

CALDECOTE FARM

NEWPORT PAGNELL · MILTON KEYNES

APPENDIX 12

ENVIRONMENTAL STATEMENT

TRANSPORT

APPENDIX 12.3

TRANSPORT ASSESSMENT ADDENDUM

NEWLANDS DEVELOPMENTS LTD

PROPOSED EMPLOYMENT DEVELOPMENT ON
LAND AT CALDECOTE FARM, WILLEN ROAD, NEWPORT PAGNELL, MILTON
KEYNES

TRANSPORT ASSESSMENT ADDENDUM

ADC Infrastructure Limited
Suite 3a, King Edward Court
King Edward Street
Nottingham
NG1 1EW

tel. 0115 941 4817
www.ADCinfrastructure.com

project number: ADC1392			report reference: ADC1392-RP-F
version	date	author	comments
1		Matt Tatler	internal draft
2	23/11/2020	Matt Tatler and Stuart Dunhill	issued to client
3	01/07/2021	Stuart Dunhill	second issue to client
4	27/07/2021	Stuart Dunhill	issued for planning

CONTENTS

1.0 INTRODUCTION	3
2.0 EXISTING CONDITIONS.....	6
Updated accident assessment	
3.0 PROPOSED DEVELOPMENT	8
Background	
Revised floor area for Unit 1	
Car park access to Unit 1	
Parking for Unit 1	
Public transport financial contribution	
Update highway plans	
4.0 ASSESSMENT TRAFFIC FLOWS.....	13
Assessment year	
Observed traffic flows	
Committed development	
2023 assessment year traffic flows	
5.0 HIGHWAY IMPACT.....	14
Traffic increases	
Junction 5 and 6: M1 Junction 14 and Northfield Roundabout	
6.0 CUMULATIVE ASSESSMENT	17
Policy SD12	
Development Framework Supplementary Planning Document	
Cumulative assessment of MK:East	
Summary	
7.0 SUMMARY AND CONCLUSIONS	25

DIAGRAMS

Diagram TAA1	2023 background traffic flows – AM peak
Diagram TAA2	2023 background traffic flows – PM peak
Diagram TAA3	2023 background traffic flows – AM peak (M1 J14 & Northfields Roundabout)
Diagram TAA4	2023 background traffic flows – PM peak (M1 J14 & Northfields Roundabout)
Diagram TAA5	2023 with development traffic flows – AM peak (M1J14 & Northfields Roundabout)
Diagram TAA6	2023 with development traffic flows – PM peak (M1J14 & Northfields Roundabout)

APPENDICES

Appendix A	MKC consultation response to application 19/02402/FUL, 14 October 2019
Appendix B	MKC consultation response to application 19/02402/FUL, 24 February 2020
Appendix C	Highways England consultation response to application 19/02402/FUL
Appendix D	Personal Injury Accident Data
Appendix E	Parameters Plan and Illustrative Development Masterplan
Appendix F	Highway drawings, RSA, Design Statements and WCHAR
Appendix G	TEMPRO outputs
Appendix H	LinSig Results

1.0 INTRODUCTION

- 1.1 ADC Infrastructure Limited produced a Transport Assessment¹ (TA) and Framework Travel Plan² in support of a detailed planning application for new employment development on land at Caldecote Farm, to the west of Willen Road, in Newport Pagnell (application reference 19/02402/FUL). The development proposals comprised the construction of two storage and distribution units (Class B8) with associated car parking, servicing, landscaping, earth bunding and off-site drainage. The two proposed B8 warehouse units had a total GFA of 81,361sqm (875,763sqft), including 4,583sqm of ancillary office space.
- 1.2 The application site forms part of ‘Milton Keynes East’ (MK:East), an allocation for a strategic urban extension within the adopted Plan:MK (**Figure 1**). Milton Keynes Council’s (MKC) objectives for the allocation are set out within policy SD12. Policy SD12 envisages a comprehensive new residential and employment development to meet the long-term needs of Milton Keynes. The allocation includes 105ha of land for a mix of employment uses and the delivery of around 5,000 new homes.

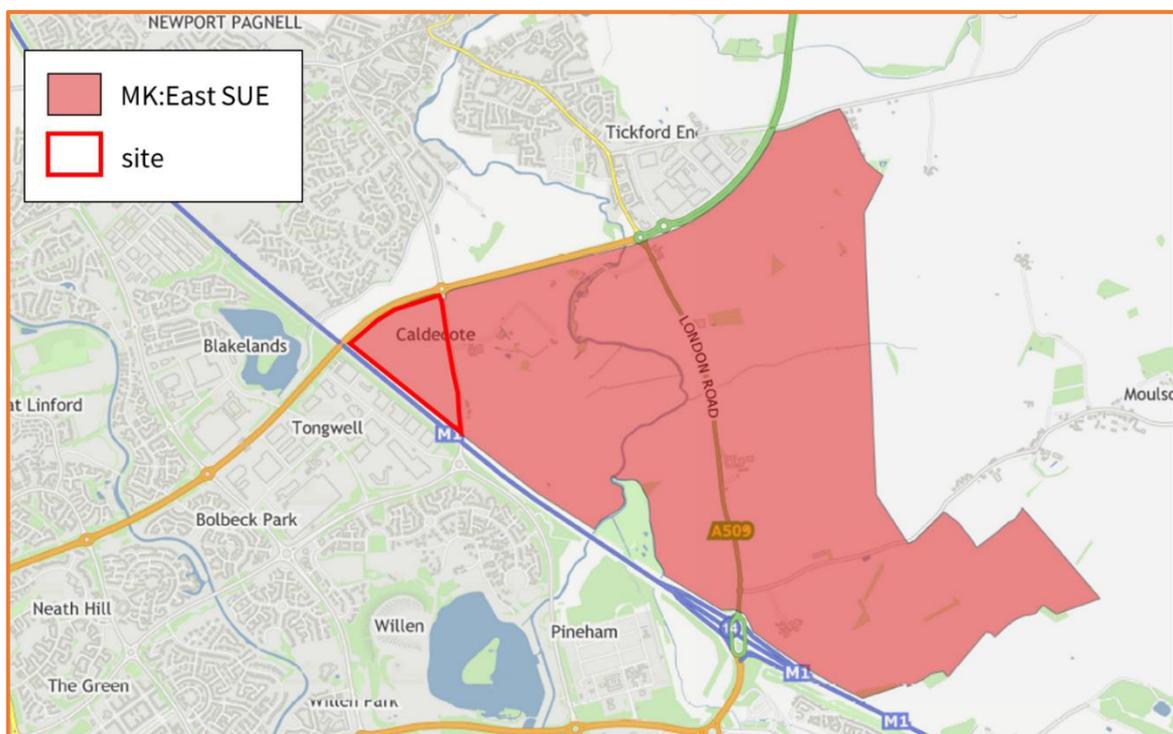


Figure 1: MK:East Strategic Urban Extension

- 1.3 The TA concluded that: the opportunities to access the site by sustainable modes have been taken up; improvements can be undertaken within the transport network that mitigate the impact of the development; and the proposed development would not result in severe traffic impacts on the surrounding highway network. It was concluded that the proposals therefore accorded with the principles of the National Planning Policy Framework, and it would be unreasonable to object to the planning application on transport grounds.
- 1.4 Milton Keynes Council (MKC) provided their initial comments on the Transport Assessment in their highways consultation response dated 14 October 2019 (**Appendix A**). In summary, they

¹ Proposed Employment Development on Land at Caldecote Farm, Willen Road, Newport Pagnell, Milton Keynes, Transport Assessment, report reference ADC1392 C ver 5, ADC Infrastructure Ltd, 22 May 2019.

² Proposed Employment Development on Land at Caldecote Farm, Willen Road, Newport Pagnell, Milton Keynes, Framework Travel Plan, report reference ADC1392 D ver 5, ADC Infrastructure Ltd, 22 May 2019.

concluded that “...the traffic impact from the development is acceptable with mitigation. The site has limited accessibility by sustainable modes and there is currently no proposal to make a contribution towards improved bus services. A Redway is to be provided, connecting Tongwell Roundabout to Marsh End Road. The proposed parking provision is acceptable; however the access to the car park to unit 1 is located where queuing into the main site junction could occur and it is therefore unacceptable as submitted. Consequently, although the issue could be addressed by revised proposals, as submitted the planning application should be refused...”.

- 1.5 A revised access plan and masterplan, that relocated the car park access to Unit 1 was therefore submitted to MKC. In addition, it was agreed that the development would provide a S106 contribution to fund a bus service to serve the development.
- 1.6 MKC provided their final highways consultations response dated 24 February 2020 (**Appendix B**). Within this response, MKC confirmed that the revised access plan for Unit 1 overcame their previous objection. As a result, MKC confirmed that they had no objection to the planning application on transport or highways grounds, subject to conditions to secure the off-site highway works and a S106 Agreement contribution to public transport. An appropriate S106 contribution to public transport was subsequently agreed with MKC.
- 1.7 Highways England had no objection to the application, subject to a condition requiring a Framework Travel Plan, as confirmed in their consultation response dated 12 May 2020 (**Appendix C**).
- 1.8 Notwithstanding the above, the planning application was subsequently refused by MKC on 30 June 2020. The reasons for refusal included: that funding for the strategic infrastructure required to deliver the MK:East allocation had (at that time) not been secured and that the cumulative impact of the development with the rest of the MK:East allocation had not been considered; concerns over landscaping; and that (at that time) the Tariff Framework Agreement had not been established.
- 1.9 Since that time, MKC have been successful in their Housing Infrastructure Funding (HIF) bid and have secured funding for the strategic infrastructure required to deliver the MK:East allocation and a Tariff Framework Agreement approach has been suggested. A cumulative assessment of the whole MK:East allocation has been undertaken as part of the assessment work prepared in support of the wider development within the MK:East allocation that is being promoted by Berkeley St James (ref 21/00999/OUTEIS).
- 1.10 A revised planning application for the proposed development on land at Caldecote Farm is to be made. This is for a slightly reduced GFA for Unit 1 (from 47,075sqm assessed in the TA, to 44,153sqm), which has been amended to increase the area available for landscaping. This means that the overall GFA reduces from 81,361sqm to 78,439sqm. The application will be in outline rather than detail, with other minor amendments that do not materially impact the transport work.
- 1.11 As such, the revised planning submission is supported by the TA and Framework Travel Plan that were submitted for the previous planning application. However, given the passage of time since the original application, it is appropriate to update certain aspects of the TA, such as the personal injury accident assessment, the opening year of the development, a review of the parking requirements for the amended Unit 1, and the consideration of the cumulative impact of the proposed development in combination with the wider MK:East allocation. This TA Addendum report has therefore been prepared to accompany the revised planning submission. It should be read in combination with the TA and Framework Travel Plan.

1.12 This TA Addendum report is structured as follows:

- Section 2 describes the updated personal injury accident assessment.
- Section 3 presents the development proposals, including the amendment to the vehicular access proposals to the car park serving Unit 1 that was agreed with MKC as part of the consultation on application 19/02402/FUL, along with setting out the commitment to provide S106 funding for a bus service as agreed with MKC, and presents the updated general arrangement plans for the proposed highway works.
- Section 4 presents the updated opening year traffic flows.
- Section 5 presents the revised opening year traffic impact assessment.
- Section 6 present a summary of the cumulative impact assessment of the proposed development in combination with the wider MK:East allocation.
- Section 7 presents the summary and conclusions.

2.0 EXISTING CONDITIONS

2.1 The existing highways and transport conditions relevant to the site are described in Section 2 of the TA.

Updated accident assessment

2.2 The TA included an accident assessment on the local highway network in the vicinity of the site for a period between 1 July 2011 and 30 September 2018. The accident data is contained within Appendix D of the Transport Assessment.

2.3 Given the passage of time since the PIA assessment, updated accident records were obtained from MKC Highways, showing all accidents from the end period examined above, until the most recent period available (February 2020). The updated accident data and location plan are contained in **Appendix D** of this TA Addendum.

2.4 With regards to the study area junctions:

- No accidents were recorded at the Marsh End Roundabout.
- One further accident was recorded at the Tickford Roundabout which resulted in slight injuries.
- No accidents were recorded at the Tongwell Roundabout.
- Six further accidents were recorded at the M1 Junction 14 study area, all of which resulted in slight injuries.
- One further accident was recorded at the Northfield Roundabout which resulted in slight injuries.
- Three further accidents were recorded at the Pineham Roundabout, all of which resulted in slight injuries.
- Four further accidents were recorded on roads between the study area junctions with one recorded on Willen Road that resulted in a slight injury, one on Tongwell Street that resulting in a serious injury, and two on the A509 London Road that both resulted in slight injuries.

2.5 The accident at the Tickford Roundabout involved a rear end shunt on the A509 London Road northbound approach to the junction. After the collision, the car at fault fled the scene at speed.

2.6 Of the six accidents recorded at the M1 Junction 14, five involved rear end shunts, and one involved a vehicle colliding with the offside of a goods vehicle on the M1 northbound on-slip. With regards to location, two of the accidents occurred at the M1 southbound off-slip, one at the M1 northbound off-slip, and two at the A509 northbound approach to the junction.

2.7 The accident at the Northfield Roundabout involved a rear end shunt on the circulating carriageway at the A5130 exit. Causation factors were deemed to be a temporary road layout, disobeying give way or stop signs and a careless/reckless driver.

2.8 Of the three recorded accidents at the Pineham Roundabout, one involved a vehicle losing control on the westbound exit, one involved a rear end shunt and the other involved a collision between a car and a pedal cycle, as the car entered the roundabout.

2.9 Four accidents were recorded on roads between the study area junctions. One accident was recorded on Tongwell Street and involved a goods vehicle travelling northwest on the V11 approaching the Carleton Gate junction. The driver of the goods vehicle blacked out and collided with the offside of a car stationary on Carleton Gate waiting to turn onto the V11. The accident resulted in serious injuries. One accident occurred on Willen Road at the travellers site access

and involved a car travelling northbound at excessive speed. The car collided with a goods vehicle waiting to turn right into the travellers site causing slight injuries. Two accidents occurred on the A509 between the Tickford Roundabout and the M1 Junction 14 Roundabout, one involved a car (C1) pulling into an access to U-turn and pulling out into the path of an oncoming vehicle. C1 then left the carriageway into a ditch. The other accident involved a police car on call, travelling northbound on the A509 overtaking vehicles travelling in the same direction. An oncoming car (C3) saw the police car and stopped. A car (C2) travelling behind C3 failed to stop and collided with the rear of C3. The accident resulted in slight injuries.

- 2.10 Overall, whilst the majority of accidents recorded at the study area junctions were a result of rear end shunts, the number and location of the PIAs does not suggest an accident problem within the study area. With the exception of one accident that occurred under a temporary road layout, the causation factors were deemed to be driver error.

3.0 PROPOSED DEVELOPMENT

Background

- 3.1 The development proposals previously assessed are described in Section 3 of the TA. In transport terms the development proposals remain materially unchanged from that presented in TA. However, the application is now in outline rather than detail, and the size of Unit 1 has been reduced slightly to provide more space for landscaping at the site.
- 3.2 As the application is now in outline, with all matters reserved except access, it is supported by a Parameters Plan and an illustrative masterplan. Copies of the of Parameters Plan and Illustrative Masterplan are provided at **Appendix E**, which extracts of each provided at **Figures 2 and 3**, respectively.

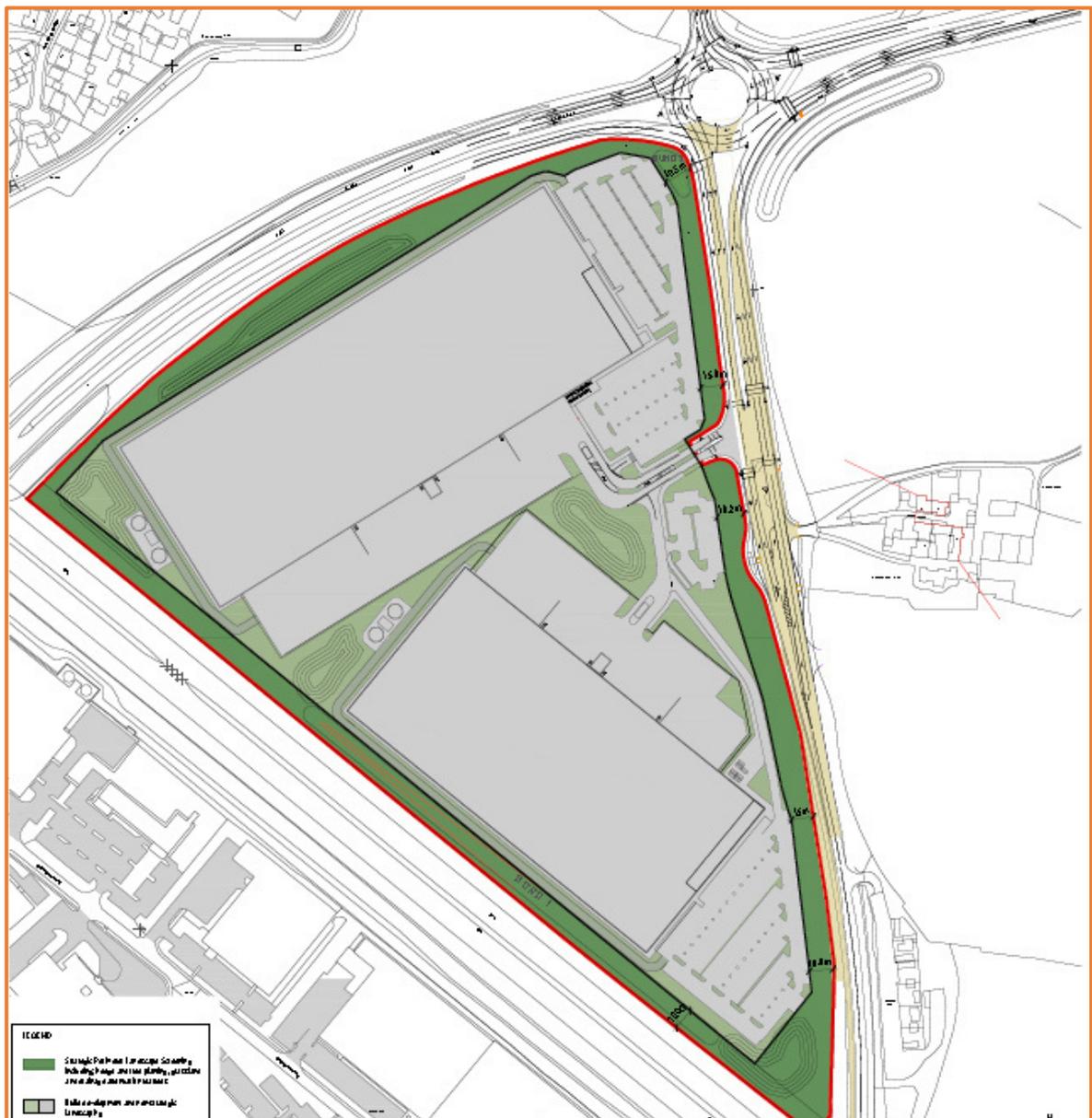


Figure 2: extract of Parameters Plan

the TA). The floor areas for Unit 2 remain unchanged from that assessed in TA and would provide a B8 warehouse with a total GFA of 34,286sqm, of which 2,136sqm would be ancillary B1 office use.

- 3.7 Therefore, the total GFA has reduced from the 81,361sqm assessed in the Transport Assessment to 78,439sqm (a reduction of 2,922sqm). This would equate to a reduction in the traffic generation for the proposed development of around 5 vehicle trips in each of the morning and evening peak hours, and a reduction of around 59 vehicles trips across the day. These flows represent around 3% of the development traffic generations. This is a small reduction and hence for the purposes of this TA Addendum, the total GFA and hence trip generation for the proposed development has not been altered from that assessed and agreed in the TA.

Car park access to Unit 1

- 3.8 As part of the consultation process on the planning application 19/02402/FUL MKC commented that the location of the car park access to Unit 1 was unacceptable as it was located close to the main site access junction and could lead to vehicles waiting to turn right into the car park queuing back into the junction.
- 3.9 As a result, the access to the car park serving Unit 1 was relocated to a position agreed with MKC as part of the consultation process on planning application 19/02402/FUL. The revised planning application retains this agreed location which is shown on the Parameters Plan and the Illustrative Masterplan contained in **Appendix E** and shown on the extract below on **Figure 4**.

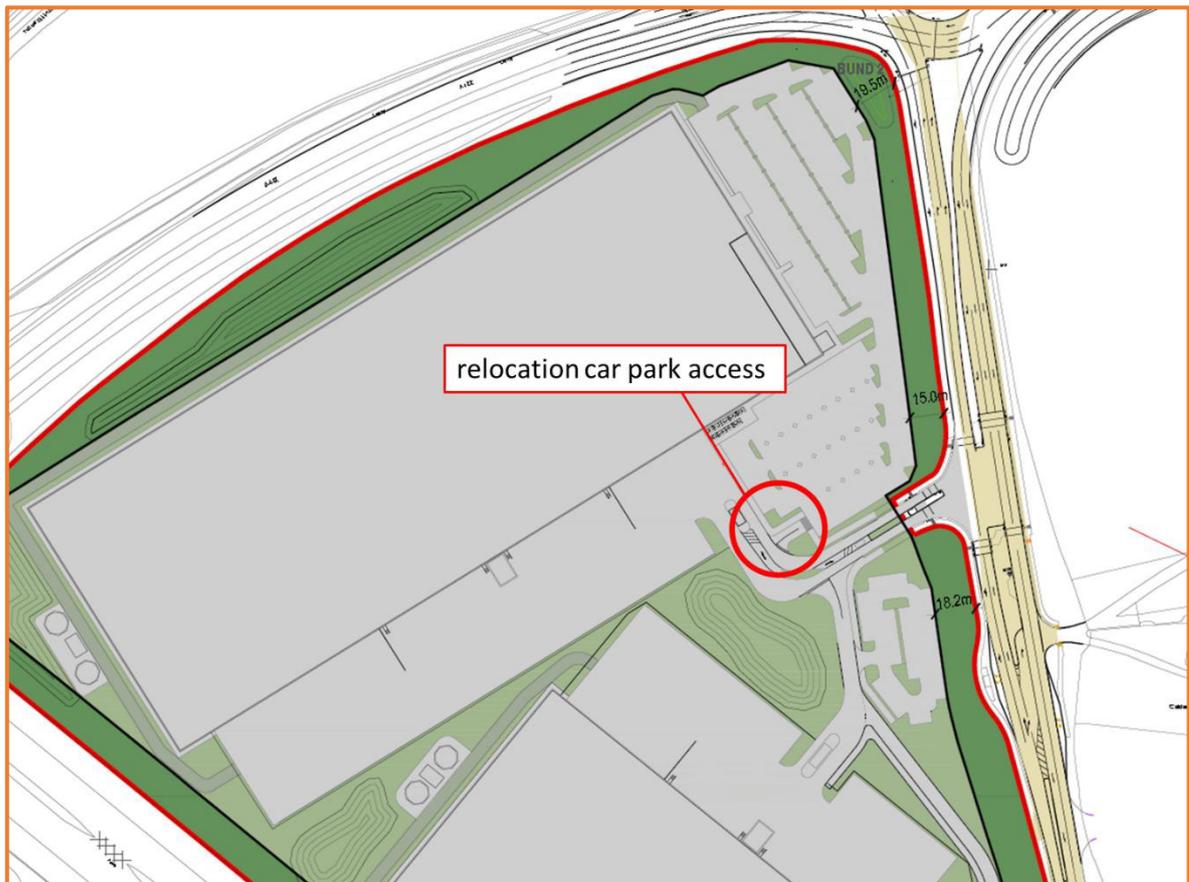


Figure 4: extract of Parameters Plans showing relocated car park access for Unit 1

- 3.10 As shown, the access to the car park is located approximately 55m from the site access stop line at the Willen Road junction. The revised location allows vehicles entering the site to do so

without blocking back to the main access junction. MKC confirmed that this arrangement was acceptable regarding planning application 19/02402/FUL, in their consultation response to dated 24 February 2020 (**Appendix B**).

Parking for Unit 1

3.11 The table at paragraph 3.8 of the TA sets out the previous parking provision for Unit 1 and Unit 2. That table is reproduced below.

Parking Type	Unit 1 – 47,075sqm			Unit 2 – 34,286sqm		
	Total requirement	Proposed	% of Req	Total requirement	Proposed	% of Req
Car*	528	528	100%	393	393	100%
Disabled	26	26	100%	20	20	100%
Electric Vehicle Charging	7	7	100%	5	5	100%
Powered Two Wheelers	8	8	100%	6	6	100%
Cycle Parking	116	90	78%	85	70	82%
HGV	157	127	81%	114	90	79%

* i includes 1 additional parking space per 30sqm of ancillary office use

3.12 These parking provisions were agreed with MKC, who noted within their consultation responses that although there was a shortfall in HGV and cycle parking compared to MKC’s standards: *“In terms of HGV parking, it is unlikely that the occupiers of the units will operate and park a fleet of vehicles on site, particularly all at once. The TA states that occupiers will not be attracted to the unit if the number of HGV docks is insufficient for their needs”* and *“With regard to cycle parking, whilst the provision is only around 80% of the requirement in the Council’s standards, it is not an unreasonable provision given the very large size of the units involved. The cycle parking provision is accepted in terms of numbers of spaces and location; details of shelters and security can be covered by condition.”*

3.13 There has been no change to Unit 2 and hence the parking provision for Unit 2 would remain as detailed in the above table.

3.14 The parking provision of Unit 1 has been amended in accordance with the reduced floor area and is shown on the Illustrative Masterplan (**Appendix E**), and as set out below.

Parking Type	Unit 1 – 44,153sqm		
	Total requirement	Proposed	% of Req
Car*	485	485	100%
Disabled	24	24	100%
Electric Vehicle Charging	7	7	100%
Powered Two Wheelers	7	9	129%
Cycle Parking	109	90	83%
HGV	147	127	86%

* i includes 1 additional parking space per 30sqm of ancillary office use

3.15 As can be seen, the proposed Unit 1 car parking would remain fully compliant with MKC’s standards, with an increase in PTW parking. There would be a modest increase (as a percentage of the requirement) in cycle and HGV parking compared to that assessed and accepted in the TA.

Public transport financial contribution

- 3.16 In their comments on planning application 19/02402/FUL, MKC noted that a financial contribution towards public transport would be required to be secured via the S106 Agreement.
- 3.17 Discussions with MKC regarding the Public Transport Strategy took place between November 2019 and February 2020. It was agreed that the development would provide a total public transport contribution of £109,500, to cover a three-year period from when the site is first occupied. This would be used by MKC to supplement the existing weekday and weekend bus services that currently serve the site, to ensure that there are opportunities for employees working shifts to travel to and from the site by public transport. The public transport contribution will be index linked to inflation.

Updated highway plans

- 3.18 Section 3 of the TA details the proposed site access junction, improvements to the Marsh End Roundabout and alterations to Willen Road, including the proposed Redway. The relevant general arrangements drawings are included in Appendix E of the TA along with the Stage 1 Road Safety Audit (RSA) and RSA Response Report prepared by Stantec (then PBA). The Walking, Cycling and Horse-Riding Assessment Review (WHCAR) undertaken by Stantec is also described at Section 3 of the TA, with the WCHAR Assessment Report provided at Appendix G of the TA.
- 3.19 There have been no changes to the scope of the highway proposals. However, given the passage of time since the previous work, the general arrangement drawings have been updated to take account of revisions to the DMRB³ design standards that have occurred since the original design. The updated general arrangement drawings are shown on the Stantec drawings that are provided at **Appendix F** of this TA Addendum along with the RSA, Stantec Design Statements detailing compliance with the design standards and updated WCHAR report.

³ [Standards For Highways | Design Manual for Roads and Bridges \(DMRB\)](#)

4.0 ASSESSMENT TRAFFIC FLOWS

Assessment year

- 4.1 In accordance with the DfT Circular 02/2013 document, Highways England require that the impact of a development on the strategic road network is assessed in the Circular 02/2013 compliant opening year. This assumes that 100% of the development is operational in the opening year. In addition, Highways England requested an assessment in 2031 as their forward planning year to coincide with the end of the Local Plan period.
- 4.2 The TA assessed an opening year of 2020 and a forward planning year of 2031. The opening year for the development is now expected to be 2023. As a result, the opening year assessment has been updated whilst the 2031 assessment contained in the TA remains valid.
- 4.3 It was agreed with MKC that the assessment year for the local road network was 2026. Based on the revised planning submission being made in 2021, 2026 remains an appropriate assessment year, as it will meet the requirement of being five years after the registration of the planning application.

Observed traffic flows

- 4.4 A traffic count was undertaken at the M1 Junction 14 and the Northfields Roundabout in May 2018. The observed 2018 morning and evening peak hour traffic flows are shown in Diagrams 1 and 2 of the TA.

Committed development

- 4.5 The TA includes an assessment of a number of committed development schemes in the vicinity of the site. However, it was agreed with MKC Highways that the use of TEMPRO growth rates is sufficient to represent the committed development traffic growth and there is no need to include site specific traffic flows. This approach was also agreed by Highways England.

2023 assessment year traffic flows

- 4.6 The observed 2018 traffic flows were factored to the 2023 opening year using the following TEMPRO growth rates (**Appendix G**) for all roads in the Milton Keynes 002 MSOA:
- 2018 to 2023 (AM) 1.07827
 - 2018 to 2023 (PM) 1.08131
- 4.7 The resultant 2023 background traffic flows are given at **Diagrams TAA1** and **TAA2** for the morning and evening peak hours. The traffic flows at the M1 Junction 14 and the Northfield Roundabout have been extracted and are shown in **Diagrams TAA3 and TAA4**.
- 4.8 The proposed morning and evening development traffic flows shown in Diagrams 4 and 5 in the TA, were added to the 2023 background traffic flows in **Diagrams TAA3 and TAA4**. The resultant morning and evening '2023 with development' traffic flows at the M1 Junction 14 and the Northfield Roundabout are shown on **Diagrams TAA5 and TAA6**.

5.0 HIGHWAY IMPACT

Traffic increases

5.1 Paragraphs 7.2 to 7.7 of the TA assessed the impact of the development traffic on the highway network in the 2020 opening year. Given the passage of time, the opening year has been updated to 2023. The table below therefore presents an updated comparison of the two-way traffic flows (using the flows calculated at Section 4 of this TA Addendum report) on the arms of each of the study area junctions in the 2023 background scenario, together with the development traffic forecast to use each arm, and the resultant percentage change on each arm.

		AM peak hour			PM peak hour		
		2023 background	development traffic	% increase	2023 background	development traffic	% increase
J1 Tickford Roundabout	A422 (W)	3318	44	1.3%	3336	52	1.6%
	B526 (N)	1373	1	0.1%	1274	2	0.2%
	A509 (E)	2754	12	0.4%	2902	14	0.5%
	A509 (S)	1386	31	2.2%	2048	36	1.8%
	TOTAL	4410	44	1.0%	4780	52	1.1%
J2 Marsh End Roundabout	A422 (W)	2624	25	1.0%	3023	33	1.1%
	Willen Rd (N)	1606	6	0.4%	1743	7	0.4%
	A422 (E)	3225	44	1.4%	3307	52	1.6%
	Willen Rd (S)	2167	75	3.5%	1485	92	6.2%
	TOTAL	4811	75	1.6%	4779	92	1.9%
J3 Tongwell Roundabout	Willen Rd (N)	2210	71	3.2%	1458	88	6.0%
	Willen Rd (S)	1788	46	2.6%	1438	54	3.8%
	Dansteed Way	2152	25	1.2%	1264	34	2.7%
	Michigan Drive	298	0	0.0%	706	0	0.0%
	TOTAL	3224	71	2.2%	2433	88	3.6%
J4 Pineham Roundabout	A509 (W)	2627	3	0.1%	2472	5	0.2%
	Tongwell St (N)	1896	46	2.4%	1575	54	3.4%
	A509 (E)	2785	32	1.1%	2536	35	1.4%
	V11 (S)	1848	11	0.6%	1679	14	0.8%
	TOTAL	4578	46	1.0%	8262	54	0.7%
J5 Northfield Roundabout	A509 (W)	2871	32	1.1%	2559	35	1.4%
	A509 (N)	5375	32	0.6%	4916	35	0.7%
	Fen St	1258	0	0.0%	1298	0	0.0%
	Childs Way	2824	0	0.0%	2407	0	0.0%
	TOTAL	6164	32	0.5%	5590	35	0.6%
J6 M1 Junction 14 Roundabout	M1N (SB diverge)	1687	23	1.4%	1043	12	1.2%
	M1N (NB merge)	1012	9	0.9%	1561	23	1.5%
	A509 (N)	2006	31	1.5%	2368	35	1.5%
	M1S (NB diverge)	1827	23	1.3%	1088	12	1.1%
	M1S (SB merge)	897	8	0.9%	1417	23	1.6%
	A509 (S)	5401	32	0.6%	3892	35	0.9%
	Total	6415	63	1.0%	6198	70	1.1%

5.2 As shown, the increase in traffic as a result of the development at the study area junctions is relatively low, and well within the typical day to day variation. Given the passage of time and the increase in background traffic with 3 additional years growth, the development would have a reduced percentage impact in the 2023 opening year than in the previously assessed 2020 opening year.

5.3 As stated in the TA, it is recognised that the local road network currently experiences peak hour congestion with a number of study area junctions already over capacity, which will be exacerbated by future traffic growth. Nevertheless, as previously agreed with MKC Highways, the approach to the assessment of the development traffic impact, and providing highway mitigation, remains to provide a single comprehensive mitigation package at the Marsh End Roundabout, where the Applicant has control of land to provide a meaningful highway

improvement, instead of providing a series of minor junction improvements at each of the study area junctions.

- 5.4 In accordance with the above strategy, Section 7 of the TA therefore presents the capacity assessment of each study area junction to allow the development impacts to be quantified. This includes the proposed improvement to the Marsh End Roundabout, in combination with the site access signal junction.
- 5.5 The TA includes the results of capacity assessments undertaken at study area junctions 1 to 4 and the site access using ‘2026 background’ and ‘2026 with development’ scenario traffic flows. The TA also includes a capacity assessment at the M1 Junction 14 and Northfield Roundabout using the future planning year ‘2031 background’ and ‘2031 with development’ scenario traffic flows. That assessment work remains unchanged by the revised opening year.
- 5.6 The below section details the results of capacity assessments undertaken at the M1 Junction 14 and Northfields Roundabout, using the revised opening year ‘2023 background’ and ‘2023 with development’ development scenario traffic flows.

Junctions 5 and 6: M1 Junction 14 and Northfields Roundabout

- 5.7 The M1 Junction 14 and the Northfields Roundabout have been modelled as a network using LinSig and the ‘2023 background’ and ‘2023 with development’ scenarios given at **Diagrams TAA3 to TAA6**. For convenience, these flows are shown represented as the LinSig model network in **Appendix H**.
- 5.8 The LinSig results, provided at **Appendix H** and summarised in the table below, show that both the M1 Junction 14 and the Northfields Roundabout would operate above their maximum capacity in all modelled scenarios (PRC values are negative indicating that one or more links are operating above 90% of their capacity).
- 5.9 However, the results show that the development would not have a significant impact on performance of the network and that in terms of PRC, there would be no impact at the M1 Junction 14 due to the proposed development in the morning peak hour. In the evening peak hour the development traffic would lead to minor reduction in PRC of 1.5% (-8.8% vs -10.3%). The table below also shows that there would only be minor deteriorations to the PRC and total delay at the Northfields Roundabout in the evening peak hour due to the development, with no impact in the morning peak. In the evening peak the PRC deteriorates by 2.6% in 2023 (-28.3% vs -30.9%).
- 5.10 Highways England previously accepted that the volumes of development traffic that were associated with the previous planning application would not have a severe impact on the operation of M1 Junction 14, and this is again confirmed by the revised opening year assessment.

M1 Junction 14 and Northfields Roundabout LinSig Results						
Scenario			Practical Reserve Capacity (%)		Total Delay (PCUhr)	
			M1 Junction 14	Northfields	M1 Junction 14	Northfields
2023	AM	Background	-20.0%	-43.8%	60.2	182.2
		With Development	-20.0%	-43.8%	63.3	192.6
	PM	Background	-8.8%	-28.3%	53.4	204.6
		With Development	-10.3%	-30.9%	59.0	213.1

5.11 To demonstrate that queuing on the slip roads at the M1 Junction 14 would not be adversely affected by the proposed development, a comparison between the ‘2023 background’ and ‘2023 with development’ scenarios is provided at the table below.

M1 Junction 14 Queue Comparison (mean max queue)				
			Northbound off-slip	Southbound off-slip
2023	AM	Background	22.6	17.9
		With Development	22.6	19.0
	PM	Background	6.4	7.9
		With Development	6.4	7.9

5.12 The development traffic does not impact on the performance of the slip roads, with no change in queue length on the northbound off slip in either the morning or evening peak hours, and a worst case increase of 1.1 PCU in 2023 on the southbound off slip in the morning peak. Further, all forecast mean max queuing on both the northbound and southbound off slips could be accommodated on the existing and/or the proposed slip roads with the Smart Motorway Project in place.

5.13 Therefore, the results summarised above show that there would not be a severe impact due to the proposed development and therefore no mitigation is required at the M1 Junction 14 or the Northfields Roundabout.

6.0 CUMULATIVE ASSESSMENT

Policy SD12

- 6.1 Policy SD12 of the adopted Plan:MK sets out the criteria that the MK:East allocated development will be expected to meet. With regard to transport and highways the expectations include:

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

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

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

- 6.2 The delivery of MK:East is constrained by the barrier created by the M1 and existing capacity constraints at bridge crossings, particularly at M1 Junction 14. Plan:MK states that MKC will support the provision of a master-planned approach to development of the MK:East allocation once a clear understanding of the delivery of key infrastructure projects has been established.
- 6.3 In that regard MKC were successful in their bid for Housing Infrastructure Funding (HIF). They have secured HIF funding for the strategic infrastructure required to enable the allocation to come forwards, in line with Policy SD12. The new strategic infrastructure enabling the delivery of the MK:East allocation includes:
- A new bridge over the M1;
 - A new north-south connection to the A422 into MK:East;
 - A new east-west connection leading to the new bridge crossing over the M1 and part of a new link road around the eastern perimeter of the site connecting into M1 Junction 14;
 - Dualling of the A509 southbound approach to M1 Junction 14; and
 - Closure of the Newport Road junction with the A509 and reconfiguration of the Newport Road to form a new junction with the eastern perimeter road and connection to the village of Moulsoe;
 - Health and education provision.
- 6.4 It is anticipated the new strategic highway infrastructure would be delivered between 2022 and 2024.
- 6.5 In addition to the above, and in accordance with Policy SD12 of Plan:MK, which requires a Development Framework for MK:East to be adopted prior to any planning permission being granted, the Milton Keynes East Strategic Urban Extension Development Framework Supplementary Planning Document (DF SPD) was adopted in March 2020.

Development Framework Supplementary Planning Document (DF SPD)

6.6 The adopted DF SPD establishes the vision, spatial disposition of land uses, development principles, and infrastructure delivery. It considers the development of the MK:East allocation as a whole. It includes a concept plan for the allocation (**Figure 5**), including the proposed strategic and other local highway infrastructure.

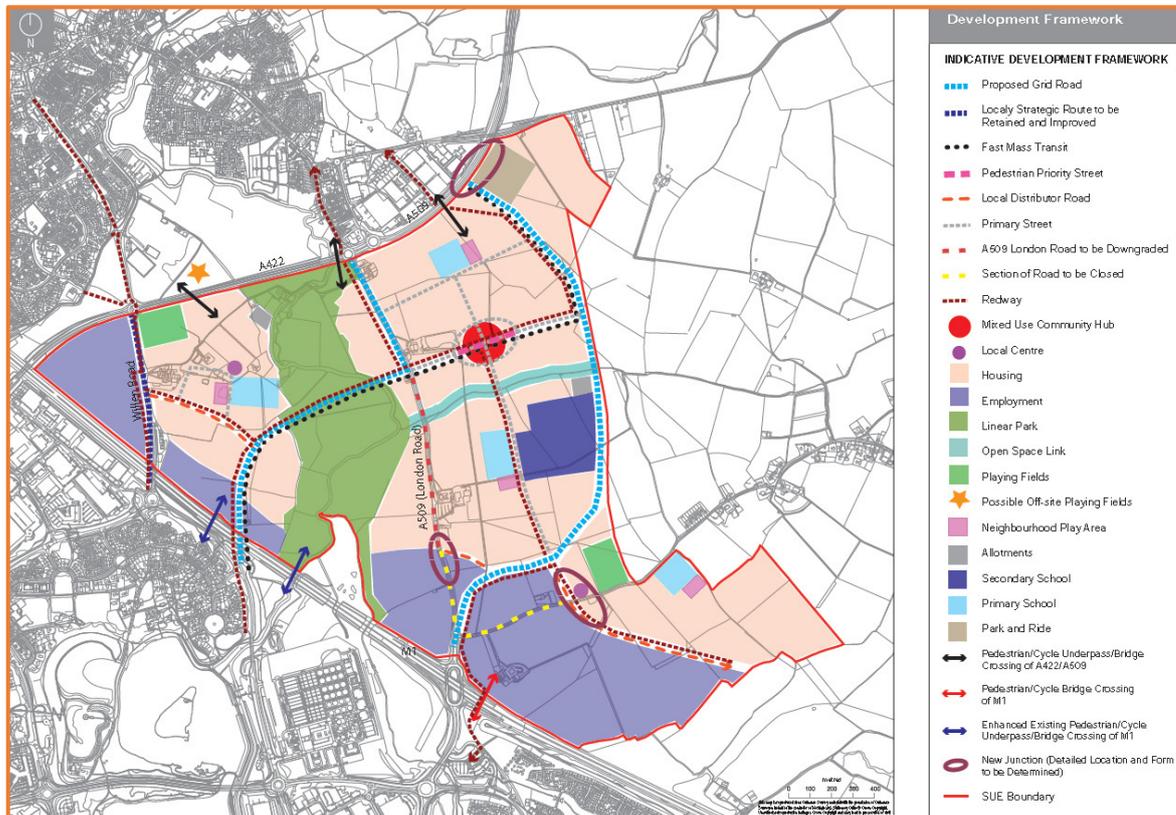


Figure 5: indicative development framework (reproduced from Figure 4.7 of the adopted DF SPD)

6.7 Section 5.2 of the DF SPD deals with infrastructure delivery. It states that contributions will be sort toward necessary infrastructure and facilities, including:

- Affordable housing;
- Highway infrastructure, both on and off-site;
- Public transport services, walking and cycling provision;
- Education, including secondary and primary school provision;
- Recreation and open space, including play areas, playing fields, allotments, linear parks;
- Community facilities, including healthcare, emergency services and community centres;
- Public art; and
- Management and maintenance of facilities and open space.

6.8 Focusing on the Willen Road corridor the DF SPD indicates:

- A new Redway provided along the length of Willen Road, connecting from the existing H4 Redway Super Route in Milton Keynes to Newport Pagnell, including a crossing on Willen Road and on the eastern side of the A422.
- Retention and improvement of Willen Road.
- A new local distributor Road providing a connection between Willen Road and the new M1 bridge link.

- 6.9 The TA and this TA Addendum set out the following highways and transport infrastructure to be delivered by the proposed development at land at Caldecote Farm:
- appropriate on-site parking for bicycles, motorcycles, cars and HGVs;
 - appropriate footways throughout the Proposed Development;
 - Toucan crossings at the proposed site access junction to facilitate safe crossing of the site access and Willen Road;
 - new bus stops on Willen Road at the site access junction;
 - a new Redway connecting to Newport Pagnell to the north, and the existing H4 Redway Super Route in Milton Keynes to the south. The new Redway would facilitate safe pedestrian and cycle travel to the site and provide a new facility for existing pedestrians and cyclists wishing to walk and cycle between Newport Pagnell and Milton Keynes, where there is currently no infrastructure provided along the Willen Road corridor. This includes the provision of an appropriate pedestrian and cyclist crossing of the A422;
 - a comprehensive improvement scheme at the Marsh End Roundabout. The improved junction would operate in conjunction with the proposed signal-controlled site access junction, to improve traffic flows and journey times through the area, on the A422 and Willen Road;
 - widening of Willen Road to provide a dual carriageway between the Marsh End Roundabout and the site access junction.
- 6.10 The proposed development at land at Caldecote Farm will therefore deliver the following components of the infrastructure identified in the MK:East DF SPD (**Figure 5**) as required to enable the delivery of the MK:East allocation:
- The new Redway connecting Newport Pagnell and the existing H4 Redway Super Route in Milton Keynes, with crossings on Willen Road and the eastern side of the A422.
 - Retention and widening of Willen Road to provide dual carriageway between the Marsh End Roundabout and the site access junction.
 - The development will also safeguard land to allow for further widening of Willen Road as part of the works promoted by Bloor Homes, which in combination with the above will allow dualling of the length of Willen Road from the north of the M1 bridge crossing to the Marsh End Roundabout. The works being promoted by Bloor Homes will include a new road link connecting from Willen Road to the new M1 bridge link, to be partially delivered by Berkeley St James and partially by Bloor Homes.

Cumulative assessment of MK:East

- 6.11 The TA⁴ submitted with the Berkeley St James planning application, whilst focusing on the parts of the allocation promoted by Berkeley, is supported by strategic transport modelling that assesses and takes into account all parts of the MK:East allocation, including the proposed development site on land at Caldecote Farm. In that way the assessment considers the cumulative impact of the whole MK:East allocation, and identifies the infrastructure required to deliver the MK:East allocation as a whole.
- 6.12 The Berkeley application is a hybrid application and seeks full planning permission for the highway infrastructure shown in **Figure 6**.

⁴ Milton Keynes East, Transport Assessment Report 70057521-TA1, March 2021, WSP.

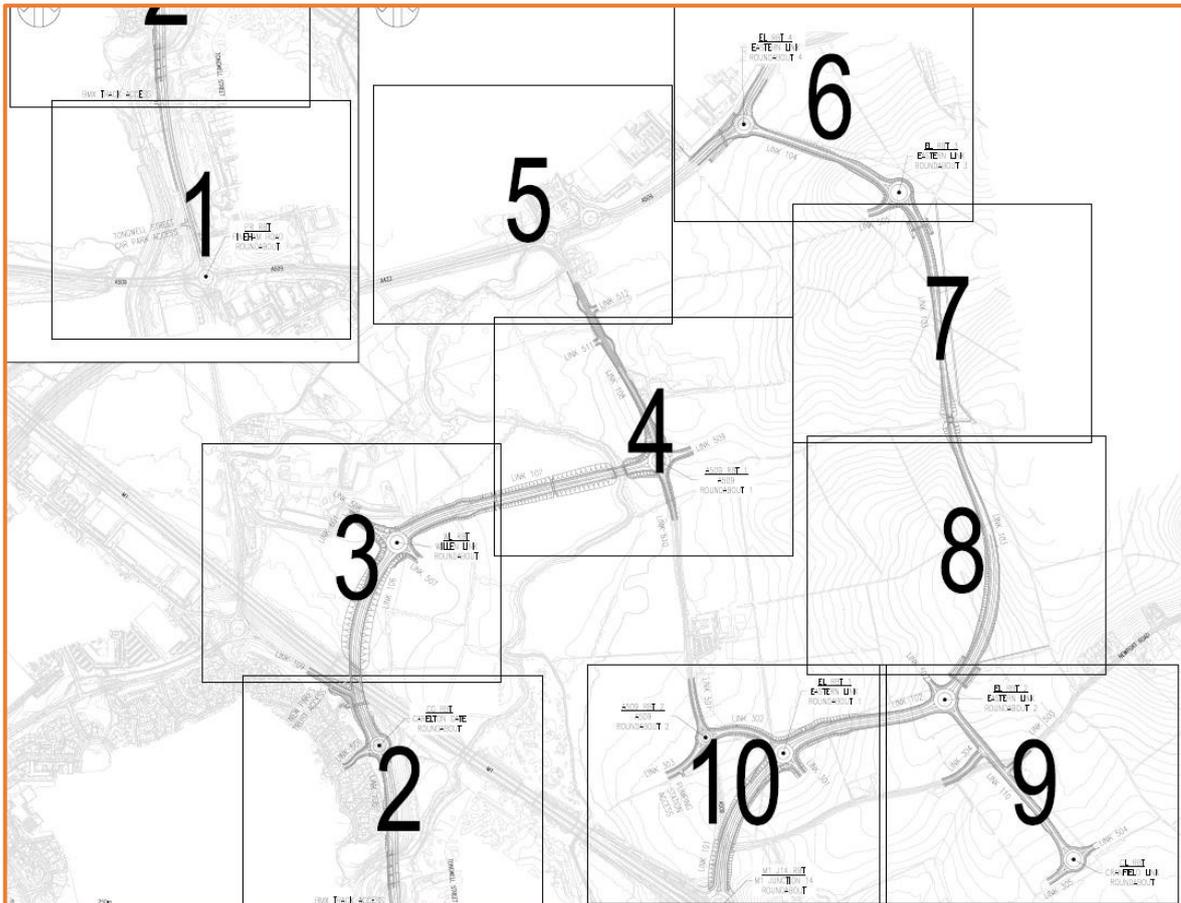


Figure 6: extract of drawing MKE-WSP-ZZ-ZZ-C-DR-0010 Rev P02 'General Arrangement for Planning Schematic Overview'

6.13 Section 6.6 of the Berkeley TA identifies the off-site junctions that require further review and assessment as part of the detailed study area for assessment under the cumulative assessment of the whole of the MK:East allocation, as follows:

- M1 J14;
- Northfield Roundabout;
- Tongwell Street Roundabout;
- Willen Road Roundabout;
- Pagoda Roundabout;
- Woolstone Roundabout;
- Blakelands Roundabout;
- Fox Milne;
- Pineham Roundabout;
- Renny Lodge Roundabout;
- Tickford Roundabout; and
- Marsh End Roundabout.

6.14 A quantitative traffic impacts review of the MK:East allocation at M1 J13 was also undertaken.

6.15 The Berkeley TA presents detailed assessment of each of the study area junctions, based on 2031 and 2048 future traffic flows taking into account all of the MK:East allocation, including the proposed development site at land at Caldecote Farm. Where required, Section 12 of the Berkeley TA presents highway schemes to mitigate any potential impacts of the MK:East allocation. That mitigation is based on the whole allocation impacts, including the proposed application site. The cumulative assessment work included in the Berkeley TA identifies a need

for improvement works at the Marsh End Roundabout, and it is demonstrated that the proposed improvement scheme being promoted as part of the planning application for the development at land at Caldecote Farm would mitigate the impact of the whole MK:East allocation (see below for further detail).

- 6.16 This is consistent with the approach agreed with MKC Highways regarding the assessment of the proposed development site at land at Caldecote Farm, as reported in the TA. It was agreed with MKC Highways at an early stage that the approach to the assessment and mitigation of the development traffic impact for the Caldecote Farm site, should be to provide a single comprehensive mitigation package at the Marsh End Roundabout where the Applicant has control of land to provide a meaningful highway improvement, instead of providing a series of minor junction improvements spread over the wider study area.

Marsh End Roundabout

- 6.17 Section 7.7 of the Berkeley TA summarises the operation of the Marsh End Roundabout in the 2016 baseline scenario. It concludes that the Marsh End Roundabout operates beyond its theoretical operational capacity in both the AM and PM peak hours. Willen Road (north) and the A422 (east) are shown to operate above capacity with RFCs (ratio of flow to capacity) of over 1.0 with long queues. This is consistent with the findings on the Caldecote Farm TA.
- 6.18 Section 9 of the Berkeley TA summarises the findings of the assessment of the operation of the study area junctions in the 'Core' future assessment year scenarios. Two assessment years and two scenarios are considered:
- 2031 reference case (without development) (2031 Do-Minimum)
 - 2048 reference case (without development) (2048 Do-Minimum)
 - 2031 with development and highway infrastructure (Figure 6) (2031 Do-Something)
 - 2048 with development and highway infrastructure (Figure 6) (2048 Do-Something).
- 6.19 The results of the assessment work are presented at Table 9.6 of the Berkeley TA. They demonstrate that the existing layout of the Marsh End Roundabout would operate over its theoretical capacity in the 2031 Do-Minimum scenario in both the AM and PM peak hours. This situation is further exacerbated in the 2048 Do-Minimum scenario, with long queues forecast on Willen Road (north and south) and the A422 (east) in the AM peak hour, and Willen Road (north and south), and the A422 (west) in the PM peak hour.
- 6.20 Whilst there is some improvement in terms of performance of some arms of the junction in the 2031 Do-Something scenario, the Willen Road (north) arms would remain over capacity in the AM peak hour and the A422 would remain over capacity in the PM peak hour. In the 2048 Do-Something scenario, there is a worsening of the performance of the Willen Road (north) arm in both the AM and PM peak hours, along with a worsening of the A422 (west) arm in the evening peak hour. These arms would exceed their theoretical capacity, with long queues forming.
- 6.21 The Berkeley TA states at paragraph 9.3.22 that *"...considering the importance of the junction to the development, it would be prudent to review what schemes could be implemented to improve performance."* Section 12 of the Berkeley TA goes on to model the operation of the Marsh End Roundabout with the proposed comprehensive improvement scheme for the junction that would be delivered by the proposed development on land at Caldecote Farm.
- 6.22 The results of that assessment are summarised at Table 12.6 of the Berkeley TA. The results show that the improved junction layout would operate with spare capacity in the 2031 Do-Something scenario, and also the 2048 Do-something scenario with the full MK:East allocation in place. The

Berkeley TA concludes that the “...improvements to the junction are considered capable of accommodating the traffic associated with the proposed MKE development.”

- 6.23 The Marsh End Roundabout improvement that would be delivered as part of the proposed development on land at Caldecote Farm would therefore satisfactorily address the capacity constraints at the existing junction that will result from the cumulative traffic impacts of the whole MK:East allocation.

Assessment of cumulative MK:East allocation at the proposed site access junction

- 6.24 The strategic modelling included in the Berkeley TA forecasts that with the new strategic infrastructure funded by the HIF bid in place (Figure 6), traffic flows on Willen Road would reduce by some 42% SB and 56% NB in the AM peak hour, and by some 80% SB and 66% NB in the PM peak hour by 2031. This is because the new strategic infrastructure provides a new bridge crossing of the M1 motorway, that will provide an alternative route for traffic travelling to and from Milton Keynes reducing the demand on Willen Road.

- 6.25 As part of the wider MK:East allocation, Bloor Homes propose to access their residential site by the addition of a fourth arm to the traffic signal controlled site access T-junction that is proposed to serve the Caldecote Farm development. Bloor Homes, also propose that access to their residential site is taken from the new road link connecting from Willen Road to the new M1 bridge link, to be partially delivered by Berkeley St James and partially by Bloor Homes. Bloor Homes propose the new road link would connect with Willen Road via a new signal controlled T-junction. This arrangement is shown indicatively on an extract of the draft Bloor Homes indicative masterplan at **Figure 7**.



Figure 7: extract of draft Bloor Homes indicative masterplan (prepared by Pegasus Group)

6.26 The operation of the site access junction (as a four-arm signalled controlled junction serving both the Caldecote Farm site and the Bloor Homes site) is assessed and reported at paragraphs 9.4.33 to 9.3.47 of the Berkeley TA. Assessment is undertaken in the 2031 Do-something and 2048 Do-Something scenarios. Table 9.25 of the Berkeley TA (extract below) summarises the result of the morning and evening peak hour capacity assessment.

Table 9-25 – Willen Road – Northern Signal Access – AM / PM Peak Hour

Arm	2031: Do Something		2048: Do Something	
	DoS	MMQ	DoS	MMQ
AM				
Willen Rd N (S/B) Left Ahead	68.5%	6	84.3%	13
Willen Rd N (S/B) Ahead Right	72.9%	7	49.9%	3
Bloor Access (Northern) Left Right Ahead	7.4 %	0	29.8%	2
Willen Rd S (N/B) Ahead Left	38.5%	3	32.5%	3
Willen Rd S (N/B) Right Ahead	28.3%	2	34.8%	4
SE GRO Ahead Right Left	33.1 %	2	42.0%	2
PM				
Willen Rd N (S/B) Left Ahead	52.1 %	4	58.6%	5
Willen Rd N (S/B) Ahead Right	57.0%	5	63.4%	5
Bloor Access (Northern) Left Right Ahead	10.4 %	1	12.5%	1
Willen Rd S (N/B) Ahead Left	38.1 %	3	38.5%	3
Willen Rd S (N/B) Right Ahead	41.0%	3	42.0%	3
SE GRO Ahead Right Left	72.7 %	4	73.7%	4

Source: LinSig 9 results

6.27 The results indicate that the four arm signal junction would operate satisfactorily with the cumulative traffic from the MK:East allocation, and would operate with residual capacity.

6.28 Similarly, paragraphs 9.4.38 to 9.4.41 and Table 9.26 (extract below) of the Berkeley TA summarise results of the morning and evening peak hour capacity assessment for the southern signal controlled access (i.e. the new link road junction with Willen Road that is proposed by Bloor Homes).

Table 9-26 – Willen Road – Southern Signal Access – AM / PM Peak Hour

Arm	2031: Do Something		2048: Do Something	
	DoS	MMQ	DoS	MMQ
AM				
Willen Rd N (S/B) Left Ahead	67.5%	5	69.2%	5
Willen Rd N (S/B) Ahead	69.7%	6	71.8%	6
Bloor Access (Southern) Left Right	73.1%	6	77.9%	7
Willen Rd S (N/B) Ahead	21.1%	2	11.3%	1
Willen Rd S (N/B) Right Ahead	16.7%	1	38.0%	2
PM				
Willen Rd N (S/B) Left Ahead	81.6%	9	73.5%	7
Willen Rd N (S/B) Ahead	7.8%	1	27.5%	2
Bloor Access (Southern) Left Right	51.8%	3	71.3%	5
Willen Rd S (N/B) Ahead	18.5%	1	16.7%	1
Willen Rd S (N/B) Right Ahead	50.0%	2	76.7%	4

Source: LinSig 9 results

6.29 The results indicate that the signal controlled T- junction would operate satisfactorily with the cumulative traffic from the MK:East allocation, and would operate with residual capacity.

Summary

- 6.30 The proposed development at land at Caldecote Farm will deliver the following components of the infrastructure identified in the MK:East DF SPD as required to enable the delivery of the MK:East allocation:
- The new Redway connecting Newport Pagnell and the existing H4 Redway Super Route in Milton Keynes, with crossings on Willen Road and the eastern side of the A422.
 - Retention and widening of Willen Road to provide dual carriageway between the Marsh End Roundabout and the site access junction.
 - The development will also safeguard land to allow for further widening of Willen Road as part of the works promoted by Bloor Homes, which in combination with the above will allow dualling of the length of Willen Road from the north of the M1 bridge crossing to the Marsh End Roundabout. The works being promoted by Bloor Homes will include a new road link connecting from Willen Road to the new M1 bridge link, to be partially delivered by Berkeley St James and partially by Bloor Homes.
- 6.31 Work undertaken as part of the Berkeley St James planning application has consider the all parts of the MK:East allocation, including the proposed development site on land at Caldecote Farm and therefore presents an assessment of the cumulative impacts of the MK:East allocation.
- 6.32 That work has demonstrated that highway mitigation strategy for the proposed development at land at Caldecote Farm, namely, to provide a single comprehensive improvement scheme at the Marsh End Roundabout, is consistent and in keeping with the findings of the cumulative assessment. The cumulative assessment identifies that an improvement scheme at the Marsh End Roundabout is required as part of the mitigation strategy for the whole of the MK:East allocation. It demonstrates that the Marsh End Roundabout improvement that would be delivered as part of the proposed development on land at Caldecote Farm would satisfactorily address the capacity constraints at the existing junction that will result from the cumulative traffic impacts of the whole MK:East allocation.
- 6.33 The cumulative impact assessment work undertaken as part of the Berkeley St James planning application also demonstrates that the proposed site access arrangements, in combination with those proposed by the adjacent Bloor Home development, would operate satisfactorily with the cumulative traffic from the MK:East allocation, and would operate with residual capacity.
- 6.34 In conclusion, it has been demonstrated that the proposed highway mitigation strategy for the proposed development at land at Caldecote Farm is fully compatible with the wider highway and infrastructure strategy that is proposed for MK:East allocation.

7.0 SUMMARY AND CONCLUSIONS

- 7.1 ADC Infrastructure Limited were commissioned by Newlands Developments Ltd to provide transport and highways advice in support of their revised detailed planning application for new employment development on land at Caldecote Farm, to the west of Willen Road, in Newport Pagnell.
- 7.2 The revised planning submission is supported by the Transport Assessment (TA) and Framework Travel Plan work that was submitted as part of the previous planning application (ref. 19/02402/FUL). However, given the passage of time since the original application, it is appropriate to update certain aspects of the TA. This TA Addendum report has therefore been prepared to accompany the revised planning submission and should be read in combination with the TA and Framework Travel Plan.
- 7.3 The TA describes the existing highways and transport conditions relevant to the site. It also includes an accident assessment on the local highway network in the vicinity of the site. Given the passage of time, this TA Addendum presents an updated accident assessment up to the most recent period. It concludes that there are no trends in the location or type of accidents recorded at the study area junctions, and of which, all but one accident are attributed to driver error.
- 7.4 The TA includes details of the development proposals. The revised access proposals to the car park serving Unit 1 that was agreed with MKC as part of the consultation on the previous application, along with setting out the commitment to provide S106 funding for a bus service as agreed with MKC, are described in this TA Addendum.
- 7.5 Likewise, the proposed development trip generation, trip distribution and assignment are presented in the TA. Capacity assessments at the agreed study area junctions in the 2026 and 2031 future assessment years are also presented in the TA. Given the passage of time since the original application, this TA Addendum includes a capacity assessment at the M1 Junction 14 and Northfield Roundabout in the revised 2023 opening year, in accordance with DfT Circular 02/2013. It is shown that the development would not have a significant impact on the performance of the network. It is also concluded that the development would not impact on the performance of the M1 slip roads at Junction 14. Therefore, as previously agreed with Highways England, it is concluded that no mitigation is required at the M1 Junction 14 or Northfield Roundabout.
- 7.6 This TA Addendum also considered the cumulative impact of the proposed development in combination with the wider MK:East allocation. It is concluded that the proposed highway mitigation strategy is fully compatible with the wider highway and infrastructure strategy that is proposed for MK:East allocation.
- 7.7 Overall, based on the work contained in the TA and this TA Addendum, it is concluded that the proposals accord with the principles of the National Planning Policy Framework (NPPF), and it would be unreasonable to object to the planning application on transport grounds.

Total vehicles					
	A	B	C	D	
A	16	286	795	49	1146
B	280	0	39	673	992
C	1169	58	1	876	2104
D	13	270	286	0	569
	1478	614	1121	1598	4811

HGVs					
	A	B	C	D	
A	1	2	48	2	53
B	9	0	2	11	22
C	42	1	0	11	54
D	0	9	11	0	20
	52	12	61	24	149

% HGVs				
	A	B	C	D
A	6.3%	0.7%	6.0%	4.1%
B	3.2%	0.0%	5.1%	1.6%
C	3.6%	1.7%	0.0%	1.3%
D	0.0%	3.3%	3.8%	0.0%

Total vehicles				
	A	B	C	
A			569	569
B				0
C	1598			1598
	1598	0	569	2167

HGVs				
	A	B	C	
A			20	20
B				0
C	24			24
	24	0	20	44

% HGVs				
	A	B	C	
A				3.5%
B				
C	1.5%			

Total vehicles					
	A	B	C	D	
A	1	577	1002	38	1618
B	260	8	608	146	1022
C	312	150	9	40	511
D	19	31	22	1	73
	592	766	1641	225	3224

PCUs					
	A	B	C	D	
A	1	588	1018	38	1645
B	266	8	625	152	1051
C	325	161	10	41	537
D	20	33	24	1	78
	612	790	1677	232	3311

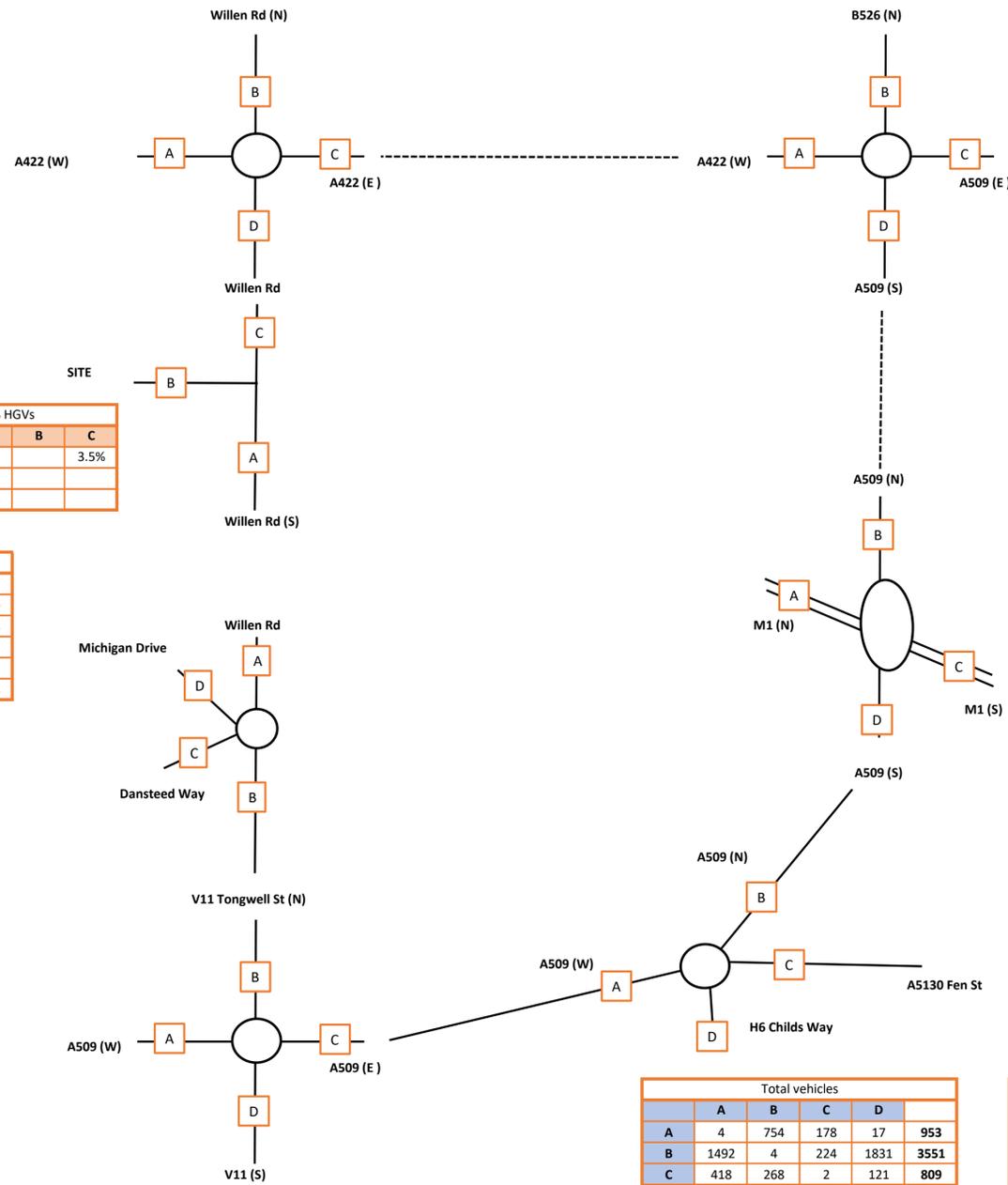
HGVs					
	A	B	C	D	
A	0	11	16	0	27
B	6	0	17	6	29
C	13	11	1	1	26
D	1	2	2	0	5
	20	24	36	7	87

% HGVs				
	A	B	C	D
A	0.0%	1.9%	1.6%	0.0%
B	2.3%	0.0%	2.8%	4.1%
C	4.2%	7.3%	11.1%	2.5%
D	5.3%	6.5%	9.1%	0.0%

Total vehicles					
	A	B	C	D	
A	1	24	641	298	964
B	36	2	196	643	877
C	1410	417	6	56	1889
D	216	576	53	3	848
	1663	1019	896	1000	4578

% HGVs				
	A	B	C	D
A	0.0%	25.0%	4.7%	1.0%
B	8.3%	0.0%	5.6%	4.7%
C	2.0%	2.9%	33.3%	12.5%
D	0.9%	2.1%	15.1%	0.0%

HGVs					
	A	B	C	D	
A	0	6	30	3	39
B	3	0	11	30	44
C	28	12	2	7	49
D	2	12	8	0	22
	33	30	51	40	154



Total vehicles					
	A	B	C	D	
A	1	327	659	129	1116
B	584	1	29	181	795
C	1406	26	0	400	1832
D	211	224	231	1	667
	2202	578	919	711	4410

HGVs					
	A	B	C	D	
A	0	3	32	26	61
B	9	1	2	7	19
C	33	1	0	36	70
D	21	21	21	0	63
	63	26	55	69	213

% HGVs				
	A	B	C	D
A	0.0%	0.9%	4.9%	20.2%
B	1.5%	100.0%	6.9%	3.9%
C	2.3%	3.8%	0.0%	9.0%
D	10.0%	9.4%	9.1%	0.0%

Total vehicles					
	A	B	C	D	
A	3	232	0	1452	1687
B	139	11	320	625	1095
C	2	299	8	1518	1827
D	868	369	569	0	1806
	1012	911	897	3595	6415

HGVs					
	A	B	C	D	
A	1	18	0	104	123
B	13	1	33	22	69
C	0	15	0	38	53
D	85	23	32	0	140
	99	57	65	164	385

PCUs					
	A	B	C	D	
A	4	250	0	1556	1810
B	152	12	353	647	1164
C	2	314	8	1556	1880
D	953	392	601	0	1946
	1111	968	962	3759	6800

Total vehicles					
	A	B	C	D	
A	4	754	178	17	953
B	1492	4	224	1831	3551
C	418	268	2	121	809
D	4	798	45	4	851
	1918	1824	449	1973	6164

HGVs					
	A	B	C	D	
A	1	52	9	0	62
B	47	0	18	97	162
C	9	13	0	1	23
D	0	73	1	0	74
	57	138	28	98	321

PCUs					
	A	B	C	D	
A	5	806	187	17	1015
B	1539	4	242	1928	3713
C	427	281	2	122	832
D	4	871	46	4	925
	1975	1962	477	2071	6485



WILLEN ROAD, NEWPORT PAGNELL

DIAGRAM TAA1: 2023 BACKGROUND TRAFFIC FLOWS - AM PEAK

Total vehicles					
	A	B	C	D	
A	12	472	1362	20	1866
B	211	0	118	279	608
C	919	200	0	258	1377
D	15	463	450	0	928
	1157	1135	1930	557	4779

HGVs					
	A	B	C	D	
A	1	3	23	0	27
B	3	0	2	3	8
C	29	0	0	6	35
D	1	3	2	0	6
	34	6	27	9	76

% HGVs				
	A	B	C	D
A	8.3%	0.6%	1.7%	0.0%
B	1.4%	0.0%	1.7%	1.1%
C	3.2%	0.0%	0.0%	2.3%
D	6.7%	0.6%	0.4%	0.0%

Total vehicles				
	A	B	C	D
A			928	928
B				0
C	557			557
	557	0	928	1485

HGVs				
	A	B	C	D
A			6	6
B				0
C	9			9
	9	0	6	15

% HGVs				
	A	B	C	D
A				0.6%
B				
C	1.6%			

Total vehicles					
	A	B	C	D	
A	0	203	330	17	550
B	358	8	283	110	759
C	366	166	13	8	553
D	184	302	85	0	571
	908	679	711	135	2433

PCUs					
	A	B	C	D	
A	0	205	333	19	557
B	359	8	293	116	776
C	368	170	13	8	559
D	185	305	85	0	575
	912	688	724	143	2467

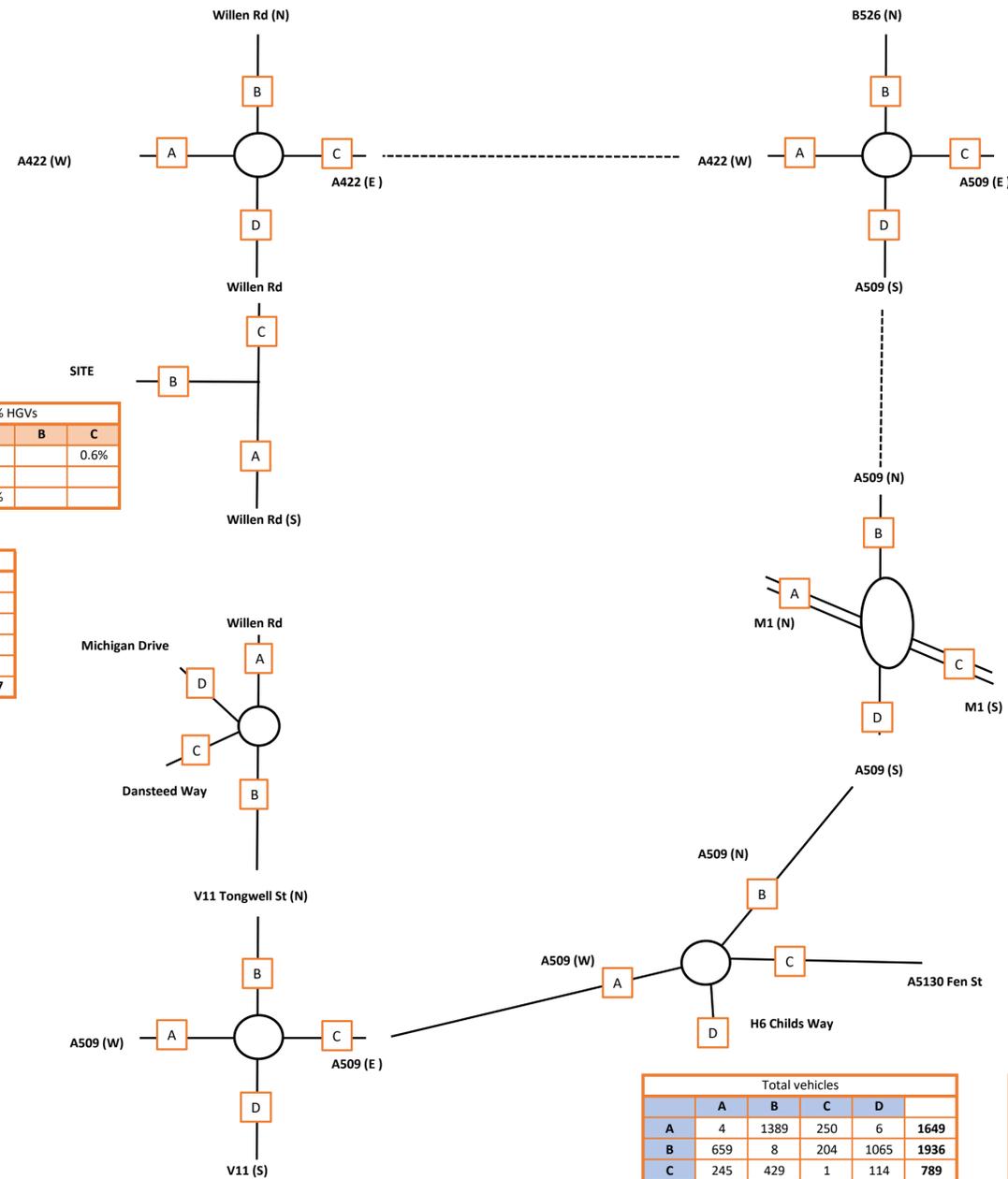
HGVs					
	A	B	C	D	
A	0	2	3	2	7
B	1	0	10	6	17
C	2	4	0	0	6
D	1	3	0	0	4
	4	9	13	8	34

% HGVs				
	A	B	C	D
A	0.0%	1.0%	0.9%	11.8%
B	0.3%	0.0%	3.5%	5.5%
C	0.5%	2.4%	0.0%	0.0%
D	0.5%	1.0%	0.0%	0.0%

Total vehicles					
	A	B	C	D	
A	4	28	1077	173	1282
B	25	1	320	462	808
C	818	173	8	25	1024
D	343	565	107	2	1017
	1190	767	1512	662	4131

% HGVs				
	A	B	C	D
A	0.0%	0.0%	2.3%	4.6%
B	0.0%	0.0%	2.2%	0.6%
C	2.7%	6.4%	0.0%	8.0%
D	0.6%	1.2%	1.9%	0.0%

HGVs					
	A	B	C	D	
A	0	0	25	8	33
B	0	0	7	3	10
C	22	11	0	2	35
D	2	7	2	0	11
	24	18	34	13	89



Total vehicles					
	A	B	C	D	
A	1	447	1145	368	1961
B	255	0	28	186	469
C	804	52	0	380	1236
D	315	306	493	0	1114
	1375	805	1666	934	4780

HGVs					
	A	B	C	D	
A	0	3	8	18	29
B	1	0	0	4	5
C	8	0	0	18	26
D	23	7	25	0	55
	32	10	33	40	115

% HGVs				
	A	B	C	D
A	0.0%	0.7%	0.7%	4.9%
B	0.4%	0.0%	0.0%	2.2%
C	1.0%	0.0%	0.0%	4.7%
D	7.3%	2.3%	5.1%	0.0%

Total vehicles					
	A	B	C	D	
A	2	249	0	792	1043
B	237	32	362	463	1094
C	0	383	14	691	1088
D	1322	610	1041	0	2973
	1561	1274	1417	1946	6198

HGVs					
	A	B	C	D	
A	0	18	0	54	72
B	9	0	12	4	25
C	0	25	2	26	53
D	71	9	12	0	92
	80	52	26	84	242

PCUs					
	A	B	C	D	
A	2	267	0	846	1115
B	246	32	374	467	1119
C	0	408	16	717	1141
D	1393	619	1053	0	3065
	1641	1326	1443	2030	6440

Total vehicles					
	A	B	C	D	
A	4	1389	250	6	1649
B	659	8	204	1065	1936
C	245	429	1	114	789
D	2	1154	54	6	1216
	910	2980	509	1191	5590

HGVs					
	A	B	C	D	
A	0	18	6	1	25
B	19	0	2	57	78
C	8	14	0	2	24
D	0	59	0	0	59
	27	91	8	60	186

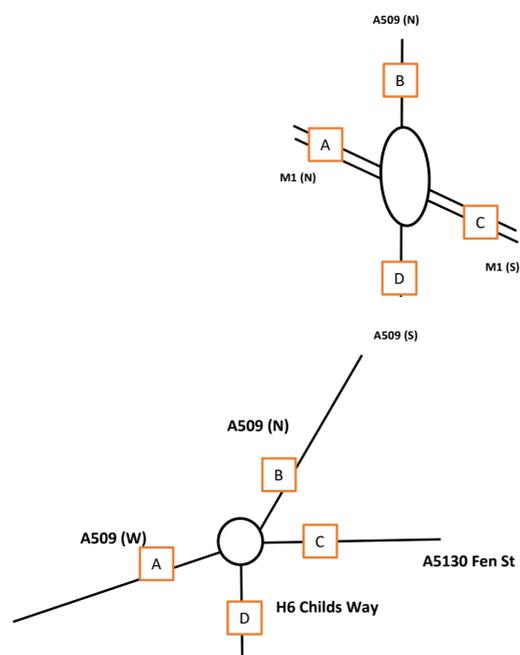
PCUs					
	A	B	C	D	
A	4	1407	256	7	1674
B	678	8	206	1122	2014
C	253	443	1	116	813
D	2	1213	54	6	1275
	937	3071	517	1251	5776

2016 count
2018 count



WILLEN ROAD, NEWPORT PAGNELL

DIAGRAM TAA2: 2023 BACKGROUND TRAFFIC FLOWS - PM PEAK



Total vehicles					
	A	B	C	D	
A	3	232	0	1452	1687
B	139	11	320	625	1095
C	2	299	8	1518	1827
D	868	369	569	0	1806
	1012	911	897	3595	6415

HGVs					
	A	B	C	D	
A	1	18	0	104	123
B	13	1	33	22	69
C	0	15	0	38	53
D	85	23	32	0	140
	99	57	65	164	385

PCUs					
	A	B	C	D	
A	4	250	0	1556	1810
B	152	12	353	647	1164
C	2	314	8	1556	1880
D	953	392	601	0	1946
	1111	968	962	3759	6800

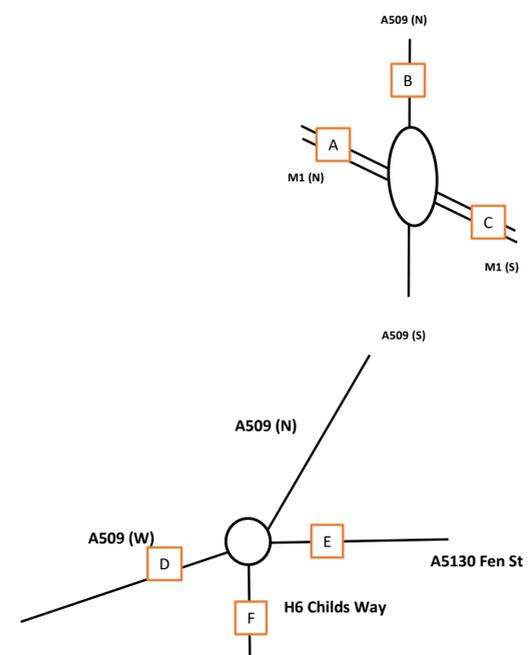
Total vehicles					
	A	B	C	D	
A	4	754	178	17	953
B	1492	4	224	1831	3551
C	418	268	2	121	809
D	4	798	45	4	851
	1918	1824	449	1973	6164

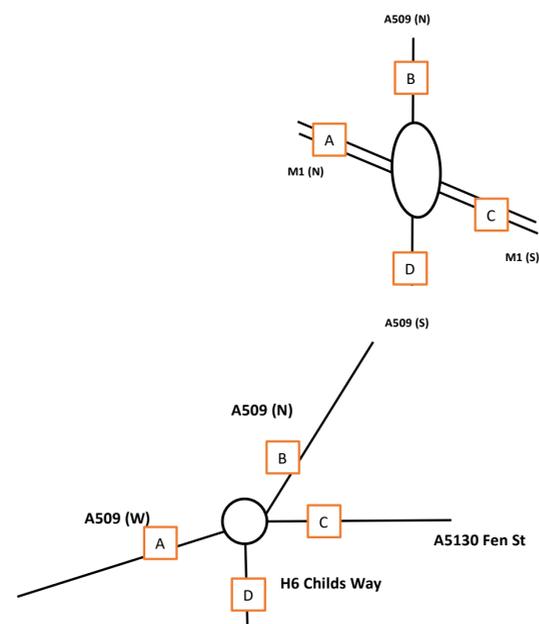
HGVs					
	A	B	C	D	
A	1	52	9	0	62
B	47	0	18	97	162
C	9	13	0	1	23
D	0	73	1	0	74
	57	138	28	98	321

PCUs					
	A	B	C	D	
A	5	806	187	17	1015
B	1539	4	242	1928	3713
C	427	281	2	122	832
D	4	871	46	4	925
	1975	1962	477	2071	6485

	A	B	C	D	E	F	Total
A	4	250	0	637	101	798	1790
B	152	12	353	265	42	332	1155
C	2	314	8	637	100	798	1859
D	395	162	249	5	187	17	1015
E	138	57	87	427	2	122	832
F	427	175	269	4	46	4	925
Total	1117	970	966	1975	478	2071	7577

FOR MODELLING PURPOSES





Total vehicles					
	A	B	C	D	
A	2	249	0	792	1043
B	237	32	362	463	1094
C	0	383	14	691	1088
D	1322	610	1041	0	2973
	1561	1274	1417	1946	6198

HGVs					
	A	B	C	D	
A	0	18	0	54	72
B	9	0	12	4	25
C	0	25	2	26	53
D	71	9	12	0	92
	80	52	26	84	242

PCUs					
	A	B	C	D	
A	2	267	0	846	1115
B	246	32	374	467	1119
C	0	408	16	717	1141
D	1393	619	1053	0	3065
	1641	1326	1443	2030	6440

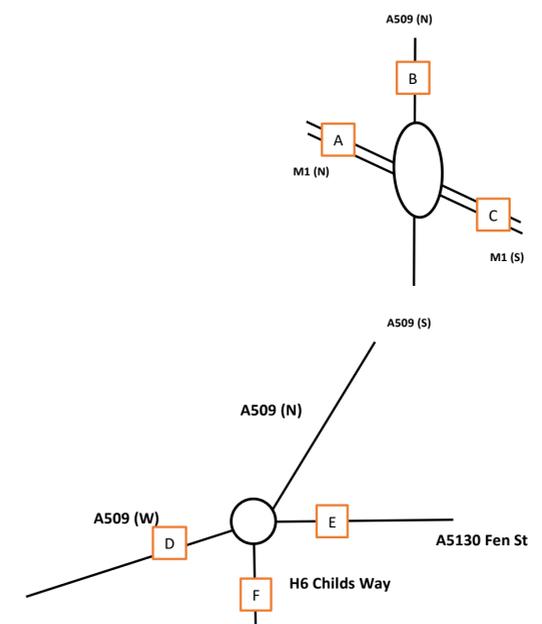
Total vehicles					
	A	B	C	D	
A	4	1389	250	6	1649
B	659	8	204	1065	1936
C	245	429	1	114	789
D	2	1154	54	6	1216
	910	2980	509	1191	5590

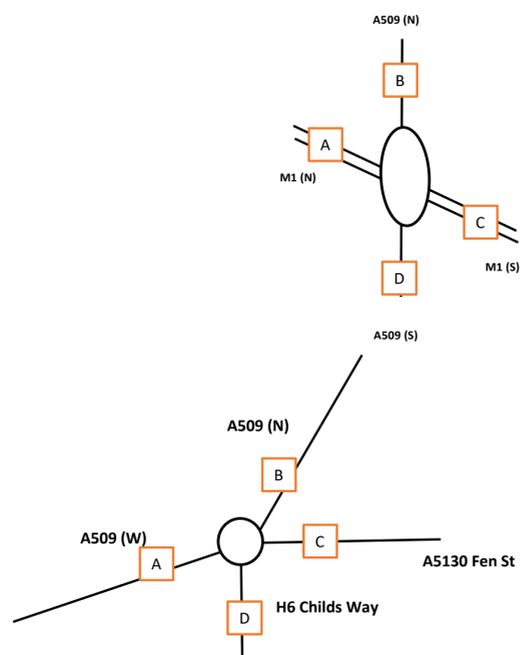
HGVs					
	A	B	C	D	
A	0	18	6	1	25
B	19	0	2	57	78
C	8	14	0	2	24
D	0	59	0	0	59
	27	91	8	60	186

PCUs					
	A	B	C	D	
A	4	1407	256	7	1674
B	678	8	206	1122	2014
C	253	443	1	116	813
D	2	1213	54	6	1275
	937	3071	517	1251	5776

	A	B	C	D	E	F	Total
A	2	267	0	283	86	468	1105
B	246	32	374	156	47	258	1113
C	0	408	16	239	73	396	1133
D	639	284	483	4	256	7	1674
E	201	89	152	253	1	116	813
F	551	245	417	2	54	6	1275
Total	1640	1326	1442	937	517	1251	7113

FOR MODELLING PURPOSES





Total vehicles					
	A	B	C	D	
A	3	255	0	1452	1710
B	139	11	328	625	1103
C	2	299	8	1541	1850
D	877	369	569	0	1815
	1021	934	905	3618	6478

HGVs					
	A	B	C	D	
A	1	26	0	104	131
B	13	1	40	22	76
C	0	15	0	46	61
D	92	23	32	0	147
	106	65	72	172	415

PCUs					
	A	B	C	D	
A	4	281	0	1556	1841
B	152	12	368	647	1179
C	2	314	8	1587	1911
D	969	392	601	0	1962
	1127	999	977	3790	6893

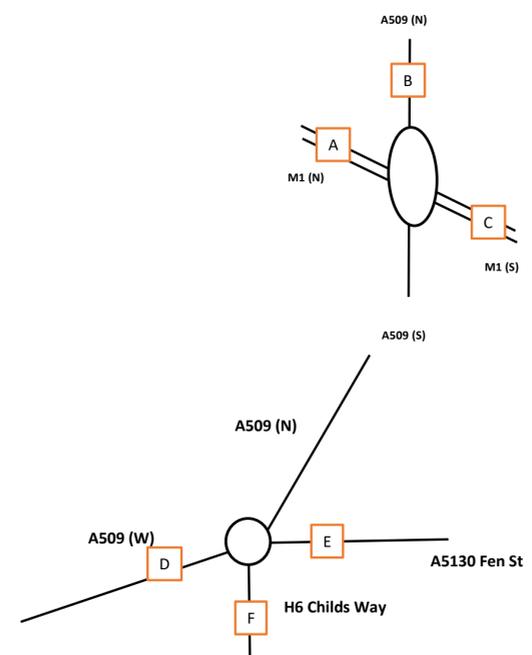
Total vehicles					
	A	B	C	D	
A	4	763	178	17	962
B	1515	4	224	1831	3574
C	418	268	2	121	809
D	4	798	45	4	851
	1941	1833	449	1973	6196

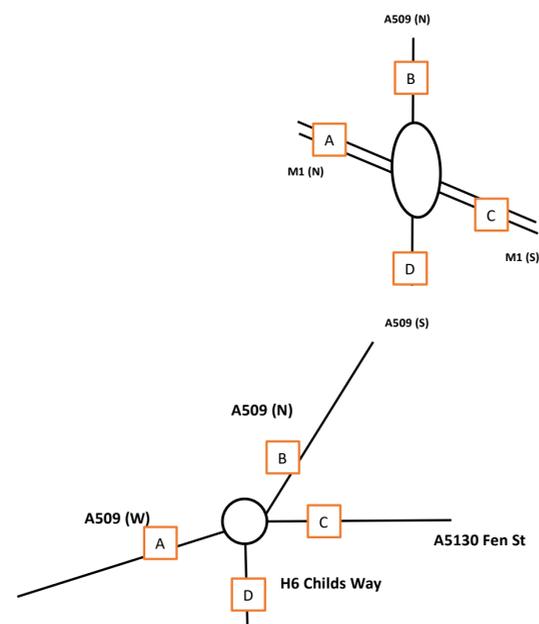
HGVs					
	A	B	C	D	
A	0	25	6	1	32
B	27	0	2	57	86
C	8	14	0	2	24
D	0	59	0	0	59
	35	98	8	60	201

PCUs					
	A	B	C	D	
A	4	788	184	18	994
B	1542	4	226	1888	3660
C	426	282	2	123	833
D	4	857	45	4	910
	1976	1931	457	2033	6397

	A	B	C	D	E	F	Total
A	4	281	0	656	96	803	1839
B	152	12	368	273	40	334	1178
C	2	314	8	669	98	819	1909
D	389	157	241	4	184	18	994
E	139	56	86	426	2	123	833
F	423	171	263	4	45	4	910
Total	1110	992	966	2031	465	2100	7664

FOR MODELLING PURPOSES





Total vehicles					
	A	B	C	D	
A	2	261	0	792	1055
B	237	32	385	463	1117
C	0	383	14	703	1100
D	1345	610	1041	0	2996
	1584	1286	1440	1958	6268

HGVs					
	A	B	C	D	
A	0	25	0	54	79
B	9	0	18	4	31
C	0	25	2	33	60
D	77	9	12	0	98
	86	59	32	91	268

PCUs					
	A	B	C	D	
A	2	286	0	846	1134
B	246	32	403	467	1148
C	0	408	16	736	1160
D	1422	619	1053	0	3094
	1670	1345	1472	2049	6536

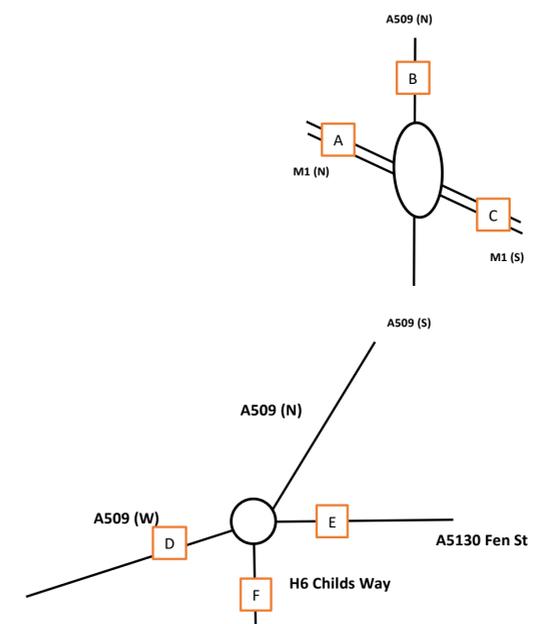
Total vehicles					
	A	B	C	D	
A	4	1412	250	6	1672
B	671	8	204	1065	1948
C	245	429	1	114	789
D	2	1154	54	6	1216
	922	3003	509	1191	5625

HGVs					
	A	B	C	D	
A	0	24	6	1	31
B	26	0	2	57	85
C	8	14	0	2	24
D	0	59	0	0	59
	34	97	8	60	199

PCUs					
	A	B	C	D	
A	4	1436	256	7	1703
B	697	8	206	1122	2033
C	253	443	1	116	813
D	2	1213	54	6	1275
	956	3100	517	1251	5824

	A	B	C	D	E	F	Total
A	2	286	0	288	86	463	1125
B	246	32	403	159	47	256	1143
C	0	408	16	250	74	403	1151
D	660	287	489	4	256	7	1703
E	204	89	151	253	1	116	813
F	557	243	413	2	54	6	1275
Total	1669	1345	1471	956	518	1251	7210

FOR MODELLING PURPOSES



APPENDIX A

MKC CONSULTATION RESPONSE TO APPLICATION 19/02402/FUL – 14 OCTOBER 2019



HIGHWAY OBSERVATIONS FOR: 19/02402/FUL

DATE: 14 OCT 2019
CONTACT: SMT
TEL: 01908 690463

APPLICATION FOR: The erection of two storage and distribution units (use class B8), with associated access and off-site highway works on land at Caldecote Farm, Willen Road, Newport Pagnell.

Summary of advice from Transport Development Management

Object	<input checked="" type="checkbox"/>
No objection	<input type="checkbox"/>
Comment only	<input type="checkbox"/>

This proposal is a detailed planning application pursuant to the withdrawal of the hybrid application 18/01719/FUL. A revised Transport Assessment has been provided along with the updated development proposals.

Transport Assessment (TA)

Extensive comments were provided for the previous TA and it appears that these have been taken on board in the update. The changes to floor areas, trip generation and traffic assessments all appear to be acceptable as well.

It is noted that although the previous proposals (18/01719/FUL) included a significant contribution to Public Transport (£650,000), the current proposals do not include one. It is difficult to see why this situation has changed and it is assumed that the Council's Passenger Transport team will, quite rightly, seek to ensure a contribution is made.

The TA asserts that the number of bus passengers arising from the development is low; however, this fails to recognise that units such as the ones proposed will operate on shift patterns across a 7-day week. Existing services, limited to more or less normal office hours, will not be adequate.

It is suggested in Paragraph 3.30 of the TA, that a requirement to provide shift-change bus services is included in the Framework Travel Plan. This is not acceptable as it would not be directly related to the planning approval (for enforcement) and would need additional monitoring / resource from the Council. Instead, a contribution to something tangible should be sought as part of the planning consent.

In other respects, the TA appears to be acceptable and therefore, subject to the input of the Passenger Transport team, the TA is accepted.

Highway Works

The proposed highway works are accepted, in principle, as adequate mitigation for the likely impacts of the development. Full details of the highway works and the associated TROs will need to be thoroughly audited and approved through the Section 278 Technical Approval process. However, the works indicated in the TA and the submitted drawings are sufficient for the granting of planning permission subject to conditions / s.106.

A full Redway link is required between the Tongwell Roundabout and the Redways at the Willen Road / Marsh End Road junction. Although it is referred to in Paragraph 3.21 of the TA, full details of this route are not clearly shown on any of the submitted drawings. However, this can be covered by condition.

It should be noted that the highway works as proposed will require, amongst other things, a reduction of speed limits on Willen Road and at its junction with the A422. Partly this is to accommodate the proposed traffic signals and partly to accommodate the movement of pedestrians and cyclists on the proposed Redways.

There is no real prospect of grade-separated cycle / pedestrian routes in this location and the at-grade proposals represent a significant improvement on the current situation. The TA has identified that there have been 3 accidents at the Marsh End Roundabout (Willen Road / A422) involving cyclists. The proposals to provide a Redway and associated crossing are welcomed.

Site Layout

The TA also considers the manoeuvring of vehicles within the site as well as accessing the site. Tracking drawings in the TA show that the proposed layout does allow vehicles to enter, manoeuvre within and exit the site satisfactorily.

However, it is noted that a change in the location of the access to the car park serving unit 1 has taken place since the 18/01719/FUL proposals. The car park access is now located close to the main junction with Willen Road which could lead to vehicles waiting to turn right into the car park queuing back into the junction.

This car park contains 528 spaces and the number of vehicles entering at shift changes could be very high. The likelihood of these vehicles arriving in a short period of time is high and this could lead to issues with vehicles not being able to enter the car park quickly enough to keep the junction clear.

This is exacerbated by the car park layout, largely retained from the previous proposal, which has access to spaces directly opposite the only entrance. As submitted, this element of the scheme is not acceptable.

Parking

The TA details the site’s parking requirements and provision in Paragraphs 3.3 – 3.10. The table provided in Paragraph 3.8, reproduced below, sets out the required number of parking spaces (“Allowance”) and the number of spaces proposed.

Parking Type	Unit 1 – 47,075sqm			Unit 2 – 34,286sqm		
	Total Allowance	Proposed	% of Req	Total Allowance	Proposed	% of Req
Car*	528	528	100%	393	393	100%
Disabled	26	26	100%	20	20	100%
Electric Vehicle Charging	7	7	100%	5	5	100%
Powered Two Wheelers	8	8	100%	6	6	100%
Cycle Parking	116	90	78%	85	70	82%
HGV	157	127	81%	114	90	79%

* includes 1 additional parking space per 30sqm of ancillary office use

The table shows that the scheme overall has a car parking provision that is fully compliant with the Council’s standards. There is, however, a shortfall in HGV and cycle parking provision.

In terms of HGV parking, it is unlikely that the occupiers of the units will operate and park a fleet of vehicles on site, particularly all at once. The TA states that occupiers will not be attracted to the unit if the number of HGV docks is insufficient for their needs.

With regard to cycle parking, whilst the provision is only around 80% of the requirement in the Council’s standards, it is not an unreasonable provision given the very large size of the units involved. The cycle parking provision is accepted in terms of numbers of spaces and location; details of shelters and security can be covered by condition.

Summary

The TA shows that the traffic impact from the development is acceptable with mitigation. The site has limited accessibility by sustainable modes and there is currently no proposal to make a contribution towards improved bus services. A Redway is to be provided, connecting Tongwell Roundabout to Marsh End Road.

The proposed parking provision is acceptable; however, the access to the car park to unit 1 is located where queuing into the main site junction could occur and it is therefore unacceptable as submitted.

Consequently, although the issue could be addressed by revised proposals, as submitted the planning application should be refused for the following reason:

The proposed access to the car park for Unit 1 is located such that queuing on the main site access and into the junction with Willen Road could occur. This would seriously prejudice the operation and therefore the safety of that junction. As a result the proposals are contrary to Policy CT2 of Plan:MK.

for
Milton Keynes Council – Transport Development Management

APPENDIX B

MKC CONSULTATION RESPONSE TO APPLICATION 19/02402/FUL – 24 FEBRUARY 2020



HIGHWAY OBSERVATIONS FOR: 19/02402/FUL

DATE: 24 Feb 2020
CONTACT: SMT
TEL: 01908 690463

APPLICATION FOR: The erection of two storage and distribution units (use class B8), with associated access and off-site highway works on land at Caldecote Farm, Willen Road, Newport Pagnell.

Summary of advice from Transport Development Management

Object	<input type="checkbox"/>
No objection	<input checked="" type="checkbox"/>
Comment only	<input type="checkbox"/>

Further to the Highway Observations dated 14th October 2019, the applicant has submitted a revised access plan for Unit 1 which overcomes the previous highway objection.

As a result, the proposals are now acceptable in highway terms and there is no objection to planning consent being issued. The matter of the contribution to public transport remains outstanding, unless this has been agreed with the Passenger Transport team since the 14th of October.

As stated previously, the proposed highway works are accepted, in principle, as adequate mitigation for the likely impacts of the development. Full details of the highway works and the associated TROs will need to be thoroughly audited and approved through the Section 278 Technical Approval process. However, the works indicated in the TA and the submitted drawings are sufficient for the granting of planning permission subject to conditions / s.106.

A full Redway link is required between the Tongwell Roundabout and the Redways at the Willen Road / Marsh End Road junction. Although it is referred to in Paragraph 3.21 of the TA, full details of this route are not clearly shown on any of the submitted drawings. However, this can also be covered by condition.

It should be noted that the highway works as proposed will require, amongst other things, a reduction of speed limits on Willen Road and at its junction with the A422. Partly this is to accommodate the proposed traffic signals and partly to accommodate the movement of pedestrians and cyclists on the proposed Redways.

There is no real prospect of grade-separated cycle / pedestrian routes in this location and the at-grade proposals represent a significant improvement on the current situation. The TA has identified that there have been 3 accidents at the Marsh End Roundabout (Willen Road / A422) involving cyclists. The proposals to provide a Redway and associated crossing are welcomed.

With regard to cycle parking, whilst the proposal is only around 80% of the requirement in the Council's standards, it is not an unreasonable provision given the very large size of the units involved. The cycle parking provision is accepted in terms of numbers of spaces and location; details of shelters and security can be covered by condition.

Consequently, there is no objection to the issuing of planning permission subject to a S.106 agreement to secure the off-site highway works and a contribution to Public Transport. The following conditions should be imposed on any consent issued:

1. No part of the development shall commence until such time as details of the proposed off-site highway works and the proposed site access junction have been submitted to and approved in writing by the Local Planning Authority. No part of the development shall be occupied until the highway works and site access junction have been provided in accordance with the approved details.

Reason: To minimise danger and inconvenience to new and existing users of the surrounding highway network by securing the provision of off-site Redways, road crossings, highway improvements and a safe and convenient means of accessing the site.

2. Prior to the commencement of the development details of the Industrial Access Road(s) shall be submitted to and approved in writing by the Local Planning Authority and no part of the development shall be occupied until the access road(s) have been laid out and constructed in accordance with the approved details. The access road(s) so laid out shall be retained thereafter.

Reason: To minimise danger, obstruction and inconvenience to users of the highway and of the development.

3. Details of the proposed bicycle parking shall be submitted to and approved in writing by the Local Planning Authority and the approved scheme shall be provided prior to the first occupation of the development hereby permitted.

Reason: To ensure that adequate cycle parking facilities are provided to serve the development.

4. Prior to the occupation of the development hereby permitted the car parking area shown on the approved drawings shall be constructed, surfaced and permanently marked out. The car parking area so provided shall be maintained as a permanent ancillary to the development and shall be used for no other purpose thereafter.

Reason: To ensure adequate parking provision at all times so that the development does not prejudice the safe free flow of traffic on the neighbouring highway.

5. Prior to the initial occupation of the development hereby permitted the scheme for parking and manoeuvring and the loading and unloading of vehicles shown on the approved drawings shall be provided and shall be used for no other purpose thereafter.

Reason: To enable vehicles to draw off, park, load/unload and turn clear of the highway to minimise danger, obstruction and inconvenience to users of the adjoining highway.

Stirling Maynard Transportation
for
Milton Keynes Council – Transport Development Management

APPENDIX C

HIGHWAYS ENGLAND CONSULTATION RESPONSE TO APPLICATION 19/02402/FUL



Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 16-01)

Formal Recommendation to an Application for Planning Permission

From: Martin Fellows
Operations (East)
planningee@highwaysengland.co.uk

To: Milton Keynes Council

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: 19/02402/FUL

Referring to the planning application referenced above, dated 20 March 2020, application for the erection of two storage and distribution units (use class B8), with associated access, car parking, servicing, landscaping, earthworks, on and off-site drainage and off-site highway works; at land Caldecote Farm, east of the M1 Motorway adjacent to Willen Road; notice is hereby given that Highways England's formal recommendation is that we:

- ~~a) offer no objection;~~
- b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);
- ~~c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);~~
- ~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B ~~is~~ is not relevant to this application.¹

This represents Highways England formal recommendation and is copied to the

¹ Where relevant, further information will be provided within Annex A.

Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2018, via transportplanning@dft.gsi.gov.uk.

Signature:	Date: 12 May 2020
Name: Shamsul Hoque	Position: Assistant Spatial Planner
Highways England: Woodlands, Manton Lane Bedford MK41 7LW shamsul.hoque@highwaysengland.co.uk	

Annex A Highways England recommended Planning Conditions

HIGHWAYS ENGLAND has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regards to 19/02402/FUL and has been prepared by Shamsul Hoque.

This proposed development site is strategically located approximately 2.5km north-west of the M1 Junction 14. This application site falls within land of the MK East allocation area (Policy SD12). It is noted that this is a new planning application which is similar to an earlier planning application (ref. no. 18/01719/FUL) where we (Highways England) have previously consulted in September 2018. The major change between these two proposed development applications as we noticed is that the change in the Use Class.

With this current application, following our previous recommendation (dated 31 March 2020), the submitted transport evidences suggest, there would be more number of trips routed via M1 junction 14; however, total development trips generated from this current development proposal would be less except a small increase in HGV trips.

That means those total forecasted trips which would be routed via M1 junction 14, may be generated from other wider committed developments in Milton Keynes East.

On our behalf, AECOM have completed the technical review of the Transport Assessment and Travel Plan has submitted the Technical Note (TN) 03, dated 7 May 2020. Highways England agrees on the content of this Technical Note 03 and from the proposed development does not appear to have a significant traffic impact on the M1 junction 14.

Assessment of the proposed Travel Plan showed that there are limited sustainable transport modes in the location currently. Highways England are therefore requesting that the Council imposes the following planning condition on any grant of planning permission.

Now, we are confirming that there would not have any severe transport impact on M1 Junction 14 from this proposed development, which is also supported by the Technical Report 03 (dated 7 May 2020) prepared by AECOM, on our behalf.

Planning Condition

The following Framework Travel Plan condition should be included in any grant of planning permission.

A Framework Travel Plan shall be approved in writing by the Local Planning Authority in conjunction with the Highways England. The Travel Plan shall include the following:

- The identification of targets for trip reduction and modal shift;
- The methods to be employed to meet these targets;
- The mechanisms for monitoring and review;
- The mechanisms for reporting;
- The penalties to be applied in the event that targets are not met;
- The mechanisms for mitigation;
- Implementation of the travel plan to be agreed timescale or timescale and its operation thereafter;
- Mechanisms to secure variations to the travel plan following monitoring and reviews.

The completed development shall be occupied in accordance with the approved travel plan which shall be retained in place thereafter unless otherwise amended in accordance with a review to be agreed in writing by the Local Planning Authority in conjunction with the Highways England.

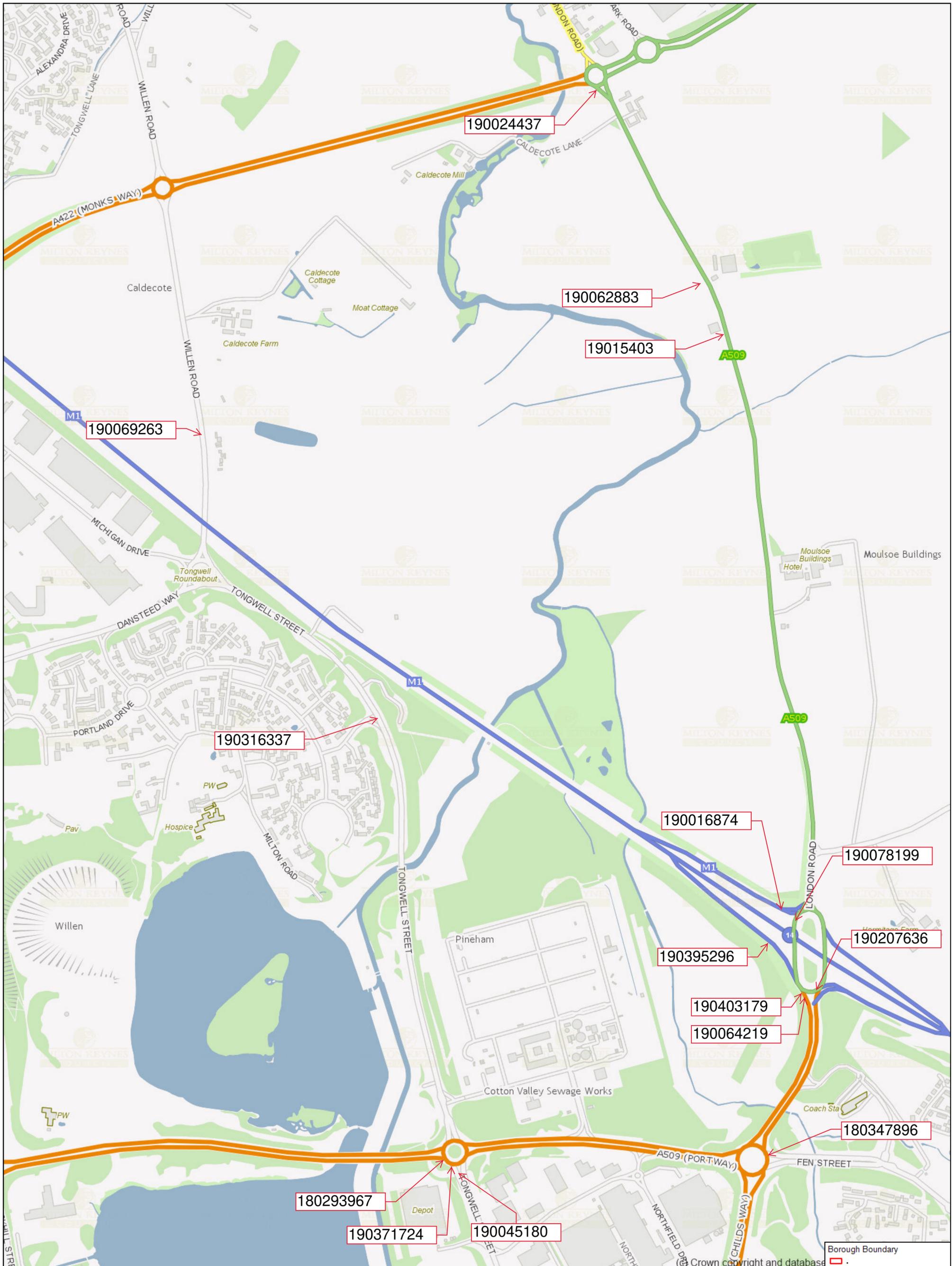
Before the development is brought into use the Framework Travel Plan is to be reviewed by the planning authority in consultation with the Highways England to take on board conditions prevailing at the time and adjustments made to accommodate them.

REASON: To ensure the M1 motorway continues to serve its purpose as part of a national system of routes for through traffic, to satisfy the reasonable requirements of

road safety on the M1 motorway and connecting roads in accordance with section 10 of the Highways Act 1980.

APPENDIX D

PERSONAL INJURY ACCIDENT DATA



Willen Rd & Surrounding area

N Scale: 1:5500

Printed on: 2020-09-09 13:23:52 by RF44137@MKC

Borough Boundary
 © Crown copyright and database rights
 Ordnance Survey 100019593
 (See "Printed on:" date for copyright year)
 © Milton Keynes Council

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday 22/01/2019 Time 1830 Slight at A422 JNC LONDON ROAD, TICKFORD ROUNDABOUT, NEWPORT PAGNELL, MK

E: 488726 N: 242833 Junction Detail: 1 Control 4

Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit

C2 TRAV NORTH ON LONDON RD STOPS AT ENTRY TO RBT, C1 FOLL COLLS WITH REAR C2. C1 THEN LEAVES SCENE & DRIVES OFF AT SPEED.

Road Type Single carriageway Vehicles 2 Casualties 1 Police Ref. 190024437 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1938 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Unknown No skidding, jack-knifing or overturning Breath test Driver not contacted

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to N Going ahead but held up Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 39 Sex of Driver Unknown Breath test Driver not contacted

Casualty Reference: 1 Age: 39 Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Wednesday 20/02/2019 Time 1232 Slight at LONDON ROAD, PRIV ACCESS 420M SOUTH OF JNC A422 RBT, NEWPORT PAGNELL, MK
E: 488926 N: 242477 Junction Detail: 8 Control 4
Fine without high winds Road surface Dry Daylight
C1 TRAV SOUTH ON A509 GOING WRONG WAY SO DRVR PULLED INTO ACCESS TO U-TURN, C2 ALSO TRAV SOUTH, C1 U-TURNS INTO PATH C2 & COLLS WITH C2. C1 THEN LEAVES C/WAY INTO DITCH.
Road Type Single carriageway Vehicles 2 Casualties 2 Police Ref. 190062883 Speed limit 60
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1190 Road Section: Accident Type(s) UU

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
2nd:	Loss of control	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from N to N U-turn Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 76 Sex of Driver Female No skidding, jack-knifing or overturning
Breath test Negative

Casualty Reference: 1 Age: 76 Female Driver/rider Severity: Slight Injured by vehicle: 1

Seatbelt: Worn but not independently confirmed

Cycle helmet Not a cyclist

Ped. Location

Ped. Movement

Ped. Direction

Ped. Injury

School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from N to S Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 61 Sex of Driver Female No skidding, jack-knifing or overturning
Breath test Negative

Casualty Reference: 2 Age: 61 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Worn but not independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	2	2
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	2	2

Number of casualties meeting the criteria: 2

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Wednesday 22/05/2019 Time 1413 Slight at A509 LONDON ROAD, 600M SOUTH OF JNC A422, NEWPORT PAGNELL, MK

E: 489017 N: 242282 Junction Detail: 0 Control

Fine without high winds Road surface Dry Daylight

C1 (POLICE ON CALL) TRAV NORTH & OVRTKNG OTHER VEH, C3 TRAV OPP DIR SLOWS FOR C1, C2 FOLL C3 FAILS TO SLOW & COLLS WITH REAR C3.

Road Type Single carriageway Vehicles 3 Casualties 1 Police Ref. 190154603 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1190 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Distraction in vehicle	Vehicle 2	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 2	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Overtaking moving vehicle ~~DR~~ hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Did not impact Parts damaged: 0 0 0 Age of Driver 26 Sex of Driver Male Breath test Negative

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from N to S Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 35 Sex of Driver Female Skidded
Breath test Negative

Casualty Reference: 1 Age: 35 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Worn and independently confirmed

Cycle helmet Not a cyclist

Ped. Location

Ped. Movement

Ped. Direction

Ped. Injury

School pupil: 0

Vehicle Reference 3 Car Moving from N to S Stopping Left hand drive: No

On main carriageway
First point of impact Back Parts damaged: 0 0 0 Age of Driver 62 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Negative

Accidents between dates 01/05/2017 and 30/04/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday 15/01/2019 Time 0728 Slight at M1 MOTORWAY, SOUTHEND EXIT SLIP ROAD TO JNC 14 RBT, PINEHAM, MILTON KEYNES
E: 489131 N: 240945 Junction Detail: 0 Control
Fine without high winds Road surface Dry Darkness: street lighting unknown
C2 TRAV SOUTH & IN STAT TRAFF ON SLIP RD, GV1 TRAV SAME DIR COLLS WITH REAR C2. GV1 PULLS AROUND C2
THEN DRIVES OFF FROM SCENE.
Road Type Slip road Vehicles 2 Casualties 1 Police Ref. 190016874 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Possible
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Goods vehicle - unknown weight Moving from N to SE Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Unknown No skidding, jack-knifing or overturning
Breath test Driver not contacted

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from N to SE Going ahead but held up Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 25 Sex of Driver Male Breath test Driver not contacted

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Wednesday 13/03/2019 Time 0640 Slight at A509 ROUNDABOUT JNC 14 M1, PINEHAM, MK

E: 489179 N: 240913 Junction Detail: 1 Control 2

Fine without high winds Road surface Wet/Damp Daylight

GV2 (VAN) TRAV NORTH ON RBT & STAT AT RED ATS, C1 TRAV SAME DIR COLLS WITH REAR GV2. C1 THEN LEAVES SCENE.

Road Type Roundabout Vehicles 2 Casualties 1 Police Ref. 190078199 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning

First point of impact Front Parts damaged: 0 0 0 Age of Driver 35 Sex of Driver Female Breath test Driver not contacted

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Van or Goods 3.5 tonnes mgw and under Moving from S to N Going ahead but held up Left hand drive: No

On main carriageway
First point of impact Back Parts damaged: 0 0 0 Age of Driver 32 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Driver not contacted
Casualty Reference: 1 Age: 32 Male Driver/rider Severity: Slight Injured by vehicle: 2
Seatbelt: Unknown Cycle helmet Not a cyclist
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/05/2017 and 30/04/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Thursday 04/07/2019 Time 1545 Slight at A509 JNC M1 ROUNDABOUT- JNC 14, BROOK FURLONG, MK

E: 489237 N: 240755 Junction Detail: 1 Control 2

Fine without high winds Road surface Dry Daylight

C2 & GV1 (VAN) STAT AT RBT ENTRY TOP OF N/BND EXIT SLIP RD FROM M1, ATS TURNED GREEN C2 & GV1 MOVED OFF, OTHER VEH APP FROM RIGHT THRU RED ATS, C2 BRAKED, GV1 HIT REAR C2.

Road Type Roundabout Vehicles 2 Casualties 1 Police Ref. 190207636 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Moving from SE to N Starting Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 39 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Driver not contacted

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from SE to N Stopping Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 42 Sex of Driver Male Breath test Driver not contacted

Casualty Reference: 1 Age: 42 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/05/2017 and 30/04/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Monday 11/02/2019 Time 1536 Slight at A509 ROUNDABOUT JNC 14 M1, PINEHAM, MK

E: 489198 N: 240738 Junction Detail: 1 Control 2

Fine without high winds Road surface Dry Daylight

C1, C2 & C3 TRAV NORTH ON A509 APPR RBT, C1 BRAKES LATE & HARD, C2 FOLL COLLS WITH REAR C1, C3 FOLL C2 & COLLS WITH REAR C2.

Road Type Dual carriageway Vehicles 3 Casualties 1 Police Ref. 190064219 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Sudden braking	Vehicle 1	Possible
2nd:	Nervous/Uncertain/Panic	Vehicle 1	Possible
3rd:	Following too close	Vehicle 2	Possible
4th:	Following too close	Vehicle 3	Possible
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Stopping Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 20 Sex of Driver Female Breath test Not requested

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 62 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Not requested
Casualty Reference: 1 Age: 64 Female Passenger Severity: Slight Injured by vehicle: 2
Seatbelt: Unknown Cycle helmet Not a cyclist
Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Vehicle Reference 3 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 24 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Negative

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	0	0
Passenger	0	0	1	1
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Friday 27/12/2019 Time 1950 Slight at A509 JNC WITH M1 JNC 14 ROUNDABOUT, PINEHAM, MK
E: 489195 N: 240739 Junction Detail: 1 Control 2
Fine without high winds Road surface Wet/Damp Darkness: street lighting unknown
C2 TRAV NORTH ON A509 STAT AT ENTRY TO RBT, C1 FOLL COLLS WITH REAR C2.
Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 190403179 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver 32 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Negative

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to N Going ahead but held up Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 46 Sex of Driver Female Breath test Negative

Casualty Reference: 1 Age: 46 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Wednesday 18/12/2019 Time 2012 Slight at M1 MOTORWAY, NORTHBND ON-SLIP RD FROM JNC 14 RBT, PINEHAM, MK
E: 489147 N: 240831 Junction Detail: 0 Control
Fine without high winds Road surface Wet/Damp Darkness: no street lighting
GV1 & C2 TRAV ON SLIP RD N/BND, FRONT C2 COLLS WITH O/SIDE GV1. C2 OVRTURNS.
Road Type Slip road Vehicles 2 Casualties 2 Police Ref. 190395296 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) ZZ

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 2	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 2	Possible
3rd:	Following too close	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Goods 7.5 tonnes mgw and over Moving from SE to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Offside Parts damaged: 0 0 0 Age of Driver Sex of Driver Male Breath test Negative

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference	2	Car		Moving from	SE	to	N	Going ahead other	Left hand drive: No
On main carriageway								No skidding, jack-knifing or overturning	
First point of impact	Front	Parts damaged:	0 0 0	Age of Driver	31	Sex of Driver	Female	Breath test	Negative
Casualty Reference:	1	Age:	31	Female	Driver/rider	Severity:	Slight	Injured by vehicle:	2
Seatbelt:	Unknown			Cycle helmet	Not a cyclist				
Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:	0
Casualty Reference:	2	Age:	20	Male	Passenger	Severity:	Slight	Injured by vehicle:	2
Seatbelt:	Unknown			Cycle helmet	Not a cyclist				
Ped. Location		Ped. Movement		Ped. Direction		Ped. Injury		School pupil:	0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	1	1
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	2	2

Number of casualties meeting the criteria: 2

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday 15/01/2019 Time 0728 Slight at M1 MOTORWAY, SOUTHEND EXIT SLIP ROAD TO JNC 14 RBT, PINEHAM, MILTON KEYNES
E: 489131 N: 240945 Junction Detail: 0 Control
Fine without high winds Road surface Dry Darkness: street lighting unknown
C2 TRAV SOUTH & IN STAT TRAFF ON SLIP RD, GV1 TRAV SAME DIR COLLS WITH REAR C2. GV1 PULLS AROUND C2
THEN DRIVES OFF FROM SCENE.
Road Type Slip road Vehicles 2 Casualties 1 Police Ref. 190016874 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Possible
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Goods vehicle - unknown weight Moving from N to SE Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Unknown No skidding, jack-knifing or overturning
Breath test Driver not contacted

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from N to SE Going ahead but held up Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 25 Sex of Driver Male Breath test Driver not contacted

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Tuesday 06/11/2018 Time 1400 Slight at H5 JNC A5130 NORTHFIELD ROUNDABOUT, NORTHFIELD, MK

E: 489112 N: 240370 Junction Detail: 1 Control 2

Fine without high winds Road surface Dry Daylight

C2 NEG RBT TWDS A5130 EXIT WHEN STRUCK FROM BEHIND BY C1.

Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 180347896 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) CO

Causation

	Factor:	Participant:	Confidence:
1st:	Temporary road layout (eg contraflow)	Vehicle 1	Possible
2nd:	Disobeyed Give Way or Stop sign or markings	Vehicle 1	Possible
3rd:	Careless/Reckless/In a hurry	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from W to E Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 25 Sex of Driver Female Breath test Driver not contacted

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from W to E Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 52 Sex of Driver Female Breath test Driver not contacted

Casualty Reference: 1 Age: 52 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Thursday 07/02/2019 Time 0840 Slight at V11 JNC H5 PINEHAM ROUNDABOUT, FOX MILNE, MK

E: 488390 N: 240333 Junction Detail: 1 Control 4

Fine without high winds Road surface Dry Daylight

C2 TRAV NORTH ON V11 & STAT AT ENTRY TO RBT, C1 TRAV SAME DIR COLLS WITH REAR C2.

Road Type Single carriageway Vehicles 2 Casualties 1 Police Ref. 190045180 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway
First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Unknown Breath test Driver not contacted
No skidding, jack-knifing or overturning

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to N Going ahead but held up Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Back Parts damaged: 0 0 0 Age of Driver 43 Sex of Driver Female Breath test Driver not contacted

Casualty Reference: 1 Age: 43 Female Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Monday 25/11/2019 Time 2017 Slight at H5 JNC V11 PINEHAM ROUNDABOUT, FOX MILNE, MK
E: 488381 N: 240345 Junction Detail: 1 Control 4
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit
PC2 TRAV WEST ON H5 NEG RBT, C1 TRAV NORTH ON V11 DOES NOT SEE PC2 & ENTERS RBT COLL WITH PC2 AT LOW
SPEED. PC2 NO LIGHTS.
Road Type Dual carriageway Vehicles 2 Casualties 1 Police Ref. 190371724 Speed limit 70
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) CM

Causation

	Factor:	Participant:	Confidence:
1st:	Not displaying lights at night or in poor visibility	Vehicle 2	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 41 Sex of Driver Male Breath test Negative

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Pedal Cycle Moving from E to W Going ahead other Left hand drive: No

On main carriageway
First point of impact Nearside Parts damaged: 0 0 0 Age of Driver 51 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Not applicable

Casualty Reference: 1 Age: 51 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Not Applicable Cycle helmet Yes

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	0	0
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	1	1
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	0	0
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	1	1
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Saturday 22/09/2018 Time 1750 Slight at H5 JNC V11 PINEHAM ROUNDABOUT, NORTHFIELD, MK

E: 488365 N: 240347 Junction Detail: 1 Control 2

Raining without high winds Road surface Wet/Damp Daylight

C1 TRAV WEST NEG RBT, DRVR LOST CONTRL ON RBT EXIT, C1 SKIDDED & LEFT C/WAY TO N/SIDE COLL WITH BARRIER.

Road Type Dual carriageway Vehicles 1 Casualties 1 Police Ref. 180293967 Speed limit 70

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) SG

Causation

	Factor:	Participant:	Confidence:
1st:	Travelling too fast for conditions	Vehicle 1	Possible
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from E to W Going ahead other Left hand drive: No

On main carriageway

First point of impact Front Parts damaged: 0 0 0 Age of Driver Sex of Driver Skidded Male Breath test Driver not contacted

Casualty Reference: 1 Age: Male Driver/rider Severity: Slight Injured by vehicle: 1

Seatbelt: Unknown

Cycle helmet Not a cyclist

Ped. Location

Ped. Movement

Ped. Direction

Ped. Injury

School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	1	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Friday 11/10/2019 Time 1651 Serious at V11 TONGWELL ST JNC CARLETON GATE, WILLEN, MK

E: 488201 N: 241385 Junction Detail: 3 Control 4

Fine without high winds Road surface Wet/Damp Daylight

C2 STAT ON CARLTN GT TO TURN RIGHT ONTO V11, GV1 (VAN) TRAV N/W ON V11 APPR JNC, DRVR GV1 CLAIMS TO HAVE BLACKED OUT & GV1 COLLS WITH O/SIDE C2. GV1 THEN COLLS WITH TRAFF SIGN.

Road Type Single carriageway Vehicles 2 Casualties 1 Police Ref. 190316337 Speed limit 60

Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1983 Road Section: Accident Type(s) ZZ

Causation

	Factor:	Participant:	Confidence:
1st:	Illness or disability, mental or physical	Vehicle 1	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Moving from SE to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 46 Sex of Driver Male Breath test Negative

Accidents between dates 01/05/2017 and 30/04/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Car Moving from S to SE Waiting to turn right Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Offside Parts damaged: 0 0 0 Age of Driver 60 Sex of Driver Female Breath test Negative

Casualty Reference: 1 Age: 60 Female Driver/rider Severity: Serious Injured by vehicle: 2

Seatbelt: Worn and independently confirmed Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/05/2017 and 30/04/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	1	0	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	1	0	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	1	0	1
Passenger	0	0	0	0
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	1	0	1

Number of casualties meeting the criteria: 1

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Friday 22/02/2019 Time 2100 Slight at WILLEN ROAD JNC ACCESS TO TRAVELLER SITE, NEWPORT PAGNELL, MK
E: 487800 N: 242062 Junction Detail: 8 Control 4
Fine without high winds Road surface Dry Darkness: no street lighting
GV2 (VAN) TRAV NORTH & TURNING RIGHT INTO TRAVELLER SITE, C1 TRAV SAME DIR POSS EXCESS SPEED & COLLS
INTO REAR GV2. DRVR C1 LEAVES SCENE THEN RETURNS.
Road Type Single carriageway Vehicles 2 Casualties 2 Police Ref. 190069263 Speed limit 60
Crossing: Control 0 Facilities 0 Local Authority: E06000042 Parish: 1190 Road Section: Accident Type(s) NB

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Moving from S to N Going ahead other Left hand drive: No

On main carriageway No skidding, jack-knifing or overturning
First point of impact Front Parts damaged: 0 0 0 Age of Driver 22 Sex of Driver Female Breath test Not requested

Casualty Reference: 2 Age: 27 Male Passenger Severity: Slight Injured by vehicle: 1

Seatbelt: Unknown

Cycle helmet Not a cyclist

Ped. Location

Ped. Movement

Ped. Direction

Ped. Injury

School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months
Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Vehicle Reference 2 Van or Goods 3.5 tonnes mgw and under Moving from S to E Turning right Left hand drive: No

On main carriageway
First point of impact Back Parts damaged: 0 0 0 Age of Driver 25 Sex of Driver Male No skidding, jack-knifing or overturning
Breath test Not requested

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Slight Injured by vehicle: 2

Seatbelt: Unknown Cycle helmet Not a cyclist

Ped. Location Ped. Movement Ped. Direction Ped. Injury School pupil: 0

Accidents between dates 01/03/2017 and 29/02/2020 (36) months

Selection: Notes:

CONFIDENTIAL ROAD ACCIDENT INFORMATION: NOT TO BE TRANSMITTED TO THIRD PARTIES

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	0	1	1
2-wheeled motor vehicles	0	0	0	0
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	0	1	1

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	1	1
Passenger	0	0	1	1
Motorcycle rider	0	0	0	0
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	0	2	2

Number of casualties meeting the criteria: 2

APPENDIX E

PARAMETERS PLAN ILLUSTRATIVE DEVELOPMENT MASTERPLAN



LEGEND

- Strategic Perimeter Landscape Screening including; hedge and tree planting, grassland and drainage attenuation features
- Build development and non-strategic landscaping
- Planning Application red line
18.75 hectares / 46.33 acres

The base plan used demonstrates one way in which the site could be delivered, accommodating built form alongside green infrastructure. It should not be taken as the definitive development scheme, as the application is submitted in Outline. The detailed layout and design and the Development Plots are Reserved Matters.

0 25m 50m SCALE 1:1250

**LAND AT CALDECOTE FARM
NEWPORT PAGNELL**

**newlands
developments**

pHp Architects
www.peter-haddon.com

STRATEGIC LANDSCAPING PARAMETERS PLAN

Drawing Status:	PRELIMINARY
CAD Reference:	4179 - SK015
Drawn:	SPH
Date:	JANUARY 2021
Scale:	1: @ A1 1:1250
Project No:	4179-01
Drawing No:	SK044
Rev:	P07



UNIT 1
Gross Internal Areas

Warehouse	454,900 ft ²	42,261 m ²
Office (3 floors)	18,000 ft ²	1,672 m ²
Hub Office (2 floors)	2,000 ft ²	186 m ²
TOTAL	474,900 ft²	44,119 m²

Gatehouse 366 ft² 34 m²

TOTAL 475,266 ft² 44,153m²

10.04 ha (24.82 acres)

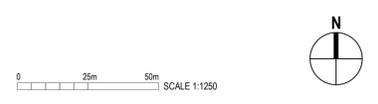
UNIT 2
Gross Internal Areas

Warehouse	345,000 ft ²	32,116 m ²
Office (3 floors)	21,000 ft ²	1,950 m ²
Hub Office (2 floors)	2,000 ft ²	186 m ²
SUB TOTAL	368,000 ft²	34,252 m²

Gatehouse 366 ft² 34 m²

TOTAL 368,366 ft² 34,286 m²

8.68 ha (21.45 acres)



LAND AT CALDECOTE FARM
NEWPORT PAGNELL

newlands
developments

pHp Architects
www.peter-haddon.com

pHp
architects

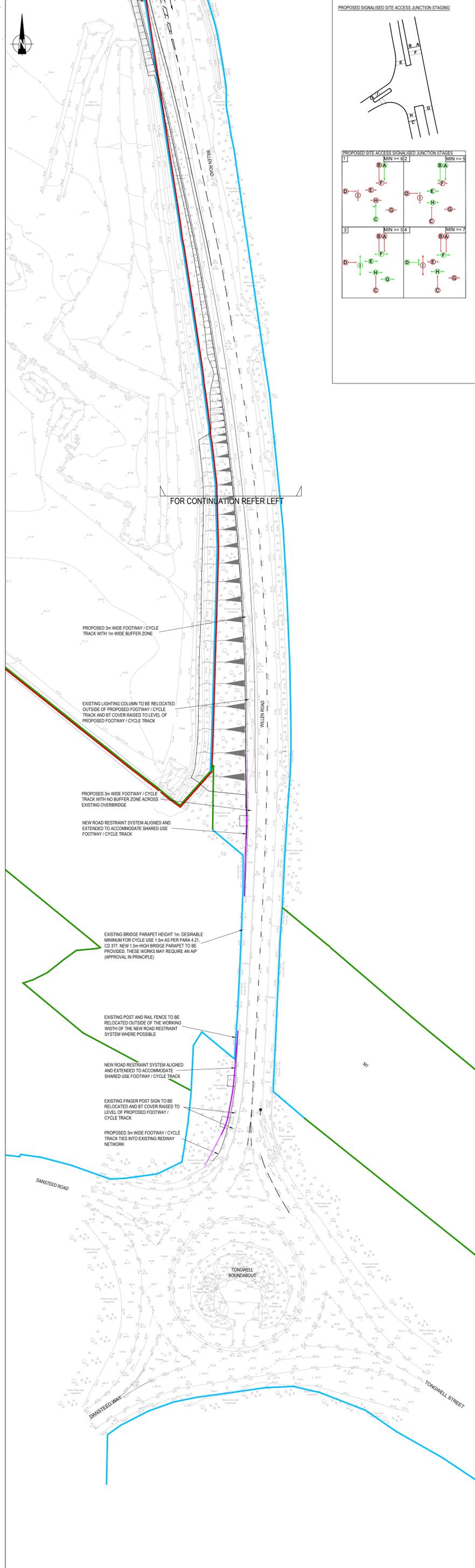
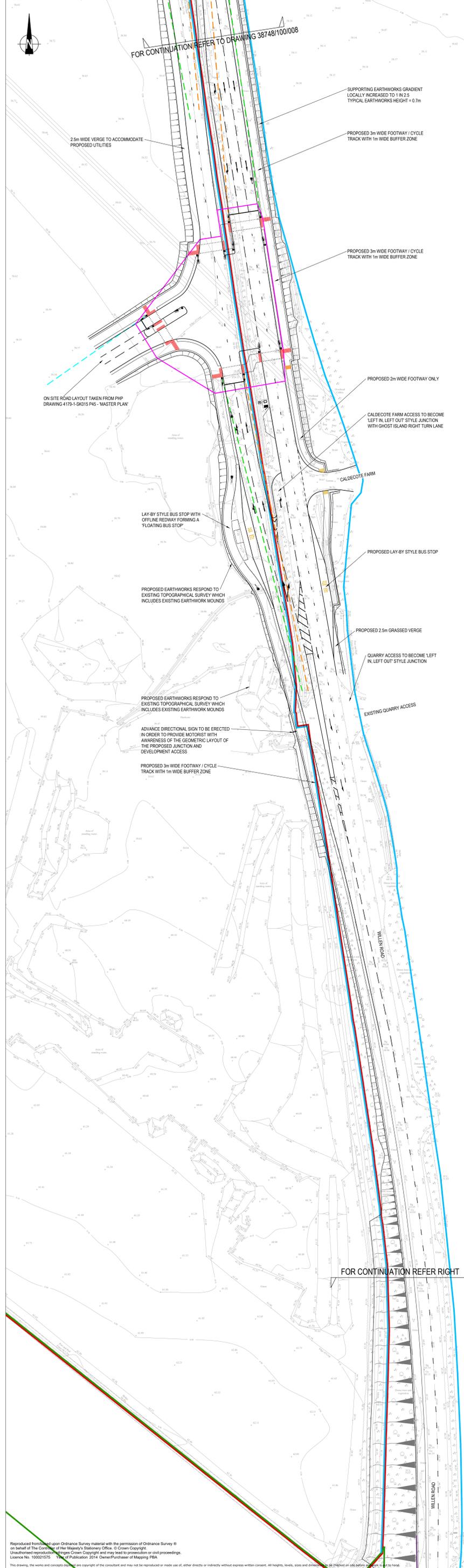
PROPOSED MASTERPLAN

Drawing Status: PRELIMINARY
CAD Reference: 4179 - SK015
Drawn: CW
Date: JUNE 2018
Scale: 1: @ A1 1:1250

Project No: 4179-01 Drawing No: SK015 Rev: P45

APPENDIX F

HIGHWAY DRAWINGS, RSA, DESIGN STATEMENTS AND WCHAR



PROPOSED SIGNALISED SITE ACCESS JUNCTION STAGING

KEY:

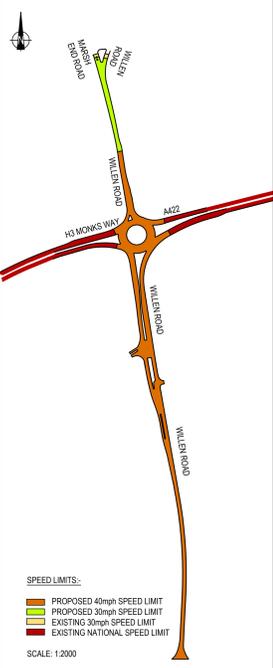
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 45m SSD - DESIGN SPEED 40kph

NOTES:

- ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
- MKCS DRAFT 'A' HIGHWAY GUIDE FOR MILTON KEYNES DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 3.12 - TABLE OF LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
- EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60kph). MKCS HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40kph. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
- THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON ADIC INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.193kx'.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - STATUTE TECHNICAL NOTE TN000001 - DESIGN STATEMENT - WILLEN ROAD / DEVELOPMENT ACCESS SIGNALISED JUNCTION.

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.



Rev	Description	Drawn	Date	Chkd
8	MASTERPLAN UPDATED TO REV FINE	JR	28.07.21	JSH
4	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RFA	DL	21.05.19	JSH

LAND AT CALDECOTE FARM NEWPORT PAGNELL NEWLANDS DEVELOPMENTS

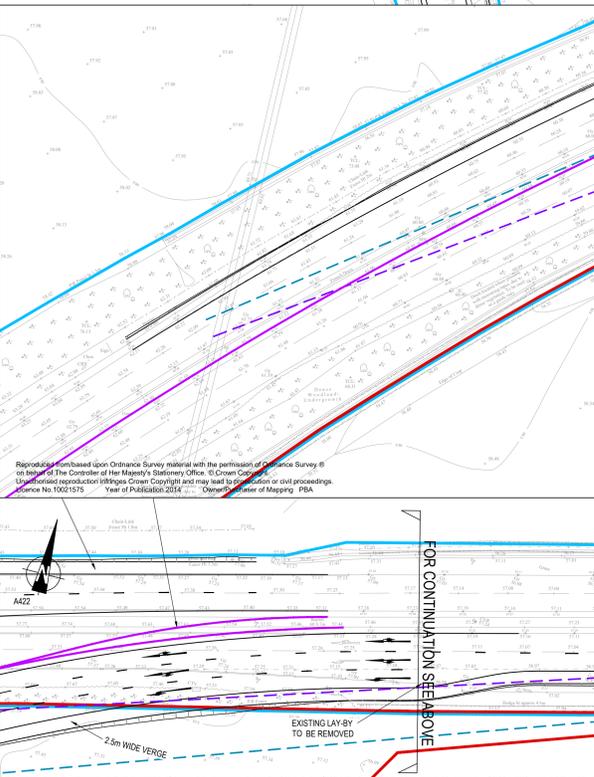
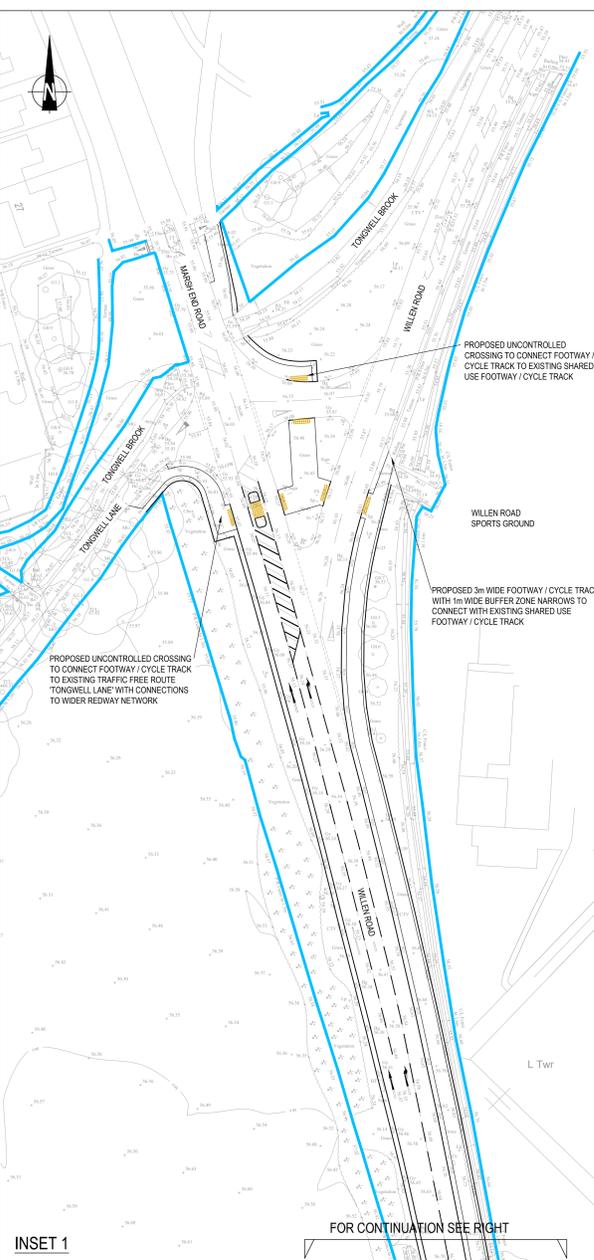
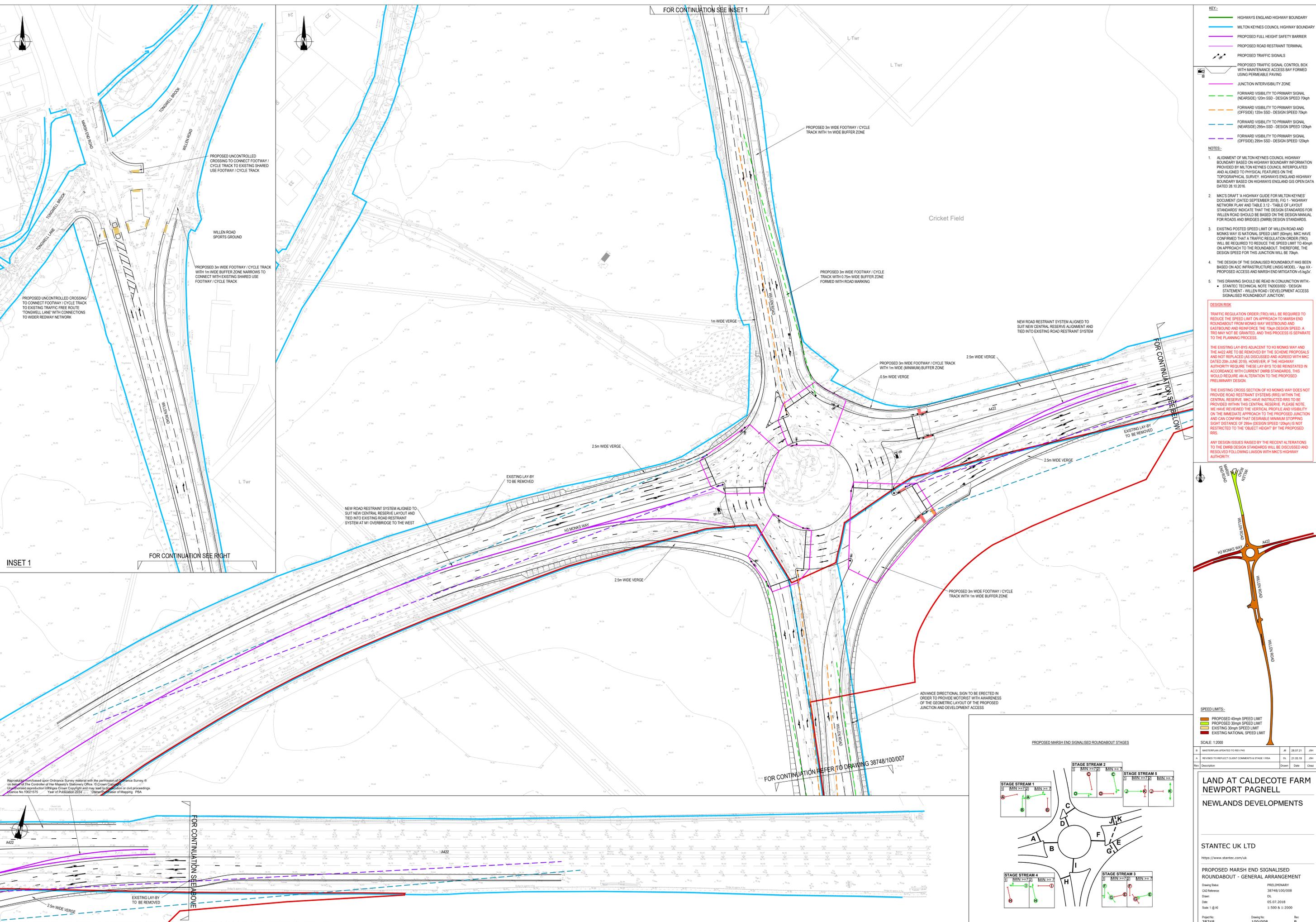
STANTEC UK LTD
<https://www.stantec.com/uk>

PROPOSED SITE ACCESS SIGNALISED JUNCTION - GENERAL ARRANGEMENT

Drawing Status: PRELIMINARY
 CAD Reference: 38748/100/007
 Drawn: DL
 Date: 05.07.2018
 Scale: 1 @ A0 1:500 & 1:2000

Project No: 38748 Drawing No: 100/007 Rev: B

Reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction of Ordnance Survey material is prohibited. Ordnance Survey is a registered trademark of Ordnance Survey. Licence No. 100021235. This drawing is the property of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions are shown as at the date of the survey unless otherwise stated.



- KEY:**
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
 - MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
 - PROPOSED FULL HEIGHT SAFETY BARRIER
 - PROPOSED ROAD RESTRAINT TERMINAL
 - PROPOSED TRAFFIC SIGNALS
 - PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
 - JUNCTION INTERVISIBILITY ZONE
 - - - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
 - - - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
 - - - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 25m SSD - DESIGN SPEED 120kph
 - - - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 25m SSD - DESIGN SPEED 120kph

- NOTES:**
1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
 2. MKC'S DRAFT A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 1.12 - TABLE LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB) DESIGN STANDARDS.
 3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD AND MONKS WAY IS NATIONAL SPEED LIMIT (80kph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40kph ON APPROACH TO THE ROUNDABOUT. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
 4. THE DESIGN OF THE SIGNALISED ROUNDABOUT HAS BEEN BASED ON ADD INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.1gkty'.
 5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - STATED TECHNICAL NOTE 1000002 - DESIGN STATEMENT - WILLEN ROAD / DEVELOPMENT ACCESS SIGNALISED ROUNDABOUT JUNCTION;

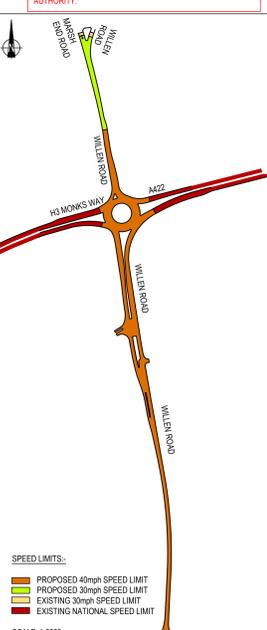
DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT ON APPROACH TO MARSH END ROUNDABOUT FROM MONKS WAY WESTBOUND AND EASTBOUND AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE EXISTING LAY-BYS ADJACENT TO H3 MONKS WAY AND THE A422 ARE TO BE REMOVED BY THE SCHEME PROPOSALS AND NOT REPLACED (AS DISCUSSED AND AGREED WITH MKC DATED 20th JUNE 2018). HOWEVER, IF THE HIGHWAY AUTHORITY REQUIRE THESE LAY-BYS TO BE REINSTATED IN ACCORDANCE WITH CURRENT DMRB STANDARDS, THIS WOULD REQUIRE AN ALTERATION TO THE PROPOSED PRELIMINARY DESIGN.

THE EXISTING CROSS SECTION OF H3 MONKS WAY DOES NOT PROVIDE ROAD RESTRAINT SYSTEMS (RRS) WITHIN THE CENTRAL RESERVE. MKC HAVE INSTRUCTED RRS TO BE PROVIDED WITHIN THIS CENTRAL RESERVE. PLEASE NOTE, WE HAVE REVIEWED THE VERTICAL PROFILE AND VISIBILITY ON THE IMMEDIATE APPROACH TO THE PROPOSED JUNCTION AND CAN CONFIRM THAT DESIRABLE MINIMUM STOPPING SIGHT DISTANCE OF 205m (DESIGN SPEED 70kph) IS NOT RESTRICTED TO THE OBJECT HEIGHT BY THE PROPOSED RRS.

ANY DESIGN ISSUES RAISED BY THE RECENT ALTERATIONS TO THE DMRB DESIGN STANDARDS WILL BE DISCUSSED AND RESOLVED FOLLOWING LIAISON WITH MKC'S HIGHWAY AUTHORITY.



SPEED LIMITS:

- PROPOSED 40kph SPEED LIMIT
- PROPOSED 30kph SPEED LIMIT
- EXISTING 30kph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

Rev	Description	Date	Drawn	Checked
B	MASTERPLAN UPDATED TO REV P45	28.07.21	JSH	
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RFA	21.05.19	JSH	

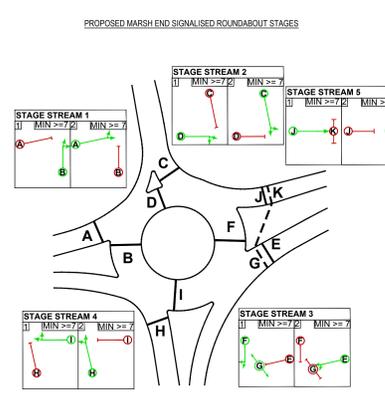
LAND AT CALDECOTE FARM NEWPORT PAGNELL NEWLANDS DEVELOPMENTS

STANTEC UK LTD
<https://www.stantec.com/uk>

PROPOSED MARSH END SIGNALISED ROUNDABOUT - GENERAL ARRANGEMENT

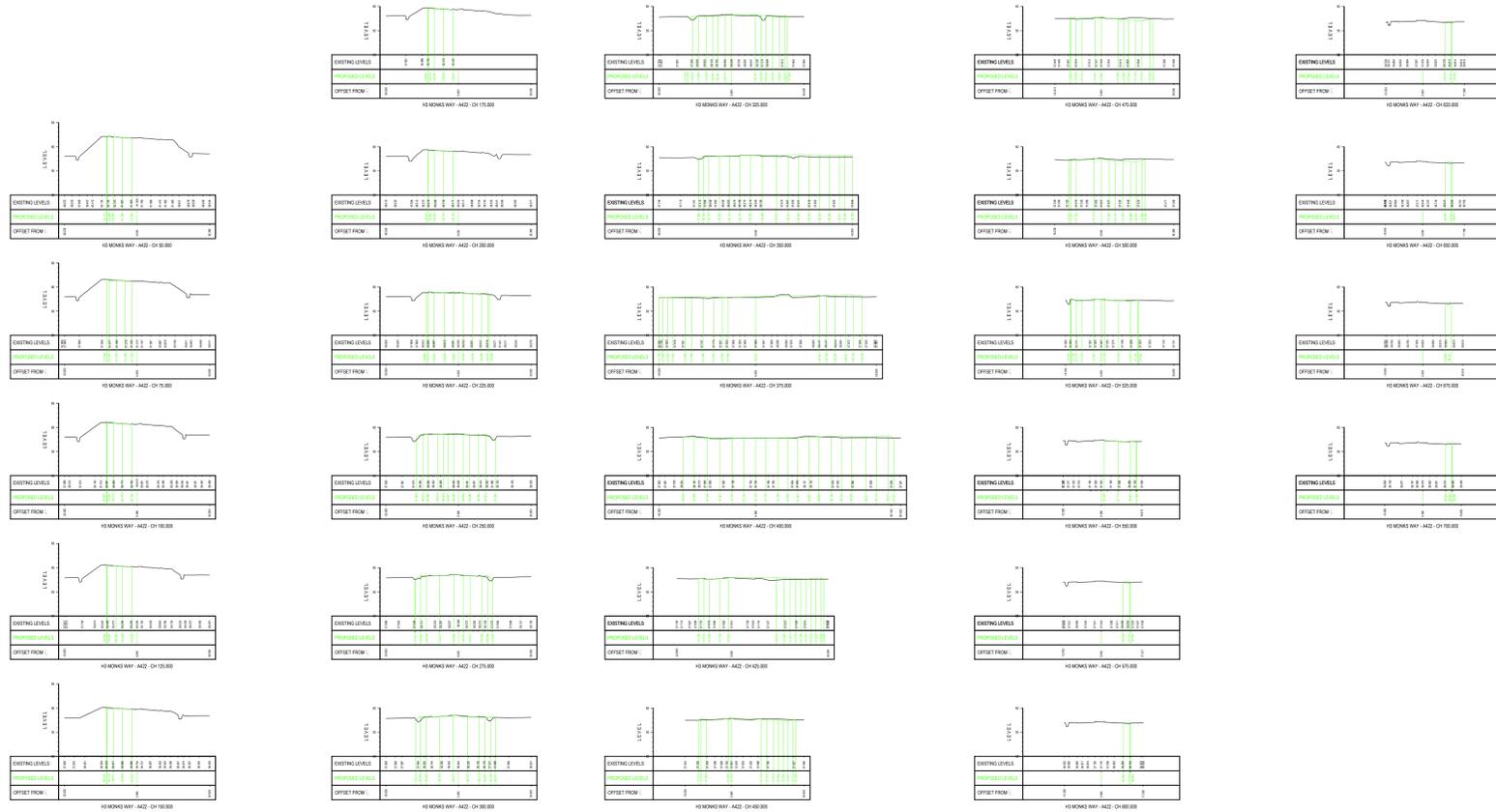
Drawing Status: PRELIMINARY
 CAD Reference: 38748/100/008
 Drawn: DL
 Date: 05.07.2018
 Scale: 1 @ A5
 1:500 & 1:2000

Project No: 38748
 Drawing No: 100/008
 Rev: B

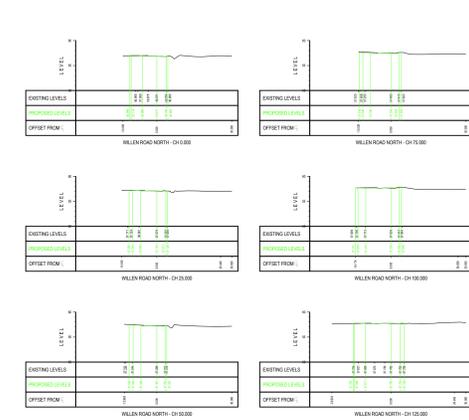


Reproduced from based upon Ordnance Survey material with the permission of Ordnance Survey 6 on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright. All rights reserved. Reproduction in whole or in part is prohibited without the prior written permission of the Controller of Her Majesty's Stationery Office or the Ordnance Survey. Year of Publication 2014. Ordnance Survey of Mapping. PBA

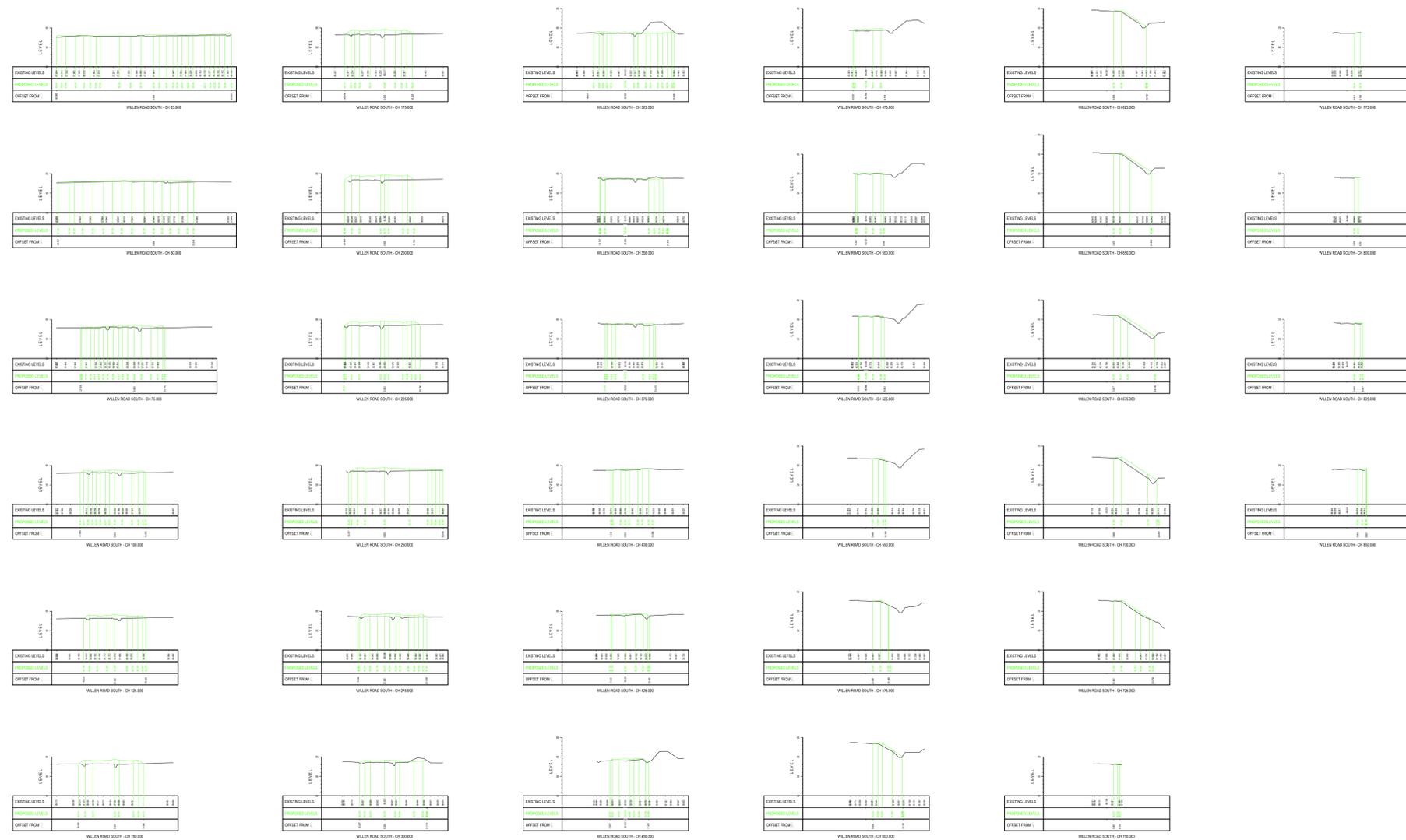
This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.



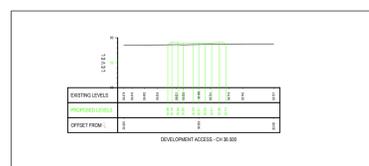
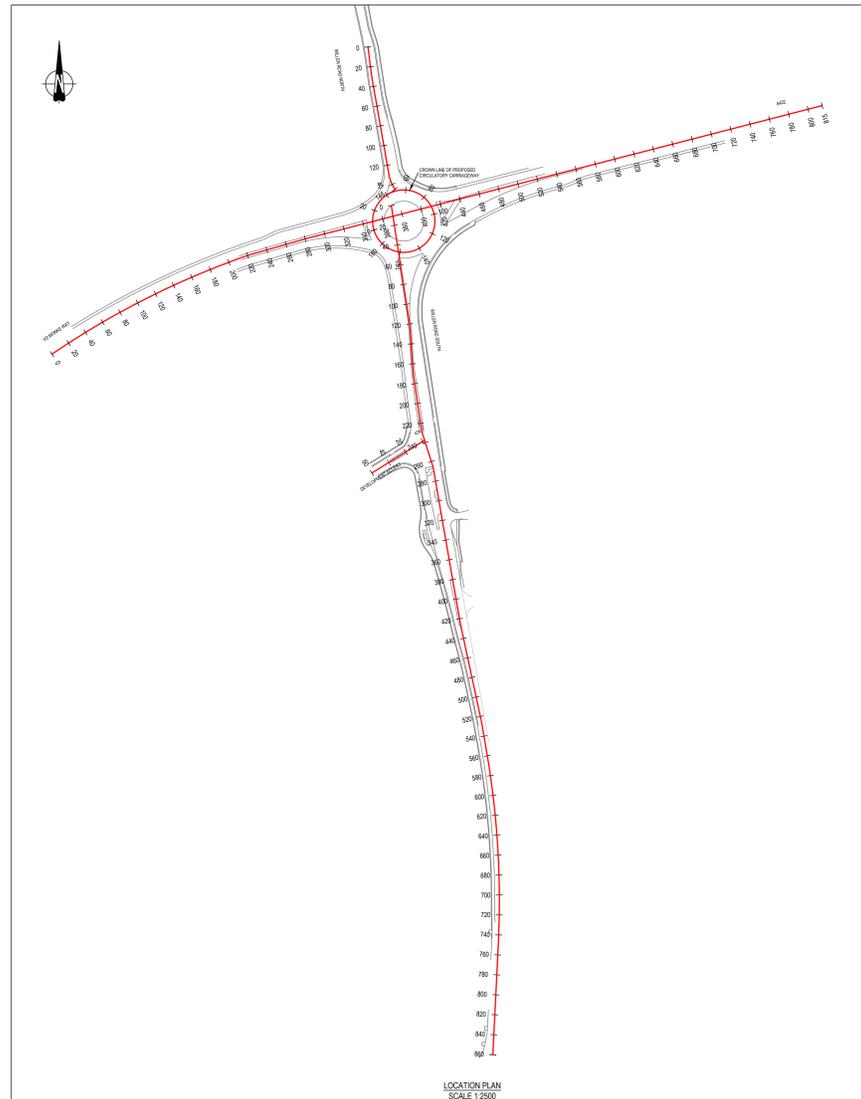
CROSS SECTION FOR MONKS WAY



CROSS SECTIONS FOR WILLEN ROAD - NORTH



CROSS SECTIONS FOR WILLEN ROAD - SOUTH



CROSS SECTION FOR DEVELOPMENT ACCESS

Rev	Description	Drawn	Date	Checked
B	MASTERPLAN UPDATED TO REV FIVE	JR	28.07.21	JPH
A	REVISED TO REFLECT NEW DEVELOPMENT ACCESS LOCATION	DL	21.05.19	JPH

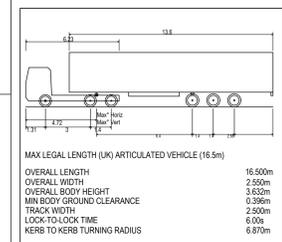
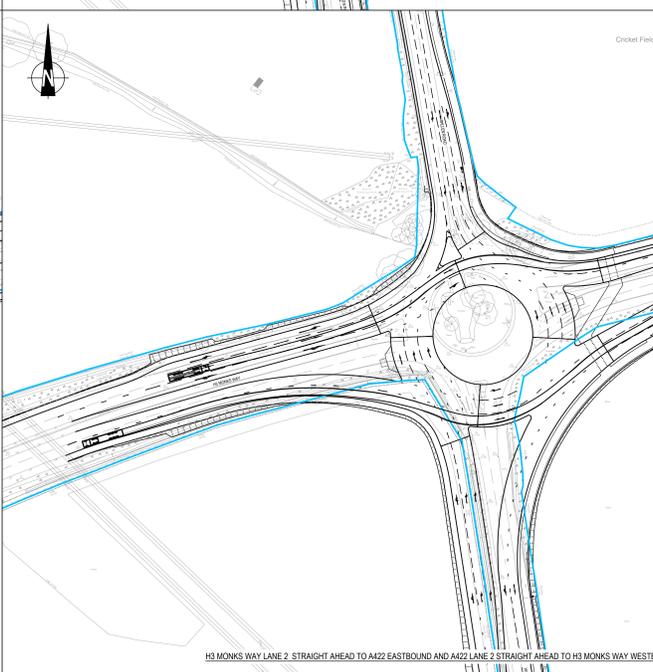
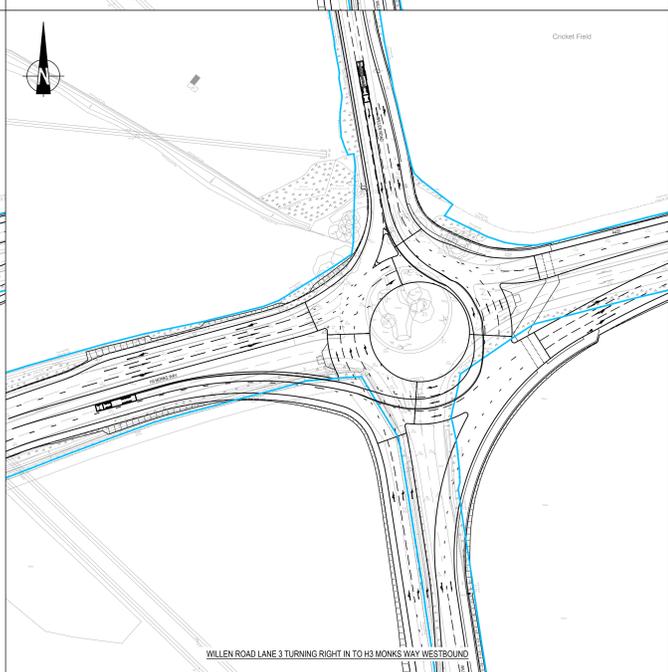
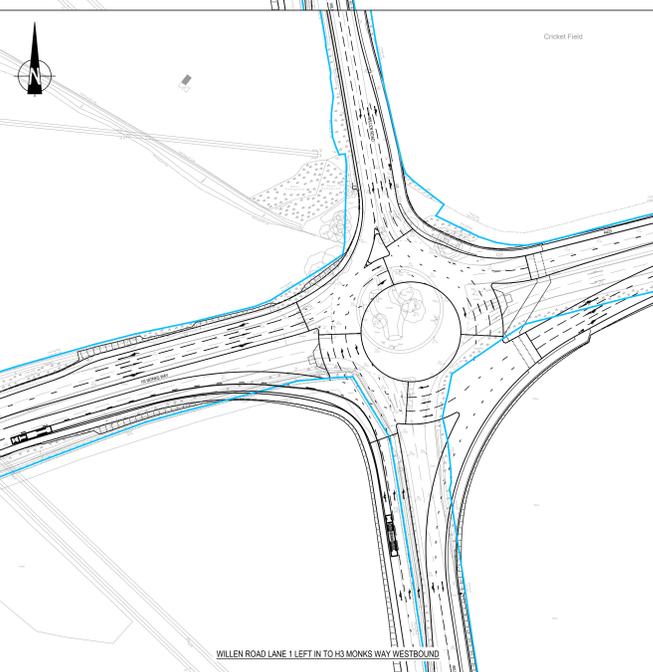
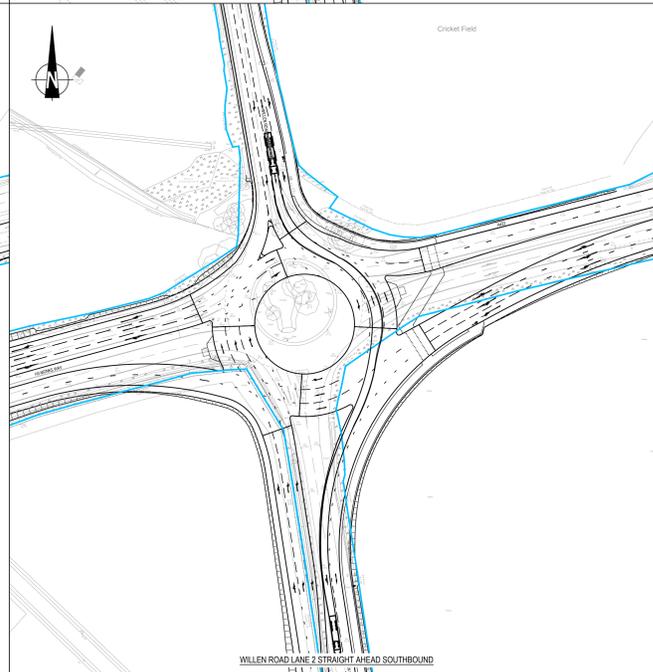
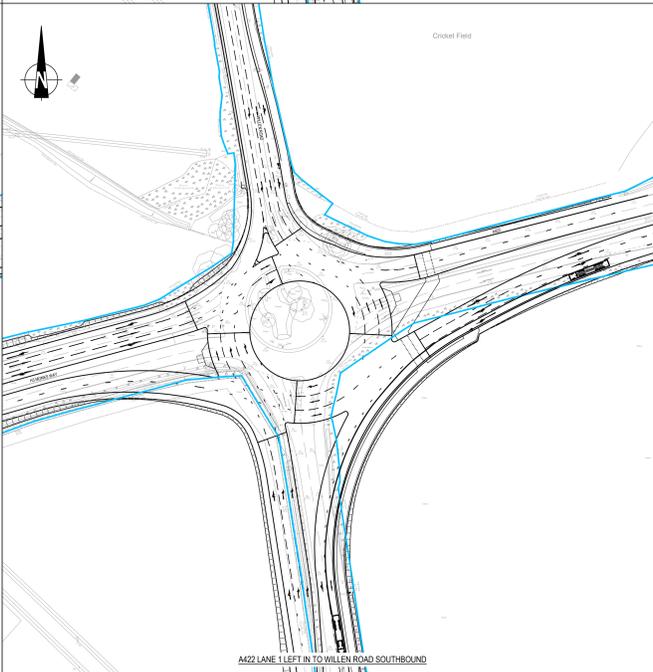
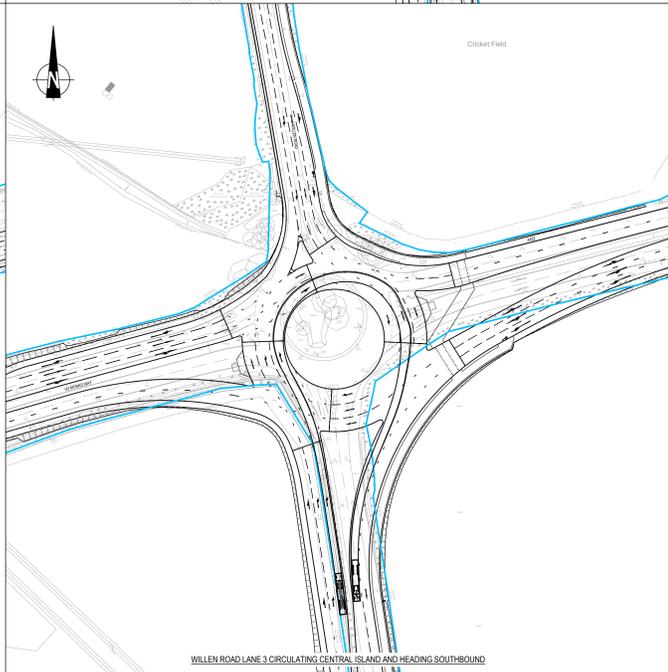
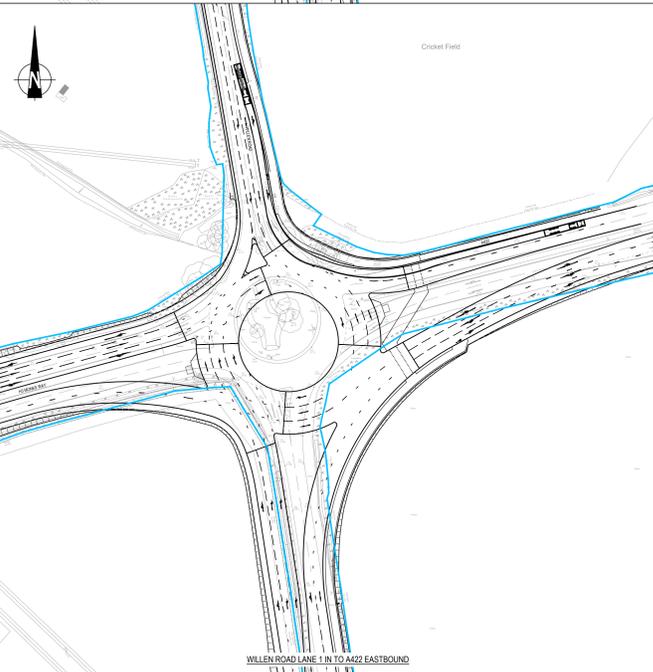
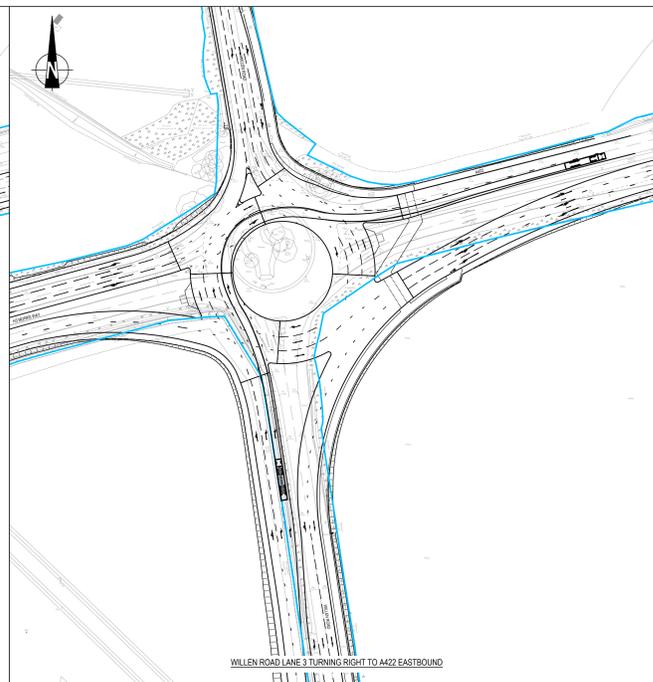
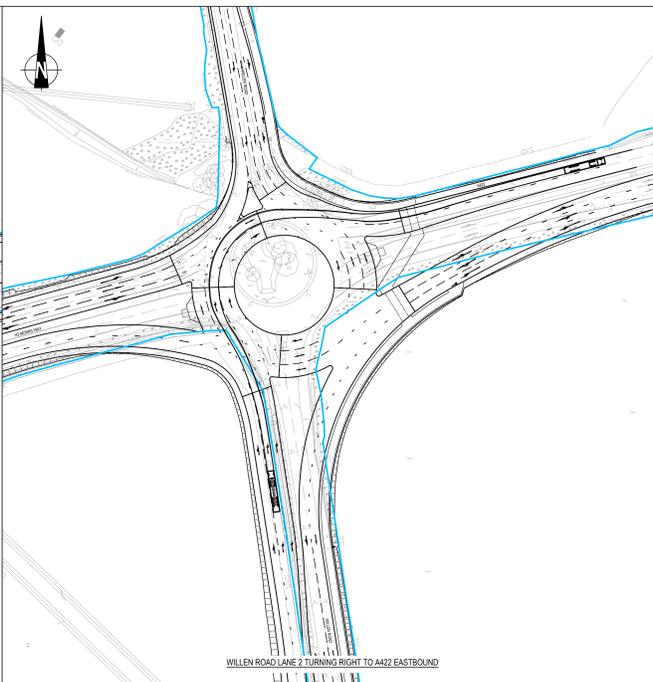
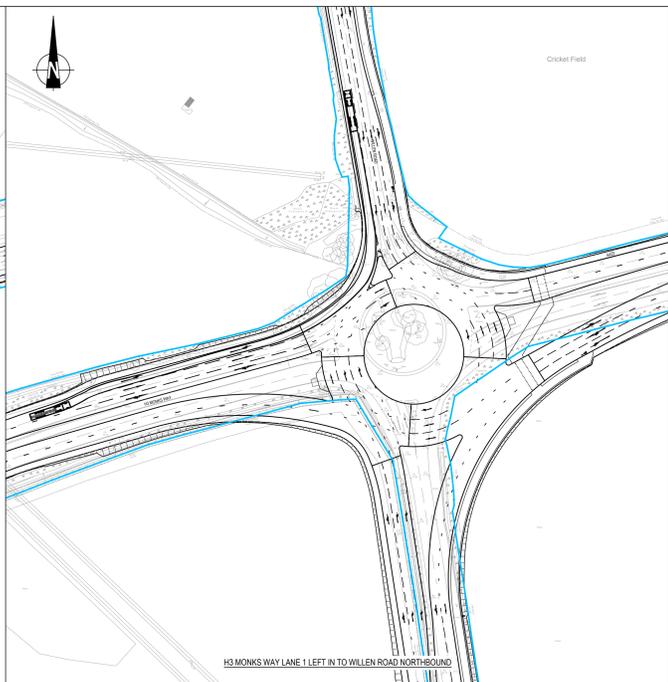
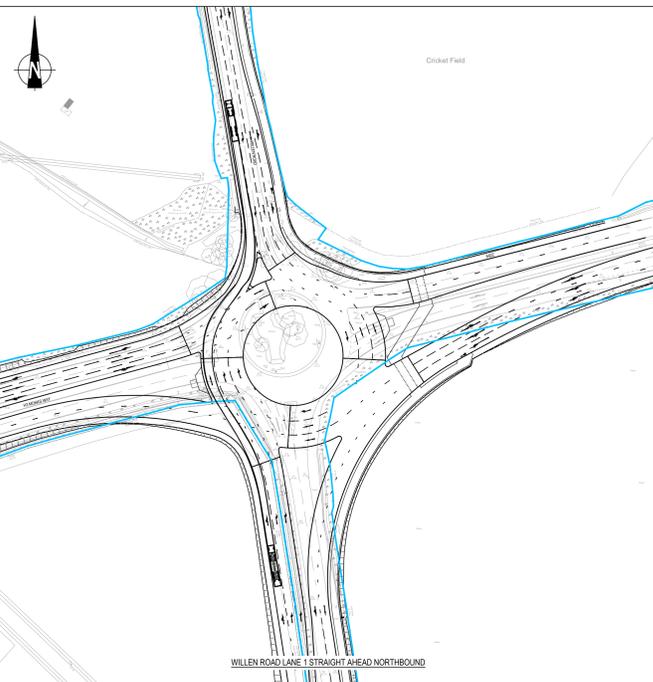
**LAND AT CALDECOTE FARM
NEWPORT PAGNELL**

NEWLANDS DEVELOPMENTS

STANTEC UK LTD
https://www.stantec.com/uk

**PROPOSED HIGHWAY
CROSS SECTIONS**

Drawing Date:	PRELIMINARY
CAD Reference:	38748/100/015
Drawn:	DL
Date:	04.07.18
Scale:	1 @ A0 1:1000 V1:500 & 1:2500
Project No:	38748
Drawing No:	100/015
Rev:	B



KEY:
 EXISTING HIGHWAY BOUNDARY

NOTES:
 1. ALL SWEEP PATH MANOEUVRES UNDERTAKEN MAINTAINING A SPEED OF 15mph.

Rev	Description	Drawn	Date	Check
B	MASTERPLAN UPDATED TO REV FMS	JR	18.07.21	JHM
A	SWEEP PATHS UPDATED	PHJ	21.05.19	JHM

**LAND AT CALDECOTE FARM
NEWPORT PAGNELL**

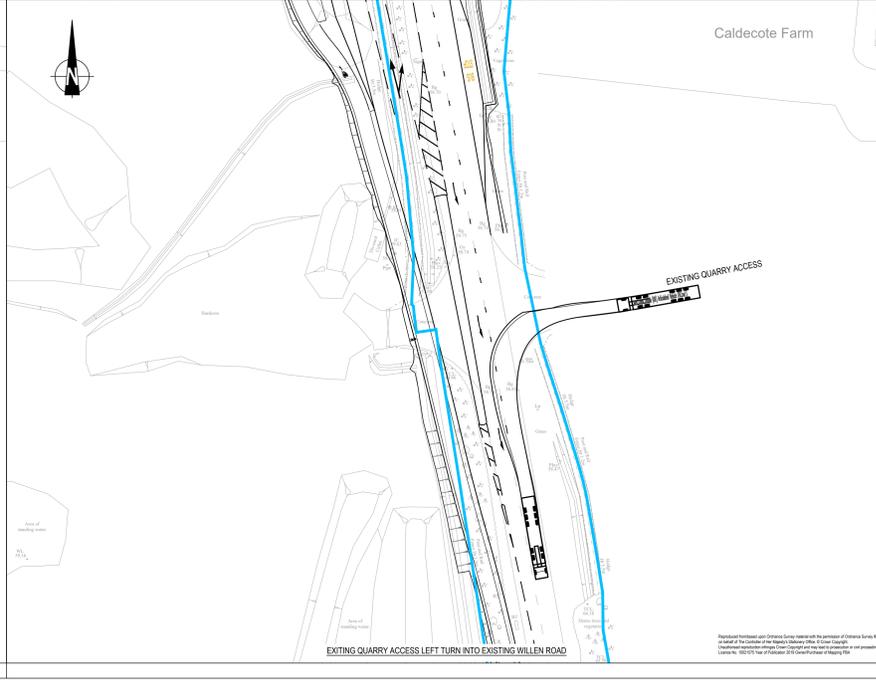
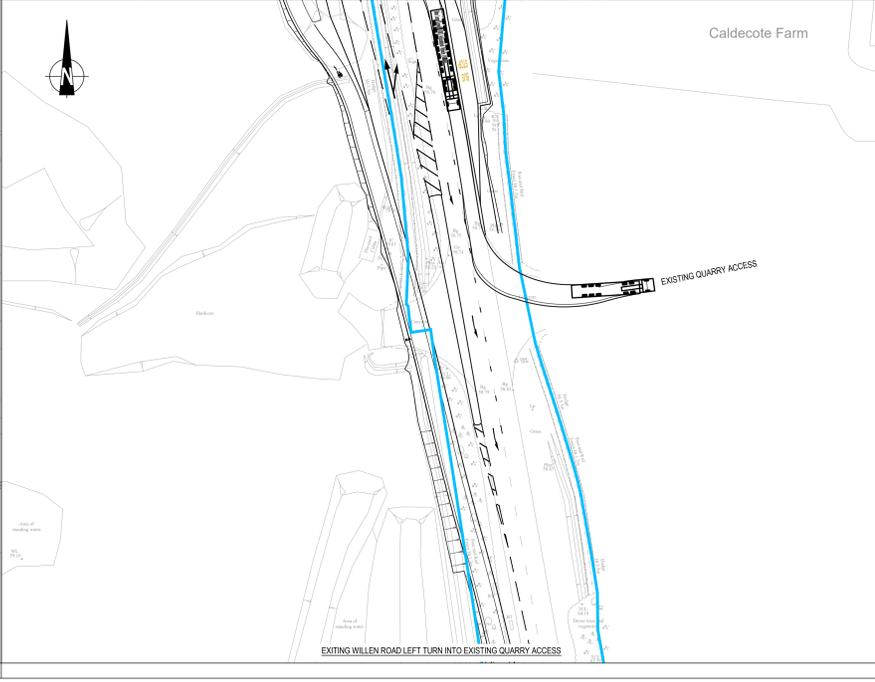
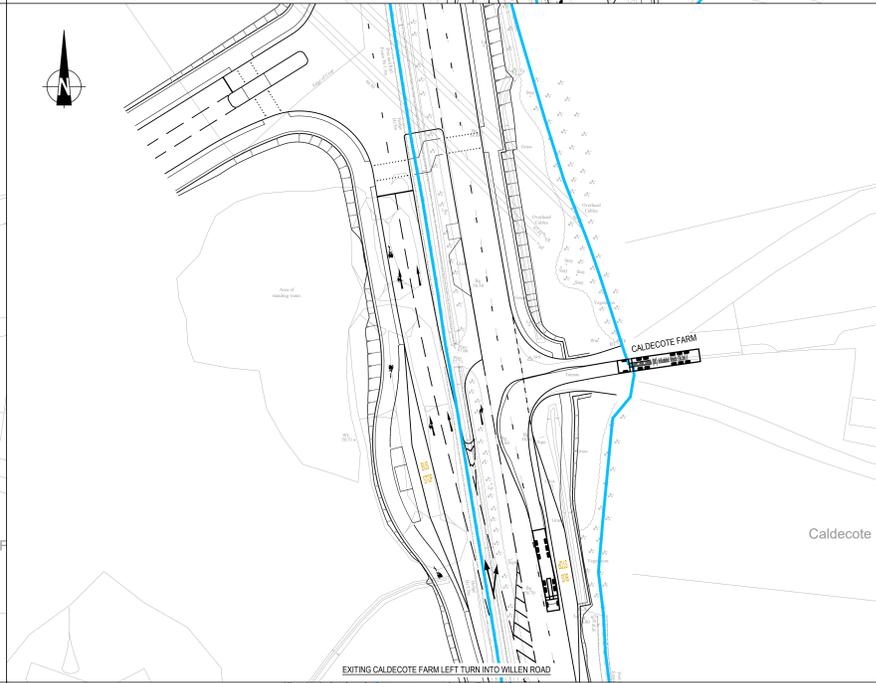
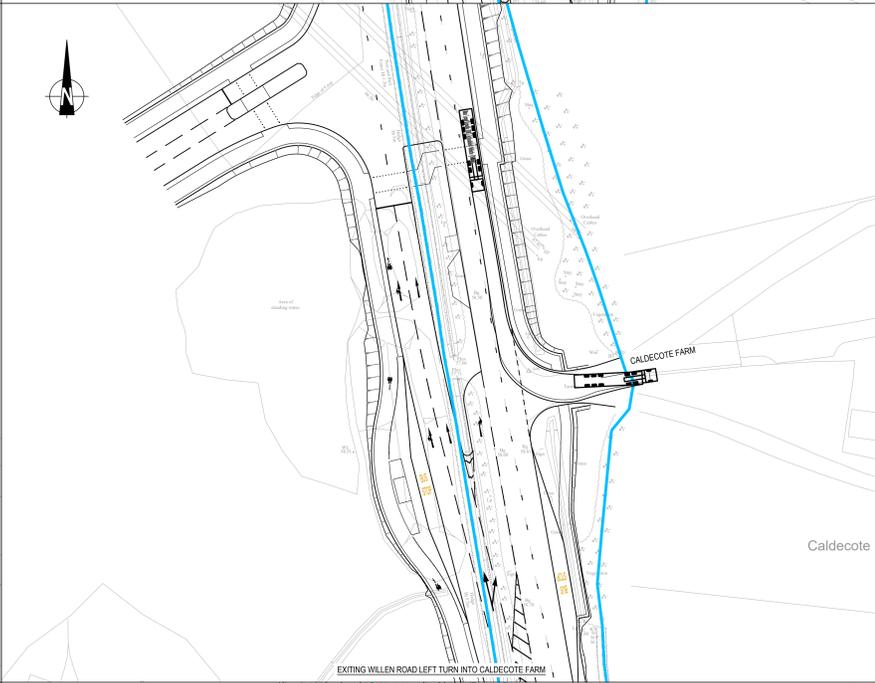
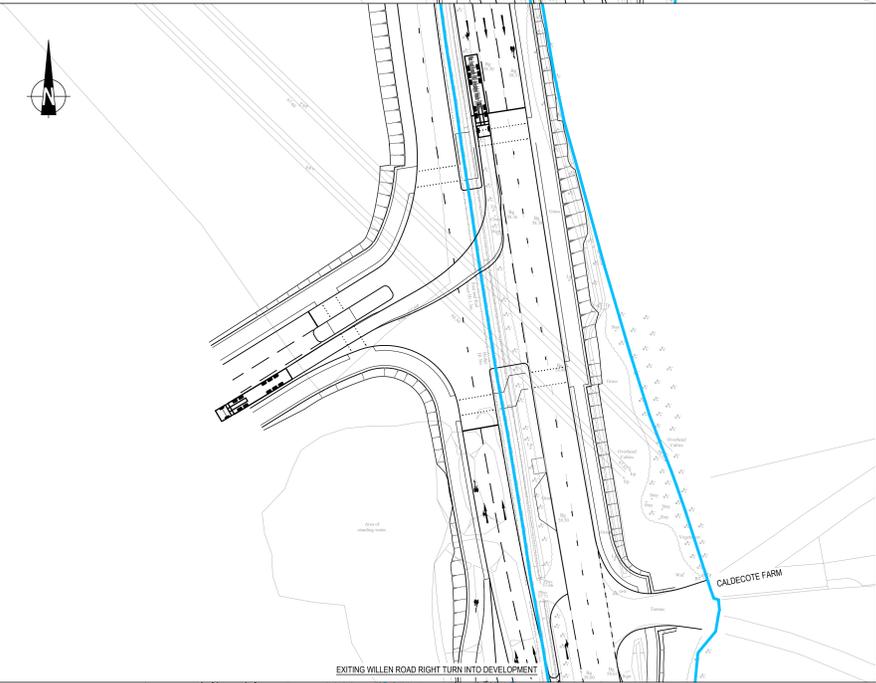
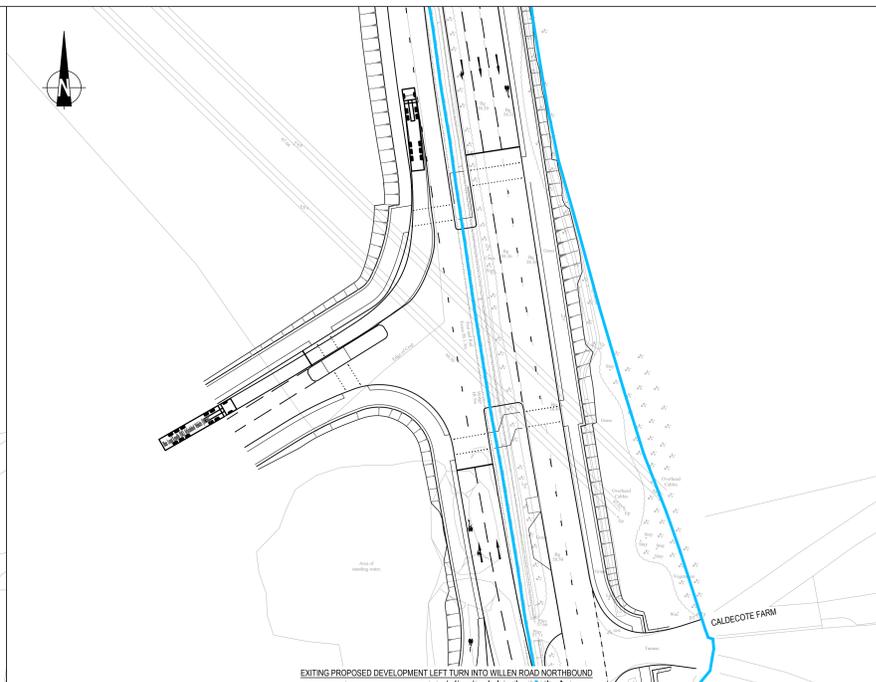
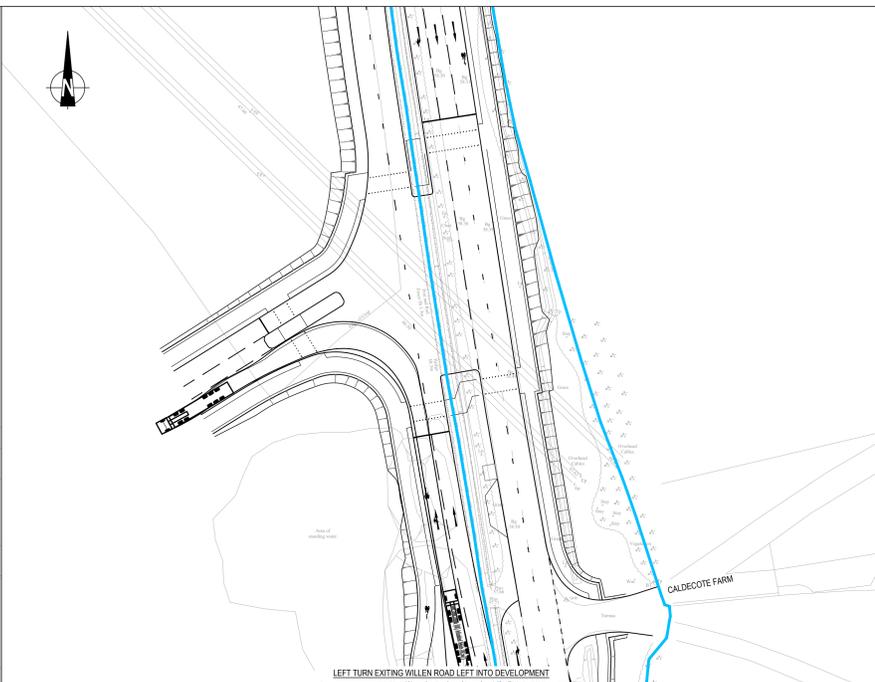
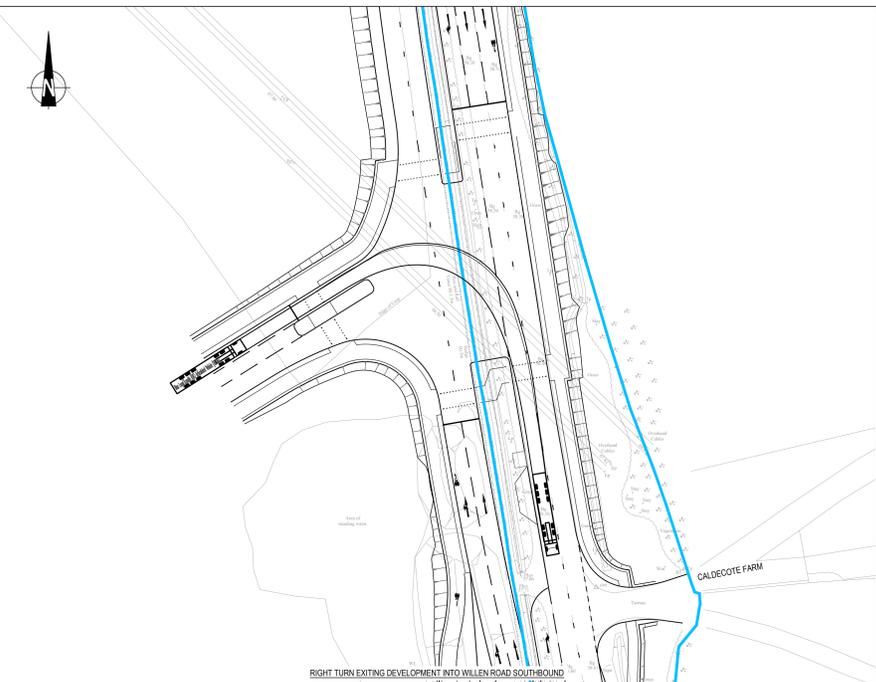
NEWLANDS DEVELOPMENTS

STANTEC UK LTD
<https://www.stantec.com/uk>

**PROPOSED MARSH END SIGNALISED
ROUNDBOUT SWEEP PATH ANALYSIS**

Drawing Status:	PRELIMINARY
CAD Reference:	38748/100/017
Drawn:	SW
Date:	04.07.18
Scale:	1:6.00
Project No:	38748
Drawing No:	100/017
Rev:	B

This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.



MAX LEGAL LENGTH (UK) ARTICULATED VEHICLE (16.5m)	16.500m
OVERALL LENGTH	2.950m
OVERALL WIDTH	3.832m
MIN BODY GROUND CLEARANCE	2.368m
TRACK WIDTH	2.900m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	6.870m

KEY:
 EXISTING HIGHWAY BOUNDARY

NOTES:

- ALL SWEEP PATH MANOEUVRES UNDERTAKEN MAINTAINING A SPEED OF MINIMUM OF 10mph AND MAXIMUM OF 15mph.

Rev	Description	Drawn	Date	Checked
B	MASTERPLAN UPDATED TO REF PMS	JR	18.07.21	JHM
A	REVISED TO REFLECT NEW LAYOUT	PKJ	21.05.19	JHM

**LAND AT CALDECOTE FARM
NEWPORT PAGNELL**

NEWLANDS DEVELOPMENTS

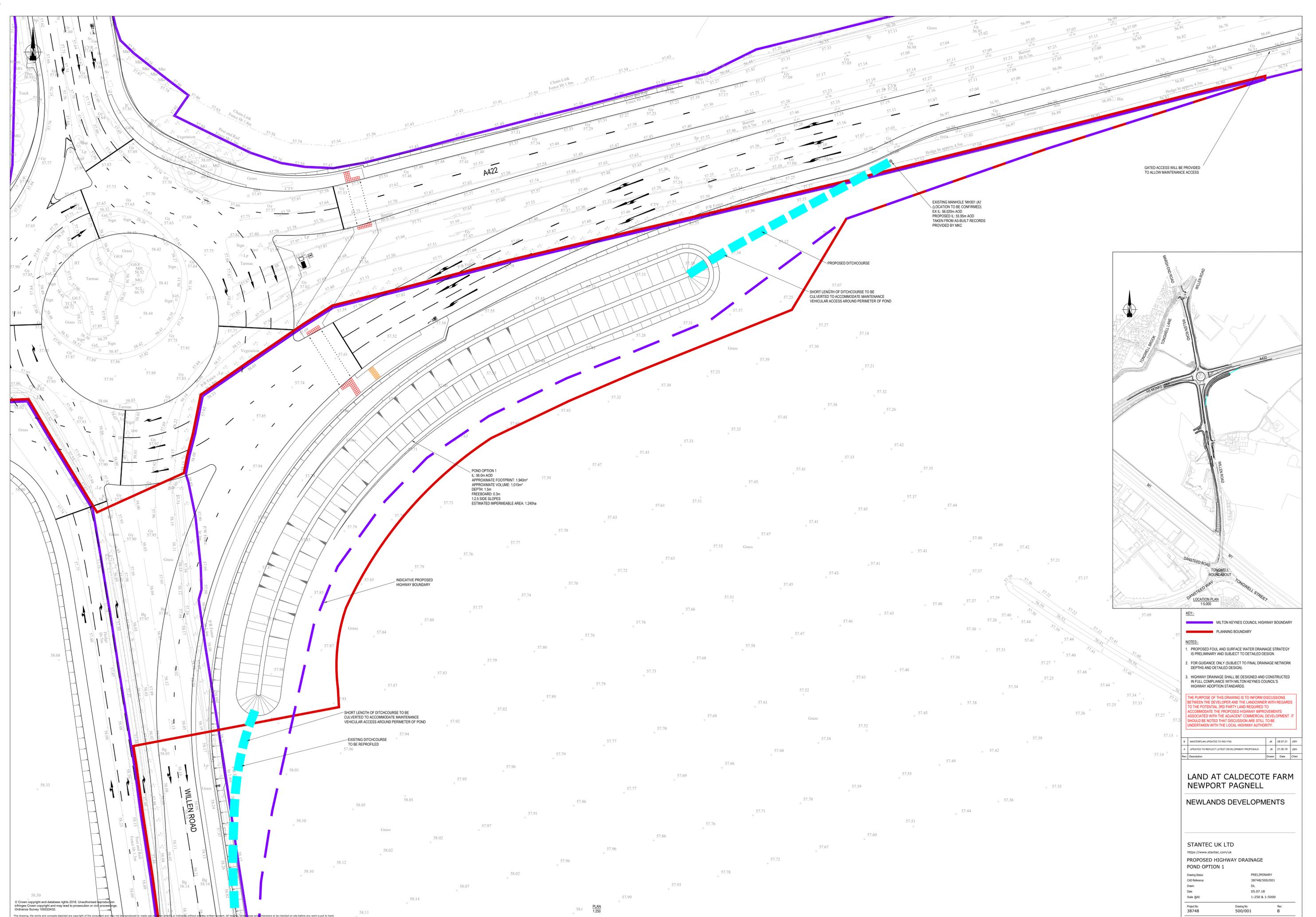
STANTEC UK LTD
<https://www.stantec.com/uk>

**PROPOSED WILLEN ROAD SIGNALISED
JUNCTION SWEEP PATHS ANALYSIS**

Drawing State: PRELIMINARY
 CAD Reference: 38748/100/018
 Drawn: SW
 Date: 04.07.18
 Scale: 1:800

Project No: 38748
 Drawing No: 100/018
 Rev: B

This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.



GATED ACCESS WILL BE PROVIDED TO ALLOW MAINTENANCE ACCESS

EXISTING MANHOLE 'MH301' (A) (LOCATION TO BE CONFIRMED) EX IL 56.02m AOD TAKEN FROM AS-BUILT RECORDS PROVIDED BY MKC

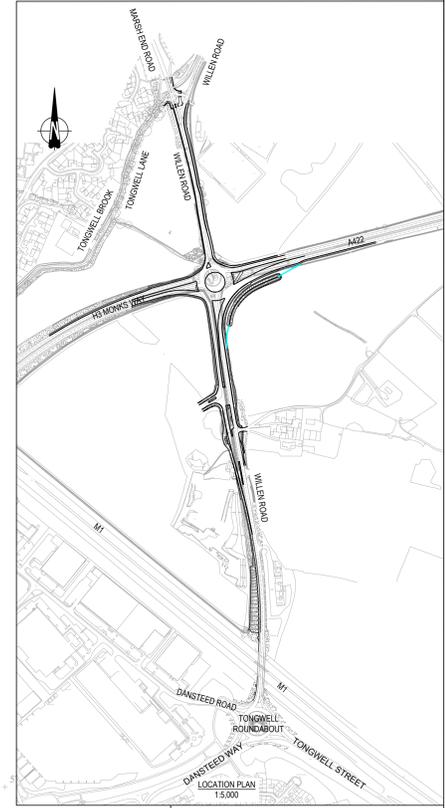
PROPOSED DITCHCOURSE
SHORT LENGTH OF DITCHCOURSE TO BE CULVERTED TO ACCOMMODATE MAINTENANCE VEHICULAR ACCESS AROUND PERIMETER OF POND

POND OPTION 1
IL: 56.0m AOD
APPROXIMATE FOOTPRINT: 1.940m²
APPROXIMATE VOLUME: 1.015m³
DEPTH: 1.5m
FREEBOARD: 0.3m
1:2.5 SIDE SLOPES
ESTIMATED IMPERMEABLE AREA 1.240ha

INDICATIVE PROPOSED HIGHWAY BOUNDARY

SHORT LENGTH OF DITCHCOURSE TO BE CULVERTED TO ACCOMMODATE MAINTENANCE VEHICULAR ACCESS AROUND PERIMETER OF POND

EXISTING DITCHCOURSE TO BE REPROFILED



KEY:
— MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- - - PLANNING BOUNDARY

- NOTES:
1. PROPOSED FOUL AND SURFACE WATER DRAINAGE STRATEGY IS PRELIMINARY AND SUBJECT TO DETAILED DESIGN.
 2. FOR GUIDANCE ONLY (SUBJECT TO FINAL DRAINAGE NETWORK DEPTHS AND DETAILED DESIGN).
 3. HIGHWAY DRAINAGE SHALL BE DESIGNED AND CONSTRUCTED IN FULL COMPLIANCE WITH MILTON KEYNES COUNCIL'S HIGHWAY ADOPTION STANDARDS.

THE PURPOSE OF THIS DRAWING IS TO INFORM DISCUSSIONS BETWEEN THE DEVELOPER AND THE LANDOWNER WITH REGARDS TO THE POTENTIAL 3RD PARTY LAND REQUIRED TO ACCOMMODATE THE PROPOSED HIGHWAY IMPROVEMENTS ASSOCIATED WITH THE ADJACENT COMMERCIAL DEVELOPMENT. IT SHOULD BE NOTED THAT DISCUSSION ARE STILL TO BE UNDERTAKEN WITH THE LOCAL HIGHWAY AUTHORITY.

Rev	Description	Date	Drawn	Check
1	WATERLAW UPDATED TO REV FMS	28.07.21	JSH	
2	UPDATED TO REFLECT LATEST DEVELOPMENT PROPOSALS	21.05.19	JSH	

**LAND AT CALDECOTE FARM
NEWPORT PAGNELL**
NEWLANDS DEVELOPMENTS

STANTEC UK LTD
<https://www.stantec.com/uk>
 PROPOSED HIGHWAY DRAINAGE
 POND OPTION 1

Drawing Status:	PRELIMINARY
CAO Reference:	38748/500/001
Drawn:	DL
Date:	05.07.18
Scale @A0:	1:250 & 1:5000
Project No:	38748
Drawing No:	500/001
Rev:	B

© Crown copyright and database rights 2016. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
 Ordnance Survey 100022432
 This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of in any form or by any means without the written permission. All technical specifications are to be checked on site before any work is put to hand.

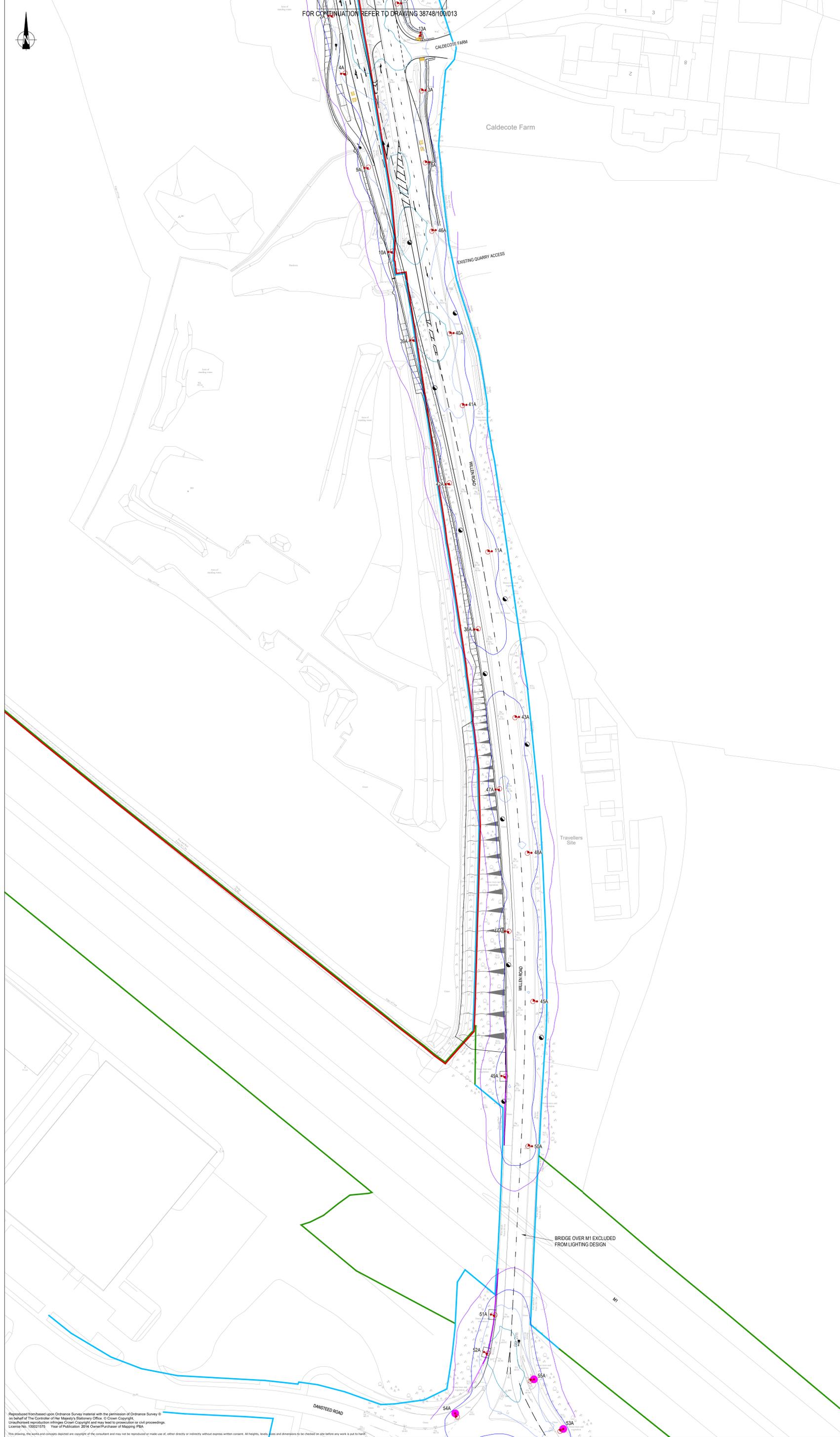


FOR CONTINUATION REFER TO DRAWING 38748/100/013

KEY:	
	PLANNING BOUNDARY
	HIGHWAY BOUNDARY
	LUMINAIRE A (PROPOSED)
	EXISTING COLUMN TO BE RETAINED AND LUMINAIRE TO BE REPLACED
	EXISTING COLUMN TO BE REMOVED
	5 LUX -
	10 LUX -
	15 LUX -
	20 LUX -
	25 LUX -

- INSTALLATION NOTES**
- ALL EQUIPMENT TO COMPLY WITH MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016.
 - ALL ARRANGEMENTS INCLUDING CABLING AND DUCTING DESIGN TO BE UNDERTAKEN BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT CABLING PROPOSALS TO MKC FOR APPROVAL. LANTERNS TO INCLUDE INTEGRAL DALI DRIVER TO PROVIDE CONSTANT LIGHT OUTPUT (CLO) AND LUMINAIRES SHALL BE CONSTRUCTED SO AS TO ACCEPT A PHOTOCELL. THE NEMA SOCKET WILL BE 7 PINS FOR FUTURE CONVERSION TO CMS. PHOTOCELL SPECIFICATION SELC 8481 SERIES 35/18. LED DRIVERS TO BE SUITABLE FOR DIMMING.
 - ALL ELECTRICAL COMPONENTS ARE TO BE DESIGNED AND TESTED IN ACCORDANCE WITH MKC'S SPECIFICATION.
 - ALL PROPOSED COLUMNS WILL BE 10m TO BE OCTAGONAL, GALVANISED STEEL AND PAINTED WITH 1m BRACKET TO MILTON KEYNES COUNCIL'S SPECIFICATION SECTION 4. PAINTED AND PROTECTED IN ACCORDANCE WITH SECTION 8 (COLOUR RAL 7037 - GREY).
 - WHERE EXISTING COLUMN LOCATIONS HAVE BEEN RETAINED THE CONTRACTOR IS TO ENSURE THESE ARE SUITABLE FOR USE WITH THE PROPOSED LUMINAIRES AND BRACKET. WHERE UNSUITABLE THIS COLUMN TO BE REPLACED.
 - LIGHTING COLUMN NUMBERING INDICATED ON THE DRAWINGS RELATES TO THE REALITY LIGHTING DESIGN REPORT. ACTUAL COLUMN NUMBERING TO BE AGREED WITH MKC ON SITE.

- DESIGN RATIONALE - NOTES**
- LIGHTING DESIGNED IN ACCORDANCE WITH BS5489-1:2013, BS EN13201-2:2015 AND MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016. DESIGN SUBJECT TO APPROVAL BY MILTON KEYNES COUNCIL AS WE WERE UNABLE TO OBTAIN A DESIGN BRIEF.
 - LIGHTING CLASS'S SELECTED FOR WILLEN ROAD, H3 MONKS WAY AND A422 - M3 (EAV = 15.55, EMANEAV = 16.40).
 - LIGHTING CLASS'S SELECTED FOR PROPOSED SIGNAL CONTROLLED JUNCTIONS (CONFLICT ZONES) - C2 (EAV = 20.00, EMANEAV = 16.40).
 - CALCULATION GRID SPACINGS 1.5m x 1.5m.
 - HOLOPHANE V-MAX LUMINAIRES USED FOR SCHEME IN ACCORDANCE WITH MKC'S SPECIFICATION.
 - PROPOSED LUMINAIRES TO BE MOUNTED TO THE COLUMN WITH 1m BRACKET.
 - COLUMN HEIGHTS AND POSITIONS WERE OPTIMISED SO THE MINIMUM AMOUNT WERE NEEDED AND EXISTING COLUMN LOCATIONS RETAINED WHERE POSSIBLE.
 - STREET LIGHTING RECORDS FOR EXISTING LIGHTING ARE UNAVAILABLE THEREFORE A DESIGN HAS BEEN MADE USING HOLOPHANE V-MAX LUMINAIRES.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OUTDOOR LIGHTING REPORT. REALITY OUTDOOR REPORT - LAND AT CALDECOTE FARM, NEWPORT PAGNELL 190308.



BRIDGE OVER M1 EXCLUDED FROM LIGHTING DESIGN

Rev	Description	Drawn	Date	Check
B	MASTERPLAN UPDATED TO REV P45		08/07/21	JSH
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RFA	JSH	21/05/19	JSH

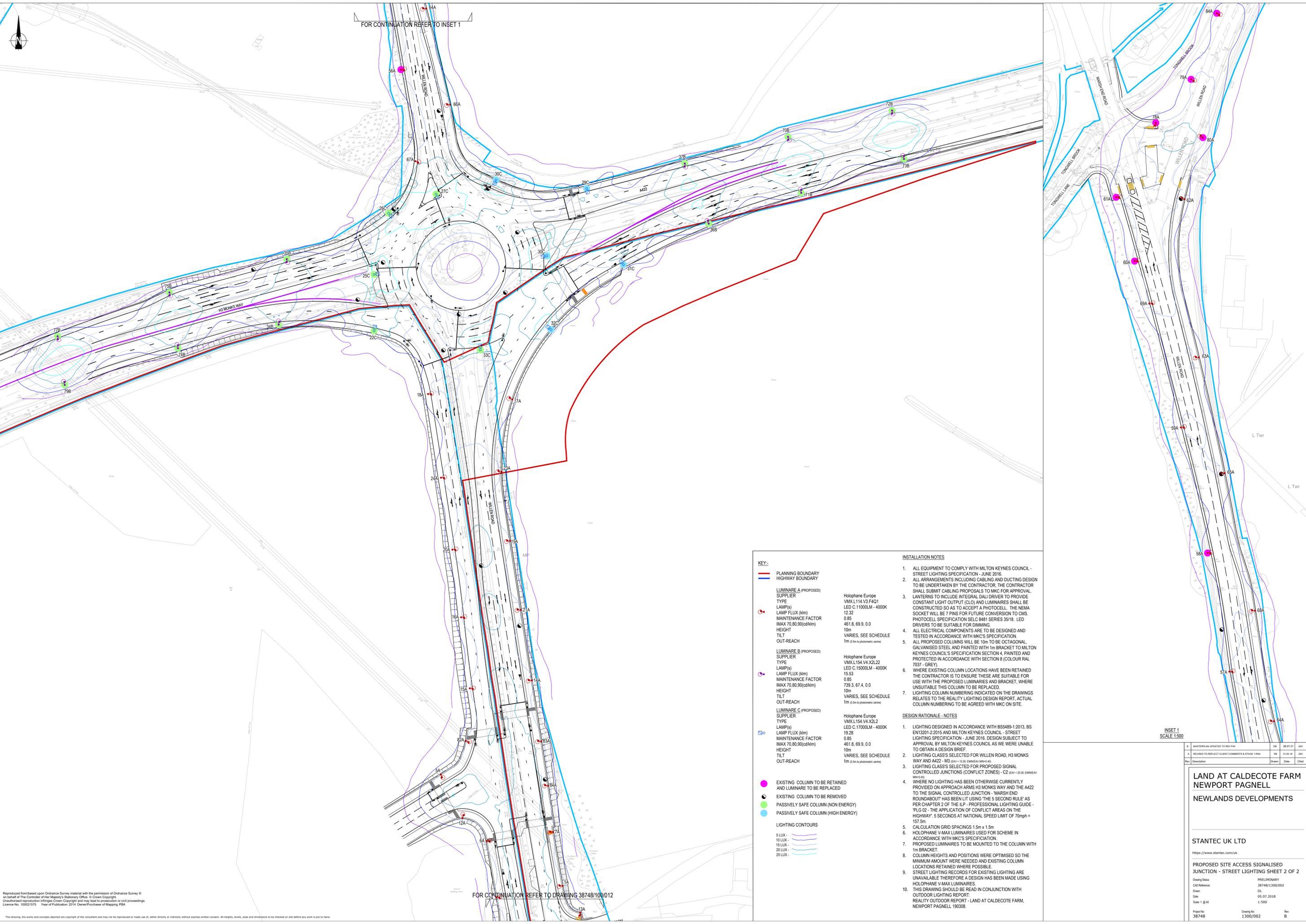
**LAND AT CALDECOTE FARM
NEWPORT PAGNELL
NEWLANDS DEVELOPMENTS**

STANTEC UK LTD
<https://www.stantec.com/uk>

**PROPOSED SITE ACCESS SIGNALISED
JUNCTION - STREET LIGHTING SHEET 1 OF 2**

Drawing Status:	PRELIMINARY
CAD Reference:	38748/1300/001
Drawn:	DL
Date:	05.07.2018
Scale 1 @ A0:	1:500
Project No:	38748
Drawing No:	1300/001
Rev:	B

Reproduced from based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence No. 100021075. Year of Publication 2014. Crown/Purchaser of Mapping RFA. This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.



FOR CONTINUATION REFER TO INSET 1

FOR CONTINUATION REFER TO DRAWING 38748/100/012

KEY:

- PLANNING BOUNDARY
- HIGHWAY BOUNDARY

LUMINAIRE A (PROPOSED)	Holophane Europe
SUPPLIER	VMXL114 V3 F4Q1
TYPE	LED C: 11000LM - 4000K
LAMP FLUX (lm)	12,32
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/km)	461.8, 69.9, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

LUMINAIRE B (PROPOSED)	Holophane Europe
SUPPLIER	VMXL154 V4 X2L22
TYPE	LED C: 15000LM - 4000K
LAMP FLUX (lm)	15,53
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/km)	739.3, 67.4, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

LUMINAIRE C (PROPOSED)	Holophane Europe
SUPPLIER	VMXL154 V4 X2L2
TYPE	LED C: 17000LM - 4000K
LAMP FLUX (lm)	19,28
MAINTENANCE FACTOR	0.85
IMAX 70,80,90(cd/km)	461.8, 69.9, 0.0
HEIGHT	10m
TILT	VARIES, SEE SCHEDULE
OUT-REACH	1m (0.5m to photometric centre)

- EXISTING COLUMN TO BE RETAINED AND LUMINAIRE TO BE REPLACED
- EXISTING COLUMN TO BE REMOVED
- PASSIVELY SAFE COLUMN (NON ENERGY)
- PASSIVELY SAFE COLUMN (HIGH ENERGY)

LIGHTING CONTOURS

- 5 LUX - —
- 10 LUX - —
- 15 LUX - —
- 20 LUX - —
- 25 LUX - —

INSTALLATION NOTES

- ALL EQUIPMENT TO COMPLY WITH MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016.
- ALL ARRANGEMENTS INCLUDING CABLING AND DUCTING DESIGN TO BE UNDERTAKEN BY THE CONTRACTOR. THE CONTRACTOR SHALL SUBMIT CABLING PROPOSALS TO MKC FOR APPROVAL. LANTERNS TO INCLUDE INTEGRAL DALI DRIVER TO PROVIDE CONSTANT LIGHT OUTPUT (CLO) AND LUMINAIRES SHALL BE CONSTRUCTED SO AS TO ACCEPT A PHOTOCELL. THE NEMA SOCKET WILL BE 7 PINS FOR FUTURE CONVERSION TO CMS. PHOTOCELL SPECIFICATION SELC 8481 SERIES 3518. LED DRIVERS TO BE SUITABLE FOR DIMMING.
- ALL ELECTRICAL COMPONENTS ARE TO BE DESIGNED AND TESTED IN ACCORDANCE WITH MKC'S SPECIFICATION.
- ALL PROPOSED COLUMNS WILL BE 10m TO BE OCTAGONAL GALVANISED STEEL AND PAINTED WITH 1m BRACKET TO MILTON KEYNES COUNCIL'S SPECIFICATION SECTION 4 (COLOUR RAL 7037 - GREY).
- WHERE EXISTING COLUMN LOCATIONS HAVE BEEN RETAINED THE CONTRACTOR IS TO ENSURE THESE ARE SUITABLE FOR USE WITH THE PROPOSED LUMINAIRES AND BRACKET, WHERE UNSUITABLE THIS COLUMN TO BE REPLACED.
- LIGHTING COLUMN NUMBERING INDICATED ON THE DRAWINGS RELATES TO THE REALITY LIGHTING DESIGN REPORT, ACTUAL COLUMN NUMBERING TO BE AGREED WITH MKC ON SITE.

DESIGN RATIONALE - NOTES

- LIGHTING DESIGNED IN ACCORDANCE WITH BS5489-1:2013, BS EN13201-2:2015 AND MILTON KEYNES COUNCIL - STREET LIGHTING SPECIFICATION - JUNE 2016. DESIGN SUBJECT TO APPROVAL BY MILTON KEYNES COUNCIL AS WE WERE UNABLE TO OBTAIN A DESIGN BRIEF.
- LIGHTING CLASS'S SELECTED FOR WILLEN ROAD, H3 MONKS WAY AND A422 - M3 (A16+15.0). (MILTON KEYNES COUNCIL - PLG 02 - THE APPLICATION OF CONFLICT AREAS ON THE HIGHWAY); 5 SECONDS AT NATIONAL SPEED LIMIT OF 70mph = 157.5m.
- CALCULATION GRID SPACINGS 1.5m x 1.5m.
- HOLOPHANE V-MAX LUMINAIRES USED FOR SCHEME IN ACCORDANCE WITH MKC'S SPECIFICATION.
- PROPOSED LUMINAIRES TO BE MOUNTED TO THE COLUMN WITH 1m BRACKET.
- COLUMN HEIGHTS AND POSITIONS WERE OPTIMISED SO THE MINIMUM AMOUNT WERE NEEDED AND EXISTING COLUMN LOCATIONS RETAINED WHERE POSSIBLE.
- STREET LIGHTING RECORDS FOR EXISTING LIGHTING ARE UNAVAILABLE THEREFORE A DESIGN HAS BEEN MADE USING HOLOPHANE V-MAX LUMINAIRES.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OUTDOOR LIGHTING REPORT: REALITY OUTDOOR REPORT - LAND AT CALDECOTE FARM, NEWPORT PAGNELL 190308.

INSET 1
SCALE 1:500

Revised	Description	Drawn	Date	Checked
A	REVISION TO REFLECT CLIENT COMMENTS & STAGE 1/2/3	SB	21.05.18	JRH
B				

**LAND AT CALDECOTE FARM
NEWPORT PAGNELL
NEWLANDS DEVELOPMENTS**

STANTEC UK LTD
<https://www.stantec.com/uk>

**PROPOSED SITE ACCESS SIGNALISED
JUNCTION - STREET LIGHTING SHEET 2 OF 2**

Drawing Status:	PRELIMINARY
CAD Reference:	38748/1300/002
Drawn:	DL
Date:	05.07.2018
Scale:	1 @ A0 1:500
Project No:	38748
Drawing No:	1300/002
Rev:	B

Reproduced from based upon Ordnance Survey material with the permission of Ordnance Survey @ on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence No. 100021515. Year of Publication: 2014. Owner/Purchaser of Mapping: PBA.

This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.

TECHNICAL NOTE

Job Name: Land at Caldecote Farm, Newport Pagnell
Job No: 38748
Note No: TN2003/001 Rev B
Date: 3rd July 2018 – Updated 28th July 2021
Prepared By: Douglas Pielage
Subject: **Design Statement – Willen Road / Development Access Signalised Junction**

Item	Subject
1,	<p>Introduction</p> <p>This note has been prepared by Stantec UK Ltd to detail the design parameters, constraints and assumptions used to prepare the planning design of a signalised junction that will provide access into the proposed commercial development at Newport Pagnell being promoted by Newlands Developments.</p> <p>This 3-arm signalised junction is to be provided on Willen Road, and includes provisions for pedestrians and cyclists to access the development via off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes. The new 'Redway' facility is also to be provided north and south along the length of Willen Road. The junction will incorporate 2No. new Bus Stops required to serve the development.</p> <p>Willen Road is a rural, single carriageway, bound on both sides by grassed verges. It is subject to the national speed limit and illuminated by a system of street lighting. There are 2No. existing on-carriageway bus stops along Willen Road, located to the south of the proposed junction that are unaffected by this scheme.</p> <p>The Local Highway Authority is Milton Keynes Council (MKC), who have stipulated that a 40mph speed limit is put in place for Willen Road to support the development access.</p> <p>This note should be reviewed in conjunction with Drawing 38748/100/007 Rev B – 'Proposed Site Access Signalised Junction – General Arrangement'.</p>
2,	<p>Design Standards</p> <p>MKC does not currently have its own published highway design guide / standards. However, the Client's Design Team have provided Stantec with a Draft copy of MKC's 'A Highway Guide for Milton Keynes – September 2018'. Fig 1 and Table 3.12 within this document, have classified this road as a 'District Distributor', and the appropriate Design Standards as the Design Manual for Roads and Bridges.</p> <p>The design parameters of the proposed junction have been determined following a review of the following documents:-</p> <ul style="list-style-type: none"> • Design Manual for Roads and Bridges (DMRB):- <ul style="list-style-type: none"> ○ CD 109 Rev 1 – 'Highway link design'; ○ CD 116 Rev 2 – 'Geometric design of roundabouts'; ○ CD 123 Rev 2 – 'Geometric design of at-grade priority and signal-controlled junctions'; ○ CD 127 Rev 1 – 'Cross-sections and headrooms'; ○ CD 143 Rev 2.0.1 – 'Designing for walking, cycling and horse-riding'; ○ CD 195 Rev 1.0.1 – 'Designing for cycle traffic';

TECHNICAL NOTE

Item	Subject													
	<ul style="list-style-type: none"> ○ CD 377 Rev 4 – ‘Requirement for road restraint systems’; ● Local Transport Note 1/20 – ‘Cycle Infrastructure Design’; ● Traffic Signs Regulations and General Directions 2016 and associated Traffic Signs Manuals; ● DfT’s Guidance on the Use of Tactile Paving Surfaces; ● A Highway Guide for Milton Keynes – September 2018 DRAFT; 													
3,	<p>Speed Survey</p> <p>A vehicular traffic speed has been commissioned by ADC Infrastructure Limited. Vehicle speeds have been determined using Automatic Traffic Counts (ATC). We have confirmed with MKC, that ATCs are an acceptable survey method to determine the Design Speed for our scheme.</p> <p>The speed survey was undertaken from 30th October 2017 to 8th November 2017 on Willen Road at the approximate location of the proposed signalised junction, in both the southbound and northbound directions.</p> <p>The weather on these days is unknown. A summary of the results is provided below in Table 1.</p> <table border="1"> <thead> <tr> <th colspan="2">Site</th> <th>Mean Average Speed</th> <th>85th Percentile Speeds</th> <th>Speed Limit</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Willen Road</td> <td>Northbound</td> <td>40</td> <td>49</td> <td rowspan="2">National Speed Limit (60mph)</td> </tr> <tr> <td>Southbound</td> <td>41</td> <td>49.5</td> </tr> </tbody> </table> <p style="text-align: center;"><u>Table 1 – Speed Survey Results Willen Road</u></p> <p>The results indicate that the average speeds, and 85th percentile speeds are below the current national speed limit (60mph). This suggests that there is not a significant speeding issue along Willen Road.</p>	Site		Mean Average Speed	85 th Percentile Speeds	Speed Limit	Willen Road	Northbound	40	49	National Speed Limit (60mph)	Southbound	41	49.5
Site		Mean Average Speed	85 th Percentile Speeds	Speed Limit										
Willen Road	Northbound	40	49	National Speed Limit (60mph)										
	Southbound	41	49.5											

TECHNICAL NOTE

Item	Subject
4,	<p>2D Design Elements</p> <ul style="list-style-type: none"> • Northern and Southern Arms (Major) = Willen Road; • Western Arm (Minor) = Development Access Road; • Posted speed limit of Willen Road = National Speed Limit (60mph). Traffic Regulation Order (TRO) to be put in place to reduce the speed limit to 40mph – Design Risk if TRO is not granted; • Design Speed for the Major Road = 70kph (CD 109, Table 2.5); • Design Speed for the Minor Road (Western Arm) = 40kph (A Highway Guide for Milton Keynes – September 2018 DRAFT, Table 3.12 – Road Type 4 (Industrial Access)); • Desirable Minimum Stopping Sight Distance Major Roads = 120m (CD 109, Table 2.10, para 2.13. CD 123, para 7.2); • Desirable Minimum Stopping Site Distance Minor Road (Western Arm = 45m (A Highway Guide for Milton Keynes – September 2018 DRAFT, Table 3.12 – Road Type 4 (Industrial Access)); • Intervisibility Zone as per CD 123, para 7.3, TSM Chapter 6 Fig 2-2; • Design Vehicle = 16.5m long articulated vehicle (CD 123). Swept path analysis to be undertaken at speeds no greater than 15mph (CD 116, para 3.6.10 NOTE 2); • Existing longitudinal gradient of Willen Road:- <ul style="list-style-type: none"> ○ Slopes from the Tongwell Roundabout (at the southern end of Willen Road) downhill to the existing access at Caldecote Farm, ranging in gradient from 1 in 30 to 1 in 330; ○ Willen Road continues to slope downhill to the A422 Roundabout at the northern end, ranging in gradient from 1 in 336 to 1 in 393; ○ Gradient taken from topographical survey; <p><u>Corner Radii and Taper</u></p> <p><u>Western Arm Development Access Road</u></p> <p>Major to Minor R = 15m, 1 in 10 Taper, A = 25m (CD 123, Para 5.62 (2), Fig 5.6) and informed by Fig 7.11.2N1;</p> <p>Minor to Major R = 10m, 1 in 5 Taper, B = 30m (CD 123, Para 5.62 (1), Fig 5.6) and informed by Fig 7.11.2N1;</p> <hr/> <p><u>Carriageway Width (Entry Width)</u></p> <p><u>Northern and Southern Arms</u> 3.65m (CD 123, para 7.6 to 7.6.4);</p> <p><u>Western Arm Development Arm</u> 3.65m (CD 123, para 7.6 to 7.6.4);</p> <p><u>Approach Layout</u></p> <p><u>Northern and Southern Arms</u> Storage Length determined by ADC Transport Assessment. 1 in 5 Taper (maximum), Minimum length 15m (CD 123, Fig 7.8);</p> <p><u>Western Arm</u> Storage Length determined by ADC Transport Assessment;</p>

TECHNICAL NOTE

Item	Subject
	<p><u>Lane Reduction</u> <u>Southern Arm</u> 100m Minimum (CD 123, para 7.10.1 and Fig 7.10.1) NB starting from when 2 lanes start to reduce;</p>
	<p><u>Horizontal Clearance of Signals</u> 0.45m Minimum (CD 123, para 7.14);</p>
	<p><u>Distance between Stop Line and Primary Signal</u> 2.5m (TSM Chapter 6, para 4.2.2);</p>
	<p><u>Secondary Signal</u> Within 50m of stop line (CD 123, para 7.2.8), located within 30° (CD 123, para 7.2.7, Fig 7.2.7);</p>
	<p><u>Maintenance</u> Traffic signals maintenance access bay to be provided (TSM Chapter 6, Section 27.8);</p>
	<p><u>Controlled Crossings (Toucan Style)</u> <u>Crossing Width</u> Northern, Southern and Western Arms = 3.2m minimum (TSM Chapter 6, Section 20);</p> <p><u>Stagger (when provided)</u> Left / Right stagger, stagger distance = 3m when refuge island is less than 5m;</p> <p><u>Refuge Island Width</u> Minimum 3m wide as per CD 195, E/4.6 and Fig E/4.6;</p> <p><u>Distance between Primary Signal and 1st set of Crossing Studs</u> 0.5m (TSM Chapter 6, para 11.2.6);</p>
	<p><u>Carriageway Cross Section</u> Figure 2.1.1N1g: Dimensions of cross-section components for urban all-purpose roads mainline (CD 127);</p>
5,	<p>3D Design Elements</p> <p>The vertical alignment of Willen Road South has been designed to comply with CD 109, particularly Table 2.10:-</p> <ul style="list-style-type: none"> • Design Speed = 70kph; • Desirable Minimum Crest K Value = 30; • Absolute Minimum Sag K Value = 20; • Gradient Max = 1 in 28.5 (Existing); • Gradients Min = 1 in 150; • Crossfall = 1 in 40;
6,	<p><u>Collision Data</u></p> <p>Recorded Injury Collision (RIC) data has been obtained from the CrashMap for years 5½ years (2015 to 2020 up to June). During this time, 2No. RICs (both slight) have occurred along the affected length of Willen Road:-</p> <ul style="list-style-type: none"> • Both collisions involved HGVs at the existing access associated with the Sand and Gravel extraction site (refer to Section 8);

TECHNICAL NOTE

Item	Subject
	<ul style="list-style-type: none"> • 1No. shunt type collision when the carriageway was wet; • 1No. occurred when the HGV was turning right during the hours of darkness; <p>It is considered that 2No. RICs in 5½ years does not constitute a significant collision problem at this location with the current national speed limit in place. It is noted that the proposed LILO junction at the Quarry should help reduce collisions at this location.</p>
7,	<p><u>Proposed Non-Motorised User facilities</u></p> <p>Shared use footway / cycle track = 3m wide (CD 143, para E/3.5);</p> <p>Footway Only = 2m wide (CD 143, para E/1.2, Table E/1.2);</p> <p>Buffer Zone = 1m wide – (CD 143, para E/3.5.1(2) states 0.5m on roads with a speed limit of 40mph or less.</p> <p>There should be no street furniture or vegetation (except grass) within the separation distance.</p>
8,	<p><u>Relation to Existing Access Points</u></p> <p>The proposed development access has been located on the western side of Willen Road, 70m (approx.) to the north of the existing access serving the Caldecote Farm development (eastern side of Willen Road) and an existing gated access to the plot.</p> <p>There is a number of existing gated access points into the plot, however, they do not appear to be in use.</p> <p>The Caldecote Farm access is approximately at the midpoint of Willen Road along the eastern side. On the eastern side of Willen Road, 90m (approx.) south of Caldecote Farm access is an access for a Sand and Gravel extraction site. 240m (approx.) south of the Caldecote Farm access is an access to a permanent Traveller Site.</p> <p>As part of these scheme proposals, the existing Caldecote Farm development, and the Sand and Gravel Quarry, are to be served by Left In / Left Out (LILO) style junctions.</p>
9,	<p><u>Traffic Signs</u></p> <p>Advance Direction Signs (ADS) as well as Flag type directional signs shall be provided on the Willen Road approaches to the junction in accordance with Traffic Signs Regulations and General Directions 2016 (TRSGD) and associated Traffic Signs Manuals. These signs will incorporate existing destinations as well as signing the development. Care has been taken with the positioning, as well as the size of these signs so that they do not interfere with driver's visibility requirements.</p> <p>A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (CD 116, para 3.36 NOTE 2).</p> <p>The 'x'-heights for these directional signs will be informed by the proposed 40mph speed limit being imposed by MKC, as well as any further comments received from MKC.</p> <p><u>Road Markings</u></p> <p>The existing road markings have been provided in response to the current national speed limit (60mph). The proposed reduction in speed limit (40mph) will require all affected road</p>

TECHNICAL NOTE

Item	Subject
	<p>markings to be amended to reflect this lower limit. All required road marking amendments have been informed by Traffic Signs Manual Chapter 5 and 6.</p>
10,	<p><u>Road Restraint Systems (RRS)</u></p> <p>The existing length of Willen Road is subject to the national speed limit (60mph). The following road side hazards are present and adjacent to the carriageway:-</p> <ul style="list-style-type: none"> • Ditchcourses, including headwalls; • Vegetation, including large mature trees; • Sign posts, street lighting, telegraph poles and feeder pillars; • Embankments; • Bridge structure over the M1; <p>Currently, RRS have only been provided along a small length of Willen Road, on the approaches to the bridge over the M1 at the southern end of Willen Road.</p> <p>The scheme proposals will reduce the speed limit along Willen Road to 40mph. Heading northbound, after exiting the Tongwell Roundabout, motorists will be informed of the change to the road layout by the provision of:-</p> <ul style="list-style-type: none"> • 2No. x 40mph speed terminal signs (sized in accordance with Traffic Signs Manual Chapter 3) at the southern end of Willen Road; • 40mph speed repeater signs along the length of Willen Road; • Advanced Directional Map Type Signs (ADS) which indicates the new road layout and provides warning of the proposed junction ahead; • Full and unrestricted visibility to primary traffic signals and associated stop line; • Full and unrestricted visibility on the immediate approach to the junction; • Street lighting to the appropriate illumination class along the length of Willen Road; • New surface course with increased Polished Stone Value (PSV) on the approach to the junction and within the extent of the junction itself; • Road markings appropriate to the new reduced speed limit; <p>It is considered by the Design Team that the above measures are sufficient to mitigate against casual and inappropriate speeding.</p> <p>Taking the above into account, and in accordance CD 377, para 2.2, RRS is not required along Willen Road (bar the M1 overbridge).</p> <p><u>Passively Safe Systems</u></p> <p>As the speed limit for Willen Road will be reduced to 40mph, Passively Safe Systems are not considered to be required along this section of the scheme.</p>
11,	<p><u>Highway Boundary</u></p> <p>The location of the existing highway boundary has been determined using plans provided by Milton Keynes Council (MKC) which has then been transferred onto topographical survey data.</p> <p>The design of this signalised junction requires additional carriageway width and adjacent NMU facilities. The widening will primarily be undertaken on the western side of Willen Road so that no works encroach onto 3rd party land that is not within the control of the Developer or Highway Authority.</p>

TECHNICAL NOTE

Item	Subject
12,	<p><u>Surface Water Drainage</u></p> <p>Refer to Technical Note TN2015/001 Rev B – ‘Preliminary Surface Water Drainage Strategy’.</p>
13,	<p><u>Utilities</u></p> <p>The affect this proposed junction may have on the existing utilities within the highway is currently being determined as part of the design of the junction. Utility records indicate that the following services are laid within Willen Road and adjacent grassed verges:-</p> <ul style="list-style-type: none"> • Anglian Water – Potable Water Main; • BT – Fibre Infrastructure; • 2 No. HV Overhead Cables; • 1 No. HV Underground Cable; <p>Any new supplies or diversions / protection of existing utilities is to be undertaken by the Client’s Utility Consultant.</p>
14,	<p><u>Street Lighting</u></p> <p>A Street Lighting design has been undertaken for Willen Road South in accordance with Milton Keynes Council’s Street Lighting Specification March 2016. The Street Lighting layout has been designed to Class C2 for Conflict Zones and M3 outside of conflict zones on Willen Road. Please refer to Street Lighting Design Drawing 38748/1300/001 Rev B for details, to be read in conjunction with Roadway Lighting Reports and Outdoor Reality Report.</p>
15,	<p><u>Bus Stops</u></p> <p>The Bus Stops to be located north and south of the signalised junction are required in order to serve the development. It is noted that Page 43 of MKC’s Draft ‘A Highway Guide for Milton Keynes’ document states:-</p> <p><i>“Bus stops that are required to be sited on primary and district distributor roads, (which include Milton Keynes’ Grid Roads) will usually be located in laybys and should be discussed at an early stage with the Council’s Development Management and Passenger Transport Officers.”</i></p> <p>Following liaison with MKC’s Public Transport, and subsequently Road Safety Team, lay-by style Bus Stops as per ‘Bus Stop Scheme Layout SS3’ of MKC’s Draft ‘A Highway Guide for Milton Keynes’ - September 2018 (Page 107), including bus shelters, are to be provided.</p> <p>Following liaison with MKC’s Senior Transport Planner - Cycling and Events Management, the scheme proposals indicate the alignment of the Redways being taken around the back of the Bus Shelters, in order to reduce the potential for conflict between Cyclists, and Pedestrians entering / exiting buses.</p>

TECHNICAL NOTE

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
38748/TN2003/001	-	03/07/18	DP	JSH	JSH	-
38748/TN2003/001	A	21/05/19	JB	JSH	JSH	-
38748/TN2003/001	B	28/07/21	JB	JSH	JSH	-

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Stantec UK Limited 11 Prospect Court Courteenhall Road, Blisworth Northampton NN7 3DG

T: +44 (0)1604 878 300

TECHNICAL NOTE

Job Name: Land at Caldecote Farm, Newport Pagnell
Job No: 38748
Note No: TN2003/002 Rev B
Date: 3rd July 2018 – Updated 28th July 2021
Prepared By: Douglas Pielage
Subject: **Design Statement – Willen Road / Development Access Signalised Roundabout Junction**

Item	Subject
1,	<p>Introduction</p> <p>This note has been prepared by Stantec UK Ltd to detail the design parameters, constraints and assumptions used to prepare the planning design of an improvement scheme to alter the layout of an existing 4-arm roundabout (referred to as Marsh End Road Roundabout) in order to accommodate the likely increase in traffic flows generated by a proposed commercial development at Newport Pagnell being promoted by Newlands Developments. The existing roundabout is to be increased in size and signalised.</p> <p>This 4-arm signalised roundabout junction is to be provided on Willen Road / H3 Monks Way / A422 and includes provisions for pedestrians and cyclists on the eastern side of the junction in the form of off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes, and Toucan Style controlled crossing points.</p> <p>Willen Road is a rural, single carriageway, bound on both sides by grassed verges. It is subject to the national speed limit (60mph) and illuminated by a system of street lighting.</p> <p>H3 Monks Way and A422 are rural, dual carriageways, bound on both sides by grassed verges. They are subject to the national speed limit (70mph) and only illuminated by a system of street lighting at the Marsh End Roundabout.</p> <p>This note should be reviewed in conjunction with Drawing 38748/100/008 Rev B – 'Proposed Marsh End Signalised Roundabout General Arrangement'.</p>
2,	<p>Design Standards</p> <p>MKC does not currently have its own published highway design guide / standards. However, the Client's Design Team have provided Stantec with a Draft copy of MKC's 'A Highway Guide for Milton Keynes – September 2018'. Fig 1 and Table 3.12 within this document, have classified this road as a 'Primary Distributor', and the appropriate design standards as the Design Manual for Roads and Bridges.</p> <p>The design parameters of the proposed junction have been determined following a review of the following documents:-</p> <ul style="list-style-type: none"> • Design Manual for Roads and Bridges (DMRB):- <ul style="list-style-type: none"> ○ CD 109 Rev 1 – 'Highway link design'; ○ CD 116 Rev 2 – 'Geometric design of roundabouts'; ○ CD 123 Rev 2 – 'Geometric design of at-grade priority and signal-controlled junctions'; ○ CD 127 Rev 1 – 'Cross-sections and headrooms';

TECHNICAL NOTE

Item	Subject
	<ul style="list-style-type: none"> ○ CD 143 Rev 2.0.1 – ‘Designing for walking, cycling and horse-riding’; ○ CD 195 Rev 1.0.1 – ‘Designing for cycle traffic’; ○ CD 377 Rev 4 – ‘Requirement for road restraint systems’; • Local Transport Note 1/20 – ‘Cycle Infrastructure Design’; • Traffic Signs Regulations and General Directions 2016 and associated Traffic Signs Manuals; • DfT’s Guidance on the Use of Tactile Paving Surfaces; • A Highway Guide for Milton Keynes – September 2018 DRAFT;
3,	<p>Speed Survey</p> <p>A vehicular traffic speed has been commissioned by ADC Infrastructure Limited. Vehicle speeds have been determined using Automatic Traffic Counts (ATC). We have confirmed with MKC, that ATCs are an acceptable survey method to determine the Design Speed for our scheme.</p> <p>The speed survey was undertaken from 30th October 2017 to 8th November 2017 on:-</p> <ul style="list-style-type: none"> • A422 (Eastern Arm) – 250m (approx.) east of the existing Marsh End Road roundabout – in both the eastbound and westbound directions; • Willen Road (Northern Arm) – Halfway between the Willen Road / Marsh End Road junction and the existing Marsh End Road roundabout – in both the southbound and northbound directions; • Willen Road (Southern Arm) – 300m (approx.) south of the existing Marsh End Road roundabout – in both the southbound and northbound directions;

TECHNICAL NOTE

Item	Subject																															
	The weather on these days is unknown. A summary of the results is provided below in Table 1.																															
	<table border="1"> <thead> <tr> <th>Site</th> <th>Mean Average Speed</th> <th>85th Percentile Speeds</th> <th>Speed Limit</th> </tr> </thead> <tbody> <tr> <td rowspan="2">A422 (Eastern Arm)</td> <td>Eastbound</td> <td>47</td> <td>54</td> <td rowspan="2">National Speed Limit (70mph)</td> </tr> <tr> <td>Westbound</td> <td>52</td> <td>64</td> </tr> <tr> <td rowspan="2">Willen Road (Northern Arm)</td> <td>Northbound</td> <td>36</td> <td>41</td> <td rowspan="2">National Speed Limit (60mph)</td> </tr> <tr> <td>Southbound</td> <td>33</td> <td>41</td> </tr> <tr> <td rowspan="2">Willen Road (Southern Arm)</td> <td>Northbound</td> <td>40</td> <td>49</td> <td rowspan="2">National Speed Limit (60mph)</td> </tr> <tr> <td>Southbound</td> <td>41</td> <td>49.5</td> </tr> </tbody> </table>				Site	Mean Average Speed	85 th Percentile Speeds	Speed Limit	A422 (Eastern Arm)	Eastbound	47	54	National Speed Limit (70mph)	Westbound	52	64	Willen Road (Northern Arm)	Northbound	36	41	National Speed Limit (60mph)	Southbound	33	41	Willen Road (Southern Arm)	Northbound	40	49	National Speed Limit (60mph)	Southbound	41	49.5
Site	Mean Average Speed	85 th Percentile Speeds	Speed Limit																													
A422 (Eastern Arm)	Eastbound	47	54	National Speed Limit (70mph)																												
	Westbound	52	64																													
Willen Road (Northern Arm)	Northbound	36	41	National Speed Limit (60mph)																												
	Southbound	33	41																													
Willen Road (Southern Arm)	Northbound	40	49	National Speed Limit (60mph)																												
	Southbound	41	49.5																													
	<u>Table 1 – Speed Survey Results A422 and Willen Road</u>																															
	The results indicate that the average speeds, and 85 th percentile speeds are below the current national speed limits. This suggests that there is not a significant speeding issue along the A422 and Willen Road.																															

TECHNICAL NOTE

Item	Subject
4,	<p>2D Design Elements</p> <ul style="list-style-type: none"> • Western Arm:- <ul style="list-style-type: none"> ○ H3 Monks Way; ○ Dual carriageway; ○ National Speed Limit; ○ 120kph Design Speed (CD 109, Table 2.5); ○ 295m Desirable Minimum Stopping Sight Distance (CD 109, Table 2.10, para 2.13. CD 116, Para 4.8); • Eastern Arm:- <ul style="list-style-type: none"> ○ A422; ○ Dual carriageway; ○ National Speed Limit; ○ 120kph Design Speed (CD 109, Table 2.5); ○ 295m Desirable Minimum Stopping Sight Distance (CD 109, Table 2.10, para 2.13. CD 116, para 4.8); • Northern Arm:- <ul style="list-style-type: none"> ○ Willen Road (North) leading to Marsh End Road; ○ Single carriageway; ○ Existing National Speed Limit / Proposed 40mph Speed Limit; ○ 70kph Design Speed (CD 109, Table 2.5); ○ 120m Desirable Minimum Stopping Sight Distance (CD 109, Table 2.10, para 2.13. CD 116, para 4.8); • Southern Arm:- <ul style="list-style-type: none"> ○ Willen Road (South); ○ Existing Single carriageway / Proposed Dual carriageway; ○ Existing National Speed Limit / Proposed 40mph Speed Limit; ○ 70kph Design speed (CD 109, Table 2.5); ○ 120m Desirable Minimum Stopping Sight Distance (CD 109, Table 2.10, para 2.13. CD 116, para 4.8); • Intervisibility Zone as per CD 116, para 4.9 and Fig 4.9.1; • Design Vehicle = 16.5m long articulated vehicle (CD 116). Swept path analysis to be undertaken at speeds no greater than 15mph (CD 116, para 3.6.10 NOTE 2); • Existing longitudinal gradients:- <ul style="list-style-type: none"> ○ H3 Monks Way Eastbound – ranging from 1 in 35 to 1 in 130; ○ H3 Monks Way Westbound – ranging from 1 in 90 to 1 in 145; ○ A422 Eastbound - ranging from 1 in 190 to 1 in 340; ○ A422 Westbound - ranging from 1 in 190 to 1 in 480; ○ Willen Road (North) ranging from 1 in 115 to 1 in 380; ○ Willen Road (South) – Slopes downhill to the A422 Roundabout ranging in gradient from 1 in 336 to 1 in 415; ○ Gradients taken from topographical survey;

TECHNICAL NOTE

Item	Subject
	<p><u>Carriageway Width at Stop Line for External Approaches</u></p> <ul style="list-style-type: none"> • Western Arm = 12.5m; • Eastern Arm = 12.3m; • Northern Arm = 13m • Southern Arm = 12.3m; <p><u>Circulatory Carriageway Width at Stop Line for Internal Approaches</u></p> <ul style="list-style-type: none"> • Western Side = 17m; • Eastern Side = 17m; • Northern Side = 11.8m; • Southern Side = 17m; <p><u>Length of External Approaches</u> Storage Length determined by ADC Transport Assessment.</p> <p><u>Length of Internal Approaches</u> Storage Length determined by ADC Transport Assessment – Minimum 15m as per CD 116, para 4.2.2 NOTE 2.</p>
	<p><u>Lane Reduction</u></p> <ul style="list-style-type: none"> • Western Arm = 2 lane exit not reducing; • Eastern Arm = 2 lane exit not reducing; • Northern Arm = single lane exit; • Southern Arm = 2 lane exit not reducing;
	<p><u>Horizontal Clearance of Signals</u> 0.45m Minimum (CD 123, para 7.14); 0.6m on high speed approaches (TSM Chapter 6, para 3.3.3);</p>
	<p><u>Distance between Stop Line and Primary Signal</u> 2.5m (TSM Chapter 6, para 4.2.2);</p>
	<p><u>Secondary Signal</u> Within 50m of stop line (CD 123, para 7.2.8), located within 30° (CD 123, para 7.2.7, Fig 7.2.7);</p>
	<p><u>Maintenance</u> Traffic signals maintenance access bay to be provided (TSM Chapter 6, Section 27.8);</p>
	<p><u>Controlled Crossings (Toucan Style)</u></p> <p><u>Width of Crossings</u> Eastern Arm = 3.2m minimum (TSM Chapter 6, Section 20);</p> <p><u>Toucan on A422 Eastern Arm Exit</u> The location of this Toucan on this exit has been determined by CD 116, para 8.2.4;</p> <p><u>Distance between Primary Signal and 1st set of Crossing Studs</u> 0.5m (TSM Chapter 6, para 11.2.6);</p>

TECHNICAL NOTE

Item	Subject
	<p><u>Carriageway Cross Section</u></p> <p><u>Eastern and Western Arms</u> Figure 2.1.1N1f: Dimensions of cross-section components for rural all-purpose roads mainline (CD 127). NB 1m hardstrips are not provided on approaches to the junction and also to tie in with existing carriageway cross-section;</p> <p><u>Southern and Northern Arms</u> Figure 2.1.1N1g: Dimensions of cross-section components for urban all-purpose roads Mainline (CD 127);</p>
5,	<p>3D Design Elements</p> <p>The vertical alignment of Willen Road South has been designed to comply with CD 109, particularly Table 2.10:-</p> <ul style="list-style-type: none"> • Design Speed = 70kph; • Desirable Minimum Crest K Value = 30; • Absolute Minimum Sag K Value = 20; • Gradient Max = 1 in 28.5 (Existing); • Gradients Min = 1 in 150; • Crossfall = 1 in 40; <p>The vertical alignment of Willen Road has been designed to comply with CD 109, particularly Table 2.10:-</p> <ul style="list-style-type: none"> • Design Speed = 70kph; • Desirable Minimum Crest K Value = 30; • Absolute Minimum Sag K Value = 20; • Gradient Max = 1 in 28.5 (Existing); • Gradients Min = 1 in 150; • Crossfall = 1 in 40; <p>The vertical alignment of H3 Monks Way and A422 has been designed to comply with CD 109, particularly Table 2.10:-</p> <ul style="list-style-type: none"> • Design Speed = 120kph; • Desirable Minimum Crest K Value = 182; • Absolute Minimum Sag K Value = 37; • Gradient Max = 1 in 36; • Gradients Min = 1 in 150; • Crossfall = 1 in 40;

TECHNICAL NOTE

Item	Subject
6,	<p><u>Collision Data</u></p> <p>Recorded Injury Collision (RIC) data has been obtained from the CrashMap for 6½ years (2014 to 2020 up to June).</p> <p><u>Marsh End Road Roundabout</u></p> <p>Within the past 6½ years, 9 RICs (2 serious, 7 slight) have been recorded at this existing roundabout:-</p> <ul style="list-style-type: none"> • A422 Approach:- <ul style="list-style-type: none"> ○ 6No collisions, 2 occurred in the wet, 1 occurred during the hours of darkness; ○ 3No. RICs involved Cyclists being struck by vehicles failing to Give Way; ○ 1No. Shunt type collision involved 2No. 50cc motorbikes at the junction; ○ 2No. Shunt type collision on the immediate approach; • H3 Monks Way Approach:- <ul style="list-style-type: none"> ○ 1No. Shunt type collision, occurred in the wet at the junction; • Willen Road (Southern Arm) Approach:- <ul style="list-style-type: none"> ○ 1No. Single vehicle collision (colliding with a tree); ○ 1No. Failed to Give Way type collision; <p>It is considered that 9 RICs in 6½ years does not constitute a significant collision problem at these locations with the current national speed limits in place. However, it is noted that 3No. of these collisions involved Cyclists on the circulatory carriageway being struck by motorists entering the roundabout. The proposed design would look to provide facilities to reduce the likelihood of these collisions occurring.</p> <p>A new surface course with appropriate PSV, street lighting, along with a reduced speed limit, as well as signalling the roundabout itself, are proposals that could reduce the number of recorded collisions. This has informed the design of the junction.</p>
7,	<p><u>Proposed Non-Motorised User facilities</u></p> <p>Shared use footway / cycle track = 3m wide (CD 143, para E/3.5);</p> <p>Footway Only = 2m wide (CD 143, para E/1.2, Table E/1.2);</p> <p>Buffer Zone = 1m wide – (CD 143, para E/3.5.1(2) states 0.5m on roads with a speed limit of 40mph or less.</p> <p>There should be no street furniture or vegetation (except grass) within the separation distance.</p>
8,	<p><u>Relation to Existing Access Points</u></p> <p>Willen Road / Marsh End Road Priority junction with ghost island right turn land is located 330m (approx.) north of the Marsh End Road roundabout.</p> <p>A gated field access is located on the western side of Willen Road (North), 20m (approx.) north of the Marsh End Road roundabout.</p> <p>Maintenance access to the central island of the proposed signalised roundabout will be provided.</p>

TECHNICAL NOTE

Item	Subject
	Lay-bys are provided adjacent to the H3 Monks Way approach and A422 approach, both 110m (approx.) from the Marsh End Road roundabout – refer to Section 15.
9,	<p><u>Traffic Signs</u></p> <p>Advance Direction Signs (ADS) as well as Flag type directional signs shall be provided on the Willen Road approaches to the junction in accordance with Traffic Signs Regulations and General Directions 2016 (TRSGD) and associated Traffic Signs Manuals. These signs will incorporate existing destinations as well as signing the development. Care has been taken with the positioning, as well as the size of these signs so that they do not interfere with driver's visibility requirements.</p> <p>A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (CD 116, para 3.36 NOTE 2).</p> <p>The 'x'-heights for these directional signs will be informed by:-</p> <ul style="list-style-type: none"> • The proposed 40mph speed limit being imposed by MKC for Willen Road; • 85th percentile speeds for A422 and H3 Monks Way; • as well as any further comments received from MKC; <p><u>Road Markings</u></p> <p>The existing road markings have been provided in response to the current national speed limits. The proposed reduction in speed limit (40mph) will require all affected road markings to be amended to reflect this lower limit. All required road marking amendments have been informed by Traffic Signs Manual Chapter 5 and 6.</p>
10,	<p><u>Road Restraint Systems (RRS)</u></p> <p><u>Willen Road</u></p> <p>The existing length of Willen Road is subject to the national speed limit (60mph). The following road side hazards are present adjacent to the carriageway:-</p> <ul style="list-style-type: none"> • Ditchcourses, including headwalls; • Vegetation, including large mature trees; • Sign posts, street lighting, telegraph poles and feeder pillars; • Embankments; <p>Currently, RRS has not been provided along the length of Willen Road affected by this proposed junction.</p> <p>The scheme proposals will reduce the speed limit along Willen Road to 40mph. Motorists will be informed of the change to the road layout by the provision of:-</p> <ul style="list-style-type: none"> • 2No. x 40mph speed terminal signs (sized in accordance with Traffic Signs Manual Chapter 3); • 40mph speed repeater signs along the length of Willen Road; • Advanced Directional Map Type Signs (ADS) which indicates the new road layout and provides warning of the proposed junction ahead; • Full and unrestricted visibility to primary traffic signals and associated stop line; • Full and unrestricted visibility on the immediate approach to the junction; • Street lighting to the appropriate illumination class along the length of Willen Road;

TECHNICAL NOTE

Item	Subject
	<ul style="list-style-type: none"> • New surface course with increased Polished Stone Value (PSV) on the approach to the junction and within the extent of the junction itself; • Road markings appropriate to the new reduced speed limit; <p>It is considered by the Design Team that the above measures are sufficient to mitigate against casual and inappropriate speeding.</p> <p>Taking the above into account, and in accordance CD 377, para 2.2, RRS is not required along Willen Road.</p> <p>As the speed limit for Willen Road will be reduced to 40mph, Passively Safe Systems are not considered to be required along this section of the scheme.</p> <p><u>H3 Monks Way / A422</u></p> <p>The need for RRS within the verges of the eastbound and westbound approaches and exits of H3 Monks Way and A422 arms has been reviewed using the 'Road Restraint Risk Assessment Process' (RRRAP) detailed within CD 377. This process has identified that the existing trees adjacent to the verges are road side hazards where the risk of not providing a RRS is unacceptable. However, as the scheme proposals do not introduce any road side hazards which cannot be erected on passively safe systems e.g. traffic sign posts, street lighting, traffic signals (subject to detailed design), then the need to provide RRS to protect trees, as well as the lengths of RRS beyond the extents of the scheme, is considered to be the responsibility of MKC.</p> <p>It should be noted that the existing RRS within the central reserve of the A422 arm is being retained (but realigned). However, currently MKC have not provide any RRS within the central reserve of the H3 Monks Way. Following a meeting with MKC (dated 14th June 2018), MKC have confirmed that RRS is required within the central reserve. Stantec have updated their proposals to include RRS, from the proposed Marsh End Road Signalised Roundabout, to the existing RRS within the vicinity of the existing M1 overbridge, a length of 500m (approx.).</p> <p>Stantec have also reviewed the vertical profile of H3 Monks Way on the immediate approach to the proposed junction (i.e. over a distance of 1.5 x SSD), and can confirm that forward visibility of 295m (appropriate for a 120kph Design Speed) is not restricted to the 'object height' by the proposed RRS.</p>
11,	<p><u>Highway Boundary</u></p> <p>The location of the existing highway boundary has been determined using plans provided by Milton Keynes Council (MKC) which has then been transferred onto topographical survey data.</p> <p>The design of this signalised junction requires additional carriageway width and adjacent NMU facilities. The widening will primarily be undertaken on the western side of Willen Road so that no works encroach onto 3rd party land that is not within the control of the Developer or Highway Authority.</p>
12,	<p><u>Surface Water Drainage</u></p> <p>Refer to Technical Note TN2015/001 Rev B – 'Preliminary Surface Water Drainage Strategy'.</p>

TECHNICAL NOTE

Item	Subject
13,	<p><u>Utilities</u></p> <p>The affect this proposed signalised roundabout junction may have on the existing utilities within the highway is currently being determined as part of the design of the junction. Utility records indicate that the following services could be affected by the proposed junction improvements:-</p> <ul style="list-style-type: none"> • Virgin Media; • Vodaphone; • BT (optic); • Anglian Water Services (Potable Water); • 1 No. 33kV Underground Cable; • 1 No. 11kV Underground Cable; <p>Any new supplies or diversions / protection of existing utilities is to be undertaken by the Client's Utility Consultant.</p>
14,	<p><u>Street Lighting</u></p> <p>A Street Lighting design has been undertaken for Marsh End Road Signalised Roundabout in accordance with Milton Keynes Council's Street Lighting Specification Marsh 2016. The Street Lighting layout has been designed to Class C2 for Conflict Zones and M3 outside of conflict zones. Please refer to Street Lighting Design Drawing 38748/1300/002 Rev B for details, to be read in conjunction with Roadway Lighting Reports and Outdoor Reality Report.</p>
15,	<p><u>Design Risks</u></p> <p><u>Lay-bys</u></p> <p>Further to Section 8, there are 2No. existing lay-bys adjacent to the H3 Monks Way and A422 approaches to the junction. These existing lay-bys are affected by the proposed additional running lanes on these approaches. Following a meeting with MKC (dated 14th June 2018), MKC have confirmed that these existing lay-bys do not need to be relocated or replaced.</p> <p><u>Update to Geometric Standards</u></p> <p>Any design issues raised by the recent alterations to the DMRB Design Standards will be discussed and resolved following liaison with MKC's Highway Authority.</p>

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
38748/TN2003/001	-	03/07/18	DP	JSH	JSH	-
38748/TN2003/001	A	21/05/19	JB	JSH	JSH	-
38748/TN2003/001	B	28/07/21	JB	JSH	JSH	-

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Stantec UK Limited 11 Prospect Court Courteenhall Road, Blisworth Northampton NN7 3DG

T: +44 (0)1604 878 300

DATE: 30 July 2020
DESIGNER: Stantec
PROJECT No: 38748
PROJECT NAME: Land at Caldecote Farm, Newport Pagnell



Lighting designed in accordance with Milton Keynes Council Street Lighting Specification 2016.

Lighting layout designed to Class C2 for Conflict Zones and M3 for all other Roads.

Please also refer to Reality Roadway Lighting design reports and lighting design drawings: 38748/1300/001 and 38748/1300/002 for notes / design rationale & schedules relative to the design.

Outdoor Lighting Report

PREPARED BY: Stantec
11 Prospect Court
Courteenhall Road
Blisworth
Northampton
NN7 3DG
Phone 01604878300
Website: <https://www.stantec.com/uk/offices/northampton-uk>

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	487526.00	242514.00	170.00	80.00	1.24	1.48
2	Grid 2	487685.41	242635.54	50.00	374.00	1.47	1.50
3	Grid 3	487686.00	242550.00	115.00	85.00	1.49	1.49
4	Grid 4	487794.00	242579.00	150.00	80.00	1.49	1.48
5	Grid 5	487712.01	242397.34	56.00	160.00	1.47	1.50
6	Grid 6	487683.73	242331.35	80.00	65.00	1.48	1.48
7	Grid 7	487772.19	241997.74	48.00	345.00	1.50	1.49
8	Grid 8	487771.70	241738.17	60.00	275.00	1.46	1.49
9	Grid 9	487713.00	242586.00	70.00	374.00	1.49	1.50
10	Grid 10	487755.00	242304.00	100.00	300.00	1.49	1.50
11	Grid 11	487732.05	242041.92	100.00	350.00	1.49	1.50
12	Grid 12	487775.71	241748.22	30.00	310.00	1.43	1.50
13	Grid 13	487618.20	242941.52	54.00	65.00	1.46	1.48

Luminaires

Luminaire A Data



Supplier	Holophane Europe
Type	VMX.L114.V3.F4Q1
Lamp(s)	LED C.11000LM - 4000K
Lamp Flux (klm)	12.32
File Name	VMX.L114.V3.F4Q1.IES
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	461.8, 69.9, 0.0
No. in Project	62

Luminaire B Data



Supplier	Holophane Europe
Type	VMX.L154.V4.X2L2
Lamp(s)	LED C.15000LM - 4000K
Lamp Flux (klm)	15.53
File Name	VMX.L154.V4.X2L2.IES
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	739.3, 67.4, 0.0
No. in Project	12

Luminaire C Data



Supplier	Holophane Europe
Type	VMX.L234.V8.D4D4
Lamp(s)	LED C.23000LM - 4000K
Lamp Flux (klm)	23.09
File Name	VMX.L234.V8.D4D4.IES
Maintenance Factor	0.85
Imax70,80,90(cd/klm)	715.0, 302.4, 0.5
No. in Project	10

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	487761.07	242323.21	12.00	190.00	0.00	0.00	1.00			
2	A	487731.59	242318.12	12.00	10.00	0.00	0.00	1.00			
3	A	487770.96	242287.95	12.00	190.00	0.00	0.00	1.00			
4	A	487736.75	242294.64	12.00	10.00	0.00	0.00	1.00			
5	A	487706.72	242372.86	12.00	306.00	0.00	0.00	1.00			
6	A	487727.15	242343.20	12.00	10.00	0.00	0.00	1.00			
7	A	487756.85	242347.23	12.00	190.00	0.00	0.00	1.00			
8	A	487772.48	242258.80	12.00	190.00	0.00	0.00	1.00			
9	A	487746.14	242256.45	12.00	10.00	0.00	0.00	1.00			
10	A	487755.90	242222.39	12.00	10.00	0.00	0.00	1.00			
11	A	487797.84	242101.04	12.00	190.00	0.00	0.00	1.00			
12	A	487716.44	242353.51	12.00	88.00	0.00	0.00	1.00			
13	A	487768.95	242311.34	12.00	276.00	0.00	0.00	1.00			
14	A	487747.33	242414.88	12.00	191.00	0.00	0.00	1.00			
15	A	487719.67	242411.32	12.00	4.00	0.00	0.00	1.00			
16	A	487715.80	242443.01	12.00	8.00	0.00	0.00	1.00			
17	A	487738.65	242540.23	12.00	165.00	0.00	0.00	1.00			
18	A	487701.06	242542.58	12.00	10.00	0.00	0.00	1.00			
19	A	487737.68	242477.06	12.00	190.00	0.00	0.00	1.00			
20	A	487711.90	242473.18	12.00	10.00	0.00	0.00	1.00			
21	A	487742.38	242446.31	12.00	189.00	0.00	0.00	1.00			
22	C	487677.04	242570.86	12.00	78.00	0.00	0.00	1.00			
23	A	487733.79	242507.93	12.00	180.00	0.00	0.00	1.00			
24	A	487706.83	242505.25	12.00	10.00	0.00	0.00	1.00			
25	C	487676.93	242595.87	12.00	10.00	0.00	0.00	1.00			
26	C	487683.89	242622.87	12.00	315.00	0.00	0.00	1.00			
27	C	487704.60	242631.73	12.00	290.00	0.00	0.00	1.00			
28	C	487731.41	242638.07	12.00	250.00	0.00	0.00	1.00			
29	C	487771.81	242634.28	12.00	285.00	0.00	0.00	1.00			
30	C	487754.08	242604.20	12.00	190.00	0.00	0.00	1.00			
31	C	487788.20	242600.28	12.00	119.00	0.00	0.00	1.00			
32	C	487755.89	242571.32	12.00	140.00	0.00	0.00	1.00			
33	C	487724.37	242562.31	12.00	98.00	0.00	0.00	1.00			
34	B	487634.41	242573.52	12.00	95.00	0.00	0.00	1.00			
35	B	487638.04	242602.74	12.00	285.00	0.00	0.00	1.00			
36	B	487826.28	242618.58	12.00	115.00	0.00	0.00	1.00			

Layout Continued

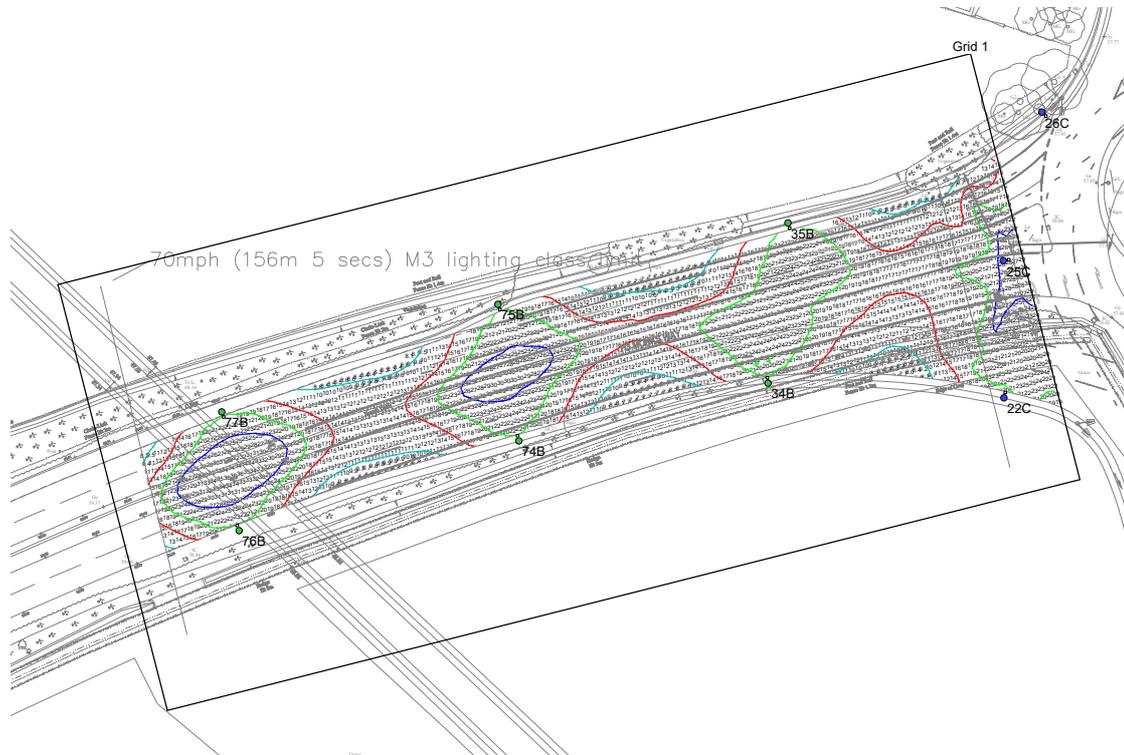
ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
37	B	487815.56	242645.39	12.00	285.00	0.00	0.00	1.00			
38	A	487790.73	242069.31	12.00	10.00	0.00	0.00	1.00			
39	A	487764.74	242186.55	12.00	15.00	0.00	0.00	1.00			
40	A	487782.35	242189.51	12.00	190.00	0.00	0.00	1.00			
41	A	487787.56	242160.41	12.00	190.00	0.00	0.00	1.00			
42	A	487779.09	242128.22	12.00	12.00	0.00	0.00	1.00			
43	A	487808.86	242033.85	12.00	190.00	0.00	0.00	1.00			
44	A	487803.18	241946.96	12.00	0.00	0.00	0.00	1.00			
45	A	487816.15	241918.54	12.00	180.00	0.00	0.00	1.00			
46	A	487775.10	242231.23	12.00	195.00	0.00	0.00	1.00			
47	A	487799.36	242004.42	12.00	5.00	0.00	0.00	1.00			
48	A	487813.91	241978.76	12.00	185.00	0.00	0.00	1.00			
49	A	487801.78	241888.29	12.00	357.00	0.00	0.00	1.00			
50	A	487814.13	241859.81	12.00	180.00	0.00	0.00	1.00			
51	A	487797.50	241791.57	12.00	355.00	0.00	0.00	1.00			
52	A	487794.70	241776.38	12.00	342.00	0.00	0.00	1.00			
53	A	487826.82	241745.16	12.00	215.00	0.00	0.00	1.00			
54	A	487782.99	241751.49	12.00	300.00	0.00	0.00	1.00			
55	A	487814.93	241765.34	12.00	205.00	0.00	0.00	1.00			
56	A	487688.93	242687.29	12.00	10.00	0.00	0.00	1.00			
57	A	487680.31	242736.61	12.00	10.00	0.00	0.00	1.00			
58	A	487670.56	242789.49	12.00	10.00	0.00	0.00	1.00			
59	A	487658.65	242845.48	12.00	15.00	0.00	0.00	1.00			
60	A	487638.06	242919.62	12.00	15.00	0.00	0.00	1.00			
61	A	487629.65	242948.17	12.00	15.00	0.00	0.00	1.00			
62	A	487660.31	242947.32	12.00	170.00	0.00	0.00	1.00			
63	A	487666.66	242876.76	12.00	190.00	0.00	0.00	1.00			
64	A	487700.21	242714.48	12.00	190.00	0.00	0.00	1.00			
65	A	487678.21	242825.08	12.00	190.00	0.00	0.00	1.00			
66	A	487710.93	242671.62	12.00	191.00	0.00	0.00	1.00			
67	A	487695.37	242646.39	12.00	350.00	0.00	0.00	1.00			
68	A	487691.69	242763.81	12.00	190.00	0.00	0.00	1.00			
69	A	487644.57	242900.74	12.00	15.00	0.00	0.00	1.00			
70	B	487861.63	242657.29	12.00	290.00	0.00	0.00	1.00			
71	B	487867.48	242632.33	12.00	105.00	0.00	0.00	1.00			
72	B	487908.06	242669.04	12.00	285.00	0.00	0.00	1.00			

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
73	B	487913.34	242647.40	12.00	105.00	0.00	0.00	1.00			
74	B	487589.47	242563.00	12.00	105.00	0.00	0.00	1.00			
75	B	487585.66	242587.90	12.00	290.00	0.00	0.00	1.00			
76	B	487538.95	242546.70	12.00	110.00	0.00	0.00	1.00			
77	B	487535.80	242568.34	12.00	290.00	0.00	0.00	1.00			
78	A	487647.54	242981.38	12.00	270.00	0.00	0.00	1.00			
79	A	487663.20	243000.73	12.00	345.00	0.00	0.00	1.00			
80	A	487668.49	242974.69	12.00	150.00	0.00	0.00	1.00			
81	A	487674.68	243030.21	12.00	340.00	0.00	0.00	1.00			
82	A	487717.92	242387.85	12.00	344.00	0.00	0.00	1.00			
83	A	487751.52	242387.63	12.00	185.00	0.00	0.00	1.00			
84	A	487754.58	242367.91	12.00	185.00	0.00	0.00	1.00			

Horizontal Illuminance (lux)

Grid 1

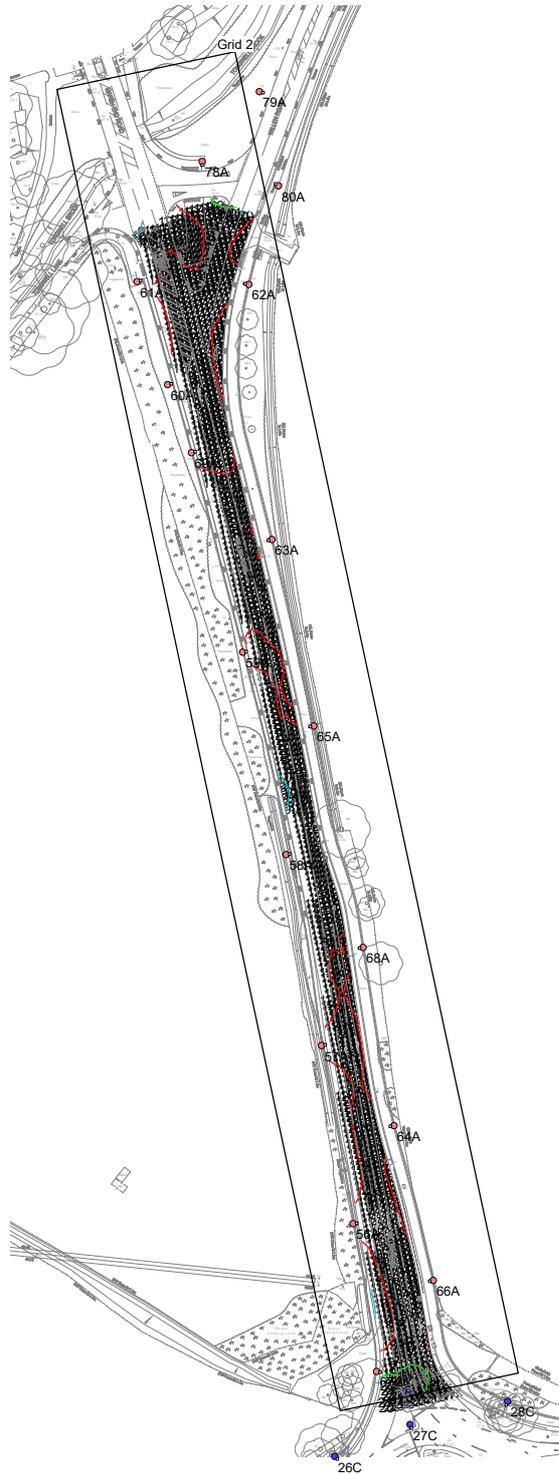


Results

Eav	17.66
Emin	7.06
Emax	36.31
Emin/Emax	0.19
Emin/Eav	0.40

Horizontal Illuminance (lux)

Grid 2

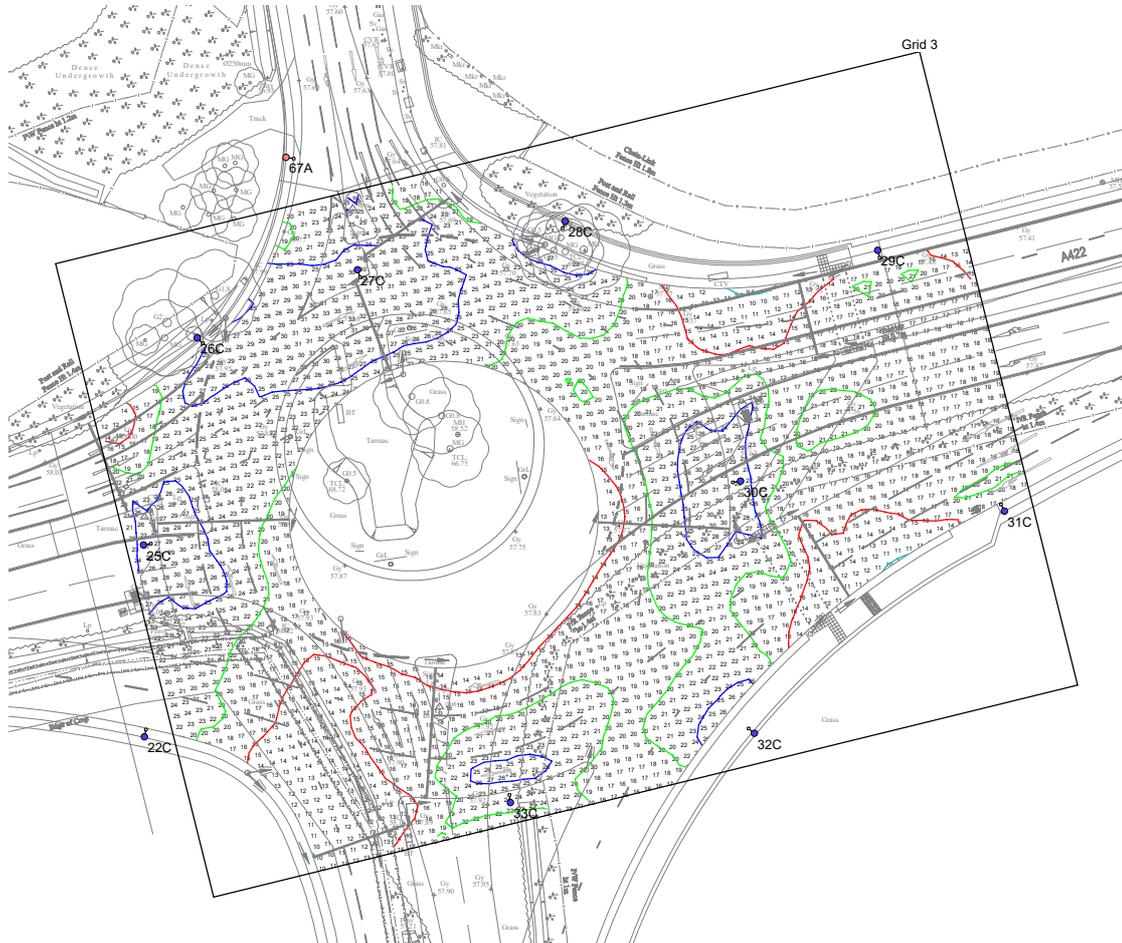


Results

Eav	15.17
Emin	7.93
Emax	25.14
Emin/Emax	0.32
Emin/Eav	0.52

Horizontal Illuminance (lux)

Grid 3

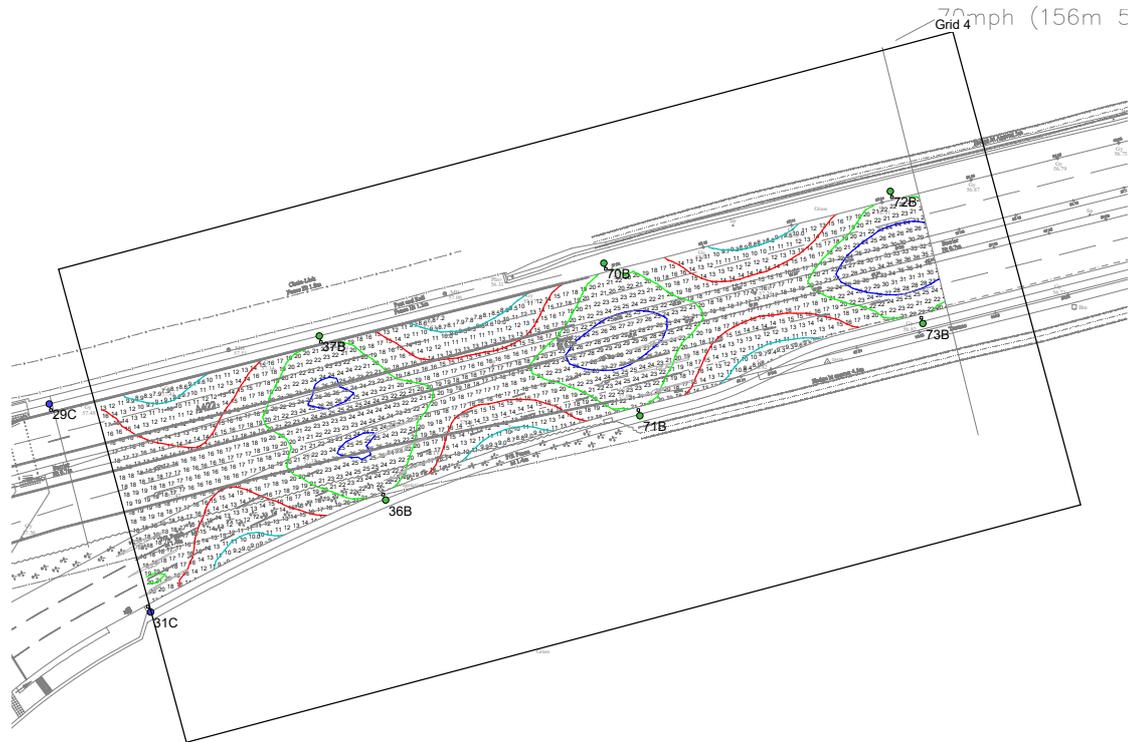


Results

Eav	20.05
Emin	9.47
Emax	34.69
Emin/Emax	0.27
Emin/Eav	0.47

Horizontal Illuminance (lux)

Grid 4

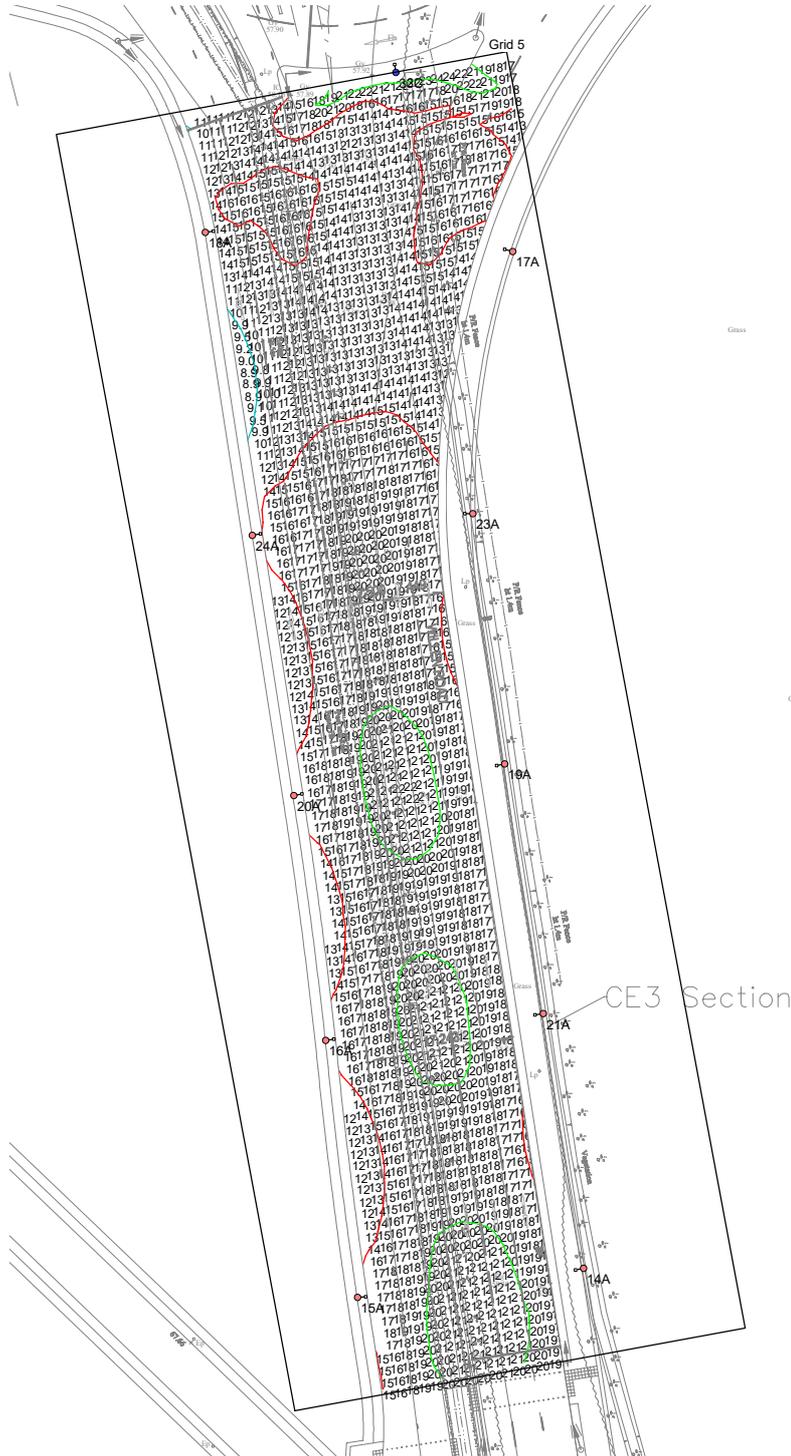


Results

Eav	18.14
Emin	7.19
Emax	35.80
Emin/Emax	0.20
Emin/Eav	0.40

Horizontal Illuminance (lux)

Grid 5

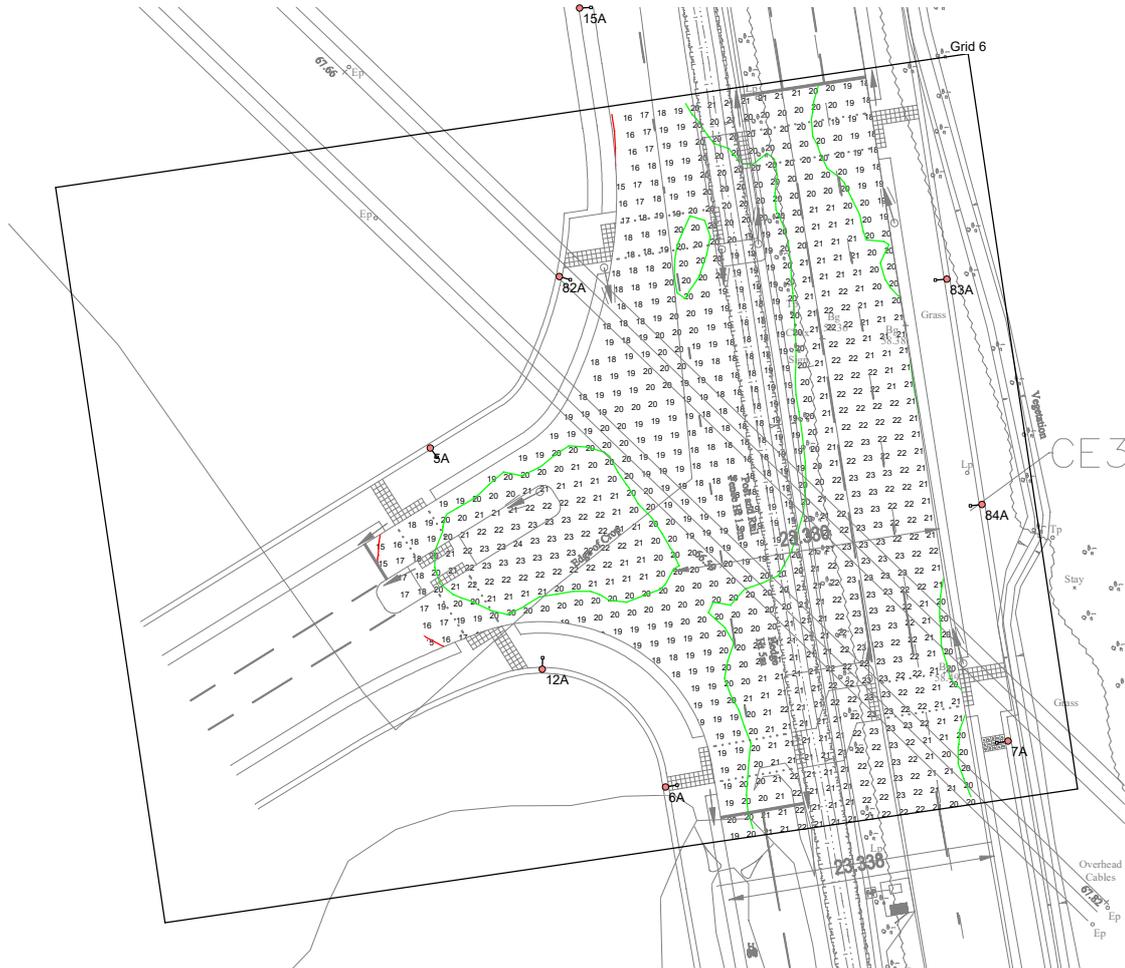


Results

Eav	16.65
Emin	8.85
Emax	23.98
Emin/Emax	0.37
Emin/Eav	0.53

Horizontal Illuminance (lux)

Grid 6

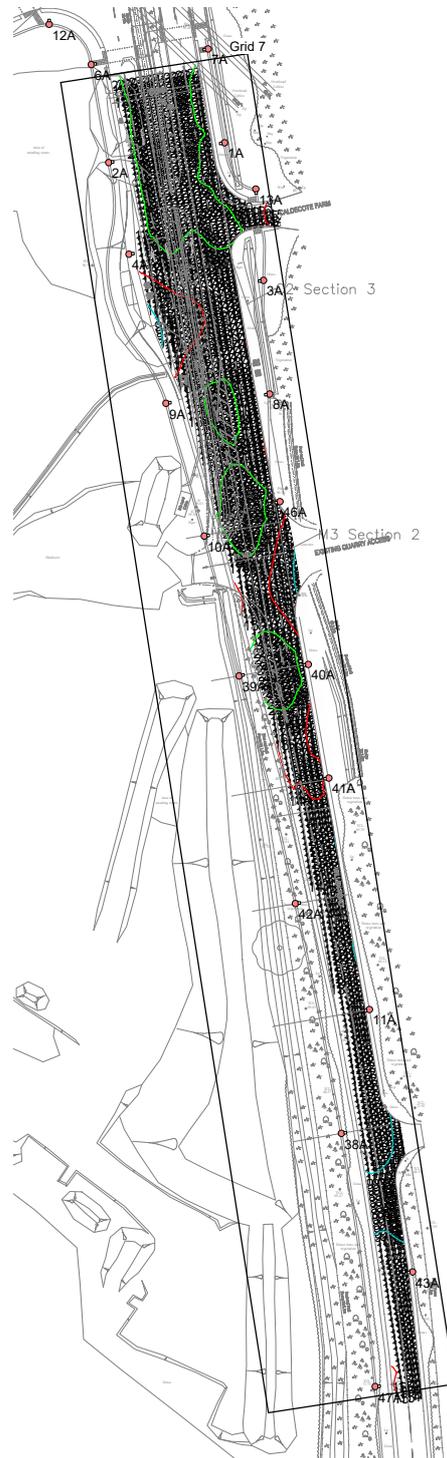


Results

Eav	20.21
Emin	14.67
Emax	23.55
Emin/Emax	0.62
Emin/Eav	0.73

Horizontal Illuminance (lux)

Grid 7

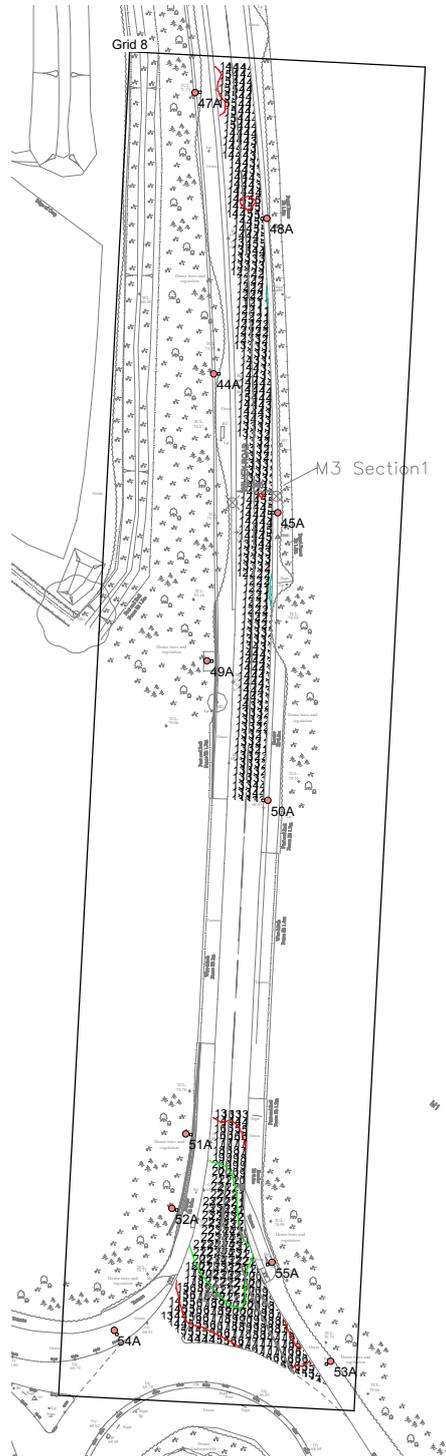


Results

Eav	16.81
Emin	7.29
E _{max}	24.34
E _{min} /E _{max}	0.30
E _{min} /E _{av}	0.43

Horizontal Illuminance (lux)

Grid 8



Results

Eav	15.05
Emin	9.82
E _{max}	24.12
E _{min} /E _{max}	0.41
E _{min} /E _{av}	0.65

Horizontal Illuminance (lux)

Grid 9



Results

Eav	13.87
Emin	7.45
Emax	27.84
Emin/Emax	0.27
Emin/Eav	0.54

Horizontal Illuminance (lux)

Grid 10

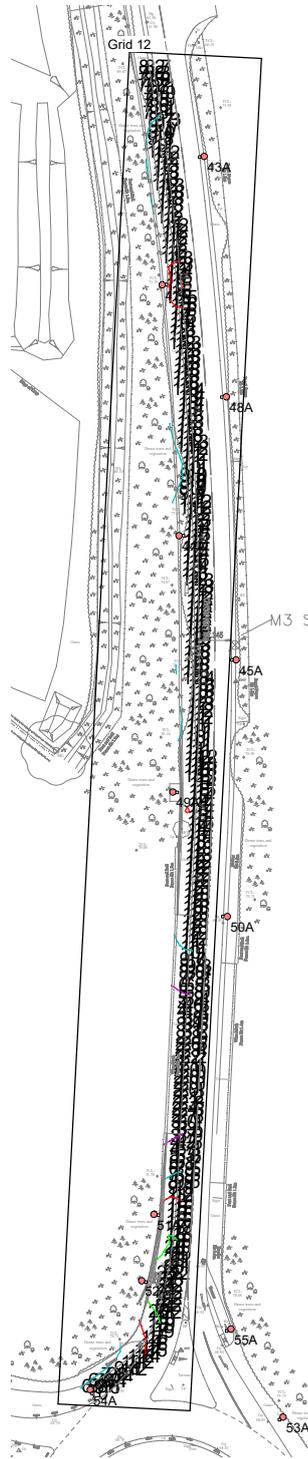


Results

Eav	15.06
Emin	6.69
Emax	27.55
Emin/Emax	0.24
Emin/Eav	0.44

Horizontal Illuminance (lux)

Grid 12

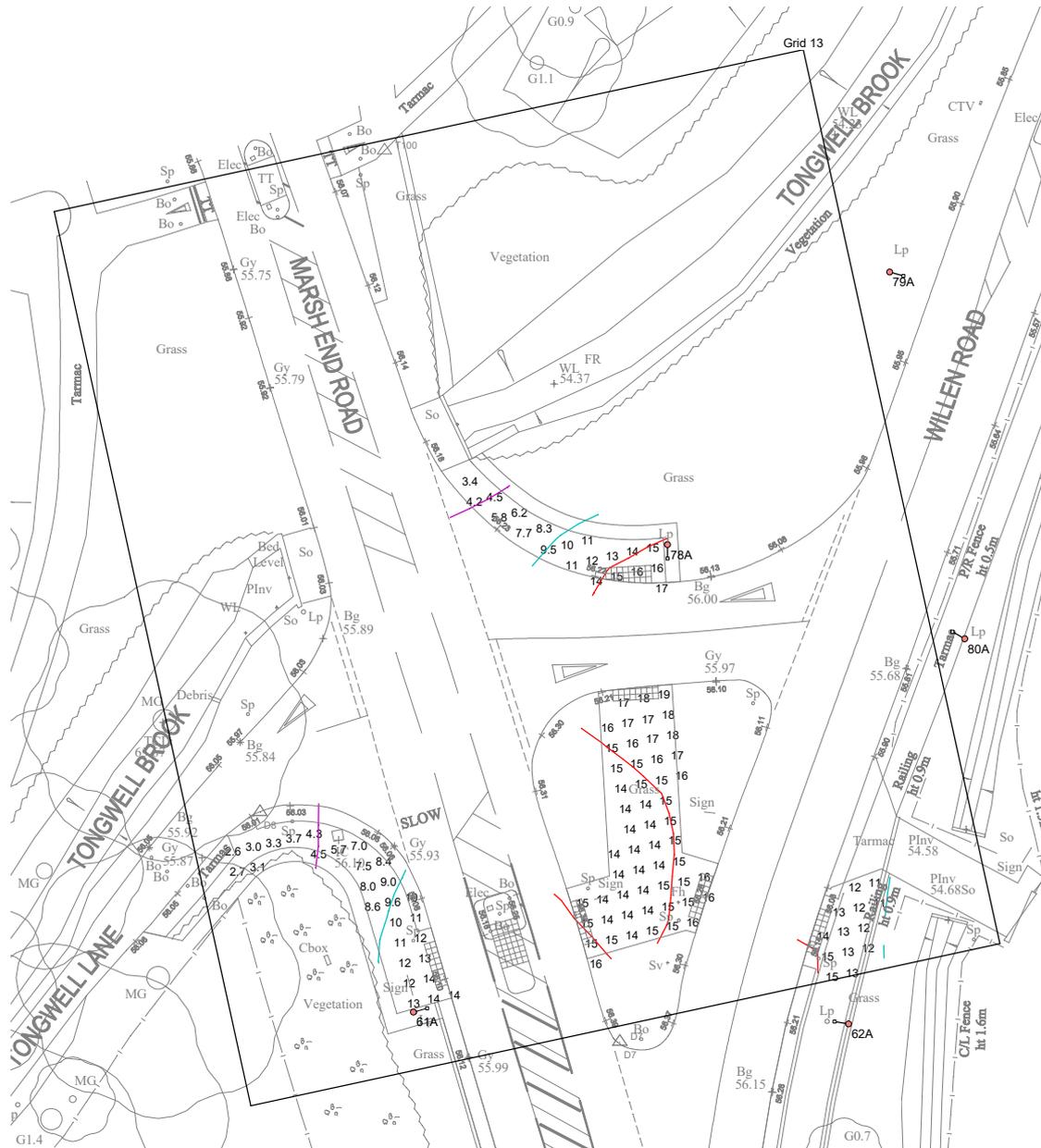


Results

Eav	11.53
Emin	1.95
Emax	22.76
Emin/Emax	0.09
Emin/Eav	0.17

Horizontal Illuminance (lux)

Grid 13



Results

Eav	12.50
Emin	2.61
Emax	18.52
Emin/Emax	0.14
Emin/Eav	0.21



now part of



Caldecote Farm, Newport Pagnell

Stage 1 Road Safety Audit

On behalf of **Segro Newport Pagnell Ltd**

Project Ref: 38748/2022 | Rev: - | Date: 10th August 2018

Office Address: 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG
T: +44 (0)1604 878300 E: northampton@peterbrett.com

Document Control Sheet

Project Name: Caldecote Farm, Newport Pagnell

Project Ref: 38748/2022

Report Title: Stage 1 Road Safety Audit

Doc Ref: 001

Date: 10th August 2018

	Name	Position	Signature	Date
Prepared by:	Philip Edwards	Principal Engineer		10 th August 2018
Reviewed by:	Bryn Kemp	Principal Engineer		10 th August 2018
Approved by:	Steve Hagreen	Associate		10 th August 2018
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

© Peter Brett Associates LLP 2018

Contents

1 Introduction 1

2 Items Raised from this Stage 1 Road Safety Audit..... 3

3 Road Safety Audit Team Statement 10

Appendix A - Information Utilised in this Stage 1 Road Safety Audit

Appendix B - Site Reference Plans

This page is intentionally blank

1 Introduction

1.1 Peter Brett Associates LLP have been commissioned by Segro Newport Pagnell Ltd to undertake a Stage 1 Road Safety Audit (RSA) on the proposed Highway Works associated with the commercial development of land off Willen Road, Newport Pagnell.

1.2 The proposed Highway Works are as follows.

Willen Road / Development Access Signalised Junction

- New 4 arm signalised junction is to be provided on Willen Road with associated maintenance access bay.
- Includes provisions for pedestrians and cyclists to access the development via off carriageway shared use footway / cycle track, referred to as a 'Redway' in Milton Keynes.
- The new 'Redway' facility is also to be provided north and south along the length of Willen Road.
- 2No. Toucan style controlled crossings.
- The junction will incorporate 2No. new bus stops required to serve the development.

Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction

- An existing 4 arm roundabout is to be increased in size and signalised, and provided with 2No. associated maintenance access bays.
- Includes a 'Redway' on the eastern side of the junction with 2No. Toucan style controlled crossings across the A442.

1.3 Willen Road in the vicinity of the proposed development access is a single carriageway all-purpose road, with verges along both sides. The road is lit, but subject to the national speed limit. There are no footways. Approximately 60m south of the proposed signalised junction, on the eastern side of Willen Road, there is an access to sand and gravel quarry. This was observed to be in use by large vehicles. There are existing bus stops on both sides of the road approximately 200m south of the proposed signalised junction.

At the Willen Road / A422 / H3 Monks Way Marsh End Road roundabout, the A422 and H3 Monks Way are all-purpose dual carriageways, with verges along both sides. The roads are lit, but subject to the national speed limit. There are no footways.

Just south of the junction of Willen Road and March End Road, which is at the edge of the existing urban development of Newport Pagnell, the speed limit changes from national speed limit to 30mph.

1.4 The RSA Team Membership was as follows:-

RSA Team Leader:-

Philip Edwards Peter Brett Associates LLP, Northampton
BSc(Hons).

RSA Team Member:-

Bryn Kemp Peter Brett Associates LLP, Ashford – Principal Engineer
MCIHT, MSoRSA
Certificate of Competency in Road Safety Audit

The RSA Team are independent of the Design Team.

- 1.5 The RSA took place during July 2018. The RSA Team visited the site on 23rd July 2018 between 14:30 and 16:00. The weather during the site visit was hot and dry.
- 1.6 During the site visit 3No. cyclists and no pedestrians were observed using Willen Road south of the Marsh End Road Roundabout. No pedestrians or cyclists were observed using the A422.
- 1.7 The terms of reference of the RSA are as described in HD 19/15, and the RSA Brief dated 10th July 2018 which required the following exceptions:-
- Mandatory Item 2.59 – The RSA Report will be finalised and issued to the Design Team in order to prepare the RSA Response Report. MKC will not be issued the RSA Report in draft;
 - Mandatory Item 3.3 – The RSA Response Report will be prepared and finalised by the Design Team and issued to MKC. MKC will not be issued the RSA Response Report in draft;

Following the completion of the RSA Report and the RSA Response Report, both documents will be issued to MKC.

- 1.8 The RSA comprises of an examination of the documents listed in Appendix A. The RSA Brief issued to the RSA Team states that no formal Departure from Standards document has been identified.
- 1.9 1 No. strategic decision has been stated within the approved RSA Brief (reference Item 7.1):-
- MKC have indicated that in order to promote the signalised junction serving the development, the speed limit on Willen Road would need to be reduced from national speed limit (60mph) to 40mph. A Traffic Regulation Order will be required to impose any reduction to the existing speed limit.

Therefore, in accordance with mandatory item 2.21 of HD 19/15, this RSA Report does not provide recommendations which require major changes to the above Strategic Decision. The RSA Team consider that this proposed change in speed limit to 40mph is appropriate as part of the scheme.

- 1.10 The RSA Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.11 Recorded Injury Collision (RIC) data for 4 years, 2014 to 2017, provided by the Design Team has been reviewed. It is noted that 3No collisions have involved cyclists on the eastern side of the Marsh End Road roundabout circulatory carriageway being struck by a vehicle. The scheme proposals to provide a Toucan crossing of the A422 should mitigate this hazard. The collision records did not indicate any other particular collision problem in the vicinity of the proposed scheme.
- 1.12 Problems identified in the report are indicated by location and are shown on the site reference plans in Appendix B.

2 Items Raised from this Stage 1 Road Safety Audit

2.1 Problem

- Location - Willen Road Signalised Junction
- Summary - Direction Signage Requirements may not be achievable – insufficient driver information and potential vehicle impact with signs

It is noted from the Design Statement (TN2003/001) that it is proposed to provide Advance Direction Signs (ADS) and Flag direction signs relating to the proposed traffic signal junction on Willen Road. The location for one ADS is indicated for northbound traffic approximately 60m from the traffic signal stop line. This location is after the carriageway has already widened from 1 to 3 lanes, and not sufficiently in advance of the junction to inform drivers. No other ADS or direction signs are indicated on the drawings.

The existing verges of Willen Road are heavily vegetated, and it is proposed that there will be a 3m wide Redway. Therefore, it cannot be assumed that the necessary signs can be accommodated and adequate visibility can be achieved without difficulty.

In view of the 3 lane approaches to the junction along Willen Road, clear signage will be needed in advance of the junction such that drivers will position themselves in the correct lane. Otherwise there is a risk of late and unexpected lane changes, which may result in collisions between vehicles approaching the junction.

Recommendation

The proposed signing for the junction should be determined in more detail before the preliminary design is completed. Locations and sign widths should be investigated to ensure that adequate advance direction signage can be achieved with suitable lateral clearance from the edge of the carriageway, and with the appropriate mounting heights in relation to the proposed cycle route.

2.2 Problem

- Location - Willen Road Signalised Junction, northbound approach
- Summary - Development of right turning lane – potential side swipe collisions associated with lane changes

On the northbound approach to Willen Road traffic signals, the carriageway widens from a single northbound lane to 3 lanes. The road markings indicated will tend to encourage a large proportion of traffic to approach the junction in the offside lane. But this lane is intended to just serve right turning traffic, for which numbers are expected to be low. Vehicles may naturally tend to enter the right turning lane and then have to change lanes for the ahead movement, which will introduce un-necessary conflict and increase the risk of collision.

Recommendation

The layout of road markings on the northbound approach should be amended such that most traffic naturally enters the ahead lanes and the right turning lane is developed nearer to the stop line.

2.3 Problem

- Location - Willen Road Signalised Junction, northbound approach
- Summary - No provision for existing sand and gravel works – potential conflict with turning vehicles

The proposals do not indicate any provision for the existing access to Caldecote Farm Sand and Gravel Works. Large vehicles use this access and currently all turning movements are permitted. The proposals will see Willen Road widened to 5 traffic lanes (3 northbound and 2 southbound) with central ghost-island hatching. There is no provision within the hatching for right turning vehicles to access to the sand and gravel works.

It is not clear how the scheme will accommodate vehicles turning right into and out from the sand and gravel works access. There will be conflict and risk of collision between right turning vehicles at the sand and gravel works and other traffic using the multiple lanes on Willen Road.



Willen Road – Large vehicle exiting from the sand and gravel works

Recommendation

The scheme proposals should recognise the existing access which is used by large / heavy vehicles. It is recommended that, in association with Problem 2.2 above, the sand and gravel works access is provided with a right turn lane or becomes left in / left out, with vehicles being able to U-turn at the Tongwell and the Marsh End Road roundabouts.

2.4 Problem

- Location - Willen Road Signalised Junction, bus stops
- Summary - Location of bus stops may cause confusion to drivers following buses leading to shunt type collisions

It is proposed to locate on-line northbound and southbound bus stops for Willen Road, in advance of the stop line of the traffic signals.

The close proximity of the bus stops, to the stop line (20 to 30m) may cause some confusion. For a bus signalling left and slowing to use the bus stop, a following vehicle may assume that the bus is intending to turn left at the traffic signals. The following vehicle may then have to stop suddenly and there may be a risk of shunt type collisions. Also, when a bus is stationary at the bus stop, there is not sufficient space for a left turning vehicle to pass the bus and re-enter the nearside lane before the traffic signals. There is also the risk that a stationary bus will mask the primary signal for approaching traffic.

Recommendation

The bus stop locations should be reviewed to avoid the hazards described above. For example, the northbound stop location could be positioned downstream of the junction.

2.5 Problem

- Location - Willen Road Signalised Junction
- Summary - Lack of clarity for separately phased manoeuvres leading to vehicle to vehicle conflicts

It is proposed that right turns from Willen Road southbound (phase b) and Willen Road northbound (phase d) are separately phased from the ahead and left turn movements on these arms. It is not clear from the preliminary design that the location of the secondary signal heads will clear enough to approaching drivers, especially given that these are 3-lane approaches. There is a risk of drivers responding to the wrong traffic signal and in the case of right-turning traffic, turning across the path of oncoming vehicles.

Recommendation

The detailed design should ensure that signal heads are positioned to ensure that they are not misinterpreted and indicative arrows are used as appropriate.

2.6 Problem

Location	-	Willen Road Signalised Junction, development access road
Summary	-	Side road layout - increased vehicle to vehicle conflict

The proposed on-site layout indicates a left / right staggered junction and a sharp bend within approximately 30 to 50m from the traffic signal junction with Willen Road. This gives rise to a generally increased level of conflict and complicated vehicle manoeuvres, which may lead to collisions between vehicles:-

- There is a right turn lane from the development access road into a development parcel to the south. The right turn lane may be confused as a right turn lane on the approach to the traffic signals;
- Vehicles queuing from the traffic signals may obstruct these side road accesses / junctions;
- The access to the development parcel to the north is on the inside of a bend where visibility may be restricted, especially considering drivers of vans and lorries whose “over-the shoulder” visibility is blocked;
- The geometry of this access also appears tight and may not be suitable to accommodate large vehicles turning;

Recommendation

The internal layout should be amended to provide increased separation between the Willen Road traffic signal junction and the on-site accesses. On-site access roads should be subject to their own road safety audit.

2.7 Problem

Location	-	Marsh End Road roundabout
Summary	-	Road markings may not correctly guide circulating vehicles leading to side swipe collisions

The proposed lane markings at signalised Marsh End Road roundabout do not guide vehicles in the offside right turn lanes into an appropriate lane to exit from the junction at the next node. The “tracer” road markings of some of the ahead lanes guides vehicles to continue circulating to the right. There may be conflict and side swipe collisions between vehicles circulating the junction in adjacent lanes. This is a particular problem for southbound traffic entering the roundabout from Willen Road turning right H3 Monks Way

Recommendation

Road markings should be reviewed to ensure they provide correct guidance for the intended paths of vehicles using each lane.

2.8 Problem

Location - Marsh End Road roundabout

Summary - Coordination of traffic signal phases not clear

The stage diagram for Marsh End Road roundabout traffic signals just provides the staging for each node. However, it does not indicate how each node will be coordinated / linked with the other nodes, including the Toucan crossing on the A422 eastbound exit. In some locations, it is possible that a driver may see traffic signals relating to more than one phase which may be showing different aspects. Drivers may be confused and fail to stop at a stop line when required, or may stop unexpectedly when not required to do so.

Recommendation

The configuration of the traffic signals should be developed in more detail. When there is an understanding of how the nodes may be linked, the design should be reviewed to ensure that drivers will have clear sight of the relevant traffic signals, and that misleading signals are relocated, or masked.

2.9 Problem

Location - Marsh End Road Roundabout

Summary - Limited provision for cyclists to access and exit Redway

The scheme provides an off carriageway shared footway / cycle track Redway along Willen Road which is accessible for cyclists at the south and north of the scheme. However, at the Marsh End Road roundabout, there is no provision for cyclists on the A422 / H3 Monks Way to leave the carriageway and join the Redway. Cyclists may remain on the carriageway where they will be at increased risk of being struck by a vehicle.

Conversely, there appears to be no provision for cyclists to leave the Redway and safely join the carriageway e.g. no facility for cyclists to access H3 Monks Way westbound from the Redway.

Recommendation

Ensure cyclists can enter / exit the Redway at the earliest opportunity from A422 / H3 Monks Way and reinforce the intended route for cyclists with the provision of appropriate signing.

2.10 Problem

- Location - Marsh End Road roundabout
- Summary - Proposed alignment of Road Restraint System may not provide protection to vulnerable users within the central reserve

It is proposed to provide a new section of Road Restraint System in the central reserve of A422, east of the Marsh End Road roundabout, tying into the existing safety fencing. However, the alignment indicated would not provide any protection to the footway / cycle track Redway within the central reserve, and it may tend to redirect any errant vehicle towards the Redway. This would increase the risk of a pedestrian or cyclist being struck by a vehicle.

Recommendation

The proposed Road Restraint System should be aligned to provide more protection to the Redway within the central reserve.

2.11 Problem

- Location - Willen Road / Marsh End Road junction
- Summary - Location of 30mph speed limit and signage conflicts with Unclear / disjointed cycle facilities potential vehicle/cycle conflicts

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing points of Marsh End Road and Willen Road. These crossing points coincide with the start / finish of the existing 30mph speed limit for traffic entering Newport Pagnell. Vehicles may not have reduced speed at the location of the crossing points and so pedestrians and cyclists may be at increased risk of injury if struck by a vehicle. Also, the sign posts associated with the speed limit signage at the crossing points may impede pedestrians and cyclists and could partially restrict intervisibility with approaching vehicles.

Recommendation

In conjunction with providing a 40mph speed limit on Willen Road, the 30mph speed limit should start further south, possible coinciding with the "Welcome to Newport Pagnell" sign such that the existing junction and proposed crossing points are entirely within the 30mph speed limit.

2.12 Problem

- Location - Willen Road / Marsh End Road junction
- Summary - Visibility to crossing point restricted - potential pedestrian / cycle and vehicle conflicts

It is proposed to provide new sections of Redway at the Willen Road / Marsh End Road junction. This includes an uncontrolled crossing of the short link on the northern side of the junction in the fork of the 2 roads. The proposed crossing point is obscured by vegetation which is growing along the Tongwell Brook. A pedestrian or cyclist crossing the carriageway may be unsighted and struck by a vehicle turning left from Marsh End Road.

Recommendation

Vegetation should be removed to improve visibility at this location.

2.13 Problem

- Location - Marsh End Road / Tongwell Lane junction
- Summary - Unclear / disjointed cycle facilities - potential pedestrian / cycle and vehicle conflicts

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing point of Marsh End Road, connecting with Tongwell Lane (Tongwell Lane having a prohibition of motor vehicle sign and bollards to prevent vehicular access). The existing road layout includes a junction bellmouth for Tongwell lane, which is redundant, but its appearance "invites" drivers to turn in potentially leading to vehicular conflict with pedestrians and cyclists.

Recommendation

Clearly define the route at the entrance of Tongwell Lane for cyclists reducing the redundant bellmouth junction potentially providing a vehicle crossover for access.

3 Road Safety Audit Team Statement

We certify that this Road Safety Audit has been undertaken in accordance with HD 19/15, with the exceptions as detailed in Section 1 of this report.

RSA Team Leader:

Name: Philip Edwards Signed: 
Position: Principal Engineer BSc (Hons) Date: 10th August 2018
Organisation: Peter Brett Associates LLP
Address: 11 Prospect Court
Courteenhall Road
Blisworth
Northamptonshire

RSA Team Member:

Name: Bryn Kemp Signed: 
Position: Principal Engineer MCIHT Date: 10th August 2018
Certificate of Competency in Road Safety Audit
Organisation: Peter Brett Associates LLP
Address: Calgarth House
39/41 Bank Street
Ashford
Kent
T23 1DQ
Courteenhall Road
Blisworth
Northamptonshire
NN7 3DG

Appendix A

Appendix A

Information Utilised in this Stage 1 Road Safety Audit:-

Documents

- Stage 1 RSA Brief;
- TN2003/001 – ‘Design Statement – Willen Road / Development Access Signalised Junction’;
- TN2003/002 – ‘Design Statement – Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction’;
- Caldecote Farm, Newport Pagnell – Walking, Cycling & Horse-Riding Assessment Report – Dated 25th June 2018;
- Speed survey was undertaken from 30th October to 8th November 2017;
- Collision Data
- ADC Transport Assessment – July 2018;
- ADC Framework Travel Plan – July 2018;

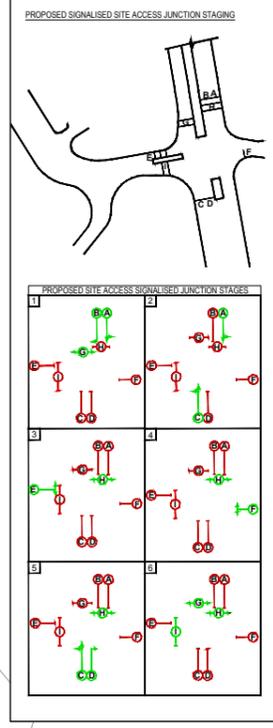
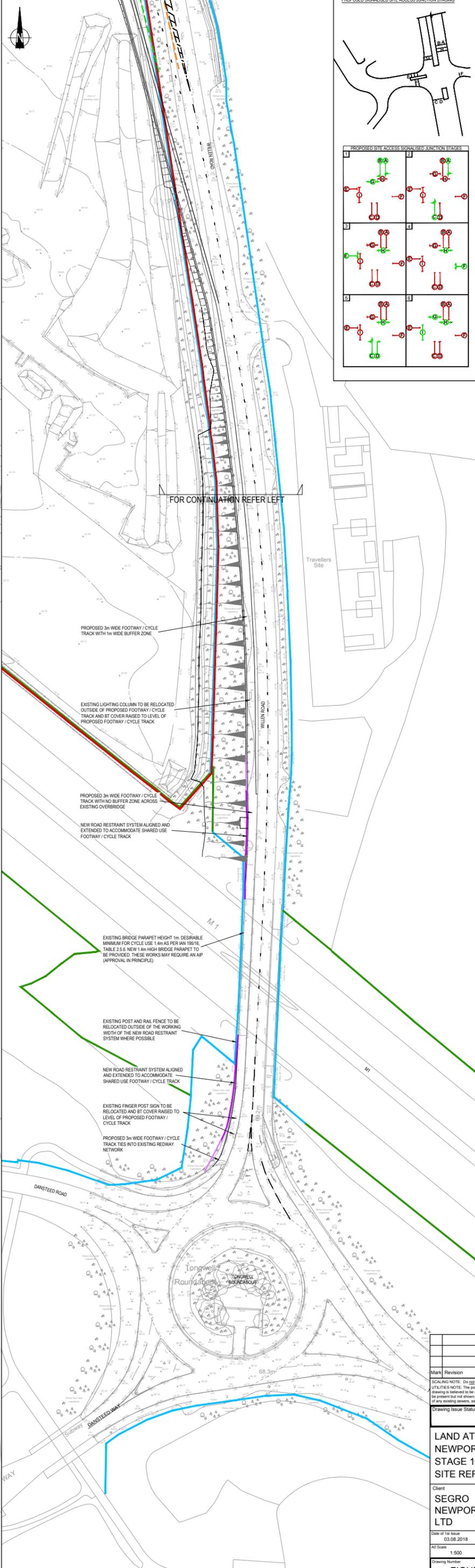
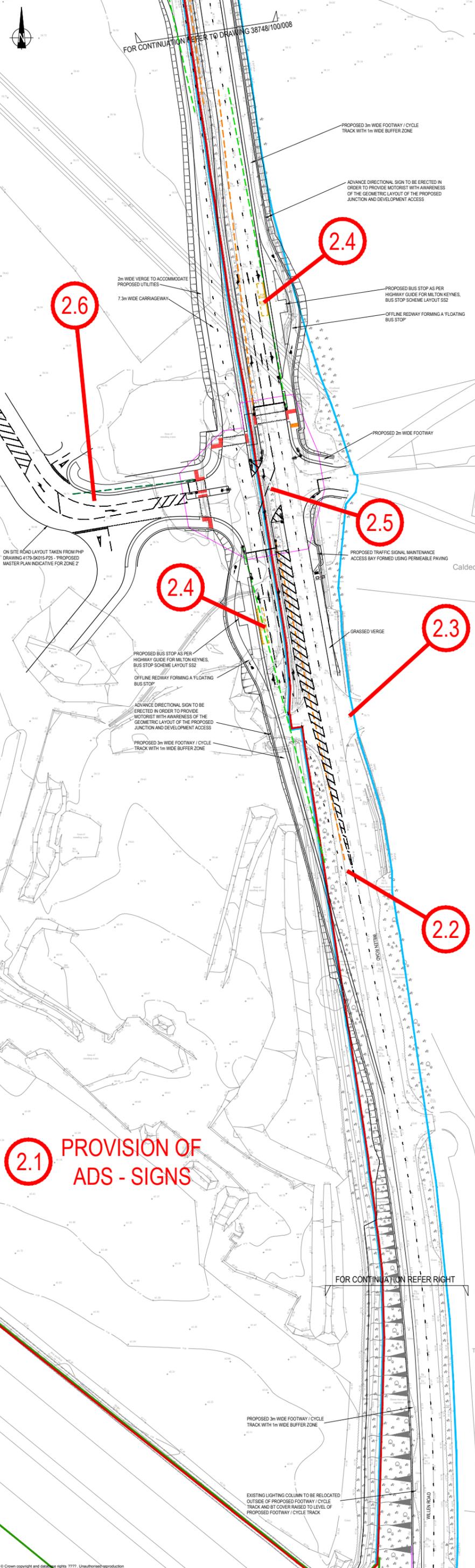
Drawings

- 38748/100/004 Rev A – ‘Location Plan’;
- 38748/100/007 – ‘Proposed Site Access Signalised Junction General Arrangement’;
- 38748/100/008 – ‘Proposed Marsh End Signalised Roundabout General Arrangement’;
- 38748/100/015 – ‘Proposed Highway Cross Sections’;
- 38748/100/016 – ‘Proposed Highway Longitudinal Sections’;
- 38748/100/017 – ‘Swept Path Analysis (Sheet 1 of 2)’;
- 38748/100/018 – ‘Swept Path Analysis (Sheet 2 of 2)’;
- 38748/500/001 – ‘Proposed Highway Drainage Pond Option 1’;
- 38748/1300/001 – ‘Street Lighting (Sheet 1 of 2)’
- 38748/1300/002 – ‘Street Lighting (Sheet 2 of 2)’

Appendix B

Site Reference Plans

Figure 1 & Figure 2

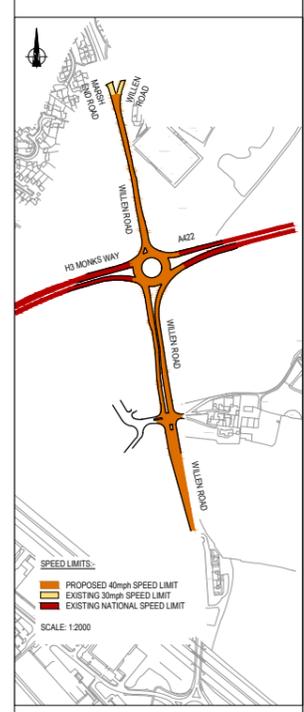


- KEY:**
- PLANNING BOUNDARY
 - HIGHWAYS ENGLAND HIGHWAY BOUNDARY
 - MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
 - PROPOSED FULL HEIGHT SAFETY BARRIER
 - PROPOSED ROAD RESTRAINT TERMINAL
 - PROPOSED TRAFFIC SIGNALS
 - SIGNAL CONTROL BOX
 - JUNCTION INTERVISIBILITY ZONE
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 45m SSD - DESIGN SPEED 40kph
- NOTES:**
- ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
 - MKCS DRAFT A HIGHWAY GUIDE FOR MILTON KEYNES DOCUMENT, FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 3.12 - TABLE OF LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
 - EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
 - THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON AEC INFRASTRUCTURE LINSIG MODEL - 180213 PROPOSED ACCESS AND MITIGATION 10kph.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - PBA TECHNICAL NOTE TN2023/001 - WILLEN ROAD, SIGNALISED JUNCTION DEVELOPMENT ACCESS.

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE SITE ACCESS SIGNALISED JUNCTION WOULD REQUIRE INDUCTIVE LOOPS ON THE NORTHERN, SOUTHERN AND WESTERN ARMS. MICROWAVE VEHICLE DETECTORS (MVD) COULD BE USED ON THE EASTERN ARM. PLEASE NOTE THAT DUE TO THE PROPOSED LAYOUT OF THE WESTERN DEVELOPMENT ARM I.E. CURVED ACCESS ROAD, WITH T-JUNCTIONS AND ASSOCIATED RIGHT TURN LANES IN CLOSE PROXIMITY TO THE SIGNALISED JUNCTION, IT WOULD NOT BE APPROPRIATE FOR MVD TO BE USED. INDUCTIVE LOOPS, EXTENDING NO MORE THAN 80m INTO THE DEVELOPMENT ACCESS, WOULD NEED TO BE USED. LANSION HAS BEEN UNDERTAKEN WITH MKC WHO HAVE AGREED THAT THESE LOOPS CAN BE LOCATED BEYOND THE EXTENT OF THE PROPOSED HIGHWAY BOUNDARY.



SPEED LIMITS:

- PROPOSED 40mph SPEED LIMIT
- EXISTING 30mph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

Mark	Revision	Date	Drawn	Chkd	Appd

ROAD SAFETY AUDIT

LAND AT CALDECOTE FARM
NEWPORT PAGNELL
STAGE 1 SAFETY AUDIT
SITE REFERENCE PLAN

Client
SEGRO
NEWPORT PAGNELL
LTD

Date of this issue: 03.08.2018
AD Scale: 1:500

Designed	Drawn
Checked	Approved
PE	PE

Drawing Number: _____
Revision: _____

FIGURE 1

Stantec
pba peter brett
now part of

© Peter Brett Associates LLP
NORTHAMPTON
Tel: 02044 878 300

© Crown copyright and database rights 1999. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Ordnance Survey 100019777



now part of



Caldecote Farm, Newport Pagnell

Stage 1 Road Safety Audit Response Report

On behalf of **Segro Newport Pagnell Ltd**

Project Ref: 38748/2005 | Rev - | Date: 21st May 2019

Office Address: 11 Prospect Court, Courteenhall Road, Blisworth, Northampton NN7 3DG
T: 01604 878 300 E: northamptonusers@peterbrett.com

Document Control Sheet

Project Name: Caldecote Farm, Newport Pagnell
Project Ref: 38748/2005
Report Title: Stage 1 Road Safety Audit Response Report
Doc Ref: 001
Date: 21st May 2019

	Name	Position	Signature	Date
Prepared by:	Dean Lucas	Engineer	<i>D Lucas</i>	21 st May 2019
Reviewed by:	J Horne	Associate	<i>James Horne</i>	21 st May 2019
Approved by:	J Horne	Associate	<i>James Horne</i>	21 st May 2019
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved

Peter Brett Associates LLP disclaims any responsibility to the Client and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence within the terms of the Contract with the Client and generally in accordance with the appropriate ACE Agreement and taking account of the manpower, resources, investigations and testing devoted to it by agreement with the Client. This report is confidential to the Client and Peter Brett Associates LLP accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

© Peter Brett Associates LLP 2019

Contents

1 Introduction 5
2 Designer’s Response to the Items Raised from this Stage 1 Road Safety Audit 6
3 Summary 19

Appendices

Appendix A – Site Reference Plans;

This page is intentionally blank

1 Introduction

- 1.1 This Road Safety Audit (RSA) Response Report relates to the Stage 1 RSA Report on the Proposed signalised junction, and associated infrastructure, including Non-Motorised User (NMU) facilities, to provide access to proposed commercial development. Proposed signalised roundabout junction, and associated infrastructure, including NMU facilities, required to accommodate the likely increase in traffic flows generated by a proposed commercial development. The RSA Brief comprised of a set of drawings and document assembled by the Design Team for the scheme and approved by Milton Keynes Highways. The RSA Report was prepared and issued by the RSA Team Leader, Philip Edwards of Peter Brett Associates LLP.
- 1.2 The scheme comprises of:-
- Willen Road / Development Access Signalised Junction;
 - Willen Road / H3 Monks Way / A422 Signalised Roundabout Junction;
 - Associated Non-Motorised User facilities to serve the development.
- 1.3 The Design Team have carefully considered the problems and recommendations in the Stage 1 RSA Report undertaken in August 2018. This Stage 1 RSA was undertaken in accordance with HD 19/15 – ‘Road Safety Audit’, which was the current Standard at the time. Therefore, this RSA Response Report has also been prepared in accordance to HD 19/15, rather than subsequently released GG 119 and GG 119 Rev 1. The RSA Team examined and reported only on the road safety implications of the scheme as presented and have not examined or verified the compliance of the design to any other criteria. This RSA Response Report includes all of the problems and recommendations raised by the RSA Team, as well as the Design Team’s response to these issues.
- 1.4 Key Personnel
- Overseeing Organisation
Milton Keynes Highways (MKC) – Kevan Paradine (Senior Road Safety Engineer)
- Road Safety Audit Team
RSA Team Leader – Philip Edwards (Peter Brett Associates LLP – Principal Engineer)
RSA Team Member – Bryn Kemp (Peter Brett Associates LLP – Principal Technician)
- Design Organisation
Design Team Leader – James Horne (Peter Brett Associates LLP – Principal Engineer)
- 1.5 This report lists the problems identified by the Stage 1 RSA. The responses from the Design Team are shown in bold typeface.
- 1.6 Problems identified in this report are indicated by location and are shown on the site reference plans in Appendix A

2 Designer's Response to the Items Raised from this Stage 1 Road Safety Audit

2.1 Problem

Location	-	Willen Road Signalised Junction
Summary	-	Direction Signage Requirements may not be achievable – insufficient driver information and potential vehicle impact with signs

It is noted from the Design Statement (TN2003/001) that it is proposed to provide Advance Direction Signs (ADS) and Flag direction signs relating to the proposed traffic signal junction on Willen Road. The location for one ADS is indicated for northbound traffic approximately 60m from the traffic signal stop line. This location is after the carriageway has already widened from 1 to 3 lanes, and not sufficiently in advance of the junction to inform drivers. No other ADS or direction signs are indicated on the drawings.

The existing verges of Willen Road are heavily vegetated, and it is proposed that there will be a 3m wide Redway. Therefore, it cannot be assumed that the necessary signs can be accommodated and adequate visibility can be achieved without difficulty.

In view of the 3 lane approaches to the junction along Willen Road, clear signage will be needed in advance of the junction such that drivers will position themselves in the correct lane. Otherwise there is a risk of late and unexpected lane changes, which may result in collisions between vehicles approaching the junction.

Recommendation

The proposed signing for the junction should be determined in more detail before the preliminary design is completed. Locations and sign widths should be investigated to ensure that adequate advance direction signage can be achieved with suitable lateral clearance from the edge of the carriageway, and with the appropriate mounting heights in relation to the proposed cycle route.

Design Team Response

We have reviewed the potential sizes of the Advanced and Flag type Directional Signs and can confirm that:-

- **These signs can be located within the proposed and existing highway boundary;**
- **Provided with appropriate lateral clearance from the kerbline or footway / cycle track;**
- **Positioned to ensure unrestricted visibility is provided to the sign plates;**
- **This review has been based on an 85th percentile approach speed between 30 to 40mph and in line with the design guidance provided by Appendix A of LTN 1/94 – 'The Design and Use of Directional Informatory Signs';**

2.2 Problem

- Location - Willen Road Signalised Junction, northbound approach
- Summary - Development of right turning lane – potential side swipe collisions associated with lane changes

On the northbound approach to Willen Road traffic signals, the carriageway widens from a single northbound lane to 3 lanes. The road markings indicated will tend to encourage a large proportion of traffic to approach the junction in the offside lane. But this lane is intended to just serve right turning traffic, for which numbers are expected to be low. Vehicles may naturally tend to enter the right turning lane and then have to change lanes for the ahead movement, which will introduce un-necessary conflict and increase the risk of collision.

Recommendation

The layout of road markings on the northbound approach should be amended such that most traffic naturally enters the ahead lanes and the right turning lane is developed nearer to the stop line.

Design Team Response

In response to other external factors, the proposed junction has now been relocated further north and has become a 3-arm signalised junction. The existing Caldecote Farm development, and the Sand and Gravel Quarry, are now to be served by Left In / Left Out (LILO) junctions. This design change has also removed the road safety problem identified above.

2.3 Problem

- Location - Willen Road Signalised Junction, northbound approach
- Summary - No provision for existing sand and gravel works – potential conflict with turning vehicles

The proposals do not indicate any provision for the existing access to Caldecote Farm Sand and Gravel Works. Large vehicles use this access and currently all turning movements are permitted. The proposals will see Willen Road widened to 5 traffic lanes (3 northbound and 2 southbound) with central ghost-island hatching. There is no provision within the hatching for right turning vehicles to access to the sand and gravel works.

It is not clear how the scheme will accommodate vehicles turning right into and out from the sand and gravel works access. There will be conflict and risk of collision between right turning vehicles at the sand and gravel works and other traffic using the multiple lanes on Willen Road.



Willen Road – Large vehicle exiting from the sand and gravel works

Recommendation

The scheme proposals should recognise the existing access which is used by large / heavy vehicles. It is recommended that, in association with Problem 2.2 above, the sand and gravel works access is provided with a right turn lane or becomes left in / left out, with vehicles being able to U-turn at the Tongwell and the Marsh End Road roundabouts.

Design Team Response

As detailed in the response to Problem 2.2, the scheme proposals have been updated to indicate the existing Quarry access being upgraded to provide a LIFO style junction. However, this upgraded junction will only be provided if the remaining lifespan of the Sand and Gravel Quarry extends beyond the construction period of the development.

2.4 Problem

Location	-	Willen Road Signalised Junction, bus stops
Summary	-	Location of bus stops may cause confusion to drivers following buses leading to shunt type collisions

It is proposed to locate on-line northbound and southbound bus stops for Willen Road, in advance of the stop line of the traffic signals.

The close proximity of the bus stops, to the stop line (20 to 30m) may cause some confusion. For a bus signalling left and slowing to use the bus stop, a following vehicle may assume that the bus is intending to turn left at the traffic signals. The following vehicle may then have to stop suddenly and there may be a risk of shunt type collisions. Also, when a bus is stationary at the bus stop, there is not sufficient space for a left turning vehicle to pass the bus and re-enter the nearside lane before the traffic signals. There is also the risk that a stationary bus will mask the primary signal for approaching traffic.

Recommendation

The bus stop locations should be reviewed to avoid the hazards described above. For example, the northbound stop location could be positioned downstream of the junction.

Design Team Response

With the proposed junction moved further north, we have been able to provide the following:-

Northbound Bus Stop

- **This Bus Stop has remained upstream of the junction, but is now being provided with an off carriageway lay-by in order to retained 2No. northbound running lanes;**

Southbound Bus Stop

- **Bus Stop has been relocated 80m (approx.) downstream of the junction;**
- **An off carriageway lay-by style Bus Stop is now being proposed in order to retained 2No. southbound running lanes;**

2.5 Problem

- | | | |
|----------|---|--|
| Location | - | Willen Road Signalised Junction |
| Summary | - | Lack of clarity for separately phased manoeuvres leading to vehicle to vehicle conflicts |

It is proposed that right turns from Willen Road southbound (phase b) and Willen Road northbound (phase d) are separately phased from the ahead and left turn movements on these arms. It is not clear from the preliminary design that the location of the secondary signal heads will clear enough to approaching drivers, especially given that these are 3-lane approaches. There is a risk of drivers responding to the wrong traffic signal and in the case of right-turning traffic, turning across the path of oncoming vehicles.

Recommendation

The detailed design should ensure that signal heads are positioned to ensure that they are not misinterpreted and indicative arrows are used as appropriate.

Design Team Response

The proposed junction is now a 3-arm signalised junction rather than a 4-arm i.e. a simpler layout. However, during the detailed design stage, appropriate positioning, additional cowling, indicative arrows, etc. will be detailed in order to mitigate against potential misinterpretation.

2.6 Problem

Location	-	Willen Road Signalised Junction, development access road
Summary	-	Side road layout - increased vehicle to vehicle conflict

The proposed on-site layout indicates a left / right staggered junction and a sharp bend within approximately 30 to 50m from the traffic signal junction with Willen Road. This gives rise to a generally increased level of conflict and complicated vehicle manoeuvres, which may lead to collisions between vehicles:-

- There is a right turn lane from the development access road into a development parcel to the south. The right turn lane may be confused as a right turn lane on the approach to the traffic signals;
- Vehicles queuing from the traffic signals may obstruct these side road accesses / junctions;
- The access to the development parcel to the north is on the inside of a bend where visibility may be restricted, especially considering drivers of vans and lorries whose “over-the shoulder” visibility is blocked;
- The geometry of this access also appears tight and may not be suitable to accommodate large vehicles turning;

Recommendation

The internal layout should be amended to provide increased separation between the Willen Road traffic signal junction and the on-site accesses. On-site access roads should be subject to their own road safety audit.

Design Team Response

The internal road layout of the development site has been updated in response to the 3-arm signalised junction. This has increased the separation between internal and external junction.

2.7 Problem

- Location - Marsh End Road roundabout
- Summary - Road markings may not correctly guide circulating vehicles leading to side swipe collisions

The proposed lane markings at signalised Marsh End Road roundabout do not guide vehicles in the offside right turn lanes into an appropriate lane to exit from the junction at the next node. The “tracer” road markings of some of the ahead lanes guides vehicles to continue circulating to the right. There may be conflict and side swipe collisions between vehicles circulating the junction in adjacent lanes. This is a particular problem for southbound traffic entering the roundabout from Willen Road turning right H3 Monks Way.

Recommendation

Road markings should be reviewed to ensure they provide correct guidance for the intended paths of vehicles using each lane.

Design Team Response

The road markings and lane destination arrows on the approaches and circulatory carriageway have been amended in response to the above road safety issue.

2.8 Problem

Location - Marsh End Road roundabout

Summary - Coordination of traffic signal phases not clear

The stage diagram for Marsh End Road roundabout traffic signals just provides the staging for each node. However, it does not indicate how each node will be coordinated / linked with the other nodes, including the Toucan crossing on the A422 eastbound exit. In some locations, it is possible that a driver may see traffic signals relating to more than one phase which may be showing different aspects. Drivers may be confused and fail to stop at a stop line when required, or may stop unexpectedly when not required to do so.

Recommendation

The configuration of the traffic signals should be developed in more detail. When there is an understanding of how the nodes may be linked, the design should be reviewed to ensure that drivers will have clear sight of the relevant traffic signals, and that misleading signals are relocated, or masked.

Design Team Response

Similar to Problem 2.5, during the detailed design stage, appropriate positioning, additional cowling, indicative arrows, etc. will be detailed in order to mitigate against potential misinterpretation.

2.9 Problem

Location - Marsh End Road Roundabout

Summary - Limited provision for cyclists to access and exit Redway

The scheme provides an off carriageway shared footway / cycle track Redway along Willen Road which is accessible for cyclists at the south and north of the scheme. However, at the Marsh End Road roundabout, there is no provision for cyclists on the A422 / H3 Monks Way to leave the carriageway and join the Redway. Cyclists may remain on the carriageway where they will be at increased risk of being struck by a vehicle.

Conversely, there appears to be no provision for cyclists to leave the Redway and safely join the carriageway e.g. no facility for cyclists to access H3 Monks Way westbound from the Redway.

Recommendation

Ensure cyclists can enter / exit the Redway at the earliest opportunity from A422 / H3 Monks Way and reinforce the intended route for cyclists with the provision of appropriate signing.

Design Team Response

As detailed within the Walking, Cycling, & Horse-Riding Assessment (provided within the design package submitted to the RSA Team), the scheme proposals are to provide pedestrian / cyclist links:-

- **From Milton Keynes to the proposed development; and**
- **From Newport Pagnell to the proposed development;**
- **Including improvements to existing Non-Motorised User (NMU) facilities;**

There are currently no cycle facilities on the H3 Monks Way and the A422 dual carriageways. Any cyclist currently using these high speed roads is likely to be a confident and experienced cyclist, who would prefer to remain in the carriageway rather than use off carriageway facilities. Therefore, the scheme proposals have not catered for these approaches. Notwithstanding the above, we have updated the scheme proposals to provide a cycle exit accessing the proposed Redway on the westbound A422 approach (prior to the Toucan crossing).

2.10 Problem

- Location - Marsh End Road roundabout
- Summary - Proposed alignment of Road Restraint System may not provide protection to vulnerable users within the central reserve

It is proposed to provide a new section of Road Restraint System in the central reserve of A422, east of the Marsh End Road roundabout, tying into the existing safety fencing. However, the alignment indicated would not provide any protection to the footway / cycle track Redway within the central reserve, and it may tend to redirect any errant vehicle towards the Redway. This would increase the risk of a pedestrian or cyclist being struck by a vehicle.

Recommendation

The proposed Road Restraint System should be aligned to provide more protection to the Redway within the central reserve.

Design Team Response

The proposed Road Restraint System has been realigned to offer more protection to the footway / cycle track within the central reserve from A422 Westbound traffic.

2.11 Problem

- | | | |
|----------|---|--|
| Location | - | Willen Road / Marsh End Road junction |
| Summary | - | Location of 30mph speed limit and signage conflicts with Unclear / disjointed cycle facilities potential vehicle / cycle conflicts |

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing points of Marsh End Road and Willen Road. These crossing points coincide with the start / finish of the existing 30mph speed limit for traffic entering Newport Pagnell. Vehicles may not have reduced speed at the location of the crossing points and so pedestrians and cyclists may be at increased risk of injury if struck by a vehicle. Also, the sign posts associated with the speed limit signage at the crossing points may impede pedestrians and cyclists and could partially restrict intervisibility with approaching vehicles.

Recommendation

In conjunction with providing a 40mph speed limit on Willen Road, the 30mph speed limit should start further south, possible coinciding with the "Welcome to Newport Pagnell" sign such that the existing junction and proposed crossing points are entirely within the 30mph speed limit.

Design Team Response

We have amended the proposed speed limit alteration in response to the above recommendation. However, any alterations to the speed limits will be subject to liaison and agreement with MKC. Therefore, any update to the scheme proposals will be on this basis.

2.12 Problem

- Location - Willen Road / Marsh End Road junction
- Summary - Visibility to crossing point restricted - potential pedestrian / cycle and vehicle conflicts

It is proposed to provide new sections of Redway at the Willen Road / Marsh End Road junction. This includes an uncontrolled crossing of the short link on the northern side of the junction in the fork of the 2 roads. The proposed crossing point is obscured by vegetation which is growing along the Tongwell Brook. A pedestrian or cyclist crossing the carriageway may be unsighted and struck by a vehicle turning left from Marsh End Road.

Recommendation

Vegetation should be removed to improve visibility at this location.

Design Team Response

As part of the detailed design of this scheme, visibility requirements will be reviewed at this existing crossing point, and any vegetation which restricts visibility will be removed as required.

2.13 Problem

- Location - Marsh End Road / Tongwell Lane junction
- Summary - Unclear / disjointed cycle facilities - potential pedestrian / cycle and vehicle conflicts

At the junction of Willen Road and Marsh End Road, the proposed Redway will have a crossing point of Marsh End Road, connecting with Tongwell Lane (Tongwell Lane having a prohibition of motor vehicle sign and bollards to prevent vehicular access). The existing road layout includes a junction bellmouth for Tongwell lane, which is redundant, but its appearance “invites” drivers to turn in potentially leading to vehicular conflict with pedestrians and cyclists.

Recommendation

Clearly define the route at the entrance of Tongwell Lane for cyclists reducing the redundant bellmouth junction potentially providing a vehicle crossover for access.

Design Team Response

Liaison will be undertaken with MKC in order to determine the status of Tongwell Lane and whether or not this access is to remain as currently provided in order to facilitate emergency access along Tongwell Lane. We can then look to resolve the road safety issue highlighted above within this context.

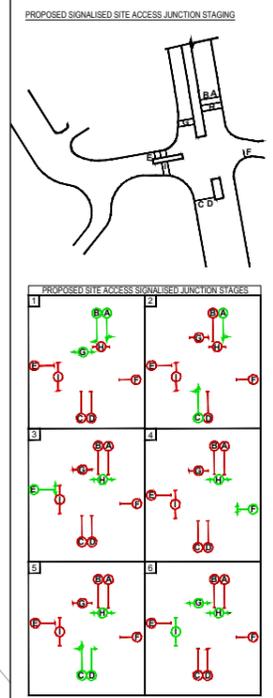
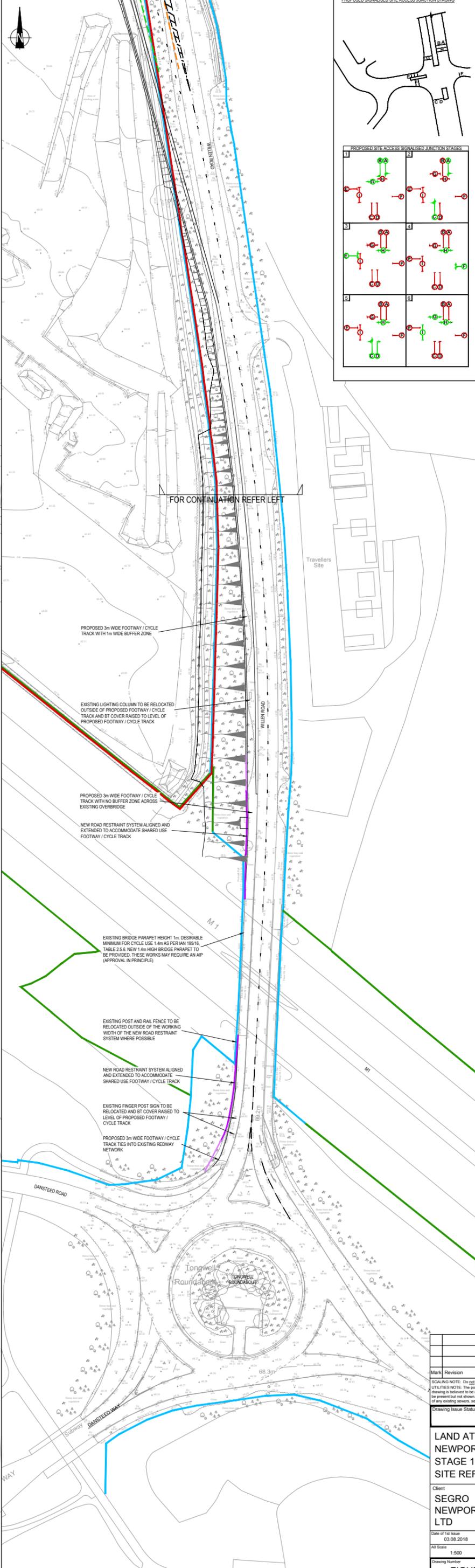
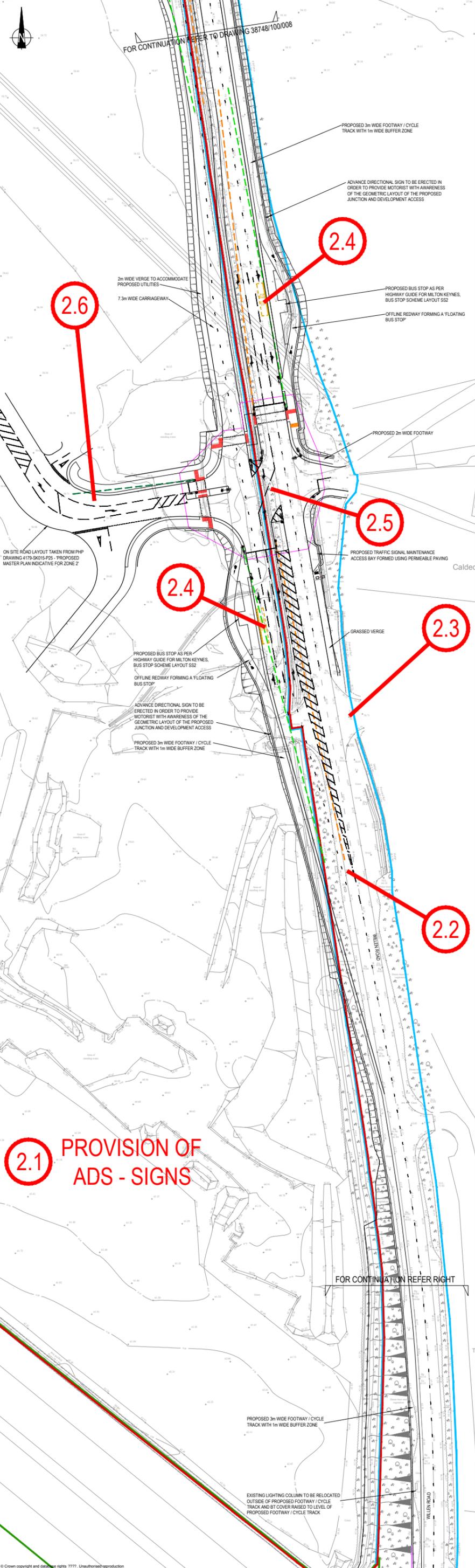
3 Summary

- 3.1 This RSA Response Report has been prepared to address the issues raised in the Stage 1 RSA. For issues where the RSA Team's recommendations are not proposed to be fully implemented substantiating reasons have been provided.

Appendix A

Appendix A

Site Reference Plans;



- KEY:**
- PLANNING BOUNDARY
 - HIGHWAYS ENGLAND HIGHWAY BOUNDARY
 - MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
 - PROPOSED FULL HEIGHT SAFETY BARRIER
 - PROPOSED ROAD RESTRAINT TERMINAL
 - PROPOSED TRAFFIC SIGNALS
 - SIGNAL CONTROL BOX
 - JUNCTION INTERVISIBILITY ZONE
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 45m SSD - DESIGN SPEED 40kph
- NOTES:**
- ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
 - MKCS DRAFT A HIGHWAY GUIDE FOR MILTON KEYNES DOCUMENT, FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 3.12 - TABLE OF LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
 - EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60mph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40mph THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
 - THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON ACC INFRASTRUCTURE LINGMIG MODEL - 180213 PROPOSED ACCESS AND MITIGATION 10kph.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - PBA TECHNICAL NOTE TN2023/001 - WILLEN ROAD, SIGNALISED JUNCTION DEVELOPMENT ACCESS.

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE SITE ACCESS SIGNALISED JUNCTION WOULD REQUIRE INDUCTIVE LOOPS ON THE NORTHERN, SOUTHERN AND WESTERN ARMS. MICROWAVE VEHICLE DETECTORS (MVD) COULD BE USED ON THE EASTERN ARM. PLEASE NOTE THAT DUE TO THE PROPOSED LAYOUT OF THE WESTERN DEVELOPMENT ARM I.E. CURVED ACCESS ROAD, WITH T-JUNCTIONS AND ASSOCIATED RIGHT TURN LANES IN CLOSE PROXIMITY TO THE SIGNALISED JUNCTION, IT WOULD NOT BE APPROPRIATE FOR MVD TO BE USED. INDUCTIVE LOOPS, EXTENDING NO MORE THAN 80m INTO THE DEVELOPMENT ACCESS, WOULD NEED TO BE USED. LAMSON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE AGREED THAT THESE LOOPS CAN BE LOCATED BEYOND THE EXTENT OF THE PROPOSED HIGHWAY BOUNDARY.



2.1 PROVISION OF ADS - SIGNS

Mark	Revision	Date	Drawn	Chkd	Appd

Drawing Issue Status

ROAD SAFETY AUDIT

LAND AT CALDECOTE FARM
NEWPORT PAGNELL
STAGE 1 SAFETY AUDIT
SITE REFERENCE PLAN

Client
SEGRO
NEWPORT PAGNELL
LTD

Date of this issue: 03.08.2018
AD Scale: 1:500

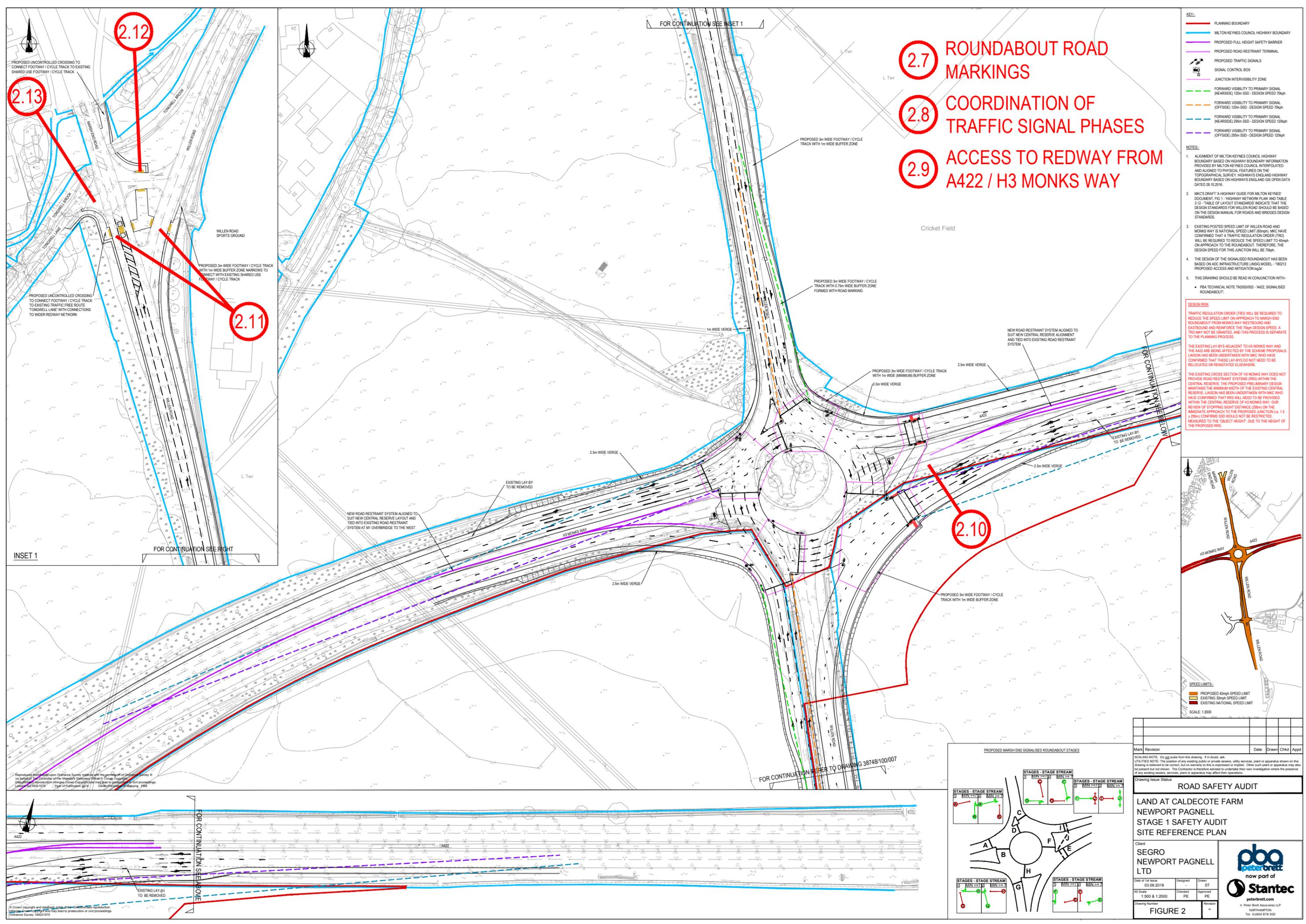
Designed	Drawn
Checked	Approved
PE	PE

Revision: -

FIGURE 1

Stantec
pba peter brett
now part of
peterbrett.com
Peter Brett Associates LLP
NORTHAMPTON
Tel: 03454 878 300

© Crown copyright and database rights 1999. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Ordnance Survey 100019777



- KEY:**
- PLANNING BOUNDARY
 - MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
 - PROPOSED FULL HEIGHT SAFETY BARRIER
 - PROPOSED ROAD RESTRAINT TERMINAL
 - PROPOSED TRAFFIC SIGNALS
 - SIGNAL CONTROL BOX
 - JUNCTION INTERVISIBILITY ZONE
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEARSIDE) 295m SSD - DESIGN SPEED 120kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 295m SSD - DESIGN SPEED 120kph

- NOTES:**
1. ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL, INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
 2. MKC'S DRAFT A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT, FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 3.12 - TABLE OF LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
 3. EXISTING POSTED SPEED LIMIT OF WILLEN ROAD AND MONKS WAY IS NATIONAL SPEED LIMIT (50kph). MKC HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40kph ON APPROACH TO THE ROUNDABOUT. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
 4. THE DESIGN OF THE SIGNALISED ROUNDABOUT HAS BEEN BASED ON ADC INFRASTRUCTURE LINSIG MODEL - 180213 PROPOSED ACCESS AND MITIGATION (log3r).
 5. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - PBA TECHNICAL NOTE TN2003/002 - A422 SIGNALISED ROUNDABOUT.

DESIGN RISK:

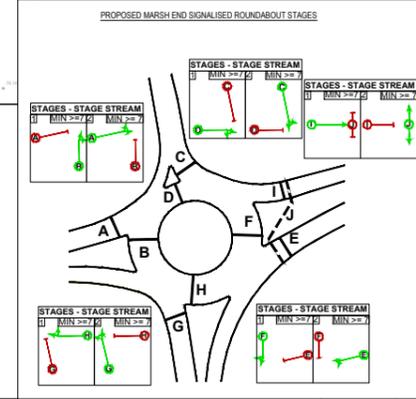
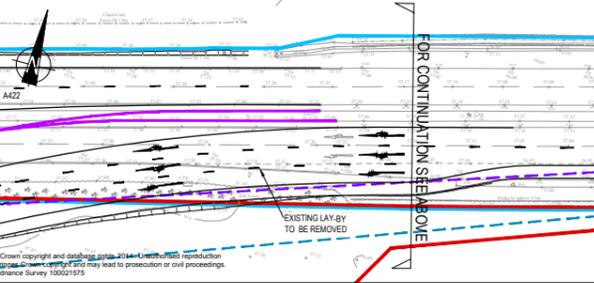
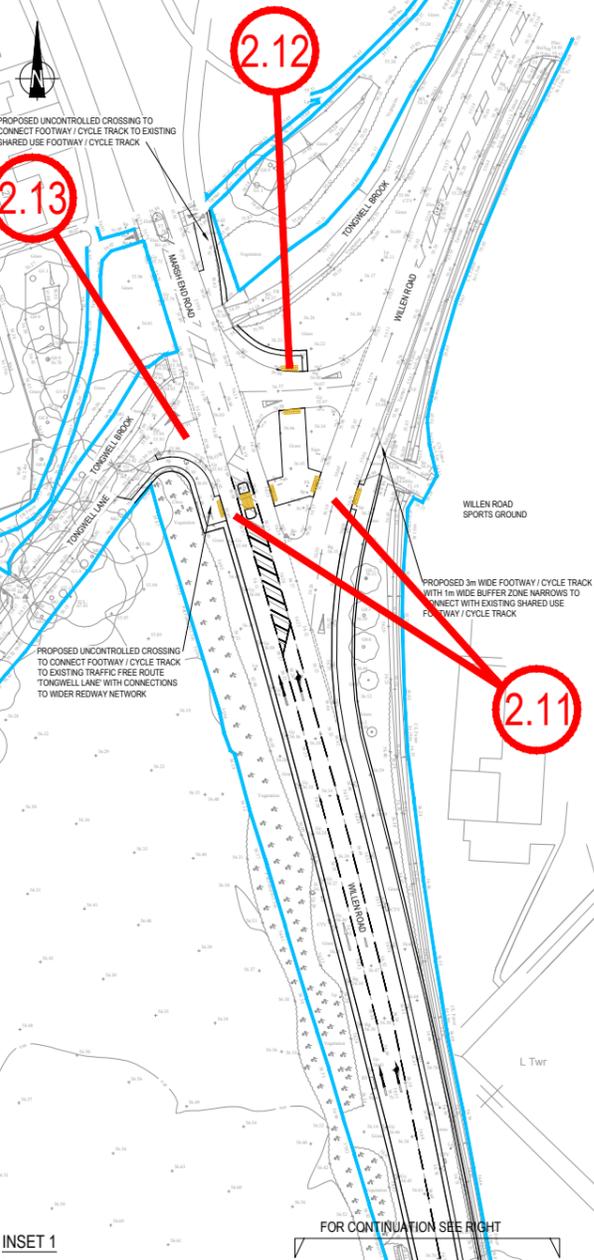
TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT ON APPROACH TO MARSH END ROUNDABOUT FROM MONKS WAY WESTWARDS AND EASTWARDS AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE EXISTING LAY-BYS ADJACENT TO H3 MONKS WAY AND THE A422 ARE BEING AFFECTED BY THE SCHEME PROPOSALS. LIAISON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE CONFIRMED THAT THESE LAY-BYS DO NOT NEED TO BE RELOCATED OR REINSTATED ELSEWHERE.

THE EXISTING CROSS SECTION OF H3 MONKS WAY DOES NOT PROVIDE ROAD RESTRAINT SYSTEMS (RRS) WITHIN THE CENTRAL RESERVE. THE PROPOSED PRELIMINARY DESIGN MAINTAINS THE MINIMUM WIDTH OF THE EXISTING CENTRAL RESERVE. LIAISON HAS BEEN UNDERTAKEN WITH MKC WHO HAVE CONFIRMED THAT RRS WILL NEED TO BE PROVIDED WITHIN THE CENTRAL RESERVE OF H3 MONKS WAY. OUR REVIEW OF STOPPING SIGHT DISTANCE (295m) ON THE IMMEDIATE APPROACH TO THE PROPOSED JUNCTION (i.e. 1.5 x 295m) CONFIRMS SSD WOULD NOT BE RESTRICTED, MEASURED TO THE 'OBJECT HEIGHT', DUE TO THE HEIGHT OF THE PROPOSED RRS.



- 2.7** ROUNDABOUT ROAD MARKINGS
- 2.8** COORDINATION OF TRAFFIC SIGNAL PHASES
- 2.9** ACCESS TO REDWAY FROM A422 / H3 MONKS WAY



Mark	Revision	Date	Drawn	Chkd	Appd

UTILITIES NOTE: Do not dig from this drawing. If in doubt, ask. The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty is made in respect of its accuracy. Other such plant or apparatus may also be present but not shown. The Contractor is to be advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

Drawing Issue Status

ROAD SAFETY AUDIT

LAND AT CALDECOTE FARM
NEWPORT PAGNELL
STAGE 1 SAFETY AUDIT
SITE REFERENCE PLAN

Client
SEGRO
NEWPORT PAGNELL
LTD

Date of 1st Issue: 03.08.2018
Designed: ST
Checked: PE
Approved: PE

Scale: A0 1:500 & 1:2000

Drawing Number: **FIGURE 2**

pba peterbrett
now part of **Stantec**
peterbrett.com
Peter Brett Associates LLP
SOUTHAMPTON
Tel: 01804 878 300



Caldecote Farm, Newport Pagnell

Walking, Cycling & Horse-Riding Assessment Report

On behalf of **Newlands Developments**

Project Ref: 38748/2003 | Rev: B | Date: 5th July 2018

Registered Office: Buckingham Court Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU
Office Address: Unit 11 Prospect Court, Courteenhall Road Blisworth Northamptonshire NN7 3DG
T: 01604 878 300 E: pba.northampton@stantec.com

Document Control Sheet

Project Name: Caldecote Farm, Newport Pagnell

Project Ref: 38748

Report Title: Walking, Cycling & Horse-Riding Assessment Report

Doc Ref: 001 Rev B

Date: 5th July 2018

	Name	Position	Signature	Date
Prepared by:	Douglas Pielage	Graduate Engineer	<i>James Horne</i>	5 th July 2018
Reviewed and Approved by:	James Horne	Principal Engineer	<i>James Horne</i>	5 th July 2018
For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
A	21 st May 2019	Report updated in response to alterations to development proposals	Jordan Balzer	<i>James Horne</i>	<i>James Horne</i>
B	28 th July 2021	Report update to reflect revised Standard (GG 142)	Jordan Balzer	<i>James Horne</i>	<i>James Horne</i>

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Contents

1	Introduction	1
2	Scheme Description and Background	2
3	Walking, Cycling and Horse-Riding Assessment	4
4	User Opportunities.....	13
5	Walking, Cycling and Horse-Riding Assessment Team Statement	16

Appendices

- Appendix A - 38748/100/007 Rev B – ‘Proposed Site Access Signalised Junction – General Arrangement’;
38748/100/008 Rev B – ‘Proposed Marsh End Signalised Roundabout – General Arrangement’;
- Appendix B - Collision Data
- Appendix C - Liaison with MKC’s Public Transport and subsequently Road Safety Team
- Appendix D - Liaison with MKC’s Senior Transport Planner – Cycling and Events Management

1 Introduction

- 1.1 Stantec UK Ltd have been commissioned by Newlands Developments to prepare proposals to provide new and improved highway infrastructure required to serve and support a proposed new commercial development in Newport Pagnell.
- 1.2 The development proposals to be submitted as part of an outline planning application comprising of the erection of two storage and distribution units (Class B8) with associated access, car parking, servicing, landscaping, earthworks and drainage.
- 1.3 The highway improvement scheme proposals are indicated on the following drawings which have been provided within Appendix A:-
 - 38748/100/007 Rev B – ‘Proposed Site Access Signalised Junction – General Arrangement’;
 - 38748/100/008 Rev B – ‘Proposed Marsh End Signalised Roundabout – General Arrangement’;
- 1.4 Willen Road is a rural, single carriageway, bound on both sides by grassed verges. It is subject to the national speed limit (60mph) and illuminated by a system of street lighting. There are 2No. existing on-carriageway bus stops along Willen Road, located to the south of the proposed development signalised junction.
- 1.5 H3 Monks Way and A422 are rural, dual carriageways, bound on both sides by grassed verges. They are subject to the national speed limit (70mph) and only illuminated by a system of street lighting at the Marsh End Road Roundabout.

2 Scheme Description and Background

2.1 Background

- 2.1.1 The scheme is a highway improvement scheme that will have a permanent impact on Milton Keynes Council's (MKC) road network. In order to ensure the needs for Non-Motorised Users (NMUs) are fully considered as part of the scheme's development, MKC have confirmed that a 'Walking, Cycling & Horse-Riding Assessment', as detailed by GG 142 Rev 0 – 'Walking, Cycling and Horse-Riding Assessment and Review', needs to be undertaken.
- 2.1.2 In accordance with Table 2.2.1 of GG 142, the scale of the scheme has been assessed by the Lead Assessor, and is considered to qualify as a 'small' scheme (for the purposes of this assessment). This has also been confirmed by MKC.
- 2.1.3 Therefore, the scheme will be subject to a 'Walking, Cycling and Horse-Riding Assessment' during the planning stage of the proposed highway scheme. The need for a subsequent 'Walking, Cycling and Horse-Riding Review' at the detailed design stage will be determined by MKC.
- 2.1.4 As-built records indicated that the original H3 Monks Way / A422 bypass was constructed in the 1976. The A422 was upgraded to a dual carriageway in 1990. Willen Road is a historic route that was present on 1945 aerial photos.

2.2 Proposed Highway Scheme

- 2.2.1 A new 3-arm signalised junction is to be provided on Willen Road to serve the commercial development (western arm) and maintain access to the farm and residential buildings (eastern arm) known as 'Caldecote Farm' and / or 'Glenfield'. Also, the existing H3 Monks Way / A422 / Willen Road 4-arm roundabout is to be increased in size and signalised in order to accommodate the likely increase in traffic flows generated by a proposed commercial development.
- 2.2.2 The scheme objectives include improving conditions for walking and cycling as the current route has limited facilities and connections for NMUs. This is likely to include:-
- Off carriageway shared use footway / cycle tracks, referred to as a 'Redways' in Milton Keynes;
 - Toucan style controlled crossings at the 2No new signalised junctions;
 - 2No. new bus stops required to serve the development;

2.3 Study Area

Figure 1 indicates the approximate study area for this Assessment Report. The assessment area has been set by the Lead Assessor and covers:-

- H3 Monks Way – Dual carriageway;
- A422 – Dual carriageway;
- Willen Road (North) – Northern Arm of the existing Marsh End Road roundabout up to its junction with Marsh End Road;
- Willen Road (South) – Southern Arm of the existing Marsh End Road roundabout down to its junction with the Tongwell Roundabout;
- Surrounding area within a 1km radius of the site;



Figure 1 – Extents of Study Area

3 Walking, Cycling and Horse-Riding Assessment

3.1 Review of Walking, Cycling and Horse-Riding Policies and Strategies

3.1.1 The following listed documents have been reviewed as part of this Assessment:-

- Local Transport Plan 3 for Milton Keynes;
- Draft Mobility Strategy 2018 - 2036 for Milton Keynes;
- Transport Vision and Strategy for Milton Keynes;
- LTP3 Review – Addendum 1 (adopted 13th June 2012);
- MKC's Cycling Interactive Mapping Service;
- Bus Strategy for Milton Keynes;
- Bus Information Strategy for Milton Keynes;

3.2 Collision Data

3.2.1 Recorded Injury Collision (RIC) data has been obtained from the CrashMap for 6½ years (2014 to 2020 up to June) – Refer to Appendix B.

3.2.2 Marsh End Road Roundabout

Within the past 6½ years, 9 RICs (2 serious, 7 slight) have been recorded at this existing roundabout:-

- A422 Approach:-
 - 6No collisions, 2 occurred in the wet, 1 occurred during the hours of darkness;
 - 3No. RICs involved Cyclists being struck by vehicles failing to Give Way;
 - 1No. Shunt type collision involved 2No. 50cc motorbikes at the junction;
 - 2No. Shunt type collision on the immediate approach;
- H3 Monks Way Approach:-
 - 1No. Shunt type collision, occurred in the wet at the junction;
- Willen Road (Southern Arm) Approach:-
 - 1No. Single vehicle collision (colliding with a tree);
 - 1No. Failed to Give Way type collision;

3.2.3 Willen Road (North)

Within the past 6½ years, 1 RIC has been recorded along Willen Road (North). A review of this RIC has indicated that the collision (slight) occurred at midnight in October 2014, when the road surface was wet. The RIC was potentially a head-on type collision.

3.2.4 Willen Road (South)

Within the past 6½ years, 3No. RICs (all slight) have been recorded along Willen Road (South). A review of these RICs has indicated:-

- A collision (slight) occurred during the early evening in January 2014, when the road surface was dry and the weather fine. The RIC appears to be a shunt type collision (potentially during queuing traffic) when a bus drove into the back of a car, with the knock on effect involving 2 more vehicles;
- 2No. collisions involved HGVs at the existing access associated with the Sand and Gravel extraction site;
 - 1No. shunt type collision when the carriageway was wet;
 - 1No. occurred when the HGV was turning right during the hours of darkness;

3.2.5 It is considered that 13 RICs in 6½ years does not constitute a significant collision problem at these locations with the current national speed limits in place. However, it is noted that 3No. of these collisions involved Cyclists on the circulatory carriageway being struck by motorists entering the roundabout. The proposed design would look to provide facilities to reduce the likelihood of these collisions occurring.

3.3 Public Transport Services and Interchange Information

3.3.1 Public Transport Mode – Bus Service

3.3.2 Milton Keynes Council's (MKC's) Urban Bus Route Map (November 2017), indicates that there are currently 2No. bus routes operating along Willen Road, referred to as:-

- Bus Route 1; and
- Bus Route C10;

3.3.3 The Route 1 service runs past the site in the evenings (between 8pm and midnight) and on Sundays (between 9am and midnight), at an hourly frequency. Bus Route C10 provides an hourly service between 0630 and 1900 hours. There are 2No. existing on-carriageway bus stops along Willen Road, located to the south of the proposed junction (No supporting footways or Bus shelters). These existing bus stops are indicated on the Urban Bus Route Map as not having real-time information facilities.



Figure 2 – Bus routes with a service frequency of 1 hour or less, within the local area of the Site (Urban Bus Route Map)

3.4 Trip Generators

3.4.1 Key Trip Generators and Local Amenities

The following listed places of interest have been identified as existing trip generators within the area local to the Site:-

- 'Caldecote Farm / Glenfield' (Residential / Employment);
- Existing Sand and Gravel Quarry;
- Traveller Site;
- Newport Pagnell Football Club and Sports Field;
- Kingfisher Park, Kingfisher Surgery and The Kingfisher Pub;
- Ousedale School Only Campus, Green Park School, Tickford Park Primary School, Willen Primary School;
- Tongwell Business Park;
- Willen Hospice;
- Willen Lake and Tongwell Lake;

3.4.2 Future Trip Generators

The following listed places of interest have been identified as potential future trip generators within the area local to the Site:-

- The Newlands commercial development proposed for the Site;
- Linear Park Extension (Figure 3);
- New community facilities (indicated by the light pink areas on Figure 3 below), adjacent to the proposed Linear Park Extension;

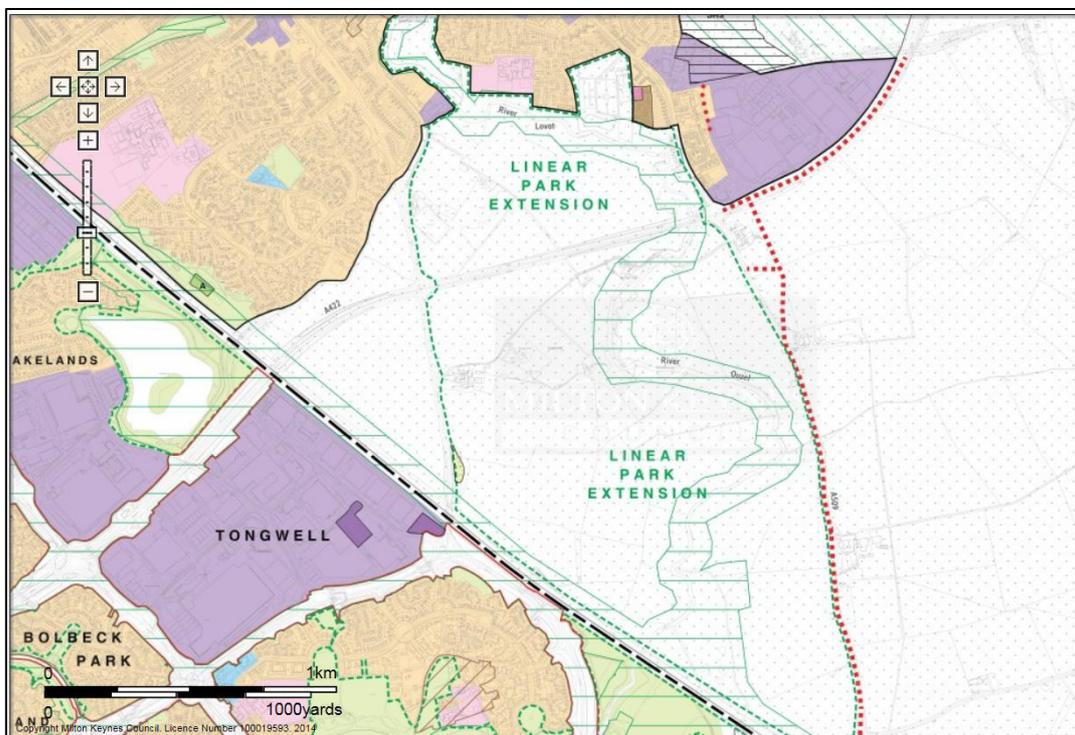


Figure 3 – Extract from MKC Local Development Plan

3.5 Site Visit

3.5.1 The site visit was undertaken by James Horne (Lead Assessor) and Douglas Pielage (Assessor) on Thursday 1st December 2017 between 10:30 and 14:00. The site visit took the form of a walking survey along:-

- Tongwell Lane – Existing footpath / cycle track;
- Alexandra Drive – Redway link to Tongwell Lane;
- Willen Road (adjacent to Sports Field – East of Marsh End Road) – Existing footway / cycle track;
- H3 Monks Way – Highway grassed verges;
- The A422 – Highway grassed verges;
- Willen Road (northern and southern lengths) – Highway grassed verges;
- Tongwell Roundabout – Existing Redway Super Route and ‘Jug Handle’ uncontrolled crossing point on the Willen Road arm of this existing roundabout;

3.5.2 The level of use and condition / suitability of each route during the site visit were recorded and potential improvements, repairs and connections were noted. The weather during the site visit was dry and overcast with the temperature 5°C (approx.). The road and path surfaces were all noted to be dry. The primary findings of the site visit were:-

A. Several Pedestrians and Equestrians were observed using Tongwell Lane;



B. Within the parcel of land bound by the M1, H3 Monks Way, Willen Road (North) and Tongwell Lane, horses are being kept;



- A. Several Cyclists were observed using Willen Road, as well as the Marsh End Road Roundabout;



- B. No evidence of NMU movements were observed along H3 Monks Way and the A422 dual carriageways;
- C. No evidence of Pedestrians using the grassed verges adjacent to Willen Road were observed;

3.6 Consultation with Key Stakeholders

- 3.6.1 As part of the WCHRA process, we have undertaken liaison with representatives from MKC's Public Transport (Stuart Simmonds – Public Transport Technical Lead), and subsequently MKC's Road Safety Team (Kevan Paradine – Senior Road Safety Engineer), regarding the proposed bus stop provisions. A copy of our correspondence has been provided in Appendix C. This liaison has informed the proposed preliminary design.
- 3.6.1 We have also undertaken liaison with representatives from MKC's Senior Transport Planner – Cycling and Events Management (Sara Randle) regarding the proposed cycle facilities. A copy of our correspondence has been provided in Appendix D. This liaison has also informed the proposed preliminary design.

3.7 Existing Pedestrian, Cyclist and Equestrian Facilities within the Local Area

The following Pedestrian, Cyclist and Equestrian facilities within the scheme extents have been identified.

3.7.1 Pedestrian Facilities

- A. Willen Road (South and North) – No footway facilities. 2No. existing bus stops are located opposite the entrance to the Traveller’s Site. However, no areas of hardstanding or bus shelters have been provided;



- B. H3 Monks Way, A422, Marsh End Road, Tongwell Lane and Alexandra Drive do not have any formal Pedestrian only facilities;
- C. There is an existing public footpath that crosses the A422 through a gap in the Road Restraint System approximately 300m east of the Marsh End Roundabout (refer to Para 3.8.1 ‘A’ and Figure 4);

3.7.2 Cyclist Facilities

- A. Willen Road (South) – No Redways have been provided, however, a ‘Jug Handle’, with an uncontrolled crossing point, allows Cyclists travelling southbound to cross Willen Road (South) and access the existing 3m wide (approx.) Redway Super Route adjacent to the Tongwell Roundabout;
- B. Willen Road (North) – No Redways have been provided. Traffic Sign Diag 950 – ‘Cycle route’ has been erected to warn northbound traffic that Cyclists may be joining Willen Road / Marsh End Road from Tongwell Lane;



- C. Marsh End Road, Willen Road (adjacent to Sports Field – East of Marsh End Road), Tongwell Lane and Alexandra Drive all have Redways or are signed shared use facilities adjacent to the carriageways;
- D. H3 Monks Way and A422 do not have any formal cycle only facilities;

3.7.3 Equestrian Facilities

- A. There are no dedicated Equestrian facilities within the scheme extents. However, Equestrians have been observed to be using Tongwell Lane – Existing footpath / cycle track;

3.8 Existing Pedestrian, Cyclist and Equestrian Facilities beyond Scheme Extents and Links to County / Strategic Networks

The following Pedestrian, Cyclist and Equestrian facilities have been identified. These facilities are outside the immediate scheme extents, but are within the study area:-

3.8.1 Pedestrian and Cyclist Facilities

A. As previously referenced, there is an existing public footpath that crosses the A422 through a gap in the Road Restraint System approximately 300m east of the Marsh End Roundabout;

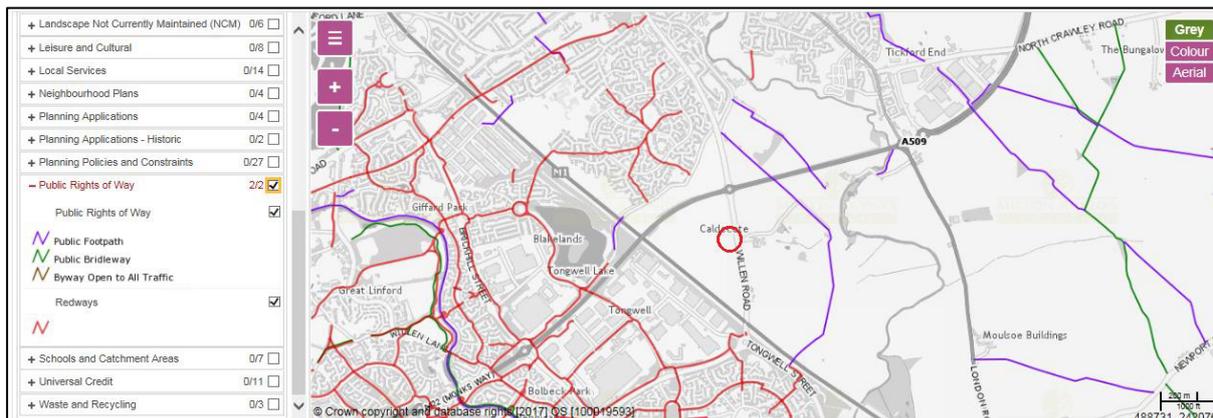


Figure 4 – Public Rights of Way Map (derived from MKC’s Definitive Map)

B. The Redway network in the nearby vicinity of the site can also be seen on Figure 4;

C. There are 2No. National Cycle Routes that pass through Milton Keynes and are within the nearby vicinity of the Site. The routes are referenced National Cycle Route 6 and 51;

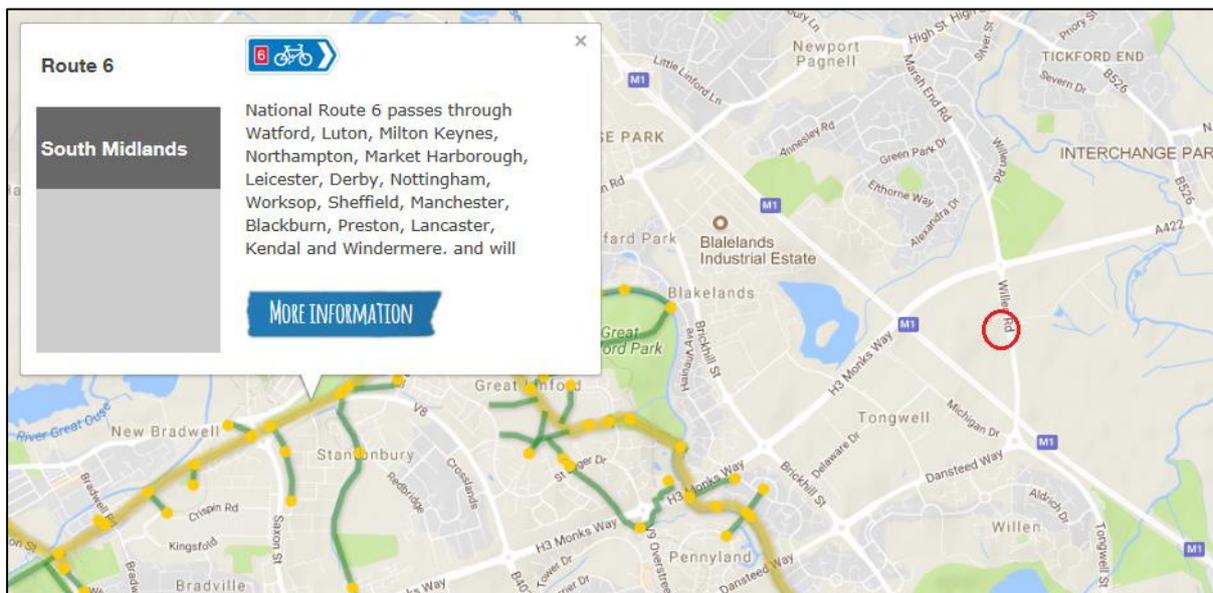


Figure 5 – National Cycle Route 51 (Sustrans Map)

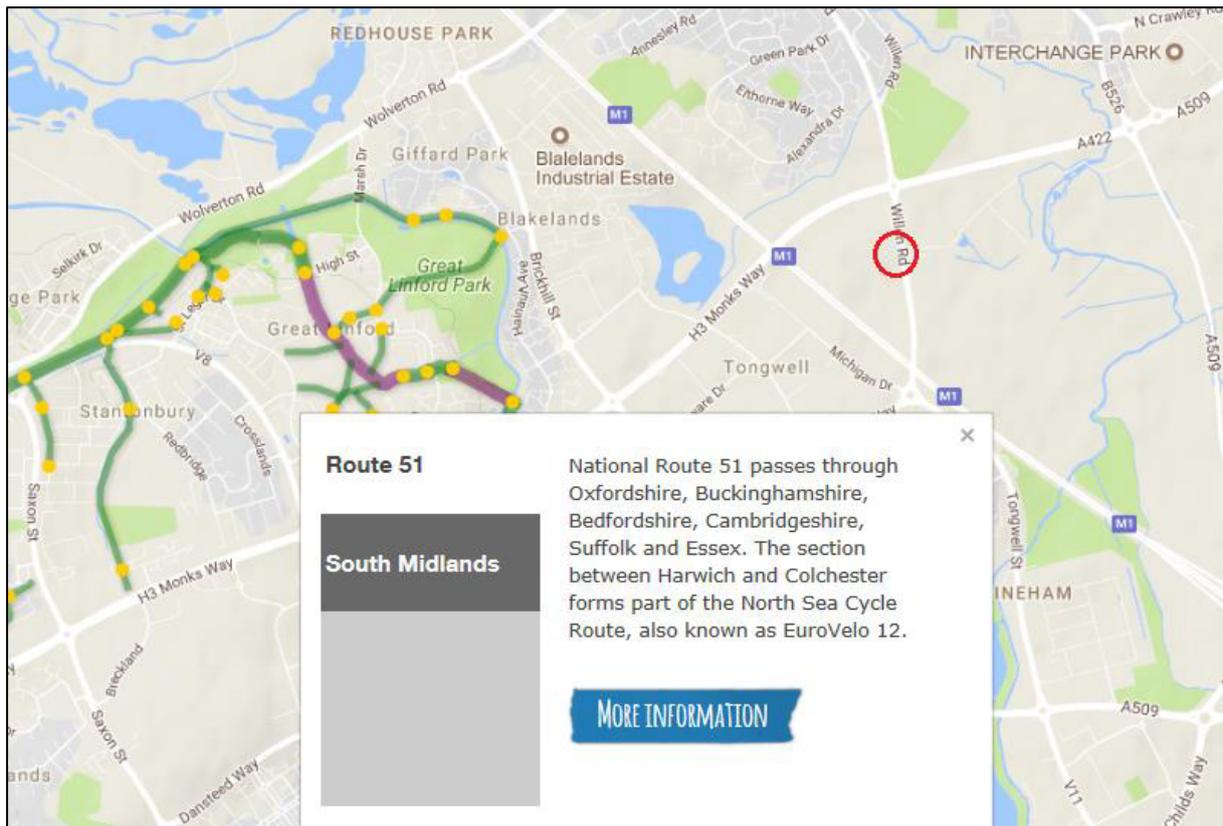


Figure 6 – National Cycle Route 6 (Sustrans Map)

3.8.2 Equestrian Facilities

- A. There are no Equestrian Facilities within the nearby vicinity of the scheme extents;

4 User Opportunities

4.1 The opportunities highlighted below are considered to be relevant to the highway scheme and should be considered by the wider Design Team throughout the progression of the scheme design in addition to any further opportunities that may arise through the ongoing development of the design phase(s).

4.2 Pedestrian and Cyclist Specific Opportunities

4.2.1 Opportunity 1

MKC have indicated that in order to promote the signalised junction serving the development, the speed limit on Willen Road would need to be reduced from national speed limit (60mph) to 40mph. A reduced speed limit would generally present a safer environment for NMUs. This reduced speed limit will be taken across the existing Marsh End Road Roundabout (located on a high speed dual carriageway), and onto Willen Road (North).

4.2.2 Opportunity 2

Provide off carriageway provisions for Pedestrians and Cyclists to travel to and from the proposed development along Willen Road. These facilities will also connect:-

- The existing Redway Super Route at the Tongwell Roundabout (southern end of Willen Road);
- To the existing Redway adjacent to Marsh End Road (northern end of Willen Road);

This will take the form of a 3m wide shared use footway / cycle track along the total of its length.

4.2.3 Opportunity 3

A 1m buffer zone (grassed verge) has been provided between the proposed shared use footway / cycle track and the carriageway (where possible). CD 143 – 'Designing for walking, cycling and horse-riding' requires a minimum of 0.5m for a 40mph road. This provision is to improve user safety.

There should be no street furniture or vegetation (except grass) within the separation distance.

4.2.4 Opportunity 4

Toucan style controlled crossing points will be provided at the proposed Willen Road Signalised Junction and Marsh End Road Signalised Roundabout. The layout of these junctions should be informed by the specific needs of Pedestrians and Cyclists. Appropriate tactile paving, widths, crossing widths, left / right staggers (were required), etc. will be considered and provided as appropriate. It is considered that these proposals will reduce the likelihood of the 3No. injury collisions recorded where Cyclists on the circulatory carriageway of the existing roundabout have been struck by motorists entering from the A422 approach (Para 3.2.2).

Following further liaison with MKC's Senior Transport Planner – Cycling and Events Management, the scheme proposals have been amended to:-

- Provide a Toucan crossing across the development access arm without a stagger. The phasing and staging of this proposed signalised junction has also been amended to indicate that this crossing will be undertaken in 1 movement rather than 2;
- Provide an additional Toucan crossing across the southern arm;

These measures have been undertaken in order to reduce the journey time for cyclists traveling along the Willen Road route from Milton Keynes to Newport Pagnell and vice versa.

4.2.5 Opportunity 5

Originally, on-carriageway bus stops, including bus shelters, were to be provided as per 'Bus Stop Scheme Layout SS2' of MKC's Draft 'A Highway Guide for Milton Keynes'. This proposal was discussed further with MKC's Public Transport, and subsequently Road Safety Team (refer to Appendix C). However, since the January 2018 email correspondence with MKC, the scheme proposals have been updated in order to provide lay-by style bus stops.

4.2.6 Opportunity 6

Following liaison with MKC's Senior Transport Planner - Cycling and Events Management (refer to Appendix D), the scheme proposals have been updated to indicate the alignment of the Redways being taken around the back of the Bus Shelters, in order to reduce the potential for conflict between Cyclists, and Pedestrians entering / exiting buses.

Furthermore, and following further liaison with MKC's Senior Transport Planner – Cycling and Events Management, all proposed Redways have been provided with a minimum width of 3m. **NB** the physical width of the Redway across the existing M1 overbridge will be 3m (without a buffer zone) as per the width of the current paved area. MKC have confirmed no additional works are required across the overbridge to increase the width of the paved area.

4.2.7 Opportunity 7

Cyclists who wish to remain within the carriageway of Willen Road may also benefit from the option to exit the carriageway prior to the 2No. signalised junctions. Therefore, short lengths of dropped kerbs, with appropriate road markings, will permit Cyclists to exit the carriageway and enter the shared use facilities in order to access the Toucan crossings.

A similar cycle exit accessing the proposed Redway on the westbound A422 approach (prior to the Toucan crossing) to the proposed H3 Monks Way / A422 / Willen Road Signalised Roundabout.

4.2.8 Opportunity 8

The proposed shared used footway / cycle track adjacent to Willen Road will cross the existing bridge over the M1. The height of the existing western bridge parapet over the M1 is 1m. However, the minimum for cycle use is 1.5m as per Para 4.21 of CD 377 – 'Requirements for road restraint systems'. Therefore, we would look to increase the height of this bridge parapet.

4.2.9 Opportunity 9

Any new or existing traffic signs associated with the proposed junctions (directional, warning, regulatory, etc.) will be located so Pedestrians and Cyclists are not obstructed. MKC's Senior Transport Planner – Cycling and Events Management, has requested a minimum offset of 0.5m. Mounting heights for these signs will be specified to reflect Pedestrians and Cyclists requirements as per Chapter 1 of the Traffic Signs Manuals.

4.2.10 Opportunity 10

Following receipt of additional topographical survey, the scheme proposals have now been updated to indicate how the proposed Redway on the eastern side of Willen Road (North) connects with the existing facilities at this location, notably:-

- Tongwell Lane;
- The existing uncontrolled crossing point north of Tongwell Lane; and
- The existing signed shared use footway / cycle track on the eastern side of Willen Road (existing 30mph length) adjacent to the Sports Ground;

Please note that the above provides a response to comments received from MKC's Senior Transport Planner – Cycling and Events Management (refer to Appendix D).

4.2.11 Opportunity 11

The scheme proposals do not introduce any potential hazards to Pedestrians and Cyclists who use H3 Monks Way and the A422.

4.3 Equestrian Specific Opportunities

4.3.1 Opportunity 1

The proposed works to install a foul water rising main across Tongwell Lane on to Alexandra Drive (via the existing Redway link) does not introduce any potential hazards for Equestrians who use Tongwell Lane.

5 Walking, Cycling and Horse-Riding Assessment Team Statement

As Lead Assessor, I confirm that this Walking, Cycling and Horse-Riding Assessment Report has been compiled in accordance with GG 142 and thus contains the appropriate information for the wider Design Team. The Walking, Cycling and Horse-Riding Assessment was undertaken by the following Assessment Team:-

Walking, Cycling & Horse-Riding Lead Assessor

James Horne
EngTech MICE
Principal Engineer

Signed: *James Horne*

Date: 5th July 2018

Walking, Cycling & Horse-Riding Assessor

Douglas Pielage
BEng (Hons)
Graduate Engineer

Signed: pp *James Horne*

Date: 5th July 2018

As Design Team Leader I confirm that the assessment has been undertaken at the appropriate stage of scheme development and that the wider Design Team has been involved in the process.

I confirm that in my professional opinion the appointed Lead Assessor has the appropriate experience for the role making reference to the expected competencies contained in GG 142.

Design Team Leader

James Horne
EngTech MICE
Principal Engineer

Signed: *James Horne*

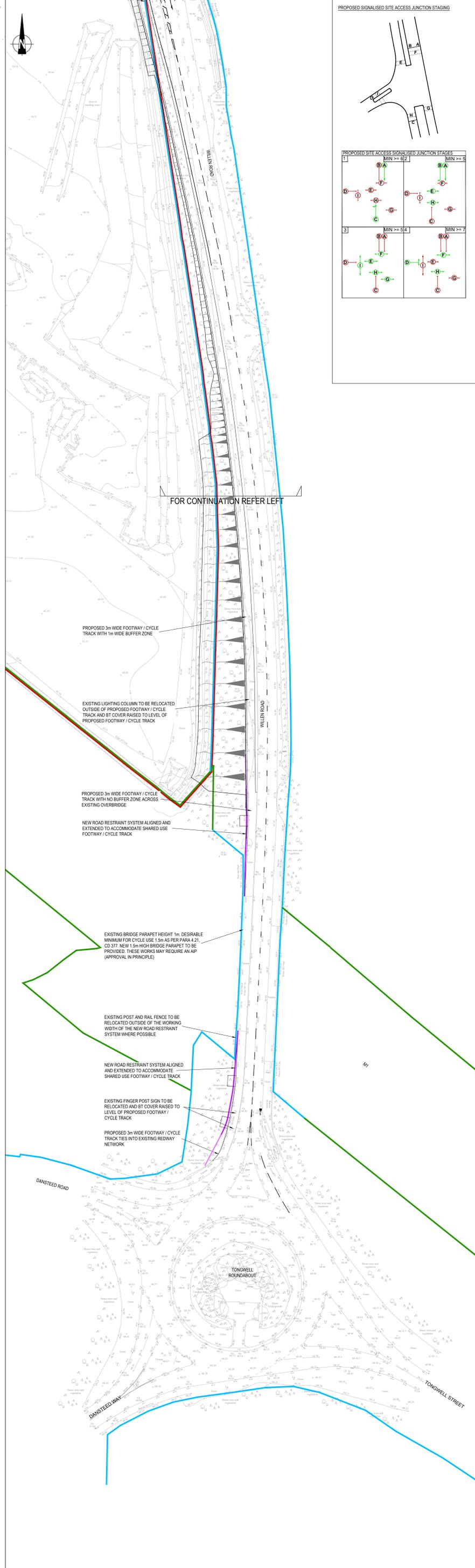
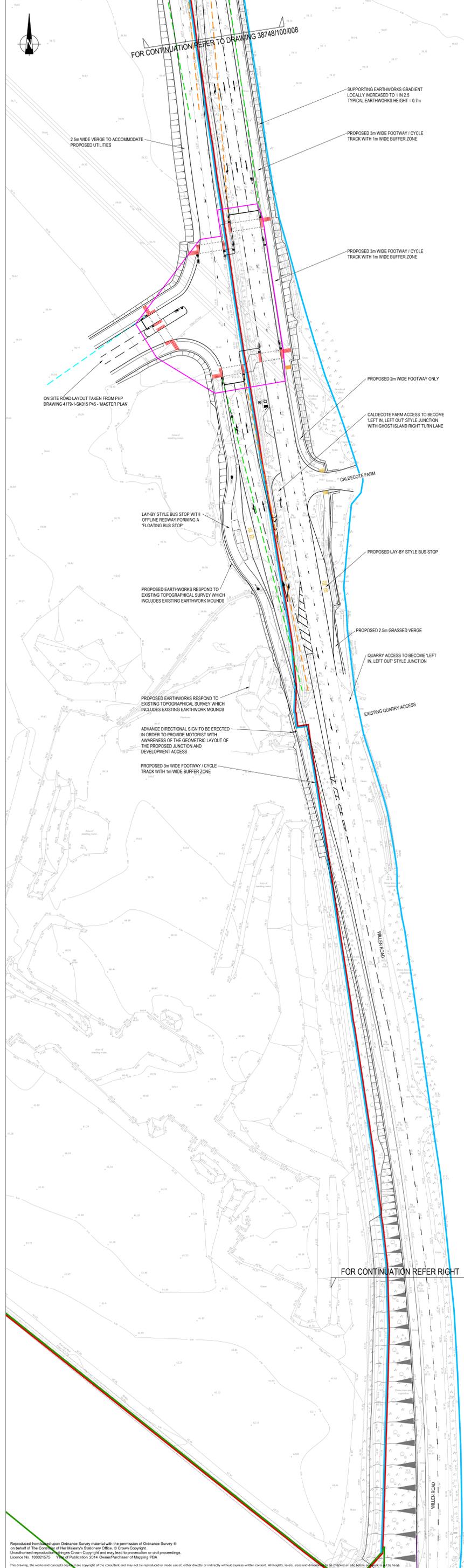
Date: 5th July 2018

Appendix A

Appendix A

38748/100/007 Rev B – ‘Proposed Site Access Signalised Junction – General Arrangement’;

38748/100/008 Rev B – ‘Proposed Marsh End Signalised Roundabout – General Arrangement’;



PROPOSED SIGNALISED SITE ACCESS JUNCTION STAGING

KEY:

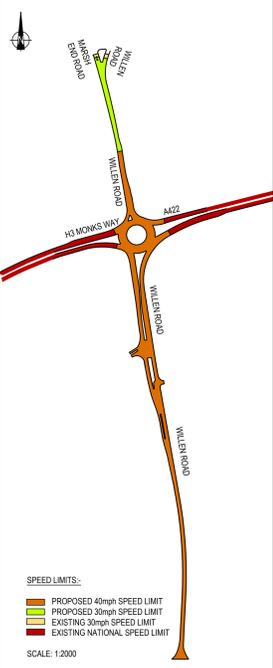
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
- MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
- PROPOSED FULL HEIGHT SAFETY BARRIER
- PROPOSED ROAD RESTRAINT TERMINAL
- PROPOSED TRAFFIC SIGNALS
- PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
- JUNCTION INTERVISIBILITY ZONE
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (OFFSIDE) 120m SSD - DESIGN SPEED 70kph
- FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR SIDE) 45m SSD - DESIGN SPEED 40kph

NOTES:

- ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
- MKCS DRAFT 'A' HIGHWAY GUIDE FOR MILTON KEYNES DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 3.12 - TABLE OF LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES DESIGN STANDARDS.
- EXISTING POSTED SPEED LIMIT OF WILLEN ROAD IS NATIONAL SPEED LIMIT (60kph). MKCS HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40kph. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
- THE DESIGN OF THE SIGNALISED JUNCTION HAS BEEN BASED ON ADIC INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.03kx'.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - STATUTE TECHNICAL NOTE TN000001 - DESIGN STATEMENT - WILLEN ROAD / DEVELOPMENT ACCESS SIGNALISED JUNCTION.

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT OF WILLEN ROAD AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.



8	MASTERPLAN UPDATED TO REV FINE	JR	28.07.21	JSH
4	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RFA	DL	21.05.19	JSH
0	Creation	DL		CHM

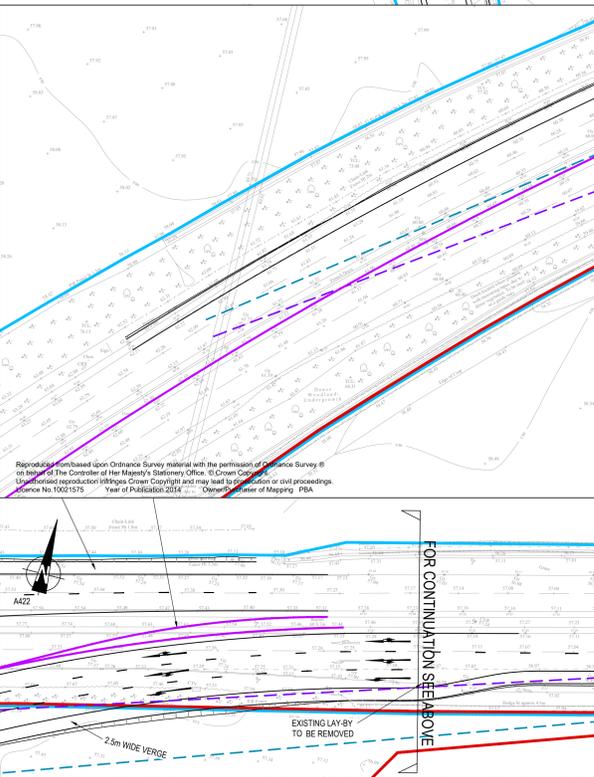
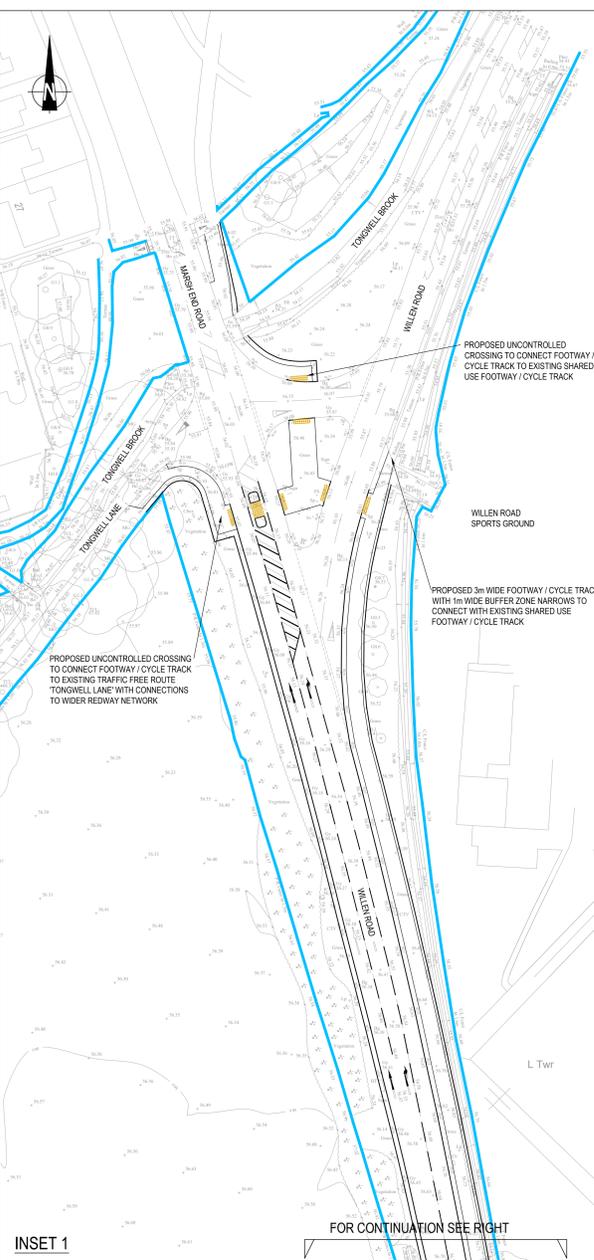
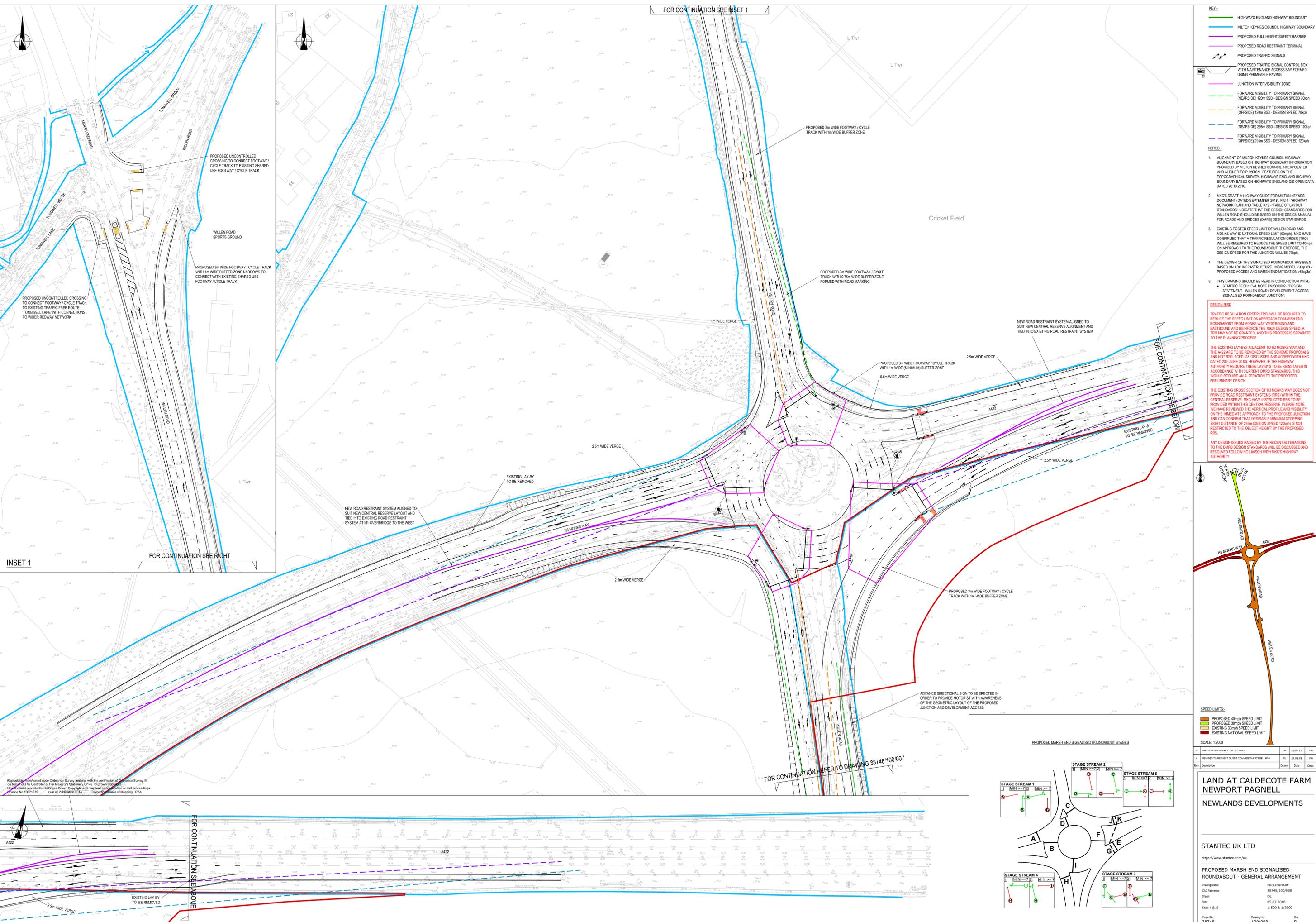
LAND AT CALDECOTE FARM NEWPORT PAGNELL NEWLANDS DEVELOPMENTS

STANTEC UK LTD
<https://www.stantec.com/uk>

PROPOSED SITE ACCESS SIGNALISED JUNCTION - GENERAL ARRANGEMENT

Drawing Status: PRELIMINARY
 CAD Reference: 38748/100/007
 Drawn: DL
 Date: 05.07.2018
 Scale: 1 @ A0
 Project No: 38748
 Drawing No: 100/007
 Rev: B

Reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction of Ordnance Survey material is prohibited. Ordnance Survey is a registered trademark of Ordnance Survey Limited. This drawing, the works and contents thereof are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly without express written consent. All heights, levels, sizes and dimensions are as shown on drawings unless otherwise stated.



- KEY:**
- HIGHWAYS ENGLAND HIGHWAY BOUNDARY
 - MILTON KEYNES COUNCIL HIGHWAY BOUNDARY
 - PROPOSED FULL HEIGHT SAFETY BARRIER
 - PROPOSED ROAD RESTRAINT TERMINAL
 - PROPOSED TRAFFIC SIGNALS
 - PROPOSED TRAFFIC SIGNAL CONTROL BOX WITH MAINTENANCE ACCESS BAY FORMED USING PERMEABLE PAVING
 - JUNCTION INTERVISIBILITY ZONE
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR-SIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFF-SIDE) 120m SSD - DESIGN SPEED 70kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (NEAR-SIDE) 25m SSD - DESIGN SPEED 120kph
 - FORWARD VISIBILITY TO PRIMARY SIGNAL (OFF-SIDE) 25m SSD - DESIGN SPEED 120kph

- NOTES:**
- ALIGNMENT OF MILTON KEYNES COUNCIL HIGHWAY BOUNDARY BASED ON HIGHWAY BOUNDARY INFORMATION PROVIDED BY MILTON KEYNES COUNCIL INTERPOLATED AND ALIGNED TO PHYSICAL FEATURES ON THE TOPOGRAPHICAL SURVEY. HIGHWAYS ENGLAND HIGHWAY BOUNDARY BASED ON HIGHWAYS ENGLAND GIS OPEN DATA DATED 28.10.2016.
 - MK'S DRAFT A HIGHWAY GUIDE FOR MILTON KEYNES' DOCUMENT (DATED SEPTEMBER 2018), FIG 1 - HIGHWAY NETWORK PLAN AND TABLE 1.2 - TABLE LAYOUT STANDARDS INDICATE THAT THE DESIGN STANDARDS FOR WILLEN ROAD SHOULD BE BASED ON THE DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB) DESIGN STANDARDS.
 - EXISTING POSTED SPEED LIMIT OF WILLEN ROAD AND MONKS WAY IS NATIONAL SPEED LIMIT (80kph). MK HAVE CONFIRMED THAT A TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT TO 40kph ON APPROACH TO THE ROUNDABOUT. THEREFORE, THE DESIGN SPEED FOR THIS JUNCTION WILL BE 70kph.
 - THE DESIGN OF THE SIGNALISED ROUNDABOUT HAS BEEN BASED ON ADD INFRASTRUCTURE LINSIG MODEL - 'App XX - PROPOSED ACCESS AND MARSH END MITIGATION v5.1gkty'.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH:
 - STATED TECHNICAL NOTE 1000002 - DESIGN STATEMENT - WILLEN ROAD / DEVELOPMENT ACCESS SIGNALISED ROUNDABOUT JUNCTION;

DESIGN RISK

TRAFFIC REGULATION ORDER (TRO) WILL BE REQUIRED TO REDUCE THE SPEED LIMIT ON APPROACH TO MARSH END ROUNDABOUT FROM MONKS WAY WESTBOUND AND EASTBOUND AND REINFORCE THE 70kph DESIGN SPEED. A TRO MAY NOT BE GRANTED, AND THIS PROCESS IS SEPARATE TO THE PLANNING PROCESS.

THE EXISTING LAY-BYS ADJACENT TO H3 MONKS WAY AND THE A422 ARE TO BE REMOVED BY THE SCHEME PROPOSALS AND NOT REPLACED (AS DISCUSSED AND AGREED WITH MKC DATED 20th JUNE 2018). HOWEVER, IF THE HIGHWAY AUTHORITY REQUIRE THESE LAY-BYS TO BE REINSTATED IN ACCORDANCE WITH CURRENT DMRB STANDARDS, THIS WOULD REQUIRE AN ALTERATION TO THE PROPOSED PRELIMINARY DESIGN.

THE EXISTING CROSS SECTION OF H3 MONKS WAY DOES NOT PROVIDE ROAD RESTRAINT SYSTEMS (RRS) WITHIN THE CENTRAL RESERVE. MKC HAVE INSTRUCTED RRS TO BE PROVIDED WITHIN THIS CENTRAL RESERVE. PLEASE NOTE, WE HAVE REVIEWED THE VERTICAL PROFILE AND VISIBILITY ON THE IMMEDIATE APPROACH TO THE PROPOSED JUNCTION AND CAN CONFIRM THAT DESIRABLE MINIMUM STOPPING SIGHT DISTANCE OF 205m (DESIGN SPEED 70kph) IS NOT RESTRICTED TO THE OBJECT HEIGHT BY THE PROPOSED RRS.

ANY DESIGN ISSUES RAISED BY THE RECENT ALTERATIONS TO THE DMRB DESIGN STANDARDS WILL BE DISCUSSED AND RESOLVED FOLLOWING LIAISON WITH MKC'S HIGHWAY AUTHORITY.



SPEED LIMITS:

- PROPOSED 40kph SPEED LIMIT
- PROPOSED 30kph SPEED LIMIT
- EXISTING 30kph SPEED LIMIT
- EXISTING NATIONAL SPEED LIMIT

SCALE: 1:2000

Rev	Description	Date	Drawn	Checked
B	MASTERPLAN UPDATED TO REV P45	28.07.21	JSH	
A	REVISED TO REFLECT CLIENT COMMENTS & STAGE 1 RFA	21.05.19	JSH	

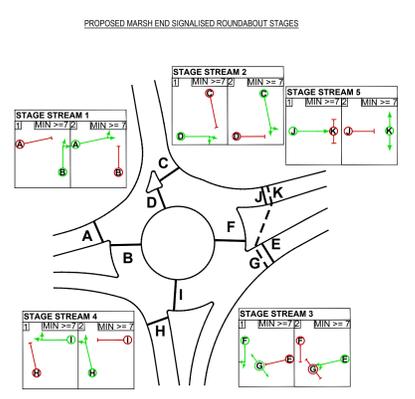
LAND AT CALDECOTE FARM NEWPORT PAGNELL NEWLANDS DEVELOPMENTS

STANTEC UK LTD
<https://www.stantec.com/uk>

PROPOSED MARSH END SIGNALISED ROUNDABOUT - GENERAL ARRANGEMENT

Drawing Status: PRELIMINARY
 CAD Reference: 38748/100/008
 Drawn: DL
 Date: 05.07.2018
 Scale: 1 @ A5
 1:500 & 1:2000

Project No: 38748
 Drawing No: 100/008
 Rev: B



Reproduced from based upon Ordnance Survey material with the permission of Ordnance Survey 6 on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or used in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the Controller of Her Majesty's Stationery Office. Ordnance Survey of Great Britain, 2014. Ordnance Survey is a registered trademark of Ordnance Survey Limited.

This drawing, the works and concepts depicted are copyright of the consultant and may not be reproduced or made use of, either directly or indirectly, without express written consent. All heights, levels, sizes and dimensions to be checked on site before any work is put to hand.

Appendix B

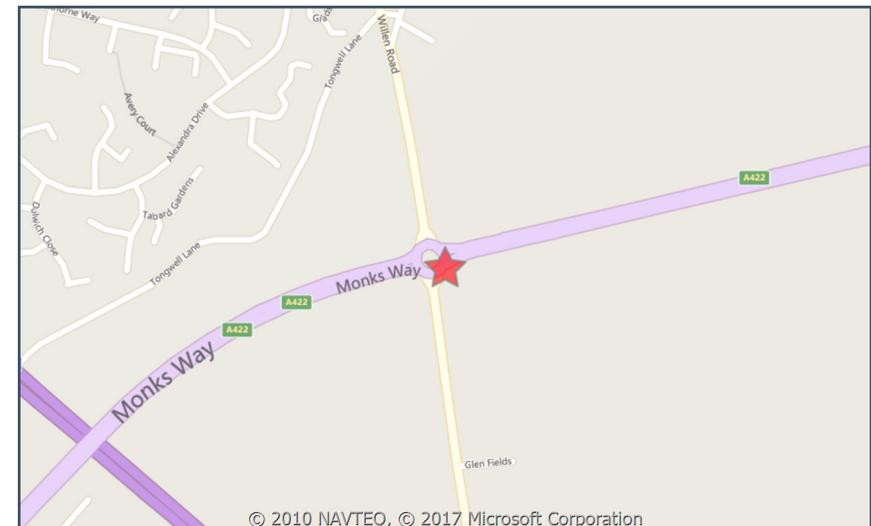
Appendix B

Collision Data



Crash Date: Wednesday, July 30, 2014 **Time of Crash:** 7:00:00 PM **Crash Reference:** 201443S139074

Highest Injury Severity:	Serious	Road Number:	A422	Number of Casualties:	1
Highway Authority:	Milton Keynes	Number of Vehicles:	2	OS Grid Reference:	487734 242602
Local Authority:	Milton Keynes				
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)		2 Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Pedal cycle		-1 Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Serious	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

Accident Description:

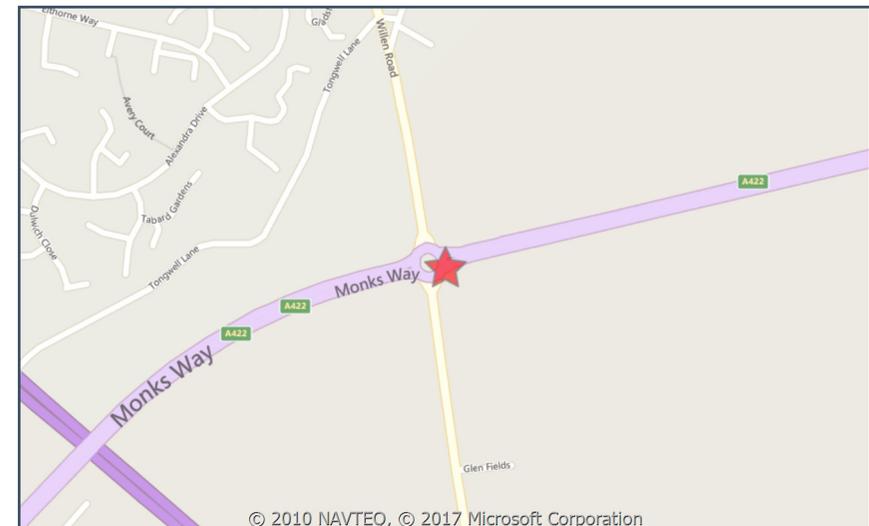
Accident description text currently unavailable for this highway authority / police force

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Thursday, September 03, 2015 **Time of Crash:** 6:11:00 AM **Crash Reference:** 201543S014095

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	1
Highway Authority:	Milton Keynes	Number of Vehicles:	2	OS Grid Reference:	487737 242603
Local Authority:	Milton Keynes				
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)		2 Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None
2	Pedal cycle		-1 Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Back	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
	2	1 Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

Accident Description:

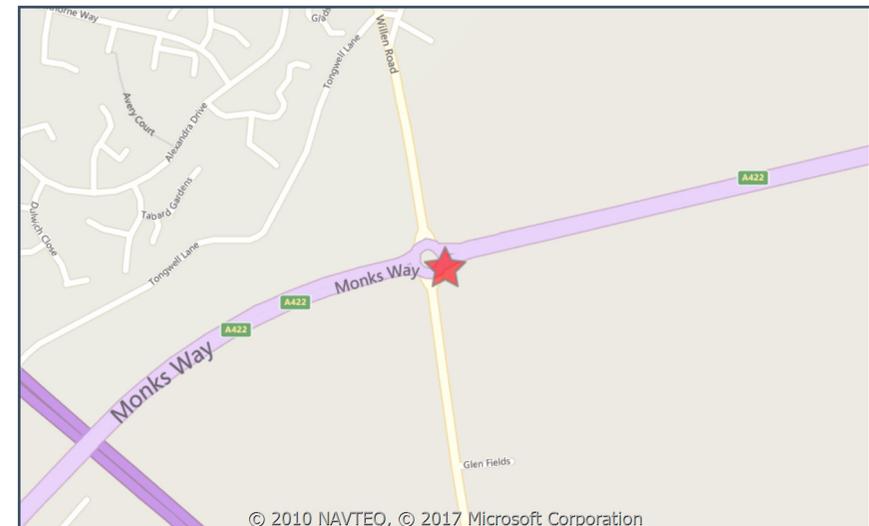
Accident description text currently unavailable for this highway authority / police force

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Tuesday, September 13, 2016 **Time of Crash:** 6:50:00 PM **Crash Reference:** 2016430298242

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	1
Highway Authority:	Milton Keynes			Number of Vehicles:	2
Local Authority:	Milton Keynes			OS Grid Reference:	487736 242599
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None
2	Pedal cycle	-1	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other

Accident Description:

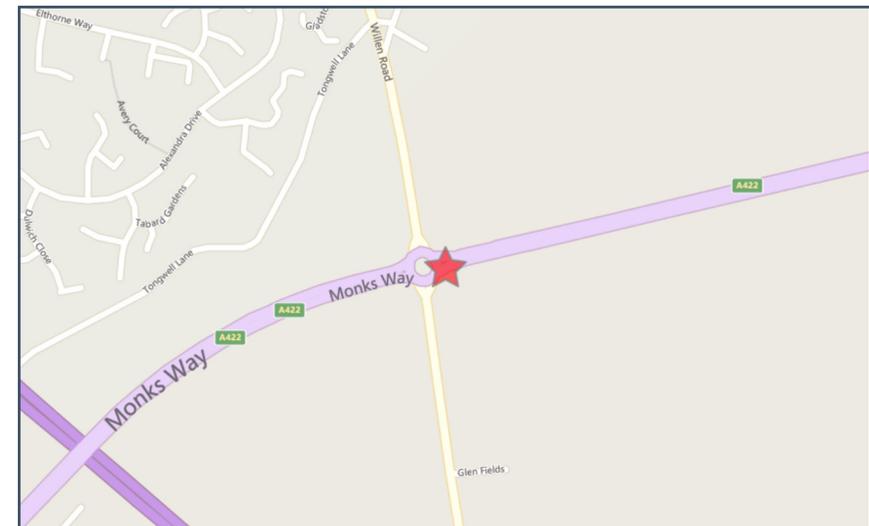
Not Available

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Monday, June 05, 2017 **Time of Crash:** 6:42:00 PM **Crash Reference:** 2017430170562

Highest Injury Severity:	Serious	Road Number:	A422	Number of Casualties:	2
Highway Authority:	Milton Keynes	Number of Vehicles:	2	OS Grid Reference:	487745 242607
Local Authority:	Milton Keynes				
Weather Description:	Raining with high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Motorcycle 50cc and under		4 Male	16 - 20	Vehicle is slowing down or stopping	Did not impact	Other	None	None
1	Motorcycle 50cc and under		1 Male	16 - 20	Vehicle is slowing down or stopping	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other
2	2	Serious	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Crash Date: Tuesday, September 19, 2017 **Time of Crash:** 11:37:00 AM **Crash Reference:** 2017430281181

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	1
Highway Authority:	Milton Keynes			Number of Vehicles:	2
Local Authority:	Milton Keynes			OS Grid Reference:	487997 242686
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Male	36 - 45	Vehicle is waiting to proceed normally but is held up	Back	Journey as part of work	None	Central crash barrier
1	Car (excluding private hire)	-1	Male	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

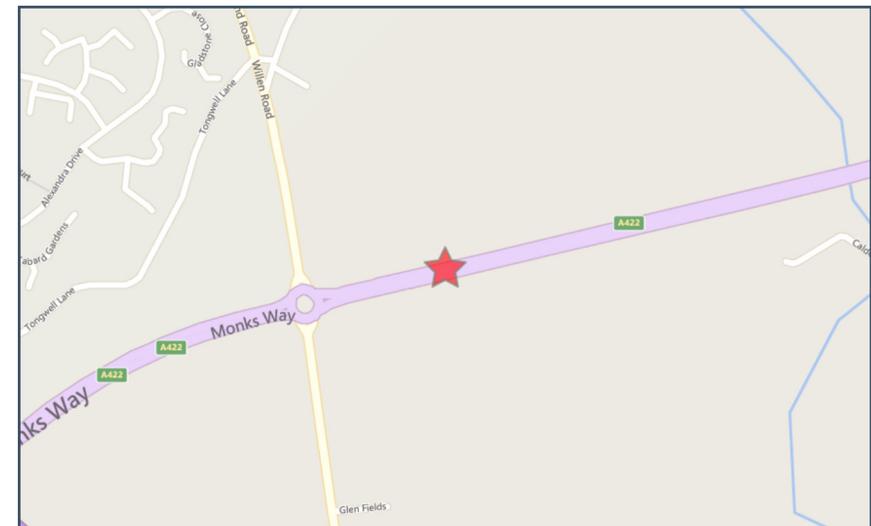
For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Crash Date: Wednesday, March 28, 2018 **Time of Crash:** 5:40:00 PM **Crash Reference:** 2018430100693

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	2
Highway Authority:	Milton Keynes			Number of Vehicles:	2
Local Authority:	Milton Keynes			OS Grid Reference:	487922 242666
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Not Applicable				

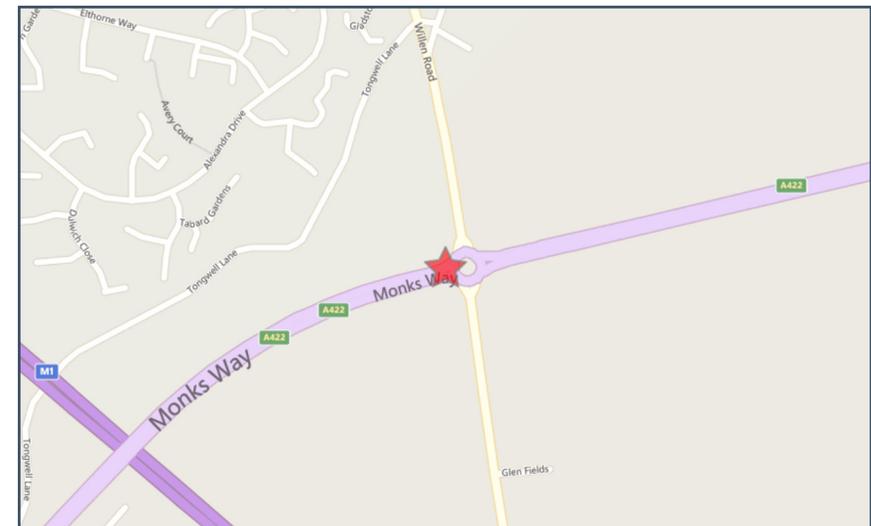


For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Crash Date: Saturday, August 05, 2017 **Time of Crash:** 1:50:00 PM **Crash Reference:** 2017430241882

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	2
Highway Authority:	Milton Keynes	Number of Vehicles:	2	OS Grid Reference:	487678 242609
Local Authority:	Milton Keynes				
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)		8 Male	26 - 35	Vehicle is slowing down or stopping	Back	Other	None	None
1	Car (excluding private hire)		19 Female	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	46 - 55	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Female	66 - 75	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	5	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Car (excluding private hire)	13	Male	21 - 25	Vehicle is changing lane to the left	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	26 - 35	Unknown or other	Unknown or other

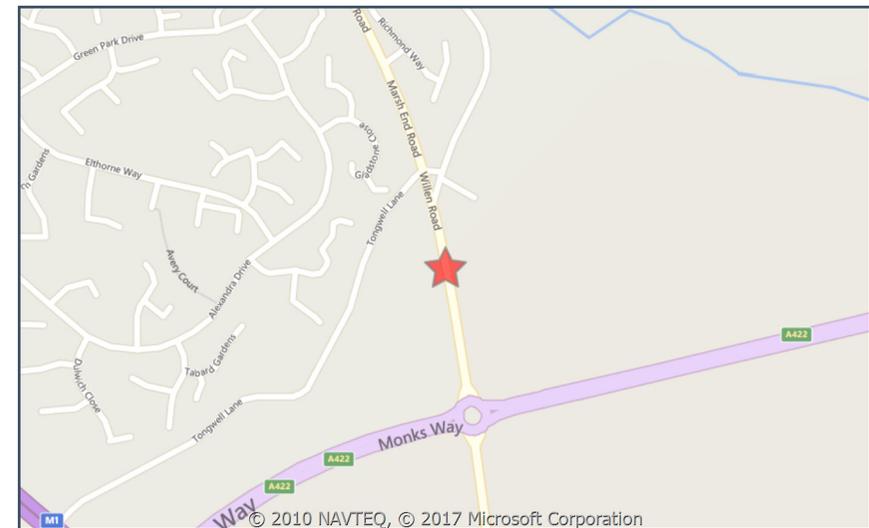
For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Crash Date: Sunday, October 05, 2014 **Time of Crash:** 12:07:00 AM **Crash Reference:** 201443S026104

Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Milton Keynes			Number of Vehicles:	2
Local Authority:	Milton Keynes			OS Grid Reference:	487667 242835
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Darkness: no street lighting				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)		5 Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
2	Car (excluding private hire)		3 Female	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
	2	1 Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

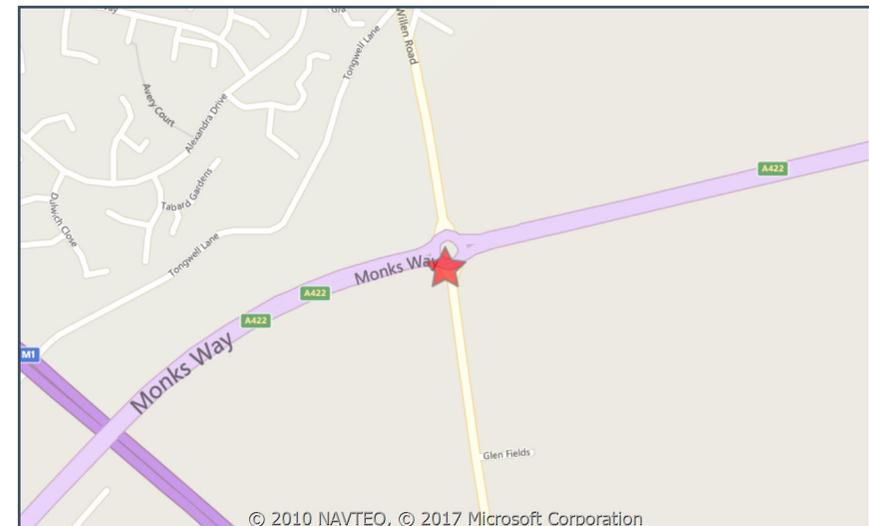
Accident Description:

Accident description text currently unavailable for this highway authority / police force



Crash Date: Sunday, April 13, 2014 **Time of Crash:** 4:38:00 PM **Crash Reference:** 201443S053044

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	2
Highway Authority:	Milton Keynes	Number of Vehicles:	2	OS Grid Reference:	487706 242588
Local Authority:	Milton Keynes				
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	16	Female	16 - 20	Vehicle is in the act of turning left	Front	Other	None	None
2	Car (excluding private hire)	-1	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Vehicle or pillion passenger	Female	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other

Accident Description:

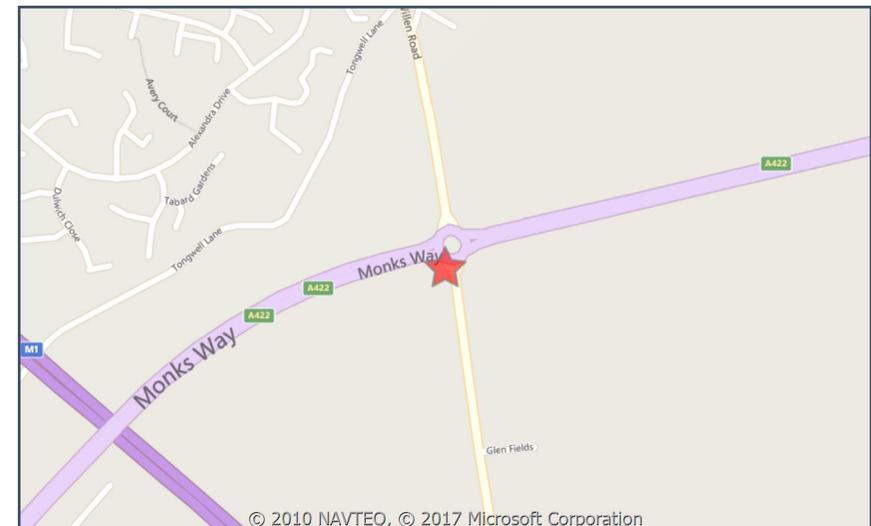
Accident description text currently unavailable for this highway authority / police force

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Tuesday, June 23, 2015 **Time of Crash:** 10:02:00 AM **Crash Reference:** 201543S107065

Highest Injury Severity:	Slight	Road Number:	A422	Number of Casualties:	1
Highway Authority:	Milton Keynes			Number of Vehicles:	1
Local Authority:	Milton Keynes			OS Grid Reference:	487702 242576
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	70				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Roundabout				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Dual carriageway				
Junction Control:	Give way or uncontrolled				

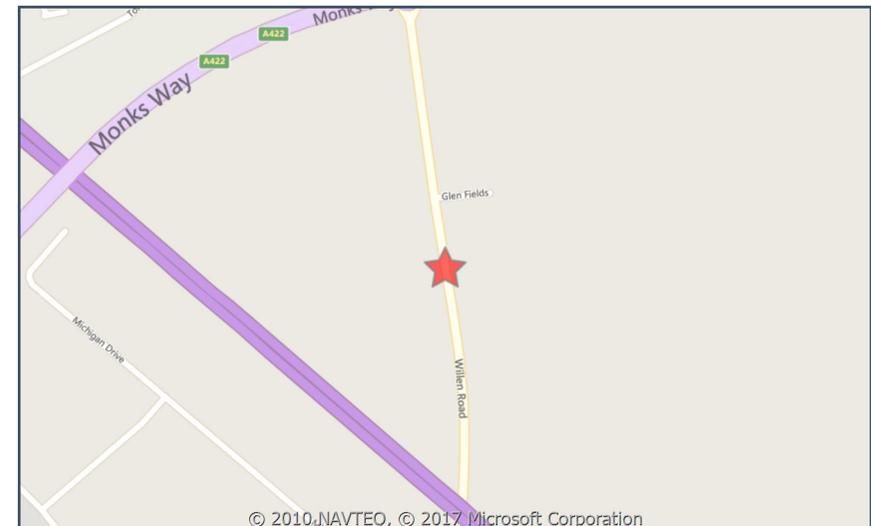


For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Thursday, January 09, 2014 **Time of Crash:** 5:35:00 PM **Crash Reference:** 201443S053014

Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	3
Highway Authority:	Milton Keynes			Number of Vehicles:	4
Local Authority:	Milton Keynes			OS Grid Reference:	487776 242200
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Darkness: no street lighting				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Bus or coach (17+ passenger seats)	15	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Front	Journey as part of work	None	None
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle is moving off	Back	Other	None	None
3	Car (excluding private hire)	13	Female	36 - 45	Vehicle is moving off	Back	Commuting to/from work	None	None
4	Car (excluding private hire)	10	Female	26 - 35	Vehicle is moving off	Back	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	3	Slight	Vehicle or pillion passenger	Female	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
3	1	Slight	Driver or rider	Female	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



crashmap.co.uk

Accident Description:

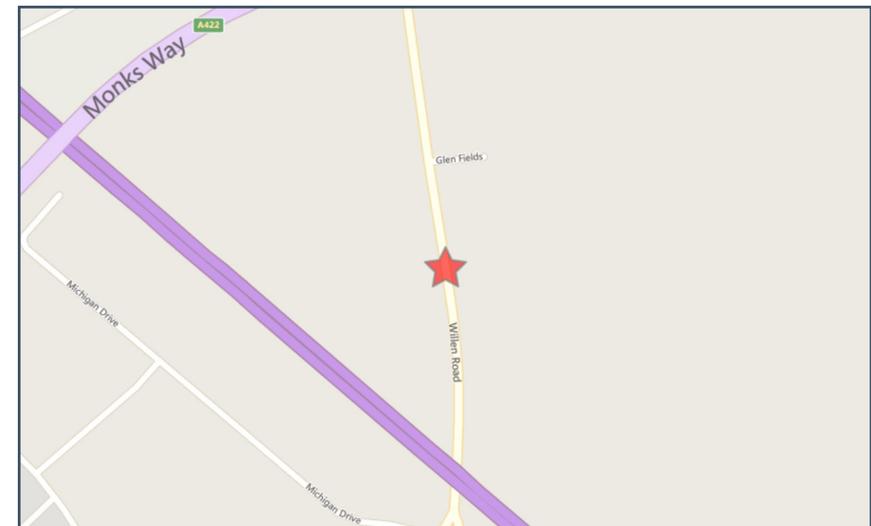
Accident description text currently unavailable for this highway authority / police force

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions



Crash Date: Monday, December 04, 2017 **Time of Crash:** 12:44:00 PM **Crash Reference:** 2017430369405

Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	2
Highway Authority:	Milton Keynes			Number of Vehicles:	2
Local Authority:	Milton Keynes			OS Grid Reference:	487786 242140
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq
To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Goods vehicle over 3.5 tonnes and under 7.5 tonnes mgw		3 Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None
1	Car (excluding private hire)		1 Female	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
	1	1 Slight	Driver or rider	Female	16 - 20	Unknown or other	Unknown or other
	2	2 Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



2019 data is provisional and is subject to change

Crash Date: Friday, February 22, 2019

Time of Crash: 9:00:00 PM

Crash Reference: 2019430069263

Highest Injury Severity: Slight

Road Number: U0

Number of Casualties: 2

Highway Authority: Milton Keynes

Number of Vehicles: 2

Local Authority: Milton Keynes

OS Grid Reference: 487800 242062

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 60

Light Conditions: Darkness: no street lighting

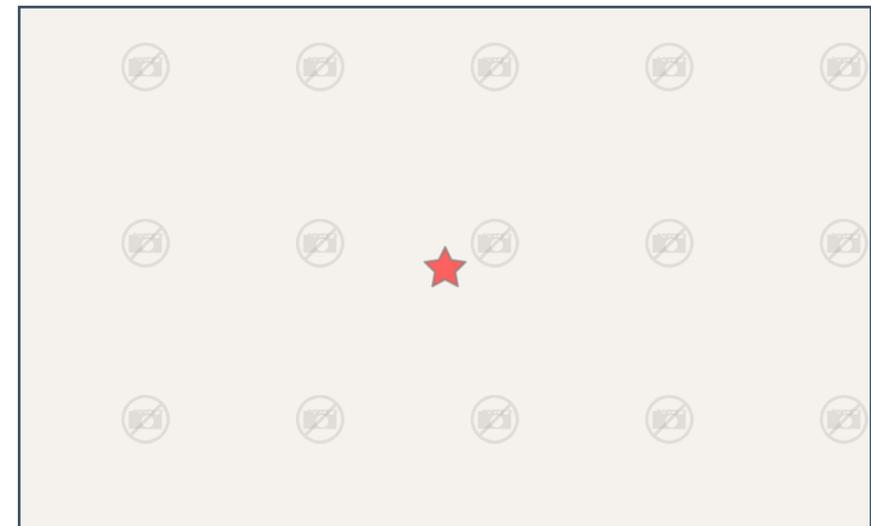
Carriageway Hazards: None

Junction Detail: Using private drive or entrance

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Give way or uncontrolled



For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



2019 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	25-34	Vehicle is in the act of turning right	Unknown	Other	None	None
1	Car (excluding private hire)	-1	Female	16-24	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	2	Slight	Vehicle or pillion passenger	Male	25-34	Unknown or other	Unknown or other
2	1	Slight	Driver or rider	Male	25-34	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	10	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	Tree

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

Accident Description:

Accident description text currently unavailable for this highway authority / police force

For more information about the data please visit: www.crashmap.co.uk/home/aboutthedata and www.crashmap.co.uk/home/definitions

Appendix C

Appendix C

Liaison with MKC's Public Transport and subsequently Road Safety Team

James Horne

From: Paradine, Kevan <Kevan.Paradine@Milton-Keynes.gov.uk>
Sent: 16 January 2018 10:15
To: James Horne
Subject: RE: Public transport improvements - new employment development on Willen Road

Hello James

Thank you for this, that's fine as all the information should enable an objectively based decision to be made on the matter.

Regards
Kevan.

Kevan Paradine
Senior Road Safety Engineer
T: 01908 252036
E: kevan.paradine@milton-keynes.gov.uk
<http://www.milton-keynes.gov.uk>

Milton Keynes Council | Public Realm Service Group | Synergy Park | Chesney Wold | Bleak Hall | Milton Keynes | MK6 1LY

From: James Horne [mailto:jhorne@peterbrett.com]
Sent: 16 January 2018 09:48
To: Paradine, Kevan
Cc: Simmonds, Stuart; Swannell, Andy; Rebecca Leconte; Matt Tatler; Mark Higgins; Stuart Dunhill; KevinM@goodrichllp.com; Mark Plowman; Paul James; Douglas Pielage
Subject: [EXT] RE: Public transport improvements - new employment development on Willen Road

Dear Kevan,

Many thanks providing your thoughts of the initial proposals for these bus stops associated with the junction designs. Your comments, and our response below, will form part of the Stakeholder engagement recorded within the 'Walking, Cycling & Horse-Riding Assessment' currently being prepared to inform the design proposals.

1, My initial thoughts are that, purely from a road safety perspective, buses should not wait on the carriageway within this particular highway environment. Traffic volumes will increase; even with a speed limit reduction, speeds may still be high on this road. Specific issues with an on carriageway stop are increased potential for conflict between road users moving out to pass a stationary bus and those approaching from behind at higher speed, also potential for shunts behind a stopped or stopping bus. The frequency of bus services means the risk of conflict will also be quite high.

Vehicle Speeds

Willen Road, both north and south of Marsh End Roundabout, is currently subject to the National Speed Limit (60mph). A speed survey has already been undertaken along both lengths of Willen Road. This survey indicated that the 85th percentile speeds are as follows:-

- Willen Road (Northern Arm) = 41mph;
- Willen Road (Southern Arm) = 49mph;

These results indicate that the 85th percentile speeds are below the current national speed limit (60mph). This suggests that there is currently not a significant speeding issue along Willen Road. **NB** the scheme proposals include reducing the speed limit to 40mph.

Recorded Injury Collision

1No. Injury collisions have been recorded in 3 years along Willen Road (southern length). It is considered that this does not constitute a significant collision problem at this location with the current national speed limits in place.

Traffic Volumes

Given the likely off peak shift patterns of the employment sites on the development, it is considered likely that the increase in traffic volumes, and frequency of bus services, will not affect traffic volumes significantly in peak periods.

Type of Bus Stop Provision i.e. On-carriageway or Lay-by

It is noted that MKC’s Draft document ‘A Highway Guide for Milton Keynes – November 2014’ states that the layout of bus stops provided on roads classified as ‘District Distributors’ (such as Willen Road) should be provided with lay-bys. However, this is primarily for high speed, dual carriageway roads e.g. the Grid Road like the A4146. The scheme proposals are to reduce the speed limit from National Speed Limit (60mph) to 40mph. Therefore, on-carriageway bus stops are more appropriate. The current scheme proposals are more akin to the existing bus stop layouts provided on the A5130 near Poppy Avenue.

Future Collisions

The shunt type collision described above could be a potentially occurrence at any on-carriageway bus stop. Our proposals have the benefit of being one way, thus removing the potential of head on collisions occurring.

Therefore, and after taking the above into consideration, we would conclude that the appropriate style of bus stop associated with the proposed development junction should be ‘on-carriageway’ as currently indicated by our proposals.

Please can we have an updated response from MKC on this issue.

Kind regards,

James Horne

Principal Engineer

For and on behalf of Peter Brett Associates LLP - [Northampton](#)



- t 01604 878300
- e jhorne@peterbrett.com
- w peterbrett.com



From: Paradine, Kevan [<mailto:Kevan.Paradine@Milton-Keynes.gov.uk>]
Sent: 22 December 2017 10:27
To: James Horne <jhorne@peterbrett.com>
Subject: RE: Public transport improvements - new employment development on Willen Road

Thank you James, you have a good Christmas and new year too.

Regards
Kevan.

Kevan Paradine
Senior Road Safety Engineer
T: 01908 252036
E: kevan.paradine@milton-keynes.gov.uk
<http://www.milton-keynes.gov.uk>

From: James Horne [<mailto:jhorne@peterbrett.com>]
Sent: 22 December 2017 10:23
To: Paradine, Kevan
Cc: Paul James
Subject: [EXT] RE: Public transport improvements - new employment development on Willen Road

Thanks Kevan,

Hope you have a good Christmas and new year.

Kind regards,

James Horne

Principal Engineer

For and on behalf of Peter Brett Associates LLP - [Northampton](#)



t 01604 878300
e jhorne@peterbrett.com
w peterbrett.com



From: Paradine, Kevan [<mailto:Kevan.Paradine@Milton-Keynes.gov.uk>]
Sent: 22 December 2017 10:01
To: James Horne <jhorne@peterbrett.com>
Subject: FW: Public transport improvements - new employment development on Willen Road

Hello James

This is the email I sent to Stuart. The email outlines my reasoning and preference regarding bus stop siting. As we discussed, there are other considerations etc. within the final decision making process.

Regards
Kevan.

Kevan Paradine
Senior Road Safety Engineer
T: 01908 252036
E: kevan.paradine@milton-keynes.gov.uk
<http://www.milton-keynes.gov.uk>

From: Paradine, Kevan
Sent: 21 December 2017 14:56

To: Simmonds, Stuart

Subject: RE: Public transport improvements - new employment development on Willen Road

Hi Stuart

The proposals for the road layout are not clear and the bus stop locations are not shown on the drawing attached to your email. Andy Swannell has since shown me drawings that indicate the bus stops upstream of the new signal junction and I have based my comments on these drawings.

My initial thoughts are that, purely from a road safety perspective, buses should not wait on the carriageway within this particular highway environment. Traffic volumes will increase; even with a speed limit reduction, speeds may still be high on this road. Specific issues with an on carriageway stop are increased potential for conflict between road users moving out to pass a stationary bus and those approaching from behind at higher speed, also potential for shunts behind a stopped or stopping bus. The frequency of bus services means the risk of conflict will also be quite high.

Regards
Kevan.

Kevan Paradine
Senior Road Safety Engineer
T: 01908 252036
E: kevan.paradine@milton-keynes.gov.uk
<http://www.milton-keynes.gov.uk>

Milton Keynes Council | Public Realm Service Group | Synergy Park | Chesney Wold | Bleak Hall | Milton Keynes | MK6 1LY

From: Simmonds, Stuart

Sent: 18 December 2017 15:38

To: Paradine, Kevan

Subject: FW: Public transport improvements - new employment development on Willen Road

Hello Kevin,

The masterplan gives the detail of the Highways works at the junction with the new entrance to the development. Apparently the A422 roundabout is going to be signalised. Thoughts about on carriageway or in laybys.

regards

Stuart Simmonds
Public Transport Technical Lead
T: 01908 252011

E: Stuart.Simmonds@milton-keynes.gov.uk

Visit us online at www.milton-keynes.gov.uk

Milton Keynes Council | Saxon Court | 502 Avebury Boulevard | Milton Keynes | MK9 3HS

From: Rebecca Leconte [<mailto:Rebecca.Leconte@ADCInfrastructure.com>]

Sent: 25 October 2017 11:45

To: Simmonds, Stuart

Cc: Stuart Dunhill

Subject: [EXT] Public transport improvements - new employment development on Willen Road

Stuart,

We have been commissioned by Roxhill Developments to provide transport and highways advice to support an outline planning application for a new employment development on Willen Road, south of Newport Pagnell. As part of this, we need to promote public transport access. This email has therefore been prepared to introduce the proposed development and seek initial advice from you on what is required to facilitate public transport access.

Initial correspondence with Andy Swannell at MKC (following a review of our Transport Assessment Scoping Study), suggested that service provision along this route is poor and that contributions are required. We are meeting with Andy and his consultants to discuss the proposals and the scope of the Transport Assessment on **Friday 3rd November**, and it would therefore be useful to have your feedback before then if possible.

Site location

As shown in the attached figures, the development site is located to the south of Newport Pagnell and east of Milton Keynes. It is a triangular piece of land bound to the north by the A422 Monks Way, to the east by Willen Rd, and to the west by the M1. The site forms part of a much larger area of land allocated within the Plan:MK for a mixed residential and employment sustainable urban extension, within Policy SD14 – Milton Keynes East.

Proposed development

As shown in the attached masterplan, the outline development proposals comprise two large B8 warehouse and distribution units with ancillary B1 office use. It is envisaged that the site as a whole would employ approximately 1000 employees. It is likely that the units will operate 24 hours a day and utilise shift patterns (typically 0600-1400, 1400-2200 and 2200-0600 hours), although staff within the ancillary office uses will work more standard office hours.

Forecast number of public transport trips

Based on travel to work data from the 2011 Census, we forecast that approximately 5% of all trips to and from work will be by bus, and 5% will be by train (as part of a multimodal journey involving walking, cycling or bus).

At this stage, we therefore forecast that the development would generate approximately 110 two-way bus passenger trips per day, and 10 two-way bus passenger trips in the peak hours. A similar number of train passenger trips are forecast, and assuming that these then use the bus between the site and the train station (due to the distance from Milton Keynes Central), the development would generate an additional 20 bus passenger trips in the peak hours, and 220 bus passenger trips per day.

Existing bus services

It is understood that the following bus services route along Willen Road past the site (see attached figure):

- Service 1 – between Newton Leys and Newport Pagnell, via MK Central train station.
 - This currently runs every 30 minutes from Monday to Saturday (between approximately 7am and 7pm), and hourly during the evenings (until approximately midnight) and on Sundays.
 - However, from 1 November, the service will terminate at MK Central during the day, and only run past the site and to/from Newport Pagnell in the evenings at an hourly frequency.
- Service C10 – between MK Central rail station and Bedford bus station, via Newport Pagnell
 - This currently stops on Willen Road hourly from Monday to Friday (between approximately 6am and 7pm).

Proposed mitigation

As part of the proposed development, it is proposed to provide new bus stops on Willen Road, with shelters and timetable information (subject to land availability and taking into account the Redway route that is also being proposed as part of the development).

It is also proposed to provide funding to improve the frequency of the bus service along Willen Road (with current focus on service 1) to facilitate access and allow the timetable to coincide with shift changeover times.

With the above context, we would appreciate your advice on likely contributions to secure suitable public transport connections to and from the site, and whether this would be via improvements to Service 1, or via improvements to/the diversion of another service. If possible, please could you get back to me before Friday 3rd November?

I trust that the above provides a useful summary of the development, but if you have any questions or require further information, please do not hesitate to contact me.

Regards

Rebecca Leconte

Associate Director – **ADC Infrastructure Limited**

tel: 07889 314 220

Rebecca.Leconte@ADCInfrastructure.com

www.ADCInfrastructure.com

Western House, Western Street, Nottingham, NG1 3AZ



Visit the Milton Keynes Council web site at <http://www.milton-keynes.gov.uk>

Please consider the environment and don't print this email unless you really need to

**** This email and any attachments hereto are strictly confidential and intended solely for the addressee. It may contain information which is privileged. If you are not the intended addressee, you must not disclose, forward, copy or take any action in reliance of this email or attachments. If you have received this email in error, please delete it and notify us as soon as possible.

The anti-virus software used by Milton Keynes Council is updated regularly in an effort to minimise the possibility of viruses infecting our systems. However, you should be aware that there is no absolute guarantee that any files attached to this email are virus free.****

This message has been scanned for viruses by Websense

—

*This email and any attachments are **confidential** and protected by **copyright**. If you receive it in error, please notify us immediately and remove it from your system. Peter Brett Associates LLP (PBA) is a limited liability partnership registered in England and Wales. The terms Partner and Member refer to a member of PBA and a list is open for inspection at its registered office. Registered no: OC334398. VAT no: GB115143456. Registered office: Caversham Bridge House, Waterman Place, Reading, RG1 8DN. T: +44 (0) 0118 950 0761, Email info@peterbrett.com.*

Visit the Milton Keynes Council web site at <http://www.milton-keynes.gov.uk>

Please consider the environment and don't print this email unless you really need to

**** This email and any attachments hereto are strictly confidential and intended solely for the addressee. It may contain information which is privileged. If you are not the intended addressee, you must not disclose, forward, copy or take any action in reliance of this email or attachments. If you have received this email in error, please delete it and notify us as soon as possible.

The anti-virus software used by Milton Keynes Council is updated regularly in an effort to minimise the possibility of viruses infecting our systems. However, you should be aware that there is no absolute guarantee that any files attached to this email are virus free.****

*This email and any attachments are **confidential** and protected by **copyright**. If you receive it in error, please notify us immediately and remove it from your system. Peter Brett Associates LLP (PBA) is a limited liability partnership registered in England and Wales. The terms Partner and Member refer to a member of PBA and a list is open for inspection at its registered office. Registered no: OC334398. VAT no: GB115143456. Registered office: Caversham Bridge House, Waterman Place, Reading, RG1 8DN. T: +44 (0) 0118 950 0761, Email info@peterbrett.com.*

Visit the Milton Keynes Council web site at <http://www.milton-keynes.gov.uk>

Please consider the environment and don't print this email unless you really need to

**** This email and any attachments hereto are strictly confidential and intended solely for the addressee. It may contain information which is privileged. If you are not the intended addressee, you must not disclose, forward, copy or take any action in reliance of this email or attachments. If you have received this email in error, please delete it and notify us as soon as possible.

The anti-virus software used by Milton Keynes Council is updated regularly in an effort to minimise the possibility of viruses infecting our systems. However, you should be aware that there is no absolute guarantee that any files attached to this email are virus free.****

Appendix D

Appendix D

Liaison with MKC's Senior Transport Planner – Cycling and Events Management

James Horne

From: James Horne
Sent: 02 February 2018 16:09
To: 'Randle, Sara'
Cc: 'andy.swannell@milton-keynes.gov.uk'; Paul James; Douglas Pielage
Subject: FW: RE: Newport Pagnell - Proposed Highway Improvement Scheme

Dear Sara,

Many thanks for providing your thoughts of the initial proposals for these junction designs. Your comments, and our response below, will form part of the Stakeholder Engagement recorded within the 'Walking, Cycling & Horse-Riding Assessment' currently being prepared to inform the design proposals.

1, The proposed Redway linkages are inefficient and indirect. To reach Marsh End Road from the existing redway on the H4 Danstead Way would require three road crossings including two major junctions and six separate stages in this current proposal. (A potential unnecessary delay of 3 minutes to a simple 6 minute journey.) I can see no reason why the Redway switches from the west side of Willen Road to the east side, creating an unattractive and inefficient route for cyclists. At either end, existing Redways and links are on the west side, alternating sides like this is not ideal.

The primary reasons for the proposed Redways is to provide employees working at the new development with off carriageway pedestrian / cyclist access to the site:-

- From Milton Keynes – connecting the existing facilities on the western side of Willen Road (at the Tongwell Roundabout) to the Development, without the need to cross Willen Road;
- From Newport Pagnell – connecting the existing facilities on the eastern side of the Willen Road / Marsh End Road junction, to the Development, providing Toucan Style controlled crossings across the A422 arm of the Marsh End Roundabout (at the location of 3No. Recorded Injury Collisions involving cyclists), then across Willen Road itself at the development signalised junction;
- This, along with physical constraints (such as the available land within the highway boundary) is the reason why these proposed facilities are being provided on differing sides of Willen Road;

When considering cyclists travelling along the length of Willen Road, from Milton Keynes to Newport Pagnell, we note the following benefits are being provided by this scheme:-

- The speed limit along Willen Road, from the Tongwell Roundabout to Marsh End Road, is being to be reduced from National Speed Limit (60mph) to 40mph. Therefore, any cyclist choosing to remain within the carriageway will benefit from lower motorised vehicle speeds;
- Dropped kerbs and cycle road markings have been indicated prior to the stop lines on Willen Road to allow cyclists the opportunity to exit the carriageway prior to both signalised junctions, and join the off carriageway Redway facilities;
- The timings of the controlled crossing point are being reviewed in to order to provide appropriate consideration to cyclists and pedestrians, to reduce journey time. This will also be subject to detailed design;
- The Marsh End Road junction is no longer a roundabout (this junction types has a higher frequency of collisions involving cyclist) and is now a fully signalised roundabout;
- Any cyclist currently travelling from Milton Keynes to Newport Pagnell (and vice versa) is doing so within the carriageway, and would therefore be considered to be an experienced, confident cyclist, who would traditionally choose to remain within the carriageway (even if off carriageway facilities are provided). This scheme provides all types of cyclist with options;

2, There's no indication of how the Redway links to any existing cycle facilities on Marsh End road. There is only one short section of Redway in this area, just north of Tongwell Lane, although Tongwell Lane is traffic free and is also considered to be a good facility of cyclists. Any new Redways would need to link to one of these two facilities and introduce yet another road crossing; unless you would also be willing to upgrade the existing footway in front of the football club to full Redway and create shared use access to Riverside Meadow.

Once additional topographical survey has been obtained for the Willen Road / Marsh End Road junction, the scheme proposals will be updated to indicate how the proposed Redway on the eastern side of Willen Road will connect with the existing facilities at this location, notably:-

- Tongwell Lane;
 - The uncontrolled crossing point north of Tongwell Lane; and
 - The existing signed shared use footway / cycle track on the eastern side of Willen Road (existing 30mph length) adjacent to the Sports Ground;
-

3, Redways are 3 metres wide and on a road with this speed limit a verge is required of at least 1 metre. In the section north of Marsh End roundabout you have indicated the width is only 1.9 metres with no verge. This is not acceptable.

MKC does not currently have its own published highway design guide / standards. However, from a review of a Draft copy of MKC's 'A Highway Guide for Milton Keynes – November 2014', Fig 1 and Table 3.12 have classified Willen Road, H3 Monks Way and the A422 as 'District Distributors', and the appropriate design standards as being the Design Manual for Roads and Bridges (DMRB). This has subsequently been confirmed by MKC's Highway Authority.

The design parameters of the proposed Redways have been determined following a review of the following documents:-

- Design Manual for Roads and Bridges (DMRB):-
 - TA 90/05 – 'The Geometric Design of Pedestrian, Cycle and Equestrian Routes';
 - TA 91/05 – 'Provision for Non-Motorised Users';
 - Interim Advice Note 195/16 – 'Cycle Traffic and the Strategic Road Network';
- Local Transport Note 2/95 – 'The Design of Pedestrian Crossings';
- Local Transport Note 1/12 – 'Shared Use Routes for Pedestrians and Cyclist';
- DfT's Guidance on the Use of Tactile Paving Surfaces;
- A Highway Guide for Milton Keynes – November 2014 DRAFT;

As you have noted, 3m wide Redways with 1m wide buffer zones are being provided adjacent to the 40mph carriageway for the majority of the scheme proposals. However, over a short length (60m approx.), the proposed Redway on the eastern side of Willen Road (north of the Marsh End Roundabout), reduces to 2m (approx.) and is without a buffer zone. This is due to insufficient room to accommodate the increased carriageway width, as well as a standard Redway layout, within the extents of the existing highway boundary at this location.

Therefore, a short section of Redway with reduced width is being proposed, in accordance with the ethos of the DMRB, which promotes the provision of pedestrian and cyclist facilities along entire routes, even if short sections are below desirable widths. Also, Para 7.31 of LTN 1/12 which states:-

Para 7.31 *"It might not always be possible to meet the minimum recommendations for the route as a whole. In this case, practitioners need to consider whether a new sub-standard facility is better than none. For example, on lightly used routes, especially rural shared use routes that avoid high speed roads which have no specific provision for pedestrians or cyclists, a narrow route might represent a considerable improvement on existing conditions."*

Employees will be travelling to the site in order to get to work, or return home, and as a consequence they are likely to be travelling in the same direction.

4, Any vertical street furniture etc should be set back 0.5 metres from the Redway. Exceptions would be on the bridge.

Noted.

5, The approaches of the Redways from the north to Marsh End roundabout and from the south to the junction with the new development access have very poor alignment and do not allow the user to scan for vehicles approaching from behind.

The approaches to the controlled crossings have been provided within the land available. We agreed that the current alignments of the footway / cycle tracks do not provide cyclists with the ability to observe oncoming traffic prior to deciding whether to cross or not before reaching the controlled crossing. However, given the nature of the adjacent carriageways, particularly the H3 Monks Way and A422, we would should suggest that an alignment that guides you

to the controlled crossing points and makes you slow down / stop, in order to use the Toucan style controlled crossing points, is more appropriate in this instance.

6, Bus stop placement introduces conflict with users travelling along the Redways. A 'floating bus stop' configuration could be considered.

The scheme proposals will be updated to indicate the alignment of the Redways being taken around the back of the Bus Shelters, in order to reduce the potential conflict between cyclists and pedestrians entering / exiting buses.

I trust the above is clear, however, please contact me to discuss further as required.

Kind regards,

James Horne

Principal Engineer

For and on behalf of Peter Brett Associates LLP - [Northampton](#)



t 01604 878300
e jhorne@peterbrett.com
w peterbrett.com



From: Randle, Sara [<mailto:Sara.Randle@milton-keynes.gov.uk>]
Sent: 20 December 2017 15:39
To: Douglas Pielage <DPielage@peterbrett.com>
Cc: James Horne <jhorne@peterbrett.com>; Swannell, Andy <Andy.Swannell@Milton-keynes.gov.uk>
Subject: RE: Newport Pagnell - Proposed Highway Improvement Scheme

Dear Douglas,

Many thanks for your email. I have taken a look at the plans and have the following comments:

- The proposed Redway linkages are inefficient and indirect. To reach Marsh End Road from the existing redway on the H4 Danstead Way would require three road crossings including two major junctions and six separate stages in this current proposal. (A potential unnecessary delay of 3 minutes to a simple 6 minute journey.) I can see no reason why the Redway switches from the west side of Willen Road to the east side, creating an unattractive and inefficient route for cyclists. At either end, existing Redways and links are on the west side, alternating sides like this is not ideal.
- There's no indication of how the Redway links to any existing cycle facilities on Marsh End road. There is only one short section of Redway in this area, just north of Tongwell Lane, although Tongwell Lane is traffic free and is also considered to be a good facility of cyclists. Any new Redways would need to link to one of these two facilities and introduce yet another road crossing; unless you would also be willing to upgrade the existing footway in front of the football club to full Redway and create shared use access to Riverside Meadow.
- Redways are 3 metres wide and on a road with this speed limit a verge is required of at least 1 metre. In the section north of Marsh End roundabout you have indicated the width is only 1.9 metres with no verge. This is not acceptable.

- Any vertical street furniture etc should be set back 0.5 metres from the Redway. Exceptions would be on the bridge.
- The approaches of the Redways from the north to Marsh End roundabout and from the south to the junction with the new development access have very poor alignment and do not allow the user to scan for vehicles approaching from behind.
- Bus stop placement introduces conflict with users travelling along the Redways. A 'floating bus stop' configuration could be considered.

If you have any queries, please get in touch.

Kind regards
Sara

Sara Randle
Senior Transport Planner - Cycling and Events Management
T: 01908 254334
E: Sara.Randle@milton-keynes.gov.uk
W: <http://www.milton-keynes.gov.uk/cycling>
Milton Keynes Council | Transport Policy | Saxon Court | 502 Avebury Boulevard | Central Milton Keynes | MK9 3HS



From: Douglas Pielage [<mailto:DPielage@peterbrett.com>]
Sent: 18 December 2017 14:31
To: Randle, Sara
Cc: Cycling; James Horne
Subject: [EXT] Newport Pagnell - Proposed Highway Improvement Scheme

Dear Sara,

We have been passed your details as a point of contact regarding obtaining an opinion from MKC on Walking and Cycling provisions associated with highway improvement schemes.

We are currently working on the design of a new 4 arm signalised junction to be provided on Willen Road to serve a proposed commercial development (western arm), as well as maintain access to the existing farm and residential buildings (eastern arm) known as 'Glenfield' (refer to Draft Drawing 38748/100/007).

The existing H3 Monks Way / A422 / Willen Road 4 arm roundabout is also proposed to be increased in size and signalised, in order to accommodate the likely increase in traffic flows generated by a proposed commercial development (refer to Draft Drawing 38748/100/008).

These proposals are being developed by the 'Walking, Cycling & Horse-Riding Assessment' process as detailed by HD 42/17 – 'Walking, Cycling & Horse-Riding Assessment and Review' (WCHAR).

The scheme objectives include improving conditions for walking and cycling as the current route has limited facilities and connections for Non-Motorised Users (NMUs). This is likely to include:-

- Off carriageway shared use footway / cycle track (Redways);
- Toucan style controlled crossings at the 2No new signalised junctions;
- 2No. new bus stops required to serve the development;

The proposed Redway will allow Pedestrians and Cyclists to travel to and from the proposed development along Willen Road. These facilities will also connect:-

- The existing Redway at the Tongwell Roundabout (southern end of Willen Road);
- To the existing Redway adjacent to Marsh End Road (northern end of Willen Road);

This will take the form of a 3m wide (whenever possible) shared use Redway.

We would be grateful to receive comments from MKC on this proposal, from a walking and cycling point of view, to inform the WCHAR process.

Please can you contact me to discuss further.

Kind Regards,

Douglas Pielage

Graduate Engineer

For and on behalf of Peter Brett Associates LLP - [Northampton](#)



t 01604878341
e dpielage@peterbrett.com
w peterbrett.com

*This email and any attachments are **confidential** and protected by **copyright**. If you receive it in error, please notify us immediately and remove it from your system. Peter Brett Associates LLP (PBA) is a limited liability partnership registered in England and Wales. The terms Partner and Member refer to a member of PBA and a list is open for inspection at its registered office. Registered no: OC334398. VAT no: GB115143456. Registered office: Caversham Bridge House, Waterman Place, Reading, RG1 8DN. T: +44 (0) 0118 950 0761, Email info@peterbrett.com.*

Visit the Milton Keynes Council web site at <http://www.milton-keynes.gov.uk>

Please consider the environment and don't print this email unless you really need to

**** This email and any attachments hereto are strictly confidential and intended solely for the addressee. It may contain information which is privileged. If you are not the intended addressee, you must not disclose, forward, copy or take any action in reliance of this email or attachments. If you have received this email in error, please delete it and notify us as soon as possible.

The anti-virus software used by Milton Keynes Council is updated regularly in an effort to minimise the possibility of viruses infecting our systems. However, you should be aware that there is no absolute guarantee that any files attached to this email are virus free.****

This message has been scanned for viruses by [Websense](#)

Kind regards,

James Horne

Principal Engineer



t 01604 878300
e jhorne@peterbrett.com
w peterbrett.com



APPENDIX G

TEMPRO OUTPUT

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2018
Future Year: 2023
Trip Purpose Group: All purposes
Time Period: Weekday AM peak period (0700 - 0959)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No

Growth Factor

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	1.0683	1.0569

Future Year - Base Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	211	131

Base Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	3,090	2,305

Future Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	3,301	2,436

Level Area Local Growth Figure
 E02003460 Milton Keynes 002 1.078270911

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2018
Future Year: 2023
Trip Purpose Group: All purposes
Time Period: Weekday PM peak period (1600 - 1859)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No
 NTM: All Road

Growth Factor

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	1.0612	1.0700

Future Year - Base Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	158	203

Base Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	2,574	2,900

Future Year

Area Description		All purposes	
Level	Name	Origin	Destination
E02003460	Milton Keynes 002	2,732	3,103

Level Area Local Growth Figure
 E02003460 Milton Keynes 002 1.081315154

APPENDIX H

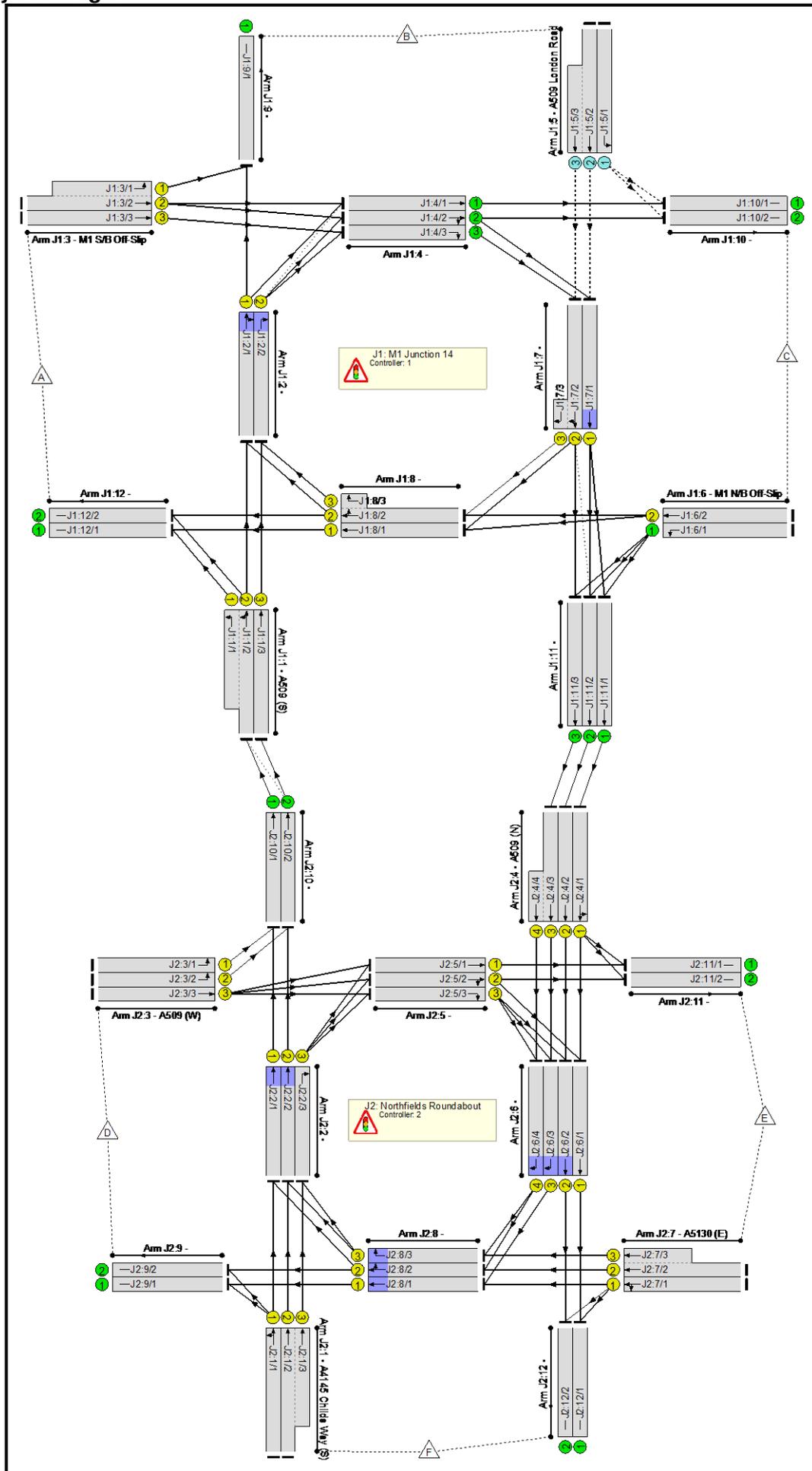
LINSIG RESULTS

Full Input Data And Results

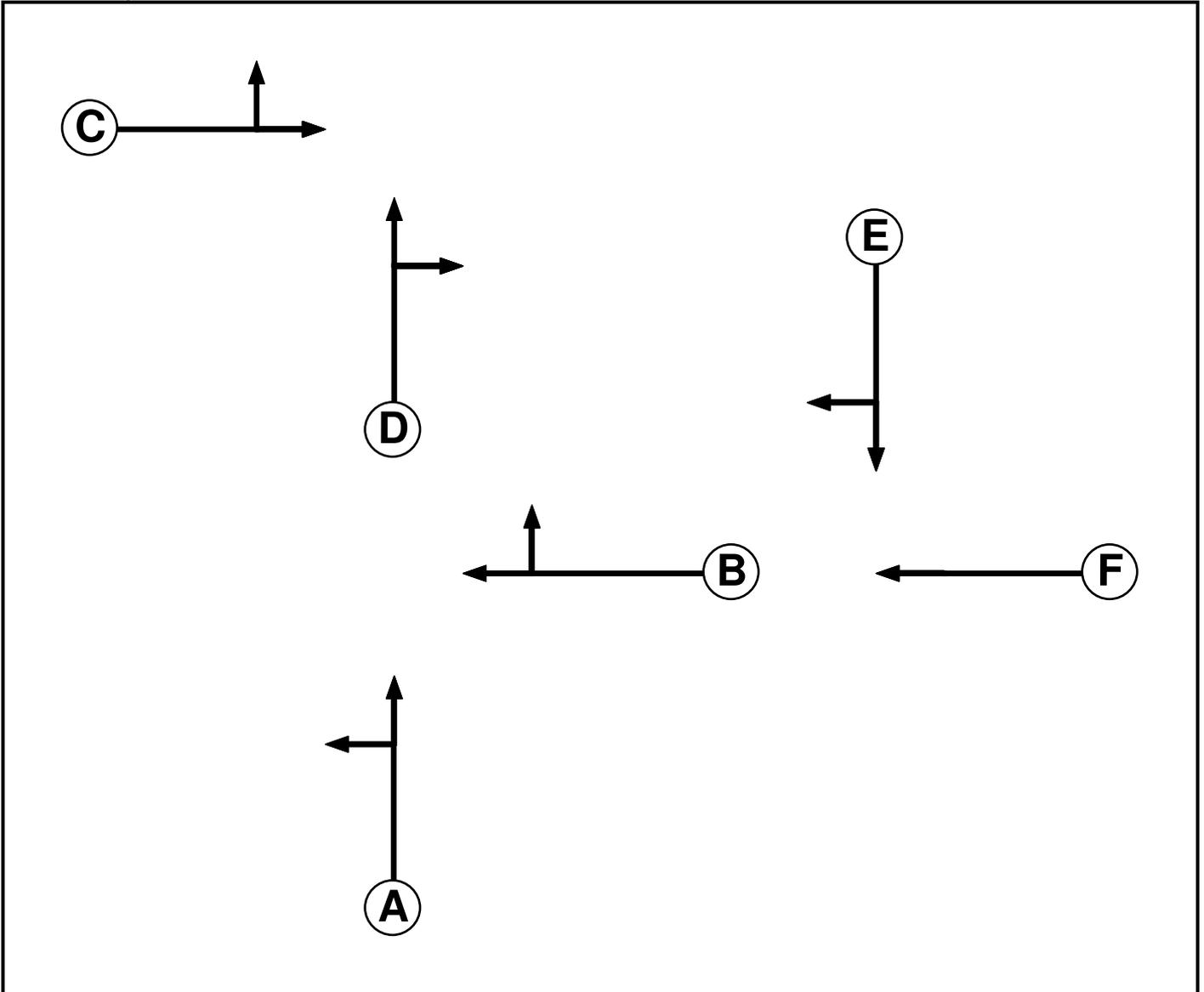
User and Project Details

Project:	Willen Road, Newport Pagnell
Title:	M1 Junction 14 / Northfields Roundabout Model
Location:	
Additional detail:	
File name:	M1 Junction 14_Northfields Roundabout (Linked Existing Model) V7.lsg3x
Author:	
Company:	ADC Infrastructure Limited
Address:	Western House, Western Street, Nottingham NG1 3AZ

Network Layout Diagram



C1
Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	7

Phase Intergrens Matrix

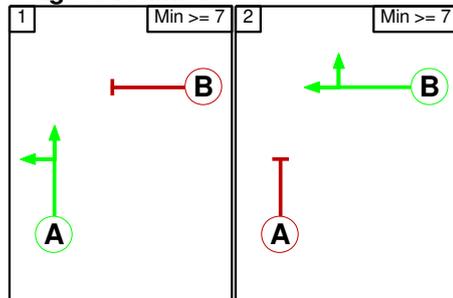
		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A	6	-	-	-	-	-
	B	6	-	-	-	-	-
	C	-	-	6	-	-	-
	D	-	-	6	-	-	-
	E	-	-	-	-	6	-
	F	-	-	-	-	6	-

Phases in Stage

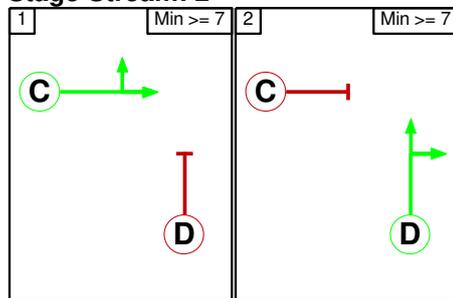
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	F
3	2	E

Stage Diagram

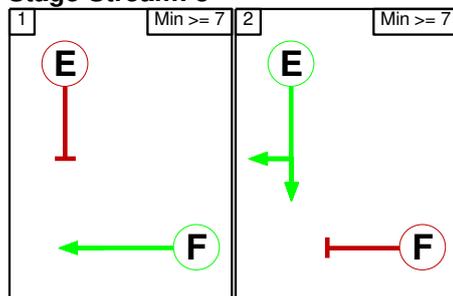
Stage Stream: 1



Stage Stream: 2



Stage Stream: 3



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

	To Stage	
From Stage	1	2
	1	6
	2	6

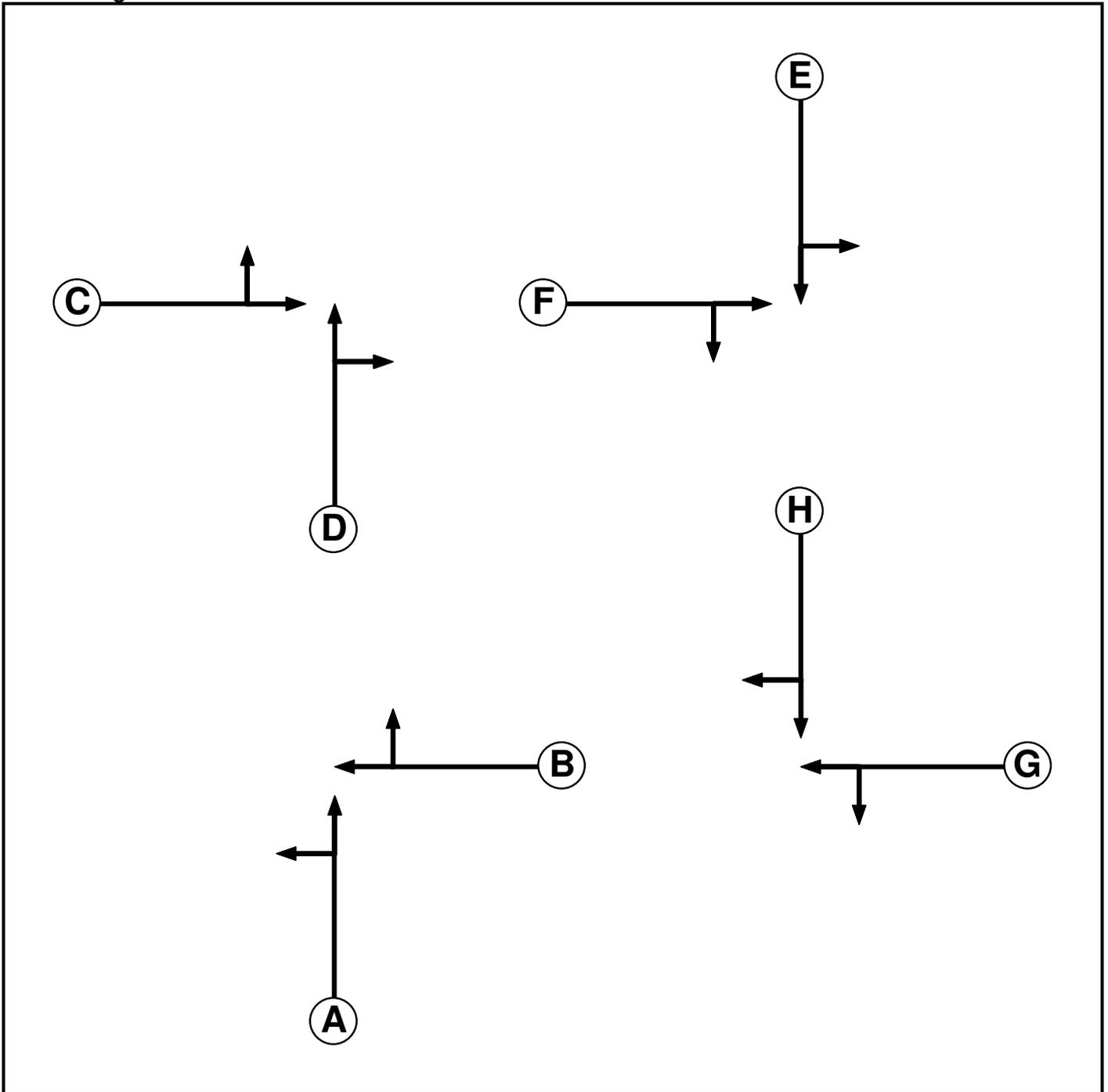
Stage Stream: 2

	To Stage	
From Stage	1	2
	1	6
	2	6

Stage Stream: 3

	To Stage	
From Stage	1	2
	1	6
	2	6

C2
Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7

Phase Intergrens Matrix

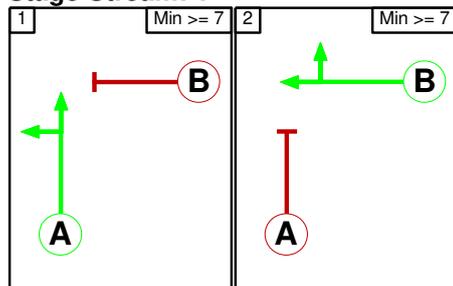
		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A	6	-	-	-	-	-	-	-
	B	6	-	-	-	-	-	-	-
	C	-	-	6	-	-	-	-	-
	D	-	-	6	-	-	-	-	-
	E	-	-	-	-	6	-	-	-
	F	-	-	-	-	6	-	-	-
	G	-	-	-	-	-	-	6	-
	H	-	-	-	-	-	-	6	-

Phases in Stage

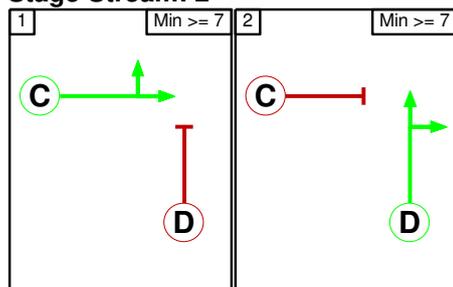
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G
4	2	H

Stage Diagram

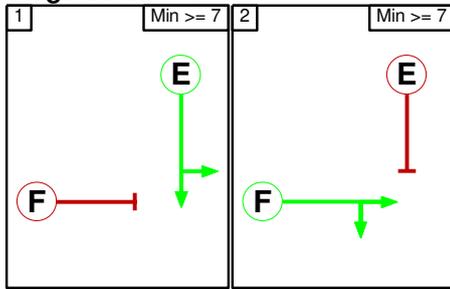
Stage Stream: 1



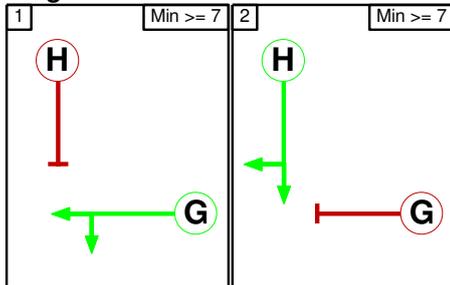
Stage Stream: 2



Stage Stream: 3



Stage Stream: 4



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		6
	2	6	

Stage Stream: 3

	To Stage		
From Stage		1	2
	1		6
	2	6	

Stage Stream: 4

	To Stage		
From Stage		1	2
	1		6
	2	6	

Give-Way Lane Input Data

Junction: J1: M1 Junction 14											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
J1:5/1 (A509 London Road)	J1:10/1 (Left)	1000	0	J1:4/1	0.33	All					
				J1:4/2	0.33	All					
J1:5/2 (A509 London Road)	J1:10/2 (Left)	1000	0	J1:4/1	0.33	All	-	-	-	-	-
				J1:4/2	0.33	All					
				J1:4/3	0.33	All					
J1:5/2 (A509 London Road)	J1:7/1 (Ahead)	1000	0	J1:4/1	0.33	All	-	-	-	-	-
				J1:4/2	0.33	All					
J1:5/3 (A509 London Road)	J1:7/2 (Ahead)	1000	0	J1:4/3	0.33	All	-	-	-	-	-
				J1:4/1	0.33	All					
				J1:4/2	0.33	All					
				J1:4/3	0.33	All					

Junction: J2: Northfields Roundabout

There are no Opposed Lanes in this Junction

Lane Input Data

Junction: J1: M1 Junction 14												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J1:1/1 (A509 (S))	U	A	2	3	19.1	Geom	-	3.50	0.00	Y	Arm J1:12 Left	Inf
J1:1/2 (A509 (S))	U	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm J1:2 Ahead	Inf
											Arm J1:12 Left	Inf
J1:1/3 (A509 (S))	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J1:2 Ahead	Inf
J1:2/1	U	D	2	3	31.3	User	1900	-	-	-	-	-
J1:2/2	U	D	2	3	31.3	User	1900	-	-	-	-	-
J1:3/1 (M1 S/B Off-Slip)	U	C	2	3	23.5	Geom	-	3.50	0.00	Y	Arm J1:9 Left	20.00
J1:3/2 (M1 S/B Off-Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J1:4 Ahead	Inf
J1:3/3 (M1 S/B Off-Slip)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J1:4 Ahead	Inf
J1:4/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:4/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:4/3	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:5/1 (A509 London Road)	O		2	3	10.8	Geom	-	3.50	0.00	Y	Arm J1:10 Left	30.00
J1:5/2 (A509 London Road)	O		2	3	60.0	Geom	-	3.50	0.00	N	Arm J1:7 Ahead	Inf
J1:5/3 (A509 London Road)	O		2	3	9.0	Geom	-	3.50	0.00	N	Arm J1:7 Ahead	Inf
J1:6/1 (M1 N/B Off-Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
J1:6/2 (M1 N/B Off-Slip)	U	F	2	3	60.0	User	1800	-	-	-	-	-
J1:7/1	U	E	2	3	31.3	User	1900	-	-	-	-	-
J1:7/2	U	E	2	3	31.3	User	1900	-	-	-	-	-
J1:7/3	U	E	2	3	3.0	User	1900	-	-	-	-	-
J1:8/1	U	B	2	3	8.2	User	1900	-	-	-	-	-
J1:8/2	U	B	2	3	8.2	User	1900	-	-	-	-	-
J1:8/3	U	B	2	3	2.6	Geom	-	3.50	0.00	Y	Arm J1:2 Right	25.00

J1:9/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:10/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:10/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:11/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:11/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:11/3	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:12/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	7.0	Inf	-	-	-	-	-	-

Junction: J2: Northfields Roundabout												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J2:1/1 (A4145 Childs Way (S))	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:2 Ahead	Inf
											Arm J2:9 Left	Inf
J2:1/2 (A4145 Childs Way (S))	U	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm J2:2 Ahead	Inf
J2:1/3 (A4145 Childs Way (S))	U	A	2	3	12.2	Geom	-	3.50	0.00	Y	Arm J2:2 Ahead	Inf
J2:2/1	U	D	2	3	8.7	User	1900	-	-	-	-	-
J2:2/2	U	D	2	3	8.7	User	1900	-	-	-	-	-
J2:2/3	U	D	2	3	8.7	User	1900	-	-	-	-	-
J2:3/1 (A509 (W))	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:10 Left	Inf
J2:3/2 (A509 (W))	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm J2:10 Left	Inf
J2:3/3 (A509 (W))	U	C	2	3	17.4	Geom	-	3.50	0.00	Y	Arm J2:5 Ahead	Inf
J2:4/1 (A509 (N))	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:6 Ahead	Inf
											Arm J2:11 Left	Inf
J2:4/2 (A509 (N))	U	E	2	3	60.0	Geom	-	3.50	0.00	N	Arm J2:6 Ahead	Inf
J2:4/3 (A509 (N))	U	E	2	3	60.0	Geom	-	3.50	0.00	N	Arm J2:6 Ahead	Inf
J2:4/4 (A509 (N))	U	E	2	3	5.2	Geom	-	3.50	0.00	Y	Arm J2:6 Ahead	Inf
J2:5/1	U	F	2	3	11.3	User	1900	-	-	-	-	-
J2:5/2	U	F	2	3	11.3	User	1900	-	-	-	-	-
J2:5/3	U	F	2	3	11.3	User	1900	-	-	-	-	-
J2:6/1	U	H	2	3	8.7	User	1900	-	-	-	-	-
J2:6/2	U	H	2	3	8.7	User	1900	-	-	-	-	-
J2:6/3	U	H	2	3	8.7	User	1900	-	-	-	-	-
J2:6/4	U	H	2	3	8.7	User	1900	-	-	-	-	-
J2:7/1 (A5130 (E))	U	G	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:8 Ahead	Inf
											Arm J2:12 Left	Inf
J2:7/2 (A5130 (E))	U	G	2	3	60.0	Geom	-	3.50	0.00	N	Arm J2:8 Ahead	Inf

J2:7/3 (A5130 (E))	U	G	2	3	7.0	Geom	-	3.50	0.00	Y	Arm J2:8 Ahead	Inf
J2:8/1	U	B	2	3	11.3	User	1900	-	-	-	-	-
J2:8/2	U	B	2	3	11.3	User	1900	-	-	-	-	-
J2:8/3	U	B	2	3	11.3	User	1900	-	-	-	-	-
J2:9/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:9/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:10/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:10/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:11/1	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:11/2	U		2	3	5.2	Inf	-	-	-	-	-	-
J2:12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:12/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
4: '2023 Bkgd AM'	08:00	09:00	01:00	
5: '2023 WD AM'	08:00	09:00	01:00	
11: '2023 Bkgd PM'	17:00	18:00	01:00	
12: '2023 WD PM'	17:00	18:00	01:00	

Scenario 3: '2023 Bkgd AM' (FG4: '2023 Bkgd AM', Plan 1: '2017 Observed AM')

Traffic Flows, Desired

Desired Flow :

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	4	250	0	637	100	798	1789
	B	152	12	353	265	42	332	1156
	C	2	314	8	637	100	798	1859
	D	395	162	249	5	187	17	1015
	E	138	57	87	427	2	122	833
	F	427	175	269	4	46	4	925
	Tot.	1118	970	966	1975	477	2071	7577

Traffic Lane Flows

Lane	Scenario 3: 2023 Bkgd AM
Junction: J1: M1 Junction 14	
J1:1/1 (short)	767
J1:1/2 (with short)	1441(In) 674(Out)
J1:1/3	518
J1:2/1	807
J1:2/2	526
J1:3/1 (short)	250
J1:3/2 (with short)	1035(In) 785(Out)
J1:3/3	754
J1:4/1	351
J1:4/2	1047
J1:4/3	754
J1:5/1	353
J1:5/2 (with short)	803(In) 374(Out)
J1:5/3 (short)	429
J1:6/1	1535
J1:6/2	324
J1:7/1	1159
J1:7/2 (with short)	1183(In) 1099(Out)
J1:7/3 (short)	84
J1:8/1	84
J1:8/2 (with short)	408(In) 400(Out)
J1:8/3 (short)	8
J1:9/1	970
J1:10/1	527
J1:10/2	439
J1:11/1	1060
J1:11/2	1110
J1:11/3	1539
J1:12/1	851
J1:12/2	267
Junction: J2: Northfields Roundabout	
J2:1/1	421
J2:1/2 (with short)	504(In) 454(Out)
J2:1/3 (short)	50

J2:2/1	576
J2:2/2	577
J2:2/3	52
J2:3/1	388
J2:3/2	418
J2:3/3	209
J2:4/1	1060
J2:4/2	1110
J2:4/3 (with short)	1539(In) 772(Out)
J2:4/4 (short)	767
J2:5/1	131
J2:5/2	120
J2:5/3	10
J2:6/1	834
J2:6/2	1115
J2:6/3	775
J2:6/4	769
J2:7/1	338
J2:7/2 (with short)	495(In) 370(Out)
J2:7/3 (short)	125
J2:8/1	991
J2:8/2	1139
J2:8/3	125
J2:9/1	993
J2:9/2	982
J2:10/1	964
J2:10/2	995
J2:11/1	252
J2:11/2	225
J2:12/1	895
J2:12/2	1176

Lane Saturation Flows

Junction: J1: M1 Junction 14								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A509 (S))	3.50	0.00	Y	Arm J1:12 Left	Inf	100.0 %	1965	1965
J1:1/2 (A509 (S))	3.50	0.00	N	Arm J1:2 Ahead Arm J1:12 Left	Inf Inf	71.4 % 28.6 %	2105	2105
J1:1/3 (A509 (S))	3.50	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1965	1965
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1 (M1 S/B Off-Slip)	3.50	0.00	Y	Arm J1:9 Left	20.00	100.0 %	1828	1828
J1:3/2 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:3/3 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:4/3	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A509 London Road)	3.50	0.00	Y	Arm J1:10 Left	30.00	100.0 %	1871	1871
J1:5/2 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:5/3 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:6/1 (M1 N/B Off-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/2 (M1 N/B Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	3.50	0.00	Y	Arm J1:2 Right	25.00	100.0 %	1854	1854
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:11/3	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Northfields Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	99.0 %	1965	1965
				Arm J2:9 Left	Inf	1.0 %		
J2:1/2 (A4145 Childs Way (S))	3.50	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2105	2105
J2:1/3 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1965	1965
J2:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A509 (W))	3.50	0.00	Y	Arm J2:10 Left	Inf	100.0 %	1965	1965
J2:3/2 (A509 (W))	3.50	0.00	N	Arm J2:10 Left	Inf	100.0 %	2105	2105
J2:3/3 (A509 (W))	3.50	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1965	1965
J2:4/1 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	77.2 %	1965	1965
				Arm J2:11 Left	Inf	22.8 %		
J2:4/2 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/3 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/4 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1965	1965
J2:5/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/4	This lane uses a directly entered Saturation Flow						1900	1900
J2:7/1 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	63.9 %	1965	1965
				Arm J2:12 Left	Inf	36.1 %		
J2:7/2 (A5130 (E))	3.50	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2105	2105
J2:7/3 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1965	1965
J2:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:9/2	Infinite Saturation Flow						Inf	Inf
J2:10/1	Infinite Saturation Flow						Inf	Inf
J2:10/2	Infinite Saturation Flow						Inf	Inf

J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 4: '2023 WD AM' (FG5: '2023 WD AM', Plan 1: '2017 Observed AM')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	4	281	0	656	96	803	1840
	B	152	12	368	273	40	334	1179
	C	2	314	8	669	98	819	1910
	D	389	157	241	4	184	18	993
	E	139	56	86	426	2	123	832
	F	427	175	269	4	46	4	925
	Tot.	1113	995	972	2032	466	2101	7679

Traffic Lane Flows

Lane	Scenario 4: 2023 WD AM
Junction: J1: M1 Junction 14	
J1:1/1 (short)	824
J1:1/2 (with short)	1433(In) 609(Out)
J1:1/3	506
J1:2/1	804
J1:2/2	514
J1:3/1 (short)	281
J1:3/2 (with short)	1082(In) 801(Out)
J1:3/3	758
J1:4/1	347
J1:4/2	1058
J1:4/3	758
J1:5/1	368
J1:5/2 (with short)	811(In) 374(Out)
J1:5/3 (short)	437
J1:6/1	1586
J1:6/2	324
J1:7/1	1175
J1:7/2 (with short)	1195(In) 1111(Out)
J1:7/3 (short)	84
J1:8/1	84
J1:8/2 (with short)	408(In) 400(Out)
J1:8/3 (short)	8
J1:9/1	995
J1:10/1	531
J1:10/2	441
J1:11/1	1068
J1:11/2	1122
J1:11/3	1598
J1:12/1	908
J1:12/2	205
Junction: J2: Northfields Roundabout	
J2:1/1	421
J2:1/2 (with short)	504(In) 454(Out)
J2:1/3 (short)	50

J2:2/1	572
J2:2/2	580
J2:2/3	52
J2:3/1	378
J2:3/2	409
J2:3/3	206
J2:4/1	1068
J2:4/2	1122
J2:4/3 (with short)	1598(In) 840(Out)
J2:4/4 (short)	758
J2:5/1	131
J2:5/2	117
J2:5/3	10
J2:6/1	850
J2:6/2	1128
J2:6/3	843
J2:6/4	759
J2:7/1	335
J2:7/2 (with short)	497(In) 369(Out)
J2:7/3 (short)	128
J2:8/1	1055
J2:8/2	1128
J2:8/3	128
J2:9/1	1057
J2:9/2	975
J2:10/1	950
J2:10/2	989
J2:11/1	248
J2:11/2	218
J2:12/1	911
J2:12/2	1190

Lane Saturation Flows

Junction: J1: M1 Junction 14								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A509 (S))	3.50	0.00	Y	Arm J1:12 Left	Inf	100.0 %	1965	1965
J1:1/2 (A509 (S))	3.50	0.00	N	Arm J1:2 Ahead Arm J1:12 Left	Inf Inf	78.5 % 21.5 %	2105	2105
J1:1/3 (A509 (S))	3.50	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1965	1965
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1 (M1 S/B Off-Slip)	3.50	0.00	Y	Arm J1:9 Left	20.00	100.0 %	1828	1828
J1:3/2 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:3/3 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:4/3	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A509 London Road)	3.50	0.00	Y	Arm J1:10 Left	30.00	100.0 %	1871	1871
J1:5/2 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:5/3 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:6/1 (M1 N/B Off-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/2 (M1 N/B Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	3.50	0.00	Y	Arm J1:2 Right	25.00	100.0 %	1854	1854
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:11/3	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Northfields Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	99.0 %	1965	1965
				Arm J2:9 Left	Inf	1.0 %		
J2:1/2 (A4145 Childs Way (S))	3.50	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2105	2105
J2:1/3 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1965	1965
J2:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A509 (W))	3.50	0.00	Y	Arm J2:10 Left	Inf	100.0 %	1965	1965
J2:3/2 (A509 (W))	3.50	0.00	N	Arm J2:10 Left	Inf	100.0 %	2105	2105
J2:3/3 (A509 (W))	3.50	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1965	1965
J2:4/1 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	78.1 %	1965	1965
				Arm J2:11 Left	Inf	21.9 %		
J2:4/2 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/3 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/4 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1965	1965
J2:5/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/4	This lane uses a directly entered Saturation Flow						1900	1900
J2:7/1 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	63.3 %	1965	1965
				Arm J2:12 Left	Inf	36.7 %		
J2:7/2 (A5130 (E))	3.50	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2105	2105
J2:7/3 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1965	1965
J2:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:9/2	Infinite Saturation Flow						Inf	Inf
J2:10/1	Infinite Saturation Flow						Inf	Inf
J2:10/2	Infinite Saturation Flow						Inf	Inf

J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 9: '2023 Bkgd PM' (FG11: '2023 Bkgd PM', Plan 1: '2017 Observed AM')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	2	267	0	283	86	468	1106
	B	246	32	374	156	47	258	1113
	C	0	408	16	239	73	396	1132
	D	639	284	483	4	256	7	1673
	E	201	89	152	253	1	116	812
	F	551	245	417	2	54	6	1275
	Tot.	1639	1325	1442	937	517	1251	7111

Traffic Lane Flows

Lane	Scenario 9: 2023 Bkgd PM
Junction: J1: M1 Junction 14	
J1:1/1 (short)	717
J1:1/2 (with short)	2025(In) 1308(Out)
J1:1/3	1036
J1:2/1	1090
J1:2/2	1036
J1:3/1 (short)	267
J1:3/2 (with short)	713(In) 446(Out)
J1:3/3	393
J1:4/1	551
J1:4/2	963
J1:4/3	393
J1:5/1	374
J1:5/2 (with short)	739(In) 305(Out)
J1:5/3 (short)	434
J1:6/1	708
J1:6/2	424
J1:7/1	751
J1:7/2 (with short)	827(In) 795(Out)
J1:7/3 (short)	32
J1:8/1	248
J1:8/2 (with short)	456(In) 456(Out)
J1:8/3 (short)	0
J1:9/1	1325
J1:10/1	738
J1:10/2	704
J1:11/1	693
J1:11/2	635
J1:11/3	678
J1:12/1	965
J1:12/2	674
Junction: J2: Northfields Roundabout	
J2:1/1	737
J2:1/2 (with short)	538(In) 478(Out)
J2:1/3 (short)	60

J2:2/1	756
J2:2/2	899
J2:2/3	61
J2:3/1	677
J2:3/2	729
J2:3/3	267
J2:4/1	693
J2:4/2	635
J2:4/3 (with short)	678(In) 189(Out)
J2:4/4 (short)	489
J2:5/1	140
J2:5/2	171
J2:5/3	17
J2:6/1	487
J2:6/2	648
J2:6/3	190
J2:6/4	492
J2:7/1	368
J2:7/2 (with short)	444(In) 22(Out)
J2:7/3 (short)	422
J2:8/1	442
J2:8/2	514
J2:8/3	422
J2:9/1	443
J2:9/2	494
J2:10/1	1433
J2:10/2	1628
J2:11/1	242
J2:11/2	275
J2:12/1	545
J2:12/2	706

Lane Saturation Flows

Junction: J1: M1 Junction 14								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A509 (S))	3.50	0.00	Y	Arm J1:12 Left	Inf	100.0 %	1965	1965
J1:1/2 (A509 (S))	3.50	0.00	N	Arm J1:2 Ahead Arm J1:12 Left	Inf Inf	48.5 % 51.5 %	2105	2105
J1:1/3 (A509 (S))	3.50	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1965	1965
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1 (M1 S/B Off-Slip)	3.50	0.00	Y	Arm J1:9 Left	20.00	100.0 %	1828	1828
J1:3/2 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:3/3 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:4/3	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A509 London Road)	3.50	0.00	Y	Arm J1:10 Left	30.00	100.0 %	1871	1871
J1:5/2 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:5/3 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:6/1 (M1 N/B Off-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/2 (M1 N/B Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	3.50	0.00	Y	Arm J1:2 Right	25.00	0.0 %	1965	1965
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:11/3	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Northfields Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	99.7 %	1965	1965
				Arm J2:9 Left	Inf	0.3 %		
J2:1/2 (A4145 Childs Way (S))	3.50	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2105	2105
J2:1/3 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1965	1965
J2:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A509 (W))	3.50	0.00	Y	Arm J2:10 Left	Inf	100.0 %	1965	1965
J2:3/2 (A509 (W))	3.50	0.00	N	Arm J2:10 Left	Inf	100.0 %	2105	2105
J2:3/3 (A509 (W))	3.50	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1965	1965
J2:4/1 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	70.3 %	1965	1965
				Arm J2:11 Left	Inf	29.7 %		
J2:4/2 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/3 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/4 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1965	1965
J2:5/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/4	This lane uses a directly entered Saturation Flow						1900	1900
J2:7/1 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	68.5 %	1965	1965
				Arm J2:12 Left	Inf	31.5 %		
J2:7/2 (A5130 (E))	3.50	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2105	2105
J2:7/3 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1965	1965
J2:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:9/2	Infinite Saturation Flow						Inf	Inf
J2:10/1	Infinite Saturation Flow						Inf	Inf
J2:10/2	Infinite Saturation Flow						Inf	Inf

J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 10: '2023 WD PM' (FG12: '2023 WD PM', Plan 1: '2017 Observed AM')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	2	286	0	288	86	463	1125
	B	246	32	403	159	47	256	1143
	C	0	408	16	250	74	403	1151
	D	660	287	489	4	256	7	1703
	E	204	89	151	253	1	116	814
	F	557	243	413	2	54	6	1275
	Tot.	1669	1345	1472	956	518	1251	7211

Traffic Lane Flows

Lane	Scenario 10: 2023 WD PM
Junction: J1: M1 Junction 14	
J1:1/1 (short)	716
J1:1/2 (with short)	2061(In) 1345(Out)
J1:1/3	1032
J1:2/1	1096
J1:2/2	1032
J1:3/1 (short)	286
J1:3/2 (with short)	733(In) 447(Out)
J1:3/3	392
J1:4/1	553
J1:4/2	963
J1:4/3	392
J1:5/1	403
J1:5/2 (with short)	740(In) 303(Out)
J1:5/3 (short)	437
J1:6/1	727
J1:6/2	424
J1:7/1	750
J1:7/2 (with short)	829(In) 797(Out)
J1:7/3 (short)	32
J1:8/1	248
J1:8/2 (with short)	456(In) 456(Out)
J1:8/3 (short)	0
J1:9/1	1345
J1:10/1	754
J1:10/2	718
J1:11/1	698
J1:11/2	631
J1:11/3	697
J1:12/1	964
J1:12/2	705
Junction: J2: Northfields Roundabout	
J2:1/1	737
J2:1/2 (with short)	538(In) 478(Out)
J2:1/3 (short)	60

J2:2/1	749
J2:2/2	908
J2:2/3	61
J2:3/1	692
J2:3/2	744
J2:3/3	267
J2:4/1	698
J2:4/2	631
J2:4/3 (with short)	697(In) 182(Out)
J2:4/4 (short)	515
J2:5/1	146
J2:5/2	165
J2:5/3	17
J2:6/1	491
J2:6/2	644
J2:6/3	184
J2:6/4	517
J2:7/1	368
J2:7/2 (with short)	446(In) 15(Out)
J2:7/3 (short)	431
J2:8/1	436
J2:8/2	532
J2:8/3	431
J2:9/1	437
J2:9/2	519
J2:10/1	1441
J2:10/2	1652
J2:11/1	249
J2:11/2	269
J2:12/1	549
J2:12/2	702

Lane Saturation Flows

Junction: J1: M1 Junction 14								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (A509 (S))	3.50	0.00	Y	Arm J1:12 Left	Inf	100.0 %	1965	1965
J1:1/2 (A509 (S))	3.50	0.00	N	Arm J1:2 Ahead Arm J1:12 Left	Inf Inf	47.6 % 52.4 %	2105	2105
J1:1/3 (A509 (S))	3.50	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1965	1965
J1:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:3/1 (M1 S/B Off-Slip)	3.50	0.00	Y	Arm J1:9 Left	20.00	100.0 %	1828	1828
J1:3/2 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:3/3 (M1 S/B Off-Slip)	3.50	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2105	2105
J1:4/1	Infinite Saturation Flow						Inf	Inf
J1:4/2	Infinite Saturation Flow						Inf	Inf
J1:4/3	Infinite Saturation Flow						Inf	Inf
J1:5/1 (A509 London Road)	3.50	0.00	Y	Arm J1:10 Left	30.00	100.0 %	1871	1871
J1:5/2 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:5/3 (A509 London Road)	3.50	0.00	N	Arm J1:7 Ahead	Inf	100.0 %	2105	2105
J1:6/1 (M1 N/B Off-Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
J1:6/2 (M1 N/B Off-Slip Lane 2)	This lane uses a directly entered Saturation Flow						1800	1800
J1:7/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	3.50	0.00	Y	Arm J1:2 Right	25.00	0.0 %	1965	1965
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:10/1	Infinite Saturation Flow						Inf	Inf
J1:10/2	Infinite Saturation Flow						Inf	Inf
J1:11/1	Infinite Saturation Flow						Inf	Inf
J1:11/2	Infinite Saturation Flow						Inf	Inf
J1:11/3	Infinite Saturation Flow						Inf	Inf
J1:12/1	Infinite Saturation Flow						Inf	Inf
J1:12/2	Infinite Saturation Flow						Inf	Inf

Junction: J2: Northfields Roundabout								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	99.7 %	1965	1965
				Arm J2:9 Left	Inf	0.3 %		
J2:1/2 (A4145 Childs Way (S))	3.50	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2105	2105
J2:1/3 (A4145 Childs Way (S))	3.50	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1965	1965
J2:2/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:2/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:3/1 (A509 (W))	3.50	0.00	Y	Arm J2:10 Left	Inf	100.0 %	1965	1965
J2:3/2 (A509 (W))	3.50	0.00	N	Arm J2:10 Left	Inf	100.0 %	2105	2105
J2:3/3 (A509 (W))	3.50	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1965	1965
J2:4/1 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	70.3 %	1965	1965
				Arm J2:11 Left	Inf	29.7 %		
J2:4/2 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/3 (A509 (N))	3.50	0.00	N	Arm J2:6 Ahead	Inf	100.0 %	2105	2105
J2:4/4 (A509 (N))	3.50	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1965	1965
J2:5/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:5/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:6/4	This lane uses a directly entered Saturation Flow						1900	1900
J2:7/1 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	68.5 %	1965	1965
				Arm J2:12 Left	Inf	31.5 %		
J2:7/2 (A5130 (E))	3.50	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2105	2105
J2:7/3 (A5130 (E))	3.50	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1965	1965
J2:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J2:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J2:9/1	Infinite Saturation Flow						Inf	Inf
J2:9/2	Infinite Saturation Flow						Inf	Inf
J2:10/1	Infinite Saturation Flow						Inf	Inf
J2:10/2	Infinite Saturation Flow						Inf	Inf

J2:11/1	Infinite Saturation Flow	Inf	Inf
J2:11/2	Infinite Saturation Flow	Inf	Inf
J2:12/1	Infinite Saturation Flow	Inf	Inf
J2:12/2	Infinite Saturation Flow	Inf	Inf

Scenario 3: '2023 Bkgd AM' (FG4: '2023 Bkgd AM', Plan 1: '2017 Observed AM')

C1

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	17
Change Point	12	49

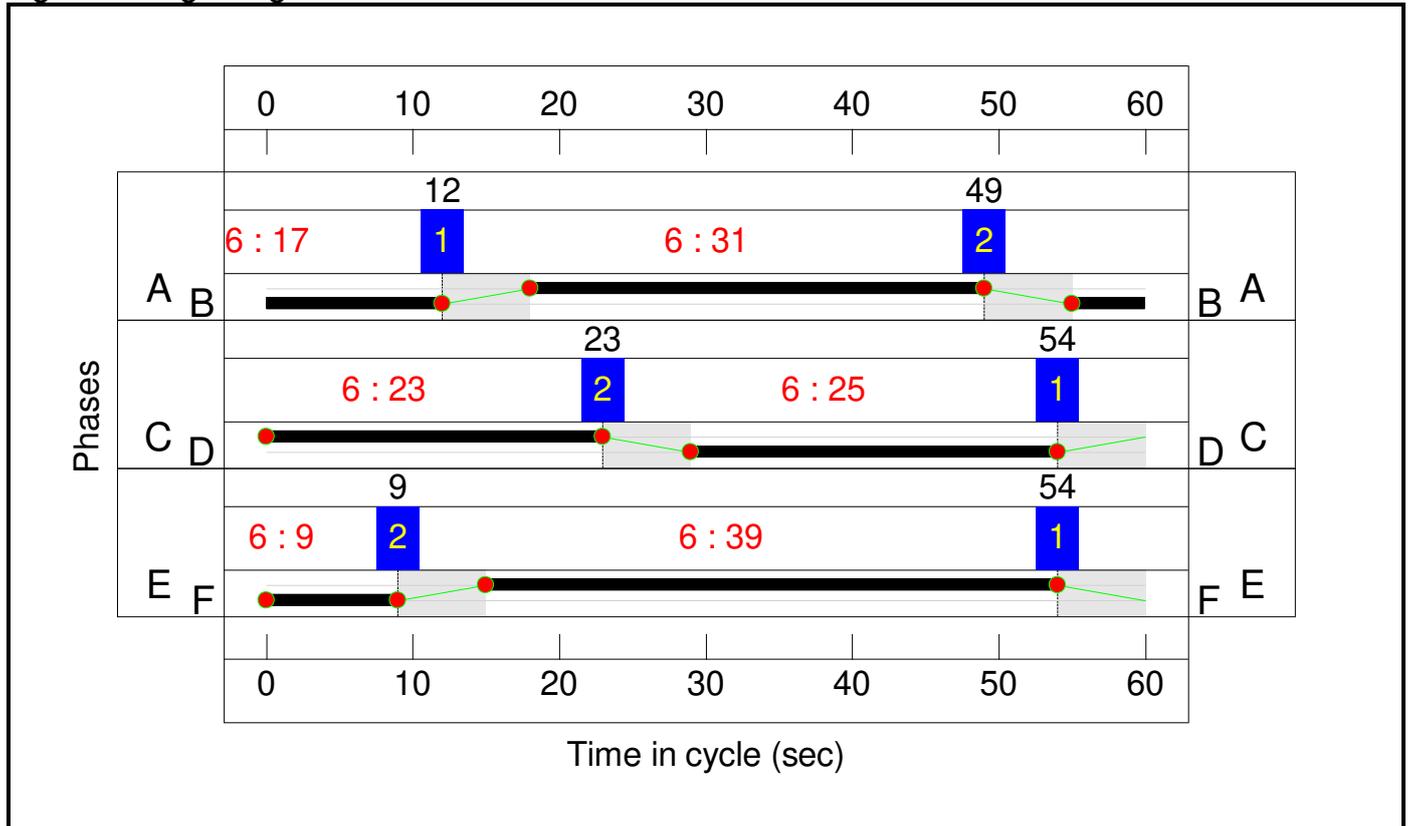
Stage Stream: 2

Stage	1	2
Duration	23	25
Change Point	54	23

Stage Stream: 3

Stage	1	2
Duration	9	39
Change Point	54	9

Signal Timings Diagram



C2

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	33	48

Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	46	4

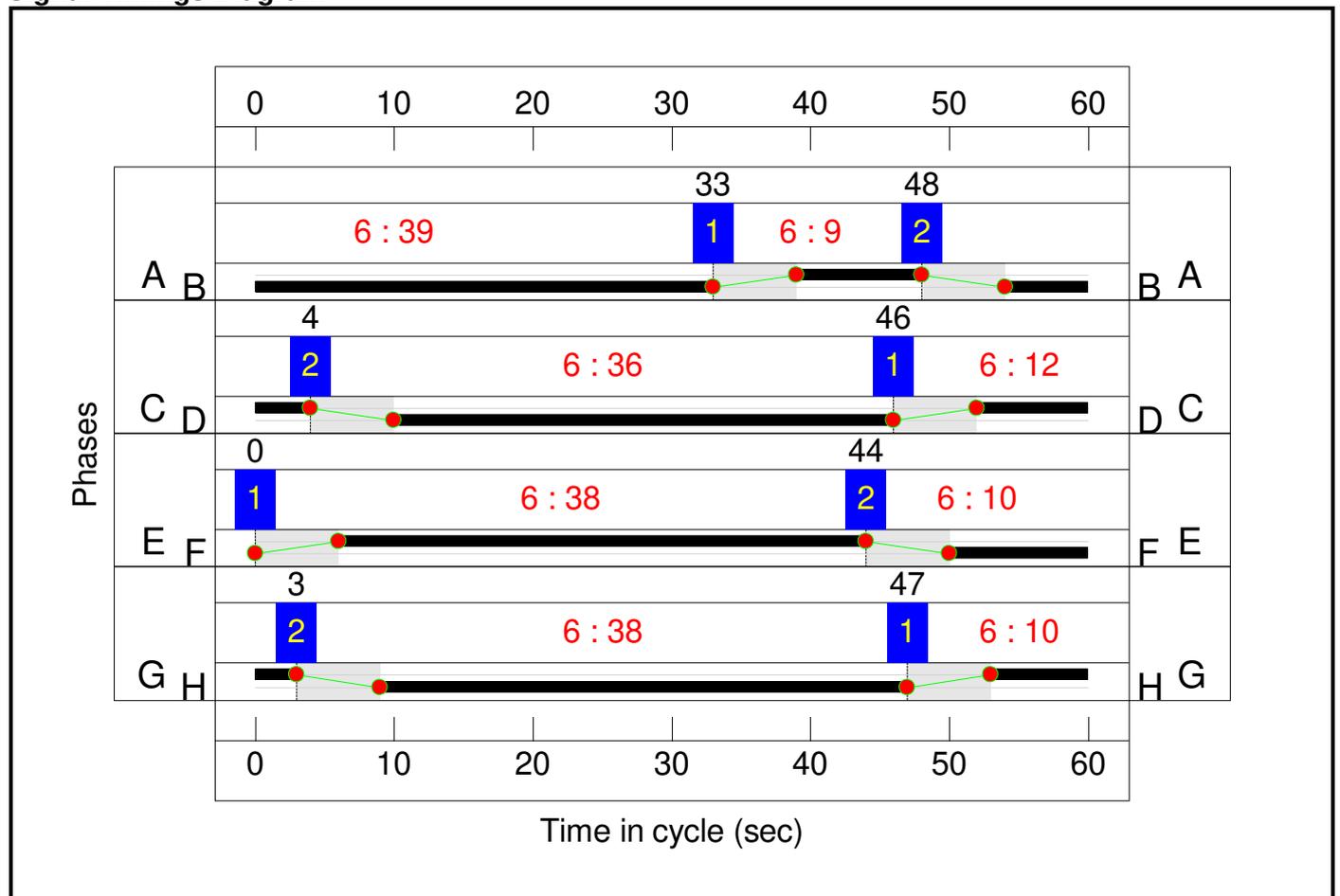
Stage Stream: 3

Stage	1	2
Duration	38	10
Change Point	0	44

Stage Stream: 4

Stage	1	2
Duration	10	38
Change Point	47	3

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	N/A	-	-		-	-	-	-	-	-	129.4%
J1: M1 Junction 14	-	-	N/A	-	-		-	-	-	-	-	-	108.0%
1/2+1/1	A509 (S) Ahead Left	U	1:1	N/A	C1:A		1	31	-	1441	2105:1965	931+1048	64.8 : 65.3%
1/3	A509 (S) Ahead	U	1:1	N/A	C1:A		1	31	-	518	1965	1048	45.4%
2/1	Right Ahead	U	1:2	N/A	C1:D		1	25	-	807	1900	823	88.2%
2/2	Right	U	1:2	N/A	C1:D		1	25	-	526	1900	823	58.7%
3/2+3/1	M1 S/B Off-Slip Ahead Left	U	1:2	N/A	C1:C		1	23	-	1035	2105:1828	842+276	93.2 : 90.7%
3/3	M1 S/B Off-Slip Ahead	U	1:2	N/A	C1:C		1	23	-	754	2105	842	89.5%
5/1	A509 London Road Left	O	N/A	N/A	-		-	-	-	353	1871	445	79.4%
5/2+5/3	A509 London Road Ahead	O	N/A	N/A	-		-	-	-	803	2105:2105	440+440	85.1 : 97.6%
6/2	M1 N/B Off-Slip Ahead	U	1:3	N/A	C1:F		1	9	-	324	1800	300	108.0%
7/1	Ahead	U	1:3	N/A	C1:E		1	39	-	1159	1900	1267	91.5%
7/2+7/3	Right Ahead	U	1:3	N/A	C1:E		1	39	-	1183	1900:1900	1180+90	93.1 : 93.1%
8/1	Ahead	U	1:1	N/A	C1:B		1	17	-	84	1900	570	14.7%
8/2+8/3	Right Ahead	U	1:1	N/A	C1:B		1	17	-	408	1900:1854	570+11	66.1 : 65.0%
J2: Northfields Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	129.4%
1/1	A4145 Childs Way (S) Ahead Left	U	2:1	N/A	C2:A		1	9	-	421	1965	327	128.5%
1/2+1/3	A4145 Childs Way (S) Ahead	U	2:1	N/A	C2:A		1	9	-	504	2105:1965	351+39	129.4 : 129.4%
2/1	Ahead	U	2:2	N/A	C2:D		1	36	-	576	1900	1172	41.3%

2/2	Ahead	U	2:2	N/A	C2:D		1	36	-	577	1900	1172	40.4%
2/3	Right	U	2:2	N/A	C2:D		1	36	-	52	1900	1172	4.4%
3/1	A509 (W) Left	U	2:2	N/A	C2:C		1	12	-	388	1965	426	91.1%
3/2	A509 (W) Left	U	2:2	N/A	C2:C		1	12	-	418	2105	456	91.6%
3/3	A509 (W) Ahead	U	2:2	N/A	C2:C		1	12	-	209	1965	426	49.1%
4/1	A509 (N) Ahead Left	U	2:3	N/A	C2:E		1	38	-	1060	1965	1277	83.0%
4/2	A509 (N) Ahead	U	2:3	N/A	C2:E		1	38	-	1110	2105	1368	81.1%
4/3+4/4	A509 (N) Ahead	U	2:3	N/A	C2:E		1	38	-	1539	2105:1965	819+814	94.2 : 94.2%
5/1	Ahead	U	2:3	N/A	C2:F		1	10	-	131	1900	348	37.6%
5/2	Right Ahead	U	2:3	N/A	C2:F		1	10	-	120	1900	348	34.4%
5/3	Right	U	2:3	N/A	C2:F		1	10	-	10	1900	348	2.9%
6/1	Ahead	U	2:4	N/A	C2:H		1	38	-	834	1900	1235	67.5%
6/2	Ahead	U	2:4	N/A	C2:H		1	38	-	1115	1900	1235	90.3%
6/3	Right	U	2:4	N/A	C2:H		1	38	-	775	1900	1235	62.8%
6/4	Right	U	2:4	N/A	C2:H		1	38	-	769	1900	1235	62.3%
7/1	A5130 (E) Ahead Left	U	2:4	N/A	C2:G		1	10	-	338	1965	360	93.8%
7/2+7/3	A5130 (E) Ahead	U	2:4	N/A	C2:G		1	10	-	495	2105:1965	386+130	95.9 : 95.9%
8/1	Ahead	U	2:1	N/A	C2:B		1	39	-	991	1900	1267	78.2%
8/2	Right Ahead	U	2:1	N/A	C2:B		1	39	-	1139	1900	1267	89.9%
8/3	Right	U	2:1	N/A	C2:B		1	39	-	125	1900	1267	9.9%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	1959	0	0	67.0	175.4	0.0	242.4	-	-	-	-
J1: M1 Junction 14	-	-	1959	0	0	26.1	34.1	0.0	60.2	-	-	-	-
1/2+1/1	1288	1288	-	-	-	3.1	0.9	-	4.1	11.3	24.5	0.9	25.4
1/3	476	476	-	-	-	1.2	0.4	-	1.6	12.5	6.7	0.4	7.1
2/1	726	726	-	-	-	1.8	0.0	-	1.8	9.0	11.7	0.0	11.7
2/2	483	483	-	-	-	0.1	0.0	-	0.1	0.4	0.2	0.0	0.2
3/2+3/1	1035	1035	-	-	-	4.6	5.5	-	10.1	35.3	12.4	5.5	17.9
3/3	754	754	-	-	-	3.5	3.9	-	7.5	35.6	11.7	3.9	15.7
5/1	353	353	353	0	0	0.9	1.9	-	2.7	27.7	5.0	1.9	6.9
5/2+5/3	803	803	1606	0	0	2.5	4.7	-	7.2	32.1	6.9	4.7	11.6
6/2	324	300	-	-	-	3.0	16.8	-	19.8	220.3	5.8	16.8	22.6
7/1	1159	1159	-	-	-	2.1	0.0	-	2.1	6.5	18.8	0.0	18.8
7/2+7/3	1183	1183	-	-	-	2.2	0.0	-	2.2	6.7	18.5	0.0	18.5
8/1	84	84	-	-	-	0.5	0.0	-	0.5	21.9	1.4	0.0	1.4
8/2+8/3	384	384	-	-	-	0.5	0.0	-	0.5	5.0	1.4	0.0	1.4
J2: Northfields Roundabout	-	-	0	0	0	40.9	141.2	0.0	182.2	-	-	-	-
1/1	421	327	-	-	-	5.4	48.9	-	54.3	464.0	9.1	48.9	58.0
1/2+1/3	504	401	-	-	-	5.6	59.4	-	65.0	464.1	9.3	59.4	68.7
2/1	483	483	-	-	-	1.5	0.0	-	1.5	11.5	5.9	0.0	5.9
2/2	474	474	-	-	-	2.0	0.0	-	2.0	15.1	5.8	0.0	5.8
2/3	52	52	-	-	-	0.0	0.0	-	0.0	2.2	0.5	0.0	0.5
3/1	388	388	-	-	-	2.5	4.2	-	6.7	61.9	6.3	4.2	10.5
3/2	418	418	-	-	-	2.7	4.4	-	7.1	61.3	6.7	4.4	11.2
3/3	209	209	-	-	-	1.2	0.5	-	1.7	28.9	3.0	0.5	3.5
4/1	1060	1060	-	-	-	2.7	2.4	-	5.1	17.3	11.0	2.4	13.4

4/2	1110	1110	-	-	-	3.1	2.1	-	5.2	17.0	11.0	2.1	13.1
4/3+4/4	1539	1539	-	-	-	3.9	7.1	-	11.0	25.8	13.8	7.1	20.9
5/1	131	131	-	-	-	0.6	0.0	-	0.6	15.3	1.1	0.0	1.1
5/2	120	120	-	-	-	0.5	0.0	-	0.5	15.9	1.0	0.0	1.0
5/3	10	10	-	-	-	0.0	0.0	-	0.0	16.3	0.1	0.0	0.1
6/1	834	834	-	-	-	0.1	0.0	-	0.1	0.6	0.6	0.0	0.6
6/2	1115	1115	-	-	-	0.4	0.0	-	0.4	1.2	2.4	0.0	2.4
6/3	775	775	-	-	-	0.2	0.0	-	0.2	0.7	0.5	0.0	0.5
6/4	769	769	-	-	-	0.1	0.0	-	0.1	0.5	0.3	0.0	0.3
7/1	338	338	-	-	-	2.3	5.2	-	7.5	79.4	5.5	5.2	10.7
7/2+7/3	495	495	-	-	-	3.2	7.0	-	10.2	74.5	6.1	7.0	13.1
8/1	991	991	-	-	-	1.2	0.0	-	1.2	4.5	8.1	0.0	8.1
8/2	1139	1139	-	-	-	1.6	0.0	-	1.6	5.1	10.8	0.0	10.8
8/3	125	125	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1

C1	Stream: 1 PRC for Signalled Lanes (%)	36.2	Total Delay for Signalled Lanes (pcuHr)	6.75	Cycle Time (s)	60
C1	Stream: 2 PRC for Signalled Lanes (%)	-3.6	Total Delay for Signalled Lanes (pcuHr)	19.46	Cycle Time (s)	60
C1	Stream: 3 PRC for Signalled Lanes (%)	-20.0	Total Delay for Signalled Lanes (pcuHr)	24.11	Cycle Time (s)	60
C2	Stream: 1 PRC for Signalled Lanes (%)	-43.8	Total Delay for Signalled Lanes (pcuHr)	122.10	Cycle Time (s)	60
C2	Stream: 2 PRC for Signalled Lanes (%)	-1.8	Total Delay for Signalled Lanes (pcuHr)	19.03	Cycle Time (s)	60
C2	Stream: 3 PRC for Signalled Lanes (%)	-4.7	Total Delay for Signalled Lanes (pcuHr)	22.52	Cycle Time (s)	60
C2	Stream: 4 PRC for Signalled Lanes (%)	-6.5	Total Delay for Signalled Lanes (pcuHr)	18.50	Cycle Time (s)	60
	PRC Over All Lanes (%)	-43.8	Total Delay Over All Lanes(pcuHr)	242.35		

Scenario 4: '2023 WD AM' (FG5: '2023 WD AM', Plan 1: '2017 Observed AM')

C1

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	31	17
Change Point	12	49

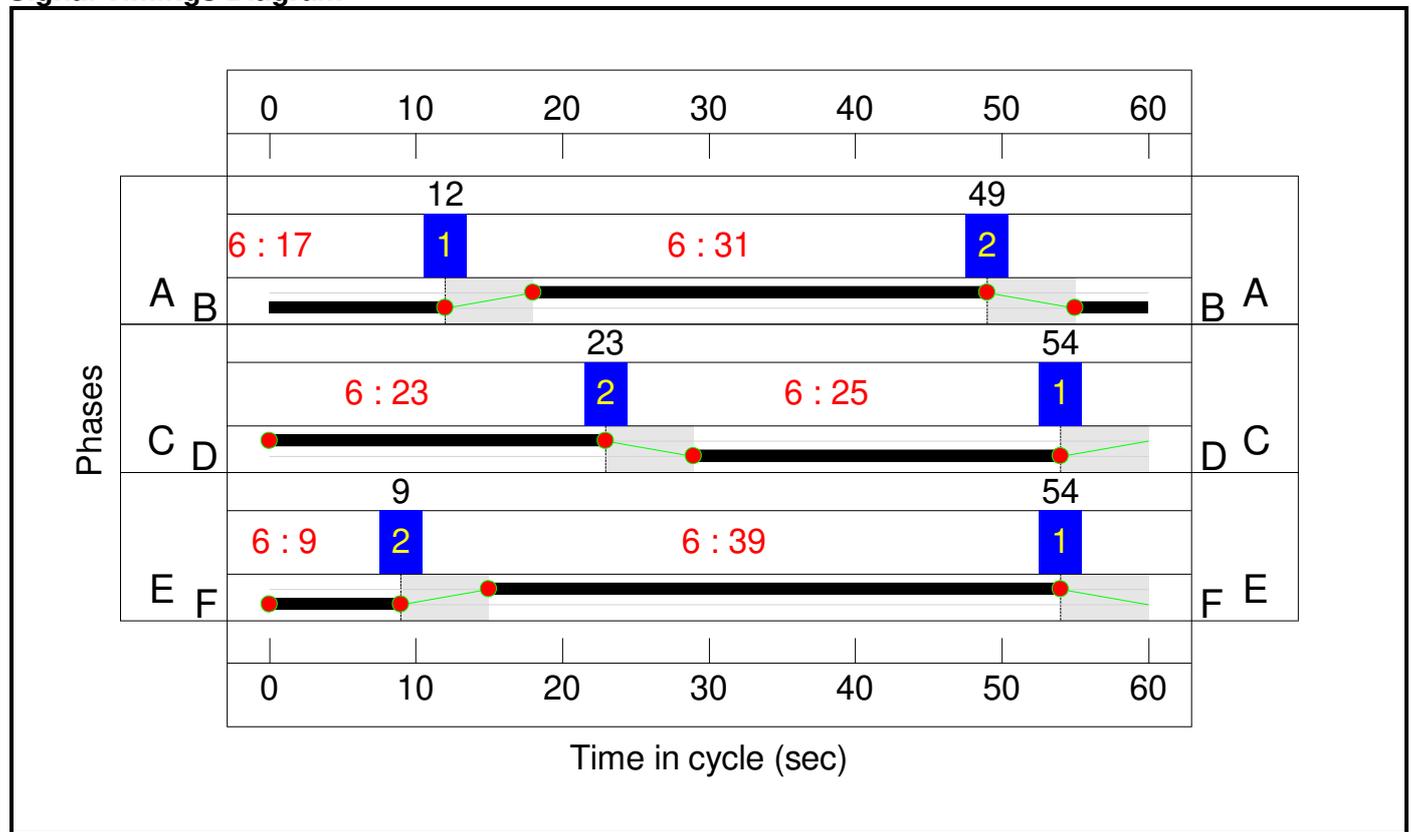
Stage Stream: 2

Stage	1	2
Duration	23	25
Change Point	54	23

Stage Stream: 3

Stage	1	2
Duration	9	39
Change Point	54	9

Signal Timings Diagram



C2

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	9	39
Change Point	33	48

Stage Stream: 2

Stage	1	2
Duration	12	36
Change Point	46	4

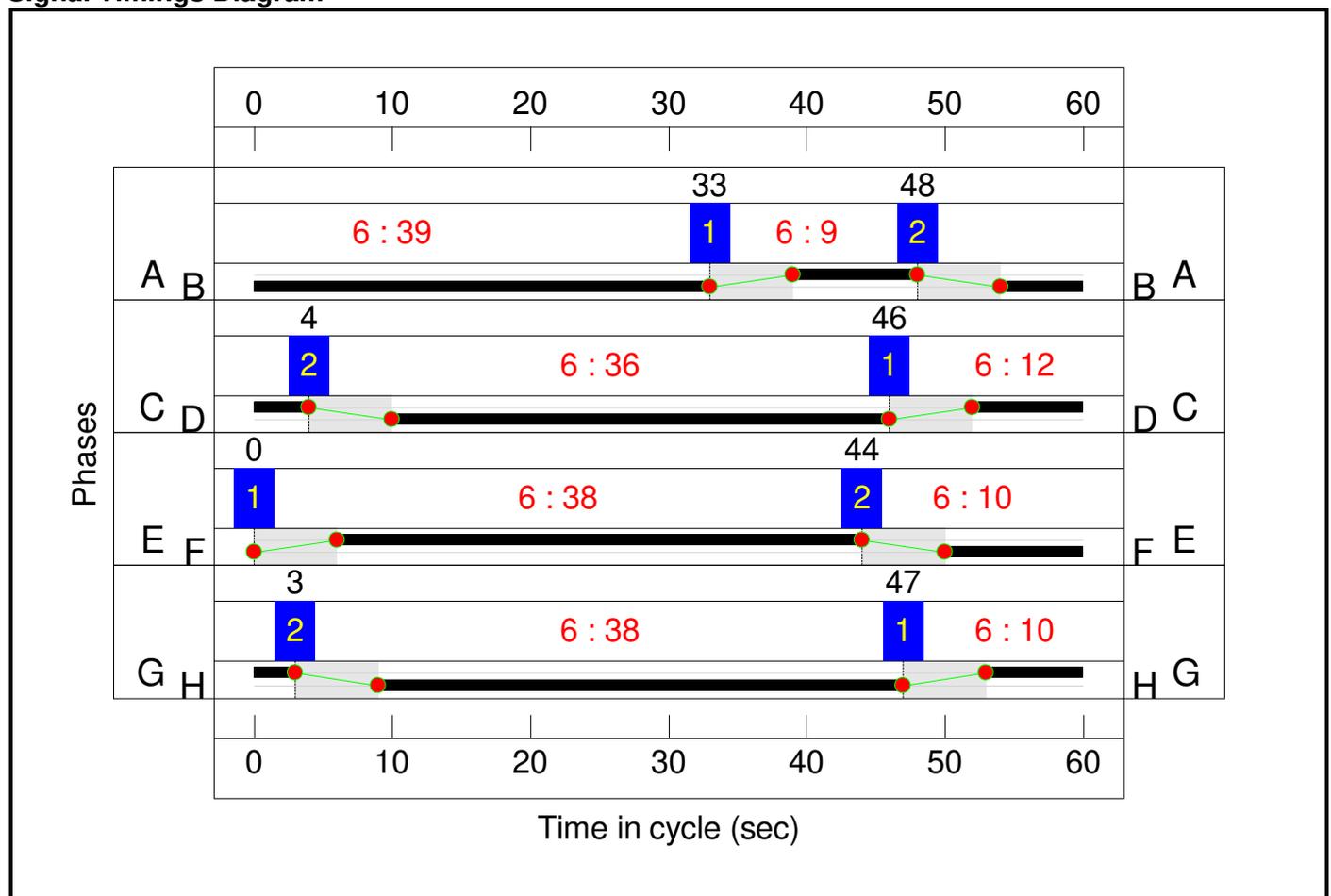
Stage Stream: 3

Stage	1	2
Duration	38	10
Change Point	0	44

Stage Stream: 4

Stage	1	2
Duration	10	38
Change Point	47	3

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	N/A	-	-		-	-	-	-	-	-	129.4%
J1: M1 Junction 14	-	-	N/A	-	-		-	-	-	-	-	-	108.0%
1/2+1/1	A509 (S) Ahead Left	U	1:1	N/A	C1:A		1	31	-	1433	2105:1965	775+1048	69.6 : 70.5%
1/3	A509 (S) Ahead	U	1:1	N/A	C1:A		1	31	-	506	1965	1048	44.4%
2/1	Right Ahead	U	1:2	N/A	C1:D		1	25	-	804	1900	823	87.7%
2/2	Right	U	1:2	N/A	C1:D		1	25	-	514	1900	823	57.4%
3/2+3/1	M1 S/B Off-Slip Ahead Left	U	1:2	N/A	C1:C		1	23	-	1082	2105:1828	842+317	95.1 : 88.7%
3/3	M1 S/B Off-Slip Ahead	U	1:2	N/A	C1:C		1	23	-	758	2105	842	90.0%
5/1	A509 London Road Left	O	N/A	N/A	-		-	-	-	368	1871	441	83.5%
5/2+5/3	A509 London Road Ahead	O	N/A	N/A	-		-	-	-	811	2105:2105	437+437	85.6 : 100.0%
6/2	M1 N/B Off-Slip Ahead	U	1:3	N/A	C1:F		1	9	-	324	1800	300	108.0%
7/1	Ahead	U	1:3	N/A	C1:E		1	39	-	1175	1900	1267	92.8%
7/2+7/3	Right Ahead	U	1:3	N/A	C1:E		1	39	-	1195	1900:1900	1181+89	94.1 : 94.1%
8/1	Ahead	U	1:1	N/A	C1:B		1	17	-	84	1900	570	14.7%
8/2+8/3	Right Ahead	U	1:1	N/A	C1:B		1	17	-	408	1900:1854	570+11	66.1 : 65.0%
J2: Northfields Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	129.4%
1/1	A4145 Childs Way (S) Ahead Left	U	2:1	N/A	C2:A		1	9	-	421	1965	327	128.5%
1/2+1/3	A4145 Childs Way (S) Ahead	U	2:1	N/A	C2:A		1	9	-	504	2105:1965	351+39	129.4 : 129.4%
2/1	Ahead	U	2:2	N/A	C2:D		1	36	-	572	1900	1172	40.9%

2/2	Ahead	U	2:2	N/A	C2:D		1	36	-	580	1900	1172	40.7%
2/3	Right	U	2:2	N/A	C2:D		1	36	-	52	1900	1172	4.4%
3/1	A509 (W) Left	U	2:2	N/A	C2:C		1	12	-	378	1965	426	88.8%
3/2	A509 (W) Left	U	2:2	N/A	C2:C		1	12	-	409	2105	456	89.7%
3/3	A509 (W) Ahead	U	2:2	N/A	C2:C		1	12	-	206	1965	426	48.4%
4/1	A509 (N) Ahead Left	U	2:3	N/A	C2:E		1	38	-	1068	1965	1277	83.6%
4/2	A509 (N) Ahead	U	2:3	N/A	C2:E		1	38	-	1122	2105	1368	82.0%
4/3+4/4	A509 (N) Ahead	U	2:3	N/A	C2:E		1	38	-	1598	2105:1965	845+763	99.4 : 99.4%
5/1	Ahead	U	2:3	N/A	C2:F		1	10	-	131	1900	348	37.6%
5/2	Right Ahead	U	2:3	N/A	C2:F		1	10	-	117	1900	348	33.6%
5/3	Right	U	2:3	N/A	C2:F		1	10	-	10	1900	348	2.9%
6/1	Ahead	U	2:4	N/A	C2:H		1	38	-	850	1900	1235	68.8%
6/2	Ahead	U	2:4	N/A	C2:H		1	38	-	1128	1900	1235	91.3%
6/3	Right	U	2:4	N/A	C2:H		1	38	-	843	1900	1235	67.8%
6/4	Right	U	2:4	N/A	C2:H		1	38	-	759	1900	1235	61.0%
7/1	A5130 (E) Ahead Left	U	2:4	N/A	C2:G		1	10	-	335	1965	360	93.0%
7/2+7/3	A5130 (E) Ahead	U	2:4	N/A	C2:G		1	10	-	497	2105:1965	386+134	95.6 : 95.6%
8/1	Ahead	U	2:1	N/A	C2:B		1	39	-	1055	1900	1267	82.8%
8/2	Right Ahead	U	2:1	N/A	C2:B		1	39	-	1128	1900	1267	88.6%
8/3	Right	U	2:1	N/A	C2:B		1	39	-	128	1900	1267	10.1%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	1990	0	0	69.4	186.4	0.0	255.8	-	-	-	-
J1: M1 Junction 14	-	-	1990	0	0	26.8	36.4	0.0	63.3	-	-	-	-
1/2+1/1	1278	1278	-	-	-	3.1	1.2	-	4.3	12.0	24.5	1.2	25.7
1/3	465	465	-	-	-	1.2	0.4	-	1.6	12.4	6.6	0.4	7.0
2/1	722	722	-	-	-	1.8	0.0	-	1.8	8.9	11.6	0.0	11.6
2/2	473	473	-	-	-	0.0	0.0	-	0.0	0.4	0.2	0.0	0.2
3/2+3/1	1082	1082	-	-	-	4.9	6.1	-	11.0	36.5	12.9	6.1	19.0
3/3	758	758	-	-	-	3.6	4.1	-	7.7	36.4	11.8	4.1	15.9
5/1	368	368	368	0	0	1.0	2.4	-	3.4	33.0	5.4	2.4	7.8
5/2+5/3	811	811	1622	0	0	2.6	5.5	-	8.1	36.0	7.2	5.5	12.6
6/2	324	300	-	-	-	3.0	16.8	-	19.8	220.3	5.8	16.8	22.6
7/1	1175	1175	-	-	-	2.2	0.0	-	2.2	6.7	19.2	0.0	19.2
7/2+7/3	1195	1195	-	-	-	2.4	0.0	-	2.4	7.1	18.7	0.0	18.7
8/1	84	84	-	-	-	0.5	0.0	-	0.5	22.2	1.4	0.0	1.4
8/2+8/3	384	384	-	-	-	0.5	0.0	-	0.5	5.1	1.4	0.0	1.4
J2: Northfields Roundabout	-	-	0	0	0	42.6	150.0	0.0	192.6	-	-	-	-
1/1	421	327	-	-	-	5.4	48.9	-	54.3	464.0	9.1	48.9	58.0
1/2+1/3	504	401	-	-	-	5.6	59.4	-	65.0	464.1	9.3	59.4	68.7
2/1	479	479	-	-	-	1.5	0.0	-	1.5	11.2	5.9	0.0	5.9
2/2	477	477	-	-	-	2.0	0.0	-	2.0	15.1	5.8	0.0	5.8
2/3	52	52	-	-	-	0.0	0.0	-	0.0	2.2	0.5	0.0	0.5
3/1	378	378	-	-	-	2.4	3.5	-	5.9	55.7	6.1	3.5	9.5
3/2	409	409	-	-	-	2.6	3.7	-	6.3	55.8	6.6	3.7	10.3
3/3	206	206	-	-	-	1.2	0.5	-	1.6	28.7	3.0	0.5	3.4
4/1	1068	1068	-	-	-	2.8	2.5	-	5.3	17.7	11.1	2.5	13.6

4/2	1122	1122	-	-	-	3.2	2.2	-	5.4	17.4	11.3	2.2	13.6
4/3+4/4	1598	1587	-	-	-	4.8	17.7	-	22.5	50.7	25.6	17.7	43.3
5/1	131	131	-	-	-	0.5	0.0	-	0.5	14.8	1.1	0.0	1.1
5/2	117	117	-	-	-	0.5	0.0	-	0.5	15.5	0.9	0.0	0.9
5/3	10	10	-	-	-	0.0	0.0	-	0.0	16.0	0.1	0.0	0.1
6/1	850	850	-	-	-	0.1	0.0	-	0.1	0.6	0.6	0.0	0.6
6/2	1128	1128	-	-	-	0.4	0.0	-	0.4	1.3	3.2	0.0	3.2
6/3	837	837	-	-	-	0.2	0.0	-	0.2	0.7	0.5	0.0	0.5
6/4	754	754	-	-	-	0.1	0.0	-	0.1	0.5	0.3	0.0	0.3
7/1	335	335	-	-	-	2.2	4.8	-	7.0	75.8	5.5	4.8	10.3
7/2+7/3	497	497	-	-	-	3.2	6.8	-	10.1	73.0	6.0	6.8	12.9
8/1	1049	1049	-	-	-	1.7	0.0	-	1.7	5.9	9.1	0.0	9.1
8/2	1123	1123	-	-	-	2.1	0.0	-	2.1	6.7	11.6	0.0	11.6
8/3	128	128	-	-	-	0.0	0.0	-	0.0	0.1	0.1	0.0	0.1

C1	Stream: 1 PRC for Signalled Lanes (%)	27.7	Total Delay for Signalled Lanes (pcuHr)	6.93	Cycle Time (s)	60
C1	Stream: 2 PRC for Signalled Lanes (%)	-5.7	Total Delay for Signalled Lanes (pcuHr)	20.47	Cycle Time (s)	60
C1	Stream: 3 PRC for Signalled Lanes (%)	-20.0	Total Delay for Signalled Lanes (pcuHr)	24.37	Cycle Time (s)	60
C2	Stream: 1 PRC for Signalled Lanes (%)	-43.8	Total Delay for Signalled Lanes (pcuHr)	123.04	Cycle Time (s)	60
C2	Stream: 2 PRC for Signalled Lanes (%)	0.4	Total Delay for Signalled Lanes (pcuHr)	17.36	Cycle Time (s)	60
C2	Stream: 3 PRC for Signalled Lanes (%)	-10.4	Total Delay for Signalled Lanes (pcuHr)	34.25	Cycle Time (s)	60
C2	Stream: 4 PRC for Signalled Lanes (%)	-6.2	Total Delay for Signalled Lanes (pcuHr)	17.94	Cycle Time (s)	60
	PRC Over All Lanes (%)	-43.8	Total Delay Over All Lanes(pcuHr)	255.85		

Scenario 9: '2023 Bkgd PM' (FG11: '2023 Bkgd PM', Plan 1: '2017 Observed AM')

C1

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	14
Change Point	0	40

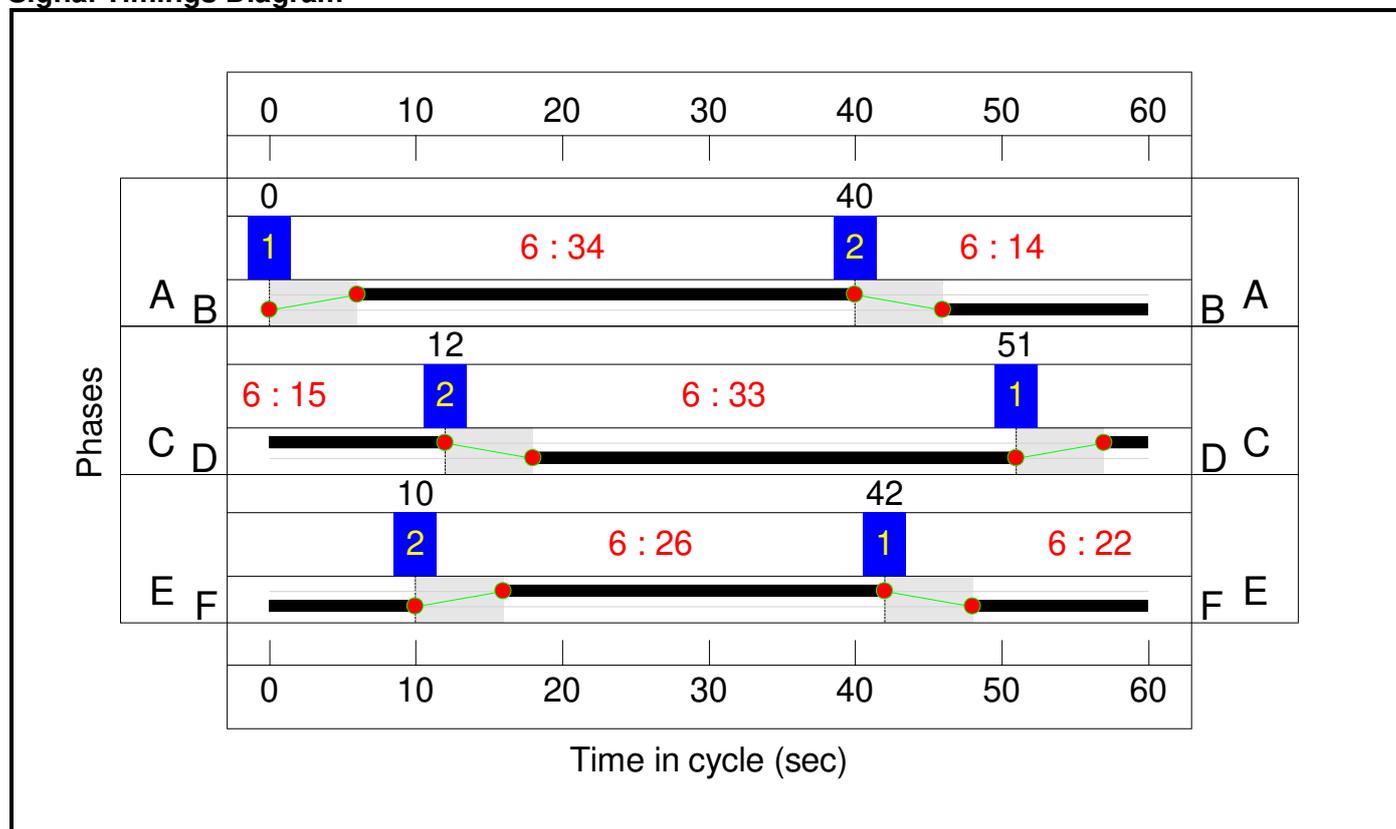
Stage Stream: 2

Stage	1	2
Duration	15	33
Change Point	51	12

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	42	10

Signal Timings Diagram



C2

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	20	28
Change Point	29	55

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	54	17

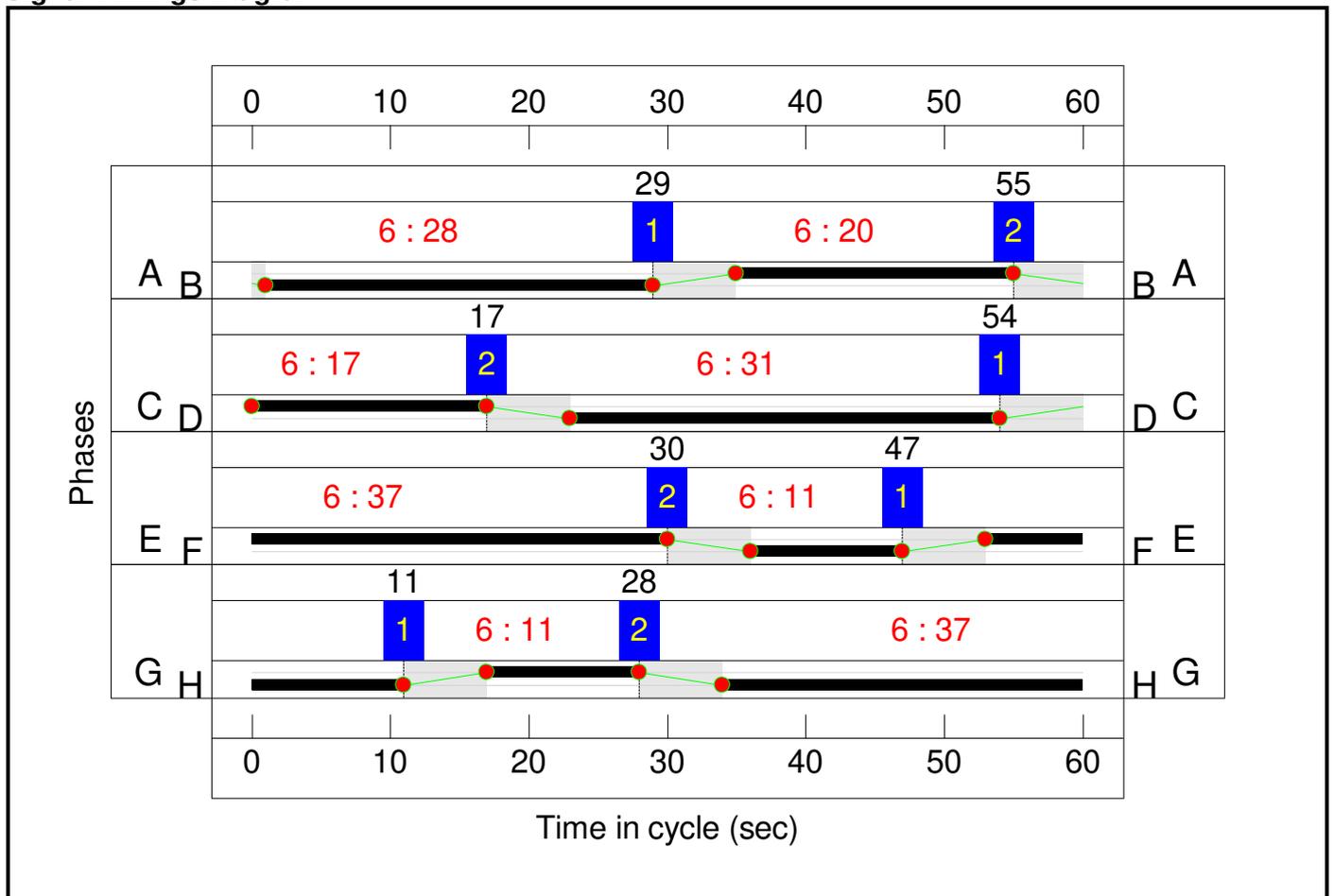
Stage Stream: 3

Stage	1	2
Duration	37	11
Change Point	47	30

Stage Stream: 4

Stage	1	2
Duration	11	37
Change Point	11	28

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	N/A	-	-		-	-	-	-	-	-	115.4%
J1: M1 Junction 14	-	-	N/A	-	-		-	-	-	-	-	-	97.9%
1/2+1/1	A509 (S) Ahead Left	U	1:1	N/A	C1:A		1	34	-	2025	2105:1965	1211+664	97.9 : 97.6%
1/3	A509 (S) Ahead	U	1:1	N/A	C1:A		1	34	-	1036	1965	1146	84.0%
2/1	Right Ahead	U	1:2	N/A	C1:D		1	33	-	1090	1900	1077	95.7%
2/2	Right	U	1:2	N/A	C1:D		1	33	-	1036	1900	1077	89.4%
3/2+3/1	M1 S/B Off-Slip Ahead Left	U	1:2	N/A	C1:C		1	15	-	713	2105:1828	561+487	79.5 : 54.8%
3/3	M1 S/B Off-Slip Ahead	U	1:2	N/A	C1:C		1	15	-	393	2105	561	70.0%
5/1	A509 London Road Left	O	N/A	N/A	-		-	-	-	374	1871	466	80.3%
5/2+5/3	A509 London Road Ahead	O	N/A	N/A	-		-	-	-	739	2105:2105	392+460	77.9 : 94.3%
6/2	M1 N/B Off-Slip Ahead	U	1:3	N/A	C1:F		1	22	-	424	1800	690	61.4%
7/1	Ahead	U	1:3	N/A	C1:E		1	26	-	751	1900	855	87.8%
7/2+7/3	Right Ahead	U	1:3	N/A	C1:E		1	26	-	827	1900:1900	819+33	97.0 : 97.0%
8/1	Ahead	U	1:1	N/A	C1:B		1	14	-	248	1900	475	52.2%
8/2+8/3	Right Ahead	U	1:1	N/A	C1:B		1	14	-	456	1900:1965	475+0	96.0 : 0.0%
J2: Northfields Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	115.4%
1/1	A4145 Childs Way (S) Ahead Left	U	2:1	N/A	C2:A		1	20	-	737	1965	688	107.2%
1/2+1/3	A4145 Childs Way (S) Ahead	U	2:1	N/A	C2:A		1	20	-	538	2105:1965	732+92	65.3 : 65.3%
2/1	Ahead	U	2:2	N/A	C2:D		1	31	-	756	1900	1013	69.6%

2/2	Ahead	U	2:2	N/A	C2:D		1	31	-	899	1900	1013	85.9%
2/3	Right	U	2:2	N/A	C2:D		1	31	-	61	1900	1013	6.0%
3/1	A509 (W) Left	U	2:2	N/A	C2:C		1	17	-	677	1965	590	114.8%
3/2	A509 (W) Left	U	2:2	N/A	C2:C		1	17	-	729	2105	632	115.4%
3/3	A509 (W) Ahead	U	2:2	N/A	C2:C		1	17	-	267	1965	590	45.3%
4/1	A509 (N) Ahead Left	U	2:3	N/A	C2:E		1	37	-	693	1965	1244	55.7%
4/2	A509 (N) Ahead	U	2:3	N/A	C2:E		1	37	-	635	2105	1333	47.6%
4/3+4/4	A509 (N) Ahead	U	2:3	N/A	C2:E		1	37	-	678	2105:1965	389+1006	48.6 : 48.6%
5/1	Ahead	U	2:3	N/A	C2:F		1	11	-	140	1900	380	36.8%
5/2	Right Ahead	U	2:3	N/A	C2:F		1	11	-	171	1900	380	45.0%
5/3	Right	U	2:3	N/A	C2:F		1	11	-	17	1900	380	4.5%
6/1	Ahead	U	2:4	N/A	C2:H		1	37	-	487	1900	1203	40.5%
6/2	Ahead	U	2:4	N/A	C2:H		1	37	-	648	1900	1203	53.9%
6/3	Right	U	2:4	N/A	C2:H		1	37	-	190	1900	1203	15.8%
6/4	Right	U	2:4	N/A	C2:H		1	37	-	492	1900	1203	40.9%
7/1	A5130 (E) Ahead Left	U	2:4	N/A	C2:G		1	11	-	368	1965	393	93.6%
7/2+7/3	A5130 (E) Ahead	U	2:4	N/A	C2:G		1	11	-	444	2105:1965	20+393	107.4 : 107.4%
8/1	Ahead	U	2:1	N/A	C2:B		1	28	-	442	1900	918	48.1%
8/2	Right Ahead	U	2:1	N/A	C2:B		1	28	-	514	1900	918	55.8%
8/3	Right	U	2:1	N/A	C2:B		1	28	-	422	1900	918	42.8%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	1852	0	0	74.9	183.1	0.0	258.0	-	-	-	-
J1: M1 Junction 14	-	-	1852	0	0	29.2	24.1	0.0	53.4	-	-	-	-
1/2+1/1	1834	1834	-	-	-	6.2	13.5	-	19.7	38.7	38.0	13.5	51.5
1/3	963	963	-	-	-	2.8	2.6	-	5.4	20.1	14.4	2.6	17.0
2/1	1030	1030	-	-	-	3.5	0.0	-	3.5	12.2	16.0	0.0	16.0
2/2	963	963	-	-	-	0.3	0.0	-	0.3	1.0	0.7	0.0	0.7
3/2+3/1	713	713	-	-	-	3.9	1.1	-	5.0	25.2	6.8	1.1	7.9
3/3	393	393	-	-	-	2.2	1.2	-	3.3	30.4	5.9	1.2	7.0
5/1	374	374	374	0	0	0.2	2.0	-	2.2	21.2	3.0	2.0	5.0
5/2+5/3	739	739	1478	0	0	0.8	3.1	-	3.9	18.8	6.9	3.1	10.0
6/2	424	424	-	-	-	1.8	0.8	-	2.6	21.7	5.7	0.8	6.4
7/1	751	751	-	-	-	2.0	0.0	-	2.0	9.7	12.1	0.0	12.1
7/2+7/3	827	827	-	-	-	2.7	0.0	-	2.7	11.8	13.4	0.0	13.4
8/1	248	248	-	-	-	1.2	0.0	-	1.2	18.0	4.1	0.0	4.1
8/2+8/3	456	456	-	-	-	1.6	0.0	-	1.6	12.8	2.6	0.0	2.6
J2: Northfields Roundabout	-	-	0	0	0	45.6	158.9	0.0	204.6	-	-	-	-
1/1	737	688	-	-	-	5.4	30.6	-	36.0	176.0	13.5	30.6	44.2
1/2+1/3	538	538	-	-	-	2.4	0.9	-	3.3	22.3	6.6	0.9	7.6
2/1	705	705	-	-	-	1.5	0.0	-	1.5	7.5	3.3	0.0	3.3
2/2	870	870	-	-	-	1.3	0.0	-	1.3	5.3	7.2	0.0	7.2
2/3	61	61	-	-	-	0.0	0.0	-	0.0	2.2	0.5	0.0	0.5
3/1	677	589	-	-	-	6.6	47.3	-	53.9	286.8	12.7	47.3	60.1
3/2	729	631	-	-	-	7.2	52.2	-	59.5	293.6	13.8	52.2	66.0
3/3	267	267	-	-	-	1.3	0.4	-	1.7	22.6	3.6	0.4	4.0
4/1	693	693	-	-	-	2.4	0.6	-	3.1	15.9	9.2	0.6	9.8

4/2	635	635	-	-	-	2.5	0.5	-	2.9	16.5	9.0	0.5	9.4
4/3+4/4	678	678	-	-	-	2.1	0.5	-	2.6	13.6	7.1	0.5	7.6
5/1	140	140	-	-	-	1.0	0.0	-	1.0	26.6	2.2	0.0	2.2
5/2	171	171	-	-	-	1.1	0.0	-	1.1	23.4	2.3	0.0	2.3
5/3	17	17	-	-	-	0.1	0.0	-	0.1	20.4	0.2	0.0	0.2
6/1	487	487	-	-	-	0.6	0.0	-	0.6	4.7	2.5	0.0	2.5
6/2	648	648	-	-	-	0.8	0.0	-	0.8	4.2	2.7	0.0	2.7
6/3	190	190	-	-	-	0.1	0.0	-	0.1	1.6	0.4	0.0	0.4
6/4	492	492	-	-	-	0.2	0.0	-	0.2	1.8	1.4	0.0	1.4
7/1	368	368	-	-	-	2.4	5.2	-	7.6	74.5	6.0	5.2	11.2
7/2+7/3	444	413	-	-	-	3.7	20.6	-	24.4	197.5	7.9	20.6	28.5
8/1	442	442	-	-	-	0.9	0.0	-	0.9	7.3	3.8	0.0	3.8
8/2	512	512	-	-	-	0.7	0.0	-	0.7	5.0	2.0	0.0	2.0
8/3	393	393	-	-	-	1.2	0.0	-	1.2	11.2	2.3	0.0	2.3

C1	Stream: 1	PRC for Signalled Lanes (%)	-8.8	Total Delay for Signalled Lanes (pcuHr):	27.94	Cycle Time (s):	60
C1	Stream: 2	PRC for Signalled Lanes (%)	-6.3	Total Delay for Signalled Lanes (pcuHr):	12.08	Cycle Time (s):	60
C1	Stream: 3	PRC for Signalled Lanes (%)	-7.8	Total Delay for Signalled Lanes (pcuHr):	7.29	Cycle Time (s):	60
C2	Stream: 1	PRC for Signalled Lanes (%)	-19.1	Total Delay for Signalled Lanes (pcuHr):	42.21	Cycle Time (s):	60
C2	Stream: 2	PRC for Signalled Lanes (%)	-28.3	Total Delay for Signalled Lanes (pcuHr):	117.87	Cycle Time (s):	60
C2	Stream: 3	PRC for Signalled Lanes (%)	61.6	Total Delay for Signalled Lanes (pcuHr):	10.80	Cycle Time (s):	60
C2	Stream: 4	PRC for Signalled Lanes (%)	-19.3	Total Delay for Signalled Lanes (pcuHr):	33.71	Cycle Time (s):	60
		PRC Over All Lanes (%)	-28.3	Total Delay Over All Lanes(pcuHr):	257.96		

Scenario 10: '2023 WD PM' (FG12: '2023 WD PM', Plan 1: '2017 Observed AM')

C1

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	34	14
Change Point	0	40

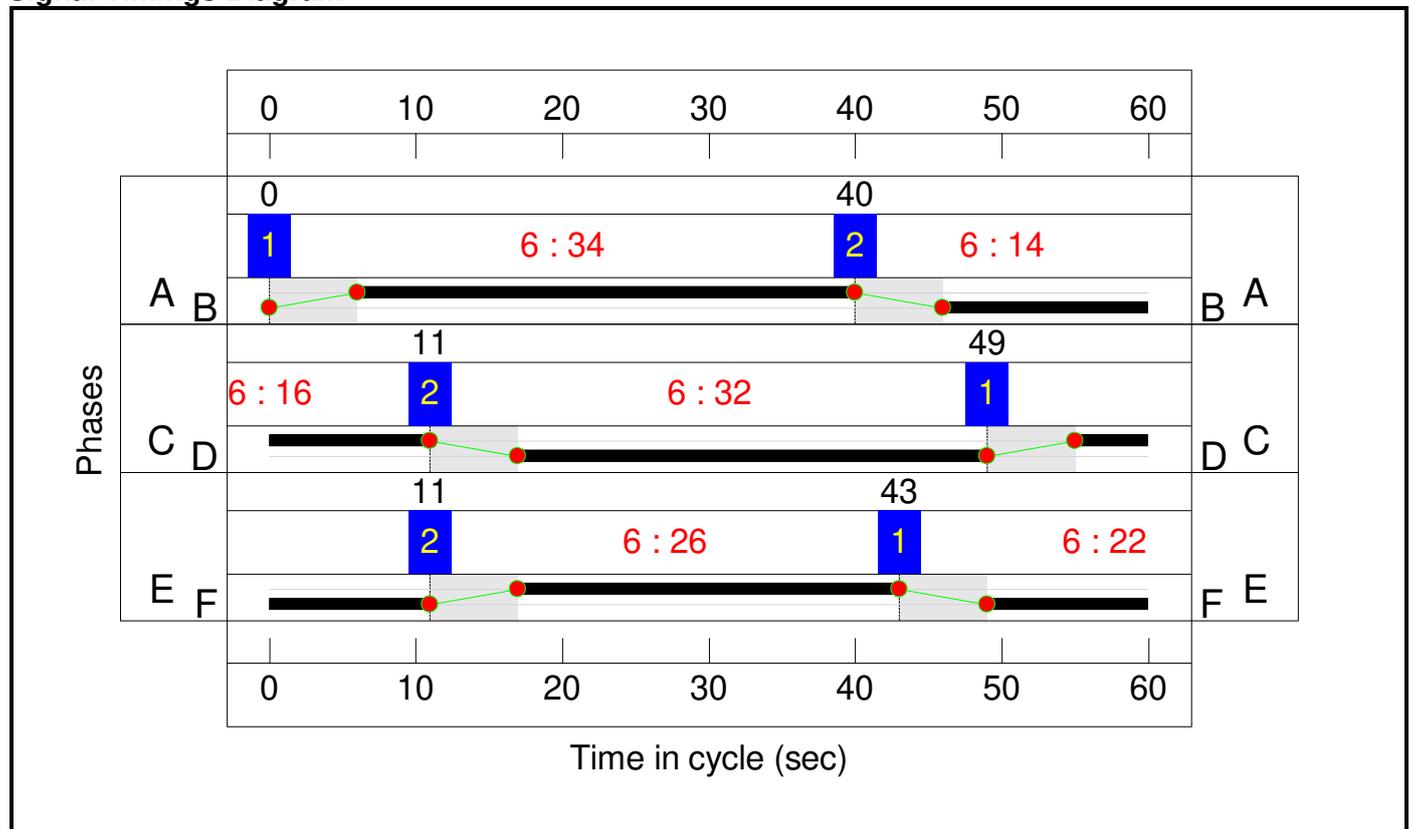
Stage Stream: 2

Stage	1	2
Duration	16	32
Change Point	49	11

Stage Stream: 3

Stage	1	2
Duration	22	26
Change Point	43	11

Signal Timings Diagram



C2

Stage Timings

Stage Stream: 1

Stage	1	2
Duration	19	29
Change Point	41	6

Stage Stream: 2

Stage	1	2
Duration	17	31
Change Point	3	26

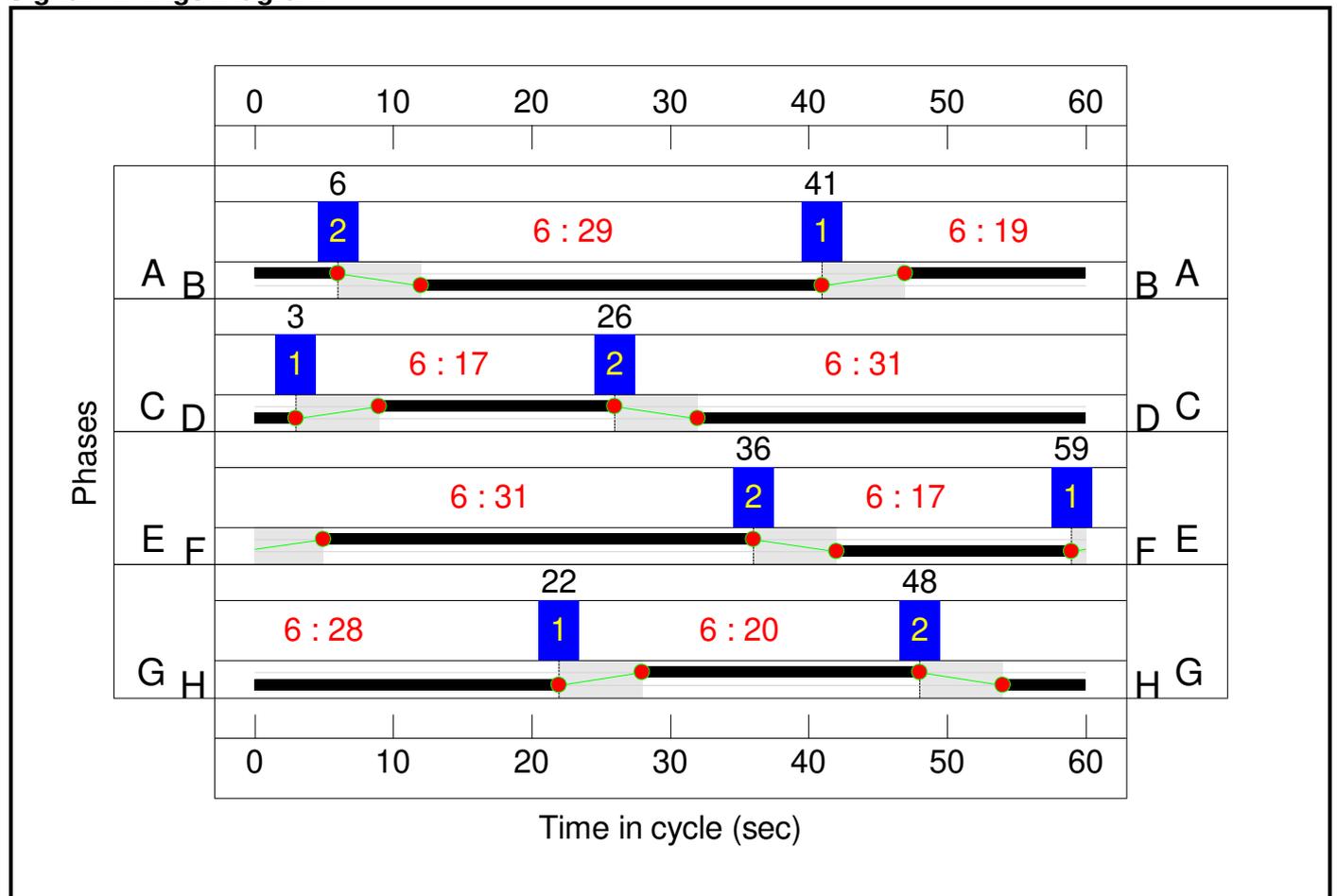
Stage Stream: 3

Stage	1	2
Duration	31	17
Change Point	59	36

Stage Stream: 4

Stage	1	2
Duration	20	28
Change Point	22	48

Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	N/A	-	-		-	-	-	-	-	-	117.8%
J1: M1 Junction 14	-	-	N/A	-	-		-	-	-	-	-	-	99.3%
1/2+1/1	A509 (S) Ahead Left	U	1:1	N/A	C1:A		1	34	-	2061	2105:1965	1212+645	98.7 : 99.3%
1/3	A509 (S) Ahead	U	1:1	N/A	C1:A		1	34	-	1032	1965	1146	83.8%
2/1	Right Ahead	U	1:2	N/A	C1:D		1	32	-	1096	1900	1045	98.2%
2/2	Right	U	1:2	N/A	C1:D		1	32	-	1032	1900	1045	91.9%
3/2+3/1	M1 S/B Off-Slip Ahead Left	U	1:2	N/A	C1:C		1	16	-	733	2105:1828	596+518	74.9 : 55.2%
3/3	M1 S/B Off-Slip Ahead	U	1:2	N/A	C1:C		1	16	-	392	2105	596	65.7%
5/1	A509 London Road Left	O	N/A	N/A	-		-	-	-	403	1871	465	86.8%
5/2+5/3	A509 London Road Ahead	O	N/A	N/A	-		-	-	-	740	2105:2105	366+458	82.9 : 95.4%
6/2	M1 N/B Off-Slip Ahead	U	1:3	N/A	C1:F		1	22	-	424	1800	690	61.4%
7/1	Ahead	U	1:3	N/A	C1:E		1	26	-	750	1900	855	87.7%
7/2+7/3	Right Ahead	U	1:3	N/A	C1:E		1	26	-	829	1900:1900	819+33	97.3 : 97.3%
8/1	Ahead	U	1:1	N/A	C1:B		1	14	-	248	1900	475	52.2%
8/2+8/3	Right Ahead	U	1:1	N/A	C1:B		1	14	-	456	1900:1965	475+0	96.0 : 0.0%
J2: Northfields Roundabout	-	-	N/A	-	-		-	-	-	-	-	-	117.8%
1/1	A4145 Childs Way (S) Ahead Left	U	2:1	N/A	C2:A		1	19	-	737	1965	655	112.5%
1/2+1/3	A4145 Childs Way (S) Ahead	U	2:1	N/A	C2:A		1	19	-	538	2105:1965	702+88	68.1 : 68.1%
2/1	Ahead	U	2:2	N/A	C2:D		1	31	-	749	1900	1013	65.8%

2/2	Ahead	U	2:2	N/A	C2:D		1	31	-	908	1900	1013	89.6%
2/3	Right	U	2:2	N/A	C2:D		1	31	-	61	1900	1013	6.0%
3/1	A509 (W) Left	U	2:2	N/A	C2:C		1	17	-	692	1965	590	117.4%
3/2	A509 (W) Left	U	2:2	N/A	C2:C		1	17	-	744	2105	632	117.8%
3/3	A509 (W) Ahead	U	2:2	N/A	C2:C		1	17	-	267	1965	590	45.3%
4/1	A509 (N) Ahead Left	U	2:3	N/A	C2:E		1	31	-	698	1965	1048	66.6%
4/2	A509 (N) Ahead	U	2:3	N/A	C2:E		1	31	-	631	2105	1123	56.2%
4/3+4/4	A509 (N) Ahead	U	2:3	N/A	C2:E		1	31	-	697	2105:1965	309+875	58.9 : 58.9%
5/1	Ahead	U	2:3	N/A	C2:F		1	17	-	146	1900	570	25.6%
5/2	Right Ahead	U	2:3	N/A	C2:F		1	17	-	165	1900	570	28.9%
5/3	Right	U	2:3	N/A	C2:F		1	17	-	17	1900	570	3.0%
6/1	Ahead	U	2:4	N/A	C2:H		1	28	-	491	1900	918	53.5%
6/2	Ahead	U	2:4	N/A	C2:H		1	28	-	644	1900	918	70.1%
6/3	Right	U	2:4	N/A	C2:H		1	28	-	184	1900	918	20.0%
6/4	Right	U	2:4	N/A	C2:H		1	28	-	517	1900	918	56.3%
7/1	A5130 (E) Ahead Left	U	2:4	N/A	C2:G		1	20	-	368	1965	688	53.5%
7/2+7/3	A5130 (E) Ahead	U	2:4	N/A	C2:G		1	20	-	446	2105:1965	23+674	64.0 : 64.0%
8/1	Ahead	U	2:1	N/A	C2:B		1	29	-	436	1900	950	45.9%
8/2	Right Ahead	U	2:1	N/A	C2:B		1	29	-	532	1900	950	56.0%
8/3	Right	U	2:1	N/A	C2:B		1	29	-	431	1900	950	45.4%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: M1 Junction 14 / Northfields Roundabout Model	-	-	1883	0	0	78.8	193.2	0.0	272.1	-	-	-	-
J1: M1 Junction 14	-	-	1883	0	0	29.9	29.1	0.0	59.0	-	-	-	-
1/2+1/1	1836	1836	-	-	-	6.8	16.8	-	23.7	46.4	38.3	16.8	55.1
1/3	961	961	-	-	-	2.0	2.5	-	4.5	16.9	11.6	2.5	14.2
2/1	1026	1026	-	-	-	3.6	0.0	-	3.6	12.5	16.0	0.0	16.0
2/2	961	961	-	-	-	0.3	0.0	-	0.3	1.0	0.5	0.0	0.5
3/2+3/1	733	733	-	-	-	3.9	1.0	-	4.8	23.8	6.7	1.0	7.7
3/3	392	392	-	-	-	2.1	0.9	-	3.0	27.7	5.7	0.9	6.6
5/1	403	403	403	0	0	0.3	3.0	-	3.3	29.5	3.6	3.0	6.6
5/2+5/3	740	740	1480	0	0	0.7	4.0	-	4.7	23.0	6.9	4.0	11.0
6/2	424	424	-	-	-	1.8	0.8	-	2.6	21.7	5.7	0.8	6.4
7/1	750	750	-	-	-	2.4	0.0	-	2.4	11.4	12.1	0.0	12.1
7/2+7/3	829	829	-	-	-	3.0	0.0	-	3.0	13.2	13.4	0.0	13.4
8/1	248	248	-	-	-	1.1	0.0	-	1.1	16.2	4.1	0.0	4.1
8/2+8/3	456	456	-	-	-	2.0	0.0	-	2.0	15.7	3.1	0.0	3.1
J2: Northfields Roundabout	-	-	0	0	0	48.9	164.2	0.0	213.1	-	-	-	-
1/1	737	655	-	-	-	6.9	45.1	-	51.9	253.8	13.6	45.1	58.7
1/2+1/3	538	538	-	-	-	2.5	1.1	-	3.6	24.0	6.8	1.1	7.8
2/1	667	667	-	-	-	2.0	0.0	-	2.0	10.6	4.2	0.0	4.2
2/2	908	908	-	-	-	1.4	0.0	-	1.4	5.6	4.1	0.0	4.1
2/3	61	61	-	-	-	0.1	0.0	-	0.1	3.0	0.5	0.0	0.5
3/1	692	589	-	-	-	6.9	54.4	-	61.3	319.0	13.2	54.4	67.7
3/2	744	631	-	-	-	7.5	59.4	-	66.9	323.5	14.3	59.4	73.7
3/3	267	267	-	-	-	1.3	0.4	-	1.7	22.6	3.6	0.4	4.0
4/1	698	698	-	-	-	3.1	1.0	-	4.1	21.0	8.7	1.0	9.7

4/2	631	631	-	-	-	3.0	0.6	-	3.6	20.5	7.7	0.6	8.4
4/3+4/4	697	697	-	-	-	3.1	0.7	-	3.8	19.8	7.0	0.7	7.7
5/1	146	146	-	-	-	0.9	0.0	-	0.9	22.9	2.2	0.0	2.2
5/2	165	165	-	-	-	1.0	0.0	-	1.0	20.9	2.3	0.0	2.3
5/3	17	17	-	-	-	0.1	0.0	-	0.1	17.4	0.2	0.0	0.2
6/1	491	491	-	-	-	1.2	0.0	-	1.2	8.7	2.9	0.0	2.9
6/2	644	644	-	-	-	1.3	0.0	-	1.3	7.3	3.3	0.0	3.3
6/3	184	184	-	-	-	0.2	0.0	-	0.2	4.4	0.7	0.0	0.7
6/4	517	517	-	-	-	0.7	0.0	-	0.7	4.8	1.9	0.0	1.9
7/1	368	368	-	-	-	1.6	0.6	-	2.2	21.2	4.8	0.6	5.4
7/2+7/3	446	446	-	-	-	2.0	0.9	-	2.9	23.2	5.9	0.9	6.7
8/1	436	436	-	-	-	0.5	0.0	-	0.5	4.5	2.1	0.0	2.1
8/2	532	532	-	-	-	0.6	0.0	-	0.6	4.3	2.5	0.0	2.5
8/3	431	431	-	-	-	1.2	0.0	-	1.2	9.7	2.4	0.0	2.4

C1	Stream: 1 PRC for Signalled Lanes (%)	-10.3	Total Delay for Signalled Lanes (pcuHr):	31.27	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%)	-9.1	Total Delay for Signalled Lanes (pcuHr):	11.70	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%)	-8.1	Total Delay for Signalled Lanes (pcuHr):	7.98	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%)	-25.0	Total Delay for Signalled Lanes (pcuHr):	57.88	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%)	-30.9	Total Delay for Signalled Lanes (pcuHr):	133.29	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%)	35.1	Total Delay for Signalled Lanes (pcuHr):	13.46	Cycle Time (s):	60
C2	Stream: 4 PRC for Signalled Lanes (%)	28.3	Total Delay for Signalled Lanes (pcuHr):	8.46	Cycle Time (s):	60
	PRC Over All Lanes (%)	-30.9	Total Delay Over All Lanes(pcuHr):	272.07		