Land Northeast of M42 Junction 10
Note on AECOM TRANSYT Comments, March 2024

Client: Hodgetts Estates Limited Date: 8th March 2024

1 Introduction

1.1 Tetra Tech (TT) have been appointed by Hodgetts Estates to provide technical support for their outline planning application for a proposed development of up to 100,000sqm of employment uses and 150 space overnight lorry park (including an associated 400sqm amenity block) on land to the northeast of M42 Junction 10. The application is also supported by a Revised Transport Assessment (TA) prepared by TT, dated February 2023 and a TA Addendum (TAA), dated December 2023.

1.2 This Note seeks to address the comments made by AECOM, provided by email from Patrick Thomas on 29th February 2024 (attached in Appendix A) in relation to TT's M42 Jn10 TRANSYT model results provided in the supporting TAA, dated December 2023 and the v6 TRANSYT model files supplied on 29th January 2024.

1.3 Each comment raised has been addressed in turn below.

2 Demand Dependency Calculations at the A5 / Core 42 Junction

2.1 NH/ AECOM comment summary: *The models have been updated with the demand dependencies as requested.*

2.2 Validation models are now agreed.

2.3 NH/ AECOM comment summary: *The transyt model results in the TAA Appendix H appear to be from model version 5.1 and should be updated to model version 5.2.*

2.4 TRANSYT model version 5.0 was issued in the October 2023 in response to the Baseline Validation report (submitted August 2023). The model was further amended in November to version 5.1 in response to AECOM comments on the stage dependencies at the A5/ Core 42 junction. A version 5.2 model was issued at the end of January 2024 in response to comments from NH/ AECOM on 25th January updating the frequency of Stage 3 at the Meridian Drive junction in the PM peak period. Note that this model was based on the original validation of the A5/ Pennine Way north roundabout. These updated results were not included in the submission of the TAA in December 2023.

2.5 As part of the TAA submission in December 2023 the model was amended for the validation of the A5/ Pennine Way north roundabout and identified as version 6. This model included the correct stage dependencies and frequency of calls as included in the version 5.2 model.

2.6 Therefore in TAA Appendix H, Table 5.1a shows the amended validation results using Model 5.1 (version submitted to NH in November 2023). Table 5.1b shows the 2023 further validation (A5/ Pennine Way North roundabout) results from model version 6 so that the results of the validation adjustment could be compared. Thus Table 5.1a is from model version 5.1, and Table 5.1b is from model version 6.

2.7 As discussed at para 2.4 above, NH/ AECOM provided comments on the now superseded validated model version 5.1 and thus were corrected post submission of the TAA in model version 5.2. Following AECOMs comments at 2.1 above, the results in Table 5.1a have been checked against model version 5.2 (as at 29-1-24) and have been corrected. The results in Table 5.1b have been reviewed against the model version 6 (as at 29-1-24) and some minor inconsistencies have been found and corrected.

2.8 The updated Tables, Table 5.1a v2, and Table 5.1b v2 are attached respectively at Appendix B and Appendix C to this report.

3 Reporting of the TRANSYT Results in the Transport Assessment Addendum

3.1 NH/ AECOM comment summary: *The results in TAA Appendices H, J, K, M, and O should be updated to reflect the results from the supplied models.*

3.2 It was noted that the results presented at Appendices J, K, M and O were results from older models and the correct results were not appended, that said the differences in the modelled results were minor to negligible. The model summary text within the TAA was based on the correct modelling results.

3.3 However, as a result of the following 3 points raised by AECOM, a revised TRANSYT model version 7.0 has been produced and the results tables for Appendices J, K, M and O have been updated and are attached as set out in Section 7.

4 Give Way Parameters at the new A5 / Long Street / Gypsy Lane Junction

4.1 NH/ AECOM comment summary: *There is a difference between opposed maximum flow value and coefficient value used in the model and that suggested by JCT. The method of calculating the values should be provided.*

4.2 The opposed maximum flow value and coefficients used in the TRANSYT model were obtained by setting the junction up as a priority crossroads junction, using the junction parameters and then extracting the relevant intercept and co-efficient values and entering them into the signal-controlled junction arrangement as set out in the TRANSYT manual.

4.3 For simplicity and to agree a set of parameters, the JCT values of 1439 for the maximum flow when opposed and a coefficient of 1.09 have been used for each of the three turning streams. Refer to Section 7 for the references to the new junction model results.

5 U-turning flows at the A5 Dordon Roundabout

5.1 NH/ AECOM comment summary: *The existing A5 u-turning flows at Dordon roundabout cannot occur at the proposed signal junction. These flows have not been redistributed in the model. Should these vehicles (64pcu AM peak and 45pcu PM peak) be redistributed to New Street-Long Street?*

5.2 As the volume of u-turners (travelling eastbound and then u-turning to head westbound) is very low in comparison to the total junction flow (less than 2% in the AM and PM peaks), the u-turners had not been redistributed in the Local Plan TRANSYT model.

5.3 Upon review and as mentioned by AECOM, it is probable that the u-turn movements will turn left up New Street, turn right onto Browns Lane, right again onto Long Street and then finally turn right at the new signalised junction arrangement to head westbound on the A5. For the 2033 Local Plan models, the 64pcu undertaking this movement in the AM peak and 45pcu in the PM peak has been added onto the right turn movement from Long Street. Updated results tables are attached as set out in Section 7.

5.4 For the A5 westbound to A5 eastbound u-turn the respective AM and PM peak hour flows are 2pcu and 5pcu. The likely alternative route is via Long Street – Brown's Lane and New Street. Because the volume of traffic is so small these u-turning flows have not been redistributed.

6 Maximum Green Time Violation

6.1 NH/ AECOM comment summary: *The maximum green time of 6 seconds has been exceeded at Green Lane exit Toucan Crossing.*

6.2 In the PM peak, the green time for the pedestrian Phase B (at the Green Lane exit Toucan Crossing) had been incorrectly set to 33 seconds whilst the traffic approach, Phase A has been set to 14 seconds. The pedestrian phase B should be set at 6 seconds and the traffic Phase A set at 41 seconds. The v6 TRANSYT models are therefore pessimistic for vehicular traffic on this movement. The models have been corrected so that the pedestrian phase B only receives a green signal for 6 seconds. Updated results tables are attached as set out in Section 7.

7 TRANSYT Results Tables

7.1 The TRANSYT model has been updated where applicable to take on board the comments listed above at Sections 4 to 6 and is now model version 7.0.

<u>2026 Reference Case</u>

7.2 Appendix J of the TAA set out the results of the 2026 Reference Case TRANSYT Assessment for both the No Development and With Development traffic flows. A revised results table, Table 5.2a is attached at Appendix D to this note.

7.3 The No Development models have been provided electronically in the file "1.M42 Jn10 and A5 – Exist With Ref Case Pen Way & Dordon v7No Development.t16".

7.4 The With Development models have been provided electronically in the file "2. M42 Jn10 and A5 – Exist With Ref Case Pen Way & Dordon v7 Site Access & Mitig With Development.t16".

7.5 The results are very similar to those presented in Appendix J of the TAA, with a maximum change of queue of +/- 3pcu and no more than +/- 9 second difference. Approximately 95% of the results are either identical with only a +/- 1pcu and/ or +/- 4 second difference.

7.6 The impacts from the development, with mitigation in place are not considered severe with reference to NPPF para 111 and no additional mitigation to that identified for the M42 Junction 10 is required.

2033 Reference Case

7.7 Appendix K of the TAA set out the results of the 2033 Reference Case Transyt Assessment for both the No Development and With Development traffic flows. A revised results table, Table 5.3a is attached at Appendix E to this note. The With Development models are based on the No Development model but with the inclusion of the proposed site access arrangement (TT Drawing 784-B033920-TTE-00-ZZ-PL-H-0002-P02 in Appendix H) and the M42 Junction 10 improvement scheme (TT Drawing 784-B033920-TTE-00-ZZ-SK-H-0001-P04 also in Appendix H).

7.8 The No Development models have been provided electronically in the file "1.M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v7 No Development.t16".

7.9 The With Development models have been provided electronically in the file "2. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v7 Site Access & Mitig With Development.t16".

7.10 The results are very similar to those presented in Appendix K of the TAA, with a maximum change of queue of +/- 2pcu and no more than +/- 13 second difference. Approximately 95% of the results are either identical with only a +/- 1pcu and/ or +/- 3 second difference.

7.11 The impacts from the development, with mitigation in place are not considered severe with reference to NPPF para 111 and no additional mitigation to that identified for the M42 Junction 10 is required.

2033 Local Plan

7.12 Appendix M of the TAA set out the results of the 2033 Local Plan TRANSYT Assessment for both the No Development and With Development traffic flows. A revised results table, Table 5.4a is attached at Appendix F to this note. The With Development models are based on the

No Development model, with the removal of the M42 southbound left turn slip to the A5 eastbound but with the inclusion of the site access and M42 Junction 10 upgrades as shown in Appendix H.

7.13 The No Development models have been provided electronically in the file "3. M42 Jn10 and A5 - Local Plan Model v7 No Development.t16".

7.14 The With Development models have been provided electronically in the file "4. M42 Jn10 and A5 - Local Plan Model v7 with Site Access & Mitigation With Development.t16".

7.15 The results are very similar to those presented in Appendix M of the TAA, with a maximum change of queue of +/- 3pcu and no more than +/- 42 second difference. Approximately 90% of the results are either identical with only a +/- 1pcu and/ or +/- 10 second difference. The impacts from the development, with mitigation in place are not considered severe with reference to NPPF para 111 and no additional mitigation to that identified for the M42 Junction 10 is required.

7.16 The proposed development does not result in a significant constraint to the delivery of Local Plan allocated sites and will deliver some of the highway improvements needed to accommodate the Local Plan allocations on the highway network.

2033 Local Plan & Additional Mitigation

7.17 Appendix O of the TAA set out the results of the 2033 Local Plan TRANSYT Assessment for both the No Development and With Development traffic flows, but including additional mitigation works. A revised results table, Table 5.5a is attached at Appendix G to this note.

7.18 The No Development models have been provided electronically in the file "3. M42 Jn10 and A5 - Local Plan Model v7 No Development.t16".

7.19 The With Development models have been provided electronically in the file "5. M42 Jn10 and A5 - Local Plan Model v7 with Site Access & Addl Mitigation With Development.t16".

7.20 The results are very similar to those presented in the TAA, with a maximum change of queue of +/- 3pcu and no more than +/- 42 second difference. Approximately 90% of the results are either identical with only a +/- 1pcu and/ or +/- 10 second difference.

7.21 With the additional mitigation the impact of the development is less, is not severe and does not significantly constrain the delivery of Local Plan allocations or highway improvement schemes. Under this scenario, the package of mitigation will again deliver some of the highway improvements needed to accommodate the Local Plan allocations on the highway network.

8 Summary and Conclusions

8.1 This Note seeks to address the comments raised by AECOM, summarised below.

- Demand dependency calculations at the A5/ Core 42 junction.
- Reporting of the TRANSYT results in the Transport Assessment Addendum.
- Give way parameters at the new A5/ Long Street/ Gypsy Lane junction in the Local Plan scenario.
- U-turning flows at the A5 Dordon Roundabout, in the Local Plan scenario.
- Maximum green time violation on the M42 Jn10 Green Lane Toucan Crossing in all of the With Development models.

8.2 The comments raised by AECOM above have been taken into account in the revised Reference Case TRANSYT models and Local Plan models.

8.3 For the 2026 and 2033 Reference Case scenarios the amendments to the TRANSYT models have had very minor effects with regards to the results in the TAA, with a maximum change of 3pcu and 13 second difference in delay at most. In most cases the results are identical or with a maximum change of 1pcu and 4 second difference in delay.

8.4 For the 2033 Local Plan scenarios the amendments to the TRANSYT models have had very minor effects with regards to the results in the TAA, with a maximum change of 3pcu and 42 second difference in delay at most. In most cases the results are identical or with a maximum change of 1pcu and 10 second difference in delay.

8.5 In conclusion the changes to the TRANSYT models have resulted in small changes in the queues and delay on some model links. The changes in the queues and delay do not alter the conclusions drawn in the TAA that:

- In the Reference Case, the traffic generated by the proposed development with the mitigation measures can be accommodated on the network in both the AM peak and PM peak in 2026 and 2033. The impact is not considered severe with reference to NPPF para 111.

- In the Local Plan Case, the traffic generated by the proposed development with the mitigation measures can be accommodated on the network in both the AM peak and PM peak in 2033. The impact is not considered severe with reference to NPPF para 111.

Appendix A – Patrick Thomas Email, 29th February 2024

Wakenshaw, Gareth

From: Patrick Thomas <Patrick.Thomas@nationalhighways.co.uk>
Sent: 29 February 2024 17:32
To: Wakenshaw, Gareth; Adrian Chadha
Cc: Morris, Chris; Bunn, Nick; dwh@hodgettsestates.co.uk; 'Jane Hodgetts'; 'Edward Hodgetts'
Subject: RE: Land NE of M42 J10 2023 -Full Response to TT 29th January Email [Filed 29 Feb 2024 23:27]

Hi Gareth

Further to the interim comments provided to your 29/1 email, Aecom have now completed their full review of the TRANSYT modelling files supplied by the applicant.

As part of this review, the following documents have been received:

- 1. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v6 No Development.t16
- 2. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v6 Site Access & Mitig With Development.t16
- 3. M42 Jn10 and A5 - Local Plan Model v6 No Development.t16
- 4. M42 Jn10 and A5 - Local Plan Model v6 with Site Access & Mitigation With Development.t16
- 5. M42 Jn10 and A5 - Local Plan Model v6 with Site Access & Addl Mitigation With Development.t16
- M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v5.2.t16
- Network Diagrams v8 for TAA NH Copy.xlsx

Following a full review of the additional documentation provided, please see their audit comments summarised below. Please note these comments should be considered in addition to our interim response provided on 22 February 2024.

PLEASE NOTE - Chris Morris is unavailable this week, so I have requested Aecom's availability for a specific Teams meeting next week to go through the below modelling queries which also raised in our recent discussions and previous email correspondence. I expect hear back regarding a proposed meeting upon Chris' anticipated return next week

Demand Dependency Calculations at the A5 / Core 42 Junction

The supplied models have been updated with the correct demand dependency value for Stage 3 as highlighted in our previous correspondence relating to validity of the 2023 Base Model.

The latest version of Transport Assessment Addendum (TAA), dated December 2023, does not show the updated model results from "Model 5.2" in Appendix H. The results contained within Appendix H of the TAA seem to refer to the results of "Model 5.1". Please can the applicant correct the reporting of model results in Appendix H of the TAA?

Reporting of the TRANSYT Results in the Transport Assessment Addendum

The email received from Gareth Wakenshaw on 29/01/2024 stated “The Stage 3 stage call parameter at Meridian Drive was corrected in the TRANSYT model used for the TAA, Version 6… As a result, there is no need to amend the stage call parameter for Meridian Drive in the TAA models, and the results reported in the TAA are not affected.”

The latest version of the TAA that National Highways have received was dated December 2023. From reviewing the TRANSYT results in Appendices H, J, K, M and O of this document, they do not appear to correspond to the TRANSYT models which have been received. Please can the applicant update the TAA to reflect the results contained within the supplied TRANSYT models?

Give Way Parameters at the new A5 / Long Street / Gyspy Lane Junction

The default values provided by JCT Consultancy for use in LinSig models vary significantly from those used in these TRANSYT models. For a right turn opposed movement within a signalised junction, JCT suggests an Opposed Maximum Flow value of 1439 and a Coefficient value of 1.09. The values used in the models have a maximum opposed flow of 781 and a coefficient of 0.28 or 0.30. Please can the applicant provide the method for calculating give way parameters for the three right turn give way movements (Traffic Streams 115, 117 and 118) at the new A5 / Long Street / Gypsy Lane junction for our review?

Whilst it is accepted that these give way parameters need to be site specific for each movement, it should be noted that the give way parameters will likely differ between signalised and unsignalised locations due to driver behaviour.

U-turning flows at the A5 Dordon Roundabout

In Models 3, 4 and 5, the A5 Dordon Roundabout has been converted into a crossroads signalised junction. The network flow diagrams show u-turning movements on both A5 approaches to the roundabout, but with the new road layout, these movements cannot be undertaken. In the 2033 with development tests, the A5 West approach u-turn is 64pcu in the AM Peak and 45pcu in the PM Peak. These u-turning flows have been entered into the “Entry Flows” matrix for OD Matrix 7, but as the movement is not possible in the proposed layout of the junction, the flows have not been carried forward to the “Resultant Flows” matrix and been allocated to the TRANSYT network.

It could be assumed that the A5 west u-turning flows are associated with vehicles exiting New Street to the west of the junction, can the applicant confirm if these vehicles should be redistributed to approach the new junction from the Long Street approach?

Maximum Green Time Violation

In TRANSYT Models 2, 4 and 5 for the 2026 and 2033 PM Peak scenarios, the maximum green time of 6 seconds seems to have been exceeded on the Timings Diagram for Phase B (the pedestrian crossing) on Controller Stream 10 (M42 J10 Green Lane Exit Toucan Crossing). Please can the applicant provide information on the severity of this error message? We note that the Errors and Warnings Window states that the error will be repaired automatically if doing a full optimised run.

We hope this provides sufficient clarity on the way forward. Please contact us should you have any queries.

Kind regards
Patrick

Patrick Thomas, Spatial Planner
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From: Patrick Thomas <Patrick.Thomas@nationalhighways.co.uk>
Sent: Thursday, February 22, 2024 12:31 PM
To: Wakenshaw, Gareth <Gareth.Wakenshaw@tetratech.com>; Adrian Chadha <Adrian.Chadha@nationalhighways.co.uk>
Cc: Morris, Chris <chris.morris1@aecom.com>; Bunn, Nick <Nick.Bunn@tetratech.com>; dwh@hodgettsestates.co.uk; 'Jane Hodgetts' <jane@hodgettsestates.co.uk>; 'Edward Hodgetts' <edward@hodgettsestates.co.uk>
Subject: Land NE of M42 J10 2023 - Interim Response to TT 29th January Email

Hi Gareth

I trust you are well. This is an interim response to your 29/1 email.

In terms of the signal specifications, I have liaised with our traffic signals lead and can confirm that those utilised are the up to date.

We have reviewed the following TRANSYT models and have determined that they accurately model the demand dependency at the A5 / Core 42 Junction where Stage 3 gets called 24% of the time in the PM Peak.

- 1. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v6 No Development.t16
- 2. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v6 Site Access & Mitig With Development.t16
- 3. M42 Jn10 and A5 - Local Plan Model v6 No Development.t16
- 4. M42 Jn10 and A5 - Local Plan Model v6 with Site Access & Mitigation With Development.t16
- 5. M42 Jn10 and A5 - Local Plan Model v6 with Site Access & Addl Mitigation With Development.t16
- 6. M42 Jn10 and A5 - Exist With Ref Case Pen Way & Dordon v5.2.t16

We now consider the Base models fit for purpose. Aecom have not yet completed their review the other models, completion of this is anticipated next week.

We have noted that the December 2023 Transport Assessment Addendum does not have model results in Appendices H, J and K that match those in the models that have been submitted. Please can the Transport Assessment Addendum be updated to reflect the results included in the TRANSYT models.

Kind regards
Patrick

Patrick Thomas, Spatial Planner

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Appendix B – 2023 Validation

Table 5.1a v2

Table 5.1a v2: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2023 Surveyed Year (v5.2 TRANSYT model)

				AM Peak		PM Peak	
Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	Observed Queue	Results	Observed Queue	Results
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	5	4 32 secs	0	1 14 secs
54/2	Pennine Way South Lane 2	N/A	Queue Aver Delay	2	1 7 secs	1	0 5 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
64/1 + 66/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	0	1 5 secs	1	2 8 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 7 secs
68/1 + 59/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	4	9 1m 3s	0	0 2 secs
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road/ Quarry Hill							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0	0 5 secs	0	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	0 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	0	0 6 secs	1	1 8 secs
76/2 + 75/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1	0 6 secs	1	4 17 secs
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0	0 6 secs	2	0 7 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0	0 4 secs	1	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1	1 6 secs	6	6 41 secs
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
M42 Junction 10							
1/1 + 2/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	6	3 16 secs	15	19 1m 18s
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	3	2 15 secs	5	4 32 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	2	1 13 secs	2	2 22 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	7	4 17 secs	9	6 29 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	8	3 17 secs	9	5 26 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	10	13 17 secs	16	25 22 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	7	10 14 secs	14	15 18 secs
8/1 + 9/1 + 11/1 + 69/1 + 70/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	47	63 4m 30s	12	13 53 secs
8/2	A5 Eastbound Lane 2	1900	Queue Aver Delay	10	3 20 secs	9	5 20 secs
8/3 + 9/2 + 11/2 + 69/2 + 70/2	A5 Eastbound Lane 3	1900	Queue Aver Delay	32	46 3m 5s	9	9 33 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	5	2 14 secs	3	5 18 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	6	4 15 secs	6	8 19 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	6	2 14 secs	7	7 17 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	2	1 12 secs	2	1 14 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	4	3 40 secs	8	4 37 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	4	5 55 secs	8	11 1m 31s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	7	7 4 secs	6	11 9 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	8	4 5 secs	6	7 11 secs

15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	2	1 3 secs	1	1 3 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1	1 25 secs	3	1 18 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1	2 27 secs	3	5 34 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	2	1 26 secs	4	3 26 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	3	3 5 secs	5	4 7 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	4	7 6 secs	6	9 10 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	5	8 7 secs	5	7 9 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1	1 4 secs	3	1 5 secs
23/1	A5 Westbound Lane 1	1930	Queue Aver Delay	7	6 21 secs	6	4 19 secs
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	6	3 18 secs	5	3 18 secs
23/3 + 24/1 + 25/1	A5 Westbound Lane 3	1851	Queue Aver Delay	10	9 31 secs	13	18 56 secs
23/4 + 24/1	A5 Westbound Lane 4	1851	Queue Aver Delay	6	2 18 secs	6	4 22 secs
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	6	4 14 secs	6	10 19 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	8	2 11 secs	5	3 14 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	2	2 11 secs	5	3 12 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	1	2 11 secs	5	3 13 secs
28/1 + 29/1	Trinity Road Lane 1	1669	Queue Aver Delay	8	4 30 secs	9	8 55 secs
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	7	5 34 secs	7	4 32 secs
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	3	9 9 secs	3	5 8 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	8	8 9 secs	6	5 10 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	3	13 10 secs	8	3 7 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	2	7 8 secs	4	3 8 secs
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	5	1 16 secs	9	8 25 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	4	1 13 secs	5	1 14 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	5	8 56 secs	4	5 53 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	8	10 1m 33s	4	3 49 secs
37/1	A5 Westbound Ahead Lane 1	1751	Queue Aver Delay	2	3 24 secs	2	2 22 secs
37/2 + 38/1 + 53/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	16	10 33 secs	13	13 46 secs
37/3 + 38/2 + 53/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	14	11 47 secs	13	18 1m 9s
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	5	4 27 secs	6	5 22 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	6	3 25 secs	9	5 21 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	3	2 27 secs	5	3 24 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2	2 3 secs	6	2 6 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1	1 1 sec	3	1 1 sec
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2	2 59 secs	1	1 1m 5s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	6	7 9 secs	8	6 11 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	4	5 8 secs	7	5 10 secs

51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	1	2 2m 35s	2	1 46 secs
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	0	0 8m 47s	1	1 3m 43s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	2	3 15 secs	2	7 18 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	1 7 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	3	1 30 secs	2	1 34 secs
97/1 + 98/1	A5 Westbound Lane 1	N/A	Queue Aver Delay	3	6 18 secs	1	3 11 secs
97/2	A5 Westbound Lane 2	N/A	Queue Aver Delay	0	1 12 secs	0	1 12 secs
100/1 + 100/2	Gypsy Lane	N/A	Queue Aver Delay	1	0 21 secs	1	0 19 secs

Appendix C – 2023 Revised Validation

Table 5.1b v2

Table 5.1b: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2023 Surveyed Year (v6 TRANSYT Model)

				AM Peak		PM Peak	
Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	Observed Queue	Results	Observed Queue	Results
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	5	5 1m 7s	0	1 5 secs
54/2	Pennine Way North Lane 2	N/A	Queue Aver Delay	2	0 7 secs	1	0 6 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
64/1 + 66/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	0	1 5 secs	1	3 8 sec
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	1 7 secs
68/1 + 59/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	4	24 2m 22s	0	0 3 secs
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road/ Quarry Hill							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0	0 5 secs	0	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	1 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	0	1 6 secs	1	1 8 secs
76/2 + 75/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1	1 6 secs	1	3 17 secs
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0	0 4 secs	2	0 7 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0	0 4 secs	1	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1	14 6 secs	6	5 41 secs
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0	0 4 secs	0	0 4 secs
M42 Junction 10							
1/1 + 2/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	6	3 16 secs	15	19 1m 16s
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	3	2 15 secs	5	4 32 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	2	1 13 secs	2	2 21 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	7	4 17 secs	9	6 28 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	8	4 16 secs	9	5 27 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	10	13 16 secs	16	25 22 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	7	9 14 secs	14	13 17 secs
8/1 + 9/1 + 11/1 + 69/1 + 70/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	47	53 4m 11s	12	12 53 secs
8/2	A5 Eastbound Lane 2	1900	Queue Aver Delay	10	2 20 secs	9	5 20 secs
8/3 + 9/2 + 11/2 + 69/2 + 70/2	A5 Eastbound Lane 3	1900	Queue Aver Delay	32	48 3m 9s	9	8 31 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	5	2 14 secs	3	5 18 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	6	4 15 secs	6	8 19 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	6	2 14 secs	7	7 17 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	2	1 13 secs	2	1 14 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	4	3 40 secs	8	4 37 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	4	5 55 secs	8	15 1m 56s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	7	6 4 secs	6	10 9 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	8	3 5 secs	6	8 11 secs

15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	2	1 3 secs	1	1 3 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1	1 25 secs	3	1 18 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1	1 27 secs	3	4 34 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	2	1 26 secs	4	3 25 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	3	3 5 secs	5	4 7 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	4	5 6 secs	6	9 10 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	5	5 7 secs	5	6 9 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1	1 4 secs	3	1 5 secs
23/1	A5 Westbound Lane 1	1930	Queue Aver Delay	7	5 21 secs	6	4 19 secs
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	6	2 17 secs	5	3 18 secs
23/3 + 24/1 + 25/1	A5 Westbound Lane 3	1851	Queue Aver Delay	10	10 31 secs	13	16 55 secs
23/4 + 24/1	A5 Westbound Lane 4	1851	Queue Aver Delay	6	3 18 secs	6	4 22 secs
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	6	4 14 secs	6	11 19 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	8	2 11 secs	5	2 14 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	2	2 11 secs	5	2 12 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	1	2 11 secs	5	3 13 secs
28/1 + 29/1	Trinity Road Lane 1	1669	Queue Aver Delay	8	4 31 secs	9	8 55 secs
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	7	5 34 secs	7	3 32 secs
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	3	8 9 secs	3	5 8 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	8	8 9 secs	6	5 10 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	3	12 10 secs	8	3 8 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	2	7 8 secs	4	3 8 secs
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	5	1 16 secs	9	14 26 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	4	1 12 secs	5	1 14 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	5	8 56 secs	4	5 56 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	8	11 1m 28s	4	4 50 secs
37/1	A5 Westbound Ahead Lane 1	1751	Queue Aver Delay	2	3 24 secs	2	2 21 secs
37/2 + 38/1 + 53/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	16	10 41 secs	13	12 42 secs
37/3 + 38/2 + 53/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	14	10 45 secs	13	17 1m 3s
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	5	4 28 secs	6	5 22 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	6	3 25 secs	9	5 21 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	3	2 27 secs	5	3 24 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2	2 3 secs	6	3 6 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1	1 1 sec	3	1 1 sec
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2	2 59 secs	1	2 1m 6s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	6	9 9 secs	8	5 11 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	4	5 7 secs	7	5 10 secs

51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	1	1 2m 43s	2	1 44 secs
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	0	1 8m 3s	1	1 4m 18s
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	2	2 16 secs	2	8 18 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	0	0 5 secs	0	1 7 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	3	2 30 secs	2	1 31 secs
97/1 + 98/1	A5 Westbound Lane 1	N/A	Queue Aver Delay	3	4 16 secs	1	3 11 secs
97/2	A5 Westbound Lane 2	N/A	Queue Aver Delay	0	0 12 secs	0	1 13 secs
100/1 + 100/2	Gypsy Lane	N/A	Queue Aver Delay	1	1 22 secs	1	0 20 secs

Appendix D – 2026 Reference Case

Table 5.2a

Table 5.2a: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2026 Reference Case (v7 models)

Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	AM Peak		PM Peak	
				No Dev	With Dev + Improv.	No Dev	With Dev + Improv.
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	2 20 secs	1 8 secs	1 5 secs	0 6 secs
54/2	Pennine Way North Lane 2	N/A	Queue Aver Delay	1 6 secs	1 6 secs	1 6 secs	1 6 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
64/1 + 66/1 + 86/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	1 5 secs	1 6 secs	4 10 secs	4 10 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 7 secs	0 7 secs
68/1 + 59/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	12 34 secs	0 2 secs	1 4 secs	0 1 secs
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 4 secs	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0 5 secs	0 5 secs	1 5 secs	1 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	0 6 secs	0 6 secs	1 9 secs	2 9 secs
76/2 + 75/1 + 71/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	0 7 secs	0 7 secs	7 17 secs	6 25 secs
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 7 secs	0 7 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 6 secs	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1 6 secs	1 6 secs	8 59 secs	10 1m 9s
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
M42 Junction 10							
1/1 + 2/1 + 4/1 + 5/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	3 16 secs	2 17 secs	11 43 secs	10 46 secs
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	2 15 secs	2 15 secs	1 22 secs	2 22 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	1 14 secs	1 13 secs	6 29 secs	6 27 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	4 17 secs	6 21 secs	7 27 secs	7 27 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	3 17 secs	3 17 secs	7 26 secs	8 30 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	15 18 secs	3 16 secs	19 17 secs	23 19 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	11 14 secs	8 19 secs	24 31 secs	27 35 secs
8/1 + 9/1 + 11/1+ 69/1 + 70/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	28 2m 17s	5 13 secs	12 1m 1s	5 16 secs

8/2	A5 Eastbound Lane 2	1900	Queue Aver Delay	4 15 secs	8 18 secs	5 22 secs	9 22 secs
8/3 + 9/2 + 11/2 + 69/2 + 70/2	A5 Eastbound Lane 3	1900	Queue Aver Delay	29 2m 23s	8 19 secs	11 44 secs	4 14 secs
8/4	A5 Eastbound Lane 4	1900	Queue Aver Delay	N/A	10 18 secs	N/A	8 17 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	3 19 secs	4 21 secs	5 18 secs	6 18 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	5 20 secs	3 19 secs	8 19 secs	2 16 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	5 18 secs	6 22 secs	7 18 secs	5 17 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	1 15 secs	6 23 secs	1 14 secs	9 20 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	3 40 secs	3 41 secs	4 38 secs	5 37 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	4 54 secs	5 59 secs	11 1m 35s	12 1m 47s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	9 7 secs	3 3 secs	8 8 secs	2 2 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	7 8 secs	13 12 secs	7 11 secs	10 7 secs
15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	1 3 secs	10 11 secs	1 3 secs	9 14 secs
15/4	Green Lane Circulating Lane 4	1745	Queue Aver Delay	N/A	2 3 secs	N/A	1 3 secs
A13/1	Green Lane Toucan Crossing	2272	Queue Aver Delay	N/A	1 2 secs	N/A	2 2 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1 25 secs	1 26 secs	1 19 secs	1 20 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1 28 secs	1 27 secs	5 33 secs	5 50 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	1 26 secs	1 26 secs	4 26 secs	4 36 secs
A16/1	Green Lane Toucan Crossing	2213	Queue Aver Delay	N/A	2 3 secs	N/A	2 2 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	5 5 secs	8 7 secs	4 7 secs	16 9 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	10 6 secs	7 7 secs	10 10 secs	10 7 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	9 7 secs	9 9 secs	6 10 secs	6 8 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1 4 secs	1 3 secs	2 6 secs	1 4 secs
23/1	A5 Westbound Lane 1	1930	Queue Aver Delay	6 21 secs	9 20 secs	6 19 secs	7 19 secs
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	2 18 secs	6 21 secs	4 17 secs	4 18 secs
23/3 + 24/1 + 25/1	A5 Westbound Lane 3	1851	Queue Aver Delay	10 34 secs	10 28 secs	12 30 secs	12 45 secs
23/4 + 24/1	A5 Westbound Lane 4	1851	Queue Aver Delay	3 18 secs	7 19 secs	9 32 secs	11 50 secs
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	6 16 secs	4 14 secs	10 20 secs	8 16 secs

22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	2 12 secs	5 18 secs	2 14 secs	6 15 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	2 11 secs	2 11 secs	3 13 secs	2 13 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	2 11 secs	2 10 secs	3 13 secs	3 13 secs
28/1 + 29/1	Trinity Road Lane 1	1669	Queue Aver Delay	4 31 secs	4 32 secs	12 1m 5s	9 1m 44s
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	5 34 secs	5 32 secs	5 41 secs	6 45 secs
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	9 9 secs	6 8 secs	5 8 secs	3 6 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	9 9 secs	7 11 secs	5 10 secs	9 12 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	13 10 secs	11 10 secs	3 7 secs	4 7 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	7 8 secs	9 9 secs	4 10 secs	5 13 secs
A5/ Proposed Site Access							
A56/1	A5 Eastbound Left & Ahead Lane 1	1677	Queue Aver Delay	N/A	7 15 secs	N/A	11 12 secs
A56/2	A5 Eastbound Ahead Lane 2	1738	Queue Aver Delay	N/A	6 14 secs	N/A	11 12 secs
A56/3	A5 Eastbound Ahead Lane 3	1995	Queue Aver Delay	N/A	2 8 secs	N/A	4 7 secs
A59/1	A5 Westbound Ahead Lane 1	1930	Queue Aver Delay	N/A	1 9 secs	N/A	3 9 secs
A59/2	A5 Westbound Ahead Lane 2	1930	Queue Aver Delay	N/A	0 9 secs	N/A	3 9 secs
A60/1	A5 Westbound Right Turn Lane	1597	Queue Aver Delay	N/A	1 42 secs	N/A	0 41 secs
A54/1	Site Access Left Turn Lane	1624	Queue Aver Delay	N/A	1 37 secs	N/A	1 36 secs
A55/1	Site Access Right Turn Lane 1	1619	Queue Aver Delay	N/A	1 41 secs	N/A	2 41 secs
A55/2	Site Access Right Turn Lane 2	1619	Queue Aver Delay	N/A	1 42 secs	N/A	2 42 secs
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	1 17 secs	1 16 secs	2 18 secs	8 20 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 13 secs	2 17 secs	1 16 secs	2 17 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	10 1m 14s	9 1m 26s	4 57 secs	6 55 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	9 1m 15s	12 1m 58s	3 50 secs	3 52 secs
37/1	A5 Westbound Left Turn Lane 1	1751	Queue Aver Delay	3 23 secs	3 22 secs	1 18 secs	1 16 secs
37/2 + 38/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	10 43 secs	10 48 secs	18 1 min	18 1m 11s
37/3 + 38/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	11 48 secs	11 53 secs	16 58 secs	16 1m 10s
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	4 27 secs	5 27 secs	4 21 secs	5 22 secs

42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	3 25 secs	3 26 secs	5 21 secs	5 21 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	2 28 secs	2 28 secs	3 23 secs	3 23 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2 3 secs	3 4 secs	3 7 secs	5 7 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 1 sec	1 1 sec	1 2 secs	2 2 secs
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	1 1 min	2 1m 4s	1 1m 21s	2 1m 30s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	8 9 secs	8 10 secs	5 10 secs	5 9 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	5 7 secs	5 8 secs	4 9 secs	5 9 secs
51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	2 2m 49s	2 2m 31s	2 54 secs	2 57 secs
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	0 7m 56s	1 7m 8s	1 3m 58s	1 3m 59s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	4 17 secs	7 21 secs	6 19 secs	12 22 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	0 4 secs	1 5 secs	0 7 secs	1 7 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	2 33 secs	3 37 secs	1 36 secs	1 37 secs
97/1 + 98/1	A5 Westbound Lane 1	N/A	Queue Aver Delay	5 18 secs	8 22 secs	5 14 secs	5 14 secs
97/2	A5 Westbound Lane 2	N/A	Queue Aver Delay	0 12 secs	0 12 secs	1 12 secs	1 13 secs
100/1 + 100/2 + 101/1	Gypsy Lane	N/A	Queue Aver Delay	0 21 secs	0 22 secs	0 20 secs	0 20 secs

KEY	
#	New traffic lanes as a result of the proposed development mitigation works
	Impact of development results in a reduction in queue of over 10pcu and/ or a reduction in delays of over 1 minute.
	Impact of development results in an increase queue of 10pcu or over and/ or an increase in delay of over 1 minute

Appendix E – 2033 Reference Case

Table 5.3a

Table 5.3a: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2033 Reference Case (v7 models)

Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	AM Peak		PM Peak	
				No Dev	With Dev + Improv.	No Dev	With Dev + Improv.
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	12 1m 58s	2 8 secs	1 6 secs	1 6 secs
54/2	Pennine Way North Lane 2	N/A	Queue Aver Delay	1 8 secs	1 7 secs	1 6 secs	0 5 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
64/1 + 66/1 + 86/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	1 6 secs	1 6 secs	4 10 secs	4 12 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0 4 secs	1 4 secs	1 7 secs	1 7 secs
68/1 + 59/1 + 58/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	28 2m 7s	0 2 secs	1 9 secs	0 1 sec
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0 5 secs	1 5 secs	0 4 secs	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 5 secs	0 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	1 6 secs	0 7 secs	1 9 secs	1 9 secs
76/2 + 75/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1 7 secs	1 7 secs	15 42 secs	10 38 secs
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 7 secs	0 7 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 6 secs	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	0 6 secs	1 6 secs	12 1m 26s	16 1m 44s
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 5 secs
M42 Junction 10							
1/1 + 2/1 + 4/1 + 5/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	3 17 secs	3 17 secs	12 1m 1s	12 58 secs
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	2 15 secs	2 15 secs	2 25 secs	2 24 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	1 13 secs	1 13 secs	8 33 secs	7 31 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	4 18 secs	6 23 secs	7 28 secs	7 28 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	4 17 secs	3 17 secs	7 27 secs	8 31 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	16 19 secs	3 16 secs	20 19 secs	23 20 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	12 15 secs	8 21 secs	26 36 secs	27 36 secs

8/1 + 9/1 + 11/1+ 69/1 + 70/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	46 3m 15s	7 13 secs	16 1m 20s	5 15 secs
8/2	A5 Eastbound Lane 2	1900	Queue Aver Delay	3 15 secs	10 31 secs	5 23 secs	10 25 secs
8/3 + 9/2 + 11/2 + 69/2 + 70/2	A5 Eastbound Lane 3	1900	Queue Aver Delay	53 3m 50s	9 28 secs	12 55 secs	4 15 secs
8/4	A5 Eastbound Lane 4	1900	Queue Aver Delay	N/A	11 21 secs	N/A	8 18 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	3 19 secs	3 21 secs	4 18 secs	6 18 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	5 21 secs	3 19 secs	7 19 secs	2 16 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	5 18 secs	5 22 secs	7 18 secs	5 17 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	1 16 secs	5 23 secs	1 14 secs	9 20 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	3 41 secs	3 41 secs	5 39 secs	5 38 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	5 58 secs	5 1m 2s	17 2m 14s	15 2m 10s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	9 7 secs	4 3 secs	8 9 secs	2 2 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	5 8 secs	12 12 secs	8 11 secs	10 8 secs
15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	1 3 secs	11 11 secs	1 3 secs	9 14 secs
15/4	Green Lane Circulating Lane 4	1745	Queue Aver Delay	N/A	1 3 secs	N/A	3 3 secs
A13/1	Green Lane Toucan Crossing	2272	Queue Aver Delay	N/A	1 2 secs	N/A	2 2 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1 25 secs	1 26 secs	1 19 secs	1 20 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1 28 secs	1 26 secs	5 36 secs	6 57 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	1 25 secs	1 26 secs	3 27 secs	4 37 secs
A16/1	Green Lane Toucan Crossing	2213	Queue Aver Delay	N/A	2 2 secs	N/A	2 2 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	5 5 secs	8 7 secs	3 7 secs	15 9 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	8 6 secs	7 7 secs	10 11 secs	10 7 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	9 8 secs	12 9 secs	8 10 secs	8 9 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1 4 secs	1 3 secs	2 6 secs	1 5 secs
23/1	A5 Westbound Lane 1	1930	Queue Aver Delay	6 21 secs	8 20 secs	6 20 secs	7 19 secs
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	2 18 secs	6 24 secs	4 18 secs	5 19 secs

23/3 + 24/1 + 25/1	A5 Westbound Lane 3	1851	Queue Aver Delay	10 35 secs	10 28 secs	12 38 secs	14 56 secs
23/4 + 24/1	A5 Westbound Lane 4	1851	Queue Aver Delay	3 18 secs	8 19 secs	13 56 secs	14 1m 11s
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	8 16 secs	5 14 secs	12 20 secs	8 17 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	3 12 secs	5 21 secs	3 14 secs	7 15 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	2 11 secs	2 11 secs	2 13 secs	2 13 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	2 11 secs	2 11 secs	3 13 secs	3 13 secs
28/1 + 29/1	Trinity Road Lane 1	1669	Queue Aver Delay	5 32 secs	4 33 secs	18 1m 52s	13 2m 29s
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	5 35 secs	5 32 secs	6 48 secs	6 49 secs
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	10 9 secs	6 9 secs	6 8 secs	3 6 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	9 9 secs	9 12 secs	6 10 secs	10 12 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	14 10 secs	12 10 secs	3 7 secs	5 7 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	8 8 secs	9 9 secs	4 13 secs	5 14 secs
A5/ Proposed Site Access							
A56/1	A5 Eastbound Left & Ahead Lane 1	1677	Queue Aver Delay	N/A	8 16 secs	N/A	11 12 secs
A56/2	A5 Eastbound Ahead Lane 2	1738	Queue Aver Delay	N/A	5 14 secs	N/A	12 12 secs
A56/3	A5 Eastbound Ahead Lane 3	1995	Queue Aver Delay	N/A	2 8 secs	N/A	5 7 secs
A59/1	A5 Westbound Ahead Lane 1	1930	Queue Aver Delay	N/A	1 9 secs	N/A	3 10 secs
A59/2	A5 Westbound Ahead Lane 2	1930	Queue Aver Delay	N/A	1 9 secs	N/A	4 10 secs
A60/1	A5 Westbound Right Turn Lane	1597	Queue Aver Delay	N/A	1 43 secs	N/A	1 42 secs
A54/1	Site Access Left Turn Lane	1624	Queue Aver Delay	N/A	1 39 secs	N/A	1 35 secs
A55/1	Site Access Right Turn Lane 1	1619	Queue Aver Delay	N/A	1 42 secs	N/A	2 45 secs
A55/2	Site Access Right Turn Lane 2	1619	Queue Aver Delay	N/A	1 40 secs	N/A	2 43 secs
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	1 17 secs	2 16 secs	3 19 secs	9 20 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 14 secs	2 21 secs	1 16 secs	3 18 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	11 1m 19s	15 1m 56s	5 56 secs	6 59 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	10 1m 33s	12 2m 17s	4 54 secs	4 54 secs

37/1	A5 Westbound Left Turn Lane 1	1751	Queue Aver Delay	3 23 secs	3 23 secs	1 17 secs	1 16 secs
37/2 + 38/1 + 53/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	10 45 secs	11 49 secs	20 1m 16s	22 1m 28s
37/3 + 38/2 + 53/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	11 52 secs	11 1m 11s	21 1m 20s	20 1m 29s
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	4 27 secs	6 27 secs	5 22 secs	5 22 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	4 25 secs	3 26 secs	5 21 secs	6 22 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	2 28 secs	2 28 secs	3 24 secs	4 24 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2 3 secs	3 5 secs	3 7 secs	5 8 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 1 sec	1 1 sec	2 2 secs	2 2 secs
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2 1 min	1 1m 2s	1 1m 18s	2 1m 22s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	7 9 secs	8 10 secs	6 10 secs	6 11 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	4 7 secs	5 7 secs	5 9 secs	6 10 secs
51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	2 2m 54s	2 2m 50s	1 55 secs	2 1m 11s
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	1 7m 26s	1 7m 12s	1 4m 12s	1 3m 47s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	4 18 secs	6 22 secs	7 20 secs	14 25 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	0 5 secs	1 5 secs	0 7 secs	1 7 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	2 34 secs	2 42 secs	1 38 secs	2 40 secs
97/1 + 98/1	A5 Westbound Lane 1	N/A	Queue Aver Delay	9 23 secs	10 27 secs	4 15 secs	5 16 secs
97/2	A5 Westbound Lane 2	N/A	Queue Aver Delay	0 12 secs	1 13 secs	0 13 secs	1 13 secs
100/1 + 100/2 + 101/1	Gypsy Lane	N/A	Queue Aver Delay	0 22 secs	0 22 secs	0 21 secs	0 21 secs

KEY	
#	New traffic lanes as a result of the proposed development mitigation works
	Impact of development results in a reduction in queue of over 10pcu and/ or a reduction in delays of over 1 minute.
	Impact of development results in an increase queue of 10pcu or over and/ or an increase in delay of over 1 minute

Client: Hodgetts Estates Limited Date: 8th March 2024

Appendix F – 2033 Local Plan

Table 5.4a

Table 5.4b: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2033 Local Plan (v7 models)

Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	AM Peak		PM Peak	
				No Dev	With Dev + Improv.	No Dev	With Dev + Improv.
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	3 20 secs	6 36 secs	1 9 secs	2 19 secs
54/2	Pennine Way North Lane 2	N/A	Queue Aver Delay	1 7 secs	1 8 secs	1 6 secs	1 6 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 5 secs	0 5 secs
64/1 + 66/1 + 86/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	1 6 secs	1 6 secs	6 15 secs	6 14 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	1 7 secs	0 7 secs
68/1 + 59/1 + 58/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	7 26 secs	13 41 secs	5 30 secs	14 1 min
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 4 secs	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 5 secs	0 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	1 7 secs	1 7 secs	1 10 secs	1 10 secs
76/2 + 75/1 + 71/1 + 6/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1 8 secs	1 8 secs	38 1m 38s	39 1m 38s
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0 4 secs	0 5 secs	0 7 secs	0 8 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 6 secs	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1 6 secs	1 7 secs	25 2m 49s	24 2m 53s
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 5 secs	0 5 secs
M42 Junction 10							
1/1 + 2/1 + 4/1 + 5/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	3 17 secs	3 17 secs	13 49 secs	13 50 secs
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	2 15 secs	2 15 secs	6 29 secs	6 29 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	1 13 secs	1 13 secs	4 1m 7s	4 1m 8s
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	6 23 secs	7 27 secs	12 43 secs	14 50 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	3 18 secs	4 18 secs	11 39 secs	12 46 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	3 8 secs	3 8 secs	7 11 secs	8 11 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	12 17 secs	12 18 secs	20 24 secs	23 26 secs
7/3	M42 Northbound Circulating Lane 3	1840	Queue Aver Delay	13 19 secs	15 24 secs	18 51 secs	19 50 secs

7/4	M42 Northbound Circulating Lane 4	1840	Queue Aver Delay	3 9 secs	2 8 secs	1 10 secs	1 10 secs
8/1 + 9/1 + 11/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	8 25 secs	12 33 secs	6 42 secs	6 43 secs
8/2 + 9/2 + 11/2 + 69/1 + 70/1	A5 Eastbound Lane 2	1900	Queue Aver Delay	32 1m 38s	46 2m 11s	34 2m 38s	54 3m 49s
8/3	A5 Eastbound Lane 3	1900	Queue Aver Delay	4 17 secs	5 21 secs	8 39 secs	9 44 secs
8/4 + 9/3 + 11/3 + 69/2 + 70/2	A5 Eastbound Lane 4	1900	Queue Aver Delay	34 1m 36s	35 1m 52s	23 1m 55s	36 3m 24s
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	4 21 secs	5 22 secs	4 19 secs	5 19 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	1 18 secs	2 20 secs	2 17 secs	3 17 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	7 22 secs	7 24 secs	9 22 secs	8 22 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	7 24 secs	8 29 secs	11 26 secs	12 27 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	4 44 secs	4 45 secs	5 42 secs	5 41 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	6 1m 7s	6 1m 10s	20 2m 55s	20 2m 58s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	1 2 secs	2 4 secs	2 2 secs	2 3 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	16 14 secs	16 13 secs	17 16 secs	16 15 secs
15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	10 11 secs	11 11 secs	16 17 secs	17 18 secs
15/4	Green Lane Circulating Lane 4	1745	Queue Aver Delay	1 3 secs	1 4 secs	4 5 secs	5 5 secs
A13/1	Green Lane Toucan Crossing	2272	Queue Aver Delay	N/A	2 2 secs	N/A	4 16 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1 25 secs	1 26 secs	2 21 secs	2 21 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1 26 secs	2 27 secs	2 23 secs	7 1m 6s
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	2 27 secs	2 26 secs	4 55 secs	5 1 min
A16/1	M42 Northbound Onslip Toucan Crossing	2213	Queue Aver Delay	N/A	2 3 secs	N/A	3 2 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	15 7 secs	20 7 secs	13 10 secs	13 11 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	16 6 secs	17 7 secs	13 11 secs	14 11 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	21 10 secs	21 11 secs	9 12 secs	8 11 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1 4 secs	1 3 secs	1 9 secs	1 11 secs
23/1 + 24/1 + A25/1 +39/1	A5 Westbound Lane 1	1930	Queue Aver Delay	15 37 secs	9 38 secs	12 1m 29s	22 1m 4s
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	7 30 secs	5 30 secs	6 34 secs	8 38 secs

23/3 + 24/2 + A25/2 + 39/2	A5 Westbound Lane 3	1851	Queue Aver Delay	9 25 secs	6 26 secs	15 1m 47s	17 59 secs
23/4 + 24/3	A5 Westbound Lane 4	1851	Queue Aver Delay	12 31 secs	9 34 secs	7 1m 17s	9 1m 56s
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	12 22 secs	13 23 secs	15 22 secs	14 21 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	6 19 secs	7 19 secs	6 15 secs	5 15 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	1 11 secs	1 11 secs	1 12 secs	1 12 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	2 12 secs	2 11 secs	5 35 secs	5 37 secs
28/1	Trinity Road Lane 1	1669	Queue Aver Delay	4 44 secs	4 43 secs	3 29 secs	3 29 secs
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	2 39 secs	2 39 secs	2 26 secs	2 27 secs
28/3 + 29/1	Trinity Road Lane 3	1669	Queue Aver Delay	9 1m 1s	8 58 secs	14 1m 35s	14 1m 43s
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	11 8 secs	12 8 secs	6 9 secs	7 10 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	15 10 secs	15 10 secs	9 14 secs	9 15 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	11 7 secs	11 7 secs	2 6 secs	3 7 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	13 8 secs	13 8 secs	7 27 secs	7 27 secs
A5/ Proposed Site Access							
A56/1	A5 Eastbound Left & Ahead Lane 1	1677	Queue Aver Delay	N/A	13 16 secs	N/A	17 14 secs
A56/2	A5 Eastbound Ahead Lane 2	1738	Queue Aver Delay	N/A	11 15 secs	N/A	13 13 secs
A56/3	A5 Eastbound Ahead Lane 3	1995	Queue Aver Delay	N/A	4 8 secs	N/A	5 6 secs
A59/1	A5 Westbound Ahead Lane 1	1930	Queue Aver Delay	N/A	2 13 secs	N/A	4 20 secs
A59/2	A5 Westbound Ahead Lane 2	1930	Queue Aver Delay	N/A	2 13 secs	N/A	4 20 secs
A60/1	A5 Westbound Right Turn Lane	1597	Queue Aver Delay	N/A	1 42 secs	N/A	0 42 secs
A54/1	Site Access Left Turn Lane	1624	Queue Aver Delay	N/A	1 36 secs	N/A	1 36 secs
A55/1	Site Access Right Turn Lane 1	1619	Queue Aver Delay	N/A	1 41 secs	N/A	2 1m 14s
A55/2	Site Access Right Turn Lane 2	1619	Queue Aver Delay	N/A	1 42 secs	N/A	2 1m 11s
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	1 9 secs	2 11 secs	2 13 secs	2 14 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	2 11 secs	7 10 secs	2 11 secs	3 12 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	13 1m 43s	12 1m 39s	6 1m 4s	6 59 secs
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	14 2m 14s	15 2m 24s	4 55 secs	4 54 secs

37/1	A5 Westbound Left Turn Lane 1	1751	Queue Aver Delay	2 13 secs	2 13 secs	2 15 secs	2 15 secs
37/2 + 38/1 + 53/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	10 41 secs	11 44 secs	13 31 secs	14 34 secs
37/3 + 38/2 + 53/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	12 50 secs	13 54 secs	12 32 secs	13 35 secs
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	7 44 secs	6 44 secs	6 37 secs	7 40 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	4 38 secs	5 39 secs	8 37 secs	7 40 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	3 41 secs	3 42 secs	7 47 secs	8 48 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2 3 secs	3 4 secs	3 4 secs	2 4 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 1 sec	1 1 sec	2 3 secs	2 3 secs
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2 1m 5s	2 1m 3s	2 1m 30s	2 1m 27s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	16 27 secs	17 29 secs	8 14 secs	7 15 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	14 25 secs	14 27 secs	6 12 secs	6 13 secs
51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	3 3 mins	3 3m 4s	3 1m 7s	2 1m 7s
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	1 8m 42s	1 7m 36s	3 4m 55s	3 4m 32s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	12 20 secs	11 20 secs	22 22 secs	23 22 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	12 19 secs	10 19 secs	24 21 secs	23 21 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	7 1m 4s	7 1m 18s	6 1m 31s	6 1m 33s
98/1	A5 Westbound Left Turn Slip	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 5 secs	0 5 secs
97/1 + 98/1	A5 Westbound Ahead Lane 1	N/A	Queue Aver Delay	6 20 secs	6 21 secs	3 8 secs	3 8 secs
97/2 + 98/2	A5 Westbound Ahead Lane 2	N/A	Queue Aver Delay	5 18 secs	5 18 secs	3 7 secs	3 7 secs
111/1	A5 Westbound Right Turn Lane 3	N/A	Queue Aver Delay	2 49 secs	2 49 secs	5 1m 3s	4 1m 6s
100/1	Gypsy Lane	N/A	Queue Aver Delay	2 28 secs	2 28 secs	2 37 secs	2 37 secs

KEY	
#	New traffic lanes as a result of the Local Plan works
#	New traffic lanes as a result of the proposed development mitigation works
	Impact of development results in a reduction in queue of over 10pcu and/ or a reduction in delays of over 1 minute.
	Impact of development results in an increase queue of 10pcu or over and/ or an increase in delay of over 1 minute

Appendix G – 2033 Local Plan &

Additional Mitigation

Table 5.5a

Table 5.5a: M42/ Junction 10 + A5/ Birch Coppice + A5/ Core 42, 2033 Local Plan + Additional Mitigation (v7 models)

Traffic Stream(s)	Lane	Saturation Flow pcu/hr	Model Output	AM Peak		PM Peak	
				No Dev	With Dev + Improv.	No Dev	With Dev + Improv.
B5080 Pennine Way North/ A5 Eastbound On/ Off Slip Road							
54/1 + 55/1	Pennine Way North Lane 1	N/A	Queue Aver Delay	3 20 secs	5 20 secs	1 9 secs	1 7 secs
54/2	Pennine Way North Lane 2	N/A	Queue Aver Delay	1 7 secs	1 7 secs	1 6 secs	1 6 secs
60/1	A5 Eastbound Off Slip Lane 1	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 4 secs	0 4 secs
60/2	A5 Eastbound Off Slip Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 5 secs	0 5 secs
64/1 + 66/1 + 86/1	Northbound Overbridge Lane 1	N/A	Queue Aver Delay	1 6 secs	1 6 secs	6 15 secs	5 14 secs
64/2	Northbound Overbridge Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	1 7 secs	1 8 secs
68/1 + 59/1 + 58/1	A5 Eastbound On-Slip Merge	N/A	Queue Aver Delay	7 26 secs	4 17 secs	5 30 secs	1 5 secs
B5080 Pennine Way South/ A5 Westbound On/ Off Slip Road							
89/1	Southbound Overbridge Lane 1	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 4 secs	0 4 secs
89/2	Southbound Overbridge Lane 2	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 5 secs	1 5 secs
76/1	A5 Westbound Off Slip Lane 1	N/A	Queue Aver Delay	1 7 secs	1 7 secs	1 10 secs	2 10 secs
76/2 + 75/1 + 71/1	A5 Westbound Off Slip Lane 2	N/A	Queue Aver Delay	1 8 secs	1 8 secs	38 1m 38s	37 1m 35s
81/1	Centurion Way Lane 1	N/A	Queue Aver Delay	0 4 secs	0 5 secs	0 7 secs	0 8 secs
81/2	Centurion Way Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 6 secs	0 6 secs
86/1	Quarry Hill Lane 1	N/A	Queue Aver Delay	1 6 secs	1 7 secs	25 2m 49s	22 2m 39s
86/2	Quarry Hill Lane 2	N/A	Queue Aver Delay	0 4 secs	0 4 secs	0 5 secs	0 5 secs
M42 Junction 10							
1/1 + 2/1 + 4/1 + 5/1	M42 Northbound Offslip Lane 1	1740	Queue Aver Delay	3 17 secs	3 17 secs	13 49 secs	14 48 secs
1/2	M42 Northbound Offslip Lane 2	1740	Queue Aver Delay	2 15 secs	2 15 secs	6 29 secs	5 29 secs
1/3	M42 Northbound Offslip Lane 3	1740	Queue Aver Delay	1 13 secs	1 13 secs	4 1m 7s	4 55 secs
3/1	M42 Northbound Offslip Lane 4	1849	Queue Aver Delay	6 23 secs	9 34 secs	12 43 secs	14 50 secs
3/2	M42 Northbound Offslip Lane 5	1849	Queue Aver Delay	3 18 secs	3 17 secs	11 39 secs	11 43 secs
7/1	M42 Northbound Circulating Lane 1	2039	Queue Aver Delay	3 8 secs	2 8 secs	7 11 secs	5 11 secs
7/2	M42 Northbound Circulating Lane 2	1840	Queue Aver Delay	12 17 secs	14 20 secs	20 24 secs	25 31 secs
7/3	M42 Northbound Circulating Lane 3	1840	Queue Aver Delay	13 19 secs	18 34 secs	18 51 secs	22 46 secs

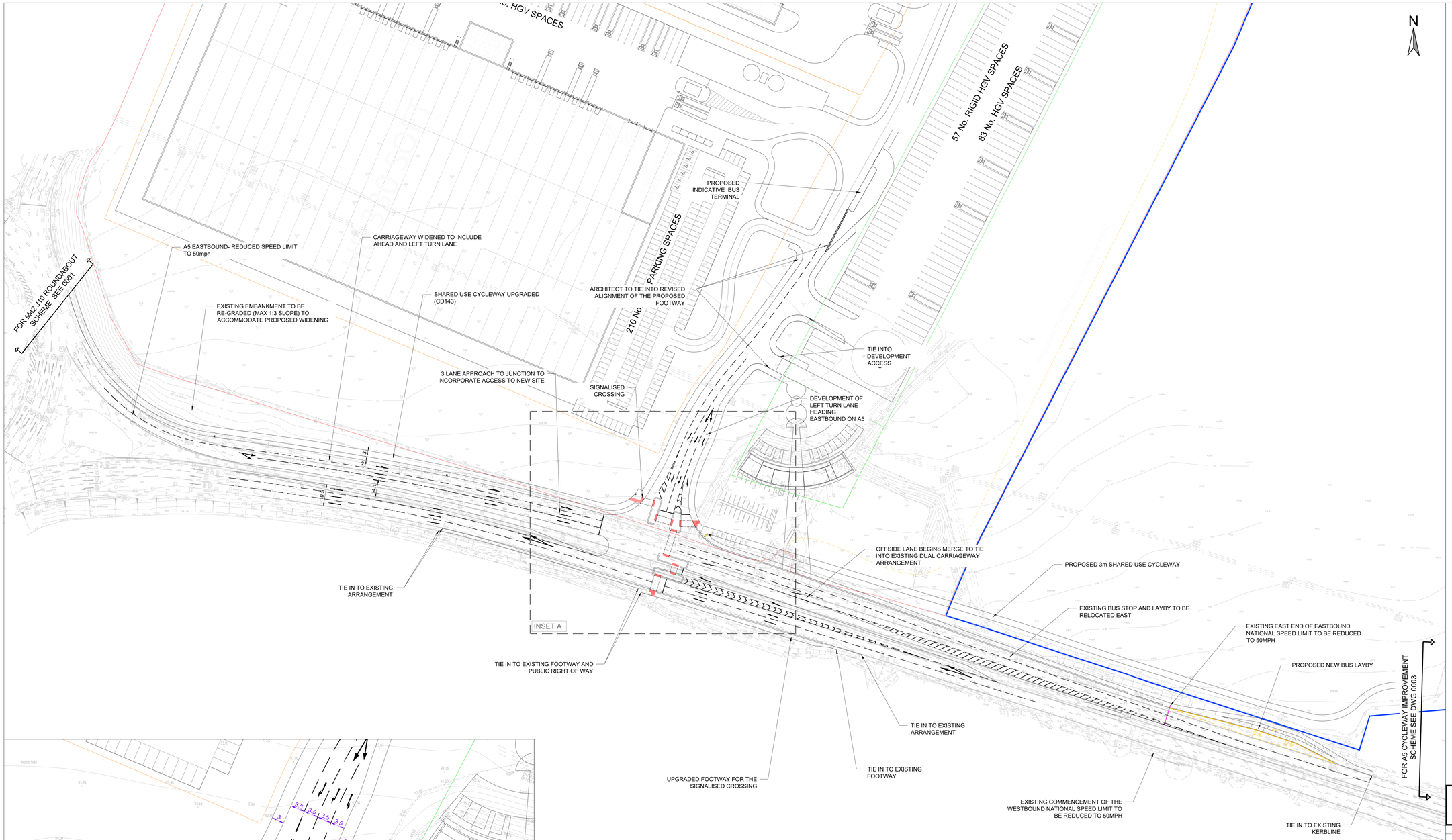
7/4	M42 Northbound Circulating Lane 4	1840	Queue Aver Delay	3 9 secs	2 8 secs	1 10 secs	1 9 secs
8/1 + 9/1 + 11/1	A5 Eastbound Lane 1	1828	Queue Aver Delay	8 25 secs	22 54 secs	6 42 secs	10 43 secs
8/2 + 9/2 + 11/2 + 69/1 + 70/1	A5 Eastbound Lane 2	1900	Queue Aver Delay	32 1m 38s	27 1m 17s	34 2m 38s	19 1m 18s
8/3	A5 Eastbound Lane 3	1900	Queue Aver Delay	4 17 secs	9 31 secs	8 39 secs	7 31 secs
8/4 + 9/3 + 11/3 + 69/2 + 70/2	A5 Eastbound Lane 4	1900	Queue Aver Delay	34 1m 36s	22 1m 3s	23 1m 55s	8 37 secs
12/1	A5 Eastbound Circulating Lane 1	1846	Queue Aver Delay	4 21 secs	5 23 secs	4 19 secs	4 19 secs
12/2	A5 Eastbound Circulating Lane 2	1878	Queue Aver Delay	1 18 secs	6 24 secs	2 17 secs	7 19 secs
12/3	A5 Eastbound Circulating Lane 3	1878	Queue Aver Delay	7 22 secs	4 21 secs	9 22 secs	4 18 secs
12/4	A5 Eastbound Circulating Lane 4	1878	Queue Aver Delay	7 24 secs	6 26 secs	11 26 secs	11 25 secs
14/1	Green Lane Lane 1	1602	Queue Aver Delay	4 44 secs	3 40 secs	5 42 secs	6 43 secs
14/2	Green Lane Lane 2	1602	Queue Aver Delay	6 1m 7s	8 1m 48s	20 2m 55s	20 3m 7s
15/1	Green Lane Circulating Lane 1	1950	Queue Aver Delay	1 2 secs	14 9 secs	2 2 secs	5 6 secs
15/2	Green Lane Circulating Lane 2	1745	Queue Aver Delay	16 14 secs	8 7 secs	17 16 secs	7 7 secs
15/3	Green Lane Circulating Lane 3	1745	Queue Aver Delay	10 11 secs	15 12 secs	16 17 secs	15 18 secs
15/4	Green Lane Circulating Lane 4	1745	Queue Aver Delay	1 3 secs	1 5 secs	4 5 secs	1 4 secs
A13/1	Green Lane Toucan Crossing	2272	Queue Aver Delay	N/A	2 2 secs	N/A	2 2 secs
18/1	M42 Southbound Offslip Lane 1	1804	Queue Aver Delay	1 25 secs	1 26 secs	2 21 secs	2 20 secs
18/2	M42 Southbound Offslip Lane 2	1813	Queue Aver Delay	1 26 secs	2 39 secs	2 23 secs	4 36 secs
18/3	M42 Southbound Offslip Lane 3	1813	Queue Aver Delay	2 27 secs	2 27 secs	4 55 secs	9 1m 46s
A16/1	M42 Northbound Onslip Toucan Crossing	2213	Queue Aver Delay	N/A	3 3 secs	N/A	2 2 secs
17/1	M42 Southbound Circulating Lane 1	1956	Queue Aver Delay	15 7 secs	7 4 secs	13 10 secs	3 6 secs
17/2	M42 Southbound Circulating Lane 2	1956	Queue Aver Delay	16 6 secs	19 8 secs	13 11 secs	13 11 secs
17/3	M42 Southbound Circulating Lane 3	1800	Queue Aver Delay	21 10 secs	19 8 secs	9 12 secs	14 14 secs
17/4	M42 Southbound Circulating Lane 4	1800	Queue Aver Delay	1 4 secs	11 23 secs	1 9 secs	3 14 secs
23/1 + 24/1 + A25/1	A5 Westbound Lane 1	1930	Queue Aver Delay	15 37 secs	19 1m 33s	12 1m 29s	20 1m 3s
23/2	A5 Westbound Lane 2	1851	Queue Aver Delay	7 30 secs	6 47 secs	6 34 secs	8 40 secs

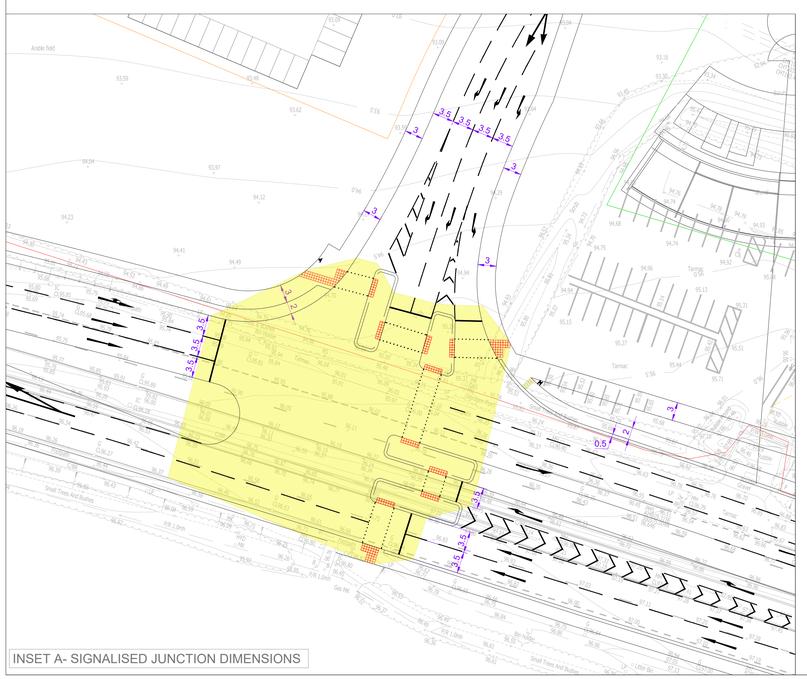
23/3 + 24/2	A5 Westbound Lane 3	1851	Queue Aver Delay	9 25 secs	9 36 secs	15 1m 47s	15 56 secs
23/4 + 24/3 + A25/2	A5 Westbound Lane 4	1851	Queue Aver Delay	12 31 secs	9 37 secs	7 1m 17s	11 2m 12s
22/1	A5 Westbound Circulating Lane 1	1797	Queue Aver Delay	12 22 secs	5 15 secs	15 22 secs	11 20 secs
22/2	A5 Westbound Circulating Lane 2	1797	Queue Aver Delay	6 19 secs	17 50 secs	6 15 secs	8 19 secs
22/3	A5 Westbound Circulating Lane 3	1902	Queue Aver Delay	1 11 secs	1 11 secs	1 12 secs	2 13 secs
22/4	A5 Westbound Circulating Lane 4	1902	Queue Aver Delay	2 12 secs	2 12 secs	5 35 secs	6 36 secs
28/1	Trinity Road Lane 1	1669	Queue Aver Delay	4 44 secs	4 44 secs	3 29 secs	3 31 secs
28/2	Trinity Road Lane 2	1669	Queue Aver Delay	2 39 secs	2 39 secs	2 26 secs	3 32 secs
28/3 + 29/1	Trinity Road Lane 3	1669	Queue Aver Delay	9 1m 1s	9 1m 7s	14 1m 35s	20 2m 3s
27/1	Trinity Road Circulating Lane 1	1846	Queue Aver Delay	11 8 secs	10 8 secs	6 9 secs	5 8 secs
27/2	Trinity Road Circulating Lane 2	1846	Queue Aver Delay	15 10 secs	16 13 secs	9 14 secs	12 17 secs
27/3	Trinity Road Circulating Lane 3	1878	Queue Aver Delay	11 7 secs	13 8 secs	2 6 secs	4 9 secs
27/4	Trinity Road Circulating Lane 4	1878	Queue Aver Delay	13 8 secs	13 9 secs	7 27 secs	9 26 secs
A5/ Proposed Site Access							
A56/1	A5 Eastbound Left & Ahead Lane 1	1677	Queue Aver Delay	N/A	14 16 secs	N/A	18 15 secs
A56/2	A5 Eastbound Ahead Lane 2	1738	Queue Aver Delay	N/A	12 16 secs	N/A	17 16 secs
A56/3	A5 Eastbound Ahead Lane 3	1995	Queue Aver Delay	N/A	4 8 secs	N/A	5 7 secs
A59/1	A5 Westbound Ahead Lane 1	1930	Queue Aver Delay	N/A	3 15 secs	N/A	4 23 secs
A59/2	A5 Westbound Ahead Lane 2	1930	Queue Aver Delay	N/A	3 16 secs	N/A	4 22 secs
A60/1	A5 Westbound Right Turn Lane	1597	Queue Aver Delay	N/A	1 42 secs	N/A	1 41 secs
A54/1	Site Access Left Turn Lane	1624	Queue Aver Delay	N/A	1 36 secs	N/A	1 36 secs
A55/1	Site Access Right Turn Lane 1	1619	Queue Aver Delay	N/A	1 43 secs	N/A	2 1m 21s
A55/2	Site Access Right Turn Lane 2	1619	Queue Aver Delay	N/A	1 45 secs	N/A	2 1m 16s
A5/ Birch Coppice							
31/1	A5 Eastbound Ahead Lane 1	1814	Queue Aver Delay	1 9 secs	2 11 secs	2 13 secs	3 15 secs
31/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	2 11 secs	7 12 secs	2 11 secs	3 12 secs
32/1	A5 Eastbound Right Turn Lane 3	1960	Queue Aver Delay	13 1m 43s	13 1m 52s	6 1m 4s	6 1m 6s
32/2	A5 Eastbound Right Turn Lane 4	1667	Queue Aver Delay	14 2m 14s	14 2m 20s	4 55 secs	4 56 secs

37/1	A5 Westbound Left Turn Lane 1	1751	Queue Aver Delay	2 13 secs	2 13 secs	2 15 secs	2 15 secs
37/2 + 38/1 + 53/1	A5 Westbound Ahead Lane 2	2015	Queue Aver Delay	10 41 secs	12 45 secs	13 31 secs	13 35 secs
37/3 + 38/2 + 53/2	A5 Westbound Ahead Lane 3	2015	Queue Aver Delay	12 50 secs	13 55 secs	12 32 secs	12 36 secs
42/1	Birch Coppice Left Turn Lane 1	1695	Queue Aver Delay	7 44 secs	7 45 secs	6 37 secs	7 42 secs
42/2	Birch Coppice Left Turn Lane 2	1983	Queue Aver Delay	4 38 secs	5 39 secs	8 37 secs	7 41 secs
43/1	Birch Coppice Right Turn Lane 3	1690	Queue Aver Delay	3 41 secs	3 42 secs	7 47 secs	7 47 secs
A5/ Core 42							
46/1	A5 Eastbound Ahead Lane 1	1833	Queue Aver Delay	2 3 secs	3 4 secs	3 4 secs	3 5 secs
46/2	A5 Eastbound Ahead Lane 2	2082	Queue Aver Delay	1 1 sec	1 1 sec	2 3 secs	2 3 secs
47/1	A5 Eastbound Right Turn Lane 3	1667	Queue Aver Delay	2 1m 5s	2 1m 5s	2 1m 30s	2 1m 25s
49/1	A5 Westbound Ahead & Left Turn Lane 1	1957	Queue Aver Delay	16 27 secs	19 30 secs	8 14 secs	7 16 secs
49/2	A5 Westbound Ahead Lane 2	1909	Queue Aver Delay	14 25 secs	15 28 secs	6 12 secs	5 14 secs
51/1	Core 42 Left Turn Lane 1	1695	Queue Aver Delay	3 3 mins	2 2m 46s	3 1m 7s	3 1m 9s
52/1	Core 42 Right Turn Lane 2	1690	Queue Aver Delay	1 8m 42s	1 7m 18s	3 4m 55s	3 4m 45s
A5/ Dordon Roundabout							
91/1	A5 Eastbound Lane 1	N/A	Queue Aver Delay	12 20 secs	11 20 secs	22 22 secs	26 25 secs
91/2	A5 Eastbound Lane 2	N/A	Queue Aver Delay	12 19 secs	10 18 secs	24 21 secs	26 24 secs
92/1 + 92/2 + 93/1	Long Street	N/A	Queue Aver Delay	7 1m 4s	7 1m 8s	6 1m 31s	7 1m 30s
98/1	A5 Westbound Left Turn Slip	N/A	Queue Aver Delay	0 5 secs	0 5 secs	0 5 secs	0 5 secs
97/1 + 98/1	A5 Westbound Ahead Lane 1	N/A	Queue Aver Delay	6 20 secs	6 20 secs	3 8 secs	3 8 secs
97/2 + 98/2	A5 Westbound Ahead Lane 2	N/A	Queue Aver Delay	5 18 secs	6 17 secs	3 7 secs	3 7 secs
111/1	A5 Westbound Right Turn Lane 3	N/A	Queue Aver Delay	2 49 secs	2 48 secs	5 1m 3s	5 1m 5s
100/1	Gypsy Lane	N/A	Queue Aver Delay	2 28 secs	2 29 secs	2 37 secs	2 37 secs

KEY	
#	New traffic lanes as a result of the Local Plan works
#	New traffic lanes as a result of the proposed development mitigation works
	Impact of development results in a reduction in queue of over 10pcu and/ or a reduction in delays of over 1 minute.
	Impact of development results in an increase queue of 10pcu or over and/ or an increase in delay of over 1 minute

Appendix H – Proposed Highway Improvement Drawings





NOTES -

1. ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE.
2. THE INFORMATION SHOWN ON THIS DRAWING IS INTENDED TO PROVIDE A GENERAL OUTLINE OF THE HIGHWAY IMPROVEMENT WORKS.

KEY:

- SITE BOUNDARY 1
- SITE BOUNDARY 2
- INTERVISIBILITY ZONE

PRELIMINARY ISSUE

Rev	Description	Date	Drn / Chk / App
P02	ADJUSTMENT TO SPEED LIMIT SIGNS & INTERVISIBILITY ZONE ADDED	04.12.2023	JG / GW / NB
P01	PRELIMINARY FIRST ISSUE	04.11.2022	LJB / LB / NB

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Client

HODGETTS ESTATES

Project Name

M42 JUNCTION 10
A5 CYCLEWAY IMPROVEMENT

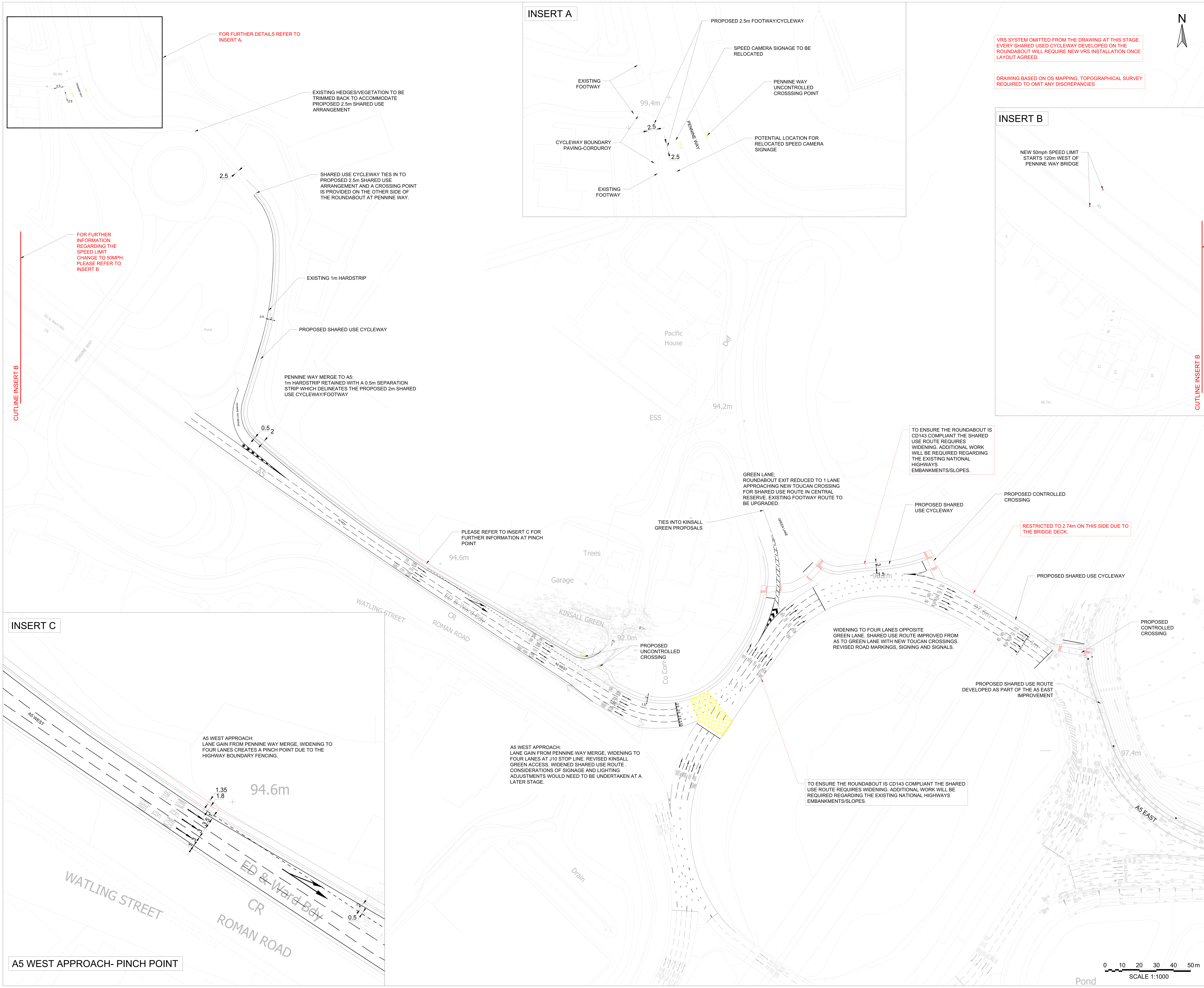
Sheet Title

PROPOSED LAYOUT FOR A5 AND NEW SITE ACCESS

TTE Project Number	Drawn By	Date	Checked By	Date	Approved By	Date	Scale @ A1	Suitability
784-B033920	LJB	Oct"22	LB	Oct '22	NB	Oct '22	1:1000	S3

Client Project Number	Originator	Volume/System	Level/Location	Type/Code	Role	Number	Revision
B033920	TTE	00	ZZ	PL	H	0002	P02

TTE_MT_v1


INSERT A
FOR FURTHER DETAILS REFER TO INSERT A.
EXISTING HEDGES/VEGETATION TO BE TRIMMED BACK TO ACCOMMODATE PROPOSED 2.5m SHARED USE ARRANGEMENT
SHARED USE CYCLEWAY TIES IN TO PROPOSED 2.5m SHARED USE ARRANGEMENT AND A CROSSING POINT IS PROVIDED ON THE OTHER SIDE OF THE ROUNDABOUT AT PENNINE WAY.
FOR FURTHER INFORMATION REGARDING THE SPEED LIMIT CHANGE TO 50MPH. PLEASE REFER TO INSERT B
EXISTING 1m HARDSTRIP
PROPOSED SHARED USE CYCLEWAY
PENNINE WAY MERGE TO A5: 1m HARDSTRIP RETAINED WITH A 0.5m SEPARATION STRIP WHICH DELINEATES THE PROPOSED 2m SHARED USE CYCLEWAY/FOOTWAY
CUTLINE INSERT B
PROPOSED 2.5m FOOTWAY/CYCLEWAY
SPEED CAMERA SIGNAGE TO BE RELOCATED
EXISTING FOOTWAY
PENNINE WAY UNCONTROLLED CROSSSING POINT
CYCLEWAY BOUNDARY PAVING-CORDUROY
POTENTIAL LOCATION FOR RELOCATED SPEED CAMERA SIGNAGE
EXISTING FOOTWAY
VRS SYSTEM OMITTED FROM THE DRAWING AT THIS STAGE. EVERY SHARED USED CYCLEWAY DEVELOPED ON THE ROUNDABOUT WILL REQUIRE NEW VRS INSTALLATION ONCE LAYOUT AGREED.
DRAWING BASED ON OS MAPPING, TOPOGRAPHICAL SURVEY REQUIRED TO OMIT ANY DISCREPANCIES
INSERT B
NEW 50mph SPEED LIMIT STARTS 120m WEST OF PENNINE WAY BRIDGE
TO ENSURE THE ROUNDABOUT IS CD143 COMPLIANT THE SHARED USE ROUTE REQUIRES WIDENING. ADDITIONAL WORK WILL BE REQUIRED REGARDING THE EXISTING NATIONAL HIGHWAYS EMBANKMENTS/SLOPES.
GREEN LANE; ROUNDABOUT EXIT REDUCED TO 1 LANE APPROACHING NEW TOUCAN CROSSING FOR SHARED USE ROUTE IN CENTRAL RESERVE. EXISTING FOOTWAY ROUTE TO BE UPGRADED.
PROPOSED SHARED USE CYCLEWAY
PROPOSED CONTROLLED CROSSING
RESTRICTED TO 2.74m ON THIS SIDE DUE TO THE BRIDGE DECK.
TIES INTO KINSALL GREEN PROPOSALS
PLEASE REFER TO INSERT C FOR FURTHER INFORMATION AT PINCH POINT
PROPOSED SHARED USE CYCLEWAY
PROPOSED UNCONTROLLED CROSSING
WIDENING TO FOUR LANES OPPOSITE GREEN LANE. SHARED USE ROUTE IMPROVED FROM A5 TO GREEN LANE WITH NEW TOUCAN CROSSINGS. REVISED ROAD MARKINGS, SIGNING AND SIGNALS.
PROPOSED CONTROLLED CROSSING
PROPOSED SHARED USE ROUTE DEVELOPED AS PART OF THE A5 EAST IMPROVEMENT
INSERT C
A5 WEST APPROACH: LANE GAIN FROM PENNINE WAY MERGE, WIDENING TO FOUR LANES CREATES A PINCH POINT DUE TO THE HIGHWAY BOUNDARY FENCING.
A5 WEST APPROACH: LANE GAIN FROM PENNINE WAY MERGE, WIDENING TO FOUR LANES AT J10 STOP LINE. REVISED KINSALL GREEN ACCESS. WIDENED SHARED USE ROUTE . CONSIDERATIONS OF SIGNAGE AND LIGHTING ADJUSTMENTS WOULD NEED TO BE UNDERTAKEN AT A LATER STAGE.
TO ENSURE THE ROUNDABOUT IS CD143 COMPLIANT THE SHARED USE ROUTE REQUIRES WIDENING. ADDITIONAL WORK WILL BE REQUIRED REGARDING THE EXISTING NATIONAL HIGHWAYS EMBANKMENTS/SLOPES.
A5 WEST APPROACH- PINCH POINT
WATLING STREET
ROMAN ROAD
KINSALL GREEN
A5 EAST
0 10 20 30 40 50 m
SCALE 1:1000
N

1. THIS DRAWING SHOULD BE READ IN RELATION TO THE SUBJECT OF THE TITLE ONLY. OTHER INFORMATION SHOWN ON THE DRAWING IS TO BE CONSIDERED INDICATIVE ONLY. REFERENCE SHOULD BE MADE TO APPROPRIATE DRAWING SERIES/SPECIFICATIONS FOR OTHER INFORMATION.
2. ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.

PRELIMINARY ISSUE

Rev	Description	Date	Drn	Chk	App
P04	AMENDMENTS TO ROAD MARKINGS	04.12.2023	JG	GW	NB
P03	MINOR AMENDMENTS	25.10.2023	LJB	LB	NB
P02	MINOR AMENDMENTS	14.08.2023	LJB	LB	NB
P01	PRELIMINARY FIRST ISSUE	21.10.2022	LJB	LB	NB

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Client: HODGETTS ESTATES

Project Name
M42 JUNCTION 10 ROUNDABOUT IMPROVEMENT

Sheet Title
PROPOSED LAYOUT

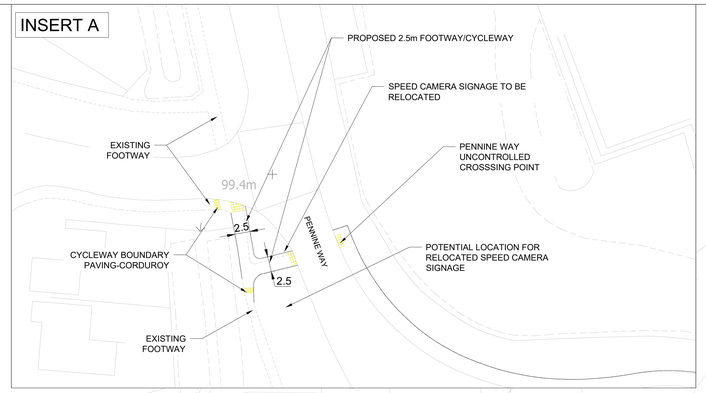
TTE Project Number	Drawn By	Date	Checked By	Date	Approved By	Date	Scale @ A1	Suitability
784-B033920	LJB	Sep'22	LB	Sep '22	NB	Sep '22	1:1000	S3

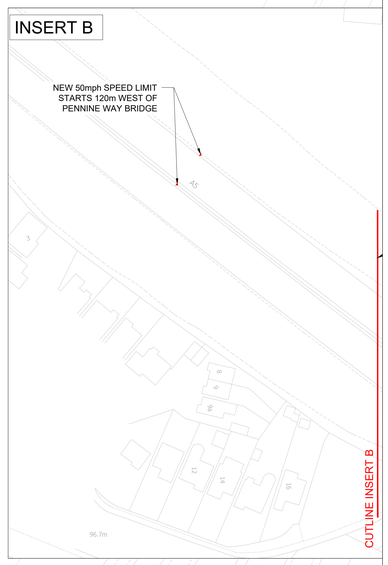
Client Project Number	Originator	Volume/System	Level/Location	Type/Code	Role	Number	Revision
B033920	TTE	00	ZZ	SK	H	0001	P04

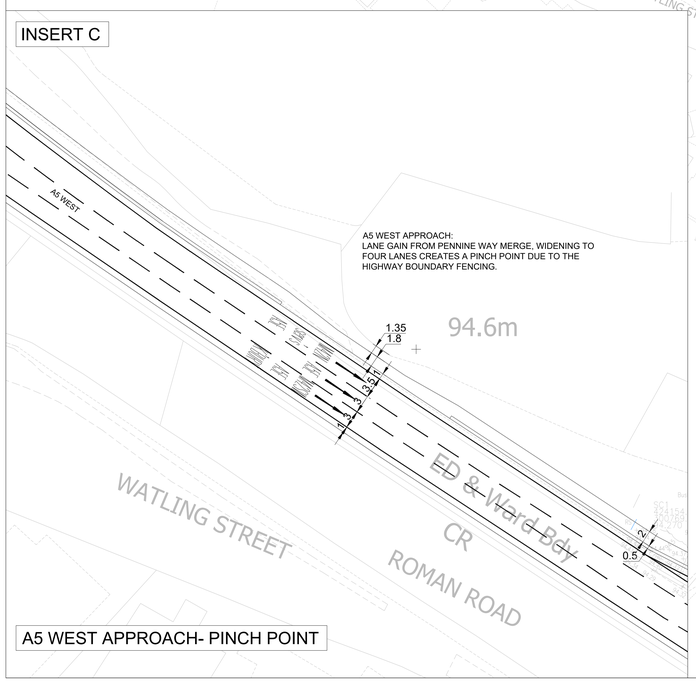
 TTE_MT_v1

Client: Hodgetts Estates Limited Date: 8th March 2024

Appendix I – Additional Mitigation Drawings







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2. ALL DIMENSIONS ARE IN METRES UNLESS SPECIFIED OTHERWISE.

PRELIMINARY ISSUE

Rev	Description	Date	Drn / Chk / App		
P01	PRELIMINARY FIRST ISSUE	04.12.203	JG	GW	NB

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Client

HODGETTS ESTATES

Project Name

M42 JUNCTION 10
ROUNDABOUT IMPROVEMENT

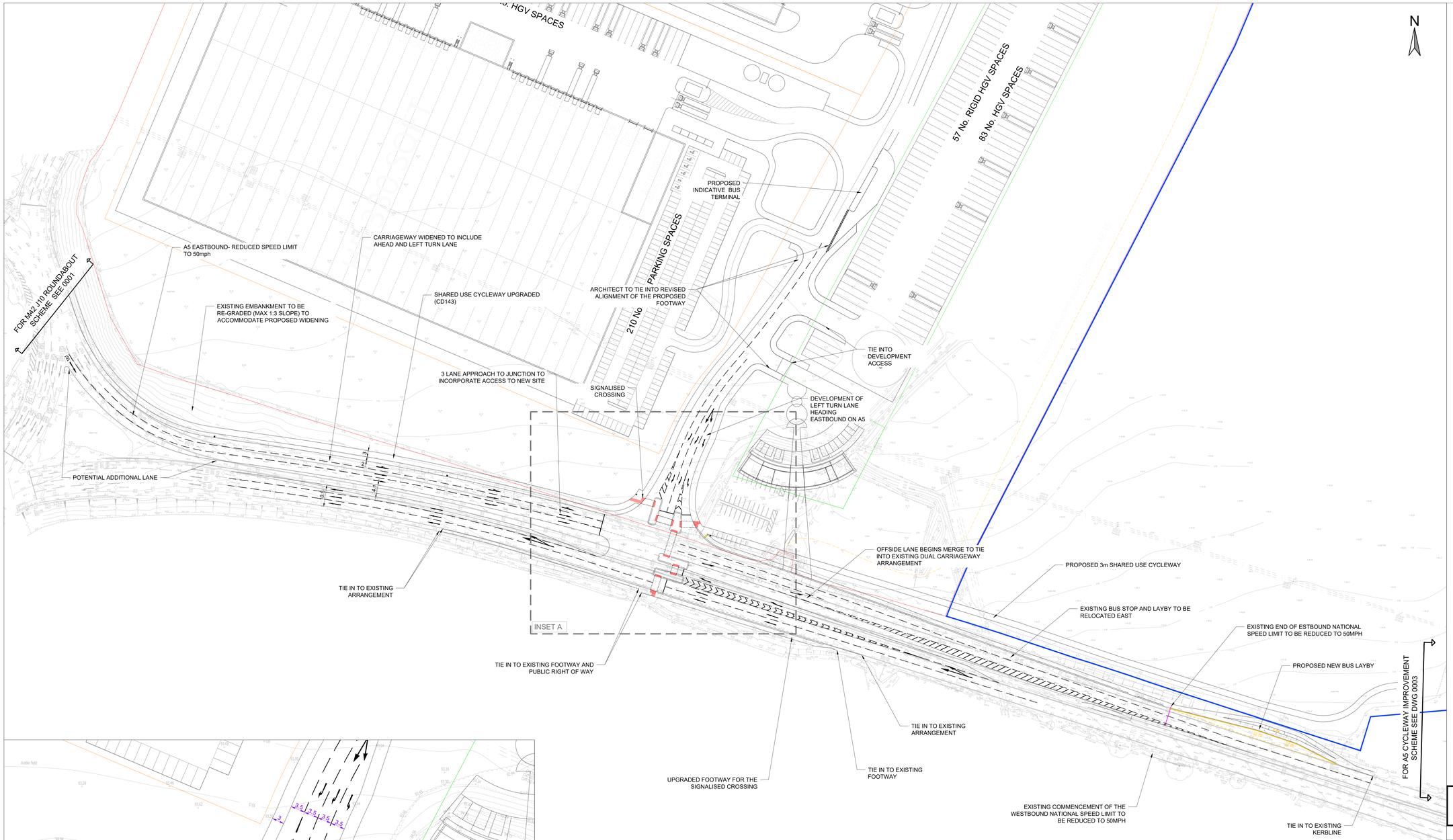
Sheet Title

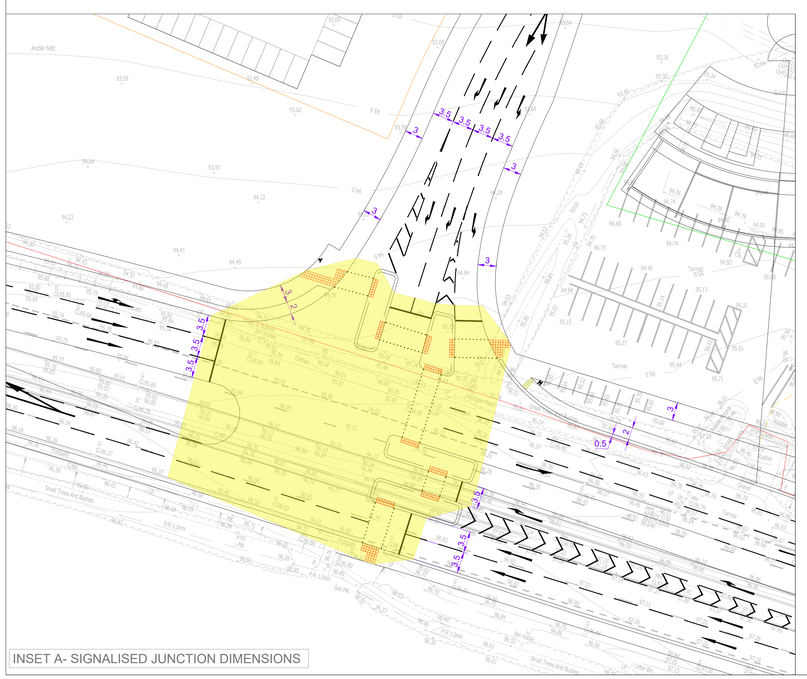
POTENTIAL ADDITIONAL MITIGATION

TTE Project Number	Drawn By	Date	Checked By	Date	Approved By	Date	Scale @ A1	Suitability
784-B033920	JG	DEC' 23	GW	DEC' 23	NB	DEC' 23	1:1000	S3

Client Project Number	Originator	Volume/System	Level/Location	Type/Code	Role	Number	Revision
B033920 -	TTE -	00 -	ZZ -	SK -	H -	0010	P01

TTE_MT_v1





0 10 20 30 40 50 m
SCALE 1:1000

NOTES -

1. ALL DIMENSIONS IN METRES UNLESS STATED OTHERWISE.
2. THE INFORMATION SHOWN ON THIS DRAWING IS INTENDED TO PROVIDE A GENERAL OUTLINE OF THE HIGHWAY IMPROVEMENT WORKS.

KEY:

- SITE BOUNDARY 1
- SITE BOUNDARY 2
- INTERVISIBILITY ZONE

PRELIMINARY ISSUE

Rev	Description	Date	Drn	Chk	App
P01	PRELIMINARY FIRST ISSUE	04.12.2023	JG	GW	NB

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TETRA TECH

Client

HODGETTS ESTATES

Project Name

M42 JUNCTION 10
A5 CYCLEWAY IMPROVEMENT

Sheet Title

POTENTIAL ADDITIONAL MITIGATION

TTE Project Number	Drawn By	Date	Checked By	Date	Approved By	Date	Scale @ A1	Suitability
784-B033920	JG	DEC '23	GW	DEC '23	NB	DEC '23	1:1000	S3

Client Project Number	Originator	Volume/System	Level/Location	Type/Code	Role	Number	Revision
B033920	- TTE	- 00	- ZZ	- SK	- H	- 0011	P01

TTE_MT_v1