

Milton Keynes City Plan 2050
Proposed Submission Stage Representation Form

Ref:
(For official use only)

Name of the Local Plan to which this representation relates:

Milton Keynes City Plan 2050

Please return by **5.30pm** on **Monday 22nd December 2025** to Development Plans, Milton Keynes City Council, Civic, 1 Saxon Gate East, Milton Keynes MK9 3EJ, or via email at nep.engagement@milton-keynes.gov.uk

This form has two parts –

Part A – Personal Details: need only be completed once.

Part B – Your representation(s). Please fill in a separate sheet for each representation you wish to make.

Part A

1. Personal Details*

2. Agent's Details (if applicable)

**If an agent is appointed, please complete only the Title, Name and Organisation (if applicable)*

boxes below but complete the full contact details of the agent in 2.

Title

Mr

Mr

First Name

David

Christopher

Last Name

Stutting

Lindley

Job Title

Senior Land and New
Business Manager

Planning Director

(where relevant)

Organisation

Amplius Living

rg+p

(where relevant)

E-mail Address

Address Line 1

c/o rg+p

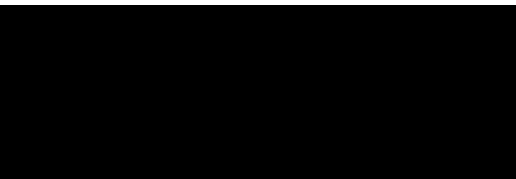
Line 2

Line 3

Line 4

Post Code

Telephone Number



Part B – Please use a separate sheet for each representation

Name or Organisation:

3. To which part of the Local Plan does this representation relate?

Paragraph		Policy	GS2, CEA10 and CEA12	Policies Map	CEA10 and CEA12 designations
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4. Do you consider the Local Plan is: (Please tick as appropriate)

4.(1) Legally compliant	Yes	☒	No	☐
4.(2) Sound	Yes	☐	No	☒
4.(3) Complies with the Duty to co-operate	Yes	☒	No	☐

5. Please give details of why you consider the Local Plan is not legally compliant or is unsound or fails to comply with the duty to co-operate. Please be as precise as possible. If you wish to support the legal compliance or soundness of the Local Plan or its compliance with the duty to co-operate, please also use this box to set out your comments.

Please refer to submitted representation letter.

(Continue on a separate sheet /expand box if necessary)

6. Please set out the modification(s) you consider necessary to make the Local Plan legally compliant and sound, in respect of any legal compliance or soundness matters you have identified at 5 above. (Please note that non-compliance with the duty to co-operate is incapable of modification at examination). You will need to say why each modification will make the Local Plan legally compliant or sound. It will be helpful if you are able to put forward your suggested revised wording of any policy or text. Please be as precise as possible.

Please refer to submitted representation letter.

(Continue on a separate sheet /expand box if necessary)

Please note your representation should cover succinctly all the evidence and supporting information necessary to support/justify your representation and your suggested modification(s). You should not assume that you will have a further opportunity to make submissions.

After this stage, further submissions will be only at the request of the Inspector, based on the matters and issues he or she identifies for examination.

7. If your representation is seeking a modification to the plan, do you consider it necessary to participate in examination hearing session(s)?

☐

No, I do not wish to participate in hearing session(s)

☒

Yes, I wish to participate in hearing session(s)

8. If you wish to participate in the hearing session(s), please outline why you consider this to be necessary:

It is important that Amplius Living are able to fully participate in the oral examination to verbally justify their position.

It is submitted that the plan in its current form is unsound and Amplius propose changes to the policies that it considers could assist with resolving the identified issues of Soundness.

Participation is respectfully requested to enable Amplius to respond to important issues raised as part of the examination and assist the Council and the Inspector in formulating a sound plan.

Dialogue will be actively sought with the Council prior to the submission of the Plan to the Secretary of State for examination.

Please note the Inspector will determine the most appropriate procedure to hear those who have indicated that they wish to participate in hearing session(s). You may be asked to confirm your wish to participate when the Inspector has identified the matters and issues for examination.

Sharing your personal details

Please be aware that, due to the process of having an Independent Examination, a name and means of contact is required for your representation to be considered. Respondent details and representations will be forwarded to the Inspector carrying out the examination of the Local Plan after the Proposed Submission period has ended. This data will be managed by a Programme Officer who acts as the point of contact between the Council and the Inspector and respondents and the Inspector.

For more information on how we use your data – please see our privacy notice by using the following link: <https://www.milton-keynes.gov.uk/milton-keynes-council/privacy-notice/milton-keynes-city-council-corporate-privacy-notice>

Representations cannot be treated as confidential and will be published on our website alongside your name. *If you are responding as an individual rather than a company or*

organisation, we will not publish your contact details (email / postal address and telephone numbers) or signatures online.

22 December 2025

Our Ref: MKCC-REG19

Development Plans
Milton Keynes City Council
Civic
1 Saxon Gate East
Milton Keynes
MK9 3EJ



Dear Sir / Madam,

**Milton Keynes City Plan 2050
Proposed Submission Stage Representations
Portfields Rise, Land north of Little Linford Lane, Newport Pagnell**

I write in relation to the above parcel of land having been instructed by our clients; Amplus Living as part of their appointed professional team.

rg+p have been instructed, to review the Milton Keynes City Plan 2050 and provide written representations regarding our clients land interest at Portfields Rise, Land north of Little Linford Lane, Newport Pagnell.

The site is located within the Parish of Haversham-cum-Little Linford, and is located north of Little Linford Lane, immediately to the west of the Newport Pagnell settlement boundary.

Amplus own and manage over 40,000 homes and deliver a range of quality services, including care and support, specialist housing and home ownership options. Amplus are driven to have a positive impact on people's lives and provide affordable homes that make a difference.

The site is owned by Amplus and extends to circa 20 hectares of greenfield land, broadly rectangular in shape and currently used for rough grazing.

Our clients seek to develop the Portfields Rise site for a range of affordable housing tenures to potentially comprise rented, shared ownership and outright purchase. The land is currently privately owned with no public access.

Development of part of the land will allow Amplus to provide new public access and designation for public use of this part of the Ouse Valley Linear Park for the benefit of all including the existing neighbouring residents of Newport Pagnell, Redhouse Park and wider Milton Keynes inhabitants. Two indicative concept plans have been produced demonstrating different levels of built development that may come forward realising linear park extension. These have previously been provided to the Council as part of 'call for sites' representations which are appended to these representations.

The site has capacity for circa 250 to 300 homes with substantial publicly accessible linear park provision.

The Site, its Surrounding Context

As noted above, the full extent of the landholding extends to circa 20 hectares of greenfield land,

broadly rectangular in shape and currently used for rough grazing. The site has mature hedges along the southern boundary with mature trees along the eastern boundary adjoining the M1, the north and western edges are bounded by the River Great Ouse. Land immediately to the north of the site is also controlled by Amplius. This has been excluded from the submissions to date as it falls within the floodzone and has limited 'built' development potential.

The part of the site fronting Little Linford Lane benefits from extant planning permission for the erection of a Stud Farm, associated buildings and temporary living accommodation (Applications 03/01140/OUT) and 05/00504/REM). It is understood that a physical start was made in its construction and so implementation has occurred. It can be argued that at least these elements of the site are brownfield. It is understood that Application (06/00399/OUT) was approved and gained an extension of 3 years for the retention of the temporary residential development.

The wider area is one of changing context. Land to the south of Little Linford Lane, North of Redhouse Park has been successfully developed by 77 dwellings by Paradigm Housing.

Topographically, the site falls gently from east to west from a relative plateau adjoining the M1, with prevailing levels associated with the M1 increasing in level towards the north.

The site promoted by our client would form an expansion to Newport Pagnell which is well located to the east and extension to the development of Redhouse Park to the south.

Emerging Local Plan

The consultation draft plan confirms at **Policy GS2** that the MK City Plan 2050 will provide for a minimum of 50,372 (net) new homes over the period 2022-2050. In line with the spatial strategy within **Policy GS1**, a total of 59,779 homes are planned to provide a buffer on meeting the minimum housing requirement and to support the growth ambitions set out by the Council within the Strategy for 2050.

In terms of affordable housing delivery it is noted from paragraph 250 of the consultation plan that "The Housing and Economic Development Needs Assessment (HEDNA) sets out the overall need for affordable homes based on local needs. It also indicates how many of these affordable homes should be provided to rent (including both social rent and affordable rent) and how many should be provided to buy. It concludes that there is a need for around 18,000 affordable homes by 2050 and that the vast majority (around 85%) of these should be for social and affordable rent."

It is also noted from paragraph 253 of the consultation plan that: "As well as considering the need for new affordable homes, we must also consider what is reasonable and viable to require as part of new development proposals. The Whole Plan Viability Study has considered the viability of different levels of affordable homes in different locations. Based on its findings, a variable approach to providing affordable homes is considered appropriate, with different levels of affordable homes being required in different areas, known as 'Housing Viability Sub Areas'. These areas are based on the viability of the local housing market and are shown on the Policies Map. Broadly, these range from the more recently built areas of the city and rural areas where a requirement for 40% of affordable housing can be achieved (where a significant proportion of our growth is being directed) to Central Milton Keynes and older areas where it is more challenging to viably provide affordable homes so lower targets have been set."

Clearly, the need to balance affordable housing delivery with commercial viability is a key consideration for the emerging plan. On this basis, development as proposed by our client provides an opportunity to provide an uplift via a scheme of development which focusses upon affordable housing delivery by a proven and reputable specialist in the field. This weighs positively in considering future development in this location, particularly in the event that affordable housing

delivery is further pressured by commercial viability. In circumstances where viability concerns may limit practical delivery of affordable housing, the Local Planning Authority should consider an uplift in housing land allocations so that needs can be fully satisfied. Our clients have an important voice in this aspect of the plan given their profile and the extent of their estate.

In terms of environmental planning designations and considerations, it is also noted that emerging policies **CEA10** and **CEA12** are of relevance.

The emerging proposals maps illustrate the site to fall within a Wildlife Corridor and a Special Landscape area, thus engaging policies **CEA10** and **CEA12** respectively.

In specific regard to the key themes underpinning the policy designations covering the site, these aspects have previously been considered through the 'call for sites' representations made on behalf of our clients predecessor organisation Grand Union Housing Group.

As confirmed in previous submissions, the site itself is not subject to any statutory ecological designations and the closest is Salcey Forest SSSI, located approximately 6.6km north-west of the site. Three non-statutory designations are partially located within the site, two Milton Keynes Wildlife Corridors and the Ouse Valley Biodiversity Opportunity Area. Although there would be some loss of habitat associated with these designations, this is largely species-poor semi-improved grassland and the areas of proposed green space will provide botanical and faunal enhancements in the long-term. It is submitted that the functionality of the Wildlife Corridors would therefore not be compromised as a result of the proposals and there will be a positive contribution towards Biodiversity as part of a comprehensive development scheme. Thus elements of emerging policy **CEA10** which impact on the prospective development of this site are not considered an insurmountable hurdle.

Furthermore, in regard to the Special Landscape Area designation which relates to policy CEA12, prior submissions have specifically considered the merits of this designation. This includes a "Technical Note: Landscape Designation Review" prepared by FPCR which has been included in these representations. This review finds (with our emphasis underlined):

".....that the site is contained within the local landscape and influenced by adjacent urban features including the M1 corridor and adjacent development to the south. Whilst some features of potential ecological value are found within the site, these are primarily limited to the perimeter vegetation. The site is in private ownership with no public access and does not contribute directly or indirectly to recreation facilities for the local community."

And

"The landscape of the site is typical of an edge of settlement field with any features of interest limited to trees and vegetation on the site boundary, more associated with the lower level floodplain beyond to the north and west. The site reflects only a low number of the key characteristics and Landscape Qualities of the LCT 3 River Floodplain and does not reflect the description of the more localised LCA 3C. The site is also not considered to relate to the criteria identified for defining landscape value for the Ouse Valley SLA as identified within the LUC study."

And

"It is therefore concluded that the site should not be included within either the Linear Park, or Special Landscape Area designations within the MK Local Plan 2050."

On this basis, we do not consider that the identification of the site as part of the Special Landscape Area is based on sound or robust evidence and this designation should be reconsidered accordingly.

Summary and Conclusion

We submit that our clients site provides as a positive opportunity to boost the delivery of affordable housing. It will provide residential dwellings in a sustainable location and will aid the Council through demonstrating a resilient supply of affordable homes. Evidence based decisions surrounding environmental designations should be informed by our clients robust evidence which will allow for further land to be positively identified.

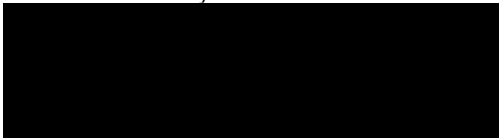
We therefore respectfully ask for modifications to the proposals maps to exclude our clients land from restrictive environmental policies which could enable it to be brought forward for beneficial development.

Our clients welcome the opportunity to participate in the Examination In Public (EIP) hearing sessions during professional debate relating to the above policies of the emerging Milton Keynes City Plan 2050.

I trust that the information provided within this letter is sufficiently clear to allow for the development to be considered with open and constructive dialogue to be developed.

Should anything require clarification, please do not hesitate to contact me.

Yours faithfully



Christopher Lindley BA (Hons) MSc MRTPI
Planning Director
rg+p



c.c. David Stutting – Amplius Living

encs.

Enclosure 1 – Supporting Plans

Call for Sites Area (18.17 ha)
Other Land Under GUHG Control (2.50 ha)

Rev Description Date
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Client:

Portfields Rise
Site Boundary Plan

Scale: A2: 1:2,500 Drawn: CE Designed: PC Approved: PC
0 125 Metres

Drawing Number: GUH001-005 Revision: Date: 13/04/2022

50 North Thirteenth Street, Central Milton Keynes, MK9 3BP
01908 666276 mail@davidlock.com davidlock.com





- Site boundary
- Views from the site
- Existing roads
- Footpaths
- Potential footbridge
- Bridleway
- Site slope
- Acoustic bund
- Green corridor
- Linear park
- Riverside edge
- SuDS
- Environment Agency flood zone 3
- Noise and air quality issues
- School and local amenities
- Opportunity for copse planting to screen the development from the open countryside

Rev	Description	Date
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Client: **Grand Union** Housing Group

Portfields Rise

Opportunities and Constraints

Scale@A3:	Drawn:	Designed:	Approved:
1:5,000	PF	JD	PJC

0m 200m

Drawing Number: **GUH001-002** Revision: **A** Date: **19.04.22**

50 North Thirteenth Street, Central Milton Keynes, MK9 3BP
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DAVID LOCK ASSOCIATES



- Acoustic bund
- Green corridor
- Key spaces
- Entrance gateway
- Vehicular movement network
- Bridleway
- Potential pedestrian and cycle network and links
- SuDS/Surface Water Drainage Attenuation
- Proposed development parcels
- Existing movement and primary access point
- Indicative footbridge location
- Potential copse planting to screen the development from open countryside
- Indicative linear park visitor parking
- Redway

Indicative
Footbridge
Location

Indicative
Footbridge
Location

Area 3.1 ha
@35 dph
108 dwellings

Area 1.8 ha
@35 dph
63 dwellings

Area 1.47 ha
@35 dph
60 dwellings

Total Residential Area: 6.6 ha
@35 dph
Total No. of dwellings: 231

Consented scheme

Motorway
Service
Area

Primary School

Local Centre

Lidl

Rev	Description	Date
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Client:



Portfields Rise
Illustrative Concept Plan

Scale@A3: 1:5,000	Drawn: JD	Designed: JD	Approved: SH
0m			200m

Drawing Number: GUH001/03	Revision: C	Date: 19.04.22
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Lidl



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 **DAVID LOCK
ASSOCIATES**

**Enclosure 2 – Technical Statement in Support
of Prior Call for Sites Submissions**

Call for Sites: Technical Statement

Portfields Rise

Land north of Little Linford Lane

Newport Pagnell

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1.0 INTRODUCTION

- 1.1. This document has been prepared by David Lock Associates ('DLA') on behalf of Grand Union Housing Group ('GUHG') in relation to land to the west of the M1 off Little Linford Lane, close to Newport Pagnell, known as Portfields Rose ('the site').
- 1.2. The land has been submitted in response to Milton Keynes Council's Call for Sites and the appropriate online proforma completed. This document provides technical information relevant to the Council's assessment of suitable, available and achievable land. The report addresses matters raised historically by MKC through historic Call for Sites and application processes. These matters have now been resolved so that there is now no impediment to the land coming forward for development.
- 1.3. This document addresses the primary technical matters raised historically comprising:
 - Chapter 2: Site Description and Context
 - Chapter 3: Highways Capacity and access
 - Chapter 4: Ecology
 - Chapter 5: Noise
 - Chapter 6: Air quality
 - Chapter 7: Drainage and Flood Risk
 - Chapter 8: Landscape
- 1.4. Further supporting information is submitted in the form of:
 - Highways Statement
 - Air Quality Appraisal
 - Opportunities and Constraints Plan and
 - Illustrative Concept Plans

Grand Union Housing Group

- 1.5. Grand Union Housing Group (GUHG) own the freehold on the land. As a registered provider of social housing they provide 12,000 homes for more than 27,000 people across Bedfordshire, Buckinghamshire, Northamptonshire and Hertfordshire.
- 1.6. GUHG provide rental homes through social rent, homes for Independent Living for over 55s, supported living for adults with learning disabilities, extra care, domestic abuse refuges, mutual exchange and market rent. They also offer homes for sale through affordable homes-ownership including shared ownership and homes for outright sale.

Aim for Portfields Rise

- 1.7. GUHG seek to develop the Portfields Rise site for a range of affordable housing tenures to potential comprise First Homes, rented, shared ownership and outright purchase. The land is currently privately owned with no public access. Development of part of the land will allow GUHG to provide new public access and designation for public use of this part of the Ouse Valley Linear Park for the benefit of all including the existing neighbouring residents of Newport Pagnell, Redhouse Park and wider Milton Keynes inhabitants. Two indicative concept plans have been produced demonstrating different levels of built development that may come forward realising linear park extension. These are provided in Appendix 1.

Site Capacity

- 1.8. The site has capacity for circa 250 to 300 homes with substantial publicly accessible linear park provision.

2.0 SITE DESCRIPTION & CONTEXT

- 2.1. The site is located within the Parish of Haversham-cum-Little Linford, and is located north of Little Linford Lane, immediately to the west of the Newport Pagnell settlement boundary.

Landholding

- 2.2. The full extent of the landholding is shown in Appendix 1 and extends to circa 20 hectares of greenfield land, broadly rectangular in shape and currently used for rough grazing. The site has mature hedges along the southern boundary with mature trees along the eastern boundary adjoining the M1, the north and western edges are bounded by the River Great Ouse. Land immediately to the north of the site is also controlled by GUHG. This is excluded from the assessment process as it falls within the floodzone and has no development potential.
- 2.3. The part of the site fronting Little Linford Lane benefits from extant planning permission for the erection of a Stud Farm, allied buildings and associated temporary living accommodation (Applications 03/01140/OUT) and 05/00504/REM). It is understood that a physical start was made in its construction and so implementation has occurred. It can be argued that the site is brownfield. Application (06/00399/OUT) was approved and gained an extension of 3 years for the retention of the temporary residential development.

Site Context

- 2.4. The wider area is one of changing context. Land to the south of Little Linford Lane, North of Redhouse Park is currently under construction for 77 dwellings by Paradigm Housing.
- 2.5. In terms of topography, the site falls gently from east to west from a relative plateau along the M1, with M1 increasing in height towards the north. The site would form an expansion to Newport Pagnell which it neighbours to the east and extension to Redhouse Park to the south.
- 2.6. Though located in the parish of Haversham it is separate from the main body of the village. The 2011 census identified that the village of Haversham-cum-Little Linford had a population of 873 (a growth of approx. 41% since the 2001 census). The 2021 census is due for public release by May 2022. Newport Pagnell has a population of 15,118 as of the 2011 Census, which comprised an approximate 4% increase based on 2001 figures.

Connectivity: Access to Facilities

- 2.7. The plans in Appendix 1 demonstrate that the site is well connected to its local environs, including cycle and pedestrian routes and facilities and amenities within walking distance.
- 2.8. Newport Pagnell is a centre for growth in the borough of Milton Keynes, due to its location as a 'higher level' settlement in the Council's settlement hierarchy based upon its sustainability credentials. There are five primary schools and a secondary school, which expands across two sites. The site is c.1 mile from Newport Pagnell Town Centre, which would provide most amenities.
- 2.9. The Portfield Rise site has direct access to facilities east of the M1 in Portfields. A Local Centre including a Primary School, Coop foodstore and pharmacy is all located within 800 metres from the site and can be accessed by a pedestrian and

cycle bridge over the M1. GUHG's land ownership includes a right of access across the bridge providing a legal right of way for pedestrians and cyclists.

- 2.10. The development of Redhouse Park and the Northern Expansion Area has resulted in development south of Little Linford Lane. This is separated from the site by a narrow triangular portion of land in Highways England control currently used a depot. Access through Redhouse Park south towards the Lidl foodstore (c.600 metres to the south) is a viable option subject to third party landowner agreement.
- 2.11. Immediately to the south of Little Lane lies the Ramada Hotel and M1 Motorway Service Area with a range of retail and catering offerings which can be accessed from Little Linford lane.

Principle of Development

- 2.12. Planning history shows that the principle of development of the land was found acceptable through the approval of applications (03/01140/OUT) and (05/00504/REM). Both relate to the erection of a Stud Farm, allied buildings and associated temporary living accommodation. Application (06/00399/OUT) was approved and gained an extension of 3 years for the retention of the temporary residential development.

Land to the north of Redhouse Park

- 2.13. Land north of Newport Road, south of Little Linford Lane formed part of MKC's Northern Expansion Area which had its own Supplementary Planning Guidance adopted in 2004. Now built out as Redhouse Park, the most northerly element was most recently subject of a planning approval in 2019 (18/03002/FUL) and construction of 77 dwellings by Paradigm Homes Charitable Housing Association, it is now well advanced. This alters the context of the Portfields Rise with residential development of the south of Linford Lane and opportunities to connect through for access to Wolverton Road subject to discussions with Paradigm Homes Charitable Housing Association and the landowners to the north of the site National Highways Ltd.

Current Local Planning Policy

Plan:MK 2016 – 2031

- 2.14. The current Local Plan for Milton Keynes is Plan:MK. This was adopted by Milton Keynes Council in March 2019 and remains the primary local policy which guides proposals at the site and against which planning applications will be tested. The plan sets out generic policies applicable to all development in the borough. The adopted Proposals Map sets out site specific allocations which are relevant. Key to consideration of the site through the Call for Sites are the following policies:

Policy DS1: Settlement Hierarchy

- 2.15. Policy DS1: Settlement Hierarchy states that "within the rural area of the Borough most new development will be concentrated within the key settlements" of which Newport Pagnell is identified as one. In this instance, the site is currently in open countryside but located immediately west of the Newport Pagnell settlement boundary, which ends on the eastern edge of the M1 and also immediately north of Milton Keynes urban area boundary which comprises all land up to the Little Linford Lane. The section above has shown that the site is far from isolated with a range of community facilities within walking distance of the land.

Policy DS6 - Linear Parks

- 2.16. The land is allocated as Linear Park (Ouse Valley) under Policy DS6. The policy states the objectives of the linear park designation. In this instance the land at Portfields Rise does not act as Linear Park as it is in private land ownership with no public access. Should development come forward then GUHG are clear that there is significant opportunity to formalise a linear park extension and provide public access to new parkland and the river. The policy sets out a series of objectives for linear park which we address below:

"Protecting and improving the landscape."

The site is currently predominantly semi-improved grassland. Development of part of the site could provide additional benefits by providing improvements to create a more ecologically diverse area, and an improved landscape along the River Great Ouse - particularly the portion of land to the north of the site.

"Protecting and enhancing features of nature conservation value."

There is limited ecological and nature conservation within the red line boundary. Ground-nesting birds have been shown to use the site through the breeding season. However, opportunities to improve nesting and species protection could be provided as part of the development package to form ecological enhancement and biodiversity net gain as part of the proposal.

"Retaining and improving public access to land and water areas for countryside recreation."

The land is entirely in private ownership and no public access is permissible. However, should the site come forward for development, this will realise opportunities to access the river by the provision of new footpaths and formalised open space.

"Flood control."

The vast majority of the land is within Flood zone 1. Land in the most northerly part of the site which has no development potential lies within flood zone 3. The northerly part of the site could be improved as part of the development in line with water compliant development as per NPPF Annex 3: Flood risk vulnerability classification. This would enable the site to be potentially better utilised as flood control, amenity open space, nature conservation and biodiversity.

"Minimising any adverse impact on local residents and agriculture."

The land is not used for agriculture. The development area can come forward without adverse impacts to the wider area. Indeed, there are benefits of access to open space and provision of a network of new paths and formalising the provision and expansion of access to the linear park.

"Protecting and interpreting areas of archaeological interest"

There is no archaeological interest on the land. Archaeological investigations in 2019 confirmed that although there is the presence of late

Iron Age and early Roman Settlement remains within the site, and they are of no more than local to regional significance, and therefore MKC have historically offered no objection to development on this basis.

3.0 HIGHWAYS AND TRANSPORT

- 3.1. Integrated Transport Planning were commissioned to provide an assessment of highways capacity. Their report can be found in Appendix 2. The following observations have been made:
- 3.2. The site benefits from being in proximity to existing residential areas in Newport Pagnell and subject to further assessment could utilise the existing M1 overbridge to provide a key active travel corridor to reduce reliance on single occupancy car trips for future residents. GUHG's land ownership includes a right of access across the bridge providing a legal right of way for pedestrians and cyclists.
- 3.3. The site is located in an area where a majority of residents travel to work via sustainable modes (12%) or work from home (10%) based on historic Census data (2011). This does not account for changes in working arrangements (working from home), increase in online shopping, shared mobility and technological advances and the post-Covid 19 society and therefore presents a conservative estimate of the current practices.
- 3.4. The local highway network has been robustly assessed using a 'worst-case' scenario demonstrating that any potential traffic generated by the development of approximately 80 dwellings can be accommodated without detriment to the existing highway network nor are any physical off site highways works. Overall, it is concluded that the site provides a significant opportunity to deliver sustainable residential development, with much needed affordable properties and provide genuine improvements to active and sustainable transport infrastructure.
- 3.5. The potential impact of vehicle trips generated by the site on the local road network can be accommodated without detriment, or severe impact, to the operation or free flow of the highway network and when combined and integrated with post-covid19 travel and working arrangements, travel planning, and shared mobility solutions would provide a high quality and sustainable development.
- 3.6. Development of 250 homes could be supported by a range of measures to reduce vehicle usage such as a mobility hub secured via a S106 agreements to reduce carborne journeys and as a tangible benefit to the immediate area. Furthermore, if required, off site highways works including improvements to the Redhouse junction could be developed. A scheme providing junction upgrades has been identified. GUHG controls land at the junction sufficient to allow delivery of the improvements.

4.0 ECOLOGY

- 4.1. Aspect Ecology was commissioned by GUHG in March 2019 to undertake an Ecological Appraisal of the full landholding.

Survey

- 4.2. The site was surveyed in June 2019 based on standard extended Phase 1 methodology. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of Badger, Otter, Water Vole, amphibians, reptiles and birds.

Ecological Designations

- 4.3. The site itself is not subject to any statutory ecological designations and the closest is Salcey Forest Site of Special Scientific Interest, located approximately 6.6km north-west of the site. Three non-statutory designations are partially located within the site, two Milton Keynes Wildlife Corridors and the Ouse Valley Biodiversity Opportunity Area. Although there would be a loss of habitat associated with these designations, this is largely species-poor semi-improved grassland and the areas of proposed green space will provide botanical and faunal enhancements in the long-term. The functionality of the Wildlife Corridors would therefore not be compromised as a result of the proposals and there will be a positive contribution towards the aim of the Biodiversity Opportunity Area.
- 4.4. Dormice are within close proximity to the site, with records from 2018 showing juvenile mice located approximately 100m to the north of the site. Although separated by a branch of the River Great Ouse, it is not unrealistic for the mice to be able to cross the river, therefore appropriate mitigation measures would be required. This can include ensuring that existing hedgerows to the north of the site are maintained as well as creating a more established and supportive habitat for them.

Habitats

- 4.5. The site comprises a species-poor semi-improved grassland field with a hedgerow at the southern site boundary. At the south of the site are areas of disturbed ground, spoil and rubble piles, tall ruderal and scattered scrub. A small section of the hedgerow would be lost to facilitate access, which would be compensated for through large areas of linear scrub planting. The remaining habitats within the site are not considered to form important ecological features and their loss to the proposals is of negligible significance. The River Great Ouse and bankside habitat adjacent to the west of the site would be fully retained and protected under the proposals, with an ecological buffer of at least 20m between the watercourse and the development footprint.

Protected Species

- 4.6. The site supports low populations of Grass Snake and Slow-worm, is likely to be utilised by foraging and commuting bats, and a range of birds utilise the site for nesting and foraging. Appropriate mitigation measures would therefore be implemented, including a destructive search for reptiles and the careful timing of works to safeguard nesting birds during relevant site clearance works. Long-term opportunities for reptiles, birds and bats will be maintained, if not enhanced, under the proposals through new landscape planting and provision of nest/roost boxes and reptile hibernacula.

Enhancements

- 4.7. The proposals present the opportunity to secure a number of biodiversity benefits, including additional native tree and shrub planting, wildflower grassland creation, new wetland habitat, roosting opportunities for bats, and more diverse nesting habitats for birds.
- 4.8. There are no known ecological constraints to development of the site. The scale of the site and riverside setting allows for significant Biodiversity Net Gain to be realised. Historically there have been concerns raised over the impact on local ecology should the site be developed. However, these concerns can be mitigated against as well as benefits gained through the provision of a net gain for biodiversity.
- 4.9. Importantly, since the 2019 surveys, the area of built development proposed is significantly smaller than that in the planning applications refused in 2017 and 2019 with a significant area proposed to be left unbuilt and come forward as a formal linear park extension with ecological benefits through Biodiversity Net Gain.

5.0 NOISE

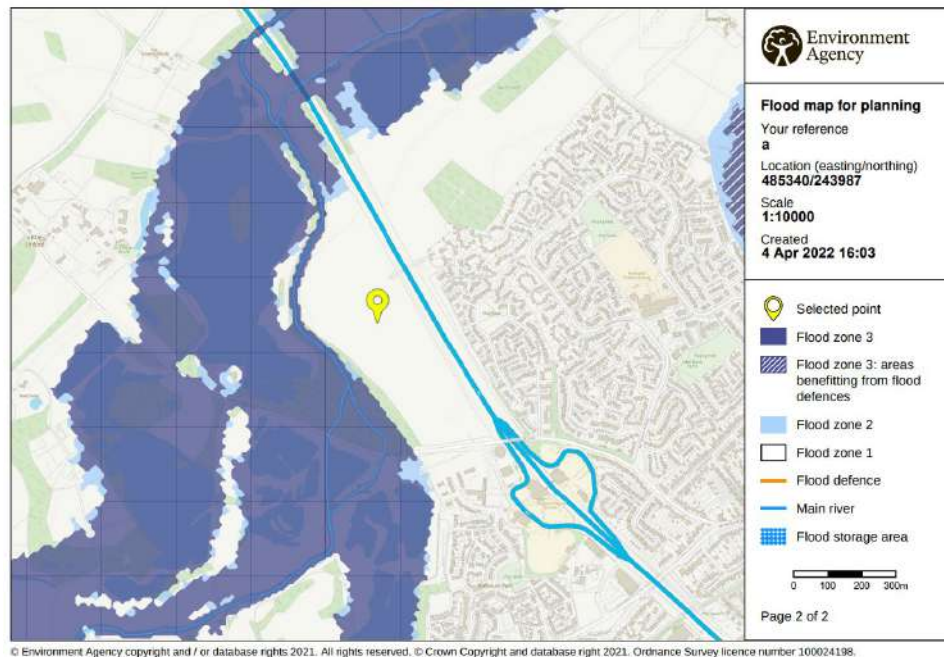
- 5.1. Although located aside the M1, through appropriate mitigation, previous planning applications on the site have shown that there would be no objection to development centred on noise pollution. LF Acoustics Ltd were appointed by the GUHG to undertake a noise assessment.
- 5.2. The site is bounded to the east by the M1, and noise levels across the site are influenced by traffic travelling along the road, and particularly within the eastern half of the landholding, where existing noise levels are relatively high.
- 5.3. Noise monitoring was carried out at several positions around the site to determine the existing noise environment, which has been used as the basis of the assessment. Consideration has been given to the current upgrade on the M1, to create a smart motorway with all lane running. The assessment carried out to support the upgrade, indicated that on the Portfields Rise site, there would be a small decrease in noise levels once complete and an assessment based upon the noise levels monitored prior to those works commencing has therefore provided a robust approach.
- 5.4. Noise levels have been modelled within the landholding. To provide a suitable design, which provides a good degree of noise mitigation, whilst considering other aspects, a design with the mitigation to a height of 6 metres above the Finished Floor Level (FFL) of the adjacent properties is required, comprising bunding with fencing to a maximum height of 2 metres constructed on the top.
- 5.5. The mitigation, with careful design of the dwellings closest to the M1, which would be limited to 2 storeys in height, and with the provision of appropriate glazing and ventilation, would ensure that the requirements of BS 8233 were achieved within the dwellings and gardens. By designing the development to meet the criteria within BS 8233 ensures the requirements of the NPPF are achieved, thus ensuring an acceptable noise environment within the Proposed Development.

6.0 AIR QUALITY

- 6.1. Royal Haskoning were appointed by GUHG to undertake a air quality appraisal given the proximity to the M1. The full report is in Appendix 3 to this document.
- 6.2. Air pollution can have a significant influence on human health, quality of life and the health of the natural environment. Children, older people and those suffering from existing health problems have heightened sensitivity to air pollution. Planning of new development has a key role in protecting and where possible improving air quality in order to protect health and the wider environment, in line with paragraph 105 of the NPPF
- 6.3. A review of baseline air quality conditions was carried out, using data collected by MKC and Defra. This analysis highlighted that background pollutant concentrations across the site are 'well below' the relevant air quality Objectives, and monitoring undertaken 35 m west of the M1 also showed concentrations 'well below' the annual mean NO2 Objective. As such, it is considered that the site can be made acceptable for residential use with the provision of an appropriate setback distance; this would be confirmed using detailed dispersion modelling to feed into the design of any future planning application. Given that air quality in the surrounding area is generally good, it is considered unlikely that development generated vehicle emissions would give rise to significant impacts at sensitive receptors located adjacent to the surrounding road network.
- 6.4. The indicative masterplans submitted with this document reflect a setback greater than 35 metres demonstrating that the site is capable of delivering significant numbers of homes without air quality constraint.
- 6.5. The Portfields Rise site is therefore considered to be suitable for future development with regard to air quality, subject to quantification using dispersion modelling that setback distances provide appropriate protection to future residents/site users.

7.0 DRAINAGE AND FLOOD RISK

- 7.1. According to the gov.uk Flood Map for Planning (Rivers and Seas) the majority of the site lies in Flood Zone 1, the lowest possibility of flooding and, as such, all uses of land are appropriate in this zone.
- 7.2. The most northerly part of the landholding is located within Flood Zones 2 & 3 with an annual probability of flooding of greater than 1%. This is excluded from the Call for Sites submission. Any built development would be located wholly within Flood Zone 1.
- 7.3. The most appropriate method of disposal of surface water run-off from the proposed development would be using a combination of infiltration techniques, such as soakaways, swales, infiltration basins and permeable paving and retention systems such as ponds, detention basins and swales. The proposed development would be planned to provide sufficient land space to allow such sustainable drainage systems to be fully integrated. These works can also be designed to provide biodiversity and Linear Park enhancements.



8.0 LANDSCAPE

Context

- 8.1. The site itself comprises an open field under agricultural use. The site is located on slightly elevated ground, raising it above the floodplain to the north and west and reflecting the northern extent of Newport Pagnell to the east, which is located at a similar height AOD.
- 8.2. The eastern boundary is defined by the M1 motorway corridor and associated embankments and established planting. To the east of the motorway, areas of residential development extend north to form the northern extent of Newport Pagnell. The southern boundary is defined by a mature hedgerow and Little Linford Lane, beyond which lies development associated with the northbound Motorway Service Area (MSA) at Newport Pagnell. To the south of the MSA lies Red House Park, a recently completed residential development that extends down to Lime Kiln Way.
- 8.3. The western and northern boundaries of the site are defined by mature hedgerows and naturalised vegetation associated with the River Ouse and the various lakes that characterise the corridor of the watercourse. This established vegetation structure assists in creating a degree of separation between the site and the wider landscape to the west.
- 8.4. The site is not publicly accessible which assists in reducing its presence in the public perception of the localised landscape context, i.e. it is not valued locally for its recreation opportunities. The area to the north west is characterised by fishing lakes which are only accessible to members. These users would be focused on the sport rather than the wider setting and as such the sensitivity is reduced.
- 8.5. There are few public rights of way (PROW) in the immediate vicinity of the site although there are several promoted routes within the landscape to the north and west, associated with the wider Ouse Valley Landscape.

Landscape Related Policy

- 8.6. The site is covered by the policies of Plan:MK (March 2019). Within the adopted plan, the site is not covered by any national or local qualitative landscape designation. The site lies outside of the defined settlement boundary. The site lies within an area identified as a Linear Park. Based on the part C of Policy DS6, it would appear that the site lies within the "Linford Lakes Area" of the wider Ouse Valley Linear Park system.
- 8.7. It is acknowledged that the proposals will result in the loss of a field at the eastern extents of the Ouse Valley Linear Park designation, however, the Ouse Valley Linear Park is an aspirational designation; the land subject of this submission is entirely in private land ownership with no public access.
- 8.8. The emerging proposals includes a large, publicly accessible, Linear Park extension along with a landscaped buffer along the northern and western boundaries of the site and will include areas of new native planting, replacing the existing semi-improved grassland, and creating an appropriate transition between the development and the mosaic of habitats associated with the River Ouse valley to the west. It is considered that the proposals can be integrated without compromising the wider aspirations for a linear park extension along the River Ouse valley along with providing increased public access, new recreational uses and enhanced nature conservation of the linear park in line with the Policy DS6.

Summary

- 8.9. The proposals are located adjacent to the existing settlement edge and as a result of the surrounding vegetation cover and existing built form, it is considered that the proposals would be perceived in the context of the settlement of Newport Pagnell.
- 8.10. It is considered that the site represents an appropriate location for new residential development adjacent to the settlement edge and, as such, it represents a sustainable opportunity to providing housing land to meet the future needs of the community and Milton Keynes without significant adverse effects to the receiving landscape or visual environment. It is therefore considered that the proposals are supportable from a landscape and visual perspective

9.0 CONCLUSION

- 9.1. GUHG seek to develop the Portfields Rise site for a range of affordable housing tenures to potential comprise First Homes, rented, shared ownership and outright purchase. The site has capacity for 250-300 homes.
- 9.2. The land is well located with existing pedestrian access to facilities in Portfield and the potential for links south through Redhouse Park; both within 800 metres. The recent development of the latter, south of Little Linford Lane, has changed the wider context of the area providing an urban context, reinforcing that provided by the M1 and Newport Pagnell to the east. A full range of facilities and amenities is located c.1 mile to the east.
- 9.3. The land is currently privately owned with no public access. Development of part of the land will allow GUHG to provide new public access and designation for public use of this part of the Ouse Valley Linear Park for the benefit of all including the existing neighbouring residents of Newport Pagnell, Redhouse Park and wider Milton Keynes inhabitants. Two indicative concept plans have been produced demonstrating different levels of built development that may come forward realising linear park extension.
- 9.4. The statement has shown that there are no insurmountable landscape, ecology, noise, flood risk, drainage highways or air quality issues. The land is suitable, available and achievable.

10.0 APPENDICES

- Appendix 1:
 - Redline for all landholding
 - Opportunities and Constraints Plan
 - Illustrative Concept Plans
- Appendix 2: Highways Statement
- Appendix 3: Air Quality Appraisal

Appendix 1:

- Redline for all landholding
- Opportunities and Constraints Plan
 - Illustrative Concept Plans

Call for Sites Area (18.17 ha)
Other Land Under GUHG Control (2.50 ha)

Rev Description Date
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Client:

Portfields Rise Site Boundary Plan

Scale: A2: 1:2,500
Drawn: CE
Designed: -
Approved: PC
125 Meters

Drawing Number: GUH001-005
Revision: -
Date: 13/04/2022

50 North Thirteenth Street, Central Milton Keynes, MK9 3BP
01908 666276 mail@davidlock.com davidlock.com





- Site boundary
- Views from the site
- Existing roads
- Footpaths
- Potential footbridge
- Bridleway
- Site slope
- Acoustic bund
- Green corridor
- Linear park
- Riverside edge
- SuDS
- Environment Agency flood zone 3
- Noise and air quality issues
- School and local amenities
- Opportunity for copse planting to screen the development from the open countryside

Rev	Description	Date
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Client: **Grand Union Housing Group**

Portfields Rise

Opportunities and Constraints

Scale@A3:	Drawn:	Designed:	Approved:
1:5,000	PF	JD	PJC

0m 200m

Drawing Number: **GUH001-002** Revision: **A** Date: **19.04.22**

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DAVID LOCK ASSOCIATES



- Acoustic bund
- Green corridor
- Key spaces
- Entrance gateway
- Vehicular movement network
- Bridleway
- Potential pedestrian and cycle network and links
- SuDS/Surface Water Drainage Attenuation
- Proposed development parcels
- Existing movement and primary access point
- Indicative footbridge location
- Potential copse planting to screen the development from open countryside
- Indicative linear park visitor parking
- Redway

Indicative
Footbridge
Location

Indicative
Footbridge
Location

Area 3.1 ha
@35 dph
108 dwellings

Area 1.8 ha
@35 dph
63 dwellings

Area 1.47 ha
@35 dph
60 dwellings

Total Residential Area: 6.6 ha
@35 dph
Total No. of dwellings: 231

Consented scheme

Motorway
Service
Area

Primary School

Local Centre

Lidl

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Client:



Portfields Rise
Illustrative Concept Plan

Scale@A3: 1:5,000	Drawn: JD	Designed: JD	Approved: SH
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Drawing Number: GUH001/03
Revision: C
Date: 19.04.22

50 North Thirteenth Street, Central Milton Keynes, MK9 3BP
01908 666276 mail@davidlock.com davidlock.com





- Acoustic bund
- Green corridor
- Key spaces
- Entrance gateway
- Vehicular movement network
- Bridgeway
- Potential pedestrian and cycle network and links
- SuDS/Surface Water Drainage Attenuation
- Proposed development parcels
- Existing movement and primary access point
- Indicative footbridge location
- Potential copse planting to screen the development from open countryside
- Redway

Indicative
Footbridge
Location

Indicative
Footbridge
Location

Total Residential Area: 1.7 ha
@35 dph
Total No. of dwellings: 60

Consented scheme

Motorway
Service
Area

Primary School

Local Centre

Lidl

Rev	Description	Date
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Client:
Grand Union
Housing Group

Portfields Rise
Illustrative Concept Plan

Scale@A3: 1:5,000	Drawn: JD	Designed: JD	Approved: SH
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Drawing Number:
GUH001/04

Revision:
C

Date:
19.04.22

50 North Thirteenth Street, Central Milton Keynes, MK9 3BP
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DAVID LOCK ASSOCIATES

- **Appendix 2:** Highways Statement

Grand Union Housing Group

Portfield's Rise,
Newport Pagnell

Transport Appraisal

April 2022



a company of Royal HaskoningDHV

Portfield's Rise, Newport Pagnell

Version 1-1

April 2022

Produced by:

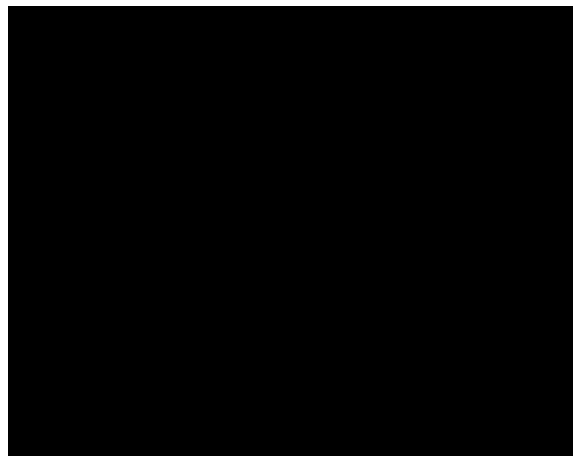


For:
Grand Union Housing Group

In association with:
David Lock Associates

Contact:

Noel Lavery



Project Information Sheet

Client	Grand Union Housing Group
Project Code	3903
Project Name	Portfield's Rise, Newport Pagnell
Project Director	Dan Palmer
Project Manager	Mark Lever-Green
Quality Manager	Dan Palmer
Additional Team Members	Noel Lavery, Matt Johnson
Sub-Consultants	Road Data Services Limited
Start Date	30 th March 2022
File Location	C:\Users\920608\Box\Integrated Transport Planning (ITP)\3900-3999\3903 Newport Pagnell\Project Files\Reports

Document Control Sheet

Ver.	Project Folder	Description	Prep.	Rev.	App.	Date
V1-1	3903 Newport Pagnell\Project Files\Reports	Final	NL	DP	DP	20/04/22
V1-0	3903 Newport Pagnell\Project Files\Reports	Draft	NL	DP	DP	13/04/22

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Appendices

Appendix A	MCC Survey
Appendix B	Junctions 9 Modelling Outputs

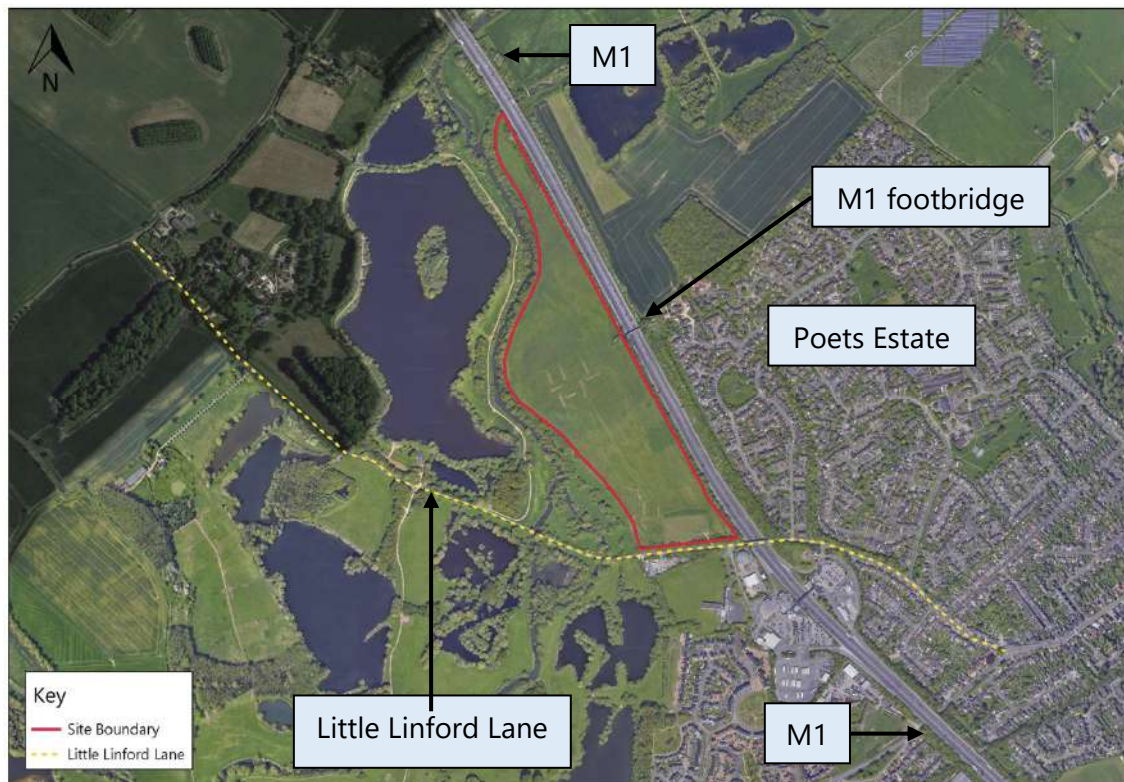
1. Introduction

- 1.1 Integrated Transport Planning Ltd (ITP) has been appointed by David Lock Associates (DLA) on behalf of Grand Union Housing Group to prepare a high-level transport appraisal in support of a call for sites application for Milton Keynes Council (MKC) to deliver affordable housing. The potential site is an area of greenfield land at Portfield's Rise, west of Newport Pagnell, herein referred to as 'the site'.
- 1.2 The site has been the subject of two previous applications, by Grand Union Housing Group (17/02105/OUT and 10/3050/OUT in 2017 and 2019, respectively) which sought permission for a scheme of 377 dwellings to be delivered over five phases.
- 1.3 The purpose of this appraisal is to provide a high-level evaluation of the sites suitability to provide high quality and sustainable residential development and identify a level of development that could be delivered without triggering a severe impact (in line with the National Planning Policy Framework (NPPF)) on the local highway network. The content of this appraisal is as follows:
 - **Site location** – identifying the existing site characteristics and suitability for residential development
 - **Sustainable travel** – a review of existing and potential options for accessing the site by sustainable modes
 - **Potential traffic generation** – calculation of the potential vehicular trip generation associated with the development
 - **Red House mini roundabout assessment** – a review of the impact that varying scales of residential development will have on the local road network having reviewed the issues identified in the aforementioned previous applications

2. Site location

- 2.1 The site is located on the north-western edge of Newport Pagnell and is bounded by the M1 to the east, Little Linford Lane to the south and the River Great Ouse to the west and north, as presented in Figure 2-1.

Figure 2-1: Site location



Source: ITP with Google Earth

- 2.2 Vehicular access to the site is currently gained via a dropped-kerb crossover arrangement with Little Linford Lane, on the southern boundary of the site, as shown in Figure 2-2. It is understood that the access is gated and not currently in use since being purchased by the landowner.

Figure 2-2: Vehicular access to site from Little Linford Lane



Source: ITP, 30.03.22

- 2.3 Although the site has an existing point of access, due to the considerable frontage with Little Linford Lane there is the opportunity to review a number of potential alternative access arrangements to serve the site, subject to agreement with MKC.
- 2.4 In addition to the vehicular access, the site benefits from a bridge which crosses over the M1, providing a connection to the Poets Estate, east of the site, as shown in Figure 2-3. The bridge is wide enough to potentially accommodate pedestrians and cyclists and therefore would allow any future residents a safe and direct route to existing residential areas and amenities located beyond.

Figure 2-3: Existing bridge over the M1



Source: ITP, 30.03.22

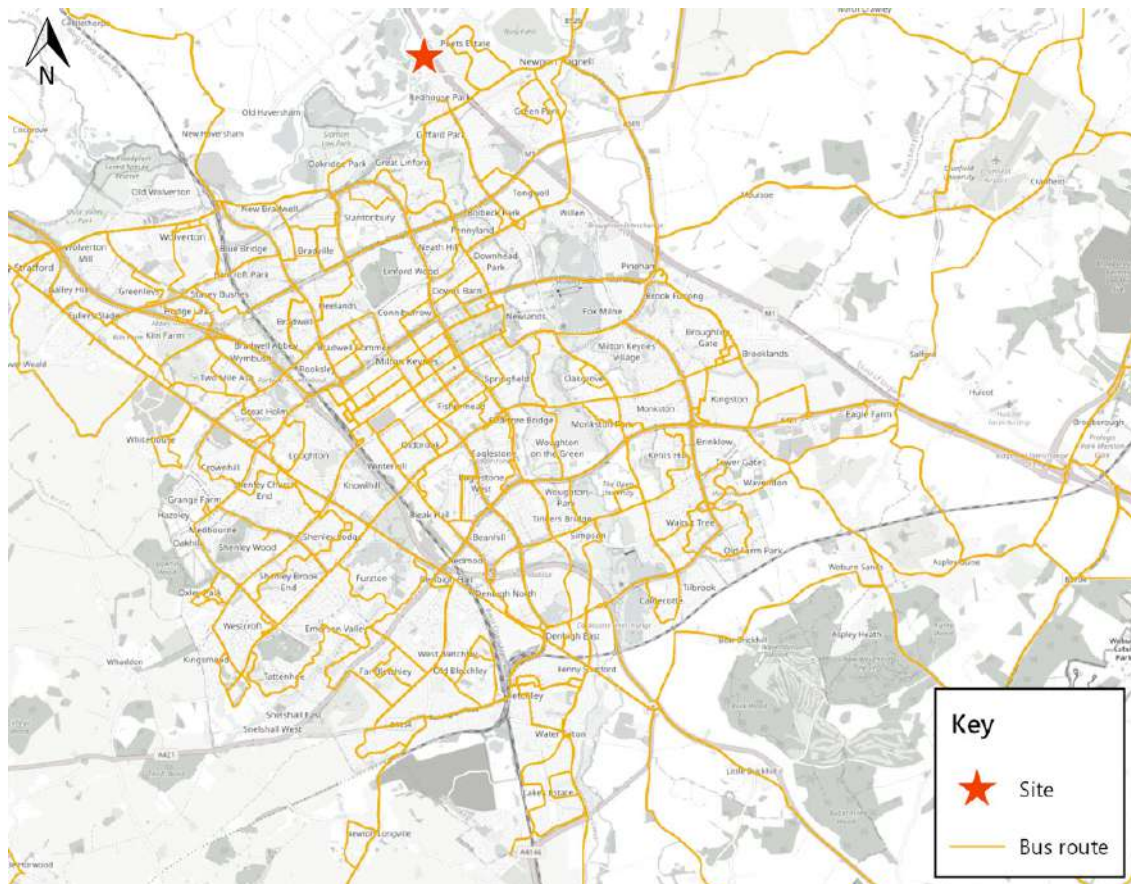
3. Sustainable Travel Opportunities

- 3.1 The site is located in proximity to a number of neighbouring residential areas and is therefore well placed for convenient means of access to a range of existing services and amenities, which can be reached via a short walk or cycle for future residents of the site.
- 3.2 Milton Keynes Council has an adopted strategy: '*Milton Keynes Strategy for 2050*' which sets out a plan to make Milton Keynes a globally leading green city. If Milton Keynes and Newport Pagnell, is to meet the ambitious target of carbon neutrality by 2030, set out by the strategy, the proportional use of private cars must fall.
- 3.3 The increasing population and employment growth of the city necessitates a shift to more efficient forms of transport. With outlying areas like Newport Pagnell more dependent on cars, active travel connections coupled with travel planning measures are advised to support a reduction in car dependency.
- 3.4 As such, this appraisal has identified sustainable transport opportunities for the site which will help meet the aims of *Milton Keynes Strategy for 2050*.

Bus

- 3.5 The nearest existing bus stops are currently located approximately 600 metres from the site access, on Wordsworth Avenue, accessible via the footway on Little Linford Lane. These are served by the number 2 and 2A services, between Newport Pagnell and Central Milton Keynes providing two services per hour Monday-Friday and an hourly service on weekends. Milton Keynes benefits from a comprehensive bus network, as presented in Figure 3-1 which will be accessible to prospective occupants to access the services, amenities and Milton Keynes Central rail station.
- 3.6 MK Connect is a demand-responsive transport system now active in Milton Keynes which provides a 'virtual bus stop' anywhere in the borough with an average of 200 metre walking distance. The service is provided via an App or calling a number and would provide future residents with an even wider range of mobility options for connection to services, amenities and places of work whilst reducing car usage.

Figure 3-1: Milton Keynes bus network



Source: Open Street Map contributors; DataCutter

Non-motorised users

- 3.7 Manual for Streets (DfT, 2007) identified “walkable neighbourhoods” as those which have access to a range of facilities within a 10 minute (approximately 800 metre) walk, whilst the Institute for Highways and Transport (IHT) identifying 2 kilometres being a preferred maximum for journeys on foot and 5 kilometres for those via bicycle.
- 3.8 Newport Pagnell High Street is located approximately 2 kilometres east of the site via Little Linford Lane and Wolverton Road, and Milton Keynes Town Centre is approximately 8 kilometres south of the site. A summary of the available amenities found on Newport Pagnell High Street has been provided in Table 3-1.

Table 3-1: Newport Pagnell amenities

Amenity	Walking	Cycling
Newport Pagnell Police Station	23 minutes	6 minutes
Newport Pagnell Dental Practice	23 minutes	6 minutes
Newport Pagnell Medical Centre	25 minutes	7 minutes
Boots Pharmacy	26 minutes	8 minutes
Co-Op supermarket	27 minutes	8 minutes
Newport Pagnell Post Office	29 minutes	8 minutes

Existing travel patterns

- 3.9 2011 Census data demonstrates 71% of people in the middle-super output area in which the site is located (E02003460) commute via private vehicles (excluding those who cars share) whilst 12% use sustainable (both public transport and non-motorised) modes and 10% work from home. The percentage share for each mode has been presented in Table 3-2.

Table 3-2: Method of travel to work

Method of travel to work	Percentage share by mode (%)
Work mainly at or from home	10
Underground, metro, light rail, tram	0
Train	5
Bus, minibus or coach	1
Taxi	0
Motorcycle, scooter or moped	0
Driving a car or van	71
Passenger in a car or van	5
Bicycle	2
On foot	6
Other method of travel to work	0

Source: NOMIS (QS701EW), 2011

- 3.10 When reviewing this data, it should be noted that it is from the 2011 census, thus it is reasonable to assume the proportion of trips made by private vehicles has decreased since it was collected. This assumption can be made based on the changes in working arrangements (working from home), increase in online shopping and other conveniences as result of technological advances and the post-COVID society.
- 3.11 Should any development at the potential site be delivered, it will be accompanied by a comprehensive Travel Plan (TP) which will seek to reduce dependency on the private vehicle and transfer trips to sustainable (both public transport and non-motorised) modes.

Travel Plan

- 3.12 A Travel Plan (TP) would accompany the delivery of the development site. Travel Plans are an increasingly important tool to facilitate sustainable development and can be used to both reduce the number of privately-owned vehicles and increase the uptake of active and alternative modes of travel by residents. In turn this seeks to achieve a reduction in the requirement for parking spaces on-site. Together with Transport

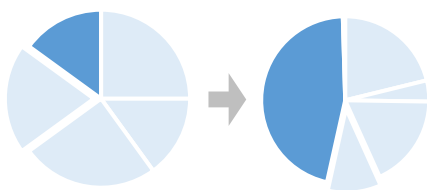
Assessments, Travel Plans provide the mechanism for assessing and managing access to new or redeveloped sites.

- 3.13 Travel Plan benefits include an increasing choice of travel mode, reducing journey times, increase in wellbeing and money-saving for residents. The local environment can benefit from improved air quality and a reduction in both congestion and noise. A Travel Plan also has the benefit of making the development more accessible to all users, whether they have access to a car or not, and therefore helps to promote social equality within the local community.

Car Club

- 3.14 The potential introduction of a Car Club can reduce car ownership. Car Clubs are an alternative to owning your own car; they enable club members to share cars, and only pay when they are using them. Peer to peer car clubs enable a member who owns a car to rent it to other members.
- 3.15 Car clubs can provide a variety of benefits, both for the individual member and within the wider community. They have a proven record of influencing travel behaviour as they provide the opportunity to reduce overall dependence on the car. This can result in a reduction in car ownership and people making better choices about how to make their journeys. Drivers who do not need access to a car every day can usually make significant savings by paying to use car club cars when they need to instead of paying the full cost of owning a car.

Shared Mobility



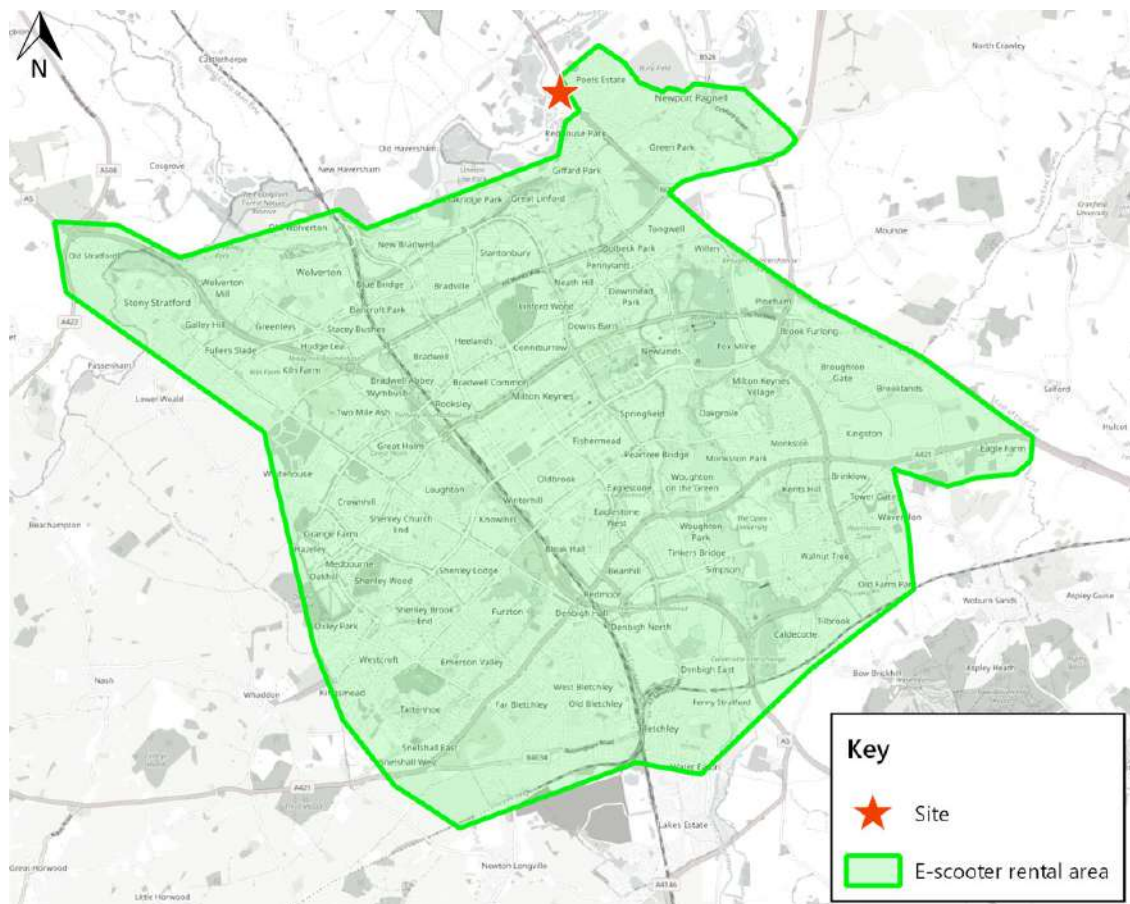
- 3.16 The site is well-placed to benefit from emerging shared mobility options, particularly due to its short distance from Newport Pagnell High Street and beyond to Milton Keynes.

- 3.17 Shared Mobility refers to a range of modes that do not fall into the traditional transport provision, such as bicycle hire schemes, e-scooter rental, lift-sharing platforms (e.g. Uber) and other demand responsive transit. Several such schemes are already established across Milton Keynes.
- 3.18 Since the completion of the previous Census in 2011, the shared mobility sector has expanded rapidly in Milton Keynes. This now includes a wide range of innovative modes, including:

- E-scooters
- Cycle hire
- Demand-responsive bus (MK Connect)

3.19 These modes are proving to be extremely popular and will account for a significant anticipated shift away from private car use for shorter journeys. There are currently several ongoing trials, which covers the residential area immediately to the south and east of the site, which are expected to lead to further innovation. This could therefore be extended to incorporate the proposed development site.

Figure 3-2: E-scooter trial rental area



Source: OpenStreetMap contributors; Lime

Reduced reliance on car parking

3.20 Future residents could have access to a wide range of E-scooters, bicycle hire, autonomous deliveries and car sharing that will enhance their experience and reduce their need to own a car, Figure 3-3 presents a range of operators currently operating within Milton Keynes that *could* expand into Newport Pagnell subject to further consultation.

Figure 3-3: Transport hire scheme operators



4. Potential Traffic Generation

- 4.1 The site has been assessed on the basis of delivering a residential development of primarily affordable housing, which will provide dwellings of varying size.
- 4.2 Given the historical planning applications at the site, which sought some 377 units, this appraisal has sought to identify a scale of development that can help MKC meet its affordable housing targets, without being detrimental to the local highway network.

Trip generation

- 4.3 Trip generation for the site has been calculated using the industry-standard TRICS database. Notwithstanding the aspirations to deliver a predominantly affordable led scheme, to ensure a robust assessment has been undertaken, the 'Privately Owned Houses' category has been selected within TRICS, as this returns higher trip rates than those for affordable housing.
- 4.4 To produce this appraisal, several scenarios, each with a varying scale of development were tested. The assessment settled on 80 dwellings as a scale of development that could be initially provided, as an early phase, without the requirement for any significant off-site highway mitigation. The trip rates for privately owned dwellings and the resultant traffic generation for 80 dwellings have been presented in Table 4-1

Table 4-1: Trip rates and generation

	AM Peak (08:00-09:00)			PM Peak (15:00-16:00)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Trip rates	0.147	0.371	0.518	0.244	0.167	0.411
80 dwellings	12	30	41	20	13	33

Source: TRICS V7.9.1

5. Red House Mini Roundabout Appraisal

Introduction

- 5.1 Due to the acknowledgement that the Red House mini roundabout (Wolverton Road / Little Linford Lane) was the key constraining factor on the local highway network, derived from previous technical work commissioned by Grand Union in consultation with Milton Keynes Council, ITP commissioned Road Data Services Ltd to conduct a manual classified count (MCC) survey at the junction to provide accurate traffic flows.
- 5.2 The MCC was completed on Tuesday the 29th of March to identify 'base year' (2022) demand and identify the peak hours at the junction. The following peak periods were identified, with a full copy of the MCC results included in **Appendix B**.
- 08:00-09:00 AM peak
 - 15:15-16:15 PM peak
- 5.3 These peak periods have been used as the base on which to assess the demand during the base year (2022), future year (2027, with growth rates gathered using TEMPro V7.2) and a future year with the potential development of 80 residential units.

Capacity Assessment

- 5.4 A capacity assessment of the existing mini-roundabout junction has been undertaken using the Junctions 9 software package in line with industry best practice. The geometry of the junction has been taken from the previous agreed capacity modelling undertaken for the site. Both the AM and PM periods were calibrated to account for the average observed queue's which were captured during the MCC survey.
- 5.5 When distributing trips associated with the potential development, it has been assumed that all inbound and outbound trips to the site route via The Red House mini roundabout, this is unlikely to happen in practice and therefore presents an overly comprehensive and robust assessment.
- 5.6 Typically, the industry standard threshold of when a junction is approaching its theoretical capacity is when it reaches a Ratio of Flow to Capacity (RFC) of 0.85. Any results over 0.85 should be reviewed in greater detail. When an RFC of 1.0 or above is recorded on any given junction arm, it is considered to be operating at or over capacity. After this point, junction models can begin to operate outside of their 'stable' conditions and do not accurately reflect the change in queuing and delay resulting

from the additional traffic. Table 5-1 presents a summary of the assessment at the mini-roundabout junction.

Table 5-1: Capacity assessment of The Red House Mini Roundabout

Scale of Dev	Arm of RBT	AM Peak (08:00-09:00)			PM Peak (15:15-16:15)		
		Queue (PCU)	Delay (Secs)	RFC	Queue (PCU)	Delay (Secs)	RFC
Existing situation (2022)							
2022 – without development	Wolverton Road (eastern arm)	3.0	26.62	0.76	2.0	14.95	0.67
	Wolverton Road (western arm)	3.1	32.23	0.77	2.9	16.15	0.74
	Little Linford Lane	3.1	31.97	0.77	1.1	8.70	0.53
Future Year (2027)							
2027 future base year - without development	Wolverton Road (eastern arm)	3.6	31.08	0.79	2.4	16.92	0.71
	Wolverton Road (western arm)	3.9	37.99	0.81	3.7	19.95	0.79
	Little Linford Lane	3.9	37.91	0.81	1.3	9.32	0.56
Future year with development of 80 residential units (2027)							
2027 future base year + potential 80 dwelling development	Wolverton Road (eastern arm)	4.0	34.26	0.81	2.6	17.96	0.72
	Wolverton Road (western arm)	6.1	55.28	0.88	4.1	21.87	0.81
	Little Linford Lane	4.4	42.50	0.83	1.4	9.66	0.57

Analysis

- 5.7 **The results presented in Table 5-1 demonstrate that a potential development of 80 dwellings will have a negligible impact on the performance of the Red House mini roundabout**
- 5.8 When comparing the existing situation (2022) and future year (2027) with no development scenario, minor increases are experienced in queue lengths, delay and capacity. The largest of these increases is the delay experienced on Little Linford Lane in the AM peak period which increase by <6 seconds equating to a vehicle queue of <1 PCU, neither of which are deemed significant. All arms of the junction operate below the 0.85 RFC value which indicates the junction operates within capacity in 2027.
- 5.9 A similar situation is experienced when the future year (2027) with a potential development of 80 residential units is assessed. In all of these scenarios, the western arm of Wolverton Road experiences the highest queues, delays and demand (RFC), with all but one arm operating below the 0.85 RFC value.
- 5.10 During the AM peak, the western arm of Wolverton Road experiences an increase in delay of circa 17 seconds, equating to a queue of 2 PCU and RFC value of 0.88, respectively. When reviewing these results, it should be noted the western arm of Wolverton Road is a two-lane entry to the mini roundabout. As such, the average queue can be distributed between the two arms demonstrating an experienced increase of one vehicle per lane.
- 5.11 Furthermore, the increase in demand does not account for measures which will be implemented as part of any consented development to reduce demand on private demand. These include implementing a Travel Plan and improvements to active travel and public transport infrastructure.
- 5.12 It should be reiterated that a number of factors included in this assessment were included to ensure a robust, 'worst-case' scenario was assessed. These include:
- All demand generated by the site being attributed to single occupancy private vehicle trips
 - Trip rates for 'privately owned houses' being used, providing a higher trip rate than those attributed to 'affordable housing'
 - Trip distribution allocating all trips generated by the development as travelling through the Red House mini roundabout

- The use of TEMPro growth rates and historic census data which do not account for working arrangements post COVID-19 and the current significant costs of vehicle ownership

5.13 **On the basis of the above, it is likely that a development quantum closer to 100 dwellings would have a minimal level of impact at the Red House mini roundabout and therefore the assessment presented within this appraisal should be seen as conservative.**

Previous mitigation proposal

- 5.14 The previous planning application (19/03050/OUT) which sought to provide 377 dwellings, presented a potential mitigation proposal at the Red House mini roundabout, however it was acknowledged by the consultant completing the assessment, and MKC, that the scheme would still not fully address the capacity constraints given the junction was concluded to be over capacity even without the addition of development generated traffic in the future assessment year of 2027.
- 5.15 On this basis if any physical highway works are deemed to be required at the Red House mini roundabout in support of a further planning application, this should be reviewed holistically with active and sustainable travel given precedent.

6. Summary & Conclusion

6.1 Based on the content of this Transport Appraisal prepared by ITP, the following observations have been made:

- The site benefits from being in proximity to existing residential areas in Newport Pagnell, and subject to further assessment could utilise the existing bridge over the M1 to provide a key active travel corridor to reduce reliance on single occupancy car trips for future residents.
- The site is located in an area where a number of residents travel to work via sustainable modes (12%) or work from home (10%) based on historic Census data (2011). This does not account for changes in working arrangements (working from home), increase in online shopping, shared mobility and technological advances and the post COVID-19 society and therefore presents a conservative estimate of the current practices.

6.2 The local highway network has been robustly assessed using a 'worst-case' scenario demonstrating that any potential traffic generated by the development of approximately 80 dwellings can be accommodated without detriment to the existing highway network nor are any physical works required at the Red House mini roundabout. Due to the robust nature of the assessment presented a development quantum of 100 dwellings is also likely to have a negligible impact to the operation of the local highway network.

6.3 It is acknowledged that a previous mitigation scheme at the Red House mini was presented (19/03050/OUT - on the basis of delivering 377 dwellings) however these works did not address existing issues on the road network and the actual wider benefit is questionable.

6.4 The vehicle trips generated by the site can be accommodated without detriment, or severe impact, to the operation or free flow of the highway network. Furthermore, when combined with post COVID-19 travel and working arrangements, travel planning, and shared mobility solutions, the site would provide for a high quality and sustainable development.

6.5 Overall, it is considered that the site presents a genuine opportunity to deliver a sustainable residential development which has the ability to provide safe and suitable access for all modes to offer much needed affordable housing.

Appendix A

MCC Survey

Newport Pagnell
Tuesday 29th March 2022

Junction: 1
Approach: Wolverton Road North

TIME	To Wolverton Road (S)									To Little Linford Lane								
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	16	3	0	0	1	20	21.0	0	0	6	1	0	0	0	7	7.0
07:15 - 07:30	1	0	36	8	0	0	0	45	44.2	0	0	10	0	0	0	0	10	10.0
07:30 - 07:45	0	0	59	6	1	0	0	66	66.5	0	0	6	1	0	0	0	7	7.0
07:45 - 08:00	0	0	52	4	0	0	0	56	56.0	0	1	12	6	0	0	0	19	18.4
Hourly Total	1	0	163	21	1	0	1	187	187.7	0	1	34	8	0	0	0	43	42.4
08:00 - 08:15	1	0	61	11	0	0	1	74	74.2	0	0	13	4	1	0	0	18	18.5
08:15 - 08:30	0	0	78	8	0	0	1	87	88.0	0	0	16	8	0	0	0	24	24.0
08:30 - 08:45	0	0	73	5	0	0	0	78	78.0	0	0	22	1	0	0	0	23	23.0
08:45 - 09:00	0	0	90	11	2	0	1	104	106.0	0	0	26	2	0	0	0	28	28.0
Hourly Total	1	0	302	35	2	0	3	343	346.2	0	0	77	15	1	0	0	93	93.5
09:00 - 09:15	0	0	71	5	1	0	1	78	79.5	0	0	16	2	0	0	0	18	18.0
09:15 - 09:30	0	0	38	10	0	0	0	48	48.0	0	0	10	1	0	0	0	11	11.0
09:30 - 09:45	0	1	41	14	1	0	0	57	56.9	0	0	17	3	1	0	0	21	21.5
09:45 - 10:00	0	0	42	12	1	0	0	55	55.5	0	0	9	4	2	0	0	15	16.0
Hourly Total	0	1	192	41	3	0	1	238	239.9	0	0	52	10	3	0	0	65	66.5

TOTAL	2	1	657	97	6	0	5	768	773.8	0	1	163	33	4	0	0	201	202.4
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15:00 - 15:15	0	0	39	5	0	0	0	44	44.0	0	0	26	3	0	0	0	29	29.0
15:15 - 15:30	0	0	68	9	1	0	0	78	78.5	0	0	28	6	0	0	0	34	34.0
15:30 - 15:45	0	0	61	7	2	0	1	71	73.0	0	0	16	4	0	0	0	20	20.0
15:45 - 16:00	0	0	45	9	1	0	0	55	55.5	0	1	17	5	1	0	0	24	23.9
Hourly Total	0	0	213	30	4	0	1	248	251.0	0	1	87	18	1	0	0	107	106.9
16:00 - 16:15	0	1	48	5	0	0	1	55	55.4	0	0	22	3	2	0	0	27	28.0
16:15 - 16:30	0	0	59	8	1	0	1	69	70.5	0	0	28	8	1	0	0	37	37.5
16:30 - 16:45	0	0	67	6	0	0	0	73	73.0	0	0	18	11	0	0	0	29	29.0
16:45 - 17:00	0	2	48	7	0	0	0	57	55.8	0	0	21	1	1	0	0	23	23.5
Hourly Total	0	3	222	26	1	0	2	254	254.7	0	0	89	23	4	0	0	116	118.0
17:00 - 17:15	0	0	60	4	0	0	1	65	66.0	0	0	27	6	0	0	0	33	33.0
17:15 - 17:30	0	0	58	3	2	0	0	63	64.0	0	0	25	8	0	0	0	33	33.0
17:30 - 17:45	0	3	66	10	0	0	0	79	77.2	0	0	25	4	0	0	0	29	29.0
17:45 - 18:00	0	1	59	5	0	0	1	66	66.4	0	0	35	2	0	0	0	37	37.0
Hourly Total	0	4	243	22	2	0	2	273	273.6	0	0	112	20	0	0	0	132	132.0
18:00 - 18:15	0	0	54	6	1	0	1	62	63.5	0	1	19	3	0	0	0	23	22.4
18:15 - 18:30	0	0	37	3	1	0	0	41	41.5	0	0	22	4	0	0	0	26	26.0
18:30 - 18:45	0	0	35	5	0	0	0	40	40.0	0	0	15	2	0	0	0	17	17.0
18:45 - 19:00	0	0	44	3	0	0	0	47	47.0	0	0	18	1	0	0	0	19	19.0
Hourly Total	0	0	170	17	2	0	1	190	192.0	0	1	74	10	0	0	0	85	84.4

TOTAL	0	7	848	95	9	0	6	965	971.3	0	2	362	71	5	0	0	440	441.3
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PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Newport Pagnell
Tuesday 29th March 2022

Junction: 1
Approach: Wolverton Road South

TIME	To Little Linford Lane									To Wolverton Road (N)								
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	14	5	0	0	0	19	19.0	1	0	13	3	1	0	0	18	17.7
07:15 - 07:30	0	0	8	3	0	0	1	12	13.0	0	0	19	6	2	0	2	29	32.0
07:30 - 07:45	0	0	15	3	2	0	0	20	21.0	0	0	18	1	0	0	0	19	19.0
07:45 - 08:00	0	0	17	11	1	0	1	30	31.5	0	0	41	7	1	0	0	49	49.5
Hourly Total	0	0	54	22	3	0	2	81	84.5	1	0	91	17	4	0	2	115	118.2
08:00 - 08:15	0	0	24	12	0	0	0	36	36.0	0	0	40	7	1	0	1	49	50.5
08:15 - 08:30	0	0	36	4	0	0	1	41	42.0	0	0	57	9	0	0	0	66	66.0
08:30 - 08:45	0	0	50	7	0	0	0	57	57.0	0	0	60	10	1	0	0	71	71.5
08:45 - 09:00	0	0	23	6	2	0	0	31	32.0	0	0	54	9	0	0	0	63	63.0
Hourly Total	0	0	133	29	2	0	1	165	167.0	0	0	211	35	2	0	1	249	251.0
09:00 - 09:15	1	0	15	2	1	0	1	20	20.7	0	0	48	7	0	0	1	56	57.0
09:15 - 09:30	0	0	16	2	0	0	2	20	22.0	0	1	35	9	4	0	1	50	52.4
09:30 - 09:45	0	0	17	4	1	0	0	22	22.5	0	0	39	11	2	0	0	52	53.0
09:45 - 10:00	0	0	19	2	0	0	1	22	23.0	0	0	24	6	1	1	0	32	33.8
Hourly Total	1	0	67	10	2	0	4	84	88.2	0	1	146	33	7	1	2	190	196.2

TOTAL	1	0	254	61	7	0	7	330	339.7	1	1	448	85	13	1	5	554	565.4
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15:00 - 15:15	0	0	53	7	2	0	0	62	63.0	0	0	48	9	0	0	0	57	57.0
15:15 - 15:30	0	0	53	8	1	0	1	63	64.5	0	0	50	5	0	0	1	56	57.0
15:30 - 15:45	2	0	34	12	0	0	0	48	46.4	0	0	45	5	1	0	0	51	51.5
15:45 - 16:00	0	0	51	16	0	0	1	68	69.0	0	0	65	2	2	0	0	69	70.0
Hourly Total	2	0	191	43	3	0	2	241	242.9	0	0	208	21	3	0	1	233	235.5
16:00 - 16:15	0	0	71	7	2	0	1	81	83.0	0	1	64	8	2	0	0	75	75.4
16:15 - 16:30	0	0	56	4	0	0	0	60	60.0	0	1	66	13	0	0	1	81	81.4
16:30 - 16:45	0	0	60	14	2	0	1	77	79.0	0	0	61	5	2	0	0	68	69.0
16:45 - 17:00	0	0	73	11	2	0	0	86	87.0	1	0	84	9	2	0	0	96	96.2
Hourly Total	0	0	260	36	6	0	2	304	309.0	1	2	275	35	6	0	1	320	322.0
17:00 - 17:15	0	0	107	9	1	0	1	118	119.5	0	1	80	7	1	0	2	91	92.9
17:15 - 17:30	1	0	86	6	0	0	0	93	92.2	1	0	83	12	0	0	1	97	97.2
17:30 - 17:45	0	2	81	9	1	0	1	94	94.3	0	0	76	12	0	0	0	88	88.0
17:45 - 18:00	0	2	65	5	1	0	0	73	72.3	0	0	71	6	0	0	0	77	77.0
Hourly Total	1	4	339	29	3	0	2	378	378.3	1	1	310	37	1	0	3	353	355.1
18:00 - 18:15	0	2	71	9	0	0	1	83	82.8	0	2	66	6	0	0	0	74	72.8
18:15 - 18:30	0	0	47	7	0	0	0	54	54.0	0	0	48	2	1	0	0	51	51.5
18:30 - 18:45	0	0	42	4	0	0	1	47	48.0	0	0	40	1	0	0	1	42	43.0
18:45 - 19:00	0	2	39	3	0	0	0	44	42.8	0	0	50	6	0	0	0	56	56.0
Hourly Total	0	4	199	23	0	0	2	228	227.6	0	2	204	15	1	0	1	223	223.3

TOTAL	3	8	989	131	12	0	8	1151	1157.8	2	5	997	108	11	0	6	1129	1135.9
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PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Newport Pagnell

Tuesday 29th March 2022

Junction: 1

Approach: Little Linford Lane

	To Wolverton Road (N)									To Wolverton Road (S)								
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	4	3	0	0	0	7	7.0	0	0	32	6	0	0	2	40	42.0
07:15 - 07:30	0	0	13	8	0	0	0	21	21.0	0	0	41	7	0	0	0	48	48.0
07:30 - 07:45	0	0	23	5	0	0	0	28	28.0	0	0	86	15	0	0	1	102	103.0
07:45 - 08:00	0	0	22	5	0	0	0	27	27.0	0	0	97	12	1	0	0	110	110.5
Hourly Total	0	0	62	21	0	0	0	83	83.0	0	0	256	40	1	0	3	300	303.5
08:00 - 08:15	0	0	19	5	1	0	0	25	25.5	0	1	82	14	2	0	1	100	101.4
08:15 - 08:30	0	0	35	1	0	0	0	36	36.0	0	0	87	12	1	0	1	101	102.5
08:30 - 08:45	0	0	30	2	1	0	0	33	33.5	0	0	115	7	1	0	1	124	125.5
08:45 - 09:00	0	0	31	6	1	0	0	38	38.5	0	1	98	8	1	0	0	108	107.9
Hourly Total	0	0	115	14	3	0	0	132	133.5	0	2	382	41	5	0	3	433	437.3
09:00 - 09:15	0	0	26	3	2	0	0	31	32.0	0	0	55	4	3	0	1	63	65.5
09:15 - 09:30	0	0	16	3	0	0	1	20	21.0	0	0	41	6	1	0	0	48	48.5
09:30 - 09:45	0	0	12	1	0	0	0	13	13.0	0	0	40	6	0	0	1	47	48.0
09:45 - 10:00	0	0	14	4	0	0	0	18	18.0	0	0	24	5	0	0	0	29	29.0
Hourly Total	0	0	68	11	2	0	1	82	84.0	0	0	160	21	4	0	2	187	191.0

TOTAL	0	0	245	46	5	0	1	297	300.5	0	2	798	102	10	0	8	920	931.8
-------	---	---	-----	----	---	---	---	-----	-------	---	---	-----	-----	----	---	---	-----	-------

15:00 - 15:15	0	0	23	2	0	0	0	25	25.0	0	0	40	8	1	0	1	50	51.5
15:15 - 15:30	0	0	23	8	0	0	0	31	31.0	0	0	50	11	2	0	0	63	64.0
15:30 - 15:45	0	0	23	4	1	0	0	28	28.5	0	0	49	6	2	0	0	57	58.0
15:45 - 16:00	0	0	20	6	1	0	0	27	27.5	0	1	33	6	1	0	1	42	42.9
Hourly Total	0	0	89	20	2	0	0	111	112.0	0	1	172	31	6	0	2	212	216.4
16:00 - 16:15	0	0	23	2	3	0	0	28	29.5	0	0	38	9	1	0	1	49	50.5
16:15 - 16:30	2	0	20	2	2	0	0	26	25.4	0	0	36	11	1	0	0	48	48.5
16:30 - 16:45	0	1	16	3	0	0	0	20	19.4	0	1	40	4	2	0	0	47	47.4
16:45 - 17:00	0	0	19	4	1	0	0	24	24.5	0	0	37	7	0	0	1	45	46.0
Hourly Total	2	1	78	11	6	0	0	98	98.8	0	1	151	31	4	0	2	189	192.4
17:00 - 17:15	0	0	12	5	0	1	0	18	19.3	0	0	33	9	1	0	0	43	43.5
17:15 - 17:30	0	0	23	6	2	0	0	31	32.0	0	0	45	8	1	0	1	55	56.5
17:30 - 17:45	0	0	24	4	0	0	0	28	28.0	0	0	46	3	0	0	0	49	49.0
17:45 - 18:00	0	2	16	2	0	0	0	20	18.8	1	0	50	3	0	0	1	55	55.2
Hourly Total	0	2	75	17	2	1	0	97	98.1	1	0	174	23	2	0	2	202	204.2
18:00 - 18:15	0	1	17	1	0	0	0	19	18.4	0	0	35	4	1	1	0	41	42.8
18:15 - 18:30	0	0	20	1	1	0	0	22	22.5	0	1	33	2	0	0	1	37	37.4
18:30 - 18:45	0	0	21	2	0	0	0	23	23.0	0	0	40	1	1	0	0	42	42.5
18:45 - 19:00	0	0	19	2	0	0	0	21	21.0	0	2	30	1	0	0	1	34	33.8
Hourly Total	0	1	77	6	1	0	0	85	84.9	0	3	138	8	2	1	2	154	156.5

TOTAL	2	4	319	54	11	1	0	391	393.8	1	5	635	93	14	1	8	757	769.5
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PCU Factors:	
CYCLE	0.2
M/CYCLE	0.4
CAR	1.0
LGV	1.0
OGV1	1.5
OGV2	2.3
BUS	2.0

Tuesday 29th March 2022

PCUs

From: 1) 08:00

To: 1) 09:00

Class: All Vehicles

Show Peak Hour: ☒

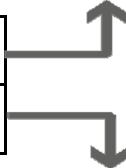
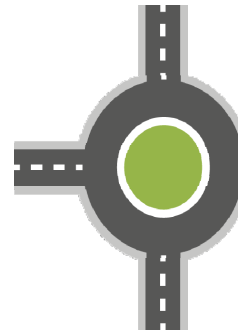
Show PCUs: ☒

Show Session 2

Wolverton Road (N)	
93	343
93.5	346.2



Little Linford Lane	132	133.5
	433	437.3

167	251
165	249
Wolverton Road (S)	



Tuesday 29th March 2022

PCUs

From: 2) 15:15

To: 2) 16:15

Class: All Vehicles

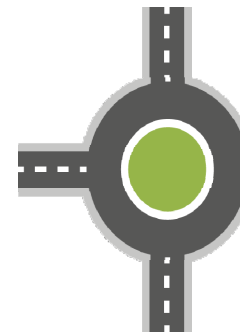
Show Peak Hour: ☒

Show PCUs: ☒

Show Session 1

Little Linford Lane	114	116.5	↑
	211	215.4	

Wolverton Road (N)	
105	259
105.9	262.4



262.9	253.9
260	251
Wolverton Road (S)	

Newport Pagnell Queues, Tuesday 29th March 2022

Produced by Road Data Services Ltd.

Lane 1 is nearside lane

		Wolverton Road (North)		Wolverton Road (S)	Little Linford Lane	
Time		Lane 1	Lane 2	Lane 1	Lane 1	Lane 2
7:00	- 7:05	0	0	0	0	0
7:05	- 7:10	0	0	0	0	1
7:10	- 7:15	1	0	1	0	1
7:15	- 7:20	2	1	0	0	3
7:20	- 7:25	2	2	2	1	4
7:25	- 7:30	0	0	1	0	1
7:30	- 7:35	3	1	1	0	3
7:35	- 7:40	2	0	1	0	1
7:40	- 7:45	1	1	1	0	4
7:45	- 7:50	3	1	1	1	1
7:50	- 7:55	4	1	0	0	4
7:55	- 8:00	2	1	3	0	5
8:00	- 8:05	5	2	1	1	3
8:05	- 8:10	5	2	2	1	4
8:10	- 8:15	3	0	3	1	2
8:15	- 8:20	3	0	1	1	3
8:20	- 8:25	5	1	3	1	5
8:25	- 8:30	11	1	3	1	6
8:30	- 8:35	12	2	5	0	5
8:35	- 8:40	3	1	1	1	4
8:40	- 8:45	4	1	1	2	8
8:45	- 8:50	8	2	5	1	7
8:50	- 8:55	4	1	4	1	14
8:55	- 9:00	3	2	2	1	5
9:00	- 9:05	2	1	1	2	1
9:05	- 9:10	3	1	1	1	1
9:10	- 9:15	3	2	0	2	3
9:15	- 9:20	2	1	3	1	1
9:20	- 9:25	3	1	1	1	1
9:25	- 9:30	1	1	0	0	1
9:30	- 9:35	1	1	1	1	2
9:35	- 9:40	0	0	2	0	1
9:40	- 9:45	2	2	4	1	6
9:45	- 9:50	1	1	0	0	2
9:50	- 9:55	1	0	2	3	0
9:55	- 10:00	2	2	1	0	1

15:00	- 15:05	1	2	0	1	1
15:05	- 15:10	2	1	4	1	1
15:10	- 15:15	2	3	5	1	2
15:15	- 15:20	2	1	2	1	0
15:20	- 15:25	2	2	2	1	2
15:25	- 15:30	3	2	7	1	3
15:30	- 15:35	3	1	0	1	2
15:35	- 15:40	1	1	4	0	1
15:40	- 15:45	3	2	2	0	2
15:45	- 15:50	2	1	3	1	1
15:50	- 15:55	1	0	4	2	1
15:55	- 16:00	2	1	5	0	1
16:00	- 16:05	1	1	2	2	4
16:05	- 16:10	0	1	5	1	0
16:10	- 16:15	2	3	3	4	2
16:15	- 16:20	3	2	3	0	2
16:20	- 16:25	3	1	3	1	4
16:25	- 16:30	2	3	4	1	2
16:30	- 16:35	3	1	6	1	4
16:35	- 16:40	4	2	2	1	3
16:40	- 16:45	2	1	5	0	1
16:45	- 16:50	3	1	4	2	5
16:50	- 16:55	2	1	5	1	3
16:55	- 17:00	2	2	5	1	1
17:00	- 17:05	5	2	13	1	1
17:05	- 17:10	3	3	6	0	2
17:10	- 17:15	1	1	6	2	1
17:15	- 17:20	1	2	10	1	4
17:20	- 17:25	3	2	14	1	3
17:25	- 17:30	1	3	5	1	1
17:30	- 17:35	5	3	4	1	2
17:35	- 17:40	2	0	3	2	3
17:40	- 17:45	1	1	1	1	1
17:45	- 17:50	4	2	3	1	5
17:50	- 17:55	2	2	3	1	1
17:55	- 18:00	1	2	6	1	2
18:00	- 18:05	2	2	8	1	4
18:05	- 18:10	1	1	3	0	2
18:10	- 18:15	2	2	1	0	1
18:15	- 18:20	1	2	3	0	0
18:20	- 18:25	1	0	2	2	0
18:25	- 18:30	3	3	0	1	1
18:30	- 18:35	1	2	2	0	5
18:35	- 18:40	1	0	1	0	1
18:40	- 18:45	2	0	0	0	2
18:45	- 18:50	0	0	0	0	1
18:50	- 18:55	2	2	5	0	1
18:55	- 19:00	2	0	3	1	1

Queues are maximum queues observed in each 5 minute period

Appendix B

Junctions 9 Modelling Outputs

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 3903_Newport Pagnell_Existing Red House Mini-RBT model_AM with Queue Validation.j9

Path: C:\Users\Local User\Documents\3903 Newport Pagnell

Report generation date: 12/04/2022 15:23:32

»2022, AM
 »2027, AM
 »2027 + Dev (50), AM
 »2027 + Dev (80), AM
 »2027 + Dev (100), AM
 »2027 + Dev (150), AM

Summary of junction performance

	AM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2022				
1 - Wolverton Road (East)	D1	3.0	26.62	0.76	D
2 - Wolverton Road (West)		3.1	31.23	0.77	D
3 - Little Linford Lane		3.1	31.97	0.77	D
	2027				
1 - Wolverton Road (East)	D5	3.6	31.08	0.79	D
2 - Wolverton Road (West)		3.9	37.99	0.81	E
3 - Little Linford Lane		3.9	37.91	0.81	E
	2027 + Dev (50)				
1 - Wolverton Road (East)	D6	3.9	33.00	0.81	D
2 - Wolverton Road (West)		5.1	47.53	0.86	E
3 - Little Linford Lane		4.2	40.68	0.82	E
	2027 + Dev (80)				
1 - Wolverton Road (East)	D7	4.0	34.26	0.81	D
2 - Wolverton Road (West)		6.1	55.28	0.88	F
3 - Little Linford Lane		4.4	42.50	0.83	E
	2027 + Dev (100)				
1 - Wolverton Road (East)	D8	4.2	35.15	0.82	E
2 - Wolverton Road (West)		6.9	61.54	0.90	F
3 - Little Linford Lane		4.5	43.77	0.84	E
	2027 + Dev (150)				
1 - Wolverton Road (East)	D9	4.5	37.55	0.83	E
2 - Wolverton Road (West)		9.8	81.89	0.95	F
3 - Little Linford Lane		4.9	47.15	0.85	E

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Existing Red House Mini-Roundabout
Location	Newport Pagnell
Site number	1
Date	05/04/2022
Version	1
Status	(new file)

Identifier	NLavery
Client	DLA
Jobnumber	3903
Enumerator	ITP0418CWLocal User
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2022	PM	ONE HOUR	15:00	16:30	15			
D3	Dwelling	AM	ONE HOUR	07:45	09:15	15			
D4	Dwelling	PM	ONE HOUR	15:00	16:30	15			
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)
D6	2027 + Dev (50)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+(D3*50)
D7	2027 + Dev (80)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+(D3*80)
D8	2027 + Dev (100)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+(D3*100)
D9	2027 + Dev (150)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+(D3*150)

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1			1.0461
G2			1.0490

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	29.81	D

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
1	Wolverton Road (East)	
2	Wolverton Road (West)	
3	Little Linford Lane	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Wolverton Road (East)	5.20	5.20	5.20	0.0	17.20	2.00	0.0	
2 - Wolverton Road (West)	2.90	2.90	5.80	4.0	8.80	6.00	0.0	
3 - Little Linford Lane	3.60	3.60	7.60	6.0	10.40	8.00	0.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Wolverton Road (East)	Percentage	Queue survey	100.00
2 - Wolverton Road (West)	None		
3 - Little Linford Lane	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Wolverton Road (East)	0.674	1187
2 - Wolverton Road (West)	0.620	1017
3 - Little Linford Lane	0.662	1033

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Wolverton Road (East)	Percentage	Queue surveys	49.00
2 - Wolverton Road (West)	Percentage	Queue surveys	59.00
3 - Little Linford Lane	Percentage	Queue surveys	51.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
----	---------------	------------------	----------------------	--------------------	---------------------	---------------------------	-------------------

D1	2022	AM	ONE HOUR	07:45	09:15	15	✓
----	------	----	----------	-------	-------	----	---

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	382	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	342	100.000
3 - Little Linford Lane		ONE HOUR	✓	337	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	110	272
	2 - Wolverton Road (West)	120	0	222
	3 - Little Linford Lane	264	73	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Wolverton Road (East)	0.76	26.62	3.0	D	351	526
2 - Wolverton Road (West)	0.77	31.23	3.1	D	314	471
3 - Little Linford Lane	0.77	31.97	3.1	D	309	464

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	288	72	54	564	0.510	284	285	0.0	1.0	12.795	B
2 - Wolverton Road (West)	257	64	202	526	0.489	254	136	0.0	0.9	13.196	B
3 - Little Linford Lane	254	63	89	497	0.511	250	367	0.0	1.0	14.490	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	343	86	65	560	0.613	341	343	1.0	1.5	16.453	C
2 - Wolverton Road (West)	307	77	243	511	0.601	305	163	0.9	1.5	17.529	C
3 - Little Linford Lane	303	76	107	491	0.618	301	441	1.0	1.6	18.933	C

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of
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	(PCU/hr)	(PCU)	(PCU/hr)				(PCU/hr)	(PCU)	(PCU)		service
1 - Wolverton Road (East)	421	105	79	556	0.757	415	416	1.5	2.8	25.000	C
2 - Wolverton Road (West)	377	94	296	492	0.765	371	199	1.5	2.9	28.703	D
3 - Little Linford Lane	371	93	130	483	0.768	365	536	1.6	3.0	29.551	D

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	421	105	80	555	0.758	420	422	2.8	3.0	26.622	D
2 - Wolverton Road (West)	377	94	299	491	0.767	376	201	2.9	3.1	31.229	D
3 - Little Linford Lane	371	93	132	482	0.769	370	543	3.0	3.1	31.975	D

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	343	86	67	560	0.614	349	352	3.0	1.7	17.639	C
2 - Wolverton Road (West)	307	77	248	509	0.604	313	167	3.1	1.6	19.136	C
3 - Little Linford Lane	303	76	110	490	0.619	309	452	3.1	1.7	20.662	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	288	72	56	563	0.511	290	292	1.7	1.1	13.417	B
2 - Wolverton Road (West)	257	64	206	525	0.491	260	139	1.6	1.0	13.904	B
3 - Little Linford Lane	254	63	91	496	0.512	256	375	1.7	1.1	15.321	C

2027, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	35.47	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2027	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	400	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	358	100.000
3 - Little Linford Lane		ONE HOUR	✓	353	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	115	285
	2 - Wolverton Road (West)	126	0	232
	3 - Little Linford Lane	276	76	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)

1 - Wolverton Road (East)	0.79	31.08	3.6	D	367	550
2 - Wolverton Road (West)	0.81	37.99	3.9	E	328	492
3 - Little Linford Lane	0.81	37.91	3.9	E	323	485

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	301	75	57	563	0.534	296	297	0.0	1.1	13.425	B
2 - Wolverton Road (West)	269	67	211	523	0.515	265	142	0.0	1.0	13.936	B
3 - Little Linford Lane	265	66	93	495	0.536	261	383	0.0	1.1	15.236	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	359	90	68	559	0.642	357	358	1.1	1.7	17.744	C
2 - Wolverton Road (West)	322	80	254	507	0.634	319	171	1.0	1.7	19.122	C
3 - Little Linford Lane	317	79	112	489	0.648	314	461	1.1	1.8	20.510	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	440	110	83	554	0.794	433	434	1.7	3.4	28.488	D
2 - Wolverton Road (West)	394	98	309	487	0.808	386	207	1.7	3.6	33.630	D
3 - Little Linford Lane	388	97	135	481	0.807	381	559	1.8	3.6	33.952	D

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	440	110	84	554	0.794	439	441	3.4	3.6	31.079	D
2 - Wolverton Road (West)	394	98	313	486	0.811	393	210	3.6	3.9	37.988	E
3 - Little Linford Lane	388	97	138	480	0.808	387	568	3.6	3.9	37.905	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	359	90	70	558	0.643	366	370	3.6	1.9	19.504	C
2 - Wolverton Road (West)	322	80	261	505	0.637	330	176	3.9	1.9	21.694	C
3 - Little Linford Lane	317	79	116	488	0.650	324	475	3.9	2.0	23.162	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	301	75	58	562	0.535	304	306	1.9	1.2	14.208	B
2 - Wolverton Road (West)	269	67	216	521	0.517	272	146	1.9	1.1	14.840	B
3 - Little Linford Lane	265	66	96	495	0.537	269	393	2.0	1.2	16.302	C

2027 + Dev (50), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	40.23	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2027 + Dev (50)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+(D3*50)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	405	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	378	100.000
3 - Little Linford Lane		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	120	285
	2 - Wolverton Road (West)	131	0	247
	3 - Little Linford Lane	276	81	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.81	33.00	3.9	D	371	557
2 - Wolverton Road (West)	0.86	47.53	5.1	E	347	520
3 - Little Linford Lane	0.82	40.68	4.2	E	328	492

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	305	76	60	562	0.542	300	301	0.0	1.2	13.661	B
2 - Wolverton Road (West)	284	71	211	523	0.544	280	149	0.0	1.2	14.719	B
3 - Little Linford Lane	269	67	97	494	0.545	265	394	0.0	1.2	15.538	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	364	91	73	558	0.652	361	362	1.2	1.8	18.246	C
2 - Wolverton Road (West)	340	85	254	507	0.669	337	180	1.2	1.9	20.960	C
3 - Little Linford Lane	321	80	116	488	0.659	319	474	1.2	1.8	21.179	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	445	111	88	553	0.806	438	438	1.8	3.6	29.926	D
2 - Wolverton Road (West)	416	104	308	488	0.853	405	218	1.9	4.6	39.909	E
3 - Little Linford Lane	394	98	140	479	0.821	386	573	1.8	3.8	35.887	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	445	111	89	552	0.807	444	446	3.6	3.9	33.001	D
2 - Wolverton Road (West)	416	104	313	486	0.856	414	221	4.6	5.1	47.533	E
3 - Little Linford Lane	394	98	143	479	0.823	392	583	3.8	4.2	40.681	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	364	91	75	557	0.653	371	376	3.9	2.0	20.287	C
2 - Wolverton Road (West)	340	85	261	505	0.673	351	185	5.1	2.2	25.246	D
3 - Little Linford Lane	321	80	121	486	0.662	330	491	4.2	2.1	24.371	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	305	76	62	561	0.543	308	310	2.0	1.2	14.511	B
2 - Wolverton Road (West)	284	71	216	521	0.546	288	153	2.2	1.3	15.909	C
3 - Little Linford Lane	269	67	100	493	0.546	273	405	2.1	1.3	16.722	C

2027 + Dev (80), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	43.90	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2027 + Dev (80)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+ (D3*80)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	408	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	390	100.000
3 - Little Linford Lane		ONE HOUR	✓	361	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	123	285
	2 - Wolverton Road (West)	134	0	256
	3 - Little Linford Lane	276	84	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.81	34.26	4.0	D	374	561
2 - Wolverton Road (West)	0.88	55.28	6.1	F	358	536
3 - Little Linford Lane	0.83	42.50	4.4	E	331	496

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	307	77	62	561	0.547	302	303	0.0	1.2	13.807	B
2 - Wolverton Road (West)	293	73	211	523	0.561	288	154	0.0	1.2	15.232	C
3 - Little Linford Lane	271	68	99	493	0.550	267	401	0.0	1.2	15.725	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	366	92	75	557	0.658	364	365	1.2	1.8	18.561	C
2 - Wolverton Road (West)	350	88	254	507	0.691	347	185	1.2	2.1	22.226	C
3 - Little Linford Lane	324	81	119	487	0.666	321	482	1.2	1.9	21.598	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	449	112	91	552	0.814	441	440	1.8	3.8	30.844	D
2 - Wolverton Road (West)	429	107	308	488	0.880	416	224	2.1	5.3	44.542	E
3 - Little Linford Lane	397	99	143	479	0.829	388	582	1.9	4.0	37.111	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	449	112	93	551	0.814	448	449	3.8	4.0	34.260	D
2 - Wolverton Road (West)	429	107	313	486	0.883	426	228	5.3	6.1	55.281	F
3 - Little Linford Lane	397	99	146	478	0.831	395	592	4.0	4.4	42.495	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	366	92	78	556	0.659	374	380	4.0	2.1	20.797	C
2 - Wolverton Road (West)	350	88	261	505	0.694	365	191	6.1	2.5	28.270	D
3 - Little Linford Lane	324	81	125	485	0.669	333	501	4.4	2.2	25.185	D

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	307	77	64	560	0.548	310	313	2.1	1.3	14.704	B
2 - Wolverton Road (West)	293	73	216	521	0.563	298	158	2.5	1.4	16.646	C
3 - Little Linford Lane	271	68	102	492	0.551	275	412	2.2	1.3	16.991	C

2027 + Dev (100), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	46.79	E

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027 + Dev (100)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+ (D3*100)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	410	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	398	100.000
3 - Little Linford Lane		ONE HOUR	✓	363	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	125	285
	2 - Wolverton Road (West)	136	0	262
	3 - Little Linford Lane	276	86	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.82	35.15	4.2	E	376	564
2 - Wolverton Road (West)	0.90	61.54	6.9	F	365	547
3 - Little Linford Lane	0.84	43.77	4.5	E	333	499

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	308	77	64	561	0.550	304	305	0.0	1.2	13.904	B
2 - Wolverton Road (West)	299	75	211	523	0.572	294	157	0.0	1.3	15.593	C
3 - Little Linford Lane	273	68	100	493	0.554	268	405	0.0	1.2	15.854	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	368	92	77	556	0.662	366	367	1.2	1.9	18.777	C
2 - Wolverton Road (West)	358	89	254	507	0.705	354	189	1.3	2.2	23.150	C
3 - Little Linford Lane	326	81	121	486	0.670	323	487	1.2	1.9	21.885	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	451	113	93	551	0.819	443	442	1.9	3.9	31.485	D
2 - Wolverton Road (West)	438	109	308	488	0.898	423	228	2.2	5.9	48.049	E
3 - Little Linford Lane	399	100	144	478	0.835	390	587	1.9	4.1	37.951	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	451	113	95	550	0.819	450	451	3.9	4.2	35.146	E
2 - Wolverton Road (West)	438	109	312	486	0.901	434	232	5.9	6.9	61.543	F
3 - Little Linford Lane	399	100	148	477	0.837	397	598	4.1	4.5	43.768	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	368	92	80	555	0.663	376	383	4.2	2.1	21.158	C
2 - Wolverton Road (West)	358	89	262	505	0.709	375	195	6.9	2.7	30.886	D
3 - Little Linford Lane	326	81	128	484	0.674	335	508	4.5	2.2	25.771	D

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	308	77	66	560	0.551	312	314	2.1	1.3	14.832	B
2 - Wolverton Road (West)	299	75	217	521	0.575	304	161	2.7	1.4	17.191	C
3 - Little Linford Lane	273	68	104	492	0.555	277	417	2.2	1.3	17.175	C

2027 + Dev (150), AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	55.92	F

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2027 + Dev (150)	AM	ONE HOUR	07:45	09:15	15	✓	Simple	(D1*G1)+ (D3*150)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	415	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	418	100.000
3 - Little Linford Lane		ONE HOUR	✓	368	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	130	285
	2 - Wolverton Road (West)	141	0	277
	3 - Little Linford Lane	276	91	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	1	1
	2 - Wolverton Road (West)	2	0	1
	3 - Little Linford Lane	1	1	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
--	--	--	--	--	----------------	----------------

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.83	37.55	4.5	E	380	571
2 - Wolverton Road (West)	0.95	81.89	9.8	F	383	575
3 - Little Linford Lane	0.85	47.15	4.9	E	337	506

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	312	78	68	559	0.558	307	308	0.0	1.2	14.159	B
2 - Wolverton Road (West)	315	79	211	523	0.601	309	164	0.0	1.5	16.569	C
3 - Little Linford Lane	277	69	104	492	0.563	272	416	0.0	1.2	16.181	C

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	373	93	81	555	0.672	370	371	1.2	1.9	19.336	C
2 - Wolverton Road (West)	376	94	254	507	0.740	371	197	1.5	2.6	25.793	D
3 - Little Linford Lane	330	83	125	485	0.682	327	500	1.2	2.0	22.634	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	456	114	98	549	0.831	448	445	1.9	4.1	33.176	D
2 - Wolverton Road (West)	460	115	307	488	0.943	439	239	2.6	7.8	58.478	F
3 - Little Linford Lane	405	101	148	477	0.849	395	599	2.0	4.4	40.139	E

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	456	114	100	549	0.832	455	454	4.1	4.5	37.548	E
2 - Wolverton Road (West)	460	115	312	486	0.946	452	243	7.8	9.8	81.885	F
3 - Little Linford Lane	405	101	152	475	0.851	403	612	4.4	4.9	47.148	E

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	373	93	85	554	0.673	382	391	4.5	2.2	22.129	C
2 - Wolverton Road (West)	376	94	262	504	0.745	402	204	9.8	3.3	41.226	E
3 - Little Linford Lane	330	83	135	481	0.687	341	529	4.9	2.4	27.438	D

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	312	78	70	559	0.559	316	319	2.2	1.3	15.172	C
2 - Wolverton Road (West)	315	79	217	521	0.604	321	169	3.3	1.6	18.799	C
3 - Little Linford Lane	277	69	108	490	0.564	281	430	2.4	1.4	17.668	C

Junctions 9	
ARCADY 9 - Roundabout Module	
Version: 9.5.1.7462 © Copyright TRL Limited, 2019	
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution	

Filename: 3903_Newport Pagnell_Existing Red House Mini-RBT model_PM with Queue Validation.j9

Path: C:\Users\Local User\Documents\3903 Newport Pagnell

Report generation date: 12/04/2022 15:22:34

»2022, PM
 »2027, PM
 »2027 + Dev (50), PM
 »2027 + Dev (80), PM
 »2027 + Dev (100), PM
 »2027 + Dev (150), PM

Summary of junction performance

	PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2022				
1 - Wolverton Road (East)	D2	2.0	14.95	0.67	B
2 - Wolverton Road (West)		2.9	16.15	0.74	C
3 - Little Linford Lane		1.1	8.70	0.53	A
	2027				
1 - Wolverton Road (East)	D5	2.4	16.92	0.71	C
2 - Wolverton Road (West)		3.7	19.95	0.79	C
3 - Little Linford Lane		1.3	9.32	0.56	A
	2027 + Dev (50)				
1 - Wolverton Road (East)	D6	2.5	17.55	0.72	C
2 - Wolverton Road (West)		3.9	21.11	0.80	C
3 - Little Linford Lane		1.3	9.53	0.57	A
	2027 + Dev (80)				
1 - Wolverton Road (East)	D7	2.6	17.96	0.72	C
2 - Wolverton Road (West)		4.1	21.87	0.81	C
3 - Little Linford Lane		1.4	9.66	0.57	A
	2027 + Dev (100)				
1 - Wolverton Road (East)	D8	2.7	18.24	0.73	C
2 - Wolverton Road (West)		4.2	22.40	0.81	C
3 - Little Linford Lane		1.4	9.75	0.57	A
	2027 + Dev (150)				
1 - Wolverton Road (East)	D9	2.8	18.98	0.74	C
2 - Wolverton Road (West)		4.5	23.85	0.82	C
3 - Little Linford Lane		1.4	9.99	0.58	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Existing Red House Mini-Roundabout
Location	Newport Pagnell
Site number	1
Date	05/04/2022
Version	1
Status	(new file)

Identifier	NLavery
Client	DLA
Jobnumber	3903
Enumerator	ITP0418CWLocal User
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2022	AM	ONE HOUR	07:45	09:15	15			
D2	2022	PM	ONE HOUR	15:00	16:30	15	✓		
D3	Dwelling	AM	ONE HOUR	07:45	09:15	15			
D4	Dwelling	PM	ONE HOUR	15:00	16:30	15			
D5	2027	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)
D6	2027 + Dev (50)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*50)
D7	2027 + Dev (80)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*80)
D8	2027 + Dev (100)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*100)
D9	2027 + Dev (150)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*150)

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1			1.0461
G2			1.0490

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	13.60	B

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Name	Description
1	Wolverton Road (East)	
2	Wolverton Road (West)	
3	Little Linford Lane	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Wolverton Road (East)	5.20	5.20	5.20	0.0	17.20	2.00	0.0	
2 - Wolverton Road (West)	2.90	2.90	5.80	4.0	8.80	6.00	0.0	
3 - Little Linford Lane	3.60	3.60	7.60	6.0	10.40	8.00	0.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Percentage intercept adjustment (%)
1 - Wolverton Road (East)	Percentage	Queue survey	100.00
2 - Wolverton Road (West)	None		
3 - Little Linford Lane	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Wolverton Road (East)	0.674	1187
2 - Wolverton Road (West)	0.620	1017
3 - Little Linford Lane	0.662	1033

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Wolverton Road (East)	Percentage	Queue surveys	71.00
2 - Wolverton Road (West)	Percentage	Queue surveys	115.00
3 - Little Linford Lane	Percentage	Queue surveys	97.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically

D2	2022	PM	ONE HOUR	15:00	16:30	15	✓
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Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	458	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	594	100.000
3 - Little Linford Lane		ONE HOUR	✓	434	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	98	360
	2 - Wolverton Road (West)	139	0	455
	3 - Little Linford Lane	261	173	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	7	2
	2 - Wolverton Road (West)	10	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Wolverton Road (East)	0.67	14.95	2.0	B	420	630
2 - Wolverton Road (West)	0.74	16.15	2.9	C	545	818
3 - Little Linford Lane	0.53	8.70	1.1	A	398	597

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	345	86	129	781	0.442	342	299	0.0	0.8	8.385	A
2 - Wolverton Road (West)	447	112	269	979	0.457	444	202	0.0	0.9	7.047	A
3 - Little Linford Lane	327	82	104	935	0.349	325	608	0.0	0.5	6.050	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	412	103	155	769	0.536	410	359	0.8	1.2	10.309	B
2 - Wolverton Road (West)	534	133	322	940	0.568	532	243	0.9	1.4	9.251	A
3 - Little Linford Lane	390	98	125	922	0.423	389	730	0.5	0.7	6.952	A

15:30 - 15:45

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side)	Start queue	End queue	Delay (s)	Unsignalised level of
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	(PCU/hr)	(PCU)	(PCU/hr)				(PCU/hr)	(PCU)	(PCU)		service
1 - Wolverton Road (East)	504	126	190	752	0.671	501	438	1.2	2.0	14.571	B
2 - Wolverton Road (West)	654	164	394	889	0.735	648	297	1.4	2.8	15.387	C
3 - Little Linford Lane	478	119	152	904	0.528	476	890	0.7	1.1	8.627	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	504	126	190	752	0.671	504	440	2.0	2.0	14.948	B
2 - Wolverton Road (West)	654	164	396	888	0.737	654	298	2.8	2.9	16.145	C
3 - Little Linford Lane	478	119	153	904	0.529	478	897	1.1	1.1	8.703	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	412	103	156	768	0.536	415	362	2.0	1.2	10.603	B
2 - Wolverton Road (West)	534	133	326	937	0.570	540	245	2.9	1.4	9.668	A
3 - Little Linford Lane	390	98	126	921	0.424	392	740	1.1	0.8	7.026	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	345	86	131	780	0.442	346	302	1.2	0.8	8.577	A
2 - Wolverton Road (West)	447	112	272	976	0.458	449	205	1.4	0.9	7.229	A
3 - Little Linford Lane	327	82	105	934	0.350	328	616	0.8	0.6	6.120	A

2027, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	15.91	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2027	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	480	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	623	100.000
3 - Little Linford Lane		ONE HOUR	✓	455	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	103	378
	2 - Wolverton Road (West)	146	0	477
	3 - Little Linford Lane	274	181	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	7	2
	2 - Wolverton Road (West)	10	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)

1 - Wolverton Road (East)	0.71	16.92	2.4	C	441	661
2 - Wolverton Road (West)	0.79	19.95	3.7	C	572	858
3 - Little Linford Lane	0.56	9.32	1.3	A	418	627

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	362	90	136	778	0.465	358	314	0.0	0.9	8.767	A
2 - Wolverton Road (West)	469	117	282	969	0.484	465	212	0.0	1.0	7.469	A
3 - Little Linford Lane	343	86	109	932	0.368	340	638	0.0	0.6	6.242	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	432	108	163	765	0.565	430	376	0.9	1.3	11.023	B
2 - Wolverton Road (West)	560	140	338	929	0.603	558	255	1.0	1.6	10.153	B
3 - Little Linford Lane	409	102	131	918	0.446	408	765	0.6	0.8	7.260	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	529	132	199	748	0.708	525	459	1.3	2.4	16.335	C
2 - Wolverton Road (West)	686	172	412	876	0.783	678	311	1.6	3.5	18.498	C
3 - Little Linford Lane	501	125	159	900	0.557	499	932	0.8	1.3	9.215	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	529	132	200	747	0.708	529	462	2.4	2.4	16.915	C
2 - Wolverton Road (West)	686	172	416	874	0.785	685	313	3.5	3.7	19.948	C
3 - Little Linford Lane	501	125	160	899	0.558	501	941	1.3	1.3	9.318	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	432	108	164	764	0.565	436	380	2.4	1.4	11.437	B
2 - Wolverton Road (West)	560	140	343	926	0.605	568	257	3.7	1.7	10.833	B
3 - Little Linford Lane	409	102	133	917	0.447	411	778	1.3	0.8	7.362	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	362	90	137	777	0.465	364	317	1.4	0.9	9.005	A
2 - Wolverton Road (West)	469	117	286	966	0.485	472	215	1.7	1.0	7.708	A
3 - Little Linford Lane	343	86	110	931	0.368	344	647	0.8	0.6	6.325	A

2027 + Dev (50), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	16.64	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2027 + Dev (50)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*50)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	485	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	633	100.000
3 - Little Linford Lane		ONE HOUR	✓	460	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	108	378
	2 - Wolverton Road (West)	151	0	482
	3 - Little Linford Lane	274	186	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	7	2
	2 - Wolverton Road (West)	10	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.72	17.55	2.5	C	445	668
2 - Wolverton Road (West)	0.80	21.11	3.9	C	581	871
3 - Little Linford Lane	0.57	9.53	1.3	A	422	634

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	365	91	139	776	0.471	362	317	0.0	0.9	8.877	A
2 - Wolverton Road (West)	477	119	282	969	0.492	473	220	0.0	1.0	7.571	A
3 - Little Linford Lane	347	87	113	930	0.373	344	642	0.0	0.6	6.306	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	436	109	167	763	0.572	435	381	0.9	1.3	11.245	B
2 - Wolverton Road (West)	569	142	338	929	0.613	567	264	1.0	1.6	10.387	B
3 - Little Linford Lane	414	103	135	915	0.452	413	770	0.6	0.8	7.364	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	534	134	205	745	0.717	530	464	1.3	2.5	16.894	C
2 - Wolverton Road (West)	697	174	412	876	0.796	689	322	1.6	3.7	19.393	C
3 - Little Linford Lane	507	127	164	897	0.565	505	937	0.8	1.3	9.417	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	534	134	205	745	0.718	534	467	2.5	2.5	17.553	C
2 - Wolverton Road (West)	697	174	416	874	0.798	696	324	3.7	3.9	21.107	C
3 - Little Linford Lane	507	127	166	895	0.566	507	946	1.3	1.3	9.531	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	436	109	168	762	0.573	441	385	2.5	1.4	11.693	B
2 - Wolverton Road (West)	569	142	343	925	0.615	578	266	3.9	1.7	11.163	B
3 - Little Linford Lane	414	103	138	914	0.453	416	783	1.3	0.9	7.471	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	365	91	141	775	0.471	367	321	1.4	0.9	9.129	A
2 - Wolverton Road (West)	477	119	286	966	0.493	479	222	1.7	1.0	7.828	A
3 - Little Linford Lane	347	87	114	929	0.373	347	651	0.9	0.6	6.389	A

2027 + Dev (80), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	17.11	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2027 + Dev (80)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*80)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	488	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	639	100.000
3 - Little Linford Lane		ONE HOUR	✓	463	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	111	378
	2 - Wolverton Road (West)	154	0	485
	3 - Little Linford Lane	274	189	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
From	1 - Wolverton Road (East)	0	6	2
	2 - Wolverton Road (West)	9	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.72	17.96	2.6	C	448	672
2 - Wolverton Road (West)	0.81	21.87	4.1	C	586	880
3 - Little Linford Lane	0.57	9.66	1.4	A	425	638

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	368	92	142	775	0.474	364	319	0.0	0.9	8.944	A
2 - Wolverton Road (West)	481	120	281	969	0.496	477	224	0.0	1.0	7.634	A
3 - Little Linford Lane	349	87	115	928	0.376	346	644	0.0	0.6	6.342	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	439	110	170	762	0.577	437	383	0.9	1.4	11.367	B
2 - Wolverton Road (West)	575	144	338	929	0.618	572	269	1.0	1.7	10.533	B
3 - Little Linford Lane	416	104	138	914	0.456	416	772	0.6	0.9	7.428	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	538	134	208	743	0.723	533	468	1.4	2.5	17.247	C
2 - Wolverton Road (West)	704	176	412	876	0.803	695	329	1.7	3.9	19.967	C
3 - Little Linford Lane	510	128	167	895	0.570	508	940	0.9	1.3	9.542	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	538	134	209	743	0.724	537	471	2.5	2.6	17.958	C
2 - Wolverton Road (West)	704	176	416	874	0.805	703	331	3.9	4.1	21.867	C
3 - Little Linford Lane	510	128	169	893	0.571	510	949	1.3	1.4	9.664	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	439	110	171	761	0.577	444	388	2.6	1.4	11.853	B
2 - Wolverton Road (West)	575	144	343	925	0.621	584	272	4.1	1.8	11.372	B
3 - Little Linford Lane	416	104	141	912	0.457	418	786	1.4	0.9	7.543	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	368	92	143	774	0.475	370	323	1.4	0.9	9.207	A
2 - Wolverton Road (West)	481	120	286	966	0.498	484	227	1.8	1.1	7.901	A
3 - Little Linford Lane	349	87	116	927	0.376	350	653	0.9	0.6	6.429	A

2027 + Dev (100), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	17.44	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2027 + Dev (100)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+(D4*100)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	490	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	643	100.000
3 - Little Linford Lane		ONE HOUR	✓	465	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	113	378
	2 - Wolverton Road (West)	156	0	487
	3 - Little Linford Lane	274	191	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	6	2
	2 - Wolverton Road (West)	9	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.73	18.24	2.7	C	450	675
2 - Wolverton Road (West)	0.81	22.40	4.2	C	590	885
3 - Little Linford Lane	0.57	9.75	1.4	A	427	640

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	369	92	143	774	0.477	366	321	0.0	0.9	8.990	A
2 - Wolverton Road (West)	484	121	281	969	0.499	480	227	0.0	1.0	7.675	A
3 - Little Linford Lane	350	88	116	927	0.378	348	645	0.0	0.6	6.369	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	441	110	172	761	0.580	439	385	0.9	1.4	11.458	B
2 - Wolverton Road (West)	578	145	338	929	0.622	576	273	1.0	1.7	10.633	B
3 - Little Linford Lane	418	105	139	912	0.458	417	774	0.6	0.9	7.469	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	540	135	210	742	0.727	535	470	1.4	2.6	17.491	C
2 - Wolverton Road (West)	708	177	412	876	0.808	699	333	1.7	4.0	20.364	C
3 - Little Linford Lane	512	128	169	893	0.574	510	942	0.9	1.4	9.627	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	540	135	211	742	0.728	540	473	2.6	2.7	18.238	C
2 - Wolverton Road (West)	708	177	416	874	0.810	707	335	4.0	4.2	22.402	C
3 - Little Linford Lane	512	128	171	892	0.574	512	951	1.4	1.4	9.754	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	441	110	173	760	0.580	446	390	2.7	1.5	11.963	B
2 - Wolverton Road (West)	578	145	343	925	0.625	588	275	4.2	1.8	11.516	B
3 - Little Linford Lane	418	105	142	910	0.459	420	789	1.4	0.9	7.589	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	369	92	145	774	0.477	371	325	1.5	1.0	9.257	A
2 - Wolverton Road (West)	484	121	286	966	0.501	487	230	1.8	1.1	7.950	A
3 - Little Linford Lane	350	88	118	926	0.378	351	655	0.9	0.6	6.459	A

2027 + Dev (150), PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Red House Roundabout	Mini-roundabout		1, 2, 3	18.33	C

Junction Network Options

Driving side	Lighting	Road surface	In London
Left	Normal/unknown	Normal/unknown	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2027 + Dev (150)	PM	ONE HOUR	15:00	16:30	15	✓	Simple	(D2*G2)+ (D4*150)

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Wolverton Road (East)		ONE HOUR	✓	495	100.000
2 - Wolverton Road (West)		ONE HOUR	✓	653	100.000
3 - Little Linford Lane		ONE HOUR	✓	470	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	118	378
	2 - Wolverton Road (West)	161	0	492
	3 - Little Linford Lane	274	196	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		1 - Wolverton Road (East)	2 - Wolverton Road (West)	3 - Little Linford Lane
	1 - Wolverton Road (East)	0	6	2
	2 - Wolverton Road (West)	9	0	4
	3 - Little Linford Lane	3	3	0

Results

Results Summary for whole modelled period

					Average Demand	Total Junction
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Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	(PCU/hr)	Arrivals (PCU)
1 - Wolverton Road (East)	0.74	18.98	2.8	C	455	682
2 - Wolverton Road (West)	0.82	23.85	4.5	C	599	899
3 - Little Linford Lane	0.58	9.99	1.4	A	432	647

Main Results for each time segment

15:00 - 15:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	373	93	147	773	0.483	369	325	0.0	0.9	9.105	A
2 - Wolverton Road (West)	492	123	281	969	0.507	487	235	0.0	1.1	7.784	A
3 - Little Linford Lane	354	89	120	925	0.383	352	649	0.0	0.6	6.433	A

15:15 - 15:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	445	111	176	759	0.587	443	389	0.9	1.4	11.688	B
2 - Wolverton Road (West)	587	147	338	929	0.632	584	282	1.1	1.7	10.888	B
3 - Little Linford Lane	423	106	144	910	0.465	422	779	0.6	0.9	7.579	A

15:30 - 15:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	545	136	215	740	0.737	540	475	1.4	2.7	18.126	C
2 - Wolverton Road (West)	719	180	412	876	0.821	709	344	1.7	4.3	21.423	C
3 - Little Linford Lane	518	129	175	890	0.582	516	946	0.9	1.4	9.845	A

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	545	136	216	739	0.738	545	478	2.7	2.8	18.979	C
2 - Wolverton Road (West)	719	180	416	874	0.823	718	346	4.3	4.5	23.855	C
3 - Little Linford Lane	518	129	177	888	0.583	518	957	1.4	1.4	9.986	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	445	111	177	758	0.588	450	394	2.8	1.5	12.247	B
2 - Wolverton Road (West)	587	147	343	925	0.635	598	285	4.5	1.9	11.904	B
3 - Little Linford Lane	423	106	147	907	0.466	425	794	1.4	0.9	7.708	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Wolverton Road (East)	373	93	148	772	0.483	375	329	1.5	1.0	9.392	A
2 - Wolverton Road (West)	492	123	286	966	0.509	495	238	1.9	1.1	8.079	A
3 - Little Linford Lane	354	89	122	924	0.383	355	659	0.9	0.6	6.529	A



a company of Royal HaskoningDHV

- **Appendix 3:** Air Quality Appraisal

Technical Note

**HaskoningDHV UK Ltd.
Industry & Buildings**

To: David Lock Associates
From: Royal HaskoningDHV
Date: 13 April 2022
Copy: Grand Union Housing Group
Our reference: PC3640-RHD-ZZ-XX-NT-Z-0001
Classification: Project related

Subject: Portfields Rise, Newport Pagnell – Air Quality Appraisal

1 Introduction and Site Context

Grand Union Housing Group are putting a site at Portfields Rise, to the west of Newport Pagnell, forward in the Call for Sites by Milton Keynes Council (MKC) with a view to it being allocated for residential development. The site is approximately 20 hectares in size, and is greenfield land currently used for rough grazing. The site is bounded to the north and west by the River Great Ouse, to the east by the M1 motorway and to the south by Little Linford Lane. The site location is shown in **Figure 1**.

There have been two previous planning applications for residential developments made on the site, which were refused in 2018 and 2020. Neither application was supported by an air quality assessment, and therefore the principle of the site's acceptability with regard to air quality has not yet been established. This Technical Note provides a high-level air quality appraisal, including a review of baseline air quality in the area, the potential air quality impacts which could arise as a result of the development and measures which could be integrated into the design to ensure that the development is suitable with regard to air quality.



Key:

 Site Boundary

Title

Site Location

Project

PC 3640 Portfields Rise, Newport Pagnell

Client

David Lock Associates

Datum

12/04/2022

Scale

1:25000

Figure

Figure 1

Checked by

JP

Number

1

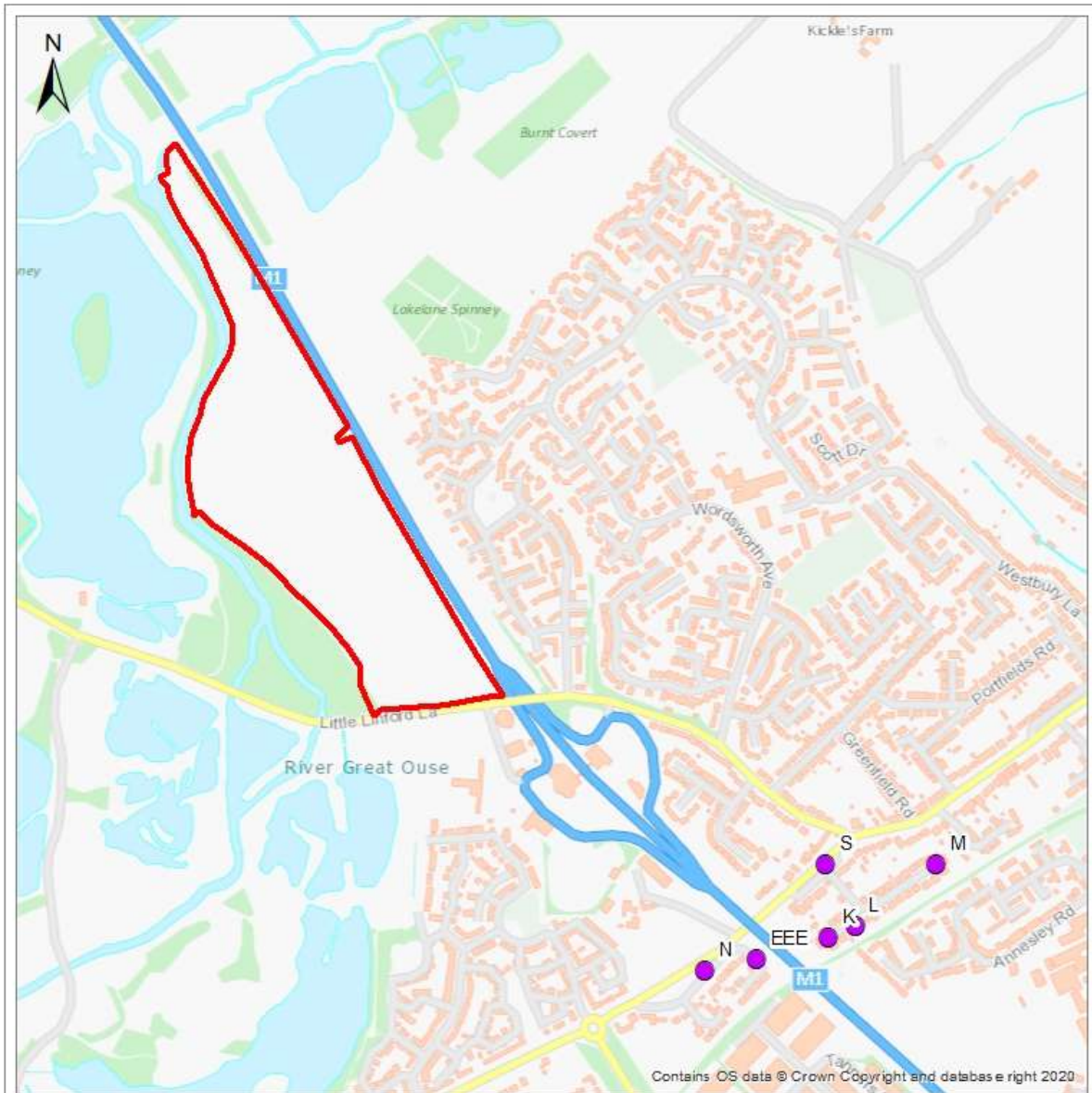
2 Baseline Air Quality Review

A review of baseline air quality conditions was undertaken to set the air quality context for the site. MKC undertakes air quality review and assessment as part of its statutory obligations under the Local Air Quality Management regime, and its latest Annual Status Report for 2021 was reviewed¹. Where the UK Government's health-based air quality Objectives are exceeded, local authorities must declare statutory Air Quality Management Areas (AQMAs) and prepare an Air Quality Action Plan within 12 months, setting out measures it will put in place to ensure compliance with the Objectives. MKC declared one AQMA in Olney in 2008, due to exceedances of the annual mean nitrogen dioxide (NO₂) Objective. In recent years, air quality has improved, and MKC is proposing to revoke the AQMA, and there are no other proposed AQMAs for designation. As such, air quality within the area in general is considered to be good and there are currently no known areas of public exposure in which the air quality Objectives are exceeded.

As part of its LAQM obligations, MKC undertakes air quality monitoring of NO₂ using both automatic and passive methods across its area of jurisdiction. Monitoring of PM₁₀ and PM_{2.5} is undertaken only at the Civic Offices in Milton Keynes and therefore there is no monitoring of particulate pollutants in the vicinity of the site.

There is one continuous air quality analyser and six diffusion tubes located to the south of the site, as shown in **Figure 2**. Monitoring data from these locations from 2016 to 2020 are presented in **Table 1**.

¹ Milton Keynes Council (2021) 2021 Air Quality Annual Status Report



Key:

- Site Boundary
- Monitoring Location

Title
Air Quality Monitoring Locations in the Vicinity of Portfields Rise

Project
PC 3640 Portfields Rise, Newport Pagnell

Client
David Lock Associates

Datum
13/04/2022

Scale
1:10000

Figure

Figure 2

Checked by
JP

Number
1

Table 1 Monitoring Data Collected by MKC in the Vicinity of Portfields Rise

Site ID	Location	Site Type	Monitored Annual Mean NO ₂ Concentration (µg m ⁻³)				
			2016	2017	2018	2019	2020
Roadbox1	Wolverton Road, Newport Pagnell	Roadside	32.8	30.5	25.6	27.1	24.2
K1, K2	16-17 Greenlands, Newport Pagnell	Suburban	23.4	24.8	22.2	20.5	19.3
L1, L2	5-7 Greenlands, Newport Pagnell	Suburban	21.8	24.4	20.7	20.7	17.8
M1, M2	42-44 Walnut Close, Newport Pagnell	Suburban	18.1	19.2	16.9	14.7	13.9
N1, N2	222 Wolverton Rd, Blakelands	Suburban	23.2	21.0	21.5	14.8	16.5
S1, S2, S3	Roadbox (Newport Pagnell)	Roadside	29.0	30.3	27.4	21.4	22.2
EEE1, EEE2	Miles Close, Blakelands	Suburban	-	-	-	14.8	17.5
Annual Mean NO ₂ Objective (µg m ⁻³)			40				

As shown in **Table 1**, monitored NO₂ concentrations at all locations did not exceed the annual mean NO₂ Objective of 40 µg m⁻³ between 2016 and 2020. The effect of the Covid-19 pandemic on traffic levels means that data collected in 2020 is unlikely to be representative of typical conditions; however, concentrations at some monitoring locations increased in 2020 compared to 2019.

The monitoring location EEE1, EEE2 is situated approximately 35 m west of the M1 and is therefore considered to be most representative of conditions at the Portfields Rise site. At this distance, concentrations are 'well below' (i.e. less than 75% of) the annual mean NO₂ Objective, which indicates that concentrations at the Portfields Rise site would not exceed the air quality Objective.

Defra provides mapped background pollutant concentrations for 1 x 1 km grid squares across the UK², which provide information about baseline air quality without the effect of explicit local emission sources (e.g. major roads). The background concentrations for the grid squares covering the development site are presented in **Table 2**.

Table 2 Defra Mapped Background Concentrations for 2022

Grid Square	2022 Mapped Background Concentration (µg m ⁻³)		
	NO ₂	PM ₁₀	PM _{2.5}
485500,243500	13.3	17.3	10.8
485500,244500	12.8	17.1	10.5
Annual Mean Objective (µg m ⁻³)	40	40	25

² Defra (2022) Background Mapping Data for Local Authorities (2018-based) <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

As shown in **Table 2**, mapped background concentrations are 'well below' the relevant annual mean Objectives.

3 Potential Air Quality Impacts and Mitigation

There are two aspects relating to air quality impacts which are of relevance to this development:

- Exposure of future residents/users of the site to elevated pollutant concentrations (predominantly due to the proximity to the M1); and
- Development-generated vehicle emissions which have the potential to impact existing sensitive receptors on the surrounding road network.

With regard to exposure of future residents or users of the site to elevated pollutant concentrations, the monitoring undertaken by MKC demonstrates that, with an appropriate setback distance, pollutant concentrations at the site would not exceed the air quality Objectives. The monitoring location EEE1 and EEE2 is set back 35 m from the M1, and experiences concentrations 'well below' the NO₂ Objective; as such, it's likely that smaller setback distances, which may be required for other purposes such as noise attenuation or landscaping, would provide sufficient dilution and dispersion of pollutants to prevent impacts on future users of the site. For the purposes of the Call for Sites submission, it is considered that the site can be designed to provide acceptable air quality for future residents/users of the site. For any future planning submission, detailed air quality dispersion modelling would be undertaken to predict pollutant concentrations at the site and determine the appropriate setback distances.

With regard to off-site impacts from development-generated traffic flows, as there are no designated AQMAs within the area, air quality can be considered to be generally good, with no localised 'hotspots'. As such, it is unlikely that emissions from traffic generated by development at this site would give rise to significant effects at existing receptor locations. As mentioned above, detailed dispersion modelling would be undertaken for any future planning application to predict pollutant concentrations at nearby receptors. Provision of electric vehicle charging infrastructure within the development would encourage users to adopt low-emission alternatives and minimise off-site effects.

4 Summary and Conclusions

Grand Union Housing Group are putting forward a site at Portfields Rise, Newport Pagnell into Milton Keynes Council's Call for Sites. A high-level air quality appraisal was undertaken to determine whether the site is suitable with regard to air quality as no detailed air quality assessments have historically been undertaken.

A review of baseline air quality conditions was carried out, using data collected by MKC and Defra. This analysis highlighted that background pollutant concentrations across the site are 'well below' the relevant air quality Objectives, and monitoring undertaken 35 m west of the M1 also showed concentrations 'well below' the annual mean NO₂ Objective. As such, it is considered that the site can be made acceptable for residential use with the provision of an appropriate setback distance; this would be confirmed using detailed dispersion modelling to feed into the design of any future planning application.

Given that air quality in the surrounding area is generally good, it is considered unlikely that development-generated vehicle emissions would give rise to significant impacts at sensitive receptors located adjacent to the surrounding road network.

The Portfields Rise site is therefore considered to be suitable for future development with regard to air quality, subject to quantification using dispersion modelling that setback distances provide appropriate protection to future residents/site users.

Enclosure 3 – Landscape Technical Note

FPCR | environment
& design



TECHNICAL NOTE: LANDSCAPE DESIGNATION REVIEW

Client

Grand Union Housing Group

Project

**Portfields Rise,
West of Newport Pagnell**

Date

October 2024

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- Figure 2: Site Context

Rev	Issue Status	Prepared/Date	Approved/Date
-	FINAL	CEH/02/10/24	CEH/02/10/24

1.0 INTRODUCTION

- 1.0 This review has been prepared for Grand Union Housing Group to appraise a site which is currently identified as being designated as a Linear Park and Special Landscape Area within the emerging Milton Keynes City Plan 2050, Regulation 18 plan for Consultation July 2024. The review has been undertaken by FPCR Environment and Design Ltd (FPCR) and consisted of a document review with the site and surrounding area visited in October 2024.
- 1.1 FPCR is a multi-disciplinary environmental and design consultancy established over 60 years, with expertise in architecture, landscape, ecology, arboriculture, urban design, masterplanning and environmental impact assessment. The practice is a member of the Landscape Institute and Institute of Environmental Management and Assessment and is frequently called upon to provide expert evidence on landscape and visual issues at Public and Local Plan Inquiries.
- 1.2 The site location is shown on Figure 1 with the site context and local designations illustrated in Figure 2.

2.0 PLANNING POLICY

MK City Plan 2050

- 2.0 Under Regulation 18, Milton Keynes is currently consulting on the draft MK City Plan 2050 which sets out how Milton Keynes will change and grow in the years ahead. The consultation runs from 17th July 2024 to 9th October 2024.
- 2.1 The MK City Plan 2050 includes policies relating to Linear Parks and Special Landscape Areas.
- Linear Parks
- 2.2 Within the MK City Plan, Linear Parks are identified on the Key Diagram and considered to be features of infrastructure, to be put in place before growth happens responding to the concept of “*infrastructure before expansion*”.
- 2.3 Annex A of the MK City Plan 2050 defines the open space typologies and Linear Parks are included as follows:

Typology/Subtypes	Description	Primary Purpose	Secondary Purpose
Linear Parks	Network of city-wide multifunctional rural and urban green spaces that usually follow the water bodies and flood plains across the city. Ecological corridors for wildlife. Linear parks historically are key components and are more formal in urban areas and more rural on the periphery.	Mitigation of flood events, preservation of archaeology, provision of ecological corridors, provision of pedestrian and cycle corridors.	Deliver wide range of environmental and/or quality of life benefits for wildlife and local communities. Provision of visual amenities and provide space for informal outdoor recreations.

- 2.4 Linear Parks are referred to within Policy CEA8 as noted below:

CEA8 'Provision and protection of accessible open space'

“Development within Linear Parks

H. Development for leisure and recreation uses, or related ancillary uses, within Linear Parks will be supported unless they would:

- 1. Lead to an unacceptable visual impact;*
- 2. Detract from the principal use of the Linear Park as publicly accessible open space;*
- 3. Be incompatible with any existing use of lakes or other water areas;*
- 4. Have an adverse impact on the flood plain; or*
- 5. Undermine opportunities to link wildlife areas and provide for biodiversity corridors.”*

Special Landscape Areas

- 2.5 Special Landscape Areas (SLA's) are identified in three locations within the plan area. The SLA's were established following a review of the former Areas of Attractive Landscape and were informed by the Milton Keynes Landscape Character Assessment. The SLA's are designated to recognise 'special' qualities of the landscape which make it of 'higher sensitivity and value'.

- 2.6 SLA's are referred to within policy CEA12 as follows:

Policy CEA12 Conserving and Enhancing Landscape Character/Special Landscape Areas

Special Landscape Areas

C. Development affecting Special Landscape Areas, as defined on the Policies Map, will only be permitted where it:

- 1. Conserves and, where possible, enhances the special character and key landscape qualities of the area;*
- 2. Safeguards important views, features and landmarks;*
- 3. Safeguards the tranquillity of the area; and*
- 4. Retains and, where possible, improves public access to the countryside.*

D. Development proposals will be expected to incorporate appropriate measures to mitigate landscape and visual impacts. Proposals should have regard to the Milton Keynes Landscape Character Assessment and the Statements of Significance for each of the Special Landscape Areas, and any other relevant landscape and visual assessments or studies.

E. A site-specific landscape and visual impact assessment will be required for development within Special Landscape Areas to show how the proposed change will conserve and enhance the special character and qualities of the landscape, including conservation and protection of valued views.

Other Relevant Strategies, Guidelines or Documents

Milton Keynes Review of Local Landscape Designations (LUC, May 2024)

- 2.7 Following a Valued Landscapes Policy Review carried out in 2022, LUC carried out a further review of Local Landscape Designations for Milton Keynes. The purpose of the review was to provide recommendations on landscapes that could merit local landscape designation. Information within the Milton Keynes Landscape Character Assessment (2022) was reviewed with further work undertaken to consider whether or not landscapes met agreed criteria for local landscape designation. The review provides up to date evidence and justification for areas recommended for local landscape designation and appropriate boundaries.

- 2.8 The report notes that '*designation does not prevent development from taking place, but can be used to ensure that special landscape qualities are considered.*
- 2.9 Each of the Milton Keynes Landscape Character Areas (LCA's) were reviewed to determine if they met the criteria identified for landscape value. The criteria for landscape value were defined to link to GLVIA Box 5.1¹ and TGN Table 1² criteria.
- 2.10 The site lies within the Milton Keynes Landscape Character Area (LCA) 3C: Ouse Lakes and Parkland Floodplains. 68% of this LCA was located within the former Area of Attractive Landscape.
- 2.11 The criteria and findings for LCA 3C are summarised as follows:

MK Local Landscape Designation Criterion	Extent the LCA meets the criterion
Natural heritage	Fully meets
Cultural heritage	Partially meets
Recreation	Fully meets
Landscape quality	Partially meets
Local distinctiveness	Fully meets
Perceptual and scenic	Partially meets
Functional	Fully meets
Conclusion	Take forward

- 2.12 LCA 3b was therefore taken forward as part of the wider Ouse Valley 'Candidate Special Landscape Area'.
- 2.13 The Special Landscape Qualities for the Ouse Valley SLA are summarised as follows:
- The low-lying shallow valley of the winding River Great Ouse and its tributaries which confer a recognisable sense of place and provide a key gateway to Olney and Milton Keynes city.*
 - Extensive woodland, sinuous water bodies and floodplain meadows provide visual contrast and ecological interest which contribute to landscape character. These provide a contrast with the more intensively farmed land on the valley sides.*
 - Historic field patterns of pre-18th century and Parliamentary enclosure retain a good network of hedgerows. Small areas of assarts on higher ground indicate a past landscape with higher woodland cover.*
 - The medieval settlement pattern of nucleated villages on the valley sides with distinctive limestone vernacular provide time depth and cultural identity.*
 - Parkland landscapes at Gayhurst and Tyringham, with their associated stone bridges over the river, are distinctive landscape features, that provide a connection to the local history of the area.*
 - Panoramic views of the meandering river, the undulating valley sides and views to distinctive tall church towers and spires provide a strong sense of place.*

¹ Guidelines for Landscape and Visual Impact Assessment, third edition (GLVIA3), Landscape Institute and the Institute of Environmental Management and Assessment, 2013

² Landscape Institute Technical Guidance Note 02-21 "Assessing landscape value outside national designations".

- *The network of Public Rights of Way including the Ouse Valley Way and Milton Keynes Boundary Walk provide recreational access to the landscape, and connections between neighbouring settlements.*

2.14 The full evaluation of the Ouse Valley SLA for each assessment criteria considered to identify landscape value is as follows:

- **Natural heritage qualities:** *There is considerable natural heritage interest associated with the meandering river valley of the River Great Ouse. The river is lined by mature riparian vegetation, much designated as priority habitat deciduous woodland. Extensive wetland habitats are found across the floodplain meadows, including priority habitat floodplain grazing marsh and chalk grassland. The whole river channel is designated as the River Ouse Wildlife Corridor. In the west, former mineral workings considerably altered this landscape. However, these have been restored and contain wetlands and plantations designated as a Local Wildlife Site (LWS). Konik ponies have recently been introduced to graze these areas for conservation management. These all provide evidence of ecological interest which contributes strongly to landscape character.*

Small areas of woodland are found on the valley sides, often recorded as priority habitat and some of ancient origin. Hedgerows also contribute positively to the structure and habitat connectivity of the landscape.

- **Cultural heritage qualities:** *The area has considerable historic interest. Historic villages and the market town of Olney contribute positively to the landscape. Many are designated as Conservation Areas due to their numerous historic buildings. Church spires and towers provide local landmarks, particularly the spire of St Peter and St Paul, Olney. The open floodplain forms an important landscape setting to the historic towns of Newport Pagnell and Olney.*

Ridge and furrow earthworks within pasture fields, and considerable areas of pre-18th and 18th century and Parliamentary field patterns contribute to the time-depth of the landscape. However, mineral extraction has removed traces of historic field patterns in the west of the area.

The landscape is characterised by a number of historic buildings (Listed Buildings) and sites (Scheduled Monuments) relating to former priories, monasteries and manor houses, established in the Ouse Valley in the early Medieval period. Historic stone bridges (designated as Scheduled Monuments and Listed Buildings) cross the river at several points and contribute positively to the character of the landscape.

Historic houses and associated parklands at Tyringham Hall and Gayhurst Court (Registered Parks and Gardens) contribute to the cultural interest of the valley landscape. Tyringham Hall was designed by Sir John Soane, with gardens laid out by Humphry Repton and later Edwin Lutyens. Repton was also involved with the design of gardens at Gayhurst Court. The parklands lie next to each other, taking advantage of the valley sides either side of the River Great Ouse.

The market town of Olney is associated with radical Christians in the 18th century, including the poet William Cowper and John Newton who wrote the words to 'Amazing Grace'.

- **Recreation value:** *The LCA has excellent recreational access, with a number of long-distance routes including the promoted Milton Keynes Boundary Walk and Ouse Valley Way. Appreciation of the landscape is an important part of the experience along these routes. Although access to the river is sometimes limited, a series of public parks on sites associated with former mineral extraction provides excellent recreational opportunities in the west. Emberton Country Park was the first dedicated Country Park in England. Part of the Grand Union Canal also crosses this area, with recreational opportunities both along the canal and its tow path. Bury Field is a valued area of Open Access Land on the edge of Newport Pagnell.*
- **Landscape quality (condition and intactness):** *Overall the landscape structure is strong although it is influenced locally by expanding settlements and infrastructure development. Hedgerows are in variable condition, with some replacement by post and rail or post and wire, but new planting of hedgerows is a sign of active management in the area. In the east historic field patterns are largely intact, except around Sherington and Filgrave. Horse grazing on the edges of villages also reduces landscape condition locally.*

Former gravel extraction has removed the historic field pattern in the west, but the restoration and flooding of the former gravel pits have created a new landscape structure. Some larger structures such as weirs and pipes along the river are evidence of human intervention.

Detractors within the landscape include major transport corridors including the M1 and West Coast Mainline railway. A solar farm north of Newport Pagnell, and electricity pylons west of Lavendon and Newton Blossomville are also incongruous features within the landscape. Residential and commercial development on the edge of Olney and at Cosgrove Park, and the wind farm at Petsoe End introduce urban features into views from the valley.

- **Local distinctiveness:** *The shallow river valley of the Great Ouse is a distinctive feature within Milton Keynes. The main river channel and its tributaries in localised shallow valleys confer a recognisable sense of place. The water-filled former gravel pits along the River Great Ouse are also a characteristic feature of this area. Parklands at Gayhurst and Tyringham are distinctive, and provide a link to the history of large estates in the area. The river and valley form an important 'gateway' and contributes positively to the character of Olney, and an important approach to Newport Pagnell.*
- **Perceptual and scenic:** *The open valley landscape has a strong visual character. There are fine panoramic views from the valley to the wooded skyline of Yardley Chase to the north and the wooded Greensand Ridge to the southeast, and open views across the valley floor to the historic parklands at Gayhurst and Tyringham, with their distinctive stone bridges. The church spire of St Peter and St Paul, Olney provides a landmark feature. Views of the Petsoe Manor wind farm, tall buildings and warehouses within Milton Keynes city to the south, and electricity pylon routes are modern influences on the landscape, but largely do not detract from its scenic rural character.*
- *Areas of rural character, particularly along the river corridor in the east where there is more limited access, are relatively tranquil. There is also a perception of naturalness,*

even within the flooded former gravel pits. The busy transport corridors which cross the area are locally audible.

- **Functional:** *The floodplain landscape of grasslands, streams and ponds, combined with the woodland on the valley slopes and riparian woodland contribute to the healthy functioning of the landscape. This includes supporting biodiversity and stabilising soil quality. These all contribute to the multifunctional green infrastructure network connecting to Milton Keynes city.*

Landscape Character

National Character

- 2.15 The site is located within the National Character Area (NCA) 88 Bedfordshire and Cambridgeshire Claylands which is described as '*a broad, gently undulating, lowland plateau dissected by shallow river valleys that gradually widen as they approach The Fens NCA in the east*'. The NCA stretches from Peterborough in the north, down to the edge of The Chilterns in the south and therefore covers an extensive landscape area.

Milton Keynes Landscape Character Assessment (LUC, 2022)

- 2.16 The site lies within Landscape Character Type (LCT) 3: River Floodplains and within the more detailed Landscape Character Area 3C: Ouse Lakes and Parkland Floodplains within the Milton Keynes Landscape Character Assessment. LCA 3C is a linear area which stretches around the northern edge of Milton Keynes and Newport Pagnell, mostly following land associated with the River Great Ouse floodplain.
- 2.17 Key Characteristics for the LCT 3 River Floodplains are as follows:
- *A flat landscape with slow flowing rivers on sinuous valley floors, underlain by a varied bedrock with alluvium deposits.*
 - *Riparian woodland lines the meandering river channels, some recorded as priority habitat deciduous woodland and wetland habitats lie on the floodplains, many of which are designated as LWS.*
 - *Open pasture fields lie adjacent to the river channel, bound by ditches and post and wire fencing.*
 - *Historic and current mineral extraction have impacted the landscape, including the creation of extensive large lakes and ponds.*
 - *Heritage assets are limited to historic mills, bridges and occasional isolated farmsteads. Archaeological evidence of Neolithic, Bronze Age, Iron Age, Roman and medieval communities is often designated as Scheduled Monuments.*
 - *An open undeveloped floodplain, with restricted settlement, although there are views to villages and towns on adjacent higher ground.*
 - *Recreationally important landscape with good access on PRoW, parks on former mineral extraction sites, cycling routes and fishing (particularly within LCAs 3c and 3d).*
 - *Rural character, away from the urban settlement edges and major transport corridors.*

- 2.18 Landscape Qualities for the LCT include the following:

- *The semi-natural habitats including floodplain grazing marsh, lowland meadows and deciduous riparian woodland that support biodiversity, and provide carbon capture.*
- *The river channels which provide water, and the underlying aquifers which maintain springs and base flows into rivers. The floodplains also regulate water flows, and provide flood protection.*
- *The riverside meadows which provide a connection to the historic land uses and provide a highly scenic quality to the landscape.*
- *The heritage features of the landscape particularly the historic mills and bridges, farmhouses and parklands, and archaeological earthwork features that provide a connection to history, cultural identity and aesthetic value.*
- *The largely undeveloped rural character of the flat low-lying floodplain, with a strong sense of openness, which provides a sense of place.*
- *The expansive, uninterrupted long-distance views across the floodplain which provide a sense of place.*
- *The recreational opportunities provided by PRow including the Ouse Valley Way, cycle routes, country parks, fishing and water sports which connect the settlements and wider countryside, provide recreational value and contribute to well-being and health.*

2.19 The description for LCA 3C highlights unique characteristics including significant areas of ecologically important good quality semi-improved grassland and floodplain grazing marsh. The area is well-treed with much woodland with Cricket bat willows along the riverside. Restored mineral workings contain lakes, scrapes and wetlands. Some pastoral fields are still used for sheep and horse grazing. The LCA has been impacted by mineral extraction with many former gravel workings restored into established recreational areas although most are privately owned. Modern influences include recreational facilities, major transport corridors and railway with the close proximity to Milton Keynes and Newport Pagnell reducing tranquillity.

Site and Immediate Context

- 2.20 The site is located on the northern edge of Milton Keynes and west of Newport Pagnell, north of Little Linford Lane and west of the M1 motorway. The site consists of one linear field compartment of open grassland with boundary treatments consisting of timber fences with native vegetation along the eastern boundary with the M1 motorway. The remaining boundaries are defined with native trees and shrubs with a tree belt along the southern boundary with Little Linford Lane.
- 2.21 There are no waterbodies or water courses within the site, although the River Great Ouse and numerous lakes and ponds are located within the river corridor to the west and north. The very northern extent of the site has a lower landform which forms part of the river floodplain.
- 2.22 Landform is relatively flat but with a slight fall from slightly higher land along the M1 corridor in the east, to lower levels towards the west and north. The landform slopes from the western boundary down to the River Great Ouse.
- 2.23 Views are limited by perimeter vegetation with a slight embankment with vegetation on the southern boundary. The M1 is in a cutting with vegetated embankments although views of the

motorway are possible from more northern parts of the site with views of traffic moving, overhead gantries and signs. Some views of housing to the south of Little Linford Lane are possible, although these are filtered by the trees along the road. Disturbance from the M1 motorway including traffic noise reduces the sense of tranquillity within the site.

- 2.24 Beyond the site, the Ouse floodplain stretches around the western and northern edges featuring many lakes and wetlands as well as the Great Ouse River itself. This area is well vegetated and occupies the lower, flatter landform.
- 2.25 An Ecological Appraisal (Aspect Ecology, 2019) identified that the site and surrounding area are not subject to any statutory ecological designations. The site is however located within the River Great Ouse Wildlife Corridor and partially located within the Ouse Valley Biodiversity Opportunity Area and M1 Wildlife Corridor. The Ecological Appraisal identified the site as consisting of predominantly species-poor semi-improved grassland bound by hedgerows with a small area of tall ruderal species and small areas of scattered scrub within the southern and northern parts of the site.
- 2.26 There are no heritage features directly associated with the site with a low number of listed buildings located at Little Linford to the north west, across the river corridor. The Grade II listed Gayhurst Court Registered Parks and Gardens is located just over 1 km to the north, across the M1 corridor.

3.0 REVIEW OF DRAFT DESIGNATIONS

- 3.0 The following reviews the draft policies in relation to the site.

Linear Park

- 3.1 As noted above, the site consists of one privately owned field of linear form consisting of grassland with perimeter vegetation and some small areas of scrub. MK City Plan 2050 describes Linear Parks as *"multi-purpose green spaces that are maintained by the Parks Trust and primarily provide flood water storage alongside recreational facilities, ecological resources and attractive settings for development on their boundary. They contribute to the overall quality of life for residents by providing opportunities for formal and informal recreation, improving health and well-being."*
- 3.2 Most of the site is slightly elevated above the surrounding river floodplain, with only the northern part situated within the floodplain. The site is currently managed as a hay crop and does not therefore primarily provide flood water storage. There is no public access to the site, either formally or informally, with access in the vicinity restricted to private fishing lakes. Views of the site from public footpaths in the area are limited by existing vegetation with some views only possible from the public footpath to the north west and the site is not considered to contribute to local recreation facilities.
- 3.3 Ecological value is limited to the perimeter vegetation and grassland with the perimeter vegetation contributing to some degree to the wider habitat network.
- 3.4 The site is contained by the perimeter vegetation and adjacent urban features of the M1 motorway corridor and development and overall, it is not considered that the site contributes

to quality of life benefits for wildlife and local communities and should not therefore be included within the Linear Park designation.

Special Landscape Area

- 3.5 The site is very small in scale compared to the more expansive SLA (Special Landscape Area) designation. The site lies adjacent to the developed edge of Milton Keynes and Newport Pagnell and is located immediately adjacent to the M1 motorway. This influences the site through general disturbance and road noise with some views of housing possible through trees to the south.
- 3.6 The site reflects only some of the Key Characteristics of the LCT 3 River Floodplains, with the features of the rivers, water bodies and associated riparian woodland found beyond the site boundary to the west and north. The site does not feature any heritage assets, is located adjacent to the settlement edge and major transport route and has no recreation access. None of the identified Landscape Qualities of the LCT relate directly to the site. Similarly, the description of the 3C LCA is also more relevant to the adjacent land to the west and north, except for the recognition of modern influences from major transport corridors and the close proximity to Milton Keynes and Newport Pagnell which reduce tranquillity.
- 3.7 The site is located on the boundary of the SLA and when reviewed against the criteria of landscape value for the Ouse Valley SLA, does not relate to the key positive points as noted below:
- **Natural heritage qualities:** there are limited features of natural heritage associated with the site, with habitats of value mostly limited to perimeter vegetation and some small areas of ruderal species and scrub. The trees and vegetation on the roadside embankment to the south have some value as does the grassland within the site. The large trees, vegetation and grasslands associated with the river corridor are of much higher value beyond the sites northern and western boundaries.
 - **Cultural heritage qualities:** there are no features of historic interest directly associated with the site with listed buildings and the RPG located at a distance and separated from the site by the river corridor and M1 motorway respectively.
 - **Recreation value:** The site is in private ownership and is not publicly accessible. There are a number of Public Rights of Way leading through the open land to the west and north, but due to the perimeter vegetation and general containment of the site, the site does not feature within views from these routes.
 - **Landscape quality (condition and intactness):** The site is set within a strong landscape framework with perimeter vegetation connecting to the wider landscape structure. There is some influence from the adjacent development to the south, although this is limited by intervening vegetation. Boundary vegetation is mostly intact. The M1 motorway to the east is a visible detracting feature with constant noise and disturbance.
 - **Local distinctiveness:** The site itself is not particularly distinct, consisting of open grassland with perimeter vegetation and does not relate to the more distinctive river

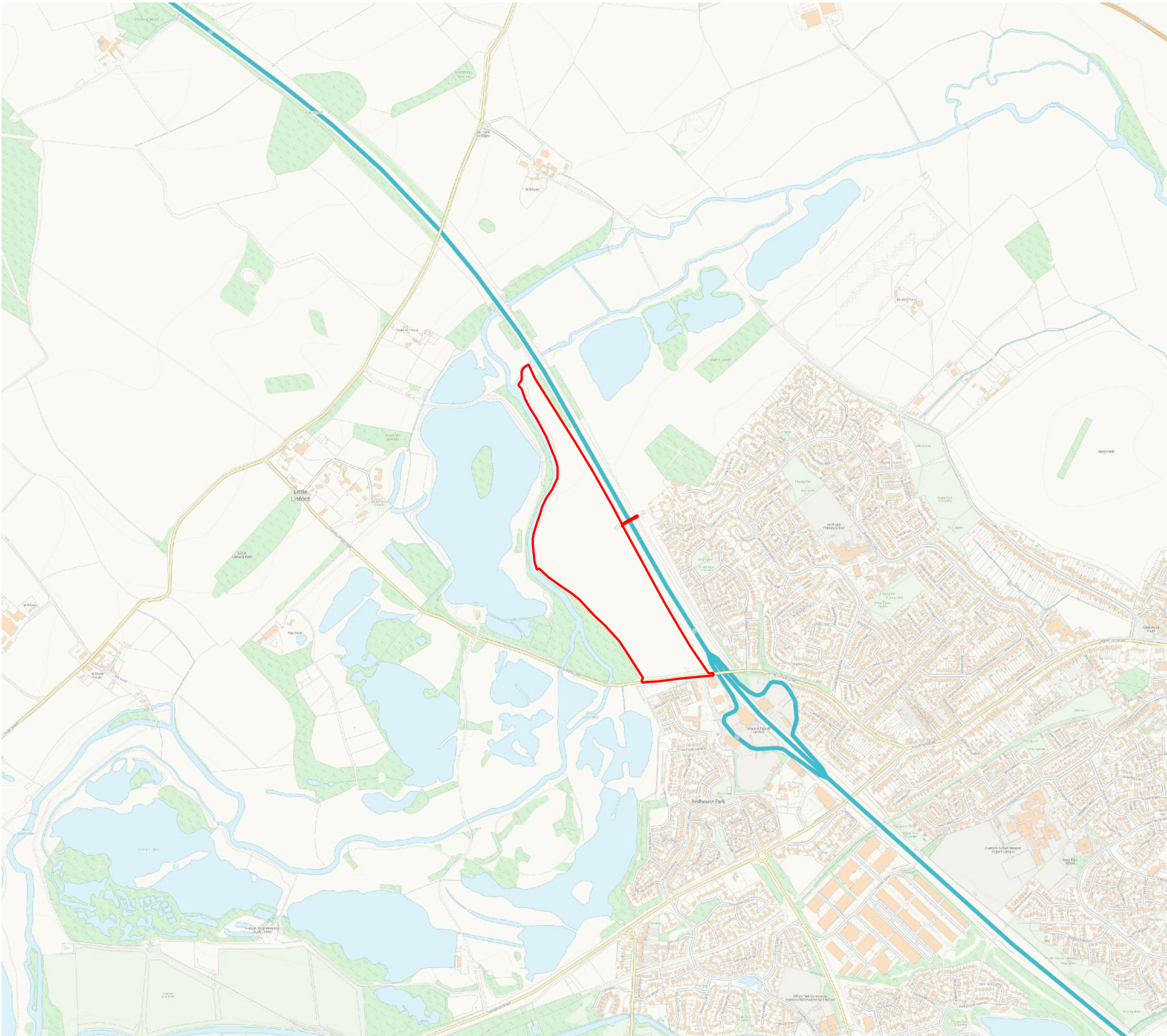
valley landscape. The slightly elevated level creates separation from the adjacent, lower and flatter landform of the river corridor and associated floodplain.

- **Perceptual and scenic:** Views from within the site are limited due to the perimeter vegetation and rising landform beyond the site. Some longer views are possible to the north, although these are still limited by mature trees and the slightly rising landform. Adjacent development is visible amongst the trees to the south and views of the M1 motorway are possible from central parts of the site including views of gantries, moving traffic and signage which form a detracting feature within views.
- **Functional:** Only the northern extent of the site acts as part of the wider floodplain. Whilst the perimeter vegetation will form part of the wider landscape structure, the majority of the site is flat open grassland which does not form any particular function.

- 3.8 It is considered that the site does not reflect the Landscape Character Area description and does not include any particular features of value that warrant its inclusion within the Ouse Valley SLA designation.

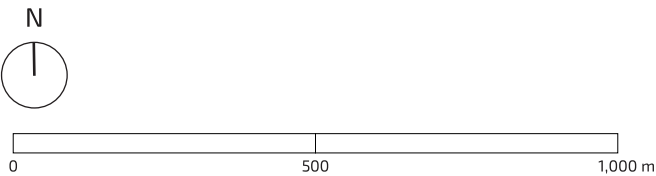
4.0 SUMMARY AND CONCLUSION

- 4.0 A detailed study which has included a desk study and site visit, has identified that the site is contained within the local landscape and influenced by adjacent urban features including the M1 corridor and adjacent development to the south. Whilst some features of potential ecological value are found within the site, these are primarily limited to the perimeter vegetation. The site is in private ownership with no public access and does not contribute directly or indirectly to recreation facilities for the local community.
- 4.1 The landscape of the site is typical of an edge of settlement field with any features of interest limited to trees and vegetation on the site boundary, more associated with the lower level floodplain beyond to the north and west. The site reflects only a low number of the key characteristics and Landscape Qualities of the LCT 3 River Floodplain and does not reflect the description of the more localised LCA 3C. The site is also not considered to relate to the criteria identified for defining landscape value for the Ouse Valley SLA as identified within the LUC study.
- 4.2 It is therefore concluded that the site should not be included within either the Linear Park, or Special Landscape Area designations within the MK Local Plan 2050.



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 Site Boundary

date	02/10/24	drwn/chkd	TW / CEH
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client	Grand Union Housing Group
project	Portfields Rise, West of Newport Pagnell

title	SITE LOCATION	scale	1:12,500 @ A3
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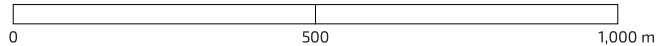
number	FIGURE 1	rev	-
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 Site Boundary

Designated Sites

-  Parks and Gardens
-  Conservation Areas
-  Ancient Woodland

Listed Buildings

-  II*
-  II

Public Right of Way

-  Bridleway
-  Footpath
-  Byway

date
02/10/24

drwn/chkd
TW / CEH

client
Grand Union Housing Group
project

Portfields Rise, West of Newport Pagnell

title
**AERIAL PHOTOGRAPH &
CONTEXT**
number

scale
1:12,500 @ A3
rev
-

FIGURE 2

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