Growing Baldock

Environmental Statement Addendum
Volume 2: Figures & Appendices

Chapter 4: Transport

Appendix 4.1 Transport Assessment Addendum

May 2026

Urban&Civic Hertfordshire

REPORT

Growing Baldock

Transport Assessment Addendum

Client: Urban&Civic

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HASKONING UK LTD.

4th Floor
15 Bermondsey Square
London
SE1 3UN
United Kingdom
Mobility & Infrastructure
VAT registration number: 792428892

Email: info@uk.haskoning.com
Website: www.integratedtransportplanning.com

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Author(s):	Zoe Trower
Drafted by:	Zoe Trower/Mark Lever-Green
Checked by:	Mark Lever-Green
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Executive Summary

This Transport Assessment Addendum (TAA) has been prepared by ITP on behalf of Urban&Civic (U&C) to strategically validate the findings of the Transport Assessment (TA) submitted in October 2025 in support of the Growing Baldock (GB) outline planning application.

The TAA has been prepared in accordance with the approach agreed with Hertfordshire County Council (HCC), National Highways (NH) and North Hertfordshire District Council (NHDC), and has three defined purposes:

- to provide an independent strategic validation of the TA's local highway modelling using Hertfordshire's COMET strategic transport model;
- to confirm whether COMET identifies any material rerouting or capacity effects not previously tested locally; and
- to close out residual stakeholder comments through proportionate, targeted verification, where justified.

COMET is a strategic, WebTAG compliant multimodal model used by HCC for Local Plan and cumulative testing. It is not a substitute for detailed operational junction modelling. Accordingly, COMET outputs are used in this TAA to check trip distribution, rerouting behaviour and cumulative context, while local junction modelling remains the key tool for testing capacity, mitigation and scheme design.

A like-for-like comparison has been undertaken between COMET outputs and the TA's local models for:

- the 2029 interim scenario (without full transport package in place),
- the 2043 full development scenarios (with full transport package in place), and
- a 2043 Local Plan cumulative "worst-case" scenario, in which all relevant allocations are assumed to come forward.

Across all directly comparable junctions and scenarios, COMET outputs show a strong correlation with the TA's local modelling results. Where COMET indicated higher flows or pressure at locations not previously modelled in detail, four junctions only were taken forward for additional local testing, in line with the scope agreed through the Transport Working Group (TWG).

In each case, the additional local modelling confirms that junctions operate within capacity or within accepted operational tolerances, and that no additional mitigation is required beyond that already identified in the TA.

COMET further demonstrates that the vision-led transport strategy is performing as intended: discouraging through-traffic through Baldock, encouraging use of the Strategic Road Network (SRN), and reducing these through-traffic movements on sensitive local town-centre streets.

On this basis, the transport evidence is robust, proportionate and independently validated, and the development does not give rise to a severe residual cumulative impact on the highway or transport network, in accordance with the National Planning Policy Framework (NPPF).

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1 Introduction

1.1 Overview

This Transport Assessment Addendum (TAA, or the ‘addendum’) has been prepared by ITP on behalf of Urban&Civic (U&C) and supplements the Transport Assessment submitted as part of the Growing Baldock Outline Planning Application in October 2025 (Ref: 25/02571/OP), and the Interim Transport Response note prepared in February 2026. The Growing Baldock Outline Planning Application is for:

“Outline planning application with all matters reserved except for means of highway access into the development from the A505/Royston Road, North Road and Clothall Road for: up to 3,200 homes, up to 16ha of employment, waste and leisure infrastructure, a mixed use local centre, up to 1 secondary school, up to 2 x primary schools, up to 1 SEND school, health hub, green infrastructure (including parks, formal sports provision, play, habitat areas, informal open space and structural planting), internal street network, access junctions and railway crossing, public transport infrastructure, pedestrian/cycle network (including PRoW diversions, active travel routes, mobility hubs and crossing of the railway), utilities and drainage infrastructure (including diversions of existing and provision of new infrastructure, pumping stations, sustainable drainage, primary substations, rising main/strategic sewer and renewable energy infrastructure), ground remodelling/earthworks and any necessary demolitions (as amended by plans and documents received 26.02.2026).”

The Local Planning Authority is North Herts District Council (NHDC), and the Local Highway Authority is Hertfordshire County Council (HCC). National Highways is the Strategic Highway Authority, with responsibility locally for the A1(M).

At the time of the planning submission, the Hertfordshire COMET strategic transport model was not ready for use and therefore could not be included within the Transport Assessment (TA). It was agreed with HCC, National Highways and NHDC that the initial Transport Assessment would be submitted as part of the application documentation based on local modelling undertaken by ITP, with a TAA to follow once the COMET model was ready and available for use. WSP was subsequently commissioned by U&C, via HCC, to undertake the COMET modelling work.

COMET is HCC’s WebTAG compliant, multimodal, countywide model used for local plan testing and developer testing, with a base year of 2023, and forecast year datasets covering 2029 and 2043.

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COMET is a strategic level model and does not replace the detailed local transport modelling presented in the TA. COMET has been used to test and validate the TA findings, particularly related to development trip assignment, rerouting of background traffic and highway network capacity. COMET has also tested a cumulative sensitivity scenario, which includes all potential Local Plan site allocations, as a worst-case assessment.

With the COMET modelling completed, this addendum presents comparisons between the COMET outputs with the ITP local modelling outputs, already presented in the TA for the key junctions. Therefore, ITP recommend that this TAA is read in conjunction with TA.

1.2 Scope of Transport Assessment Addendum

This addendum is largely focussed on highway-related matters, while the Vision-Led strategy remains as presented within the TA, including the overall focus on active travel and public transport as key to the sustainability of the site.

With respect to Growing Baldock, a Vision-Led approach refers to a shift away from motor vehicle travel towards walking, cycling and using public transport, supporting placemaking and ensuring daily activities can be undertaken in a sustainable way, consistent with local and national policy.

This TAA presents the findings of the strategic traffic modelling exercise, making use of the COMET model. The TAA will focus on providing responses to the following five points, which were outlined in the TA for the strategic modelling work to address:

1. COMET has been used as the agreed tool to test and validate the assumptions and outcomes of the TA, including validating the trip assignment assumptions and used to highlight whether and where additional assessments could or would be required.
2. The local modelling presented in the TA was based on a static assignment of development trips. Whereas, COMET, as a strategic model, has been used to test dynamic rerouting of all trips based on cumulative changes to the network and development impacts beyond this application.
3. COMET has been used to validate and confirm that the proposed package of mitigation measures and active travel interventions set out in the TA are having the desired effect of encouraging 'through traffic' movements to stay on the primary and strategic road networks, rather than using the more sensitive local streets in Baldock, and that there are no severe impacts on neighbouring villages (in accordance with the National Planning Policy Framework (NPPF) wording).
4. The outputs from the strategic model have informed whether other local junctions require reassessment as a result of the dynamic rerouting that will be picked up in COMET, with updated modelling being presented in this addendum as necessary.

5. COMET has also been used to test a cumulative scenario, incorporating all Local Plan site allocations for housing and employment growth forecast over the period of 2023 to 2043. This is a worst-case situation, as it assumes all site allocations would come forward by 2043, even though this is unlikely.

In summary, the COMET outputs are being used to test and validate the key assumptions made in TA in terms of trip distribution and assignment; the local modelling of impacts on the highway network; and the impact of the proposed transport interventions (including introduction of a single-lane shuttle working on Station Road and low-traffic routes to prioritising walking and cycling). This TAA also covers any residual stakeholder comments.

The TAA is split into two main sections, as follows:

Traffic Modelling

The traffic modelling section provides an overview of the outputs from the strategic COMET modelling exercise. The strategic COMET modelling has been progressed as an independent comparison exercise to test and validate the TA. A comparison is presented in this addendum between the COMET outputs with the ITP local modelling outputs, already presented in the TA for the key junctions.

Where the comparison exercise highlights significant differences in traffic flow or junction capacity in the COMET outputs, these are set out with commentary in this addendum. Where the need for additional local modelling has been identified, this has been undertaken and the outputs presented in this TAA.
The comparison exercise also tests and validates planned mitigation measures, such as junction improvements and active travel interventions, identified in the TA.

Residual Stakeholder Comments

The outstanding stakeholder comments section provides responses on points that were not covered in the Interim Transport Response note dated 13th February 2026 and any additional comments raised by stakeholders in the Transport Working Group meeting dated 11th March 2026 (the Transport Working Group is made up of key stakeholders, including NHDC, HCC, National Highways, U&C, and ITP, which has met on a regular basis over the last eighteen months focused on transport matters connected to Growing Baldock).

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2 Traffic Modelling Comparison

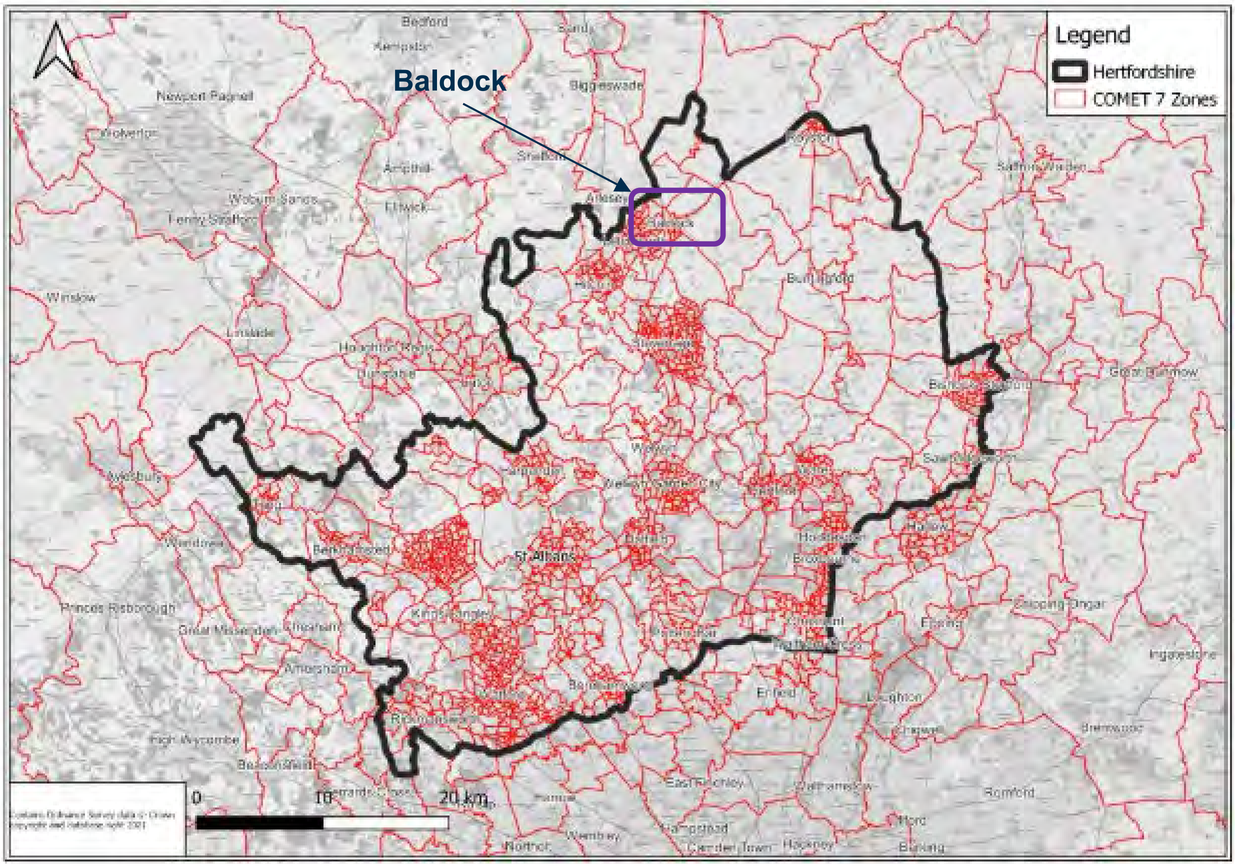
To ensure a consistent analysis, there have been no changes made to assumptions regarding development quantum and trip generation, and these remain as set out in the TA.

2.1 COMET Model Background

The COMET strategic model has been independently run by WSP in agreement with HCC. Key outputs in this TAA have been drawn from WSP's Technical Notes (see **Appendix A**), and WSP provided the figures in this section, for the purpose of assessing the impacts of Growing Baldock.

The strategic COMET model covers a wide geographic area, encompassing the whole of Hertfordshire, incorporating A, B and C classified roads, as well as Motorways and trunk roads, the full extent of the COMET model can be seen in **Figure 2-1** (with Baldock highlighted in purple**)**. It is a multi-modal, zonal model based on the Census Medium Super Output Areas (MSOA), with trips being assigned to simulate typical weekday travel patterns covering the peak times of AM (08:00-09:00) and PM (17:00 to 18:00).

Figure 2-1: Full extent of COMET model, showing zonal system



In responding to the five key points in **Section 1.2**, this TAA reports the results of the like-for-like comparison between the local modelling outputs presented in the TA with the strategic COMET modelling outputs undertaken and presented by WSP. This like for like comparison has been used to test and validate the local modelling results in the TA, establishing where further local modelling analysis is required, with additional modelling outputs being set out subsequently in **Section 2.6**.

Figure 2-2 is a zoomed in extract of the COMET model, detailing the links and zones centred on the Baldock area. This shows the routes connecting the town centre with strategic routes such as the A1(M) and A505/A507.

Figure 2-2: Extract of COMET Model Network centred on Baldock Area

Given the wide geographic area covered by COMET, the outputs for comparison have been focused on the key junctions tested in the TA within the Baldock area. These were agreed at scoping stage with HCC, NHDC and National Highways.

Figure 2-3 details the 19 key junctions, with the associated COMET junction references, within Baldock modelled area. These outputs associated with these junctions will form the basis of the like-for-like comparison exercise.

Figure 2-3: COMET key junctions within Baldock area

2.2 Scenarios Tested

In agreement with stakeholders, COMET has been run for the scenarios summarised in **Table 2-1**.

Table 2-1: COMET Modelling Scenarios

Scenario	Reference	Description of Scenario
S1 Do Minimum	S1	2029 NTEM Without development
S2	S2	2029 NTEM with Interim development
S3 Do Minimum	S3DM	2043 NTEM without development
S3-1	S3-1	2043 NTEM with full development (KTS relocation to BA3)
S3-2	S3-2	2043 NTEM with full development
S5 Do Minimum	S5	2043 Local Plan without development
S6-1	S6-1	2043 Local Plan with full development (KTS relocation to BA3)

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To ensure a like-for-like comparison is being made, there have not been any changes made to the development specification from that presented in the TA (see Table 6.1 in the TA), with that undertaken in the COMET model.

Alongside there being no changes to the development quantum, the same trip generation and trip distribution patterns based on MSOA data, the same development delivery phasing, the same development zone references and the same package of mitigation measures and active travel interventions being proposed have been applied.

The local modelling base year was established from traffic count surveys conducted in 2022, with the COMET model having a base year of 2023, with growth applied to the traffic surveys, ensuring no differences in traffic flows. Both the local and strategic modelling base years have been subjected to background traffic growth, based on the National Trip End Model (NTEM), to generate a comparable future COMET 2029 dataset.

Key points to note:

- Scenario 1 reflects a 2029 baseline year without development
- Scenario 2 is an interim opening year with 650 homes being delivered in development zones BA1 and the completion of BA2 (200 homes), but with no access road linking North Road and Royston Road through BA1
- All future scenarios have been taken from the existing 2023 COMET base year, and the 2029 NTEM and 2043 NTEM datasets to avoid the need for new scenarios in the model.

The future year scenarios tested in COMET have been guided by the NTEM forecast years, with an interim scenario year of 2029 and the final full development build scenario in 2043. These are robust model years, aligned with the scenarios tested in the local modelling.

Account has also been made towards the future secondary school (Knights Templar School – KTS) options that will be determined at a later date. **Table 2-2**, details the two scenarios (S3-1 and S3-2) which have been tested in COMET.

Table 2-2: Flexible Land Uses connected to BA3 taken into account within COMET model

Option 1 – Knights Templar expansion and relocation to BA3
• Relocation and expansion (up to 12FE) of Knights Templar school to BA3. BA3 to accommodate SEND school and secondary school. Note that no removal of existing trips from the current KTS site has been included in the calculations in order to present a highly robust but transparent scenario where it is accepted that the current site will likely be redeveloped.
Option 2 – Knights Templar expansion
• Expansion of Knights Templar on existing site. BA3 to accommodate SEND school and residential (c. 250 units). In this scenario the trips associated with the expansion of KTS have not been included separately so as to avoid double counting. Residential trip generation already accounts for trips to school originating from the new dwellings.

There is a third option connected to the secondary school, which proposes a smaller secondary school on BA3, but this has not been included because this option generates significantly lower demand than Options 1 and 2, so no further strategic COMET modelling was required.

2.3 Assessment Study Area

Figure 2-4 shows the key COMET junctions (see **Figure 2-3)** within Baldock compared with the ITP local junctions modelled and the associated junction references. **Table 2.3** lists the corresponding junction name associated with the COMET junction reference.

Figure 2-4: Comparison of junction ID numbers between COMET and ITP

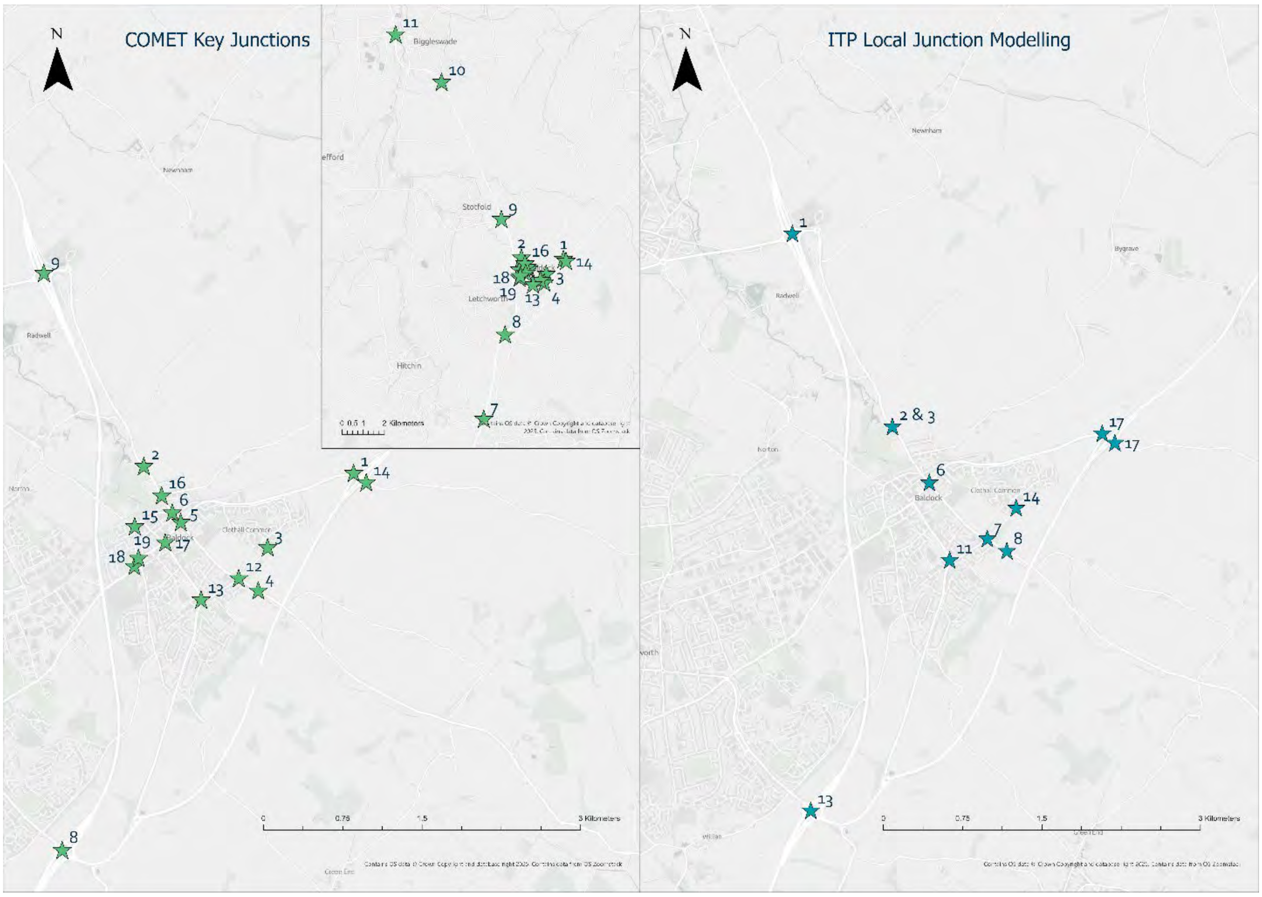

Table 2-3: WSP COMET reference number and associated Junction aligned with Figure 2-4

WSP Junction ID	Junction Name
1	A505 / Royston Road / BA1 access
2	A507 North Road / BA1 northern access
3	BA3 access / Wallington Road
4	BA2 access / Clothall Road
5	A507 Station Road / Royston Road / Whitehorse Street / Clothall Road
6	A507 Station Road / Icknield Way / Football Close
7	A1(M) Junction 8
8	A1(M) Junction 9
9	A1(M) Junction 10
10	A1(M) / London Road at Biggleswade
11	A1(M) / Hill Lane at Biggleswade
12	Clothall Road / Wallington Road
13	London Road / South Road / High Street
14	A505 / Wallington Road
15	Icknield Way / Norton Road
16	A507 North Road / Bygrave Road
17	High Street / Whitehorse Street / Hitchin Street
18	B656 Letchworth Road / Weston Way
19	B656 Letchworth Road / Norton Road

2.4 Analysis of Results

2.4.1 Methodology

This section presents our methodology for testing and validating the TA local modelling findings, making use of the COMET outputs. The analysis is based on a comparison between the COMET outputs and those set out in the TA, based on the following outputs:

- AM and PM Growing Baldock with development distribution from COMET
- differences in AM and PM peak traffic flow volumes between the two modelling outputs
- differences in AM and PM performance levels and delay covering key local junctions
- comparison plot of AM peak junction performance across all COMET sites with local models

Different traffic modelling software has been used for the local modelling, each of which presents results in a slightly different format. To allow for consistent analysis across junctions, **Table 2-4** sets out how performance is defined from the results reported across each of the software packages used.

Table 2-4: Performance comparison between different the traffic software

Performance	Junctions	LinSig	VISSIM	COMET
<0.8	RFC < 0.8	DoS < 80%	LOS_A, B	V/C < 0.8
0.8-0.85	0.8 < RFC < 0.85	80% < DoS < 85%	LOS_C	0.8 < V/C < 0.85
0.85-1.00	0.85 < RFC < 1.00	85% < DoS < 100%	LOS_D	0.85 < V/C < 1.00
= 1.00	RFC = 1.00	DoS =100%	LOS_E	= 1.00
>1.00	RFC >1.00+	DoS >101% +	LOS_F	V/C > 1.00

The data comparison outputs also include delay, reported as total delay at the junction in seconds. It is included because it provides another output on which junction operation can be tested, as delay indicates how long a vehicle is held up compared with normal free-flow conditions.

COMET outputs are checked against the local junction modelling findings from the TA for all key junctions listed in **Table 2-5.**

Table 2-5: Key Junctions in Local Modelling

WSP Junction ID	ITP Junction ID	Junction Name
1	17	A505 / Royston Road / BA1 access
2	2 & 3	A507 North Road / BA1 northern access
3	14	BA3 access / Wallington Road
4	8	BA2 access / Clothall Road
5	6	A507 Station Road / Royston Road / Whitehorse Street / Clothall Road
8	13	A1(M) Junction 9
9	1	A1(M) Junction 10
12	7	Clothall Road / Wallington Road
13	11	London Road / South Road / High Street

Further testing has only been targeted at those junctions showing material differences, where COMET locations are showing higher levels of congestion or significantly lower levels of available capacity. The thresholds and considerations informing further testing include:

- Noticeable traffic volume differences greater than 10% (representing a typical daily variation) in AM or PM peak flows on the network, focused on the key local model junctions in **Table 2-5**.
- Observable worsening junction performance, showing lower levels of available capacity, where the outputs are above >**1.00+** in COMET, see **Table 2.4.** Or where junction performance is significantly different when compared with the TA local modelling results, indicating potential operational issues not captured in the TA findings.
- For junction locations not previously subject to local modelling in the TA, junction performance will be utilised to determine whether new local modelling is required, and if so, new models will be run using COMET flows and presented in this TAA.
- Stakeholder discussions made in Transport Working Groups held in 2026, attended by HCC, NHDC and National Highways, following the COMET outputs being presented by WSP.

Where any individual or combination of thresholds or conditions were met, a review was undertaken to determine whether further detailed local modelling would be necessary, using COMET traffic outputs. Junctions identified as being subjected to further detailed analysis, were agreed with stakeholders and are presented in **Section 2.6** of this TAA.

2.4.2 2029 Interim ‘S2’ Comparison

Figure 2-5 shows the 2029 Interim S2 development traffic distribution modelled in COMET. This interim scenario shows the traffic distribution of 850 dwellings and 39,250sqm of non-residential uses proposed to be built out by 2029 focused on sites BA1, BA2 and BA10. There is no ‘link’ access road proposed in this scenario, but interventions modelled in COMET include the bus access from Royston Road (provides bus priority), new pedestrian crossings (removes traffic barriers and provides links to encourage walking), closure of access on Icknield Way (provides a traffic free route and prevents inappropriate routing of through traffic), one-way shuttle operation under railway bridge (enables delivery of active travel corridor), bus access into BA1 and changes to the station junction (provision of bus priority measures).

Figure 2-5: Extract from COMET with AM Peak Growing Baldock 2029 Development Traffic Distribution

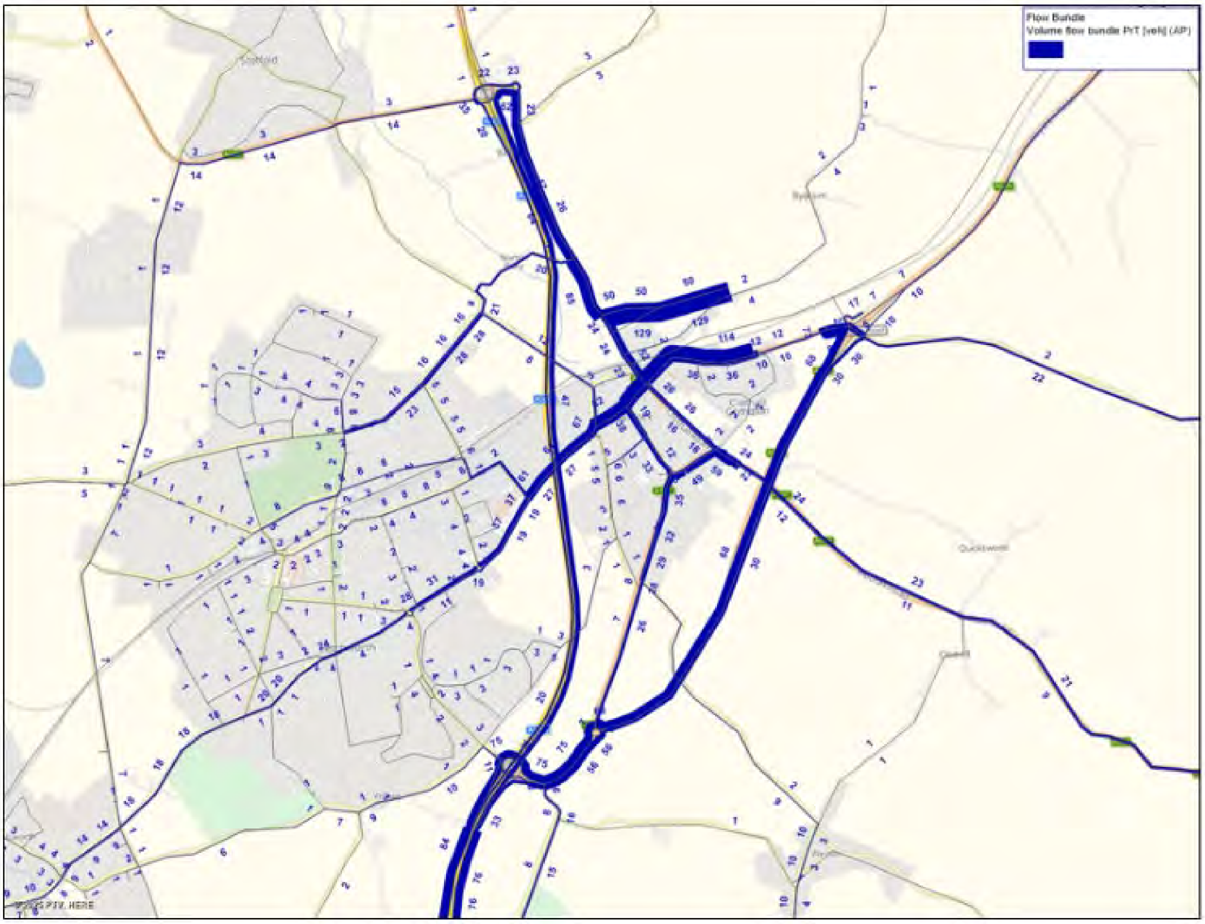

Figure 2-6: Extract from COMET with PM Growing Baldock 2029 Development Traffic Distribution

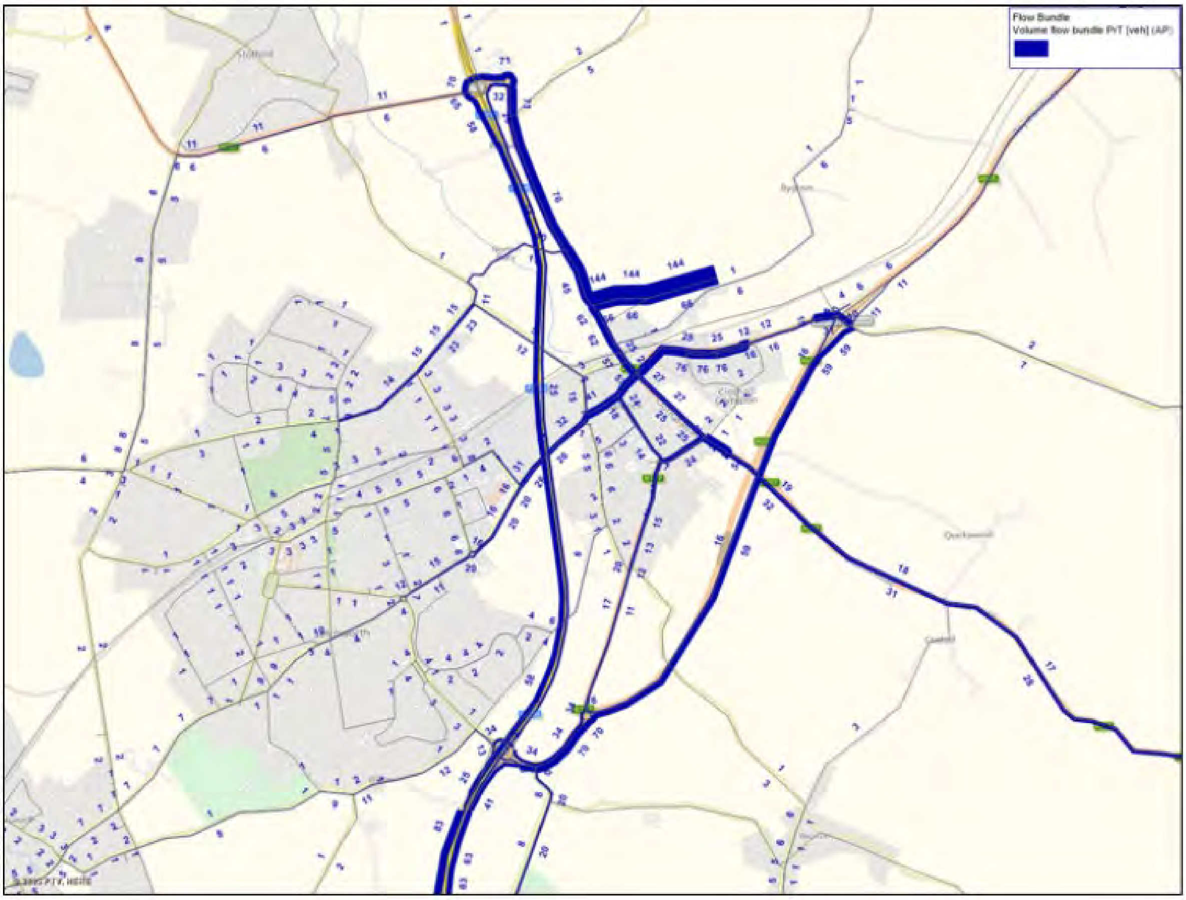

Figure 2-5 and **Figure 2-6** identifies a general increase of traffic in both peak periods generated by the interim development, resulting in additional trips on the A505 and London Road, the higher traffic flows focused on the major roads. There are traffic increases on Norton Road, Hitchin Street / Whitehorse Street, High Street and the A505.

As a result of the proposed changes on North Road / Station Road, including the introduction of signalised junctions and one-way shuttle traffic under the railway bridge, traffic is being directed onto the Strategic Road Network, rather than along the A507 with some more modest increases in traffic seen on Norton Road and the High Street.

Figure 2-7 illustrates the 2029 Interim S2 traffic flow comparison of the key junctions assessed in COMET and the TA local models (associated ID and junction names listed in **Table 2-4)**

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Figure 2-7: Traffic flow comparison for 2029 Interim Scenario S2

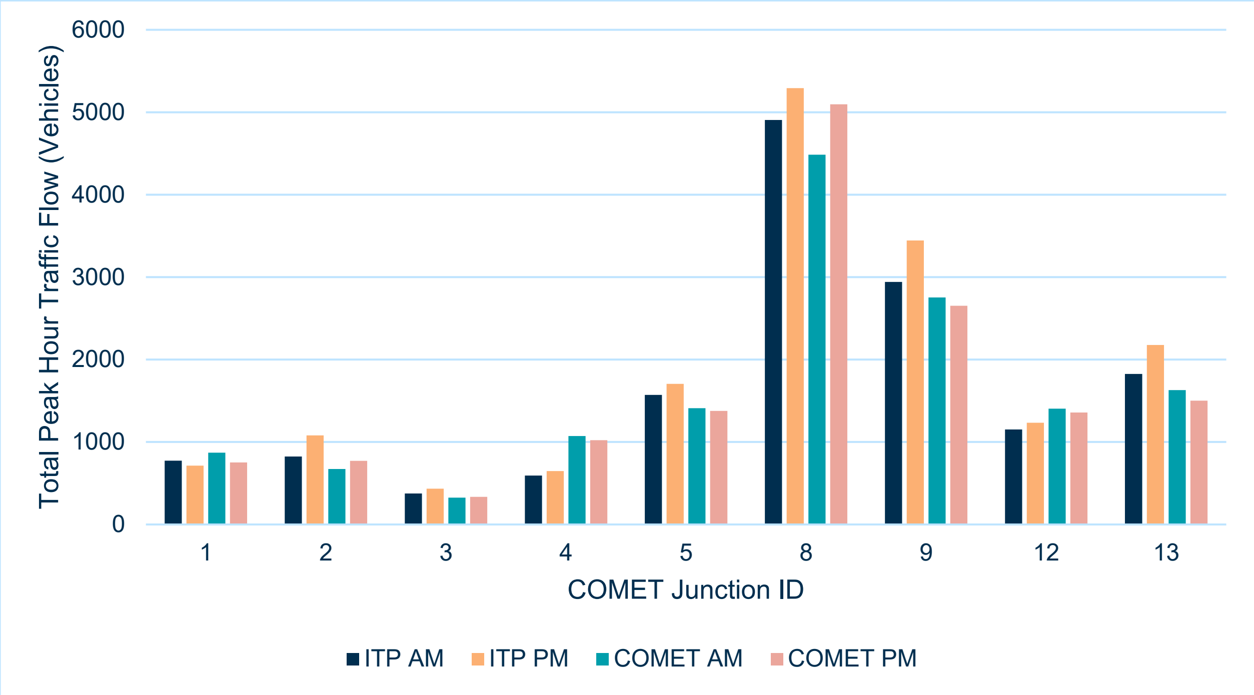

Figure 2-7 details that across the nine key junctions, six of the junctions are showing lower volumes in COMET than was forecast in the TA, namely junctions 2, 3, 5, 8, 9 and 13. This demonstrates that the local model findings in the TA are robust. The remaining three junctions, 1, 4 and 12 show volumes higher than forecast in the TA. The differences are minor and remain within an acceptable level of tolerance. The modelling conclusions from the TA for these junctions therefore remain valid.

Following the traffic volume comparisons, junction performance level comparisons have been undertaken for the peaks, comparing outputs for each key junction, using the performance criteria set in **Table 2-5**.

Table 2-6 and **Table 2-7** compare the peak periods performance levels in terms of capacity and recorded total junction delay in seconds, between COMET outputs and the ITP local modelling outputs.

Table 2-6: Junction Performance comparison for 2029 AM Interim Scenario S2

WSP ID	ITP ID	COMET (2029)		ITP Local Junctions (2033)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	<0.8	30-60s	0.85-1.00	**143s**
3	14	<0.8	<30s	-	-
4	8	<0.8	<30s	<0.8	<30s
5	6	0.8-0.85	<30s	0.85-1.00	30-60s
8	13	=1.00	30-60s	=1.00	60-120s
9	1	0.8-0.85	<30s	<0.8	<30s
12	7	<0.8	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

Table 2-7: Junction Performance comparison for 2029 PM Interim Scenario S2

WSP ID	ITP ID	COMET (2029)		ITP Local Junctions (2033)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	<0.8	30-60s	0.85-1.00	**160s**
3	14	<0.8	<30s	-	-
4	8	<0.8	<30s	<0.8	<30s
5	6	0.8-0.85	30-60s	0.85-1.00	30-60s
8	13	=1.00	30-60s	=1.00	60-120s
9	1	<0.8	<30s	<0.8	<30s
12	7	<0.8	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

All junctions in the Interim S2 scenario are forecast to operate at or below capacity, with the majority of junctions experiencing low delays (<30 seconds) and performance of <0.80. A few junctions are showing signs of increased pressure:

- Junctions 2 & 3 (ITP ID 2 & 3): Performance is shown as worse in the ITP local modelling, with capacity of 0.8-1.00 with COMET showing capacity of 0.8-0.85, in both peaks.

- Junction 5 (ITP ID 6): Performance is shown as near capacity 0.8–0.85 in COMET, with ITP's local modelling showing a worse outcome of 0.85-1.00 in both peaks.
- Junction 8 (ITP ID 13): The most constrained junction is operating at capacity =1.00 in both COMET and ITP local modelling, in the AM and PM peaks.

No junctions are recorded as operating above capacity in this scenario. The performance results further validate the local modelling findings reported in the TA.

Figure 2-8 provides a visual junction comparison plot for the AM peak (the peak with the greatest impact) on junction performance levels across the Baldock area.

Figure 2-8: Interim AM Junction plot of Performance Comparison

The plot shows most junctions in COMET performing well, with junction performance as green (<0.8). There are noted hotspot clusters, with both plots showing a small number of constrained junctions with performance as red (0.85-1.00) on the main corridor (North Road, Clothall Road, the High Street and London Road) and at the junction of the A1(M) to the south. The plots define broad stability across both the COMET and ITP local models; with issues being localised.

In recognition that junction 8, the strategic junction A1(M), is operating at capacity, further detailed testing has been undertaken (**Section 2.6**).

2.4.3 Future Scenario Modelling Considerations

In the 2029 Interim scenario, COMET does not include the full suite of transport interventions proposed. For the final year scenarios, this is included. The following junctions will have improvements in place as modelled in the COMET scenarios S3-1 and S3-2:

- Junction of A507 Station Road / Royston Road / Whitehorse Street / Clothall Road
- Icknield Way and Football Close
- North Road (BA1 accesses and active travel corridor)
- Royston Road (indicative BA10 access junctions)
- Royston Road and Yeomanry Drive (bus gate)
- Connection between North Road and Royston Road (through BA1)

The comparison between the COMET model and ITP local modelling outputs, take into account these measures.

2.4.4 2043 NTEM 'S3-1' Comparison

Figure 2-9 and **Figure 2.10** show the 2043 Development traffic distributed on the network, as modelled by COMET. The traffic flow distribution for this 2043 S3-1 full development scenario, represents Option 1 in **Table 1-1**, with The Knights Templar School (KTS) being relocated to the development site BA3.

This scenario is a robust assessment as the traffic flows connected to the existing KTS have not been removed from the network. This, in effect, creates a double counting situation, with existing school trips still being assigned on the network including Weston Way, Hitchin Street, Letchworth Road, Norton Road and Church Street, making the impact on these roads appear greater. In practice, trips connected to the existing school would cease from its existing site, should it be relocated onto BA3. Nonetheless, the existing site would likely be converted into an alternative use and therefore the trips have been retained in COMET.

Figure 2-9: Growing Baldock 2043 AM Peak Development S3-1 Flow Distribution

Figure 2-10: Growing Baldock 2043 PM Peak Development S3-1 Flow Distribution

The same as the interim scenario, these show a general increase in highway traffic in both peak periods with the highest changes on the major roads, associated with the development traffic.

Wallington Road (near Royston Road) is showing an increase in traffic during the AM peak. This is a result of COMET's dynamic traffic assignment, which identifies Wallington Road as a slightly quicker route to Buntingford than the A507 Clothall Road, principally because it provides a more direct connection. A review of the COMET flow-difference outputs confirms that this increase is small, with only around 29 additional two-way trips in the peak hour. At around one additional vehicle every two minutes, the increase is negligible and does not affect the road's overall low-traffic character.

Similarly to the 2029 scenario, there are reductions in traffic flows on Great North Road, Icknield Way and Station Road, due to the scheme proposals which reduce the capacity along North Road and closing the Icknield Way access. The package of interventions developed achieve their intended objectives, by directing traffic onto the Strategic Road Network whilst utilising the proposed access connecting Norton Road and A505. It can also be positively highlighted that the package of measures is contributing to reducing through traffic movements on sensitive local town centre streets.

Figure Figure 2-11 illustrates the 2043 S3-1 with development. The figure details the traffic flow comparison of the key junctions assessed in COMET and the TA local models (associated ID and junction names listed in **Table 2-5)**

Figure 2-11: Traffic flow comparison for 2043 NTEM scenario S3-1

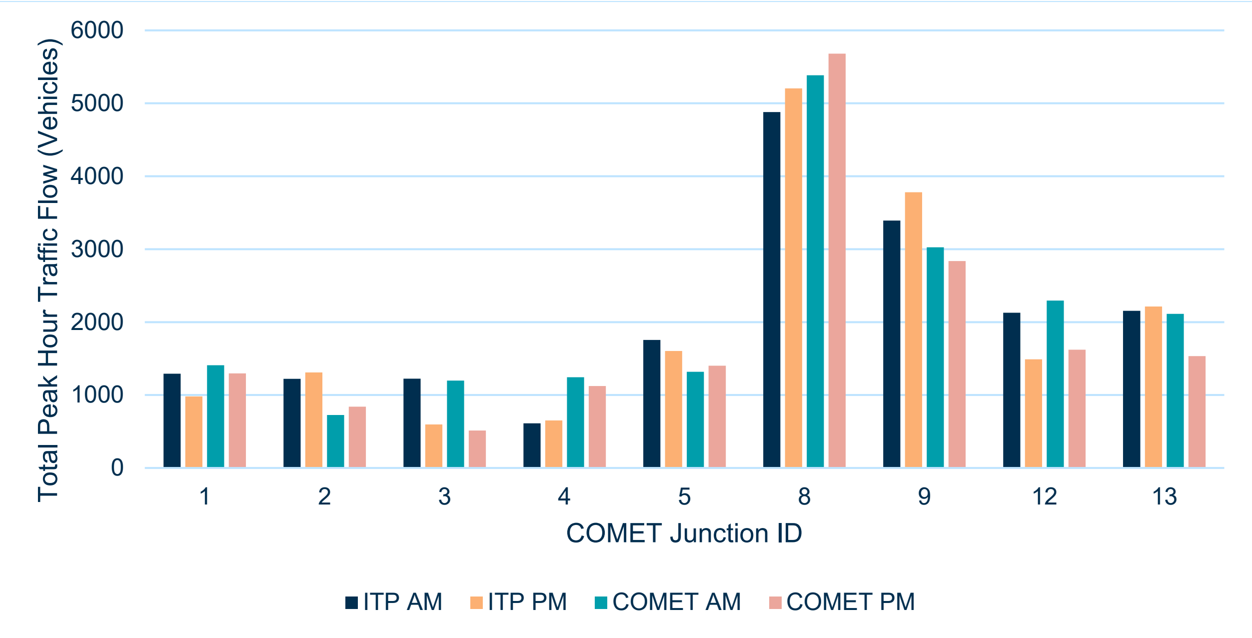

Figure 2-11 details that across the nine key junctions, five of the junctions are showing lower volumes in COMET noted for junctions 2, 3, 5, 9 and 13, which demonstrates that the local model findings in the TA are robust. The remaining four junctions 1, 4, 8 and 12 are showing higher volumes. These are minor and the volumes remain within an acceptable tolerance level of 10%, for junctions 1, 8 and 12.

Following the traffic volume comparisons, junction performance level comparisons have been undertaken for the two peak periods, which comparing the junction performance, against the criteria in **Table 2-5**.

Table 2-8 and **Table 2.9** sets out the key junction performance comparisons undertaken, for the modelling outputs for each of the key junctions being highlighted in **Figure 2-11**.

Table 2-8: Junction Performance comparison for 2043 NTEM Scenario S3-1 - AM

WSP ID	ITP ID	COMET S3-1 (2043)		ITP Local Modelling (2040)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	<0.8	60-120s	0.80-0.85	30-60s
3	14	<0.8	<30s	0.85-1.00	<30s
4	8	<0.8	<30s	<0.8	<30s
5	6	<0.8	<30s	0.85-1.00	**281s**
8	13	0.85-1.00	30-60s	0.85-1.00	30-60s
9	1	**=1.00**	<30s	<0.8	<30s
12	7	0.85-1.00	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

Table 2-9: Junction Performance comparison for 2043 NTEM Scenario S3-1 - PM

WSP ID	ITP ID	COMET S3-1 (2043)		ITP Local Modelling (2040)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	0.8-0.85	30-60s	0.8-0.85	60-120s
3	14	<0.8	<30s	0.85-1.00	<30s
4	8	<0.8	<30s	<0.8	<30s
5	6	<0.8	30-60s	0.85-1.00	60-120s
8	13	0.85-1.00	30-60s	0.85-1.00	30-60s
9	1	<0.8	<30s	<0.8	<30s
12	7	<0.8	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

All junctions in the 2043 with development S3-1 scenario are forecast to operate at or below capacity, with the majority of junctions experiencing low delays (<30 seconds) and performance of <0.80. A few junctions are showing signs of increased pressure:

- Junctions 2 & 3 (ITP ID 2 & 3): Performance is shown as worse in the ITP local modelling, with capacity of 0.8-0.85 with COMET showing capacity of <0.8, in both peaks.
- Junction 5 (ITP ID 6): Performance is shown as below capacity <0.8 in COMET, with ITP's local modelling showing a worse outcome of 0.85-1.00 in both peaks.
- Junction 8 (ITP ID 13): The most constrained junction in the AM and PM peaks is operating at near capacity 0.85-1.00 in both COMET and ITP local modelling.
- Junction 9 (ITP 1): Is noted as operating at capacity =1.00 in the COMET AM peak, but is shown as operating below capacity <0.8 in the ITP local modelling AM peak. This junction operates below capacity in the PM peak.

No junctions are recorded as operating above capacity in this scenario. However, as identified in the interim scenario, junction 8, the strategic junction A1(M), is being further tested in this TAA.

Figure 2-12 provides a visual comparison of the AM peak junction performance between the COMET and ITP junctions for scenario S3-1.

Figure 2-12: Option S3-1 Junction Performance Comparison

As observed in the 2029 interim scenario, this plot continues to show most junctions in COMET performing well, with junction performance as green (<0.8). There remain hotspot clusters, with both plots showing a small number of constrained junctions with performance as red (0.85-1.00) on the main north/south corridor (considered as North Road, Clothall Road, the High Street and London Road) and at the junction of the A1(M) to the south, which replicate the same junctions identified in the interim scenario. The plots continue to define broad stability across both the COMET and ITP local models; with issues being localised

In recognition that capacity issues are being noted at the junction of the A505 and the B197 London Road in the COMET outputs, which does not have an associated local model in the TA, a new local junction model has been prepared for further testing, included in **Section 2.6** of this TAA.

2.4.5 2043 NTEM 'S3-2' Comparison

Figure 2-13 and **Figure 2.14** show the 2043 development traffic distributed on the network, as modelled by COMET. The traffic flow distribution for this 2043 S3-2 full development scenario, represents Option 2 in **Table 2-1**, with KTS remaining on its site.

Figure 2-13: Growing Baldock 2043 AM Peak Development S3-2 Flow Distribution

Figure 2-14: Growing Baldock 2043 PM Peak Development S3-2 Flow Distribution

These show a general increase in highway traffic in both peak periods with the highest changes on the major roads, with increases in traffic flows occurring on the A505, Wallington Road, South Road, and London Road, similar to scenario S3-1.

There remain increases in traffic flows on Wallington Road (adjacent to Royston Road) where it has already been established in Section 2.4.4, that COMET's dynamic route assignment predicted that it is quicker for development traffic travelling towards Buntingford rather than using the A507 Clothall Road.

Similarly to the 2029 and 2043 S3-1 scenarios, there are reductions in traffic flows on Great North Road, Icknield Way and Station Road, due to the proposals which reduce the capacity along North Road and close the Icknield Way access and result in rerouting along the strategic network.

The distribution plots demonstrate, that as per the S3-1 scenario, the package of measures that have been developed are doing what they are intended to do, which is directing traffic onto the Strategic Road Network and utilising the proposed access connecting Norton Road and A505.

Figure 2-15 illustrates the 2043 S3-2 with development, for Option 2 scenario with KTS remaining on its current site. The figure details the traffic flow comparison of the key junctions assessed in COMET and the TA local models (associated ID and junction names listed in **Table 2-5)**

Figure 2-15: Traffic flow comparison for 2043 NTEM scenario S3-2

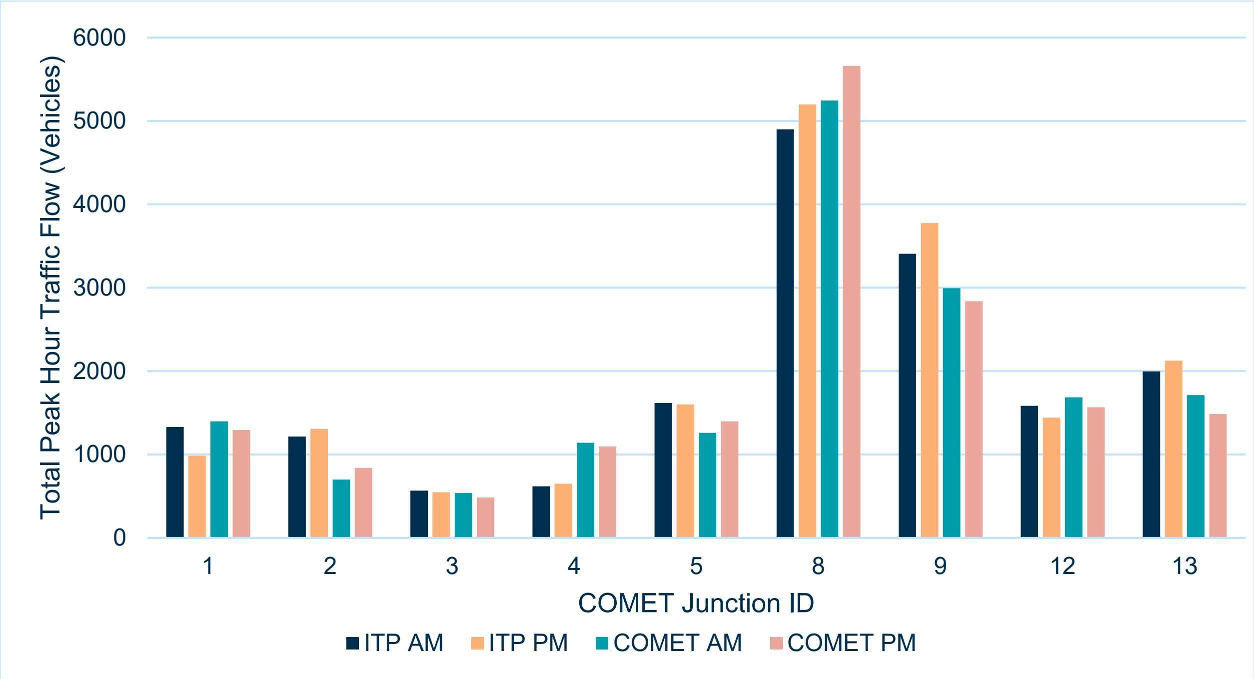

Figure 2-15 details that across the nine key junctions, five of the junctions are showing lower traffic volumes in COMET noted for junctions 2, 3, 5, 9 and 13, which demonstrates that the local model findings in the TA are robust. The remaining four junctions 1, 4, 8 and 12, show higher traffic volumes, which indicate that the local modelling is potentially underrepresenting the impacts. The difference in traffic volumes is minor at these junctions, with changes of no more than 200 vehicles, which does not fundamentally change the conclusions that have been reached in the TA.

Following the traffic volume comparisons, junction performance level comparisons have been undertaken for the AM and PM peaks, which compares the outputs for each key junction, using the performance criteria set out in **Table 2-4**.

Table 2-10 and **Table 2.11** compares the outputs for each of the key junctions listed in **Figure 2-11**.

Table 2-10: Junction Performance comparison for 2043 NTEM Scenario S3-2 - AM

WSP ID	ITP ID	COMET S3-2 (2043)		ITP Local Modelling (2040)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	<0.8	60-120s	0.85-1.00	60-120s
3	14	<0.8	<30s	<0.8	<30s
4	8	<0.8	<30s	<0.8	<30s
5	6	0.85-1.00	<30s	0.85-1.00	30-60s
8	13	0.85-1.00	30-60s	0.85-1.00	30-60s
9	1	0.85-1.00	<30s	<0.8	<30s
12	7	<0.8	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

Table 2-11: Junction Performance comparison for 2043 NTEM Scenario S3-2 – PM

WSP ID	ITP ID	COMET S3-2 (2043)		ITP Local Modelling(2040)	
		Performance	Delay S*	Performance	Delay S*
1	17	<0.8	<30s	<0.8	<30s
2	2 & 3	0.8-0.85	60-120s	0.85-1.00	60-120s
3	14	<0.8	<30s	<0.8	<30s
4	8	<0.8	<30s	<0.8	<30s
5	6	<0.8	30-60s	0.85-1.00	30-60s
8	13	0.85-1.00	30-60s	0.85-1.00	30-60s
9	1	<0.8	<30s	<0.8	<30s
12	7	<0.8	<30s	<0.8	<30s
13	11	<0.8	<30s	<0.8	<30s

Delay represents **total delay at junction (i.e. 30-60s means vehicles will be delayed for up to 1 minute)*

All junctions in the 2043 with development S3-2 scenario are forecast to operate within capacity, with the majority of junctions experiencing low delays (<30 seconds) and performance of <0.80. A few junctions are showing signs of increased pressure:

- Junctions 2 & 3 (ITP ID 2 & 3): Performance is shown as worse in the ITP local modelling, with capacity of 0.85-1,00 with COMET showing capacity of 0.8-0.85, in both peaks.

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- Junction 5 (ITP ID 6): Performance is shown as below capacity <0.8 in COMET, increasing to 0.85-1.00 in the ITP local modelling, in the PM peak.
- Junction 8 (ITP ID 13): The most constrained junction in the two peaks is operating at capacity 0.85-1.00 in both COMET and ITP local modelling.

No junctions are recorded as operating above capacity in this scenario.

Figure 2-16 provides a visual comparison of the AM peak junction performance between the COMET and ITP junctions for scenario S3-2.

Figure 2-16: Option S3-2 Junction Performance Comparison

As observed in the 2043 S3-1 scenario, this plot shows most junctions in COMET performing well, with junction performance as green (<0.8). There are some hotspot clusters, with both plots showing a small number of constrained junctions with performance as red (0.85-1.00) on the main corridor and junction 8, the A1(M) 9 and the A505 j/w B197 London Road to the south, already identified for further testing.

The plots continue to define broad stability across both the COMET and ITP local models; identifying localised issues only.

2.5 Summary of Modelling Comparison

The review of COMET outputs against the TA local modelling outputs, comparing traffic flows and performance (across the key junctions), identifies that there is a good correlation for all junctions, in all scenarios, with the COMET outputs validating the local modelling outputs reported in the TA.
As a result, no further testing is necessary for the majority of the junctions.

Table 2.12 sets out a visual comparison between the COMET modelling results and local modelling results presented in the TA. This table shows that in general there was a good level of comparison across all scenarios.

The only exception was A1(M) Junction 9 where a potential mitigation scheme was previously developed but not included in the COMET modelling. This was to understand it's necessity from a strategic perspective. Further modelling of this junction, with the proposed mitigation scheme in place is therefore included in the following sections.

Table 2-12: Comparison of modelling results across all scenarios

WSP ID	Interim		Full build out 1 (w school)		Full build out 2 (w/o school)		TA Modelling Sufficient	Proposed next steps
	TA	COMET	TA	COMET	TA	COMET		
1	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	✓	Royston Road / A505 roundabout- no need for updated modelling
2	Approaching full capacity	Within capacity	Close to capacity	Close to capacity	Approaching full capacity	Close to capacity	✓	BA1 Main Access - COMET results better than previous local modelling, no need for updated modelling
3	N/A	N/A	Approaching full capacity	Within capacity	Within capacity	Within capacity	✓	BA3 School access - not applying in detail, no need for updated modelling
4	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	✓	BA2 access - no need for updated modelling
5	Approaching full capacity	Within capacity	Approaching full capacity	Within capacity	Approaching full capacity	Within capacity	✓	Whitehorse crossroads - COMET results better than previous local modelling, no need for updated modelling
8	Above capacity*	Approaching full capacity	Approaching full capacity	Approaching full capacity	Approaching full capacity	Approaching full capacity	X	A1(J9) - Modelling carried out using existing layout prior to understanding strategic outputs, Local modelling has been carried out to verify impact of proposed intervention.
9	Within capacity	Close to capacity	Within capacity	Approaching full capacity	Within capacity	Approaching full capacity	✓	A1(M) J10 - COMET performance worse than local modelling. RFC >0.7 on some arms in all w/ Dev scenarios in local modelling. We would propose a monitor and manage approach.
12	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	✓	Clothall Road/Sout Road roundabout - no need for updated modelling
13	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	Within capacity	✓	South Road/London Road roundabout - no need for updated modelling

* Junction 8 “Above Capacity” denotes robust basis of assessment during initial Transport Assessment.

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In addition to the above like-for-like comparison analysis covering the key junctions, a more detailed comparison exercise has also been undertaken that looks at all the junctions presented by the COMET model outputs. This is presented in **Table 2-13.**

Following examination of the COMET outputs, and in response to stakeholder comments, four junctions are subjected to additional local modelling to test the impact of the higher-than-anticipated flow changes and performance constraints reported by COMET. These junctions are:

- A1(M) junction 9 (COMET Junction 8)
- A505 j/w B197 London Road
- Hitchin Street j/w Norton Road j/w Letchworth Road (COMET Junction 19)
- A505 j/w B656 Royston Road

Table 2-13: Modelled junction comparison commentary informing whether further analysis is required outputs

WSP Junction ID	Junction ID ITP	Junction Name	Junction ID - TA	ITP Modelling Performance summary - 2033	ITP Modelling Performance summary - 2045	Comparison / Comments
1	17	A505 / Royston Road / BA1 access	10.1	Within capacity	Within capacity	Results match, no additional modelling needed
2	2 & 3	A507 North Road / BA1 northern access	A507 corridor	Queueing on north road	No extensive queues on north road north of junction	Capacity issues not significant to need modelling. Junction designed to gate traffic so some congestion is expected.
3	14	BA3 access / Wallington Road	BA3 Access	No change - no BA3 flows in interim	Within capacity in all scenarios aside from AM peak in 2040 Option 1 scenario.	Results match, no additional modelling needed
4	8	BA2 access / Clothall Road	2.1	Within capacity	Within capacity	Results match, no additional modelling needed
5	6	A507 Station Road / Royston Road / Whitehorse Street / Clothall Road	1 / A507 corridor	Some queues on Station Road, but shorter compared to existing	Queues on Clothall Road and Whitehorse Street in Opt 1. Queues reduced in opt 2	Capacity issues not significant to need modelling. Flows broadly similar
6	5	A507 Station Road / Icknield Way / Football Close	-	-	-	No base survey flows to compare. No significant capacity issues in the COMET model
7	-	A1(M) Junction 8	-	-	-	-
8	13	A1(M) Junction 9	4	Above capacity on some arms in all scenarios, including those without development traffic.	Above capacity on some arms in all scenarios, including those without development traffic.	Some capacity issues, although noted that the COMET model does not include the mitigation scheme at this junction. Local modelling is presented in this TAA to demonstrate the positive impact of the proposed mitigation. The monitor & manage approach will further mitigate any traffic impacts at this junction.
9	1	A1(M) Junction 10	5	Within capacity. A507 EB RFC 0.7 in AM peak	Within capacity in all scenarios. RFC >0.7 on some arms in Opt 1&2	Results match, no additional modelling needed. Comparison of “with” and “without” Growing Baldock development shows net reduction in trips at this junction through proposed mitigation.

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WSP Junction ID	Junction ID ITP	Junction Name	Junction ID - TA	ITP Modelling Performance summary - 2033	ITP Modelling Performance summary - 2045	Comparison / Comments
10	-	A1(M) / London Road at Biggleswade	-	-	-	Removed from scope due to distance from development site and limited impact.
11	-	A1(M) / Hill Lane at Biggleswade	-	-	-	Removed from scope due to distance from development site and limited impact.
12	7	Clothall Road / Wallington Road	2	Within capacity	Within capacity in all scenarios (South Road has RFC 0.77 in Opt 1 AM)	Results match, no additional modelling needed
13	11	London Road / South Road / High Street	3	Within capacity	Within capacity in all scenarios	No additional modelling needed
14	17	A505 / Wallington Road	-	-	-	No capacity issues
15	-	Icknield Way / Norton Road	-	-	-	Junction scale and location does not require modelling.
16	3	A507 North Road / Bygrave Road	-	-	-	No capacity issues
17	10	High Street / Whitehorse Street / Hitchin Street	-	-	-	No additional modelling needed
18	-	B656 Letchworth Road / Weston Way	-	-	-	No capacity issues
19	9	B656 Letchworth Road / Norton Road	-	-	-	Junction model provided in the TAA
-	16	BA10 Royston Road priority	10.2	Within capacity	Within capacity	No capacity issues
-	15	BA10 Royston Road signal junction	10.3	Within capacity	Within capacity	No capacity issues

2.6 Additional Local Modelling

As noted above, four additional junctions have been subjected to additional local modelling. The results of this work is set out below.

2.6.1 A1(M) Junction 9

The COMET model runs did not include any mitigation measures at the A1(M) Junction 9.

The TA for Growing Baldock included a LinSig model of A1(M) Junction 9, both as existing and with proposed mitigation in the form of layout changes and additional signalisation. Both LinSig models have been re-run using the turning flows from the COMET NTEM model runs, with the results presented below. The full junction reports are included in **Appendix B**. The local modelling results using the COMET turning counts are very similar to those previously presented within the TA.

The junction is operating beyond theoretical capacity on several arms in the baseline peak periods, with Degree of Saturation (DoS) being reported as over 100% on some arms. Where a baseline situation is already showing DoS above 100%, then percentage increases in 'Do something' scenario will increase quickly in a way that is not proportional to traffic increases. This is to be expected on a network at capacity.

In 2029 S2 the impact of development traffic is relatively modest, both in terms of DoS and overall queueing. In order not to provide additional capacity early on that will be taken up through background latent demand, and to ensure that any mitigations funded are proportionate to development impacts, mitigations are not necessary to support the interim year.

In the 2043 scenarios, the impacts of background traffic on junction capacity are significant, exacerbating the issues highlighted above. Although the increases do appear large, the model is essentially reflecting the less predictable operational characteristics of a junction that is over capacity. As such, such increases in an already above capacity situation are not treated or considered as significant because the network already requires mitigation regardless of the development.

With development traffic, the queuing increases but this is mitigated with the proposed signalisation of the Letchworth Gate arm, as previously presented within the TA. Signalisation allows traffic exiting Letchworth Gate to get onto the roundabout, allowing for better balancing of demand across the arms of the roundabout. This mitigates the impact of development and reduces queuing on both A1(M) slip roads in comparison to the baseline, ensuring there is not a safety concern for National Highways.

This analysis confirms that the mitigation proposed for 2043 S3 is proportionate to the development impact.

The proposed mitigation for Junction 9 is shown in the original Transport Assessment (Figure 8-12 in Section 8.7.5.1) and provided at Appendix E.

Table 2-14: A1(M) Junction 9 Local Modelling Results

Scenario	Arm	AM Peak		PM Peak	
		DoS	MMQ (PCU)	DoS	MMQ (PCU)
2029 S1 (Interim Year, Without Development)	A1 (M) SB	**104.7%**	26.8	82.9%	4.6
	A505 WB	**102.2%**	27.9	99.6%	12.7
	A1 (M) NB	**105.0%**	30.3	**106.6%**	39.3
	Letchworth Gate	90.2%	17.1	**107.1%**	90.0
2029 S2 (Interim Year, With Development)	A1 (M) SB	**108.8%**	30.0 ↑	91.8%	6.7 ↑
	A505 WB	**111.3%**	43.4 ↑	**105.6%**	31.4 ↑
	A1 (M) NB	**110.8%**	44.5 ↑	**106.7%**	39.5 ↑
	Letchworth Gate	92.4%	19.5 ↑	**109.3%**	100.4 ↑
2029 S2 and mitigation	A1 (M) SB	**105.1%**	24.3 ↓	78.1%	5.0 ↑
	A505 WB	**117.7%**	47.5 ↑	**109.4%**	39.6 ↑
	A1 (M) NB	69.4%	9.6 ↓	90.9%	11.9 ↓
	Letchworth Gate	54.2%	9.1 ↓	57.0%	9.8 ↓
2043 S3DM (Final Year, Without Development)	A1 (M) SB	**120.8%**	40.6	**122.5%**	25.8
	A505 WB	**120.9%**	64.5	**123.0%**	64.3
	A1 (M) NB	**105.8%**	32.5	84.4%	11.5
	Letchworth Gate	96.2%	25.8	**115.3%**	130.9
S2043 S3-1 (Final Year, With Development, KTS relocation)	A1 (M) SB	**142.9%**	55.2 ↑	**138.1%**	32.4 ↑
	A505 WB	**145.5%**	117.7 ↑	**137.9%**	96.8 ↑
	A1 (M) NB	74.7%	10.9 ↓	86.1%	11.6 ↑
	Letchworth Gate	**104.7%**	83.6 ↑	**118.4%**	157.9 ↑
2043 S3-1 and mitigation	A1 (M) SB	**122.7%**	38.6 ↓	90.2%	6.9 ↓
	A505 WB	**149.2%**	125.8 ↑	**150.6%**	112.0 ↑
	A1 (M) NB	80.4%	10.5 ↓	86.7%	13.5 ↑
	Letchworth Gate	61.3%	13.9 ↓	62.1%	11.1 ↓
S2043 S3-2 (Final Year, With Development)	A1 (M) SB	**138.1%**	53.4 ↑	**134.2%**	30.7 ↑
	A505 WB	**138.7%**	102.9 ↑	**137.7%**	96.3 ↑
	A1 (M) NB	79.4%	11.5 ↓	86.1%	11.6 ↑
	Letchworth Gate	**104.1%**	79.9 ↑	**118.7%**	159.4 ↑

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Scenario	Arm	AM Peak		PM Peak	
		DoS	MMQ (PCU)	DoS	MMQ (PCU)
2043 S3-2 and mitigation	A1 (M) SB	**121.5%**	38.5 ↓	90.4%	7.0 ↓
	A505 WB	**141.7%**	110.2 ↑	**150.3%**	111.3 ↑
	A1 (M) NB	79.1%	9.9 ↓	86.7%	13.3 ↑
	Letchworth Gate	61.1%	10.7 ↓	62.2%	11.1 ↓

2.6.2 A505 j/w B197 London Road

One arm of this junction is forecast to be operating at 85% (0.85) by COMET. Both junctions to the south and north of this three-arm roundabout have been tested – the A1(M) junction 9 (COMET junction 8) and A505 j/w B656 Royston Road (COMET junction 14). An additional local model has been built to test the impacts at this junction in greater detail.

The modelling results are shown in **Table 2-15**. The full model output report is included in **Appendix B.**

Table 2-15: A505 / London Road Local Modelling Results

Arm	AM Peak				PM Peak			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
2029 S1								
A – London Road	0.6	2.7	5.31	0.37	0.5	1.8	4.72	0.31
B – A505 N	1.2	1.4	3.63	0.54	2.1	4.3	4.98	0.68
C - A505 S	2.4	5.5	5.00	0.71	2.9	6.7	5.56	0.75
2029 S2								
A – London Road	0.6	2.7	56.46	0.45	0.4	1.5	4.23	0.29
B – A505 N	1.3	1.8	3.93	0.57	1.5	2.4	4.04	0.61
C - A505 S	3.1	7.0	5.99	0.76	2.1	4.6	4.46	0.68
2043 S3DM								
A - London Road	0.7	3.2	6.04	0.41	0.5	2.3	5.20	0.34
B - A505 N	1.7	2.9	4.53	0.63	3.2	6.8	6.66	0.76
C - A505 S	3.1	6.9	5.91	0.76	4.2	13.5	7.39	0.81
2043 S3-1								
A - London Road	4.6	23.6	25.85	0.83	1.0	3.6	7.75	0.51
B - A505 N	7.1	36.6	15.00	0.88	10.8	59.4	20.44	0.93
C - A505 S	14.1	77.7	23.05	0.95	17.6	93.2	27.79	0.96
2043 S3-2								

Arm	AM Peak				PM Peak			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
A - London Road	1.5	4.6	10.81	0.61	0.8	3.4	6.75	0.44
B - A505 N	5.5	26.7	11.42	0.85	9.5	48.9	17.78	0.91
C - A505 S	8.5	44.0	14.32	0.90	12.8	70.8	20.65	0.94

Table 2.15 shows that the local modelling analysis is aligned with the COMET outputs, demonstrating that this junction is operating below capacity in all modelled scenarios, with the RFC performance below 1.00. No mitigation is required at this location for development related traffic.

2.6.3 Hitchin Street j/w Norton Road j/w Letchworth Road

Norton Road is a key link to The Knights Templar School (KTS). COMET outputs show potential increases in flows along Norton Road and Hitchin Street.

To assess the potential impacts on this junction in more detail, ITP built a new Junctions model covering the 2029 interim year and both 2043 future years. The model used the turning flows extracted from the COMET model runs for S1, S2, S3DM, S3-1 and S3-2. The results are presented in **Table 2-16**, with the full model output report is included in **Appendix B.**

Table 2-16: Hitchen Street / Norton Road / Letchworth Road Local Modelling Results

Arm	AM				PM			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
2029 S1								
Norton Rd to Hitchin St	13.5	44.9	128.47	1.01	0.8	3.8	14.85	0.45
Norton Rd to Letchworth Rd	8.8	30.5	161.03	0.98	1.1	5.3	26.71	0.53
From Hitchin St	0.5	1.6	7.44	0.27	1.2	5.3	11.52	0.49
2029 S2								
Norton Rd to Hitchin St	16.6	52.6	123.77	1.02	1.7	6.7	19.93	0.64
Norton Rd to Letchworth Rd	6.0	20.9	209.38	0.99	0.6	2.5	30.58	0.37
From Hitchin St	2.0	9.6	10.62	0.58	5.1	28.1	24.55	0.79
2043 S3DM								
Norton Rd to Hitchin St	27.3	61.3	210.85	1.11	1.6	7.4	23.62	0.63
Norton Rd to Letchworth Rd	13.2	34.6	253.94	1.07	1.4	7.5	37.72	0.60
From Hitchin St	0.6	2.8	7.76	0.33	1.9	8.1	14.01	0.60

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Arm	AM				PM			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
2043 S3-1								
Norton Rd to Hitchin St	50.0	85.7	368.99	1.23	3.7	20.0	38.80	0.81
Norton Rd to Letchworth Rd	13.0	30.3	428.09	1.18	1.3	6.2	62.97	0.59
From Hitchin St	3.4	17.5	13.20	0.67	9.4	46.4	40.17	0.88
2043 S3-2								
Norton Rd to Hitchin St	28.9	64.7	201.83	1.11	4.0	21.8	41.78	0.82
Norton Rd to Letchworth Rd	8.5	24.5	289.36	1.07	1.4	6.7	67.63	0.62
From Hitchin St	2.8	13.8	12.09	0.64	8.7	44.1	38.19	0.87

As detailed in section 2.7.1, where a baseline situation is already being modelled operating above 100%, or with a Ratio to Flow Comparison (RFC) above 1.00, then any percentage increases reported in do something scenarios will appear larger. Importantly although these increases do appear large, observed up to 1.23, this does not materially change the operational conditions.

In addition, traffic conditions at this location are also influenced by the nearby junctions, which helps improve how the junction operates in practice. To the south, the signalised Weston Way / Letchworth Road junction, and to the east, the signalised pedestrian crossing with Keep-Clear markings, both create regular gaps in traffic travelling along Hitchin Street. These gaps assist vehicles exiting Norton Road, meaning that real-world operation is likely to be more favourable than indicated by the model outputs

Looking specifically at the full build out scenarios, a level of congestion is observable in the performance levels, noticeable in the AM peak. This is due to the junction being in proximity to Knights Templar School, accessed from Weston Way.

Scenario S3-1, which incorporates the double counting of existing school trips from the current KTS site, represents an unlikely worst-case situation. S3-2 represents a more realistic scenario impact at this junction, as this the school double counting trips are removed. In this scenario, it can be observed there is very little difference in junction performance compared to the Do Minimum scenario. Nonetheless, as part of the active travel proposals, indicative enhancements to the junction have been presented, along with the wider Norton Road and Icknield Way corridor, to introduce a traffic-free and/or low-traffic environment to promote this as a walking and cycling route. This will provide people the choice to travel by alternative modes, supporting policy. This is set out in more detail in **Section 3.3.1**.

2.6.4 A505 j/w B656 Royston Road

The COMET outputs highlighted that as a result of the full development, there will be an increase in traffic accessing the A505 at its junction with the B656 Royston Road and Wallington Road. In this location, traffic modelling is not required as there is a calculation that can be undertaken set out in the UK standards Design Manual for Roads and Bridges (DMRB). This calculation is the recognised industry mechanism to use when looking at changes in traffic flow demands connected to a merge and diverge slip road arrangement.

The DMRB standards have been interrogated to identify the impact of the proposed increased development traffic entering the A505 from the B656 Royston Road.

DMRB CD 122 sets out the requirements for the geometric design of grade-separated junctions on high-speed roads, which the A505 is classified as, being a dual carriageway road operating with the National speed limit.

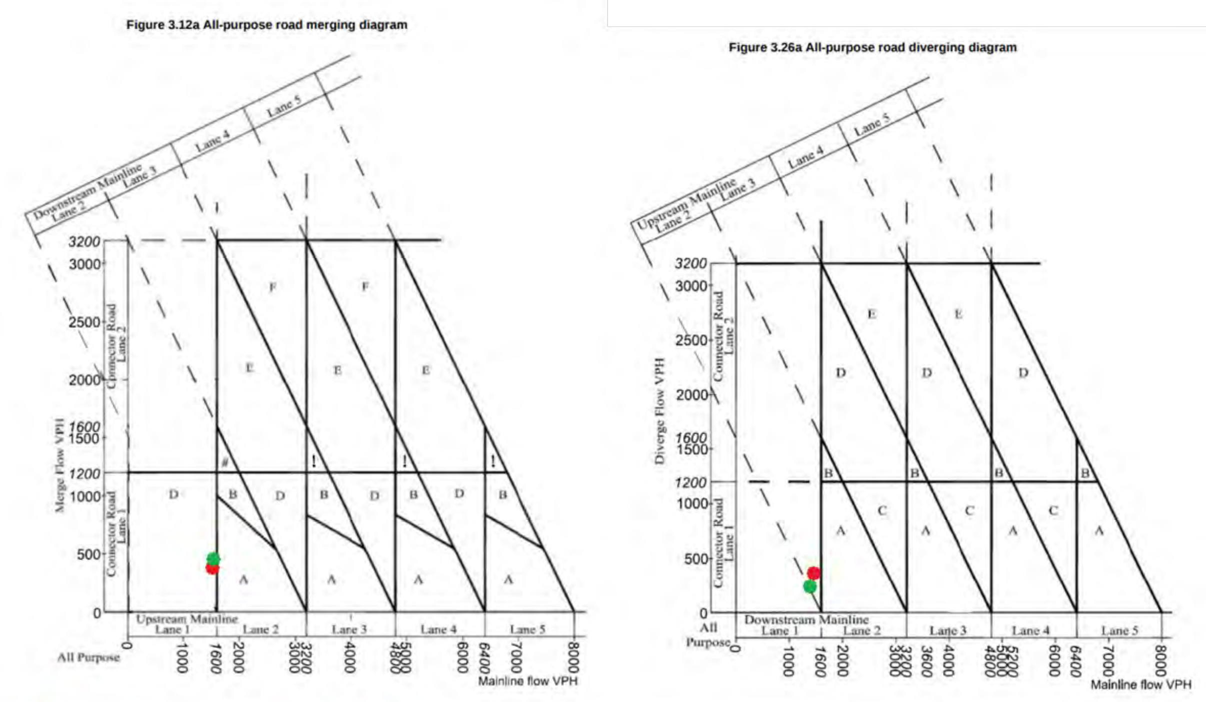
CD 122 provides a flow-based method for calculating the impact of changes to traffic flow demand that could impact/influence traffic flow along the high-speed road. This calculation is informed through:

- Determining mainline flow (veh/h)
- Determining slip road merge/diverge flow (veh/h)
- Using the DMRB merge/diverge diagrams to identify where the traffic interactions are plotted.

These data were applied to CD 122, using Figures 3.12a and 3.26a, the results of the traffic flow plots connected to the merge/diverge can be seen in **Figure 2.17**. This identifies that there is no discernible impact on the junction slip road with and without the proposed development in the future year scenario during the AM and PM peaks.

The slip road onto the A505 continues to operate well within capacity and no changes are required to the configuration.

Figure 2-17: Merge/Diverge Comparison



Southbound towards A1(M)
Northbound towards Royston

2.7 2043 Local Plan 'Sensitivity' Considerations

In addition to the like-for-like comparison analysis set out above a further sensitivity test of the local plan scenarios has been undertaken. These scenarios consider all Local Plan allocated sites within Hertfordshire being delivered in full. This represents a much larger quantum of growth for both planned new dwellings and employment growth when it is compared to COMET 2043 NTEM model baseline in the like-for-like comparison exercise. In NTEM 32,489 new dwellings and 42,184 new jobs are assumed, compared to the Local Plan scenario of 124,832 new dwellings and 80,784 new jobs, across the whole of Hertfordshire.

Delivery of the full planned growth is unlikely to take place and is considered a 'worst-case'. There are many reasons for this, Local Plans intentionally allocate more land than may be required, meaning full build-out is improbable. Other reasons include, not all sites securing planning permission, some sites being replaced or removed with later plan reviews, some are simply delayed or stalled over legal and land ownership issues. This means that the NTEM scenario outlined above is a more realistic reflection of the likely future highway's impacts.

As this is a sensitivity test, this analysis does not reference TA local modelling findings, as this is a high-level comparison rather than a detailed testing and validation exercise. The exercise compares the impact of all local plan allocated sites coming forward by 2043 as a do-minimum (DM) baseline scenario 'S5' against the do-something (DS) scenario S6-1 with the addition of Growing Baldock to the local plan sites. This comparison is primarily focused on the AM peak, as this the worst performing period.

Figure 2-18: 2043 S6-1 Local Plan including Growing Baldock Development

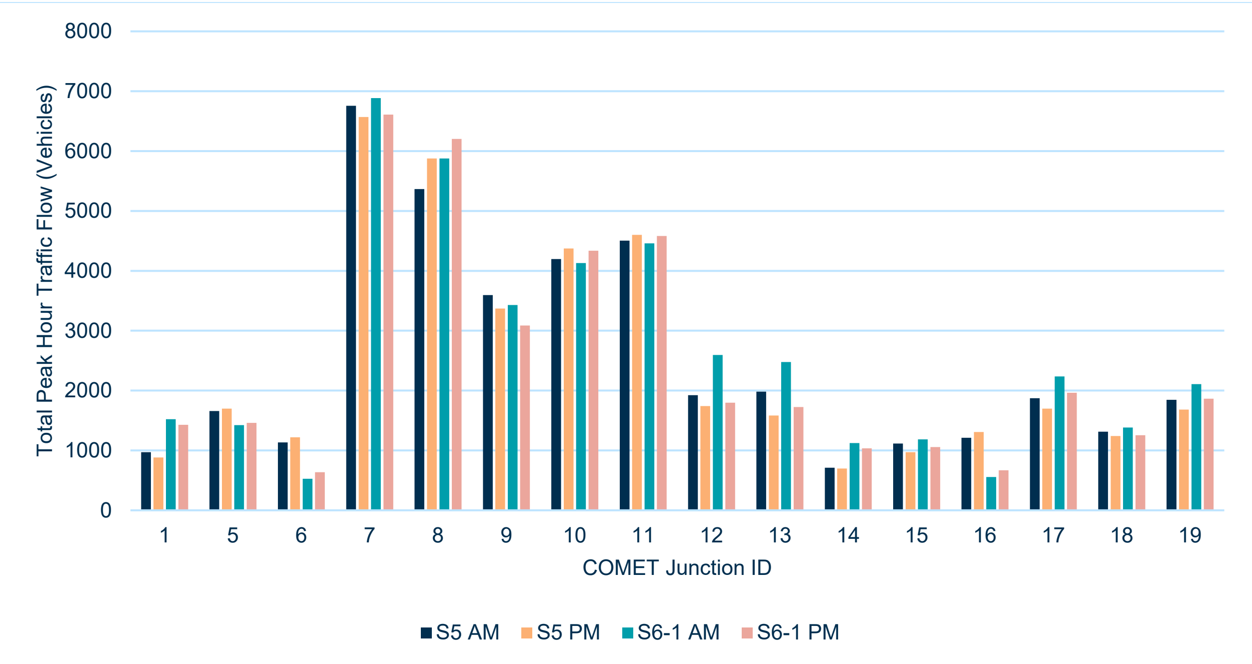


Figure 2-18 details that across 19 key junctions from the COMET outputs (junctions listed in **Figure 2-4),** comparing traffic volumes between the Local Plan scenario S5 without Growing Baldock and S6-1 Growing Baldock included, identifies that junctions 7, 10, 11, 15 and 18 traffic volumes are comparable with no increases recorded, for junctions 5, 6, 9, 16, 18 traffic volumes are lower. Junctions 1, 8, 12, 13, 14, 17 and 19 show higher traffic volumes in S6-1, these are minor increases overall.

Table 2-17 compares junction performance outputs for each key junction, using the performance criteria in **Table 2-4,** between the two scenarios This table provides commentary on the noted over capacity performance.

Table 2-17: Comparison between future 2043 DM and 2043 Local Plan with development

WSP Junction ID	Junction	Volume/Capacity		Notes
		Local Plan Do Minimum scenario S5	Local Plan full build out scenario S6-1 (w school)	
1	A505 / Royston Road / BA1 access	<0.8	<0.8	No issues.
2	A507 North Road / BA1 northern access	-	0.85-1.00	Site access junctions are not present in Do Minimum scenario.J2 is intentionally designed to restrict traffic flow as part of the treatment of North Road.
3	BA3 access / Wallington Road	-	<0.8	
4	BA2 access / Clothall Road	-	<0.8	
5	A507 Station Road / Royston Road / Whitehorse Street / Clothall Road	0.85-1.00	0.85-1.00	
6	A507 Station Road / Icknield Way / Football Close	<0.8	<0.8	No issues.
7	A1(M) Junction 8	1.00+	1.00+	Distance from development and similarity between DM and Development scenarios suggests that mitigation is not required to justify Growing Baldock.
8	A1(M) Junction 9	0.85-1.00	1.00+	A1(J9) Local modelling results are based on the existing junction layout. Capacity reaches 100% on one arm in COMET - turning west onto Letchworth Gate.
9	A1(M) Junction 10	1.00+	1.00+	See Section 2.7.2.
10	A1(M) / London Road at Biggleswade	1.00+	1.00+	Distance from development and similarity between DM and Development scenarios suggests that mitigation is not required to justify Growing Baldock.
11	A1(M) / Hill Lane at Biggleswade	<0.8	<0.8	No issues.
12	Clothall Road / Wallington Road	<0.8	<0.8	No issues.
13	London Road / South Road / High Street	<0.8	<0.8	No issues.

WSP Junction ID	Junction	Volume/Capacity		Notes
		Local Plan Do Minimum scenario S5	Local Plan full build out scenario S6-1 (w school)	
14	A505 / Wallington Road	<0.8	<0.8	No issues.
15	Icknield Way / Norton Road	<0.8	<0.8	No issues.
16	A507 North Road / Bygrave Road	<0.8	<0.8	No issues.
17	High Street / Whitehorse Street / Hitchin Street	<0.8	<0.8	No issues.
18	B656 Letchworth Road / Weston Way	<0.8	<0.8	No issues.
19	B656 Letchworth Road / Norton Road	<0.8	<0.8	No issues.

**AM Peak values used as worst performing period*

Figure 2-19 and **Figure 2-20** are the COMET plots comparing junction performances in the two peaks between scenario S5, Local Plan allocations only and S6-1 inclusion of Growing Baldock, in addition.

These figures identify that there are changes in the impacts on the network as a result of the additional planned growth, and more importantly where impacts are notable, these are not directly attributable to Growing Baldock alone. Most noticeable is that, with development traffic added to the Local Plan scenario, there is no significant deterioration of the network from the DM scenario. This identifies that Growing Baldock can be accommodated, as a result of the proposed transport interventions.

WSP has confirmed that the signal timings improvements could improve operation of junctions in these Local Plan models, as they remain unchanged and “un-optimised” between the Do-Minimum (DM) S5 and Do-Something (DS) S6-1 scenarios. WSP also note that the Local Plan scenario includes the Letchworth North site, which has a single access onto Norton Road and is generating delays in both the DM and DS scenarios.

Figure 2-19: 2043 Local Plan Do-Minium S5 scenario

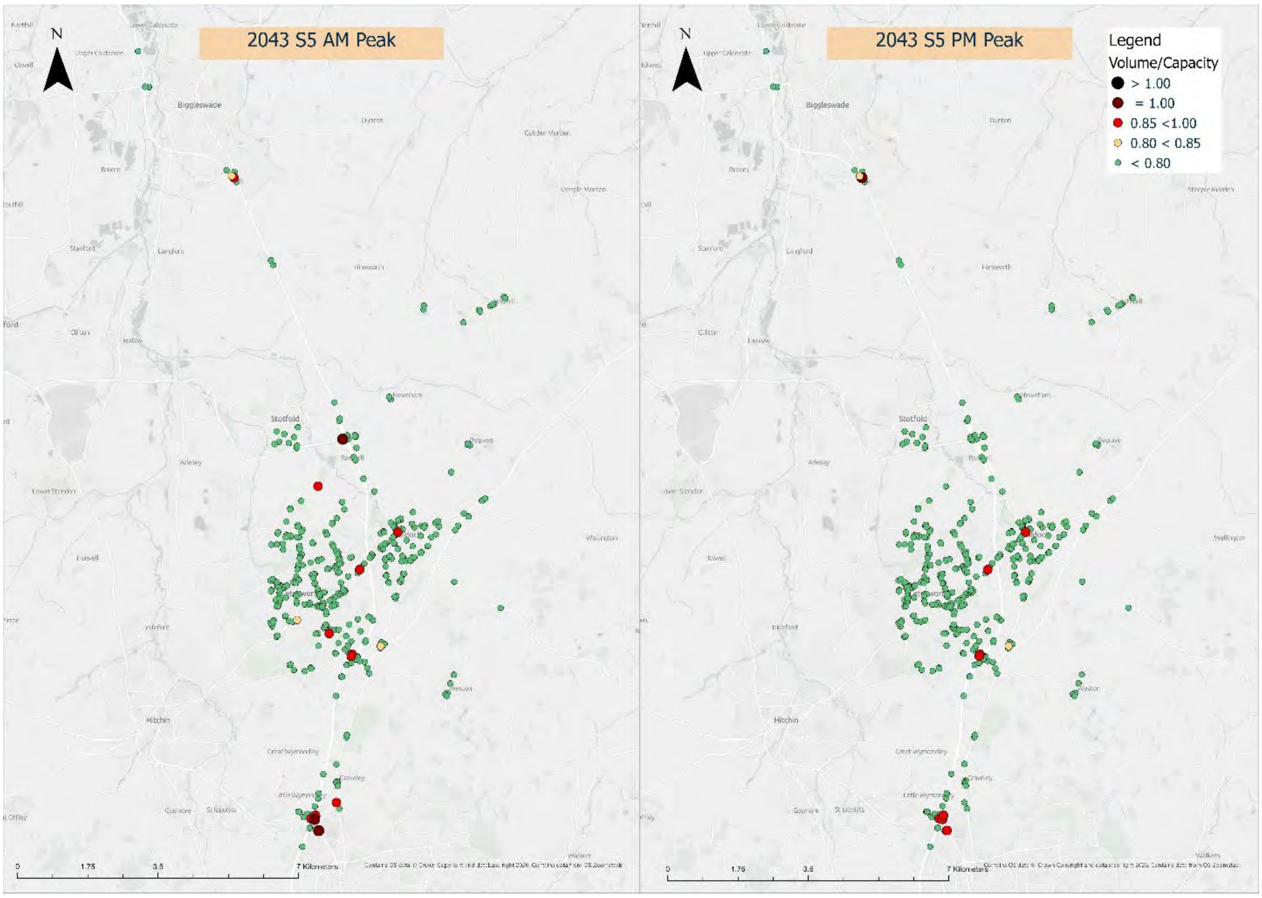


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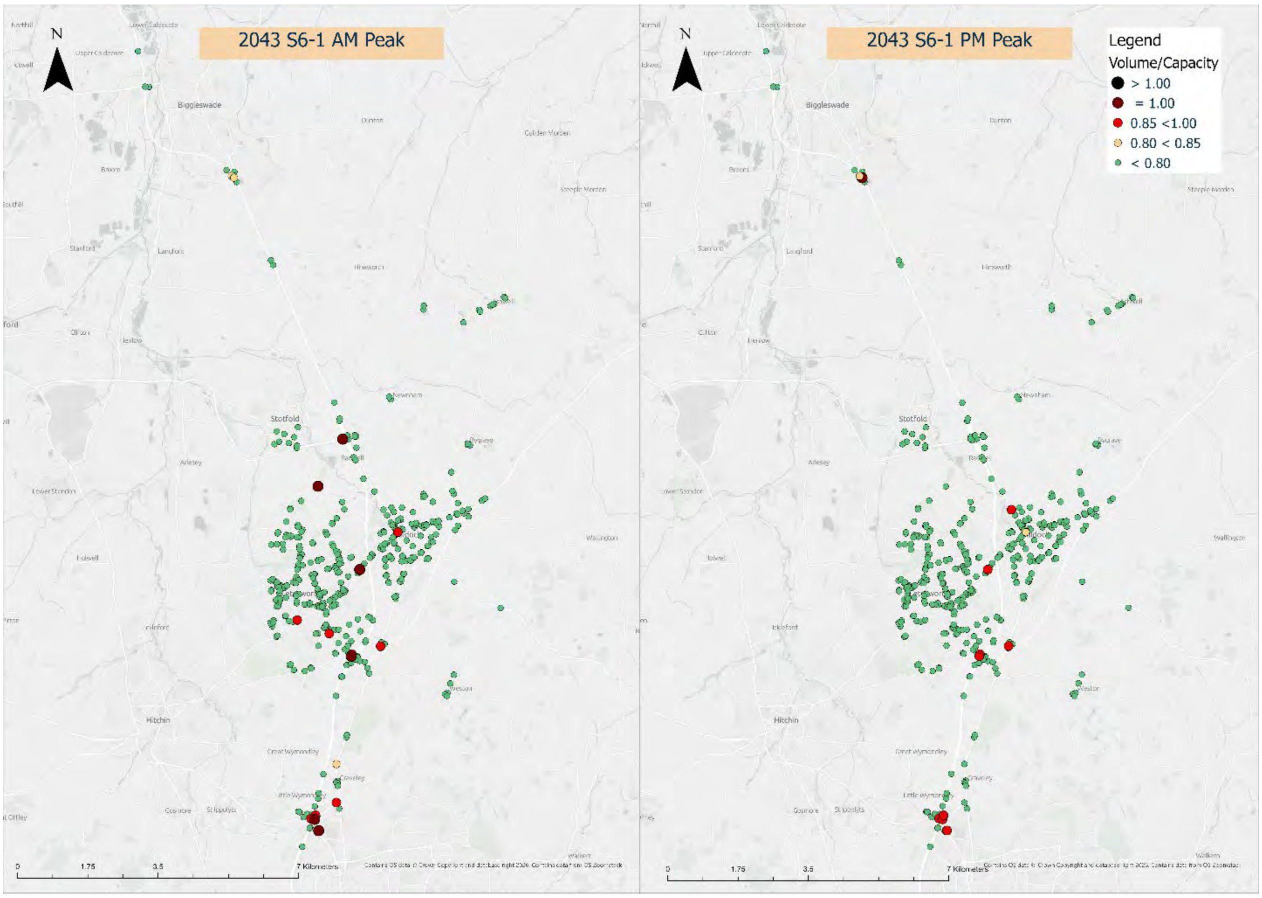
Figure 2-20: 2043 Local Plan S6-1 scenario including Growing Baldock Development



2.7.1 Additional Junctions Review in COMET LP Scenarios

There is a small number of junctions within the COMET network which were identified as being at 100% capacity in some of the scenarios. These junctions are set out below, alongside the scenario and associated notes.

Figure 2-21: COMET Junctions at 100% Capacity

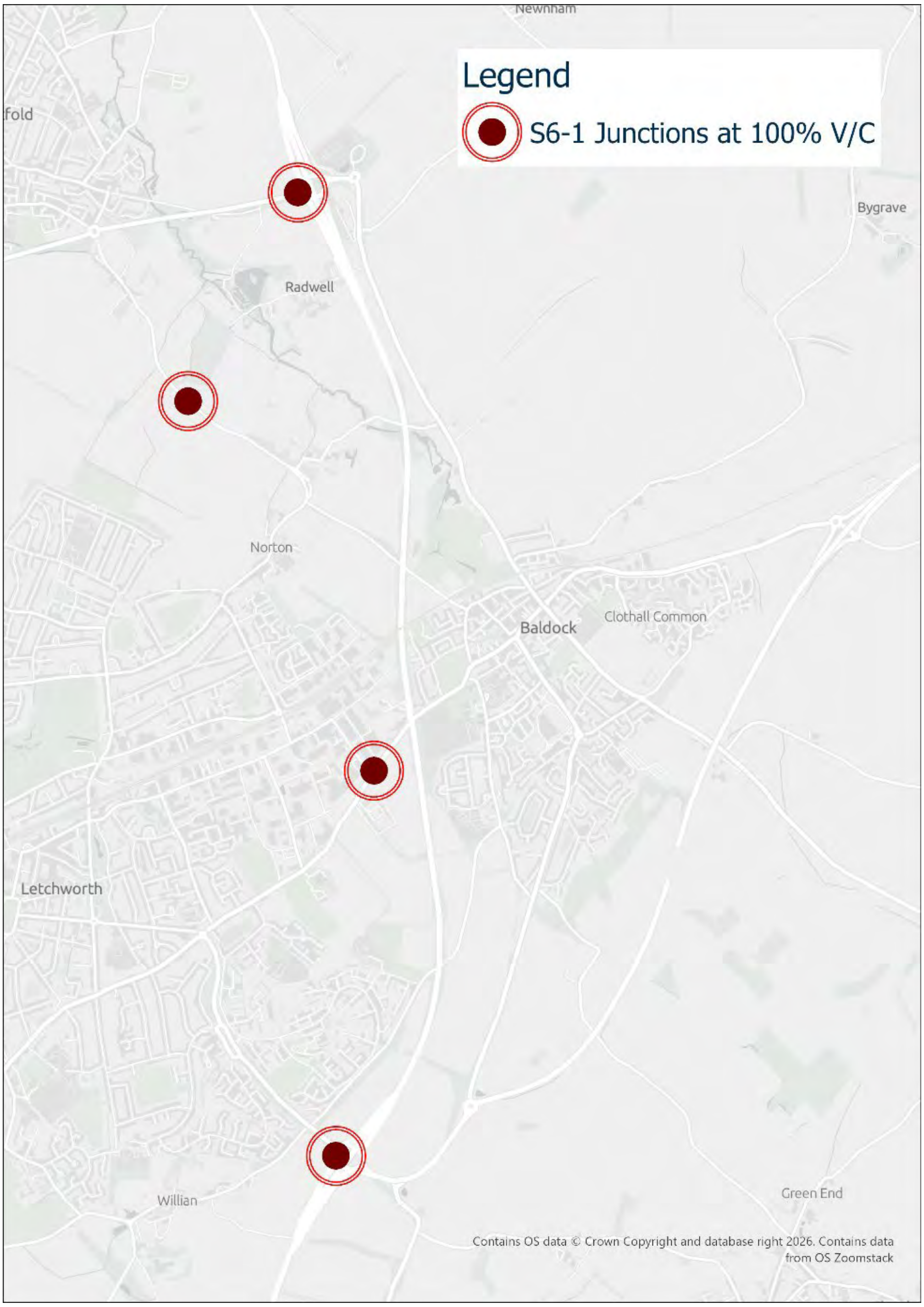


Table 2-18: COMET Junctions at 100% Capacity

Road / Link	Scenario	Capacity (2043 S3-1)	Notes
A1(M) J10	2043 Option 1 LP	100%	Local Plan scenario represents worst case scenario, where all allocated sites come forward. In reality, the cumulative impact is likely to be less. Additionally, many allocated sites may take on a similar vision-led approach, hence reducing overall trips.
A1(M) J9	"2029 DM & Interim Dev 2043 DM, Option 1 NTEM & LP"	100%	Included in this section for completeness but addressed previously. An updated layout has been proposed.
Letchworth Road / Jubilee Road / Baldock Road	2043 Option 1 LP	100%	Shuttle bus and station access improvements will facilitate travel between Baldock and Letchworth by rail, providing a realistic alternative to those who may currently chose to drive on congested routes.
Norton Road north	2043 Option 1 LP	100%	Local Plan represents worst case scenario. Additionally, trips from Letchworth include those as part of secondary school catchment, which will be changing as part of development.

2.7.2 A1(M) Junction 10

A comparison of the Local Plan flows without any Growing Baldock development and with the Option 1 development is set out in **Table 2-19**. On most arms, the junction has lower flows with the mitigation already proposed by Growing Baldock on the North Road corridor. Further modelling or mitigation is therefore not required.

Table 2-19: Flow Difference (2043 Local Plan Option 1 minus 2043 Local Plan No Dev)

Arm	AM		PM	
	To Arm	From Arm	To Arm	From Arm
2043 Local Plan No Development				
A1(M) North	527	470	654	441
A507 East	676	848	637	946
A1(M) South	1192	740	654	955
A507 West	1200	1537	1425	1028
2043 Local Plan Option 1 development				
A1(M) North	482	433	640	358
A507 East	593	632	477	754
A1(M) South	1193	835	606	980
A507 West	1161	1530	1364	994
Change in flows resulting from Growing Baldock mitigation				
A1(M) North	**-45**	**-37**	**-14**	**-83**
A507 East	**-83**	**-216**	**-161**	**-192**

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Arm	AM		PM	
	To Arm	From Arm	To Arm	From Arm
A1(M) South	2	94	-48	25
A507 West	-39	-7	-61	-35

2.8 Modelling Summary

As set out in section 1.1, five points were identified as the primary focus of the COMET validation and testing exercise. The analysis and comparisons set out in this section, enables those key points to be responded upon:

1. COMET will be used as the agreed tool to validate the assumptions and outcomes of the TA, including validating the trip assignment assumptions and used to highlight whether and where additional assessments could or would be required.

   The COMET modelling has validated the assumptions and outcomes as presented in the original Transport Assessment (TA). As part of the validation process, four junctions were identified for further testing. This has been comprehensively undertaken and provided in summary tabular form, with the detailed Junctions modelling reports attached as appendices.

2. The local modelling presented in the TA was based on a static assignment of trips. This approach is recognised as being limited in considering the wider unexpected impacts on the highway network. COMET, as a strategic model is better suited to dynamic re-routing of trips based on consequential changes to the network. The local modelling approach is not invalidated, but the COMET provides a level of further certainty and a wider perspective of impacts.

   The COMET model has enabled a broad perspective to be taken in respect of the impacts of all potential development, using the dynamic rerouting approach. The outputs reveal the re-routing that would take place in connection to the new school location options and also detailing rerouting of trips away from the town centre with the proposed mitigation measures in place. It provides an understanding of the potential wider impacts that will be subject to the agreed Monitor and Manage process.

3. COMET will be used to validate and confirm that the proposed package of measures and interventions set out in the TA are having the desired effect of making journeys through Baldock slower, thereby encouraging vehicles to stay on the Strategic Road Network, rather than re-route through Baldock.

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The outputs from the COMET model clearly demonstrate that this desired effect is taking place, with vehicles staying on the Strategic Road Network and new residents choosing to use the A505 rather than routing through the town centre.

4. The outputs from the strategic model will inform whether other local junctions require reassessment as a result of rerouting that will be picked up in COMET. If this is identified, then updated modelling will be presented in the TAA.

   The COMET outputs did highlight other junctions that required local modelling testing, and these have been detailed in the TAA. This exercise has confirmed that there are no residual severe impacts that haven't already been eliminated or mitigated through the strong transport strategy.

5. COMET will also be used to test a cumulative scenario, that takes account of all potential Local Plan site allocations. This will be considered a worst-case situation, as it will assume that all site allocations would come forward.

   The COMET model outputs present a worst-case scenario with all the potential Local Plan site allocations being modelled with the full Growing Baldock development in place. In this instance, further checks have been carried out to ensure that where there may be residual congestion, that alternative travel choices are in place. Given the possibility that housing and employment growth isn't as strong as this worst-case scenario assumes, wider potential impacts will be subject to the agreed Monitor and Manage process.

With all modelling outputs there was a strong correlation between the strategic outputs in comparison to the local modelling outputs prepared. ITP conclude that the local modelling outputs represent a valid and robust basis on which the impacts of the Baldock development have been tested. More importantly, that the mitigation measure put forward in respect of the Vision-Led approach are appropriate and valid for the scale of development proposed.

The work confirms that the transport strategy and the development proposals themselves do not result in a severe impact on the highway or transport networks, in many cases offering significant improvement, and therefore should be supported in the determination of the outline planning application.

In order to summarise the original TA local modelling, the COMET modelling outputs, resultant planning action and mitigation the following Table 2-20 has been prepared.

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Table 2-20: Summary of TA & COMET traffic modelling (including Planning Actions and Mitigation)

WSP ID	Junction Name	Modelling Completed		COMET Validation results	Planning Action	Mitigation
		TA	COMET			
1	A505 / Royston Road / BA1 access	Yes	Yes	TA local modelling validated	New access	New connection to existing junction
2	A507 North Road / BA1 northern access	Yes	Yes	TA local modelling validated	New access	Create new junction on A507 North Road
3	BA3 access / Wallington Road	Yes	Yes	COMET indicates greater capacity than local modelling	New access	Create new junction Wallington Road
4	BA2 access / Clothall Road	Yes	Yes	TA local modelling validated	New access	Create new junction on A507 Clothall Road
5	A507 Station Road / Royston Road / Whitehorse Street / Clothall Road	Yes	Yes	COMET indicates greater capacity than local modelling	Mitigate	Improvement to existing junction (2043)
8	A1(M) Junction 9	Yes	Yes	TA and COMET both indicate further modelling required – has been completed	Mitigate	Part signalisation of junction (2043)
9	A1(M) Junction 10	Yes	Yes	COMET indicates lower capacity than local modelling	Monitor & Manage	-
12	Clothall Road / Wallington Road	Yes	Yes	TA local modelling validated	Mitigate	Improve active travel connections (BA2)
13	London Road / South Road / High Street	Yes	Yes	TA local modelling validated	None	-
New	*A505 / B197 London Road*	*Yes*	-	*Additional local modelling required / completed*	*None*	-
New	*Hitchin Street / Norton Road / Letchworth Road*	*Yes*	-	*Additional local modelling required / completed*	*None*	-

3 Residual Stakeholder Comments

3.1 Interim Transport Note Responses

The core element of this TAA is set out in **Section 2,** which covers the COMET modelling outputs and additional local modelling undertaken by ITP. This section is a follow on to the Interim Transport Note, dated February 2026, that responded to consultation comments made in respect of the Outline Planning Application 25/02571/OP. This section focuses on responses to queries raised by HCC and NHC.

In addition to modelling outputs, HCC requested additional information relating to the following key points:

- Scaled designs for key junctions and access arrangements,
- Early delivery of sustainable transport connections,
- Delivery and phasing of the scheme,
- Securing infrastructure through conditions,
- How the monitor and manage framework will be delivered, and
- Clear commitments and trigger points for infrastructure interventions, including the active travel bridge and A1(M) Junction 9 interventions.

NHDC requested clarification on the following topics:

- Proposed walking, cycling, and bus improvements,
- Early phasing of upgrades needed to support safe and convenient active travel,
- A consolidated understanding of obligations and design principles that will guide conditions and Design Code requirements,
- Parking provision (including cycle parking, EV charging design and car club locations),
- Station access arrangements, and
- Separate consents for proposals outside the red line boundary.

This section is split into the following sections, in response to identified key points:

Section 3.2 - Phasing and Delivery of Transport Infrastructure

Section 3.3 - Interventions and Access Arrangements

Section 3.4 - Design Principles

Section 3-5 – Other Network Considerations

Section 3.6 – Baldock Town Centre Impact

Section 3.7 - Monitor and Manage Framework

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3.2 Phasing and Delivery of Transport Infrastructure Upgrades

A phasing plan of all interventions associated with Growing Baldock has been prepared and agreed. The full plan is included in **Appendix D** of this TAA.

The phasing plan seeks to provide clarity as to the walking, cycling and bus improvements associated with Growing Baldock, and sets out how sustainable connections will be delivered early in the scheme timeline, to support safe and convenient active travel and achieve the modal shift of the Transport Vision.

The phasing plan sets out clear trigger points and commitments for the proposed interventions. The phasing plan also includes the dependencies between various interventions and scheme delivery.

All proposed interventions, as included in the phasing plan, are summarised in **Table 3-1.**

Table 3-1: Interventions in Phasing Plan

Ref.	Proposed Interventions
	BA1
1.0	Provide footway between P1 and existing route on Bygrave Road
1.1	Build temporary access on A507 North Road in location of future bus-only access (utilise for construction vehicle routing for later stages of P1)
1.2	Improve walking and cycling routes to Knights Templar School along Icknield Way and Norton Road
1.3	Build main access on A507 North Road (permanent form) including signalised crossings
1.4	Convert construction traffic access to bus-only use (permanent form) including signalised crossings
1.5	Run interim 30-minute frequency shuttle bus service.
1.6	Implement traffic gating on A507 North Road southbound using signal timings at future bus-only access (and then main BA1 access)
1.7	Build single lane alternating traffic system under the A507 Station Road railway bridge
1.8	Upgrade junction at A507 Station Road and Icknield Way East and remove access to/from Icknield Way and Football Close loop
1.9	Complete full length of North Road / Station Road segregated cycle route between Icknield Way East and bus-only access
1.10	Reopen pedestrian access to the station from A507 North Road
1.11	Enlarge roundabout at junction of B656 Royston Road and A505 eastbound slip roads
1.12	Build a multi-modal bridge
1.13	Connect North Road to B656 Royston Road and A505 via a new access road
1.14	Convert Bygrave Road to a walking and cycling greenway with local access (phased as parcels complete eastwards)
1.15	Run 15-minute frequency Baldock Flyer loop bus service

Ref.	Proposed Interventions
1.16	Upgrade Whitehorse signalised cross-roads and introduce turning ban between A507 Station Road and B656 Royston Road
1.17	Provide capacity improvements at A1(M) Junction 9 including partial signalisation
1.18	Build new active travel underpass linking BA1 to B656 Royston Road
1.19	Extend 7.5t weight restrictions across Baldock and review directional signage
1.20	Extend 20mph speed limits to North Road, Station Road and Clothall Road
	BA2
2.2	Build access on A507 Clothall Road
2.3	Build footway between access and Wallington Road, including signalised crossing point at access and improvements to Wallington Road roundabout
2.5	Provide pedestrian route to Laxton Gardens
	BA3
3.1	Build access on Wallington Road
3.2	Upgrade footpath to A507 Clothall Road to tie in with crossing point to BA2, e.g. all-weather surface upgrades and directional signage
3.3	Upgrade footpaths to Hartsfield School and Pinnocks Lane via A507 Clothall Road, e.g. all-weather surface upgrades and directional signage
3.4	Upgrade walking and cycling routes through Clothall Common from B656 Royston Road, e.g directional signage
3.5	Upgrade A507 Clothall Road / Wallington Road / South Road with improved crossing points and traffic calming geometry
3.6	Wayfinding improvements to coincide with relocation of Knights Templar School (if applicable), e.g. town-wide pedestrian and cycle signage
	BA10
10.1	Build access points on B656 Royston Road, including integrated signalised crossings and traffic calming
10.2	Build segregated cycle route on B656 Royston Road and Yeomanry Drive corridor between Icknield Way East and BA1 railway underpass
10.3	Build bus gate between Royston Road and Yeomanry Drive
10.4	Build remainder of segregated cycle route on B656 Royston Road corridor to junction of B656 Royston Road and A505 eastbound slip roads
10.5	Install signalised Pegasus crossing on B656 Royston Road at location of existing bridleway crossing

3.2.1 Interim Sensitivity Testing

Comments raised during the TWG meetings focused on the alignment between the delivery programme for sustainable mitigation and the scale of proposed residential development. An Interim Sensitivity test has been undertaken in connection to the 2033 Interim Year, which effectively changes the quantum of vehicles proposed to arrive and depart from the BA1 access on North Road, reflecting the ability for an additional 200 residential units to be occupied on BA1 prior to the opening of the multimodal bridge due to the earlier delivery of the North Road/Station Road active travel corridor scheme. This sensitivity has been undertaken as a comparison of the network performance compared to the 2033 Interim Year presented in the TA. The outcome of this sensitivity test was that the additional units could be accepted onto the North Road with minimal changes in corridor performance.

2033 Interim AM Sensitivity

The AM Sensitivity test shows slightly higher queues and delays on the A507 Station Road southbound movements, with maximum queues increasing (e.g. the left turn rising from ~196 m to ~207 m) and delays increasing modestly (e.g. ~68 s to ~70 s). Elsewhere, differences are small and mixed, with minor increases and reductions in queues and delays, indicating the Sensitivity case performs marginally worse overall, with Levels of Service generally unchanged across the network.

Notwithstanding this, localised deteriorations in LOS are observed at individual arms that were operating close to threshold conditions in the original assessment. A deterioration from LOS C to LOS D occurs on the Royston Road left turn, associated with an increase in average queues of ~0.5 m and delay of ~1.5 s, while a further change from LOS A to LOS B is recorded on the A507 northbound bus priority junction, with average queuing increasing from ~31 m to ~32.5 m.

Overall, the A507 Station Road (North) – Left Turn into the BA1 Access shows the largest increase in average maximum queues (≈130 m to ≈137 m), while the largest increase in delay occurs on Clothall Road, rising by approximately 10 s (≈115 s to ≈125 s) in the Sensitivity test.

2033 Interim PM Sensitivity

For the PM peak, the Sensitivity test performs marginally worse overall, with small increases in maximum queues and delays at key movements, particularly on A507 Station Road northbound, where maximum queues increase (e.g. ~200 m to ~213 m) and delays rise slightly. Levels of Service remain unchanged across the network, indicating that while the Sensitivity case is operationally slightly weaker, it does not materially alter the overall PM performance outcome.

The A507 Station Road (North) – Left Turn into the BA1 Access records the largest increase in average queues (≈120 m to ≈125 m, +~5 m), while the largest increase in average delay occurs on Clothall Road, rising by approximately 6 s (≈59 s to ≈65 s) in the Sensitivity test.

The results of the sensitivity test enabled identification of a range of mitigation measures for delivery, with the residential quantum threshold adjusted in the TA to account for bringing forward the sustainable vision-led mitigation measures. This test identifies that the revised threshold remains operationally acceptable and any trade off in slightly worse delay is worth it for delivering active travel interventions sooner.

3.2.2 Secondary School Delivery

The secondary school location will be determined by an education review mechanism, which will be agreed between NHC, HCC and U&C. The transport work carried out considers the two extreme ends of the spectrum and therefore likely compromise between these positions will result in a lesser traffic impact.

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3.3 Interventions and Access Arrangements

This section sets out updates to the proposed layout, including access arrangements, since the TA was issued, and confirms the arrangement for interventions proposed outside of the red line boundary.

3.3.1 Updated Designs

Comments raised by NHC and HCC included concerns regarding crossings on North Road and Royston Road, to improve pedestrian and cyclist permeability. Revised drawings of North Road have been prepared, submitted with the Interim Transport Response note, and these show a southbound connection from the shared path. Northbound cyclists will be able to access Football Close and Icknield Way using the dropped kerbs.

Additional drawings of proposals along Norton Way have been prepared, included in **Appendix C**. Improvements on this link relate to improvements to walking and cycling routes to Knights Templar School, which are included in the phasing plan **Appendix D**. Proposals include traffic calming measures such as speed cushions and raised tables, in addition to improved crossing infrastructure and improvements to pedestrian and cycling routes.

An enhanced scheme for A1(M) Junction 9 has been prepared to demonstrate the physical possibility of its implementation. This is included in **Appendix E**. As set out in **Section 2.6.1**, this scheme is proportionate to the impact of the Growing Baldock proposals in the 2043 scenarios, taking into account existing and future congestion on the network.

3.3.2 Consents and Approvals Outside of Red Line Boundary

The TA includes indicative proposals, including access arrangements and amendments to the local highway and active travel network, which are located outside of the red line boundary for the development.

For those works proposed within public highway, these will be covered by S106 and/or S278 agreement for offsite works.

3.4 Design Principles

This section sets out how the detailed design elements relating to internal layout of the development will be secured.

The internal layout aspects of the scheme will be agreed in detail at the Design Code stage. This will include:

- Location of internal bus stops.

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- Location of parking bays, including car club, unallocated and off-plot car parking.
- Provision of EV chargepoints.
- Quantity and type of cycle parking.
- Bin storage provision, including carry distances and routes.

3.5 Other Network Considerations

As the COMET model covers a wider geographic area, which can be seen in **Figure 2-1 and Figure 2-2,** a review of key highway links providing connections to the local villages of Wallington, Bygrave and Norton has been undertaken, as stakeholders have raised that these locations as experiencing impacts as a result of the Growing Baldock vision-led mitigation measures proposed. A comparison of the traffic flows on the key links serving these locations is set out in **Table 3-2**.

Table 3-2: Traffic Flows for 2043 Do Minimum and 2043 Development Option 1

Location	2043 AM do minimum	2043 PM do minimum	2043 S3-1 AM flow difference	S3-1 2043 PM flow difference
Ashwell Road	155	158	+43	+23
Wallington Road	240	246	+158	+145
Norton Road	889	976	+114	+6

The presented flow differences shown in **Table 3-2** have been modelled within COMET, with the outputs reviewed for consideration on impact. The COMET outputs demonstrate that the increased development flows in the NTEM modelled period can be accommodated on the network within existing capacity, with these links operating well below the 80% threshold.

As such, whilst ITP acknowledge that the assessment identifies forecast traffic flow increases of an additional 43 trips on Bygrave Road, 158 trips on Wallington Road and 114 trips on Norton Road, in the AM peak, this uplift in traffic flows is from a low baseline traffic level. This means that the resultant traffic flows remain modest in absolute terms. There is no indication that this level of increase would materially affect junction operation, capacity, or safety.

However, although the resulting absolute traffic flows remain low and do not give rise to capacity or operational concerns that warrant more detailed junction modelling, a number of potential mitigation measures are proposed within the Monitor and Manage framework, such as introducing traffic calming and restricted turning movements, these are set out in more detail in **Table 3-4**.

3.6 Baldock Town Centre Impact

The transport strategy for the Growing Baldock development has been specifically designed to protect and enhance conditions within Baldock town centre, by managing through traffic, rather than discouraging access. Under the interim scenario, with mitigation measures in place, peak hour development traffic is primarily directed north via North Road and south via Clothall Road, to connect with the strategic road network, as illustrated in **Figure 2-4** and **Figure 2-5**.

The proposals have been independently tested using Hertfordshire County Council's COMET strategic transport model and detailed local junction modelling.

The modelling demonstrates that the scheme's vision-led package of interventions (developed with input from the community) successfully discourages through-traffic from routing via the town centre, instead directing longer-distance movements towards the A1(M), A505 and other strategic routes. Measures such as traffic "gating" on North Road, alternating shuttle working under the Station Road railway bridge, changes to access arrangements, and potential turning restrictions at key junctions are intentionally designed to reduce the attractiveness of the town as a through-route, whilst balancing access to the town centre's offer.

Key town-centre junctions, including High Street / Whitehorse Street / Hitchin Street and London Road / South Road / High Street, are forecast to operate within capacity or within accepted operational tolerances in the interim year, at full development, and under a 2043 Local Plan cumulative "worst-case" scenario. Where localised congestion is forecast, it is either comparable to existing conditions or arises from deliberate traffic-management measures intended to restrain traffic volumes, rather than from uncontrolled congestion caused by development traffic.

Importantly, the strategic modelling confirms that the proposals reduce through-movements on sensitive town-centre streets, supporting lower traffic volumes and a calmer street environment. This enables improved conditions for walking, cycling and public transport, which are central to both national and local planning policy objectives. Significant investment in new and upgraded pedestrian and cycle routes, alongside the delivery of the "Baldock Flyer" bus service linking new neighbourhoods, the town centre and the station, further supports sustainable access to the centre.

The evidence does not identify any severe residual impacts on the town-centre highway network once the committed mitigation is in place. A secured Monitor and Manage framework will provide a mechanism to review traffic conditions and introduce further measures if required, without over-engineering solutions at the outset.

Taken together, the evidence demonstrates that the Growing Baldock transport proposals do not harm the operation or vitality of Baldock town centre. On the contrary, they support a safer, more accessible and more sustainable town-centre environment.

3.7 Monitor and Manage Framework

Mode shift has been integrated into the trip rates that have been used for assessing the impact of the development, as part of the Vision-Led approach. As the development will be built out over several years with multiple reserved matters applications, there is potential uncertainty over whether predicted impacts will in fact arise at a small number of junctions.

The Framework Travel Plan, prepared and submitted with the application, sets out how trips from the development will be **monitored**, to establish whether trip rate and mode share targets are being achieved.

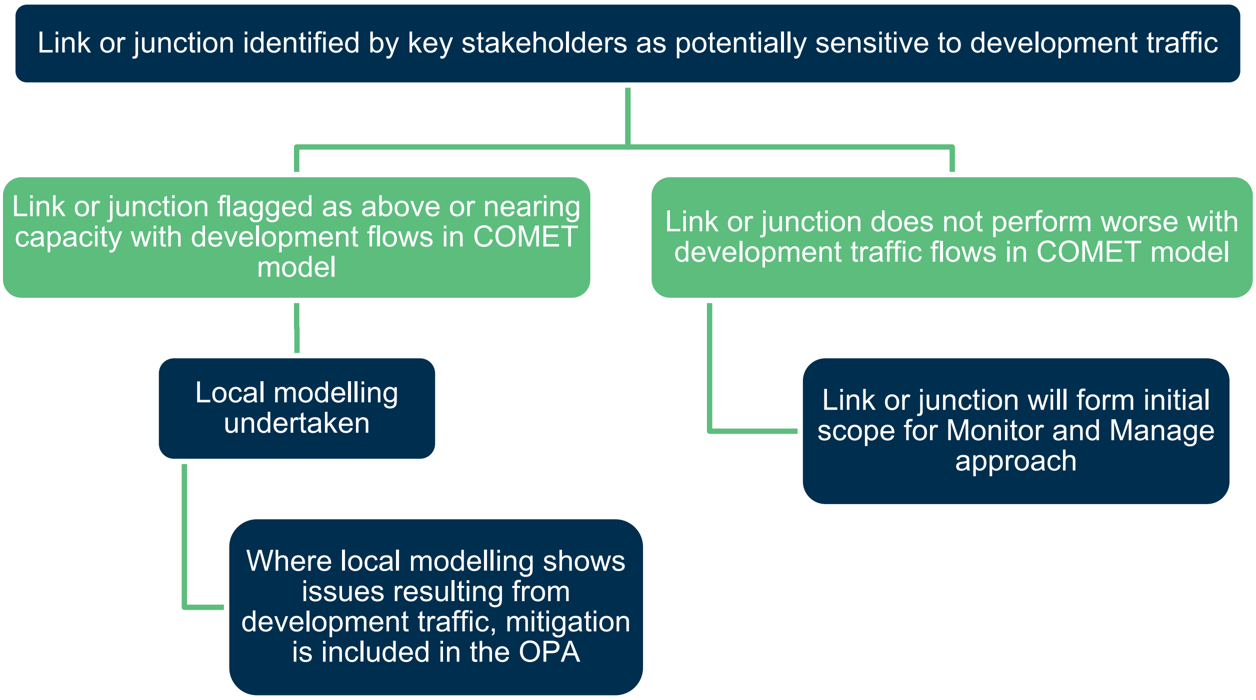
Monitoring will allow uncertain impact to be appropriately **managed**, recognising a necessary proportionality. The Framework Travel Plan includes the steps by which actions and further interventions will be put in place, should the number of trips made by active and sustainable modes be lower than expected.

3.7.1 Monitor and Manage Scope

In the TWGs and other communications with key stakeholders, some junctions and links have been flagged by stakeholders as potentially having issues as a result of development impacts.

Where the COMET assessment in this TAA does not show these junctions or links performing significantly worse as a result of the development, no mitigation is proposed at these locations at this stage of the application. Instead, these junctions may be included as part of the Monitor and Manage Framework. The method by which these locations may be identified is set out in **Figure 3-1.**

Figure 3-1: Monitor and Manage Process



The Monitor and Manage Framework is set out in more detail within the Framework Travel Plan (FTP), submitted alongside the Transport Assessment. The FTP will be the key document in terms of refining the monitoring, thresholds and governance further through future RMAs. As an initial basis, the NPPF Paragraph 115 test is applied, which states:

"*Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be* <u>*severe*</u>." (ITP underlined for reference)

Within the Monitor and Manage approach, the 'severe' test aligns with adopted planning policy. However, it is recognised that this represents a high threshold—beyond typical congestion and delay—which may limit timely intervention if relied upon alone. This is not the intention of the approach, and the thresholds and triggers will be refined through the RMA process. To provide confidence that mitigation can be delivered where necessary, a range of 'severe'-aligned thresholds have therefore been identified to inform the timely implementation of measures, including:

- Deterioration in the Place and Movement function in line with HCC guidance and policy
- Peak delay frequently in excess of levels presented in technical assessment
- Material increase in recorded collisions relative to background trends
- Evidence that intervention would assist in achieving a mode shift to sustainable modes where this is currently below required Travel Plan targets.

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Table 3.2 summarises the outcomes of the review process outlined in **Figure 3-1**, identifying locations to be included within the Monitor and Manage Framework. The associated thresholds, triggers and potential interventions are also set out in **Table 3.2**. As no severe impacts are currently predicted at these locations, mitigation is not required at this stage.

Table 3-3: Monitor and Manage Junction Schedule

<table>
<tr><th>Junction / Link</th><th>Potential Issue</th><th>Potential Mitigation</th><th>Trigger for Monitor and Manage</th></tr>
<tr><td>A507 / B656 (Whitehorse junction)</td><td>Proposed interventions are less successful than anticipated at removing through traffic, therefore resulting in congestion beyond that predicted at the time of determination.</td><td>Turning restrictions to prevent vehicles travelling between Whitehorse Street (west) and Station Road (north) in both directions. This would further encourage the appropriate use of A1(M) junction 9 by drivers accessing Letchworth.</td><td rowspan="6">One or more of the following thresholds may trigger the Monitor and Manage approach, leading to the potential mitigation being introduced:

• Deterioration in the Place and Movement function in line with HCC guidance and policy
• Peak delay frequently in excess of levels presented in technical assessment
• Material increase in recorded collisions relative to background trends
• Evidence that intervention would assist in achieving a mode shift to sustainable modes where this is currently below required Travel Plan targets.

Notwithstanding the above, the impact of the core measures implemented at each phase of delivery will monitored, with sufficient time allowed to gauge their efficacy.</td></tr>
<tr><td>Norton Road (between Baldock and Stotfold)</td><td>Potential for additional through traffic routing north-south avoiding the North Road corridor, therefore resulting in greater impact than predicted at the time of determination.</td><td>Traffic calming, such as speed cushions, reduced speed limits or chicanes, to reduce the average speed and make this a less competitive route when considering journey time.

Turning restrictions at the junction of Norton Road and B656 Letchworth Road to reduce the convenience of this route for through trips.</td></tr>
<tr><td>Wallington Road</td><td>Potential for additional through traffic routing east-west, instead of using Clothall Road, therefore resulting in greater impact than predicted at the time of determination.</td><td rowspan="4">Traffic calming, such as speed cushions, reduced speed limits or chicanes, to reduce the average speed and make these less competitive routes when considering journey time.

Alternative interventions such as Travel Plan measures may also be considered to deliver the equivalent of the above physical interventions.</td></tr>
<tr><td>Newnham Road</td><td rowspan="2">Potential for additional through traffic routing east-west avoiding the Royston Road corridor, therefore resulting in greater impact than predicted at the time of determination.</td></tr>
<tr><td>Ashwell Road</td></tr>
<tr><td>Norton Bury Lane</td><td>Potential for additional through traffic routing north-south avoiding the North Road corridor, therefore resulting in greater impact than predicted at the time of determination.</td></tr>
</table>

Table 3-4 lists the junctions agreed for inclusion in the Monitor and Manage framework. Links towards Graveley and Weston were also reviewed but not progressed, as COMET modelling

indicates no material change in delay on these links. The maximum development-related peak traffic impact (26% on the B197 in the AM peak) is minimal and within normal daily variations.

In terms of the broader Monitor and Manage framework, softer measures could also be incorporated in the place of physical interventions, which focus on influencing travel behaviour and optimising network performance through initiatives such as travel planning, public transport enhancements and operational adjustments, enabling proportionate and timely intervention without the need for immediate infrastructure delivery.

4 Summary and Conclusion

This Transport Assessment Addendum (TAA) has been prepared to deliver the approach agreed in advance with Hertfordshire County Council (HCC), National Highways (NH) and North Hertfordshire District Council (NHDC): namely, to independently verify the local highway modelling presented in the Transport Assessment (TA) using Hertfordshire's countywide COMET strategic transport model, and to proportionately address all residual stakeholder queries.

The COMET modelling has been undertaken independently by WSP on behalf of HCC and reported through the Transport Working Group (TWG). COMET provides a strategic cross-check of trip distribution, rerouting behaviour and cumulative context, but does not replace detailed operational modelling for junction capacity or mitigation design.

The Addendum undertook a like-for-like comparison between COMET outputs and the TA's local junction models for:

- (i) the 2029 interim scenario,
- (ii) the 2043 full development scenarios with committed mitigation, and
- (iii) a 2043 Local Plan cumulative scenario, representing a conservative "worst-case" planning assumption.

Across all directly comparable junctions and in all scenarios, COMET outputs corroborate the conclusions of the local modelling presented in the TA. Any differences identified are small, within accepted tolerances between strategic and operational modelling tools, and do not result in new or previously unidentified capacity constraints once the committed mitigation package is applied.

Where COMET identified higher-than-anticipated flows at locations not previously modelled in detail, four junctions only were taken forward for targeted local verification, in accordance with the scope agreed with HCC and NH. In each case, the additional local modelling confirms that junctions operate within capacity or within accepted operational tolerances, and that no additional mitigation is required to support determination of the outline application.

Further testing at A1(M) Junction 9 demonstrates that, while the junction experiences background capacity constraints in all scenarios, the proposed mitigation reduces queuing on the SRN slip roads relative to baseline conditions, thereby avoiding any additional safety or operational concern for National Highways. The mitigation is proportionate to the development impact and is not relied upon to resolve wider, pre-existing congestion.

Consistent with the Vision-Led Strategy underpinning the TA, COMET demonstrates that the proposed package of measures discourages through-movements through Baldock and encourages use of the SRN, with traffic redistribution away from sensitive town-centre streets. This behaviour is policy-aligned and anticipated by the original TA assumptions.

COMET was also used to test a Local Plan cumulative scenario in which all relevant allocations are assumed to come forward. Any locations shown to approach or exceed practical capacity in this scenario reflect plan-wide growth, not impacts attributable to the Growing Baldock development in isolation. Such outcomes are appropriately addressed through the agreed Monitor and Manage framework, consistent with how COMET evidence is used across Hertfordshire plan-making and decision-taking.

Delivery and controls are clearly secured. The Phasing Plan appended to this TAA sets out defined triggers, dependencies and commitments for active travel infrastructure, public transport enhancements and highway measures. When read alongside the submitted Travel Plan and Monitor and Manage framework, this provides a robust and proportionate mechanism to manage uncertainty in out-turn behaviour without reopening the principle of development or requiring speculative mitigation.

Taken together, the strategic COMET validation, the targeted local verification, and the secured, phased mitigation demonstrate that:

1. The TA's conclusions are confirmed: with the proposed mitigation, the development does not give rise to a severe residual cumulative impact on the transport network, in accordance with the NPPF.
2. Strategic rerouting effects are positive and policy-aligned, directing traffic towards the SRN and away from sensitive local routes.
3. No additional mitigation is required beyond that already identified and secured; the Monitor and Manage framework provides appropriate assurance that any future variance can be addressed proportionately.

On this basis, the transport evidence is sound, proportionate and independently validated, and the application can be supported on transport grounds.

Appendix A – WSP COMET Technical Note

TECHNICAL NOTE 2

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

INTRODUCTION

WSP were commissioned by ITP on behalf of Urban&Civic to assess the strategic transport impact of the Growing Baldock development proposals.

The Growing Baldock development comprises of the Local Plan allocation sites BA1, BA2, BA3 and BA10 in Baldock, Hertfordshire. The development proposes to deliver of up to 3,198 residential units, 93,000 sqm of employment and other land uses and up to three new schools across all four site allocations. The development is located in the North Hertfordshire district of Hertfordshire.

Transport modelling to assess the impacts of the proposed development has been undertaken in Hertfordshire's COMET model, which has a base year of 2023. A review of the 2023 base year model has been undertaken and the changes that have been made to the base model in the local area are outlined in a separate technical note titled "Base Year Model Review and Update", which is provided in Appendix A of this technical note.

This technical note details the scenarios and results of the forecast modelling undertaken to assess the impacts of the proposed development.

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CONTEXT

Figure 1 shows the location of the Growing Baldock development within the context of the wider Baldock area. The development site is located to the north-east of Baldock town in Hertfordshire. There are four allocated areas of development.

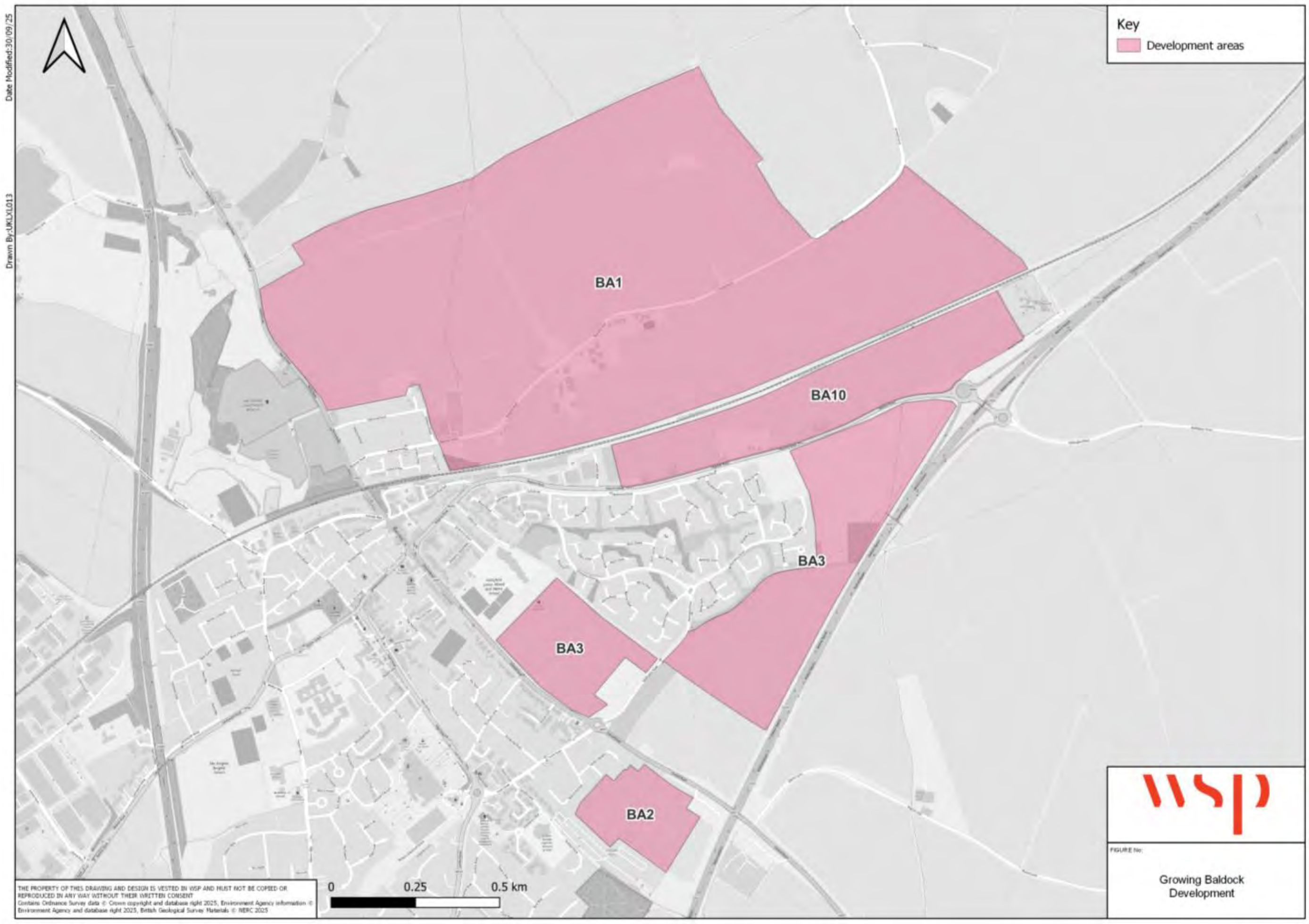

Figure 1: Growing Baldock Development Area

Table 1 shows the proposed land use types in each of the areas of the development.

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Table 1: Proposed Land Use of Growing Baldock Development

Land Use Type	Land Use	2033 (2029 forecast year)			2040 (2043 forecast year)		
		Floorspace	Dwellings	Other	Floorspace	Dwellings	Other
BA1							
Dwellings	C3		650			2,750	
Shops	A1-A3	350m^2			700 m^2		
Financial & Professional Services							
Restaurants & Cafes							
Drinking Establishments	A4-A5	400m^2			800 m^2		
Hot Food Takeaways							
Office	B1(a)/ B1(b)	0m^2			550 m^2		
Hotel / Residential Institutions	C1-C2	0m^2			3,500 m^2		
Leisure	D2	575m^2			1,150 m^2		
Pub	Sui Generis	0m^2			750 m^2		
Education – Primary School	F1			1no. 3-form			2no. 3-form
Community	F2	500m^2			500 m^2		
Nursery	E(f)	550m^2			550 m^2		
BA2							
Dwellings	C3		200			200	
BA3 (Option 1)							
Education – Secondary School	F1						1no. 12-form
Education – SEND School	F1						150 pupils 50 staff

Land Use Type	Land Use	2033 (2029 forecast year)			2040 (2043 forecast year)		
		Floorspace	Dwellings	Other	Floorspace	Dwellings	Other
BA3 (Option 2)							
Dwellings	C3					248	
Education – SEND School							150 pupils 50 staff
BA10							
Medical Centre	E	1,500m^2			6,000 m^2		
Vehicle depot	Sui generis	-			1,500 m^2		
Waste transfer station	B2				3,500 m^2		
Household Waste Recycling Centre (HWRC)	Sui generis	-			1.1ha		
Office	E	12,500m^2			20,000 m^2		
Light Industrial	E	13,250m^2			26,500 m^2		
Industrial	B2	9,400m^2			26,500 m^2		
Gym	E(d)	-			5,000m^2		

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Figure 2 shows the base COMET model network links, nodes and zones in the Baldock area.

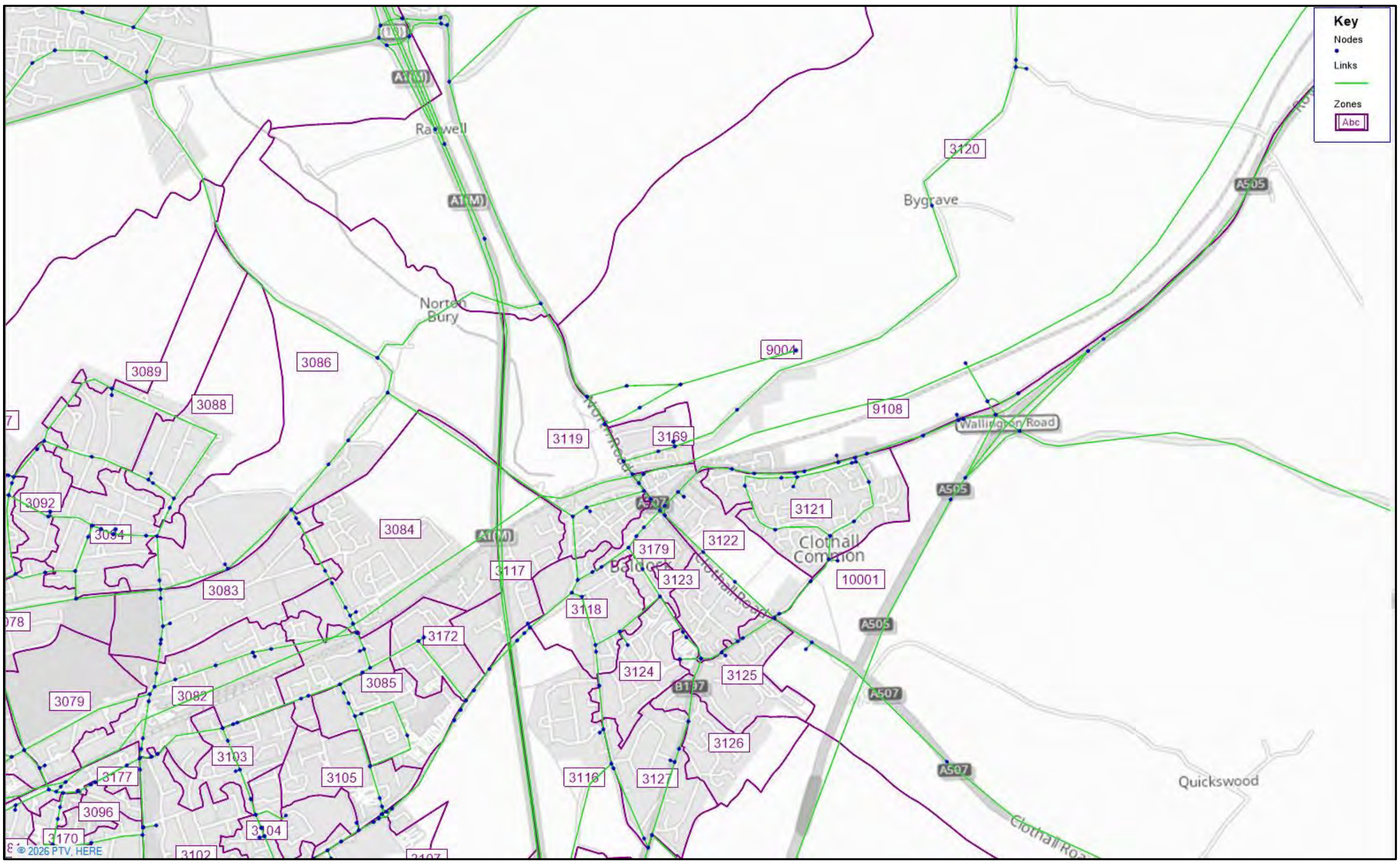

Figure 2: **Model Network in the Baldock Area**

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ASSUMPTIONS AND MODEL SCENARIOS

Demand Assumptions

The forecast demand in AM and PM peak hours for the Baldock development was provided by ITP and is presented in **Table 2** to **Table 5.** To run the variable demand model, forecast demand was also required for the interpeak hours as well. Since ITP was not able to provide these, it was agreed by ITP and HCC that the Interpeak flows should be factored from the AM and PM using factors based on the survey data that was collected for the COMET model update in 2023.

The demand that was provided by ITP for the interim year was for 2033. The COMET model has a forecast year of 2029 and it was agreed that the 2033 demand should be used in the 2029 models.

Table 2: Highway Development Demand (Vehicles) 2029 (Interim Phase), Vision-Led Assumptions

Development Area	AM Peak (8-9) Arrivals	AM Peak (8-9) Departures	PM Peak (17-18) Arrivals	PM Peak (17-18) Departures
BA1 Cars	50	129	144	66
BA2 Cars	23	59	54	25
BA3 Option 1 Cars	0	0	0	0
BA3 Option 2 Cars	0	0	0	0
BA10 Site access road west Cars	141	44	29	88
BA10 Site access road east Cars	46	15	10	29
BA10 Waste access Cars	14	4	3	9
BA10 HGV	4	3	3	3
TOTAL CARS	**274**	**251**	**240**	**217**
TOTAL HGV	**4**	**3**	**3**	**3**

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Table 3: Bus Development Demand (Passengers) 2029 (Interim Phase), Vision-Led Assumptions

Development Area	AM Peak (8-9) Arrivals	AM Peak (8-9) Departures	PM Peak (17-18) Arrivals	PM Peak (17-18) Departures
BA1	6	46	35	9
BA2	3	28	15	3
BA3 Option 1	0	0	0	0
BA3 Option 2	0	0	0	0
BA10	102	49	44	99
TOTAL	**213**	**172**	**140**	**210**

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Table 4: Highway Development Demand (Vehicles) 2043 (Full Development Year), Vision-Led Assumptions

Development Area	AM Peak (8-9) Arrivals	AM Peak (8-9) Departures	PM Peak (17-18) Arrivals	PM Peak (17-18) Departures
BA1 Cars	176	455	443	201
BA2 Cars	22	57	53	24
BA3 Option 1 Cars	565	368	4	184
BA3 Option 2 Cars	107	98	65	66
BA10 Site access road west Cars	328	102	51	192
BA10 Site access road west Cars	108	34	17	63
BA10 Waste access Cars	33	10	5	19
BA10 HGV	14	14	0	0
TOTAL CARS OPTION 1	**1232**	**1026**	**573**	**683**
TOTAL CARS OPTION 2	**774**	**755**	**634**	**565**
TOTAL HGV (BOTH OPTIONS)	**14**	**14**	**0**	**0**

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Table 5: Bus Development Demand (Passengers) 2043 (Full Development Year), Vision-Led Assumptions

Development Area	AM Peak Period (7-10) Arrivals	AM Peak Period (7-10) Departures	PM Peak Period (16-19) Arrivals	PM Peak Period (16-19) Departures
BA1	22	179	114	26
BA2	9	37	23	9
BA3 Option 1	378	0	0	4
BA3 Option 2	6	34	18	6
BA10	370	172	152	330
TOTAL OPTION 1	**778**	**388**	**289**	**369**
TOTAL OPTION 2	**407**	**422**	**307**	**371**

The car trips forecast for the development have been split between the three model user classes according to the percentage split in the Base COMET model. The split is shown in **Table 6**

Table 6: Percentage Split Between Model Car User Classes

User Class	AM Peak	Interpeak	PM Peak
Car Business	9%	8%	8%
Car Commute	47%	17%	43%
Car Other	44%	75%	49%

The bus trips forecast for the development have been split between the three model public transport user classes according to the percentage split in the Base COMET model. The split is shown in ***Table 7***.

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Table 7: Percentage Split Between Model Public Transport User Classes

User Class	AM Peak	Interpeak	PM Peak
PT Business	11%	12%	13%
PT Commute	45%	14%	43%
PT Other	44%	74%	44%

The forecast demand for Growing Baldock has been allocated to specific model zones, as shown in **Table 8** and **Figure 3.**

Table 8: Development Zones Used for the Baldock Development

Zone	Part of development
9004	BA1
9108	BA10
10001	BA2 and BA3

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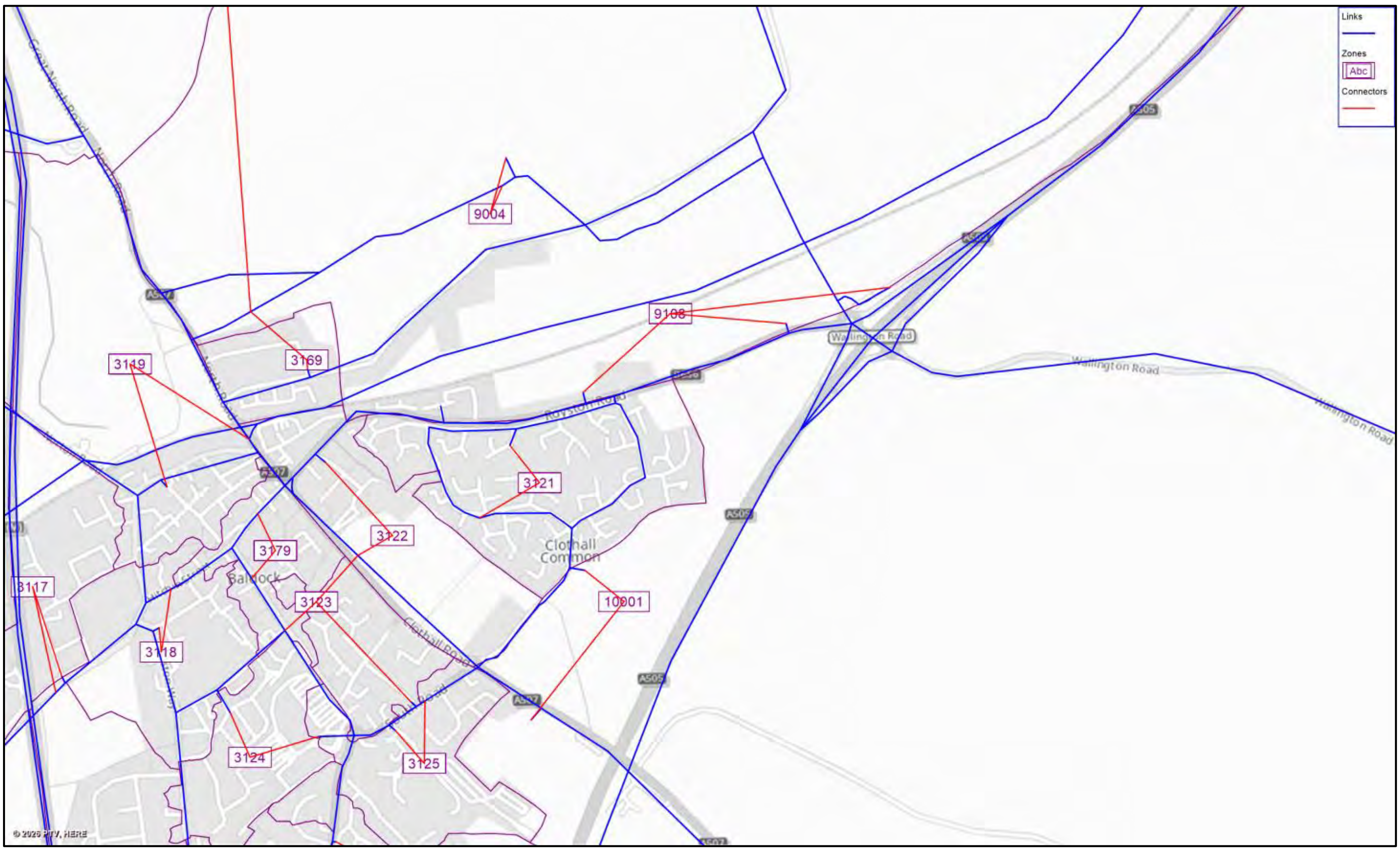

Figure 3: Model Development Zone Locations

Network Assumptions

HIGHWAY SCHEMES

A number of highway schemes have been proposed as part of the Growing Baldock development. Drawings of the schemes and proposed signals timings were provided by ITP. The schemes have been summarised in **Table 9** and the locations are shown in **Figure 4.** The drawings of the schemes are provided in Appendix B.

Table 9: Proposed Highway Schemes

ID	Junction / Road	Highway Scheme	Year
1	North Road - Development access for BA1	New signalised junction	2029, 2043
2	North Road	Change of speed limit on North Road to 30mph southwards of the development access	2029, 2043
3	North Road - bus access to BA1	New signalised junction	2029, 2043
4	North Road - railway bridge	New signals will introduce one-way shuttle traffic under the bridge	2029, 2043
5	Station Road - Whitehorse Street - Royston Road - Clothall Road	Existing layout in 2029, with revised signal timings update signal timings to those proposed Revised layout in 2043, including banned turns from North to East and East to North	2029 2043
6	Roston Road - Marquis Business Park	New mini roundabout	2043
7	Royston Road - BA10 access West	New signalised junction	2029, 2043
8	Royston Road - bus access from Yeomanry Drive	Signalised junction with new link between Royston Road and Yeomanry Drive for bus only	2029, 2043
9	Royston Road - BA10 access East	New priority junction	2029, 2043
10	Royston Road - A505 roundabout north-west	New arm on roundabout to link to BA1 link road	2029, 2043
11	Link Road - BA10 east access	Junction on link road to provide access to BA10 east traffic	2029, 2043

ID	**Junction / Road**	**Highway Scheme**	**Year**
12	Wallington Road - BA3 access	New priority junction for development access	2029, 2043
13	Clothall Road - BA2 access	New priority junction for development access (connector to zone 10001 with a adjacent node coded as controlled crossing	2029, 2043
14	Clothall Road - speed limit change	Change to 30mph in vicinity of the BA2 access and northwards	2029, 2043
15	Link Road between North Road and Royston Road/A505 roundabout	Only part of the link road built in 2029 models, full link included in 2043 models only	2043
16	Link road - bus access road	Mini roundabout on the link road to join to bus access road	2029, 2043
17	Link Road - Ashwell Road junction	New roundabout on Ashwell Road to join it to the new link road. Existing part of Ashwell Road through the development to become active greenway. All traffic on Bygrave Road south of this to travel to/from area via North Road.	2043
18	Toucan crossing on Royston Road	New Toucan crossing	2029, 2043
19	Pegasus crossing on Royston Road	New Pegasus crossing	2029, 2043
20	Ped/cycle crossing on Royston Road	Royston Road reduces to a single lane at crossing, with traffic westbound giving way to eastbound.	2029, 2043
21	Ped/cycle crossing on Yeomanry Drive	Yeomanry Drive reduces to a single lane at crossing, with traffic eastbound giving way to westbound.	2029, 2043
22	Icknield way access to North Road	Closure of access from Icknield Way to North Road	2029, 2043

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ID	Junction / Road	Highway Scheme	Year
23	Clothall Road pedestrian crossing	New signalised pedestrian crossing on Clothall Road, close to BA2 access	2029, 2043

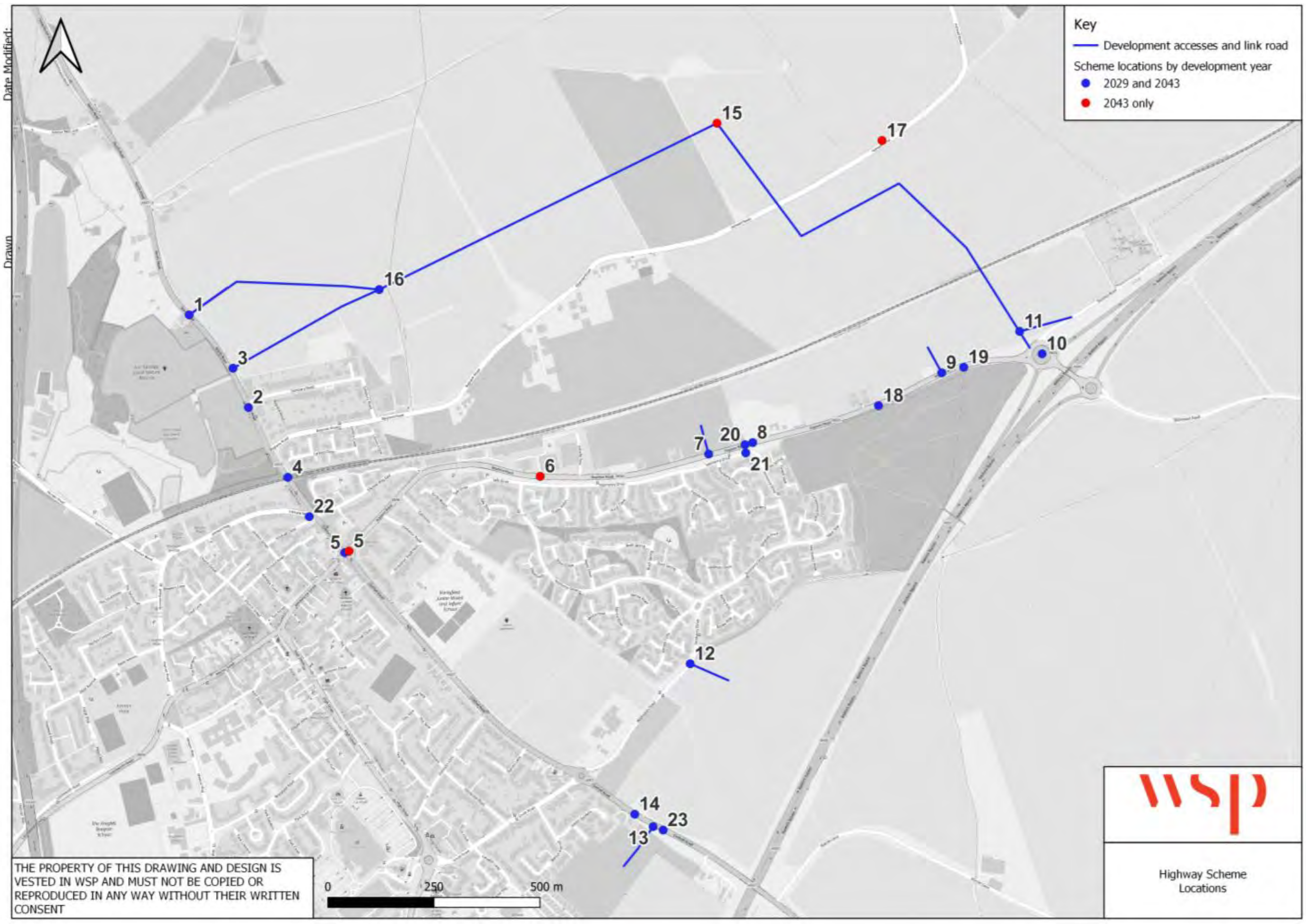

Figure 4: **Highway Scheme Locations**

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PUBLIC TRANSPORT SCHEMES

A new bus route is proposed to be implemented as part of the Growing Baldock development. It was agreed with ITP and HCC that the following frequency should be modelled:

- 2029 – 30 minutes frequency throughout the day
- 2043 – 15 minutes frequency throughout the day

The route has been coded with a total route time in both forecast years of 30 minutes, with assumed fares in line with the fares for other local bus routes in Baldock. The route modelled in 2029 is shown in **Figure 5** and the route modelled in 2043 is shown in **Figure *6*.**

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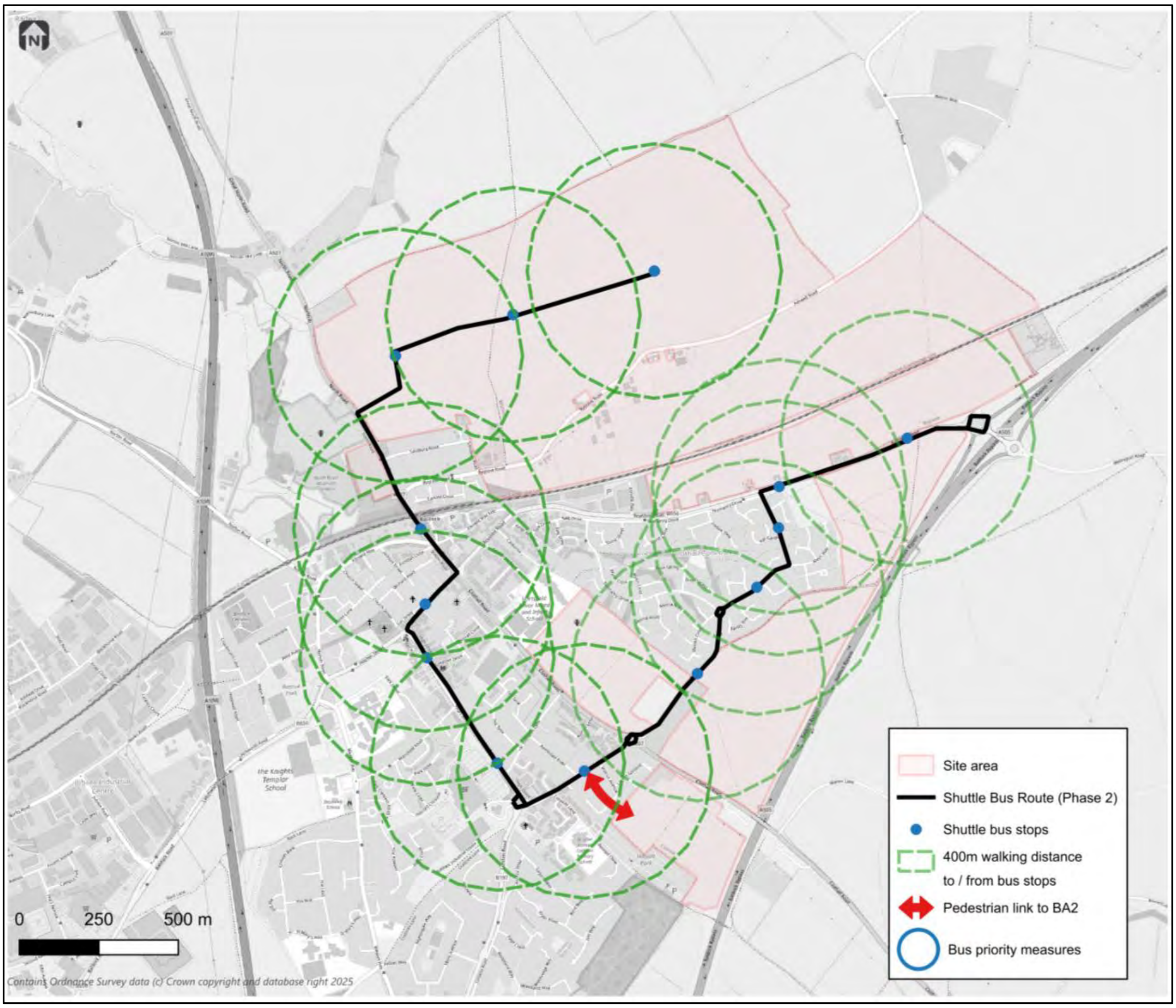

Figure 5: Proposed Bus Route 2029 Model

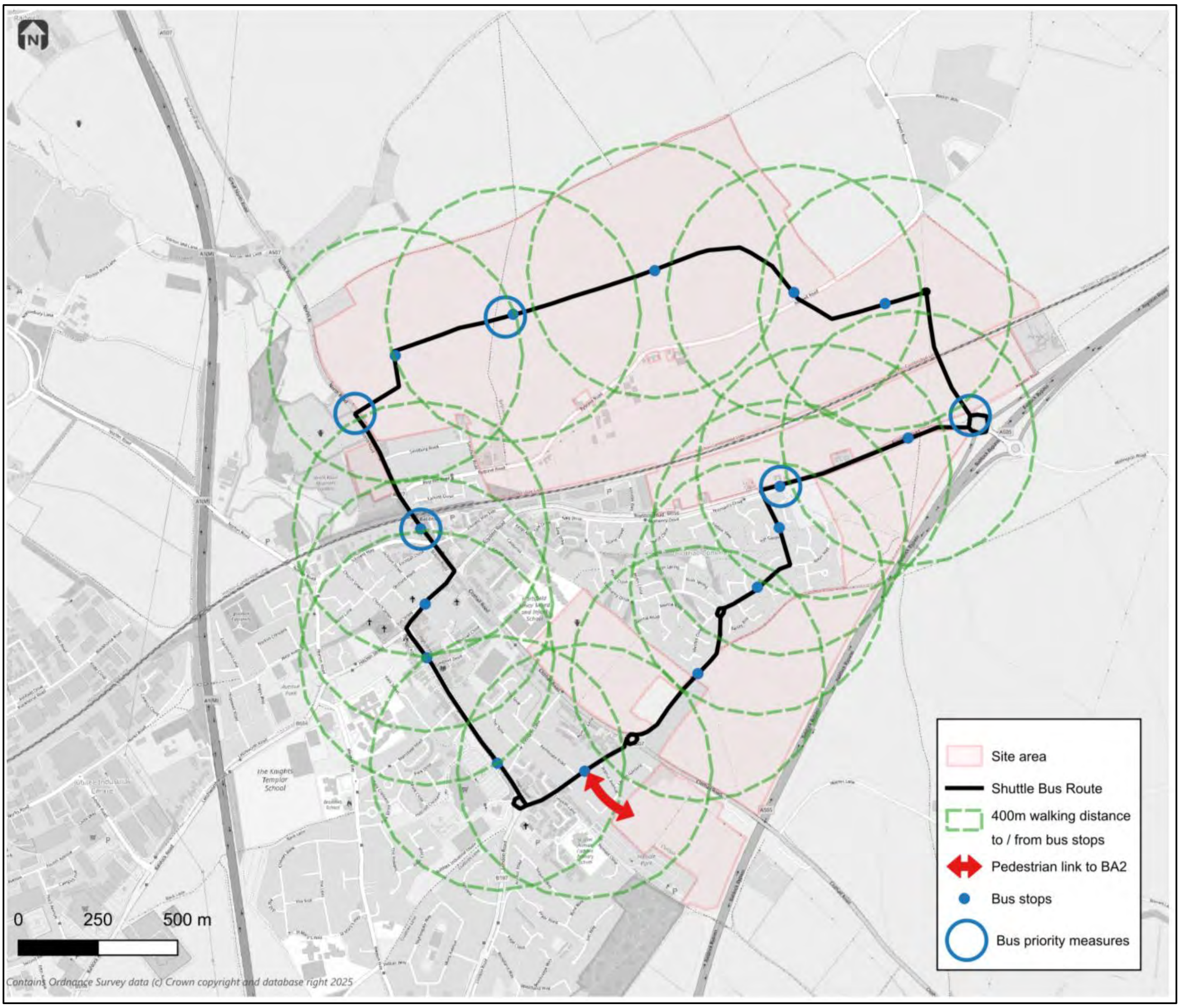

Figure 6: **Proposed Bus Route 2043 Model**

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Scenarios Modelled

The COMET model has three existing forecast scenarios:

- 2029 NTEM scenario – this model includes completed and committed developments in Hertfordshire between 2023 and 2029, with overall growth within Hertfordshire constrained to the NTEM forecast for 2029. Within the district of North Hertfordshire, this includes 2,276 dwellings and 400 jobs.
- 2043 NTEM scenario – this model includes completed and committed developments in Hertfordshire between 2023 and 2043, with overall growth within Hertfordshire constrained to the NTEM forecast for 2043. Within the district of North Hertfordshire, this includes 2,346 dwellings and 556 jobs.
- 2043 Local Plan scenario – this model includes completed, committed and all Local Plan developments in Hertfordshire between 2023 and 2043, with no constraint to NTEM. Within the district of North Hertfordshire, this includes 14,842 dwellings and 3,959 jobs (including the Baldock development). This scenario represents the aspirational case that all Local Plan developments are built out. It represents a significant increase in demand in comparison to the 2043 NTEM scenario.

The scenarios shown in **Table 10** were modelled in the full COMET modelling suite.

Table 10: Scenarios Modelled

Scenario	Description	Run VDM
S1 Do Minimum	2029 NTEM Without development – the existing COMET 2029 NTEM scenario	No
S2	2029 NTEM With Interim development (vision led assumptions) and mitigation	Yes
S3 Do Minimum (S3DM)	2043 NTEM Without development – the existing COMET 2043 NTEM scenario	No
S3-1	2043 NTEM with full development (vision led assumptions) and mitigation, Option 1 (secondary school and SEND school on BA3)	Yes
S3-2	2043 NTEM with full development (vision led assumptions) and mitigation, Option 2 (housing and SEND school on BA3)	No
S5 Do Minimum	2043 Local Plan Without Development	Yes
S6-1	2043 Local Plan with full development (vision led assumptions) and mitigation, Option 1 (secondary school and SEND school on BA3)	Yes

The S1 and S3 Do Minimum scenarios replicate the available COMET 2029/2043 NTEM models, only modified to include the updated base year model changes.

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The S5 Do Minimum is based on the COMET 2043 Local Plan model, modified to remove the development in Baldock that had been assumed by the district/HCC.

The other scenarios include the Growing Baldock development assumptions, which are outlined in more detail above.

RESULTS

This section highlights the key results from the modelling undertaken, providing demand, highway and public transport results.

Demand Model

The variable demand model has the following time periods:

- AM Period (7am - 10am);
- Interpeak Period (10am – 4pm);
- PM Period (4pm – 7pm); and
- Off-Peak Period (7pm – 7am).

The full COMET Variable Demand Model (VDM) has been run for four scenarios:

- Scenario S2: 2029 NTEM with Baldock Development
- Scenario S3-1: 2043 NTEM with Baldock Development Option 1
- Scenario S5: 2043 Local Plan without Baldock Development
- Scenario S6-1: 2043 Local Plan with Baldock Development

For scenarios S1 and S3DM, the models were already available – the 2029 COMET NTEM scenario and the 2043 COMET NTEM scenarios. These models have been updated post-VDM to incorporate the changes made to the base model for Baldock.

Scenario S3-2 did also did not need a VDM run as it has been based on the post-VDM Scenario S3-1 model, with the flows from the BA3 part of the development adjusted.

The convergence of the COMET VDM model has been assessed according to the Department of Transport TAG Unit M2.1, specifies that the convergence of the demand and supply models should be measured using a demand-supply gap statistic (%GAP) which suggest that %GAP values of less than 0.2% should be sought to ensure model results are as free from error and noise as possible. The convergence of the VDM models is shown in **Table 11**, where the %GAP of the final four iterations is provided.

The table shows that for Scenario S2 the model converged in 22 iterations, achieving a %GAP of 0.1914%, thus meeting the TAG criteria.

For Scenario S3-1 the model achieved a %GAP of 0.2188% in iteration 12, coming very close to the TAG criteria.

For Scenario S5 the model achieved a %GAP of 0.2085% in iteration 10, coming very close to the TAG criteria.

For Scenario S6-1 the model converged in iteration 14, achieving a %GAP of 0.1997% thus meeting the TAG criteria.

Table 11: Demand Model Convergence Statistics

S2		S3-1		S5		S6-1	
Iteration	**%GAP**	**Iteration**	**%GAP**	**Iteration**	**%GAP**	**Iteration**	**%GAP**
19	0.2639%	9	0.3123%	7	0.2643%	11	0.2814%
20	0.2963%	10	0.2829%	8	0.2969%	12	0.2073%
21	0.2393%	11	0.2867%	9	0.2509%	13	0.2062%
22	0.1914%	12	0.2188%	10	0.2085%	14	0.1997%

The main results from the demand model for this assessment is the mode share between highway and PT trips.

Analysis and plots of the traffic flow differences between the post-VDM and pre-VDM models for each scenario are provided in Appendix C.

Highway Model

The impact of the development in both NTEM and Local Plan scenarios was assessed using the COMET model.

This section considers the following:

- Development traffic distributions
- Forecast traffic flows with and without the development
- Flow differences with and without the development
- Delay differences with and without the development
- Area stress plots

- Individual junction turning movements outputs
- Journey times
- Impacts on National Highways junctions
- Public transport flow differences
- Public Transport development distributions
- Bus passenger boardings

The results of highway assignment model are presented for the following time periods:

- AM peak hour (8am - 9am)
- PM peak hour (5pm - 6pm)

DEVELOPMENT FLOW DISTRIBUTION PLOTS

Distribution plots have been generated for the Growing Baldock development trips for each of the with development scenarios. These demonstrate where the development traffic is forecast to travel to and from.

2029 SCENARIOS

Figure 7 shows the distribution of the Baldock Scenario S2 development trips on the highway network during the AM peak and **Figure 8** shows the distribution during the PM peak.

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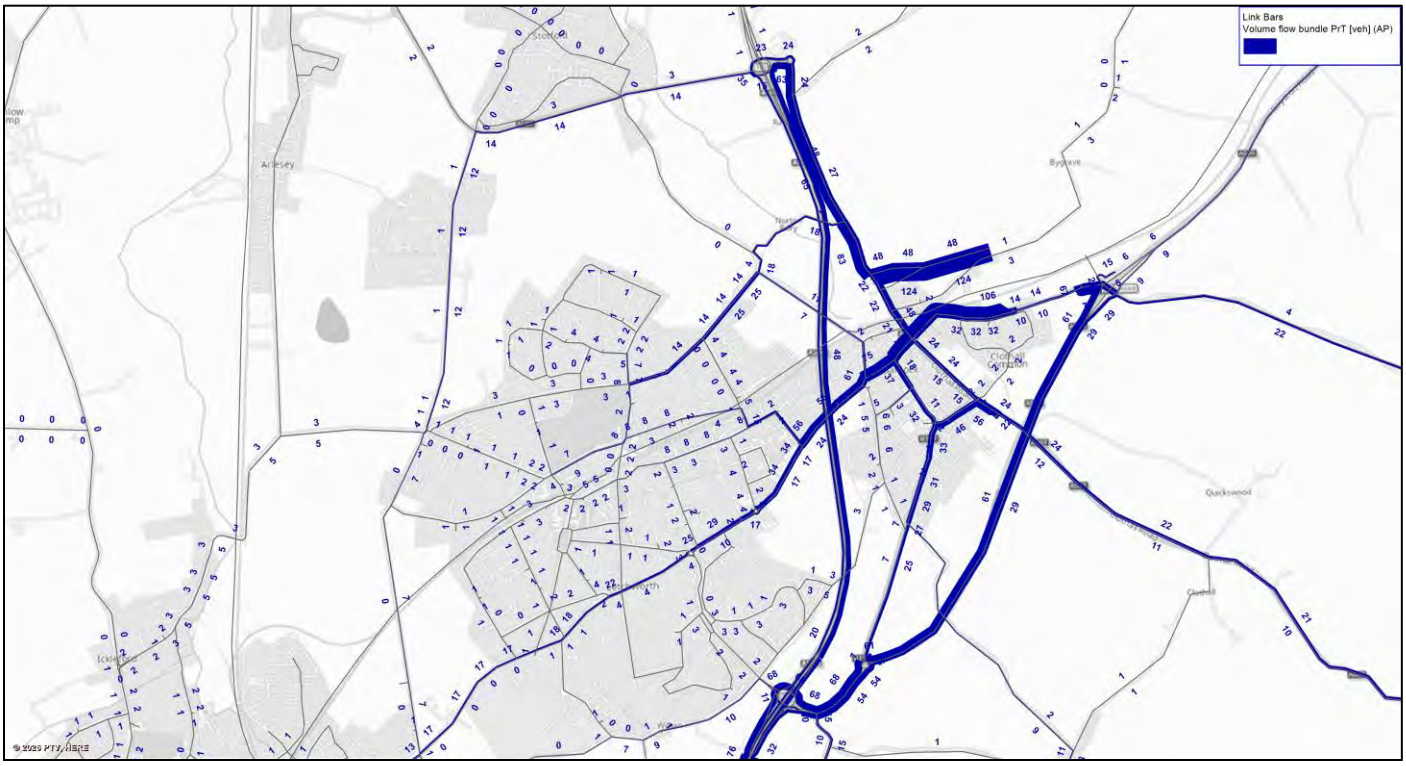

Figure 7: Development Traffic Distribution Scenario S2 (2029 NTEM with interim development) AM Peak

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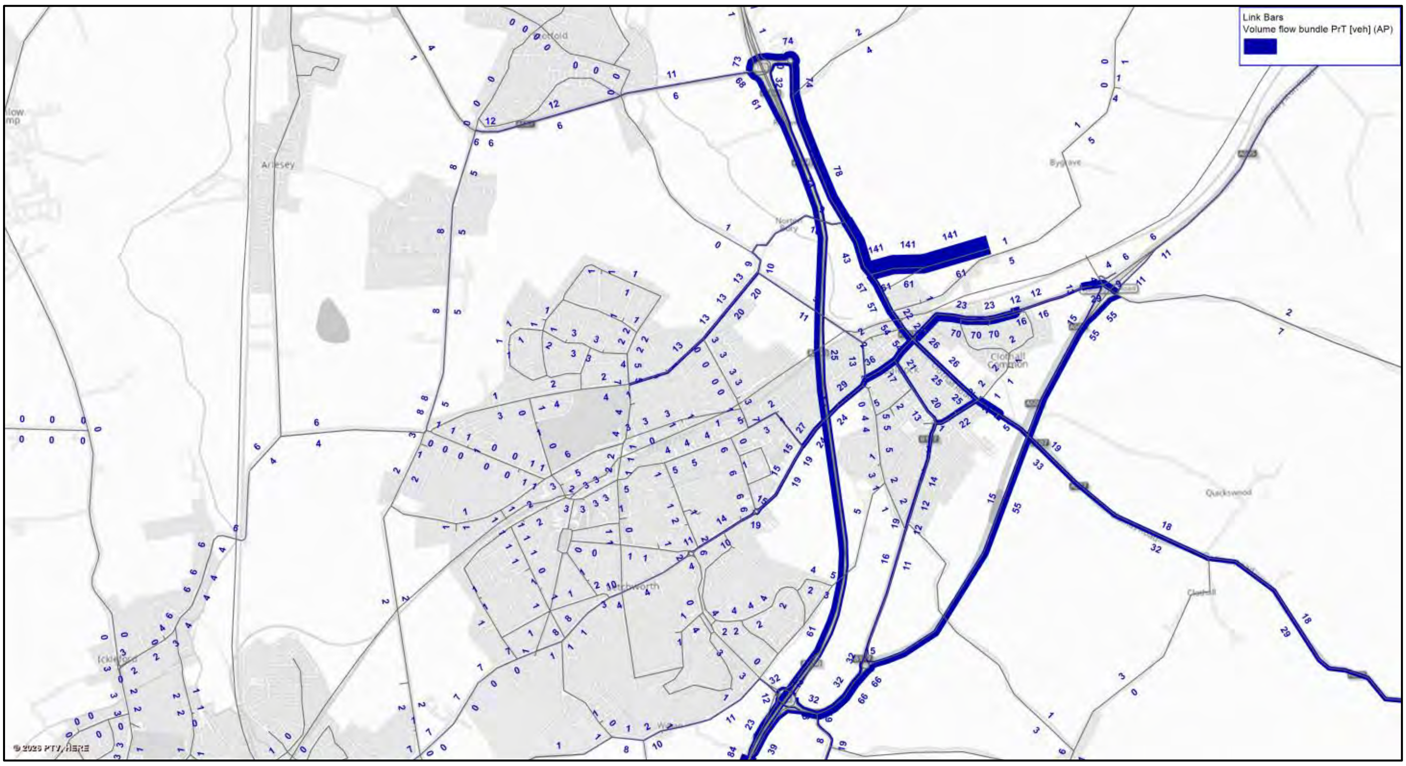

Figure 8: Development Traffic Distribution Scenario S2 (2029 NTEM with interim development) PM Peak

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2043 NTEM SCENARIOS

Figure 9 shows the distribution of the Baldock Scenario S3-1 development trips on the highway network during the AM peak and **Figure 10** shows the distribution during the PM peak. The distribution of the Scenario S3-2 trips are shown in **Figure 11** and **Figure 12** for the AM and PM peak.

Figure 9: Development Traffic Distribution Scenario S3-1 (2043 NTEM with development option 1) AM Peak

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Figure 10: Development Traffic Distribution Scenario S3-1 (2043 NTEM with development option 1) PM Peak

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Figure 11: Development Traffic Distribution Scenario S3-2 (2043 NTEM with development option 2) AM Peak

Figure 12: Development Traffic Distribution Scenario S3-2 (2043 NTEM with development option 2) PM Peak

2043 LOCAL PLAN SCENARIOS

The distributions of the Baldock Scenario S6-1 development trips on the highway network during the AM peak is shown in **Figure 13** and the PM peak is shown in **Figure 14.**

Figure 13: Development Traffic Distribution Scenario S6-1 (2043 LP with development option 1) AM Peak

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Figure 14: Development Traffic Distribution Scenario S6-1 (2043 LP with development option 1) PM Peak

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FORECAST FLOWS

2029 SCENARIOS

The total traffic flows forecast in Scenario S1 are shown in **Figure 15** and **Figure 16** and the flows for Scenario S2 are shown in **Figure 17** and **Figure 18**. A comparison of the difference in traffic flows between Scenario S1 and Scenario S2 is undertaken in the next section of this report.

Figure 15: Forecast Traffic Flows Scenario S1 (2029 Do Minimum) AM Peak

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Figure 16: Forecast Traffic Flows Scenario S1 (2029 Do Minimum) PM Peak

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Figure 17: **Forecast Traffic Flows Scenario S2 (2029 NTEM with interim development) AM Peak**

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Figure 18: Forecast Traffic Flows Scenario S2 (2029 NTEM with interim development) PM Peak

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2043 NTEM SCENARIOS

The traffic flows forecast in Scenario S3DM are shown in **Figure 19** and **Figure 20,** the flows for Scenario S3-1 are shown in **Figure 21** and **Figure *22*** and the flows for Scenario S3-2 are shown in **Figure 23** and **Figure 24**. A comparison of the difference in traffic flows between Scenario S3DM, Scenario S3-1 and Scenario S3-2 is undertaken in the next section of this report.

Figure 19: **Forecast Traffic Flows Scenario S3DM (2043 NTEM Do Minimum) AM Peak**

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Figure 20: Forecast Traffic Flows Scenario S3DM (2043 NTEM Do Minimum) PM Peak

Figure 21: **Forecast Traffic Flows Scenario S3-1 (2043 NTEM with development option 1) AM Peak**

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Figure 22: **Forecast Traffic Flows Scenario S3-1 (2043 NTEM with development option 1) PM Peak**

Figure 23: **Forecast Traffic Flows Scenario S3-2 (2043 NTEM with development option 2) AM Peak**

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Figure 24: Forecast Traffic Flows Scenario S3-2 (2043 NTEM with development option 2) PM Peak

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2043 LOCAL PLAN SCENARIOS

The traffic flows forecast in Scenario S5 are shown in **Figure 25** and **Figure 26,** and the flows for Scenario S6-1 are shown in **Figure 27** and **Figure 28**. A comparison of the difference in traffic flows between Scenario S5 and Scenario S6-1 in undertaken in the next section of this report.

Figure 25: **Forecast Traffic Flows Scenario S5 (2043 LP Do Minimum) AM Peak**

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Figure 26: **Forecast Traffic Flows Scenario S5 (2043 LP Do Minimum) PM Peak**

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Figure 27: Forecast Traffic Flows Scenario S6-1 (2043 LP with development option 1) AM Peak

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Figure 28: Forecast Traffic Flows Scenario S6-1 (2043 LP with development option 1) PM Peak

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FLOW DIFFERENCE PLOTS

2029 SCENARIOS

The traffic flow differences in 2029, between Scenario S2 (2029 interim development of 850 dwellings, 39,025m^2 of employment and 1 primary school) and Scenario S1 (2029 Do Minimum) are shown in **Figure 29** and **Figure 30**. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

The figures show that in both peak periods there are traffic flow increases across the highway network as a result of the Scenario S2 development. The most significant traffic flow increases occur on Norton Road, Hitchin Street / Whitehorse Street, High Street and the A505. The additional trips generated by the development are resulting in the additional trips on the A505 and London Road.

The increases in traffic flows on Norton Road and High Street are due to the scheme proposals which reduce the capacity along North Road by introducing signalised junctions and one-way shuttle traffic under the railway bridge. This causes the through traffic to avoid North Road and Clothall Road and reroute via Norton Road and High Street.

The reductions in traffic flow on Icknield Way are caused by the closure of the Icknield Way / North Road access, which also results in some increases in traffic flow on some of the adjacent roads such as Hitchin Street / Whitehorse Street. In Clothall Common, there is a switch in the direction that the traffic takes along Yeomanry Drive to reach the zone loading point. This is not a significant change as it is a quirk in the modelling and unlikely to occur in reality. There are small increases in traffic flows on the minor roads of Bygrave Road, Norton Mill Lane and Newnham Road.

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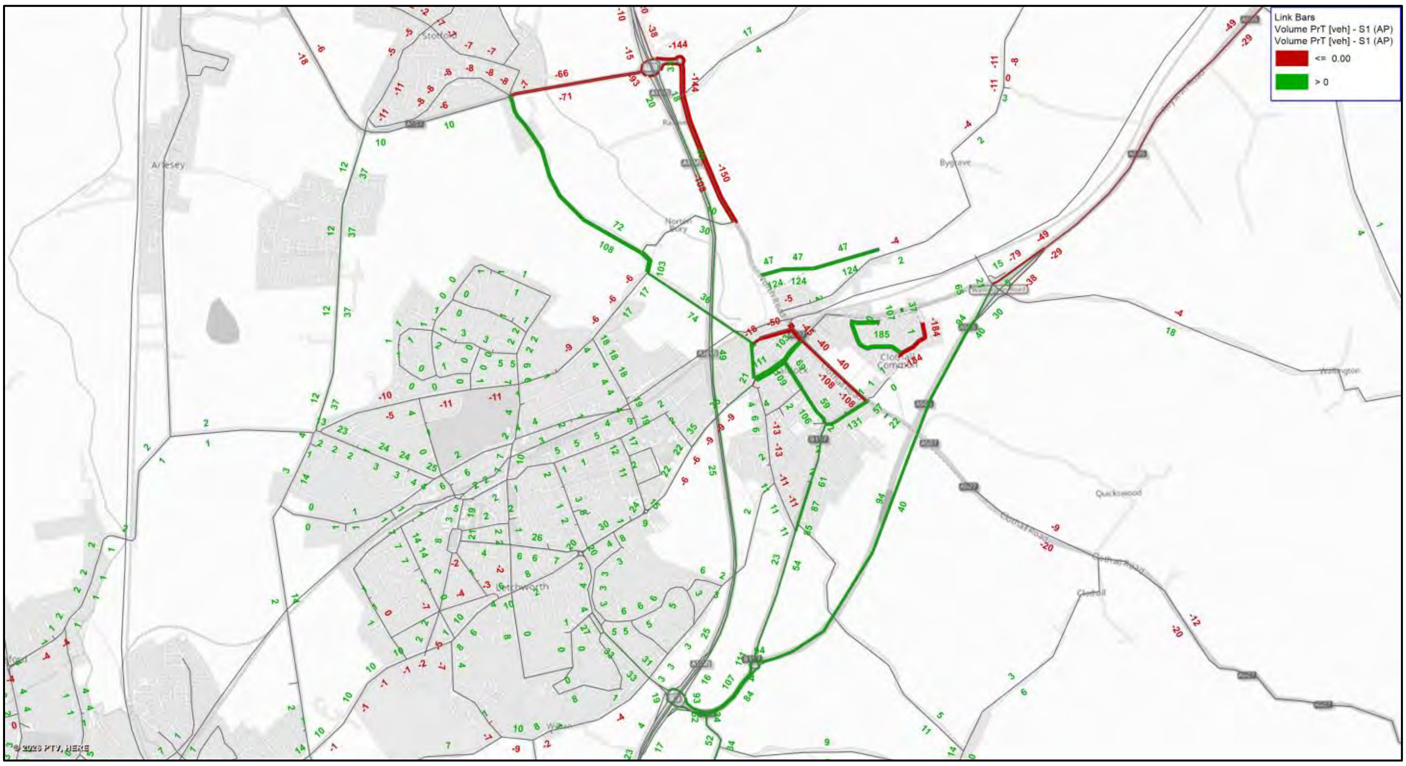

Figure 29: Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) AM Peak

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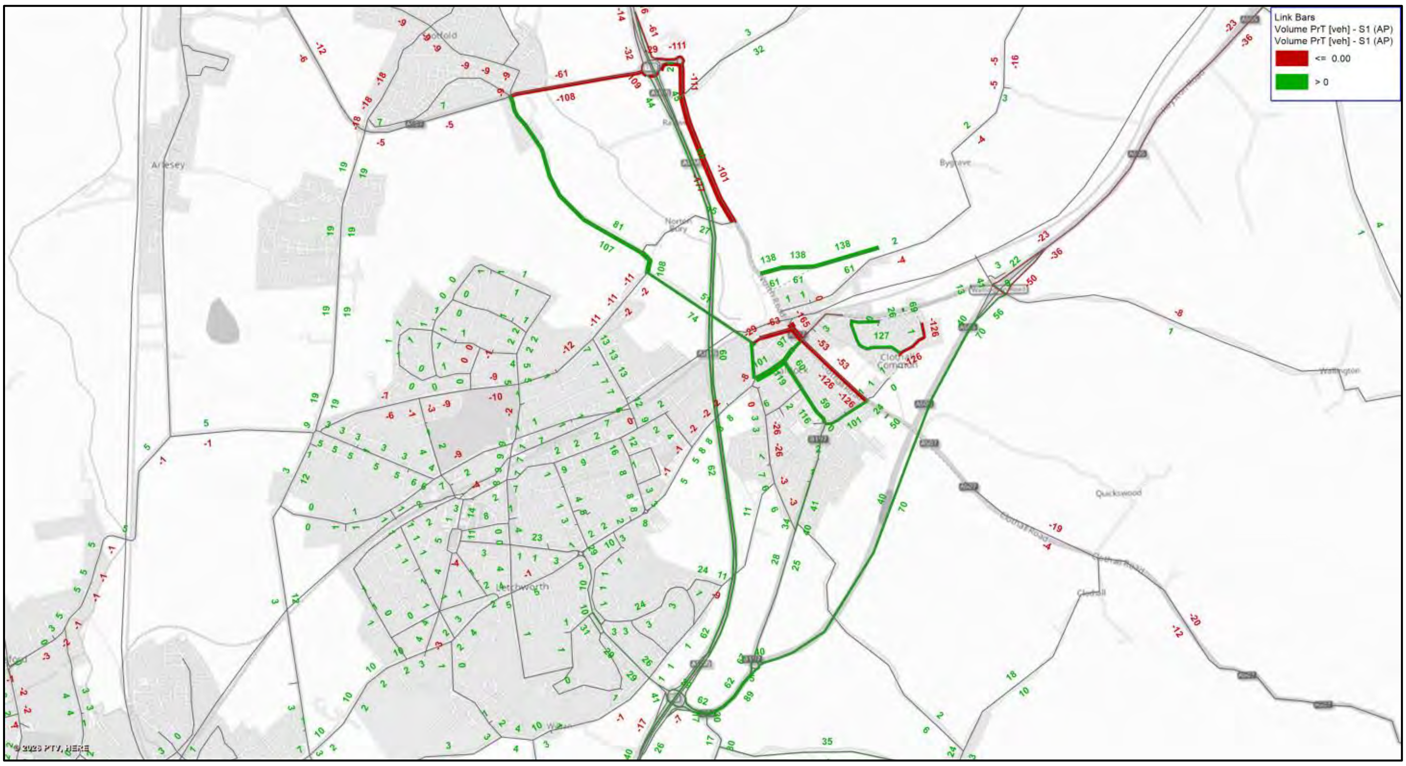

Figure 30: Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) PM Peak

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2043 NTEM SCENARIOS

The traffic flow differences in 2043 between Scenario S3-1 and Scenario S3DM are shown in Figure 31 and Figure 32 for the AM and PM peak. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

The plots show that in both peak periods there is an increase in traffic flows on the majority of the highway network as a result of the development. The most notable increases in traffic flows occur on the A505, Wallington Road, South Road, and London Road. This is caused by the additional traffic associated with the development. There are particularly large increases in traffic flows around Wallington Road during the AM peak which is due to the location of the secondary school on BA3. It should be noted however that existing school trips have not been removed from the model, so there may be an overestimation of the impact of the school. There are some notable increases in traffic flows on Wallington Road (adjacent to Royston Road) where it is quicker for development traffic travelling towards Buntingford rather than using the A507 Clothall Road.

Similarly to the 2029 scenarios, there are reductions in traffic flows on Great North Road, Icknield Way and Station Road, due to the scheme proposals which reduce the capacity along North Road and close the Icknield Way access and result in rerouting. In Clothall Common there is also a similar switch in the direction that the traffic takes along Yeomanry Drive to reach the zone loading point, but this is not a significant change and is unlikely to occur in reality.

There are only small increases in traffic flows on the side roads of Norton Mill Lane and Newnham Road as a result of the development. On Bygrave Road there is expected to be a reduction in traffic flow as a result of the development scheme proposals to transform a section of Bygrave Road into an active travel route with no vehicular access.

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Figure 31: Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

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Figure 32: **Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak**

The traffic flow differences in 2043 between Scenario S3-2 and Scenario S3DM are shown in Figure 33 and Figure 34 for the AM and PM peaks. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

The figures show that in both peak periods there is an increase in traffic flows on the majority of the highway network as a result of the Scenario S3-2 proposals and generally has similar results to Scenario S3-1. The most notable increases in traffic flows occur on the A505, the A1(M), London Road, Norton Road and Wallington Road. On Wallington Road nearby to BA3, the increases in traffic flows are less significant than in S3-1 as housing rather than a secondary school is located there in Scenario S3-2.

Similarly to the other scenarios, there are reductions in traffic flows on Great North Road, Icknield Way, and Station Road, due to the scheme proposals along North Road and on Icknield Way. In Clothall Common, the same switch in direction that the traffic along Yeomanry Drive takes to the zone loading point occurs.

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As in Scenario S3-1, there are small increases in traffic flows on Norton Mill Lane and Newnham Road, and decreases on Bygrave Road where the road has been upgraded to an active travel highway.

Figure 33: Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

Figure 34: Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

2043 LOCAL PLAN SCENARIOS

The traffic flow differences in 2043 between Scenario S6 and Scenario S5 are shown in **Figure 35** and **Figure 36** for the AM and PM peak. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

The plots show that in both peak periods there is an increase in traffic flows on the majority of the highway network as a result of the development. The most notable increase in traffic flows occur on the A505, Wallington Road, South Road, London Road and the BA1 new road off of Royston Road. This is caused by the additional traffic associated with the development. There are particularly large increases in traffic flows around Wallington Road during the AM peak which is due to the location of the secondary school on BA3. There are some additional traffic flows on Wallingford Road (east of the A505) where development traffic is travelling towards Buntingford.

Similarly to the other scenarios, there are reductions in traffic flows on Great North Road, Royston Road, Station Road and Icknield Way, due to the scheme proposals which reduce the capacity along North Road and close the Icknield Way access and results in rerouting. In Clothall Common there is a similar switch in the direction that traffic takes along Yeomanry Drive to reach the zone loading point, but this is not a significant change and is unlikely to occur in reality.

There are some increases in traffic flows on the side roads of Norton Mill Lane and on Newnham Road as a result of the development. Some traffic to/from Ashwell and the villages beyond, reroutes to Newnham Road instead of using the A505 and Station Road. On Bygrave Road there is expected to be a reduction in traffic as a result of the development scheme proposals to transform a section of the road into an active travel route with no vehicular access.

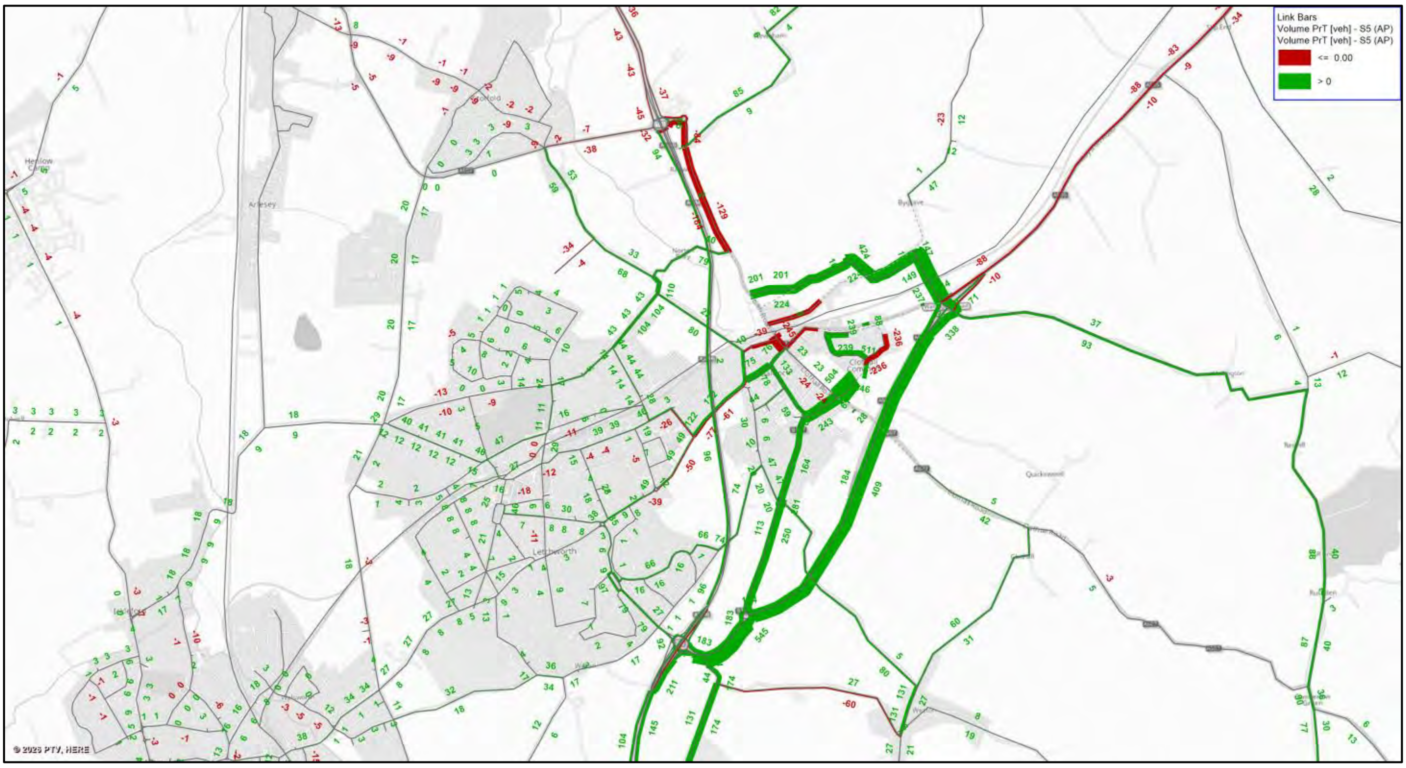

Figure 35: Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) AM Peak

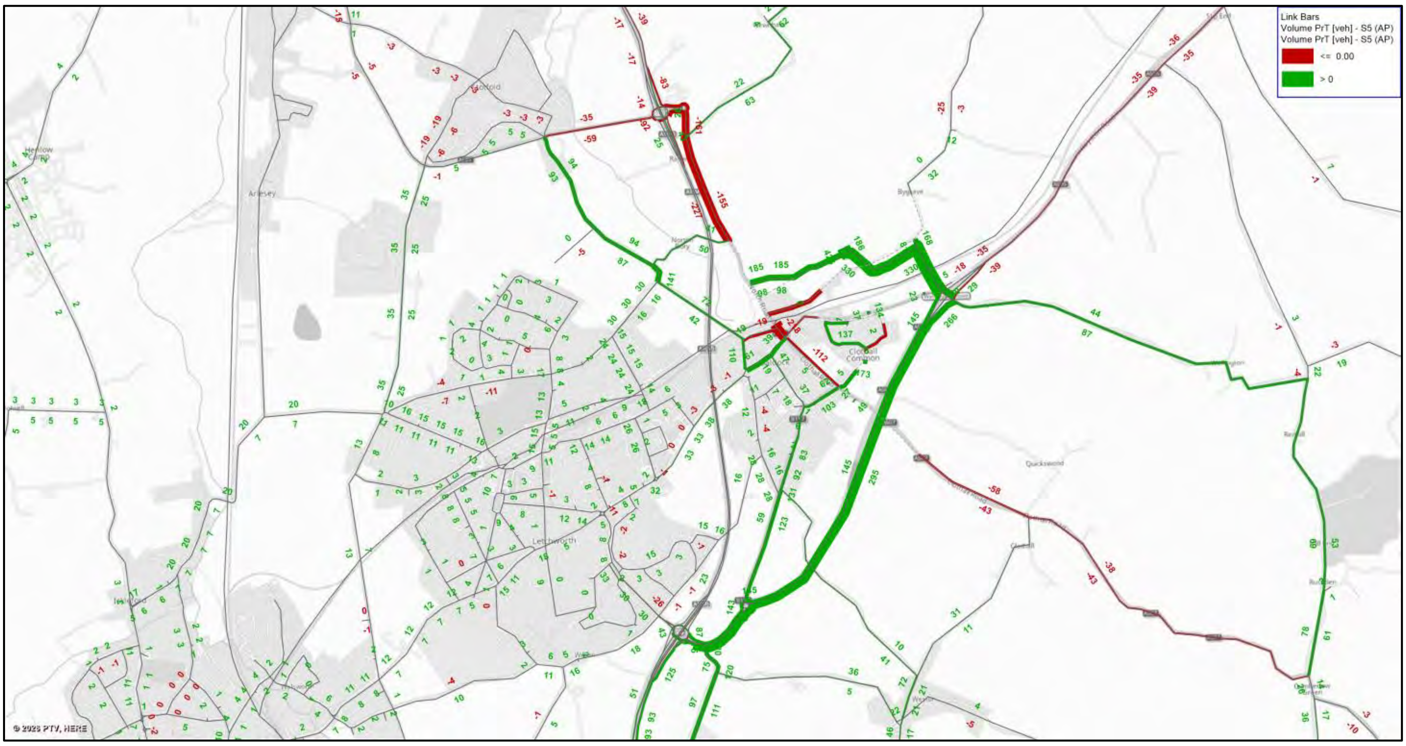

Figure 36: Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) PM Peak

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LINK AND NODE DELAY DIFFERENCE PLOTS

2029 SCENARIOS

The link and node delay difference plots in 2029 between Scenario S2 and Scenario S1 are shown in **Figure 37** and **Figure 38**. It should be noted that the differences are not shown where the network structure is different between scenarios.

The figures show that there is expected to be a small increase in link delay in Scenario S2 compared to Scenario S1 on Norton Road, where traffic is rerouting from North Road to avoid the new signalised junctions which are part of the scheme proposal. There is expected to be a small decrease in delay westbound on Icknield Way at the western end during both the AM and PM peak due to the closure of the Icknield Way / Station Road junction as part of the scheme proposals.

In both the AM and PM peak there is expected to be increases in node delay of between 30 seconds and a minute at the North Road and BA1 development access junctions and the Royston Road and BA10 development access west junction, which are all new signalised junctions as part of the scheme proposals.

Figure 37: Link and Node Delay Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) AM Peak

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Figure 38: **Link and Node Delay Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) PM Peak**

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2043 NTEM SCENARIOS

The link and node delay difference plots in 2043 between Scenario S3DM and Scenario S3-1 are shown in **Figure 39** and **Figure 41**. The link and node delay difference plots between Scenario S3DM and Scenario S3-2 are shown in **Figure 40** and **Figure 42.**

The figures show that in Scenario S3-1 compared to S3DM, in the AM peak, the largest difference is a 44 second increase in delay on the A1(M) northbound off-slip at Junction 9. In Scenario S3-2 compared to S3DM, this increase is 31 seconds, lower than in Scenario S3-1 due to a lower increase in traffic flow though the junction. There are also expected to be small increases in link delay in Scenario S3-1 and Scenario S3-2 compared to Scenario S3DM on Norton Road and London Road in both directions and during both peaks, due to the increased traffic flow on these roads.

For both Scenario S3-1 and Scenario S3-2 compared to S3DM in the AM peak there is expected to be increases in node delay of between 30 seconds and a minute at the North Road and BA1 development access junctions and the Royston Road and BA10 development access west junction, which are all new signalised junctions as part of the scheme. In the PM peak, there is expected to be similar increases at these junctions, except the delay at the North Road / BA1 development access is expected to be between 1 and 2 minutes. The forecast delays are part of the transport strategy of the development, aiming to reduce the through traffic on North Road. The re-routing of traffic from North Road onto Norton Road that was shown in the flow difference plots above, indicates that the increased delays have had the desired impact.

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Figure 39: Link and Node Delay Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

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Figure 40: **Link and Node Delay Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak**

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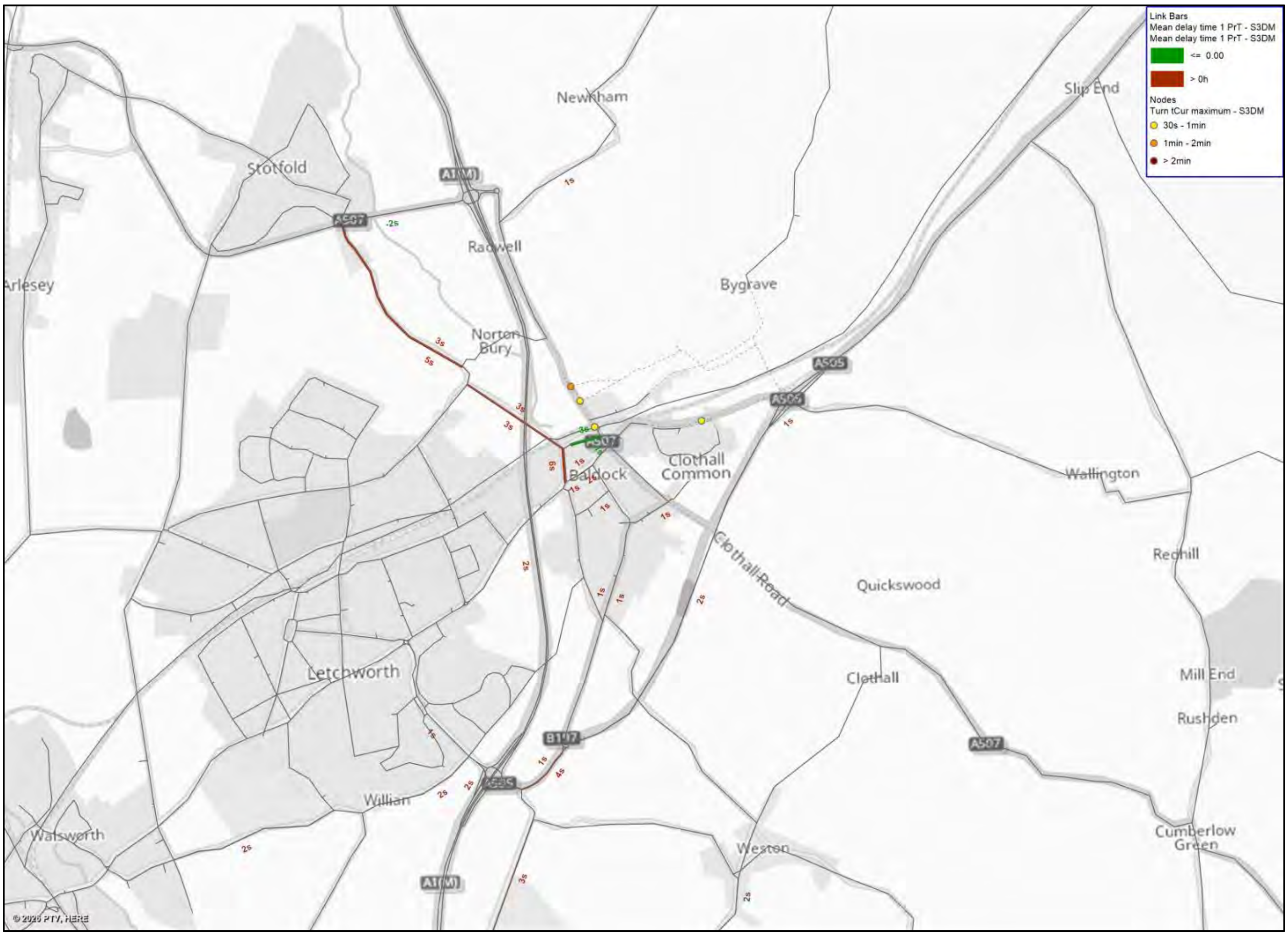

Figure 41: Link and Node Delay Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

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Figure 42: Link and Node Delay Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

2043 LOCAL PLAN SCENARIOS

The link and node delay difference plots in 2043 between Scenario S6-1 and Scenario S5 are shown in **Figure 43** and **Figure 44.** It should be noted that the differences are not shown where the network structure is different between scenarios.

The figures show that in Scenario S6-1 compared to Scenario S5 in the AM peak the largest difference is a 57 second increase in delay on Letchworth Road southbound at the junction with Jubilee Road. It should be noted however that this is a signalised junction and signal timings have not been optimised. There is expected to be some smaller increases in delay at the A1(M) Junction 9 on the A1 northbound off-slip (29 seconds) and the Letchworth Gate approach (18 seconds). There is a notable 17 second decrease in delay on the A507 eastbound in the AM peak. Similar to the AM peak, there are also some increases in delay at the A1(M) Junction 9 on the A1 northbound off-slip (22 seconds) and the Letchworth Gate approach (17 seconds) in the PM peak.

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For both the AM and PM peak there is expected to be increases in junction delay of between one and two minutes at the North Road / BA1 development access. There is expected to be increases in junction delay of between 30 seconds and one minute on the North Road / BA1 development access (bus gate) and the Royston Road / BA10 development access (west). These are all new signalised junctions as part of the development scheme. In the PM peak there is also an increase of between 30 seconds and one minute on Station Road at the new railway bridge signalised junction.

Figure 43: Link and Node Delay Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) AM Peak

Figure 44: Link and Node Delay Difference Scenario S6-1 (2043 LP with development option 1) and Scenario S5 (2043 LP Do Minimum) PM Peak

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AREA STRESS PLOTS

2029 SCENARIOS

The volume over capacity link and node plots in 2029 for the AM peak are shown in **Figure 45** for Scenario S1 and **Figure 46** and for Scenario S2.

The figures show that in Scenario S1 and S2 during the AM peak the key links which are expected to experience a volume over capacity of between 70% and 80% are the A507, Letchworth Gate and around the A1(M) Junction 9. There are some links around the A1(M) Junction 9 which experience a volume over capacity of between 80% and 90%, this will be explored in more detail later in the report within the detailed section on National Highway impacts.

There are four junctions in Scenario S1 AM peak that are expected to have capacity constraints: the A507 (W) arm of the A1(M) Junction 10, the B656 / Jubilee Road junction, and the Letchworth Gate arm of the A1(M) Junction 9 all have a volume over capacity of between 85% and 100%, and the A507 / Whitehorse Street / Royston Road junction has a volume over capacity of between 80% and 85%. In Scenario S2, the A507 (W) arm of the A1(M) Junction 10 and the A507 / Whitehorse Street / Royston Road junction no longer have capacity constraints. This due to the reduction in traffic flows using the A507 due to the new signalisation at the railway bridge on North Road and the proposed change in signal timings.

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Figure 45: **Volume over Capacity Scenario S1 (2029 Do Minimum) AM Peak**

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Figure 46: **Volume over Capacity Scenario S2 (2029 NTEM with interim development) AM Peak**

The volume over capacity link and node plots in 2029 for the PM peak are shown in **Figure 47** for Scenario S1 and **Figure 48** for Scenario S2.

The figures show that in Scenario S1 and S2 during the PM peak the key links which are expected to experience a volume over capacity of between 70% and 80% are the A507, Letchworth Gate, around the A1(M) Junction 9, and at around the A505 / London Road roundabout. There are some links around the A1(M) Junction 9 which experience a volume over capacity of between 80% and 90% but this will be explored in more detail later in the report.

There are three junctions in Scenario S1 PM peak that are expected to have capacity constraints: the B656 / Jubilee Road junction and the A507 / Whitehorse Street / Royston Road junction have a volume over capacity of between 85% and 100%, and the Letchworth Gate arm of the A1(M) Junction 9 has a volume over capacity of between 80% and 85%. In Scenario S2, the same junctions have capacity constraints, but the A507 / Whitehorse Street / Royston Road has reduced to 80-85% (due to the decrease in traffic flows on North Road and proposed change in signal timings) and the Letchworth Gate arm of the A1(M) Junction 9 has increased to 85-100% (due to the overall increase in traffic flow through the junction).

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Figure 47: **Volume over Capacity Scenario S1 (2029 Do Minimum) PM Peak**

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Figure 48: **Volume over Capacity Scenario S2 (2029 NTEM with interim development) PM Peak**

2043 NTEM SCENARIOS

The volume over capacity link and node plots in 2043 for the AM peak are shown in Figure 49 for Scenario S3DM, Figure 50 for Scenario S3-1, and Figure 51 for Scenario S3-2.

The figures show that in Scenario S3DM during the AM peak the key links which are expected to experience capacity constraints are the A507 (70-80%) and Letchworth Gate (80-90%) and some of the links around the A1(M) Junction 9 roundabout and the A505 / London Road roundabout. This is similar in Scenario S3-1 and S3-2 except the capacity constraints on Letchworth Gate have extended further along the link and become more significant at the junction (increasing to 90-100%). In addition, Scenario S3-1 has capacity constraints on Hitchin Street and South Road (70-80%) which is caused by the additional traffic flows associated with the secondary school.

The are four junctions in Scenario S3DM AM peak that are expected to have capacity constraints: the A507 (W) arm of the A1(M) Junction 10 and the B656 / Jubilee Road junction have a volume over capacity of between 85% and 100%, and the Letchworth Gate arm of the A1(M) Junction 9 and the A507 / Whitehorse Street / Royston Road junction have a volume over capacity of between 80% and 85%. In Scenario S3-1 and S3-2 AM peak, the same junctions have capacity constraints with the addition of the A505 / London

Road, but all now have a volume over capacity of 85-100%. These increases in volume over capacity are due to the overall increase in traffic flows in the 2043 scenarios.

Figure 49: **Volume over Capacity Scenario S3DM (2043 NTEM Do Minimum) AM Peak**

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Figure 50: Volume over Capacity Scenario S3-1 (2043 NTEM with development option 1) AM Peak

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Figure 51: **Volume over Capacity Scenario S3-2 (2043 NTEM with development option 2) AM Peak**

The volume over capacity link and node plots in 2043 for the PM peak are shown in Figure 52 for Scenario S3DM, Figure 53 for Scenario S3-1, and Figure 54 for Scenario S3-2.

The figures show that in Scenario S3DM, S3-1 and S3-2 during the PM peak the key links which are expected to experience capacity constraints are the A507 (70-80%) and Letchworth Gate (70-90%), some of the links around the A1(M) Junction 9 roundabout and the A505 / London Road roundabout.

The are four junctions in Scenario S3DM PM peak that are expected to have capacity constraints: the B656 / Jubilee Road junction, the Letchworth Gate arm of the A1(M) Junction 9 and the A507 / Whitehorse Street / Royston Road junction have a volume over capacity of between 85% and 100%, and the A505 / London Road has a volume over capacity of between 80% and 85%. In Scenario S3-1 and S3-2 there are no longer capacity constraints at the A507 / Whitehorse Street / Royston Road junction (due to the junction layout changes proposed as part of the development), but there is a volume over capacity of 80-85% at the North Road / BA1 development access, and the A505 / London Road junction has increased to 85-100%.

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Figure 52: **Volume over Capacity Scenario S3DM (2043 NTEM Do Minimum) PM Peak**

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Figure 53: Volume over Capacity Scenario S3-1 (2043 NTEM with development option 1) PM Peak

Figure 54: Volume over Capacity Scenario S3-2 (2043 NTEM with development option 2) PM Peak

2043 LOCAL PLAN SCENARIOS

The volume over capacity link and node plots in 2043 for Scenario S5 and Scenario S6-1 AM peak are shown in Figure 55 and Figure 56. The figures show that in Scenario S5 during the AM peak the key links which are expected to experience capacity constraints are the A507 (70-80%) and Letchworth Gate (70-80% increasing to 90-100%) at the A1(M) Junction 9. This is the same in Scenario S6-1, except the capacity constraints on Letchworth Gate have increased (80-90% increasing to >100%). In addition to this there are capacity constraints on the A505, South Road, Hitchin Street and Norton Road.

There are nine junctions in Scenario S5 AM peak that are expected to have capacity constraints. The A1(M) Junction 10 eastbound approach, Norton Road / Letchworth North development access (a proxy access for another Local Plan development), A507 / B656, B656 / Jubilee Road, Letchworth Gate Roundabout and the A1(M) Letchworth Gate approach all have a volume over capacity of between 85% and 100%. The A505 / London Road, the A507 / Hitchin Road and the A505 / Norton Road South all have a volume over capacity of 80% to 85%. The junctions with capacity constraints in Scenario S6-1 AM peak are

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exactly the same as Scenario S5, except the volume over capacity at the A505 / London Road and the A505 / Norton Road South have increased to between 85% and 100%.

Figure 55: **Volume over Capacity Scenario S5 (2043 LP Do Minimum) AM Peak**

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Figure 56: **Volume over Capacity Scenario S6-1 (2043 LP with development option 1) AM Peak**

The volume over capacity link and node plots in 2043 for Scenario S5 and Scenario S6-1 in the PM peak are shown in Figure 57 and Figure 58. The figures show that in Scenario S5 the key links what are expected to experience capacity constraints are the A507 (70-80%), A1(M) (70-80%), A505 (70-80%) and Letchworth Gate (70-80% increasing to 80-90% at the A1(M) Junction 9). This is the same in Scenario S6-1, except the capacity constraints on Letchworth Gate have increased (80-90% to 90-100%) and have extended on the A505.

There are four junctions with capacity constraints in Scenario S5: A505 / London Road (80-85%), and Letchworth Gate / A1(M), Letchworth Road / Jubilee Road, A507 / B656 all have a volume over capacity of 85-100%. The same junctions have capacity constraints in Scenario S6-1, except Letchworth Gate / A1(M) junction has worsened, the A507 / B656 junction has improved, and the BA1 / North Road development is included (85-100%).

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Figure 57: Volume over Capacity Scenario S5 (2043 LP Do Minimum) PM Peak

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Figure 58: Volume over Capacity Scenario S6-1 (2043 LP with development option 1) PM Peak

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JUNCTION TURNING MOVEMENT OUTPUTS

As requested by ITP, hourly junction turning movements and V/C have been obtained at nineteen key junctions, for further detailed junction modelling. The location of these sites is shown in **Figure 59**.

Figure 59: Location of Key Junctions

As the model has not been validated to turning movements it is advised that the results should only be used for relative change. A full set of flows at the junctions in each scenario have been sent to ITP.

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JOURNEY TIME ROUTES

To understand the change in journey time the additional development would have on the surrounding road network, two journey time routes were defined, as requested by ITP, and the total time taken to travel was obtained. The routes are shown in **Figure 60.**

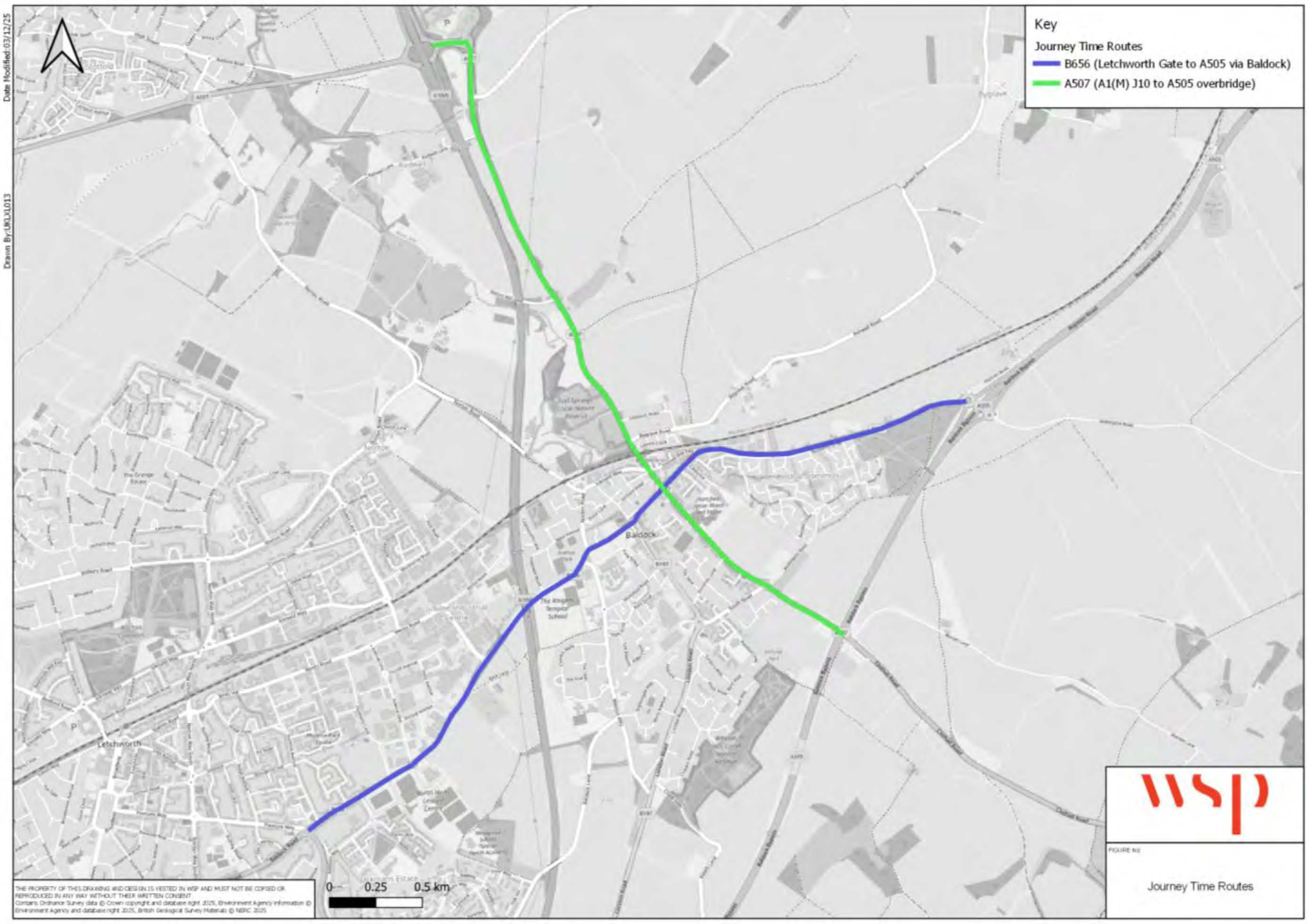

Figure 60: **Journey Time Routes**

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2029 SCENARIOS

The journey time differences in 2029 between Scenario S1 and Scenario S2 are shown in **Table 12** for the two routes. The table shows there are increases in each of the journey time routes in Scenario S2 in both AM and PM peaks. In the AM peak the largest increase of one minute is expected to occur on the A507 northbound between the A505 overbridge and the A1 (M) J10. This is likely to be caused by the proposed changes to the signal timings at the Station Road / Clothall Road / Whitehorse Road / Royston Road junction.

In the PM peak the largest increase of one minute and 17 seconds is expected to occur on the A507 southbound between the A1(M) J10 and the A505 overbridge. This is likely to be caused by the introduction of the signalised junctions on North Road where the proposed timings are set up to cause “gating” of southbound traffic, to hold back queuing from the town centre.

Table 12: Journey Time Routes Scenario S1 (2029 Do Minimum) and Scenario S2 (2029 NTEM with interim development) Comparison

Journey Time Route	S1 (mins) AM Peak	S2 (mins) AM Peak	S2 minus S1(mins) AM Peak	S1 (mins) PM Peak	S2 (mins) PM Peak	S2 minus S1 (mins) PM Peak
A507 NB	06:53	07:54	01:00	07:00	07:43	00:44
A507 SB	07:23	08:20	00:57	07:02	08:18	01:17
B656 NB	07:40	08:32	00:52	08:01	08:50	00:49
B656 SB	07:47	08:21	00:34	07:46	08:18	00:32

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2043 NTEM SCENARIOS

The journey time differences in 2043 between Scenario S3DM and Scenario S3-1 are shown in **Table 13** for the two journey times routes. The table shows there are increases in each of the journey time routes in Scenario S3-1 in both AM and PM peaks. In the AM peak the largest increase of one minute and 26 seconds is expected to occur on the B656 northbound between Letchworth Gate and the A505. In the PM peak the largest increase of two minutes and three seconds is expected to occur on the A507 southbound between the A1(M) J10 and the A505 overbridge.

Table 13: Journey Time Routes Scenario S3DM (2043 NTEM Do Minimum) and Scenario S3-1 (2043 NTEM with development option 1) Comparison

Journey Time Route	S3DM (mins) AM Peak	S3-1 (mins) AM Peak	S3-1 minus S3DM (mins) AM Peak	S3DM (mins) PM Peak	S3-1 (mins) PM Peak	S3-1 minus S3DM (mins) PM Peak
A507 NB	06:59	07:46	00:47	07:09	07:47	00:38
A507 SB	07:32	08:36	01:04	07:16	09:19	02:03
B656 NB	07:41	09:07	01:26	08:03	08:50	00:47
B656 SB	07:46	08:59	01:13	07:46	08:47	01:00

The journey time difference in 2043 between Scenario S3DM and Scenario S3-2 are shown in **Table 14** for the two journey time routes. The table shows there are increases in each of the journey time routes in Scenario S3-2 in both AM and PM peaks. In the AM peak the largest increase of one minute and 17 seconds is expected to occur on the B656 northbound between Letchworth Gate and the A505. In the PM peak the largest increase of two minutes and three seconds is expected to occur on the A507 southbound between the A1(M) J10 and A505 overbridge. This is the same pattern as in Scenario S3-1.

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Table 14: Journey Time Routes Scenario S3DM (2043 NTEM Do Minimum) and Scenario S3-2 (2043 NTEM with development option 2) Comparison

Journey Time Route	S3DM (mins) AM Peak	S3-2 (mins) AM Peak	S3-2 minus S3DM (mins) AM Peak	S3DM (mins) PM Peak	S3-2 (mins) PM Peak	S3-2 minus S3DM (mins) PM Peak
A507 NB	06:59	07:32	00:33	07:09	07:44	00:34
A507 SB	07:32	08:31	01:00	07:16	09:18	02:03
B656 NB	07:41	08:58	01:17	08:03	08:51	00:48
B656 SB	07:46	08:53	01:06	07:46	08:45	00:58

2043 LOCAL PLAN SCENARIOS

The journey time difference in 2043 between Scenario S5 and Scenario S6-1 are shown in **Table 15** for the two journey time routes. The table shows there are increases in each of the journey time routes in Scenario S6-1 in both AM and PM peaks. In the AM peak the largest increase of two minutes and 14 seconds is expected to occur on the B656 southbound between the A505 and Letchworth Gate. This is a result of delays at Jubilee Road junction where the signal timings have not been optimised.

In the PM peak the largest increase of two minutes and eight seconds is expected to occur on the A507 southbound between the A1(M) and the A505 overbridge. The increases in journey times in the Scenario S6-1 PM peak follow the same pattern as the other Do Something scenarios in the PM peak.

Table 15: Journey Time Routes Scenario S5 (2043 LP Do Minimum) and Scenario S6-1 (2043 LP with development option 1) Comparison

Journey Time Route	S5 (mins) AM Peak	S6-1 (mins) AM Peak	S6-1 minus S5 (mins) AM Peak	S5 (mins) PM Peak	S6-1 (mins) PM Peak	S6-1 minus S5 (mins) PM Peak
A507 NB	07:29	08:21	00:53	07:22	08:00	00:38
A507 SB	07:36	08:47	01:11	07:28	09:36	02:08
B656 NB	08:00	09:32	01:32	08:17	08:57	00:40
B656 SB	08:09	10:22	02:14	08:04	09:05	01:02

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IMPACT ON NATIONAL HIGHWAYS JUNCTIONS

The impact of the development in Baldock on the National Highways junctions A1(M) Junction 9 and A1(M) Junction 10 has been reviewed in greater detail in this section of the report. Traffic flows, link delay and node delay differences has been compared between the scenarios for each junction.

2029 SCENARIOS

The traffic flow differences between Scenario S2 minus Scenario S1 during the AM peak at the A1(M) Junction 9 are shown in Figure 61 and at the A1(M) Junction 10 in Figure 62. The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S2 development, with the majority of the additional traffic joining the junction from the A505 arm.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S2 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme. This results in the Scenario S2 improvement to the capacity constraint at Junction 10 during the AM peak highlighted earlier in the report.

The results presented previously in the report show that there are no significant changes to link and node delay between Scenario S2 and Scenario S1 at these junctions.

Figure 61: A1(M) Junction 9 Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) AM Peak

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Figure 62: A1(M) Junction 10 Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) AM Peak

The traffic flow differences between Scenario S2 minus Scenario S1 during the PM peak at the A1(M) Junction 9 are shown in **Figure 63** and at the A1(M) Junction 10 in **Figure 64.** The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S2 development, with the majority of the additional traffic utilising the A505 arm. There is a slight decrease in traffic using the northbound off-slip. This contributes to the increased capacity constraints at Junction 9 during the PM peak highlighted earlier in the report.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S2 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme.

The results presented previously in the report show that there are no significant changes to link and node delay between Scenario S2 and Scenario S1 at these junctions.

Figure 63: A1(M) Junction 9 Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) PM Peak

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Figure 64: A1(M) Junction 10 Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) PM Peak

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2043 NTEM SCENARIOS

The traffic flow differences between Scenario S3-1 minus Scenario S3DM during the AM peak at the A1(M) Junction 9 are shown in **Figure 65** and at the A1(M) Junction 10 in **Figure 66.** The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S3-1 development, with the majority of the additional traffic joining the junction from the A505 arm. The additional traffic at Junction 9 contributes to the increased capacity constraints and increased link delay during the AM peak highlighted earlier in the report.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S3-1 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme. The results presented previously in this report show that there are no significant changes to link delay, node delay, or volume over capacity at Junction 10 during the AM peak.

Figure 65: A1(M) Junction 9 Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

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Figure 66: A1(M) Junction 10 Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

The traffic flow differences between Scenario S3-1 minus Scenario S3DM during the PM peak at the A1(M) Junction 9 are shown in **Figure 67** and at the A1(M) Junction 10 in **Figure 68**. The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S3-1 development, with the majority of the additional traffic joining the junction from the A505 arm.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S3-1 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme.

The results presented previously in the report show that there are no significant changes to link delay, node delay or capacity constraints between Scenario S3-1 and Scenario S3DM at these junctions during the PM peak.

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Figure 67: A1(M) Junction 9 Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

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Figure 68: A1(M) Junction 10 Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

The traffic flow differences between Scenario S3-2 minus Scenario S3DM during the AM peak at the A1(M) Junction 9 are shown in **Figure 69** and at the A1(M) Junction 10 in **Figure 70**. The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S3-2 development, with the majority of the additional traffic joining the junction from the A505 arm. The additional traffic at Junction 9 contributes to the increased capacity constraints and increased link delay during the AM peak highlighted earlier in the report.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S3-2 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme. The results presented previously in the report show that this causes no significant changes to link delay, node delay or capacity constraints between Scenario S3-2 and Scenario S3DM at Junction 10 during the AM peak.

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Figure 69: **A1(M) Junction 9 Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak**

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Figure 70: A1(M) Junction 10 Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

The traffic flow differences between Scenario S3-2 minus Scenario S3DM during the PM peak at the A1(M) Junction 9 are shown in **Figure 71** and at the A1(M) Junction 10 in **Figure 72.** The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S3-2 development, with the majority of the additional traffic joining the junction from the A505 arm.

At Junction 10 there is an overall decrease in traffic as a result of the Scenario S3-2 development, with the majority of the reduction on the A507 arm. This is due to the rerouting of traffic away from the Great North Road to avoid the new signalisation as part of the development scheme.

The results presented previously in the report show that there are no significant changes to link delay, node delay or capacity constraints between Scenario S3-2 and Scenario S3DM at these junctions during the PM peak.

Figure 71: A1(M) Junction 9 Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

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Figure 72: A1(M) Junction 10 Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

2043 LOCAL PLAN SCENARIOS

The traffic flow differences between Scenario S6-1 minus Scenario S5 during the AM peak at the A1(M) Junction 9 are shown in **Figure 73** and at the A1(M) Junction 10 in **Figure 74.** The figures show that at Junction 9 there is an increase in traffic as a result of the Scenario S6-1 development, with the majority of additional traffic joining the junction from the A505 arm. At Junction 10 there is an overall decrease in traffic as a result of the Scenario S6-1 development, with the majority of the reduction on the A507 arm, as a result of the traffic rerouting caused by the signalisation on Great North Road introduced as part of the development scheme.

The traffic flow differences during the PM peak at the A1(M) Junction 9 are shown in **Figure 75** and at the A1(M) Junction 10 in **Figure 76.** The figures show the same patterns as the AM peak.

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Figure 73: A1(M) Junction 9 Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) AM Peak

Figure 74: A1(M) Junction 10 Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) AM Peak

Figure 75: A1(M) Junction 9 Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario 5 (2043 LP Do Minimum) PM Peak

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Figure 76: A1(M) Junction 10 Flow Difference Scenario S6-1 (2043 LP with development option 1) minus Scenario 5 (2043 LP Do Minimum) PM Peak

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Public Transport

The impact of the Baldock development on the public transport services in the area have been reviewed in this section of the report. Public transport flow difference, public transport development trip distribution, and the proposed new bus patronage have been compared between the scenarios.

The public transport assignment model results are presented for the following time periods:

- AM period (7am - 10am)
- PM period (4pm - 7pm)

PASSENGER FLOW DIFFERENCE PLOTS

2029 SCENARIOS

The public transport passenger flow differences in 2029, between Scenario S2 and Scenario S1 are shown in **Figure 77** and **Figure *78***. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

In both peak periods, there is an increase in passengers along the proposed new bus route as well as on Hitchin Street, Letchworth Road and the railway line southwards.

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Figure 77: **Passenger Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) AM Peak**

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Figure 78: Passenger Flow Difference Scenario S2 (2029 NTEM with interim development) minus Scenario S1 (2029 Do Minimum) PM Peak

2043 NTEM SCENARIOS

The public transport passenger flow differences in 2043, between Scenario S3-1 and Scenario S3DM are shown in **Figure 79** and **Figure 80.** It should be noted that the flow differences are not shown where the network structure is different between scenarios.

In both peak periods, there is an increase in passengers along the proposed new bus route as well as on Hitchin Street, Letchworth Road and the railway line southwards.

Figure 79: Passenger Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak

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Figure 80: Passenger Flow Difference Scenario S3-1 (2043 NTEM with development option 1) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak

The public transport passenger flow differences in 2043, between Scenario S3-2 and Scenario S3DM are shown in **Figure 81** and **Figure 82**. It should be noted that the flow differences are not shown where the network structure is different between scenarios.

Similar to Scenario S3-1, in both peak periods, there is an increase in passengers along the proposed new bus route as well as on Hitchin Street, Letchworth Road and the railway line southwards.

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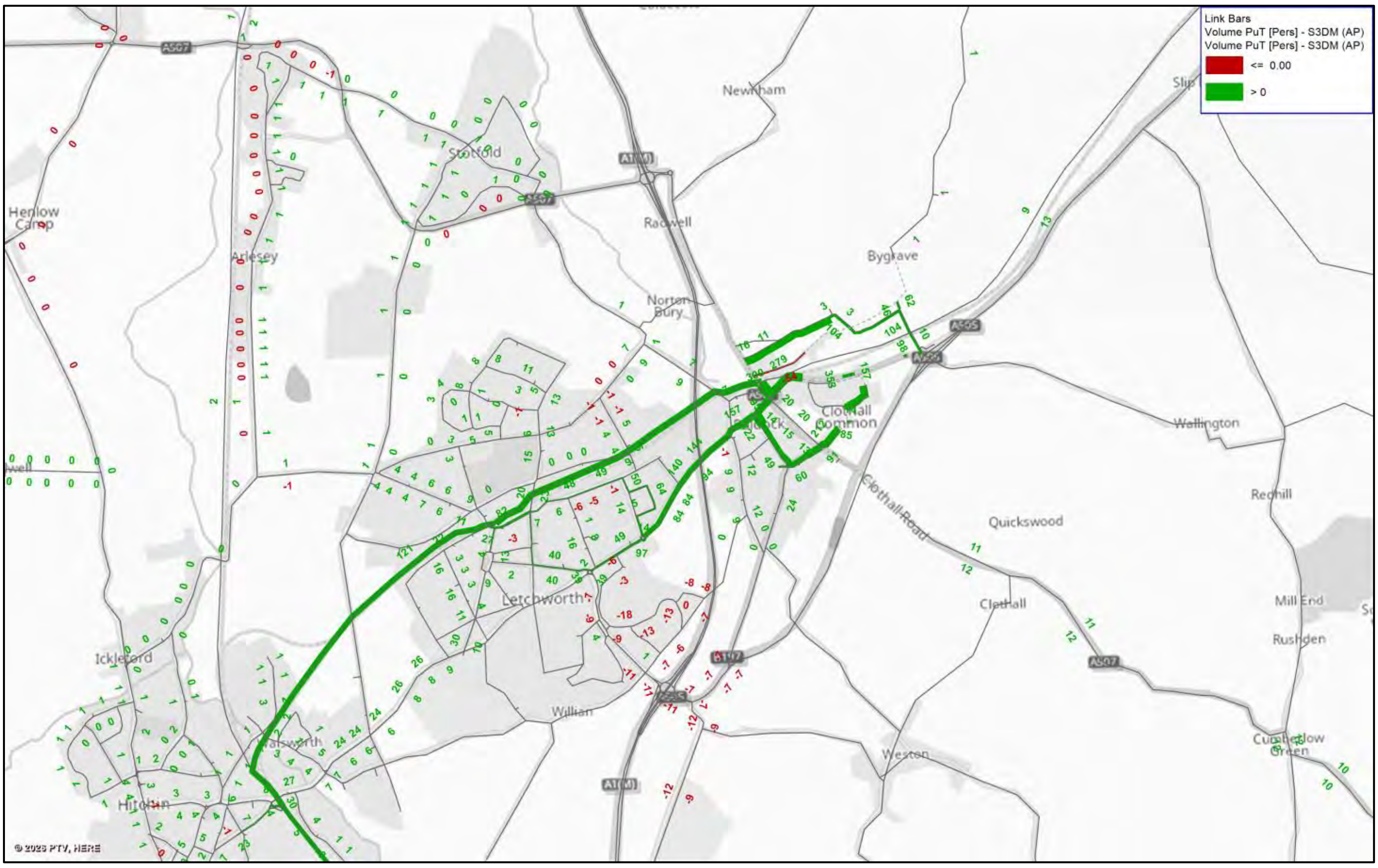

Figure 81: **Passenger Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) AM Peak**

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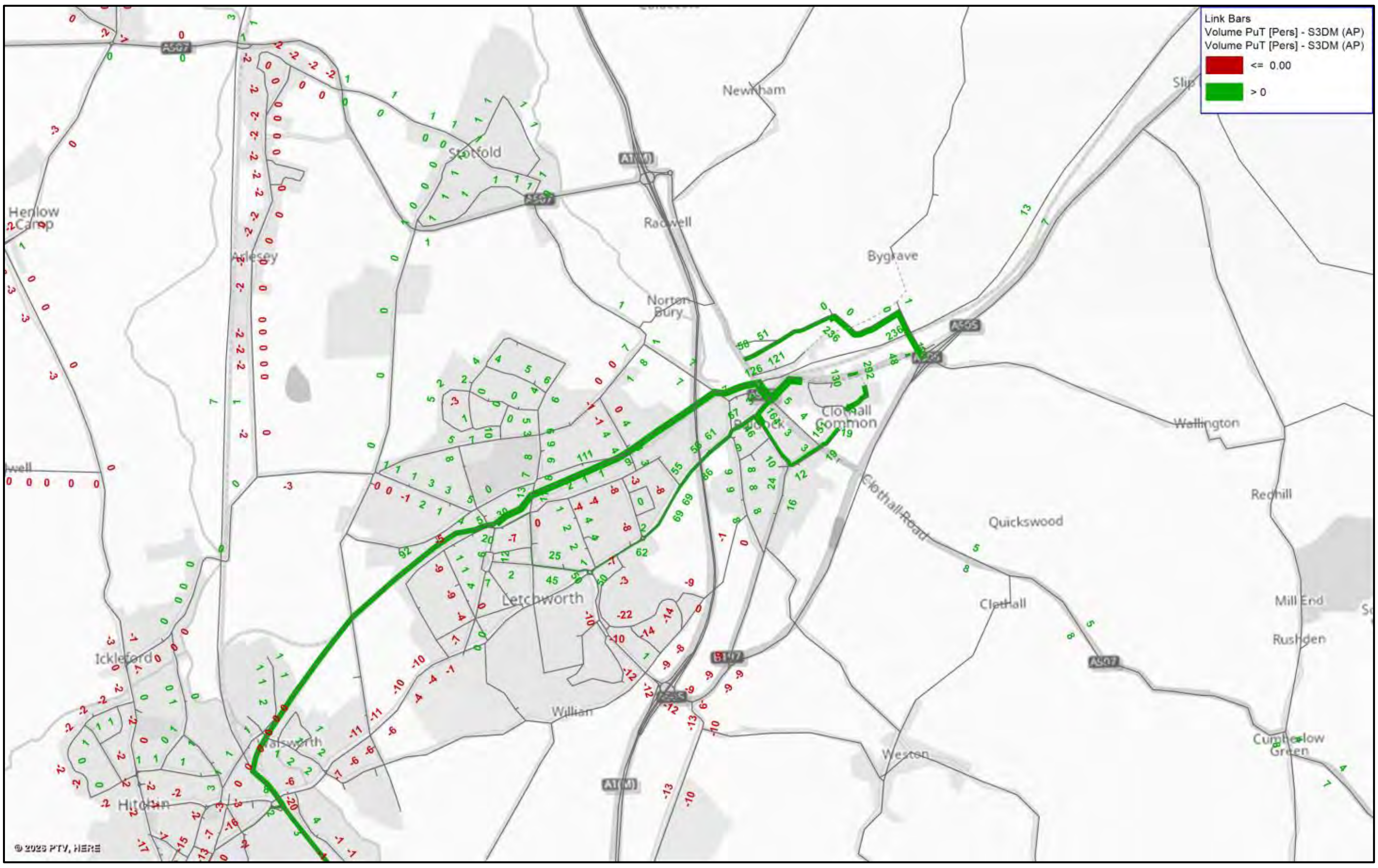

Figure 82: **Passenger Flow Difference Scenario S3-2 (2043 NTEM with development option 2) minus Scenario S3DM (2043 NTEM Do Minimum) PM Peak**

2043 LOCAL PLAN SCENARIOS

The public transport passenger flow differences in 2043 between Scenario S6-1 and Scenario S5 are shown **Figure 83** for the AM peak and **Figure 84** for the PM peak.

In both peak periods there is an increase in passengers along the proposed new bus routes as well as on Hitchin Street, Letchworth Road and on the railway line between Baldock and the stations to the south of Baldock.

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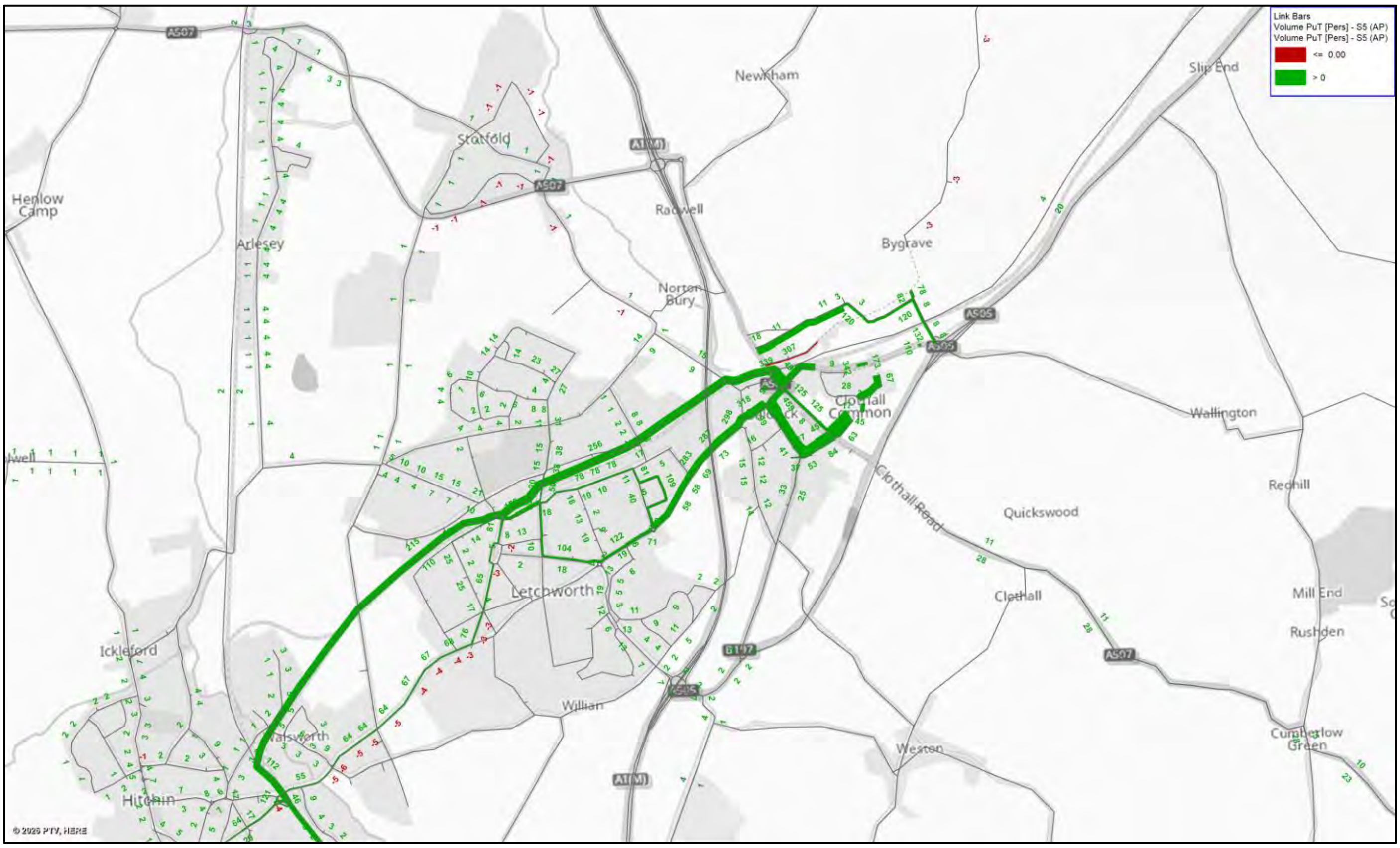

Figure 83: Passenger Flow Differences Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) AM Peak

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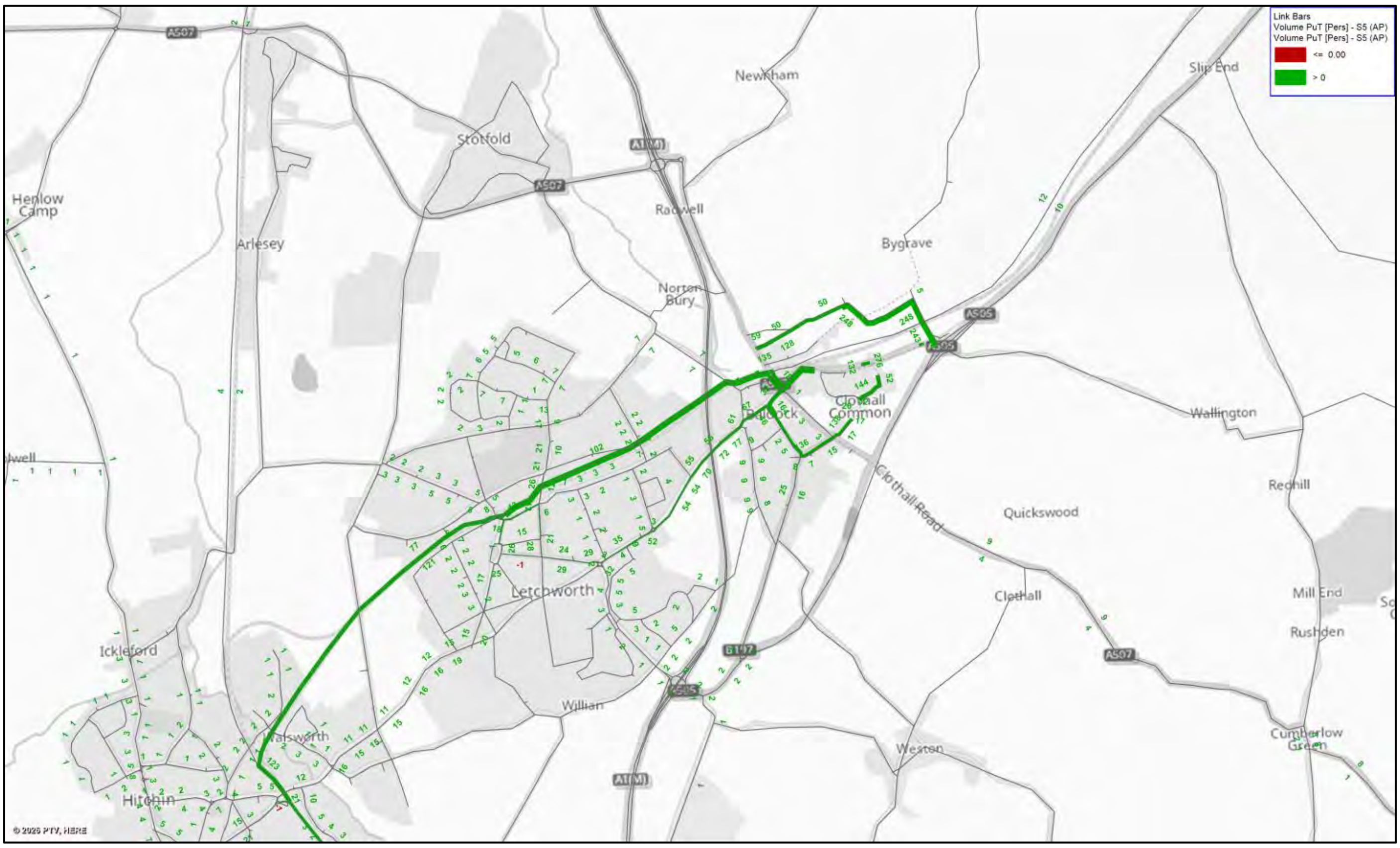

Figure 84: **Passenger Flow Differences Scenario S6-1 (2043 LP with development option 1) minus Scenario S5 (2043 LP Do Minimum) PM Peak**

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PASSENGER DEVELOPMENT FLOW DISTRIBUTION PLOTS

Distribution plots have been generated for the Growing Baldock public transport development trips for each of the with development scenarios. These demonstrate where the development traffic is forecast to travel to and from.

2029 SCENARIOS

Figure 85 shows the distribution of the Baldock Scenario S2 public transport development trips on the highway network during the AM peak and **Figure 86** shows the distribution during the PM peak.

Figure 85: Development Public Transport Passenger Distribution Scenario S2 (2029 NTEM with interim development) AM Peak

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Figure 86: Development Public Transport Passenger Distribution Scenario S2 (2029 NTEM with interim development) PM Peak

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2043 NTEM SCENARIOS

Figure 87 shows the distribution of the Baldock Scenario S3-1 development trips on the highway network during the AM peak and **Figure 88** shows the distribution during the PM peak. The distribution of the Scenario S3-2 trips are shown in **Figure 89** and **Figure 90** for the AM and PM peak respectively.

Figure 87: **Development Public Transport Passenger Distribution Scenario S3-1 (2043 NTEM with development option 1) AM Peak**

Figure 88: Development Public Transport Passenger Distribution Scenario S3-2 (2043 NTEM with development option 2) AM Peak

Figure 89: Development Public Transport Passenger Distribution Scenario S3-1 (2043 NTEM with development option 1) PM Peak

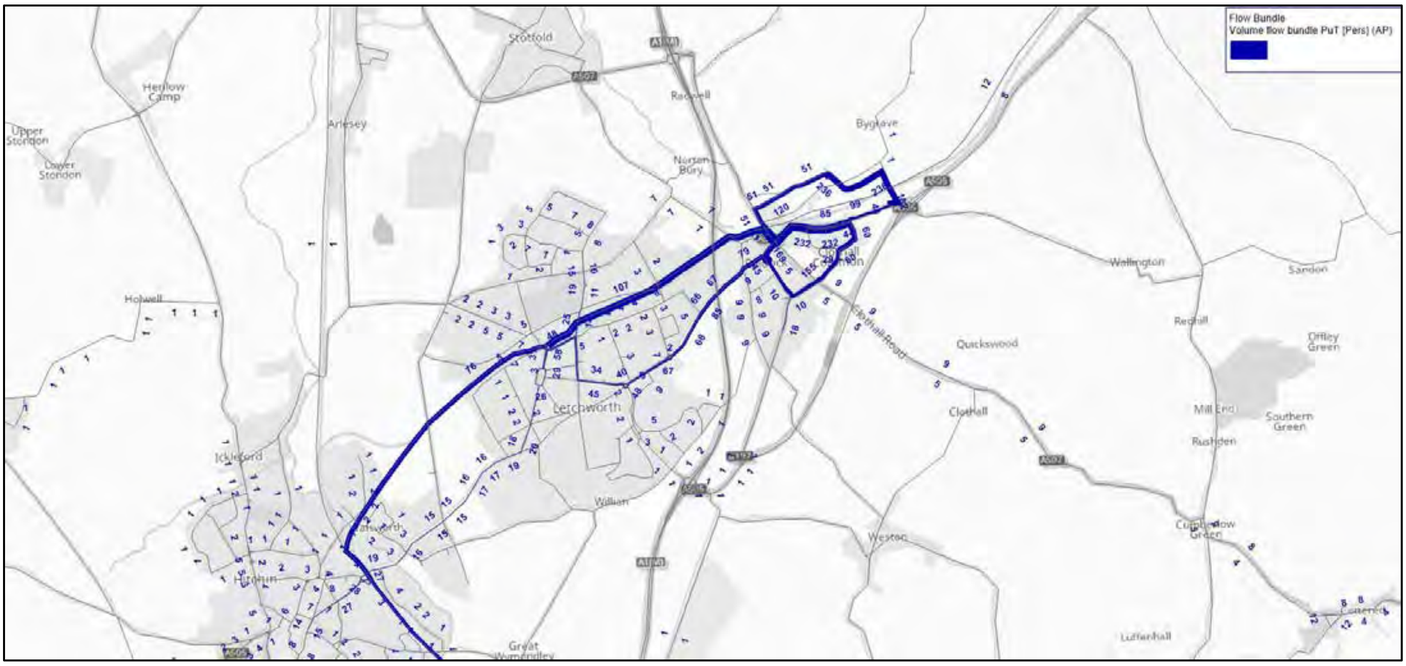

Figure 90: Development Public Transport Passenger Distribution Scenario S3-2 (2043 NTEM with development option 2) PM Peak

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2043 LOCAL PLAN SCENARIOS

The distribution of the Scenario S6-1 development trips on the public transport network is shown in **Figure *91*** for the AM peak and **Figure 92** for the PM peak.

Figure 91: **Development Public Transport Passenger Distribution Scenario S6-1 (2043 LP with development option 1) AM Peak**

Figure 92: **Development Public Transport Passenger Distribution Scenario S6-1 (2043 LP with development option 1) PM Peak**

BUS PASSENGER BOARDINGS

The passenger boarding numbers on the proposed additional bus route for each of the development scenarios are presented in **Table 16** for the three-hour morning and evening peak periods. It shows that the highest patronage is expected to be in the AM peak in Scenario S6-1.

Table 16: **Proposed Bus Route Passenger Boardings**

Scenario	Passenger Boardings AM Peak (07:00-10:00)	Passenger Boardings PM Peak (16:00-19:00)
Scenario S2	132	133
Scenario S3-1	440	354
Scenario S3-2	390	358
Scenario S6-1	493	368

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SUMMARY

WSP were commissioned by ITP on behalf of Urban&Civic to assess the strategic transport impact of the Growing Baldock development proposals. Transport modelling to assess the impacts of the proposed development was undertaken in Hertfordshire's COMET model, which has a base year of 2023 and forecast years of 2029 and 2043.

A revised base model was developed for use in the assessment of the Growing Baldock Development. This was detailed in the technical note "Baldock_Base_Year_Review+Update_23.10.2025.pdf". This technical note details the scenarios and results of the forecast modelling undertaken to assess the impacts of the proposed development.

The scenarios that have been developed and used in the assessment are:

- S1 - 2029 NTEM Without development
- S2 - 2029 NTEM With interim development (vision led assumptions) and mitigation
- S3DM - 2043 NTEM Without development
- S3-1 - 2043 NTEM with full development (vision led assumptions) and mitigation, Option 1 (secondary school and SEND school on BA3)
- S3-2 - 2043 NTEM with full development (vision led assumptions) and mitigation, Option 2 (housing and SEND school on BA3)
- S5 - 2043 Local Plan Without Development
- S6 - 2043 Local Plan with full development (vision led assumptions) and mitigation, Option 1

The development trips for highway and public transport were provided by ITP, together with the details of development highway mitigations and proposed new bus route.

The full COMET variable demand model has been run for four of the scenarios – Scenarios S2 and S3DM were existing COMET NTEM scenarios and Scenario S3-2 was created using the post-VDM Scenario S3-1 model.

The traffic flows, flow differences, delay differences and volume over capacity ratios, journey times and public transport passenger flow differences have been presented and analysed.

The forecast model results show that:

- Traffic flows are forecast to decrease on North Road and increase on Norton Road, as existing traffic re-routes.
- Traffic flow increases are also forecast on A1(M), A505, Whitehorse Street, South Road and London Road as a result of the development.

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- There is forecast to be traffic flow decreases on Icknield Way, due to the closure of the junction with Station Road.
- Capacity constraint and delays increases are forecast at the A505 / London Road roundabout, the A1(M) Junction 9 and on South Road, and should be subject to further investigation.
- Journey time increases of up to around two minutes for through traffic are predicted on the A507 southbound route due to the proposed signals changes on North Road, and on the A656 northbound route due to the proposed development changes.
- Development traffic is predicted to mainly use the A505 (accessing via the Royston Road junction) and North Road (via A1(M) junction 10) and London Road, with similar patterns of movement in both peaks and all scenarios.
- Public transport passengers are forecast to use the new bus route to access the development and the train line towards the south. The highest number of passengers using the proposed bus route is forecast to be in the AM peak in Scenario S6-1.

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CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

APPENDIX A – BASE YEAR MODEL REVIEW AND UPDATE TECHNICAL NOTE

TECHNICAL NOTE 2

DATE:	23 October 2025	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Base Year Model Review and Update		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Laura Lelliott
CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

INTRODUCTION

WSP were commissioned by ITP via Hertfordshire County Council (HCC) to assess the strategic transport impact of the Growing Baldock development proposals.

The Growing Baldock development comprises of the Local Plan allocation sites BA1, BA2, BA3 and BA10 in Baldock, Hertfordshire. The development proposes to deliver of up to 3,198 residential units, 93,000 sqm of employment and other land uses and up to three new schools across all four site allocations. The development is located in the North Hertfordshire district of Hertfordshire.

Transport modelling to assess the impacts of the proposed development will be undertaken in Hertfordshire's COMET model, which has a base year of 2023. The scenarios and model results that will be produced align with the modelling proforma completed by ITP and provided to WSP by HCC.

This technical note details the review of the 2023 base year model that has been undertaken and the changes that have been made to update the base model in the local area.

CONTEXT

Figure 1 shows the location of the Growing Baldock development within the context of the wider Baldock area. The development site is located to the north-east of Baldock town in Hertfordshire. There are four allocated areas of development.

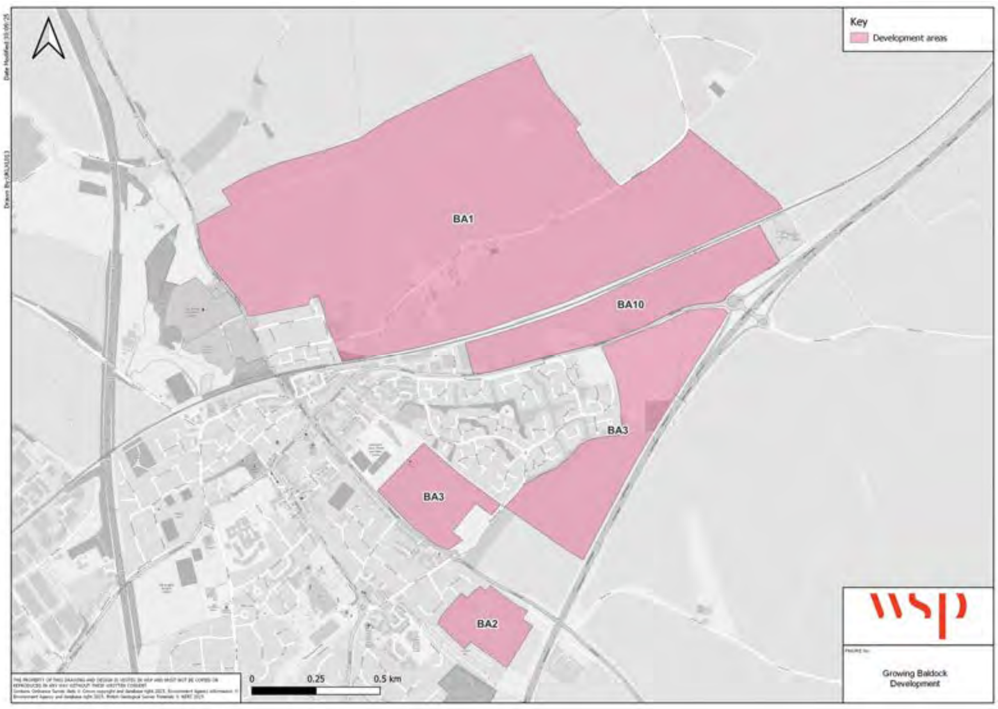

Figure 1: **Growing Baldock Development Area**

TECHNICAL NOTE 2

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CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

Figure 2 shows the COMET model network links, nodes and zones in the Baldock area.

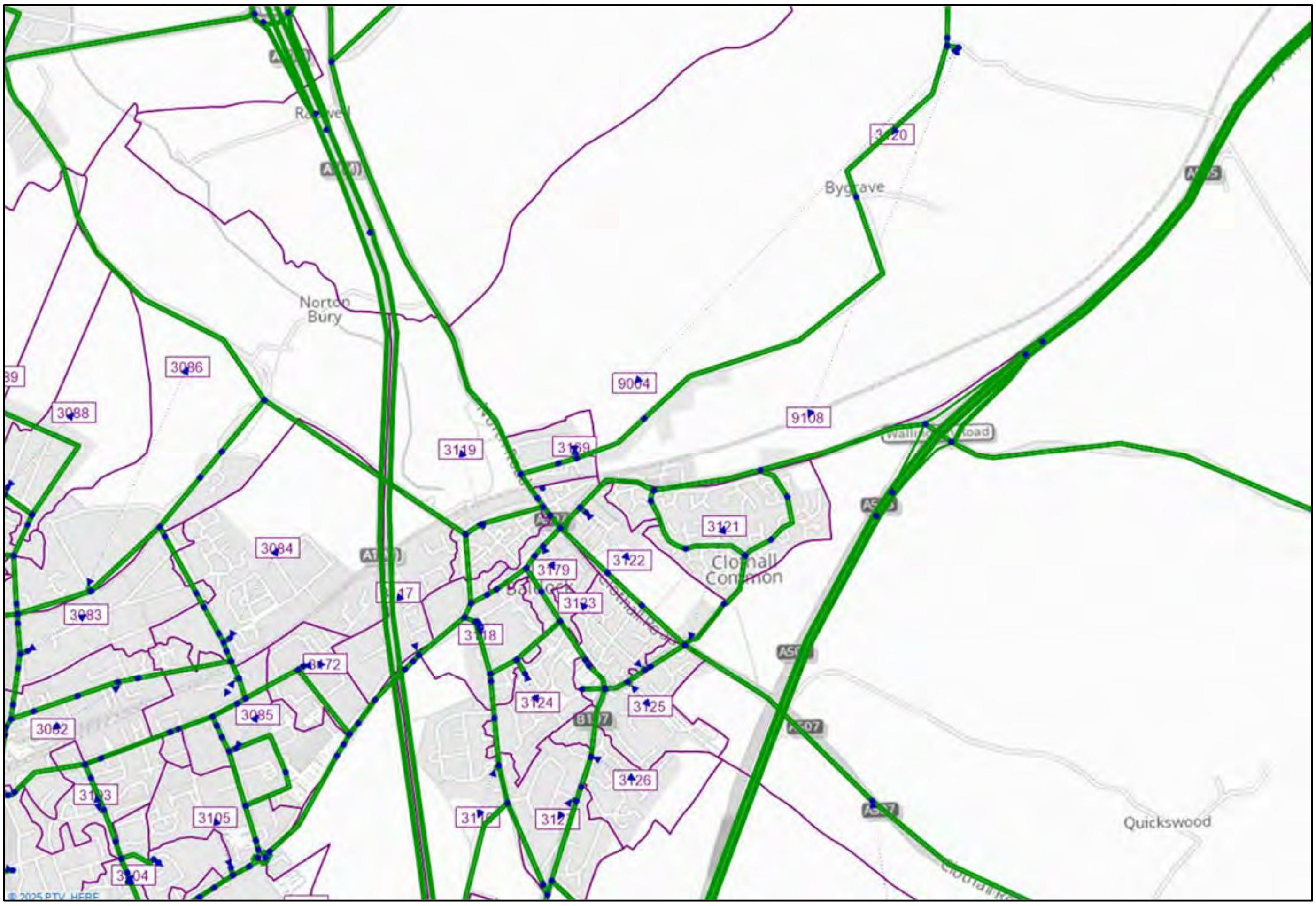

Figure 2: Model Network in the Baldock Area

TECHNICAL NOTE 2

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BASE YEAR PERFORMANCE

Count Data

A comparison between observed traffic counts and modelled traffic has been undertaken to understand how accurate the COMET model is representing traffic in the area.

Figure 3 and Figure 4 show how the modelled traffic flows compare against count data currently within the COMET model in the Baldock area. The plots highlight that in the area close to the development there are counts on the B656 Whitehorse Street, Norton Road and the A1(M). All of these have a GEH value of less than 5 in both AM and PM peak hour which indicates a good level of accuracy between modelled and observed data.

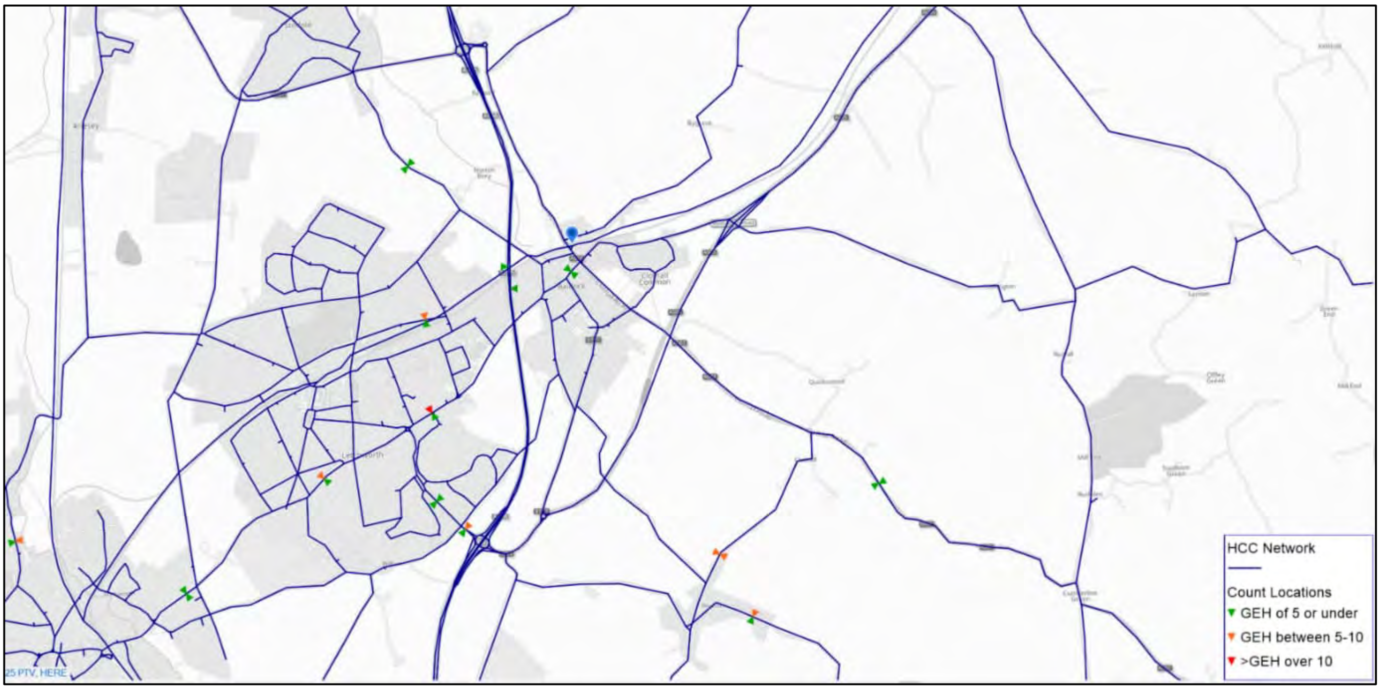

Figure 3: AM Peak Calibration and Validation Counts

TECHNICAL NOTE 2

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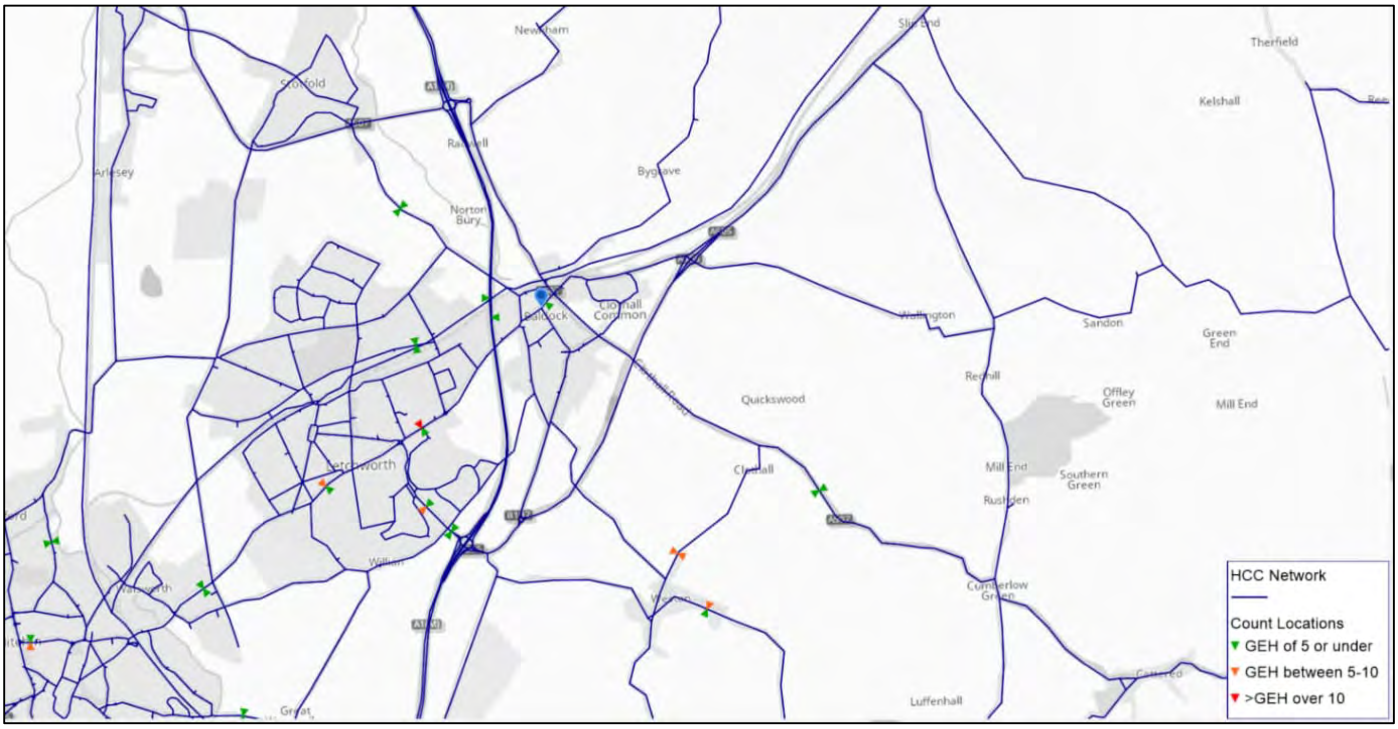

Figure 4: PM Peak Validation and Calibration Counts

TECHNICAL NOTE 2

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Figure 5 and Figure 6 show the count screenlines and cordons in the Baldock area and their performance between modelled and observed data. The Baldock/Letchworth cordon, closest to the development, passes in both directions in both the AM and PM peak periods.

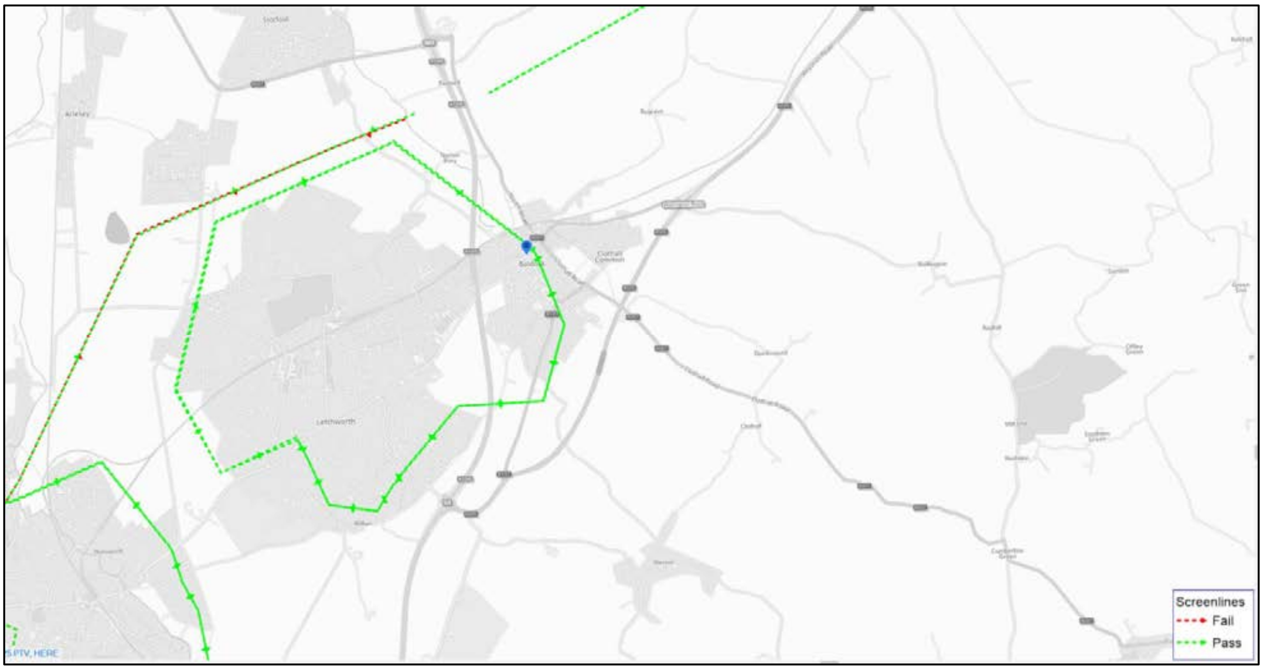

Figure 5: AM Peak Screenline and Cordon Performance

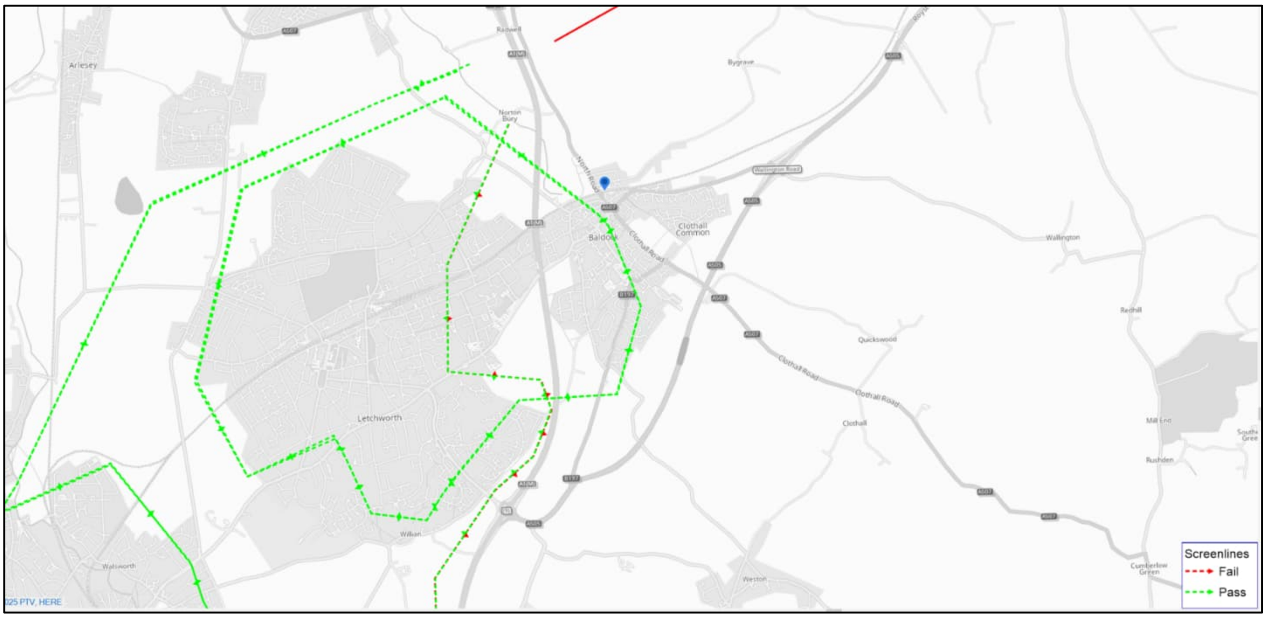

Figure 6: PM Peak Screenline and Cordon Performance

TECHNICAL NOTE 2

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Figure 7 and Figure 8 show the journey time routes in the COMET model and their performance. The journey times routes on the A505 south of Baldock passes in both directions in both AM and PM peak periods. The route on the A1(M) passes fails southbound but passes in the northbound direction in the AM peak and passes in both directions in the PM peak.

Figure 7: **AM Peak Journey Time Performance**

Figure 8: **PM Peak Journey Time Performance**

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Additional ATC Data Validation

To further understand the model performance in the context of the Growing Baldock development, ITP provided WSP with additional Automatic Traffic Count (ATC) data collected in July 2022. The location of the additional count sites are shown in Figure 9.

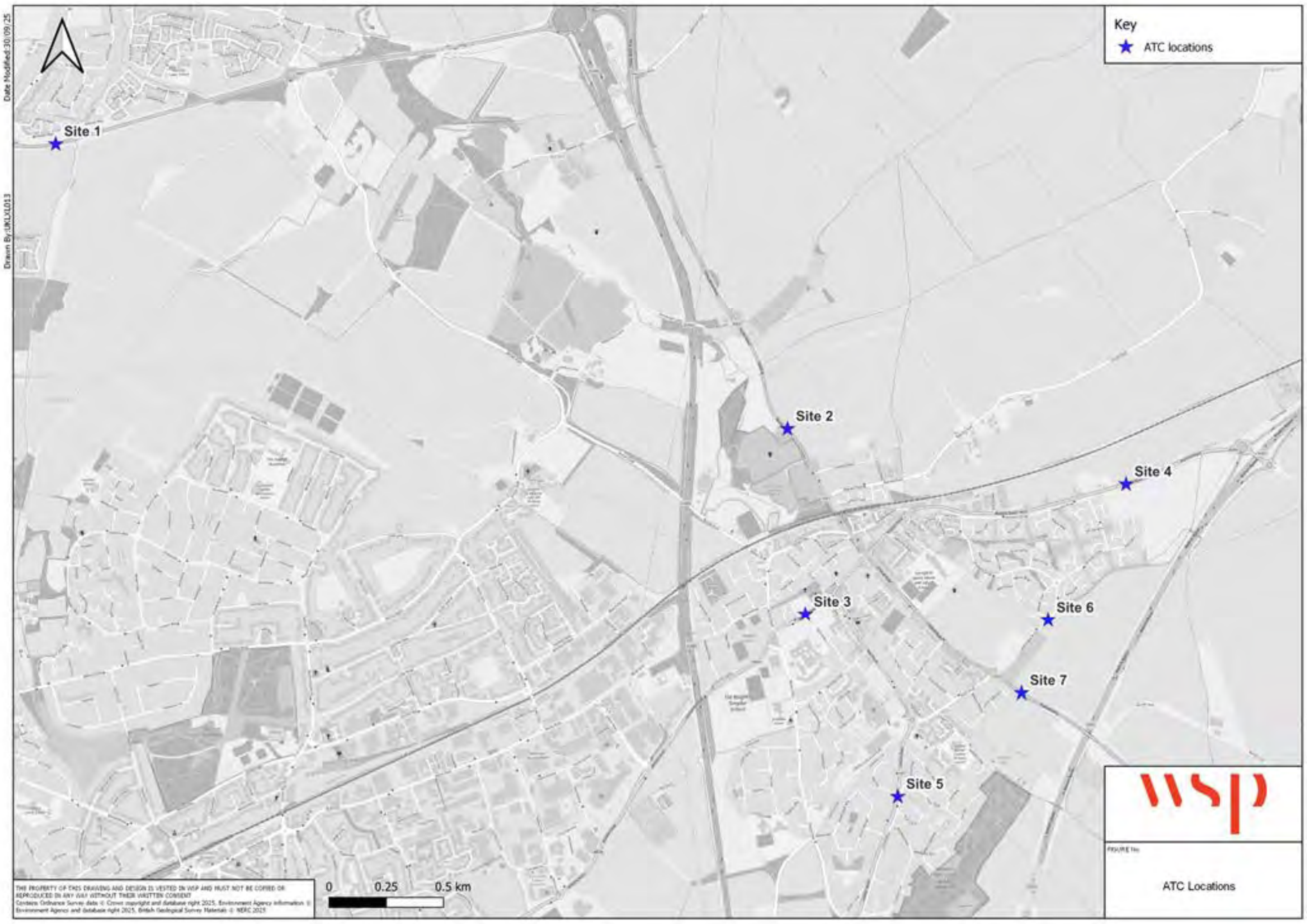

Figure 9: ATC Locations

The ATC data has been processed by WSP to analyse the Monday-Thursday average peak hour 08:00-09:00 for the AM peak and 17:00-18:00 PM peak, to match the base modelled times. The data has also been factored to the 2023 spring base year, using factors calculated when the COMET model was built.

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Figure 10, Figure 11 and Table 1 show how well the new count data compares to the modelled flows. The performance is mixed, with some sites comparing well, but others not so well. Any location where a GEH of over 10 is experienced, close to the proposed site, requires further investigation.

Figure 10: **AM Peak ATC Validation**

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Figure 11: **PM Peak ATC Validation**

Table 1: ATC Validation Performance

Site	Road	Direction	AM Peak				PM Peak			
			Observed Flow	Modelled Flow	GEH	Link Pass?	Observed Flow	Modelled Flow	GEH	Link Pass?
1	A507	Hitchin Road (W) to Norton Road E	1273	748	16.51	No	891	522	13.87	No
		Norton Road (E) to Hitchin Road (W)	715	553	6.44	No	1221	583	21.24	No
2	A507 North Road	Salisbury Road (S) to Norton Mill Lane (N)	292	303	0.62	Yes	337	233	6.19	No
		Norton Mill Lane (N) to Salisbury Road (S)	377	369	0.42	Yes	666	556	4.46	Yes
3	B656 Hitchin Street	The Gardens (SW) to Pepper Court (NE)	617	561	2.33	Yes	596	612	0.64	Yes
		Pepper Court (NE) to The Gardens (SW)	457	471	0.66	Yes	438	398	1.96	Yes
4	B656 Royston Road	Ashville Way (W) to A505 (E)	353	401	2.46	Yes	302	268	2.01	Yes
		A505 (E) to Ashville Way (W)	255	410	8.50	No	310	415	5.51	No
5	B197 London Road	Templar Avenue (S) to Hillcrest (N)	444	214	12.66	No	504	405	4.65	Yes
		Hillcrest (N) to Templar Avenue (S)	519	213	16.01	No	449	290	8.28	No
6	Wallington Road	A507 Clothall Road (SW) to Yeomanry Drive (NE)	134	73	6.04	Yes	243	28	18.43	No
		Yeomanry Drive (NE) to A507 Clothall Road (SW)	281	52	17.79	No	174	69	9.53	No
7	A507 Clothall Road	Warren Lane (SE) to South Road (NW)	309	425	6.08	No	304	388	4.53	Yes
		South Road (NW) to Warren Lane (SE)	397	373	1.23	Yes	415	446	1.50	Yes

Network Coding

A high-level check of the highway network in the Baldock area has been undertaken to assess the suitability of it for the assessment of the development. This has included checks on the highway network coding of the key junctions where output data will be required for the network, links speeds, number of lanes and capacity. The coverage of the network in the development area has also been assessed.

The network checks have highlighted that:

- **Norton Mill Lane and Norton Bury Lane** are not included in the COMET model network. This is a minor road that would not normally be included in a strategic network, but it was highlighted by ITP as a possible route that could be sensitive to increased traffic flows. A select link of development traffic using it was also requested by ITP. Given the sensitivity of this road and the development, it should be included in the model to assess the development.
- **Icknield Way East and Football Close** are not included in the COMET model network. The Growing Baldock development proposals include closure of these roads at their junction with Station Road. These are minor residential roads that would not normally be included in a strategic network and their addition to the model is not considered proportionate and necessary to assess the impact

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of the development. The turning flows requested at these junctions could not be provided as part of the modelling outputs.

- Two priority junctions have been coded on **B656 Royston Road**, providing access to Yeomanry Drive. However, these junctions do not exist. As a result, some traffic is modelled as accessing the Yeomanry Drive area from Royston Road rather than Wallington Road. This will affect the traffic flow in the local area and subsequently would impact the model results. This is likely to be a reason for the low modelled flow compared to the observed at ATC site 6.
- The connector for zone 3121 is located on **Wallington Road**, close to the junction with Clothall Road. To accurately assess the impact of, and interaction with, the proposed access to the BA3 part of the development, the connector needs to be changed to load further north on Yeomanry Drive. This is also likely to be a reason for the low modelled flow compared to the observed at ATC site 6.
- The link representing **Great North Road** has been modelled as type 28, a Rural Poor B-Road. It should be a Rural 40 mph A-Road (type 58).
- The link type of **Bygrave Road/Ashwell Road** has been modelled as type 40, a Suburban 30mph road. It should be a Rural Poor B-Road (type 28).
- The critical gap and FuT for some turning movements at **Clothall Road / Wallington Road** and the **Yeomanry Drive** roundabout junctions need to change to the standard as per coding manual.
- It is noted that the junction A1(M) / Hill Lane at Biggleswade has been listed as a key junction by ITP, a junction where they would like results extracted. This junction is not in the Fully Modelled Area of the model. Can ITP confirm whether any discussions with National Highways have prompted the requirement for this as given the junction is outside of the Fully Modelled Area, this means the junctions are not coded in detail and do not represent the junction type or delays the traffic flows will be less reliable.

TECHNICAL NOTE 2

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PROJECT:	Growing Baldock Development	**AUTHOR:**	Laura Lelliott
CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

BASE YEAR MODEL UPDATE

The following changes have been undertaken to improve the base model validation in the Baldock area.

Network Coding Changes

Network changes have been undertaken to address the network coding issues highlighted in the model review.

The following changes have been made:

- Norton Mill Lane and Norton Bury Lane have been added to the network
- A link representing that part of Yeomanry Drive that runs parallel with Royton Road has been added, and the incorrectly coded junctions between Yeomanry Drive and Royston Road have been removed.
- The connector for zone 3121 has been relocated to the new link on Yeomanry Drive
- The link type on Great North Road between roundabout at the services and Bygrave Road has been changed to type 58
- The link type of Bygrave Road/Ashwell Road between Salisbury Road and Ashwell has been changed to type 28
- The critical gap and follow-up time (FuT) for some turning movements at Clothall Road / Wallington Road have been updated
- The zone connection of zone 6506 has been moved from Norton Road, Stotfold to Hitchin Road, Stotfold, to provide a better representation of traffic loading in the area.

Matrix Estimation

An assignment was run with just the above coding changes incorporated into the base network. Although the performance of the model did improve, matrix estimation was needed to improve the traffic flow on B197 Baldock Road AM peak, where the modelled flows were significantly lower than observed. Matrix estimation was therefore undertaken on the AM peak model only.

UPDATED BASE YEAR PERFORMANCE

The performance of the updated base model is shown in Figure 12 and Figure 13 and the details of the performance at the ATC validation performance is shown in **Table *2***.

TECHNICAL NOTE 2

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PROJECT:	Growing Baldock Development	**AUTHOR:**	Laura Lelliott
CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

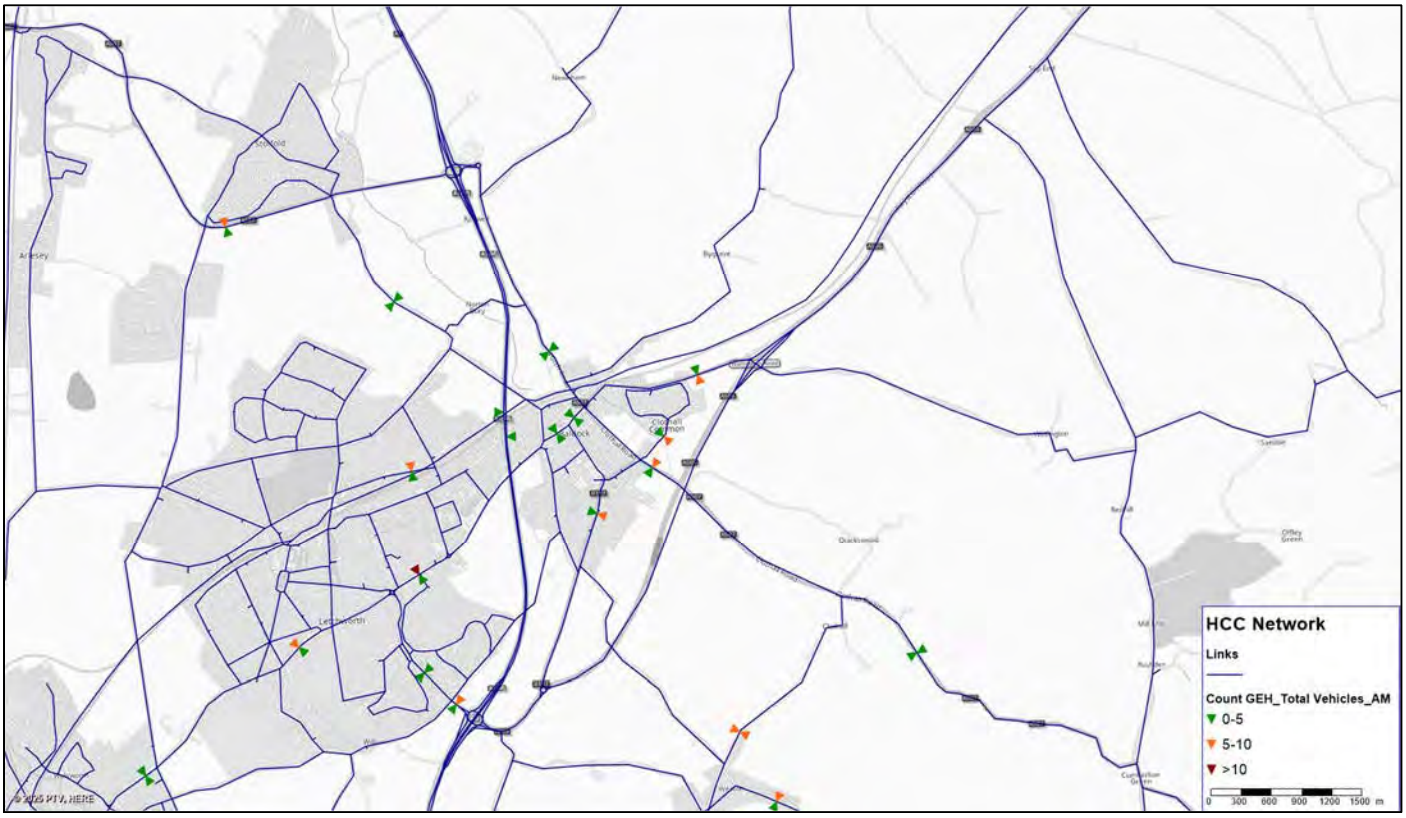

Figure 12: AM Peak Validation and Calibration Count Performance After Model Updates

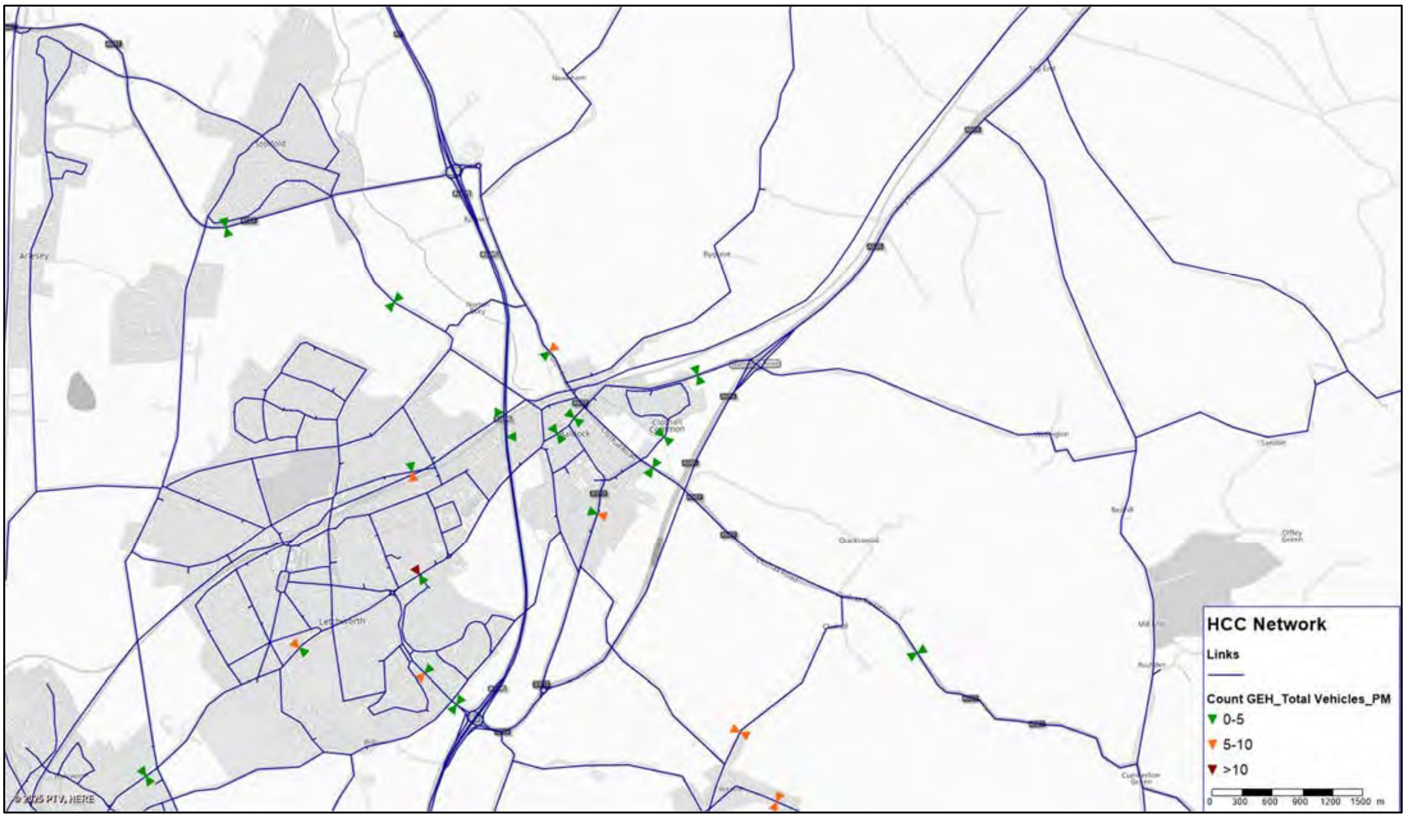

Figure 13: **PM Peak Validation and Calibration Count Performance After Model Updates**

TECHNICAL NOTE 2

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SUBJECT:	Base Year Model Review and Update		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Laura Lelliott
CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

Table 2: Revised ATC Validation

Site	Road	Direction	AM Peak				PM Peak			
			Observed Flow	Modelled Flow	GEH	Link Pass?	Observed Flow	Modelled Flow	GEH	Link Pass?
1	A507	Hitchin Road (W) to Norton Road E	1273	1479	5.56	No	891	858	1.12	Yes
		Norton Road (E) to Hitchin Road (W)	715	817	3.68	Yes	1221	1305	2.37	Yes
2	A507 North Road	Salisbury Road (S) to Norton Mill Lane (N)	292	310	1.03	Yes	337	249	5.12	Yes
		Norton Mill Lane (N) to Salisbury Road (S)	377	432	2.73	Yes	666	637	1.15	Yes
3	B656 Hitchin Street	The Gardens (SW) to Pepper Court (NE)	617	576	1.67	Yes	596	600	0.17	Yes
		Pepper Court (NE) to The Gardens (SW)	457	464	0.35	Yes	438	371	3.35	Yes
4	B656 Royston Road	Ashville Way (W) to A505 (E)	353	389	1.86	Yes	302	264	2.25	Yes
		A505 (E) to Ashville Way (W)	255	399	7.95	No	310	403	4.95	Yes
5	B197 London Road	Templar Avenue (S) to Hillcrest (N)	444	383	3.00	Yes	504	403	4.76	Yes
		Hillcrest (N) to Templar Avenue (S)	519	398	5.66	No	449	280	8.84	No
6	Wallington Road	A507 Clothall Road (SW) to Yeomanry Drive (NE)	134	142	0.71	Yes	243	216	1.77	Yes
		Yeomanry Drive (NE) to A507 Clothall Road (SW)	281	189	6.03	Yes	174	129	3.66	Yes
7	A507 Clothall Road	Warren Lane (SE) to South Road (NW)	309	454	7.43	No	304	384	4.32	Yes
		South Road (NW) to Warren Lane (SE)	397	404	0.35	Yes	415	451	1.73	Yes

The plots and table show that the performance in the local Baldock area has been significantly improved by the changes made to the base model. All of the ATC counts now have a GEH of under 9, with the majority being under 5. The modelled traffic flows are therefore representative of the observed counts.

The performance of the other traffic counts, screenlines and journey times in the model have been checked. These have not been significantly affected by the model changes. Just one count has changed GEH category – the GEH of the westbound count on Icknield Way in the PM peak has changed from just under 5 to just over 5. Although this shows as changing colour in the plots above, it is not considered significant as the link still passes the link flow criteria.

TECHNICAL NOTE 2

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SUBJECT:	Base Year Model Review and Update		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Laura Lelliott
CHECKED:	C Elphicke	**APPROVED:**	C Elphicke

SUMMARY

WSP were commissioned by ITP via Hertfordshire County Council (HCC) to assess the strategic transport impact of the Growing Baldock development proposals. Transport modelling to assess the impacts of the proposed development will be undertaken in Hertfordshire's COMET model, which has a base year of 2023.

A review of the base model in the Baldock area identified network coding changes that could be made to improve the model in the local area to ensure accurate modelling of the development proposals. Validation of the ATC data provided by ITP also indicated that the model performance could be improved.

The network improvements and matrix estimation have been undertaken on the base model, leading to a higher level of validation performance. The revised base model is considered appropriate for use in the assessment of the Growing Baldock Development.

TECHNICAL NOTE 2

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

APPENDIX B – HIGHWAY SCHEME DRAWINGS

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0100

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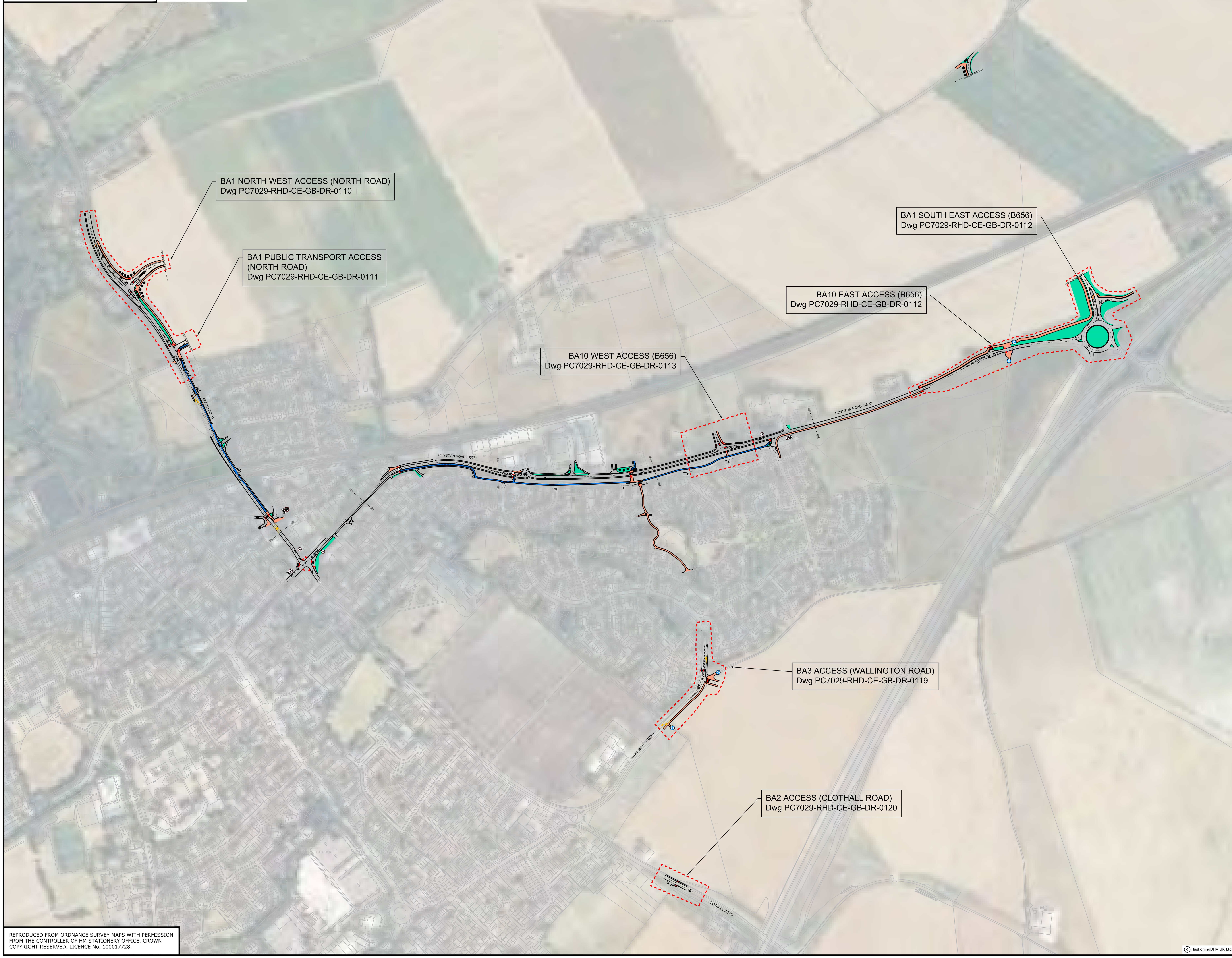

GENERAL NOTES

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- PROPOSED SIGN & POST
- PROPOSED TACTILE PAVING
- PROPOSED SHARED FOOT & CYCLEWAY
- PROPOSED FOOTWAY
- PROPOSED CYCLE TRACK
- PROPOSED SOFT LANDSCAPING (TO BE DETERMINED)
- PROPOSED BUFFER AREAS (TO BE DETERMINED)
- PROPOSED TRAFFIC CALMING
- HIGHWAY PLANNING APPLICATION SITES

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: GROWING BALDOCK OUTLINE PLANNING APPLICATION LOCATION PLAN

itp
a company of Royal HaskoningDHV

Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	GB	GB
DATE	**SCALE AT A1**	**PROJECT NUMBER**
MAR 25	NTS	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0100	S3	I02

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0130

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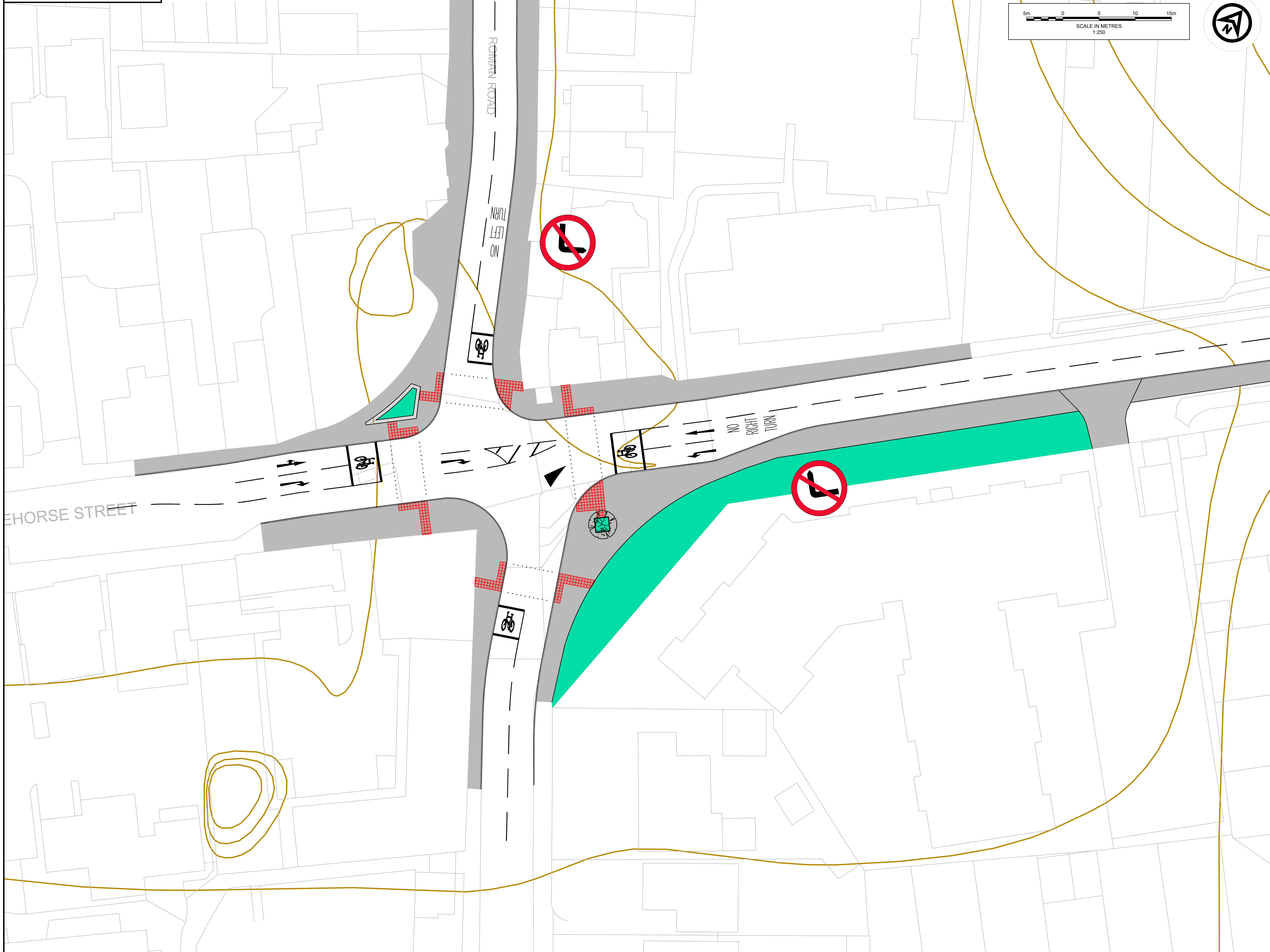

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- PROPOSED CYCLE TRACK
- PROPOSED SOFT LANDSCAPING (TO BE DETERMINED)
- PROPOSED HARD LANDSCAPING
- PROPOSED TRAFFIC CALMING

REV	DATE	DESCRIPTION	BY	CHK	APP
I01	17.06.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE

ROYSTON ROAD/NORTH ROAD - REVISED JUNCTION LAYOUT

itp a company of Royal HaskoningDHV
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	GB	GB
DATE: JUN 25	SCALE AT A1: 1:250	PROJECT NUMBER: PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0130	S3	I01

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0131

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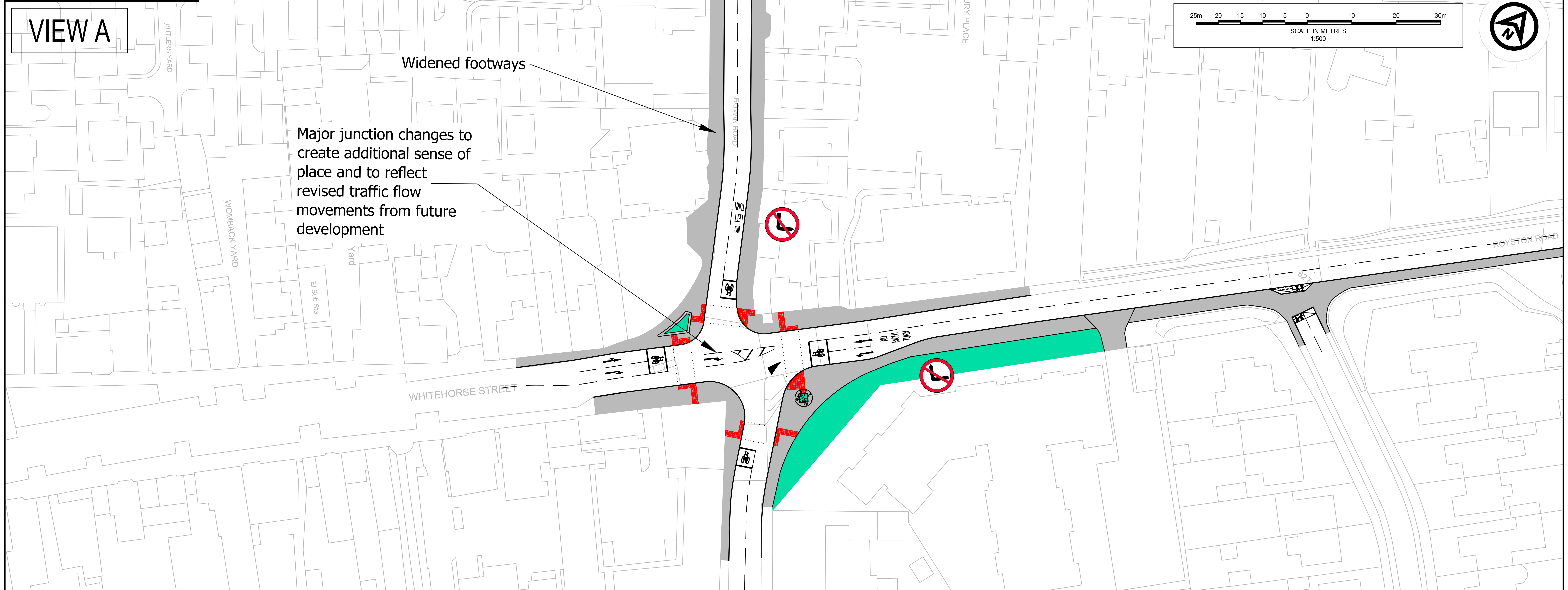

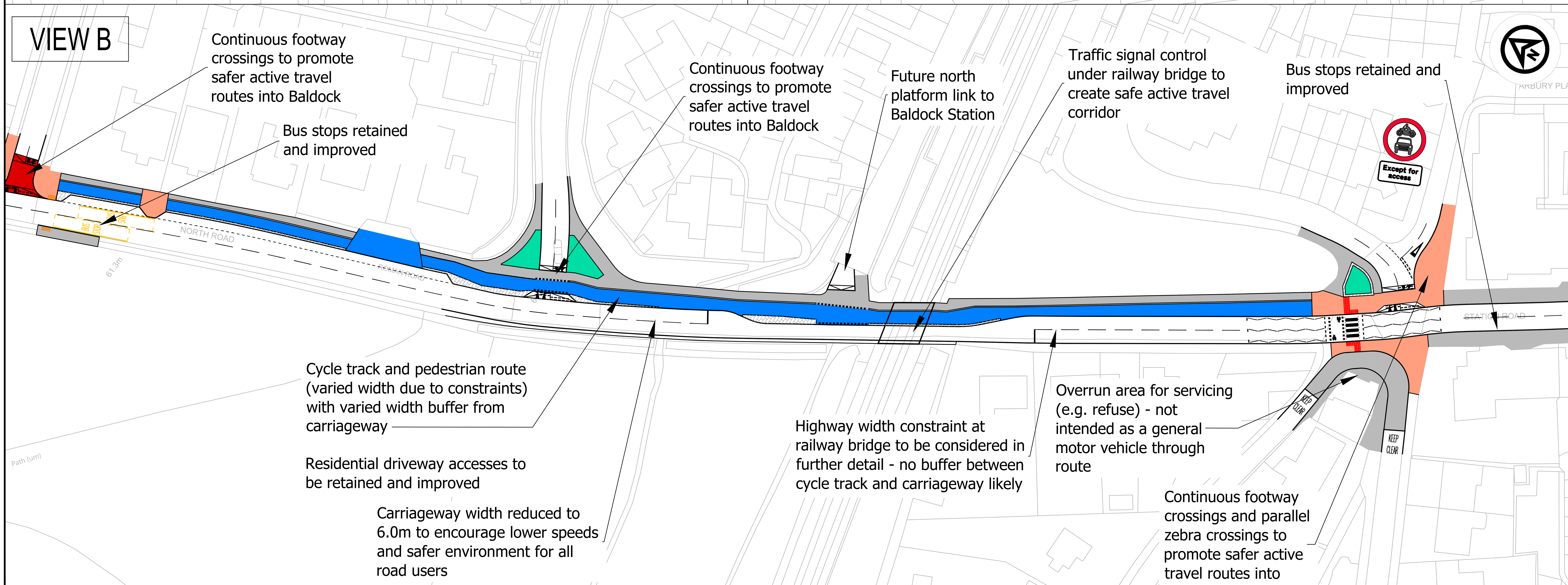

WORK IN PROGRESS

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- PROPOSED CYCLE TRACK
- PROPOSED SOFT LANDSCAPING (TO BE DETERMINED)
- PROPOSED HARD LANDSCAPING
- PROPOSED TRAFFIC CALMING

REV	DATE	DESCRIPTION	BY	CHK	APP
I01	30.06.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: ROYSTON ROAD/NORTH ROAD - TOWN APPROACH ACCESS CONCEPT DESIGN

Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

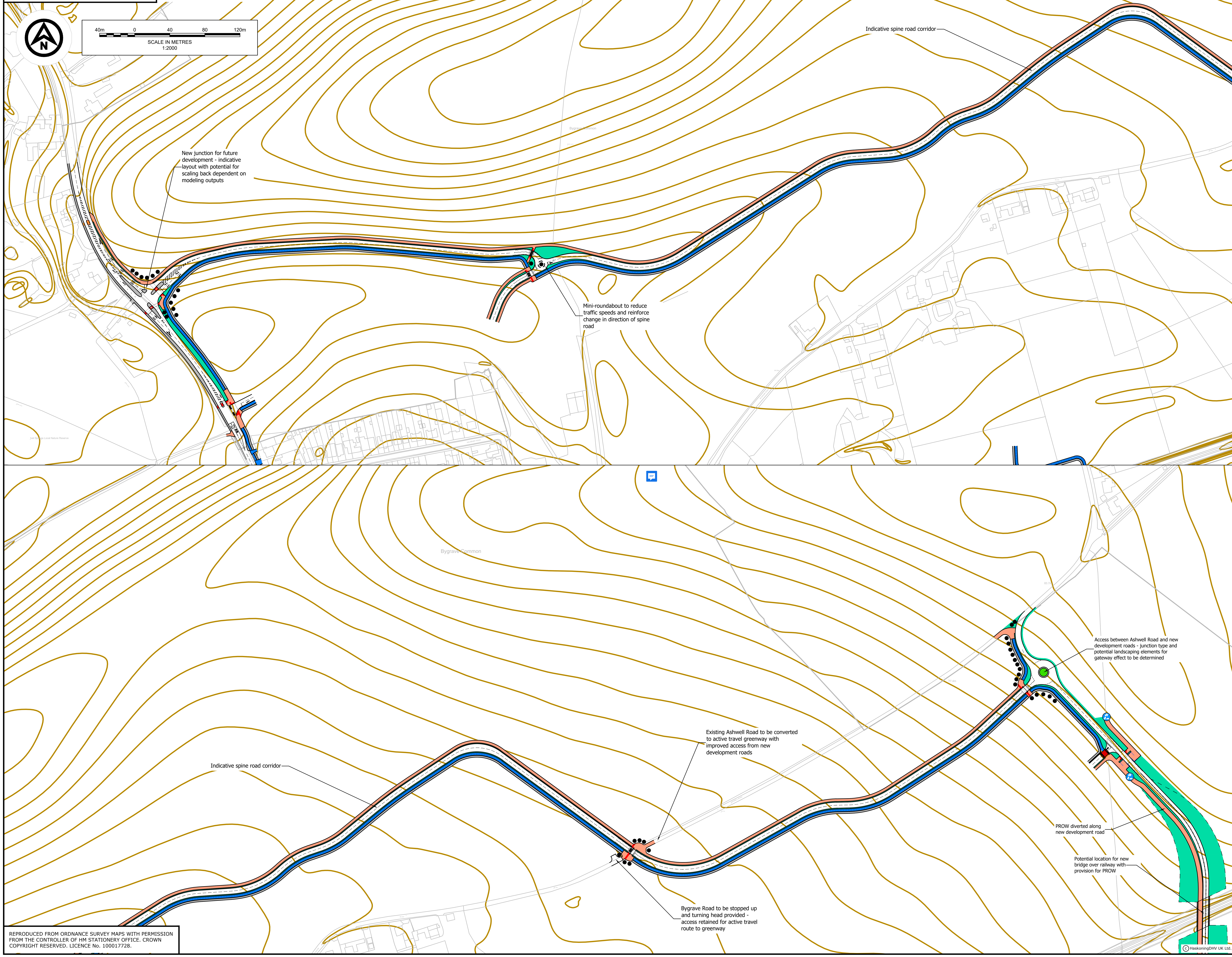
a company of Royal HaskoningDHV

DRAWN	CHECKED	APPROVED
BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
JUN 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0131	S3	I01

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0118

DO NOT SCALE



GENERAL NOTES

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LEGEND:

- PROPOSED KERB LINE
- PROPOSED SIGN & POST
- PROPOSED TACTILE PAVING
- PROPOSED SHARED FOOT & CYCLEWAY
- PROPOSED FOOTWAY
- PROPOSED CYCLE TRACK
- PROPOSED SOFT LANDSCAPING (TO BE DETERMINED)
- PROPOSED HARD LANDSCAPING
- PROPOSED TRAFFIC CALMING

WORK IN PROGRESS

REV	DATE	DESCRIPTION	BY	CHK	APP
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: GROWING BALDOCK DEVELOPMENT CORRIDOR GENERAL OVERVIEW

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a company of Royal HaskoningDHV
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

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BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0118	S3	I02

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0116

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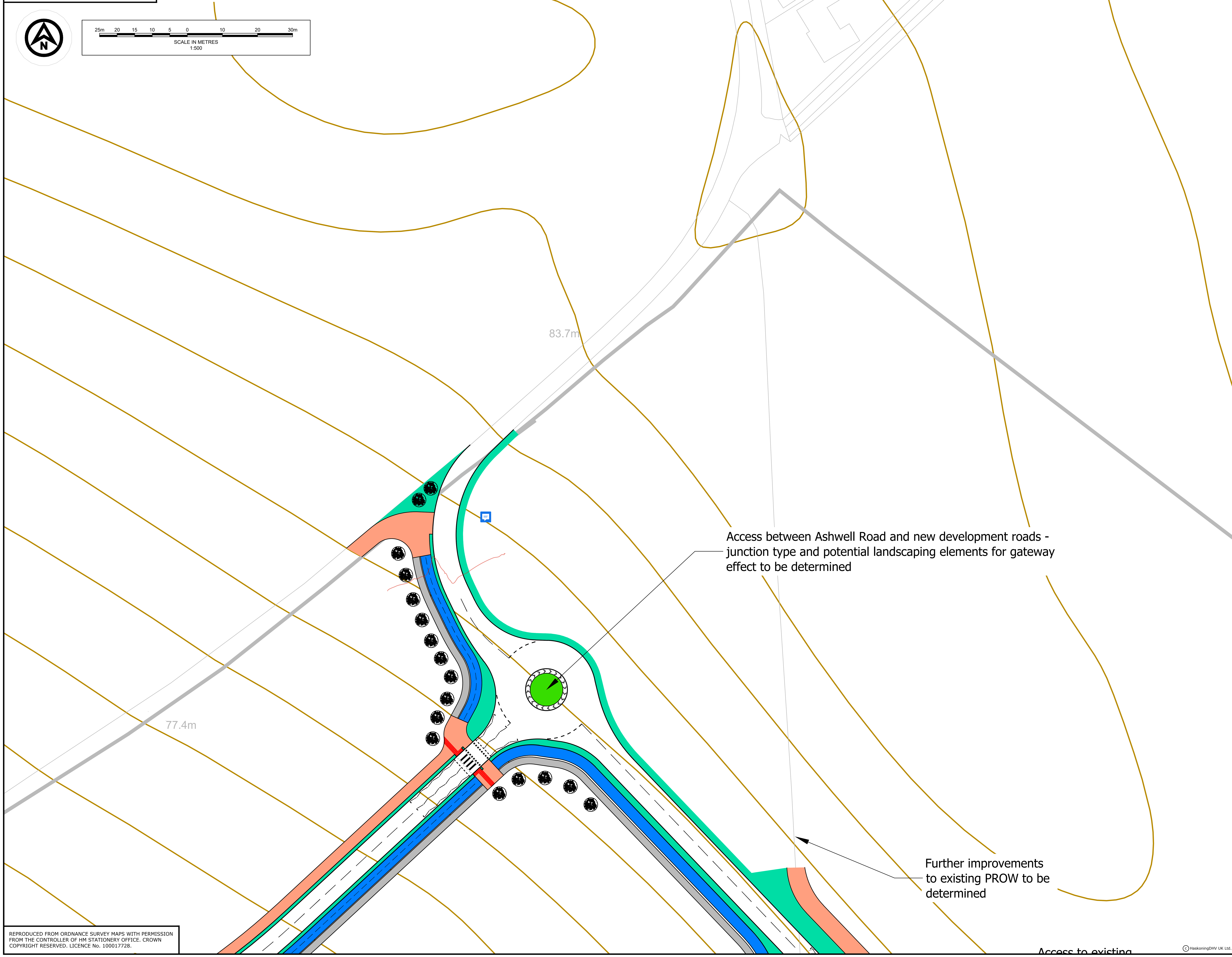

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REV	DATE	DESCRIPTION	BY	CHK	APP
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: DEVELOPMENT CORRIDOR - ASHWELL RD CONNECTION CONCEPT DESIGN

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Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

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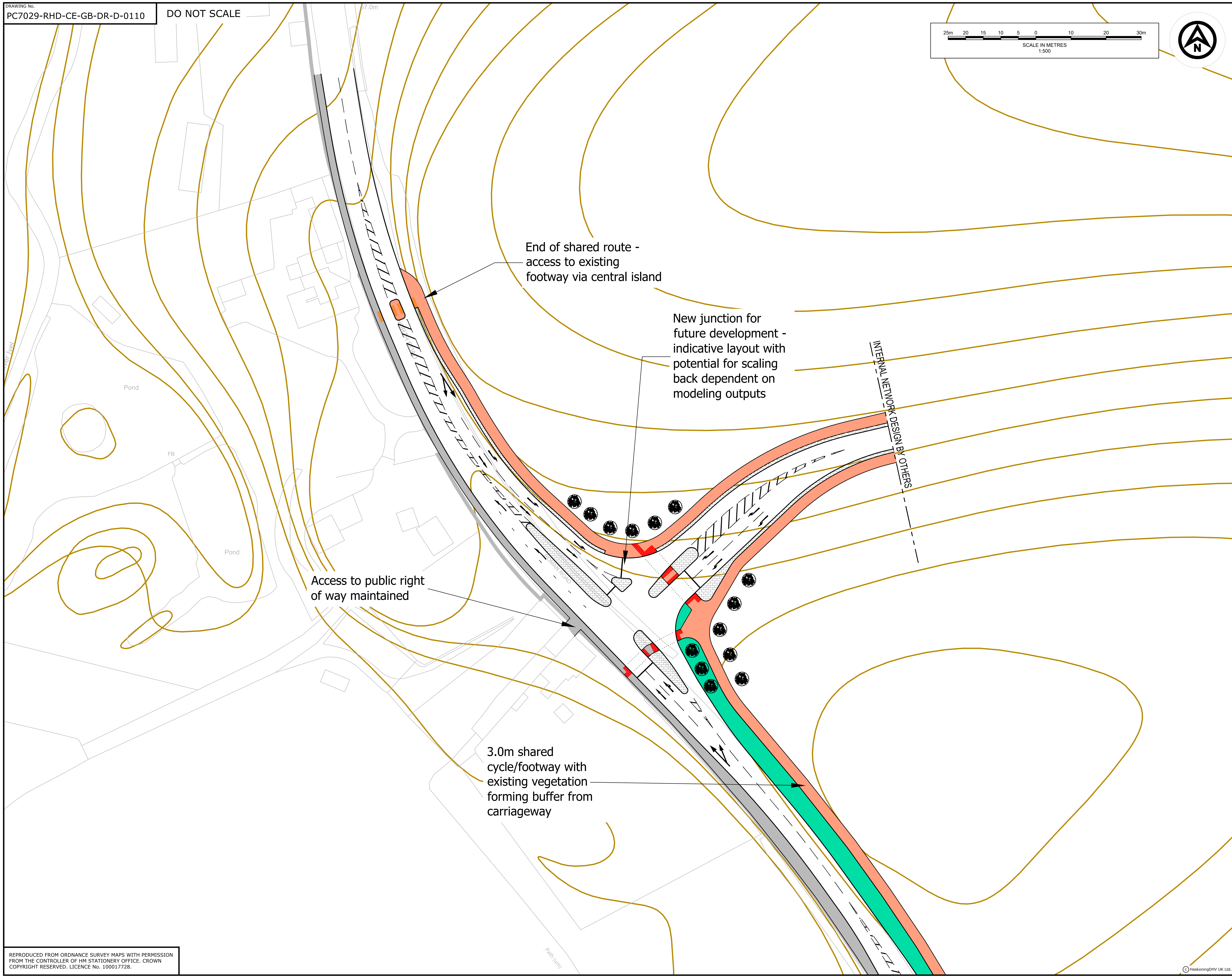
BKB	GB	GB
DATE	**SCALE AT A1**	**PROJECT NUMBER**
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0116	S3	I02

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0110

DO NOT SCALE



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REV	DATE	DESCRIPTION	BY	CHK	APP
I03	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: NORTH ROAD - ALL MODES SITE ACCESS CONCEPT DESIGN

a company of Royal HaskoningDHV
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

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BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0110	S3	I03

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0111

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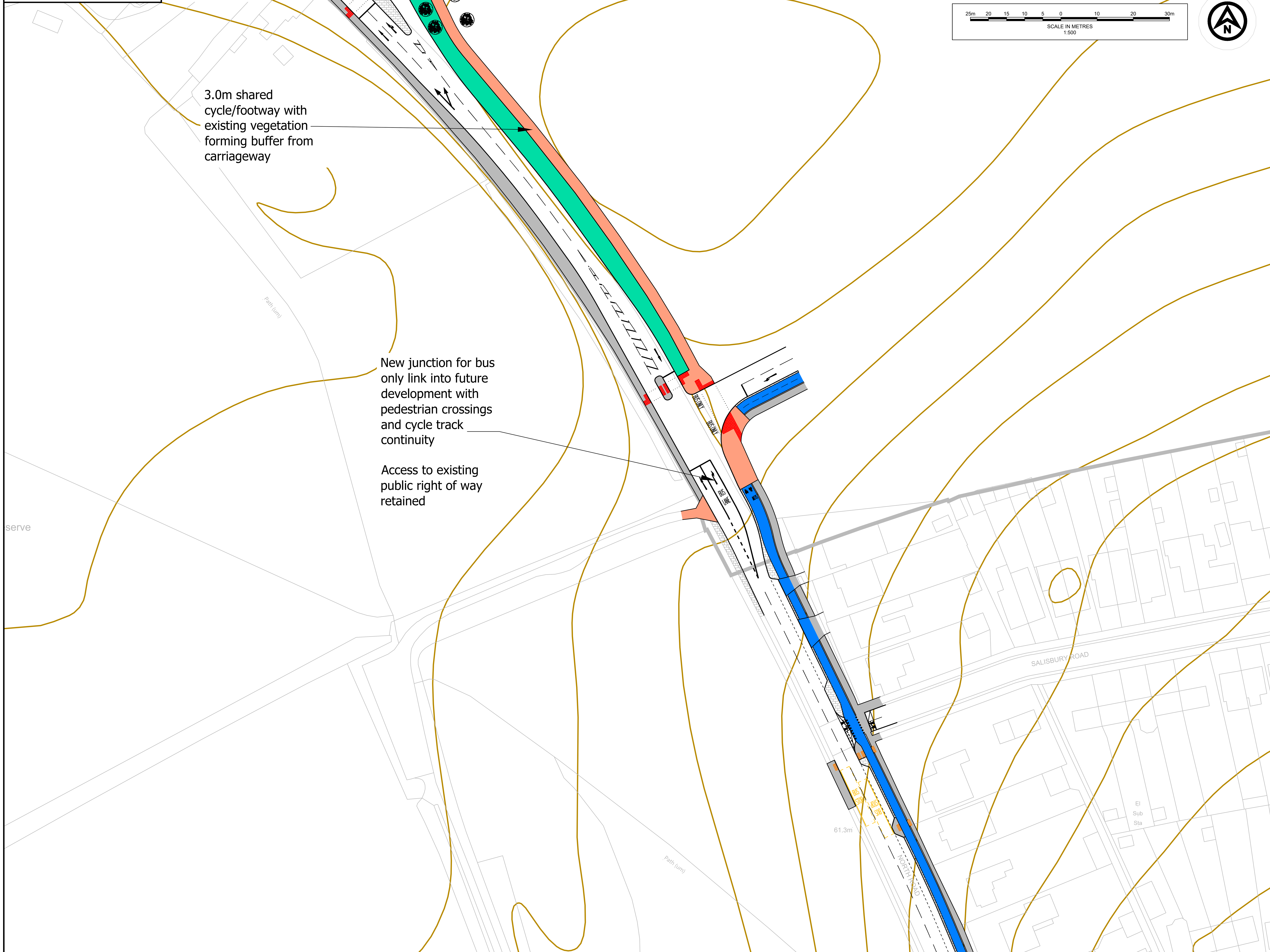

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REV	DATE	DESCRIPTION	BY	CHK	APP
I03	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: NORTH ROAD - PUBLIC TRANSPORT ACCESS CONCEPT DESIGN

itp a company of Royal HaskoningDHV
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
nfo.manchester@uk.rhdhv.com
bsite www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	GB	GB

DATE	SCALE AT A1	PROJECT NUMBER
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0111	S3	I03

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0112

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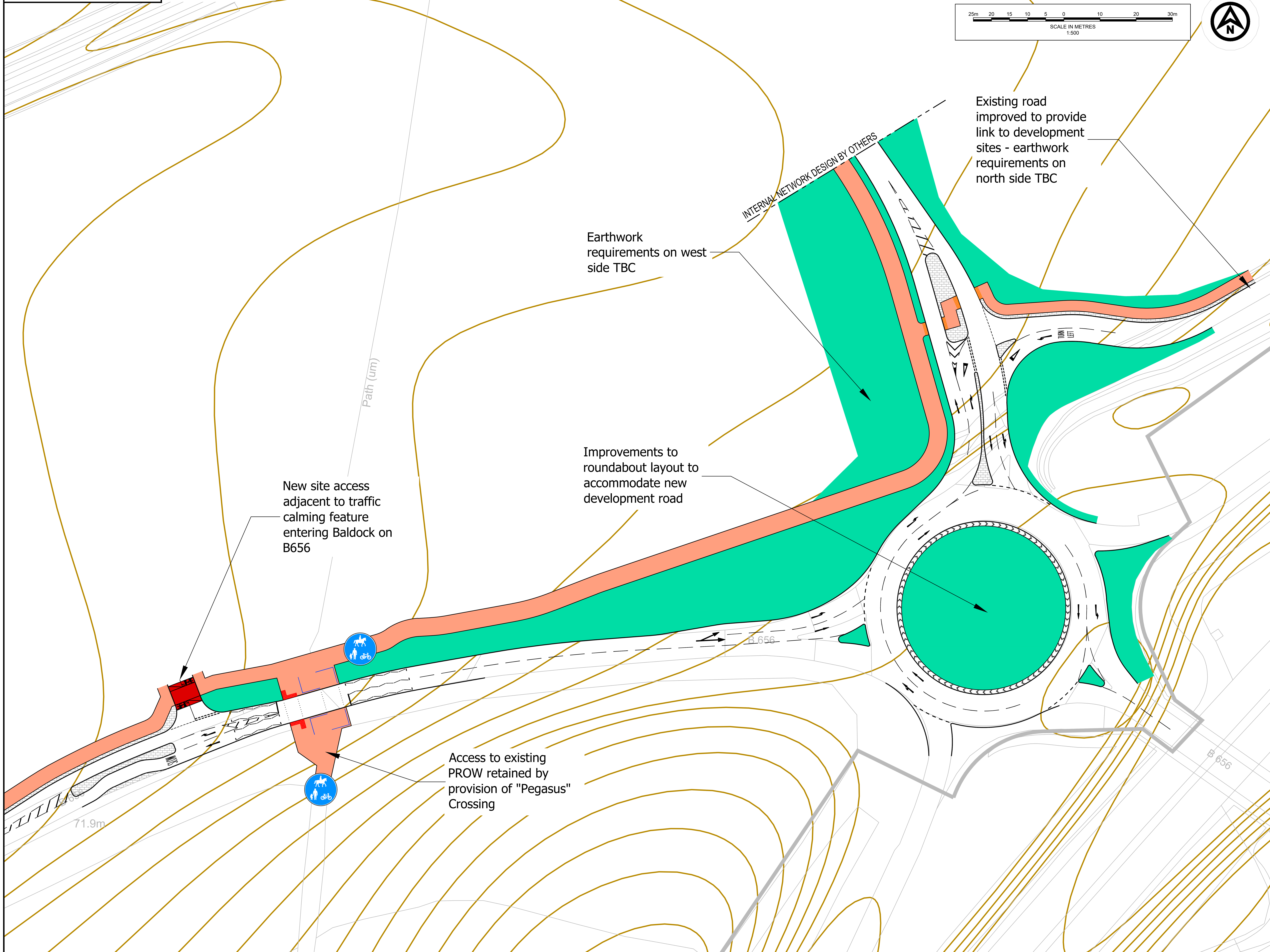

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REV	DATE	DESCRIPTION	BY	CHK	APP
I03	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS FOR DISCUSSION

CLIENT
Urban&Civic

PROJECT
GROWING BALDOCK

TITLE
ROYSTON ROAD - ALL MODES ACCESS CONCEPT DESIGN

itp
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Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
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BKB	GB	GB
DATE: MAR 25	SCALE AT A1: 1:500	PROJECT NUMBER: PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0112	S3	I03

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0120

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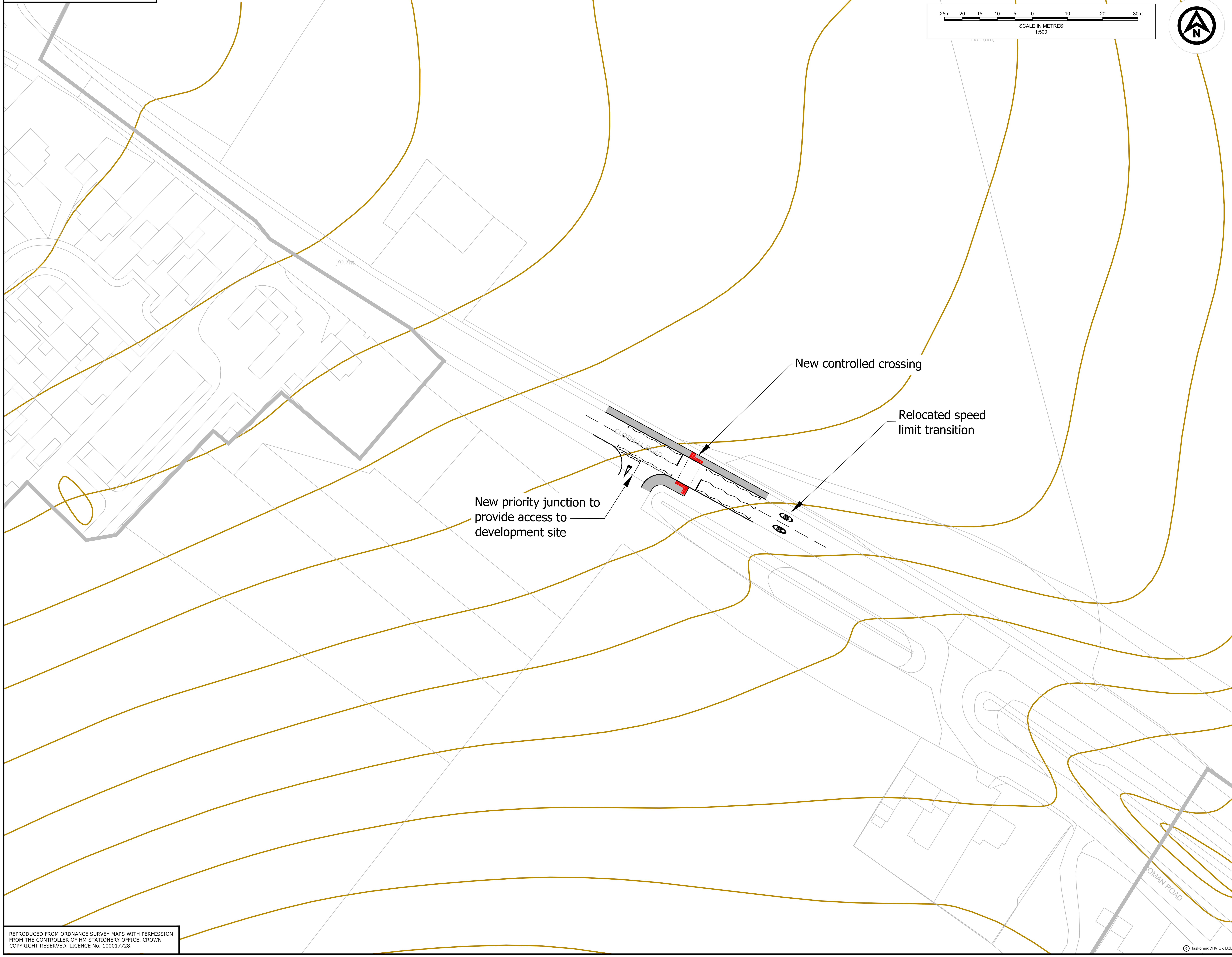

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REV	DATE	DESCRIPTION	BY	CHK	APP
I02	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	10.04.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: CLOTHALL ROAD DEVELOPMENT ACCESS CONCEPT DESIGN

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Manchester One, 9th Floor
Manchester, M1 3LF
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BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0120	S3	I02

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0119

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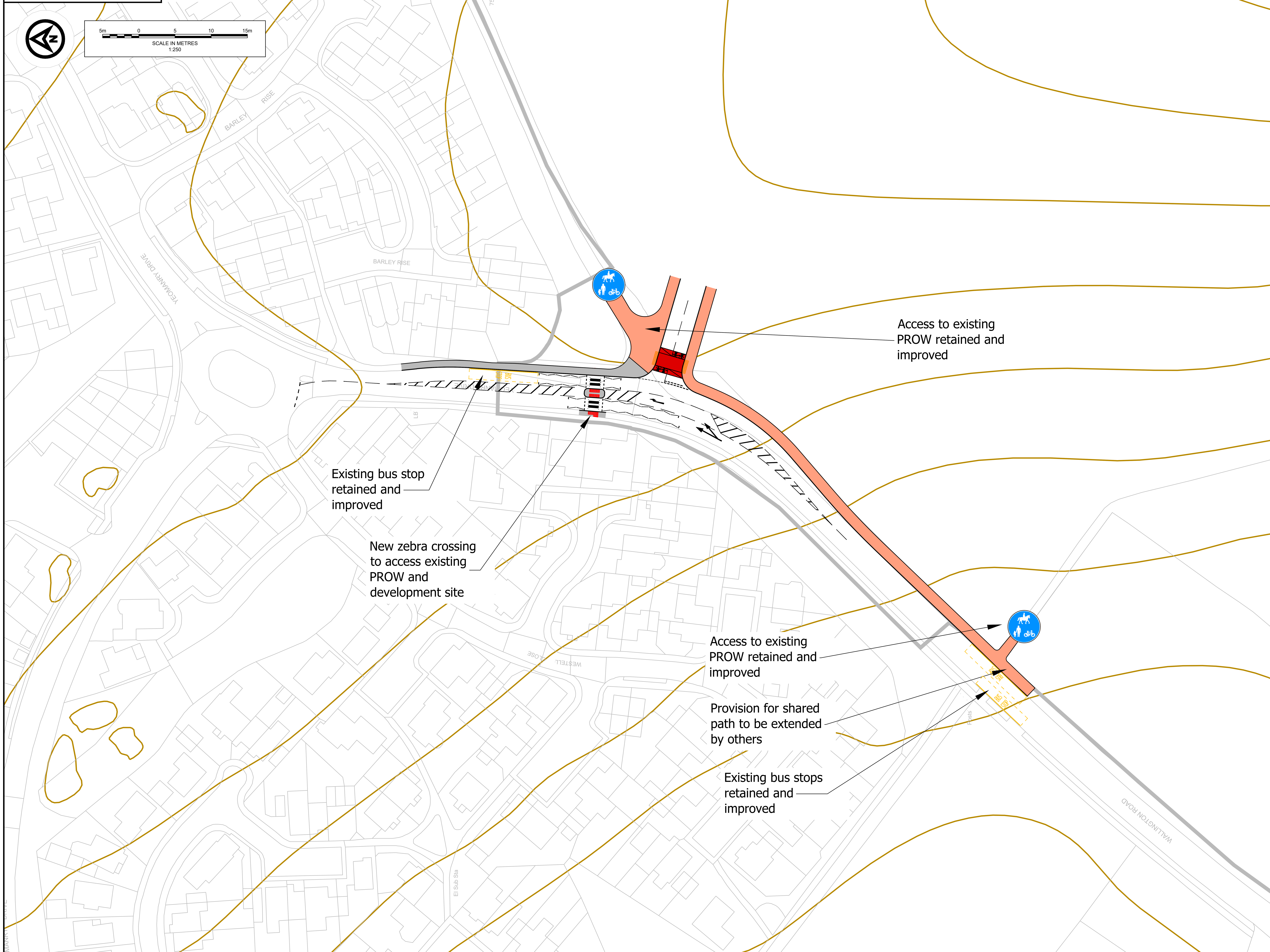

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REV	DATE	DESCRIPTION	BY	CHK	APP
I02	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	10.04.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE:

GROWING BALDOCK WALLINGTON ROAD ACCESS CONCEPT DESIGN

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Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
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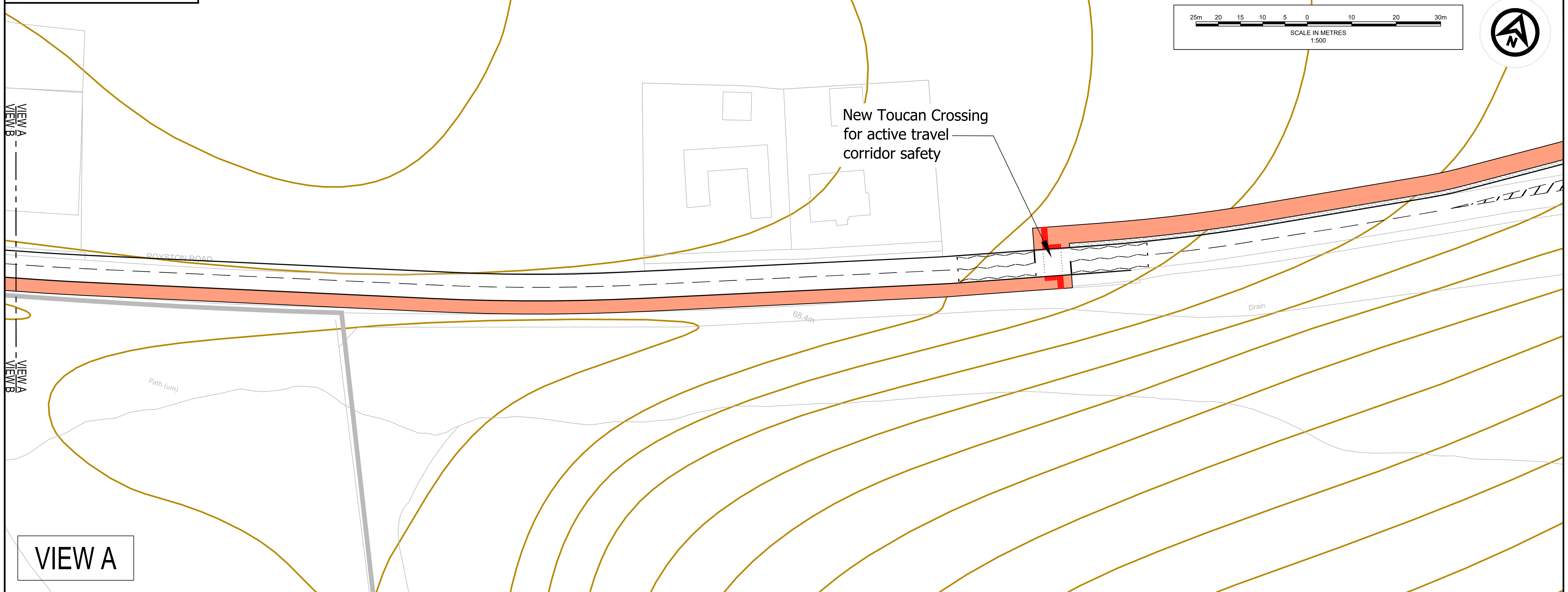
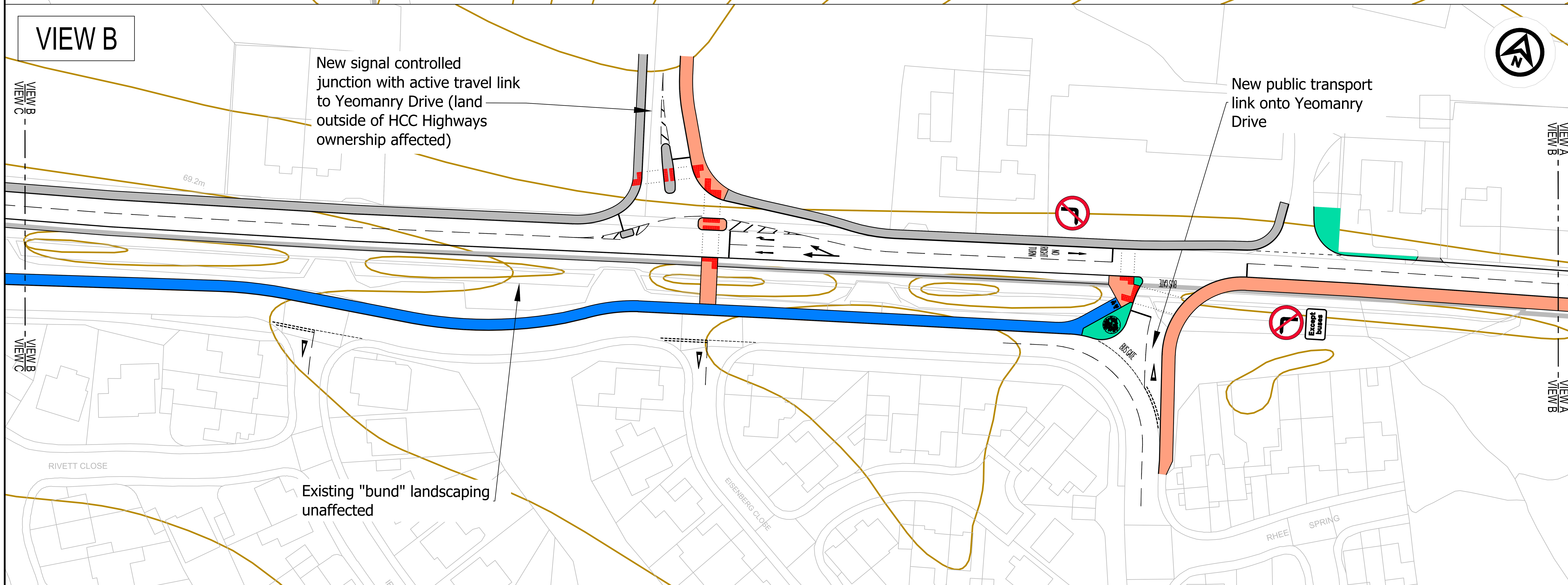
BKB	GB	GB
DATE: MAR 25	SCALE AT A1: 1:500	PROJECT NUMBER: PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0119	S3	I02

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0113

DO NOT SCALE





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WORK IN PROGRESS

REV	DATE	DESCRIPTION	BY	CHK	APP
I03	24.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE:
ROYSTON ROAD - DEVELOPMENT SITE ACCESS CONCEPT DESIGN

itp
a company of Royal HaskoningDHV
Portland Street,
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Manchester, M1 3LF
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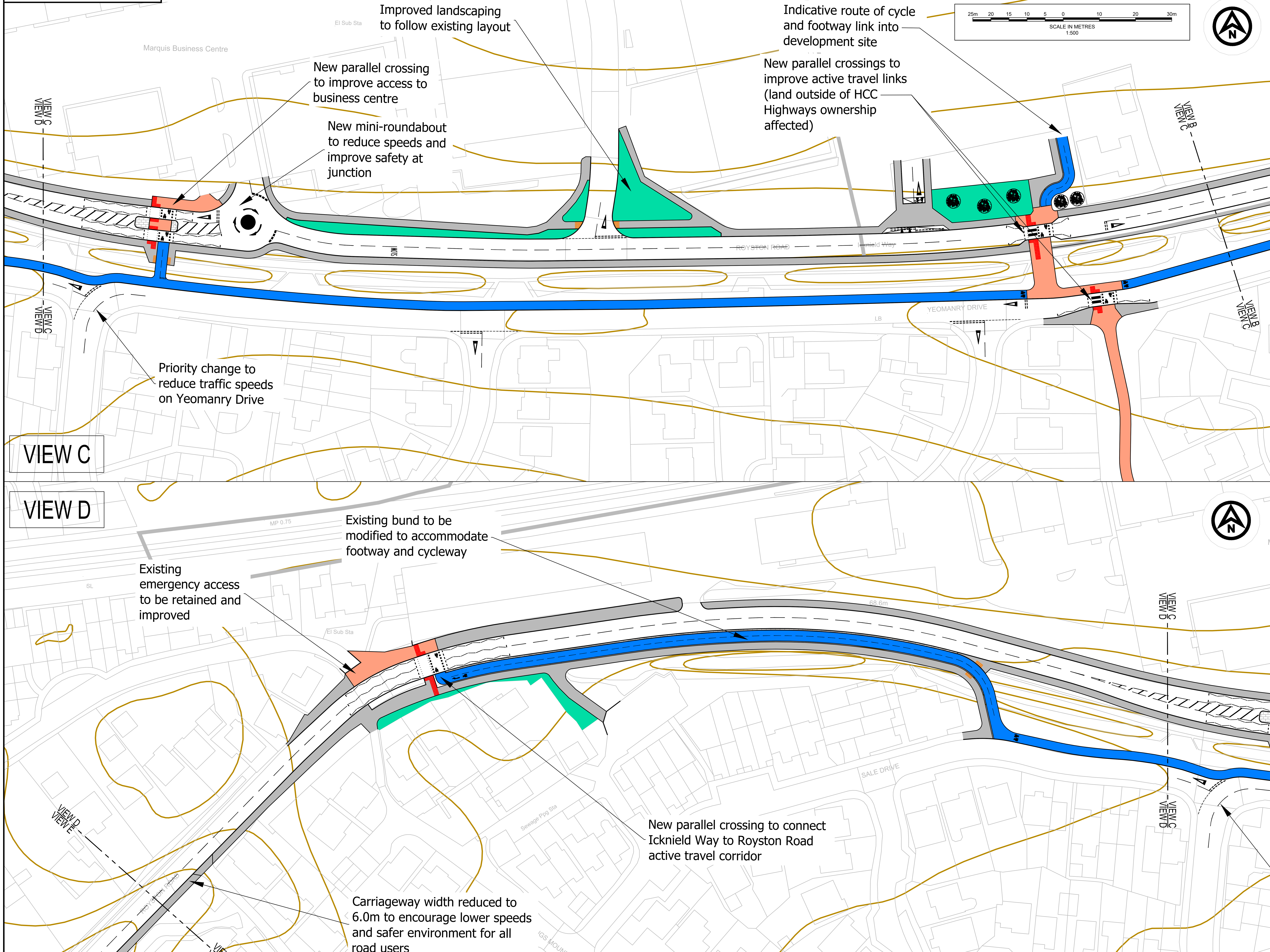
BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
MAR 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0113	S3	I03

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0114

DO NOT SCALE



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I02	09.04.25	AMENDED TO CLIENT COMMENTS	BKB	GB	GB
I01	14.03.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: FOR DISCUSSION

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: ROYSTON ROAD - TOWN APPROACH ACCESS CONCEPT DESIGN

a company of Royal HaskoningDHV
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BKB	GB	GB
DATE: MAR 25	SCALE AT A1: 1:500	PROJECT NUMBER: PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0114	S3	I02

APPENDIX C – VDM TRAFFIC FLOW DIFFERENCES

2029 SCENARIO S2

The highway and public transport flows differences between the Scenario S2 post-VDM model and pre-VDM model in the AM and PM peaks are shown in **Figure *93*** to **Figure *96***.

These show a general increase in highway traffic in both peak periods and a decrease in public transport passengers, with the highest changes on the major roads and railway line. Within Baldock and around the development areas, there is a small decrease in highway traffic and a small increase in public transport trips, especially along the route of the proposed new bus route.

Figure 93: Highway Flow Difference Scenario S2 (2029 NTEM with interim development) Post-VDM minus Pre-VDM AM Peak

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 94: Public Transport Flow Difference Scenario S2 (2029 NTEM with interim development) Post-VDM minus Pre-VDM AM Peak

Figure 95: **Highway Flow Difference Scenario S2 (2029 NTEM with interim development) Post-VDM minus Pre-VDM PM Peak**

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 96: Public Transport Flow Difference Scenario S2 (2029 NTEM with interim development) Post-VDM minus Pre-VDM PM Peak

2043 NTEM SCENARIO S3-1

The highway and public transport flows differences between the Scenario S3-1 post-VDM model and pre-VDM model in the AM and PM peaks are shown in **Figure 97** to **Figure 100**.

These show a general increase in highway traffic in both peak periods and a decrease in public transport passengers, with the highest changes on the major roads. However, within Baldock and around the development areas, there is a decrease in highway traffic and an increase in public transport trips, especially on the development link road and along route of the proposed new bus route.

Figure 97: Highway Flow Difference Scenario S3-1 (2043 NTEM with development option 1) Post-VDM minus Pre-VDM AM Peak

TECHNICAL NOTE 2

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 98: Public Transport Flow Difference Scenario S3-1 (2043 NTEM with development option 1) Post-VDM minus Pre-VDM AM Peak

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 99: Highway Flow Difference Scenario S3-1 (2043 NTEM with development option 1) Post-VDM minus Pre-VDM PM Peak

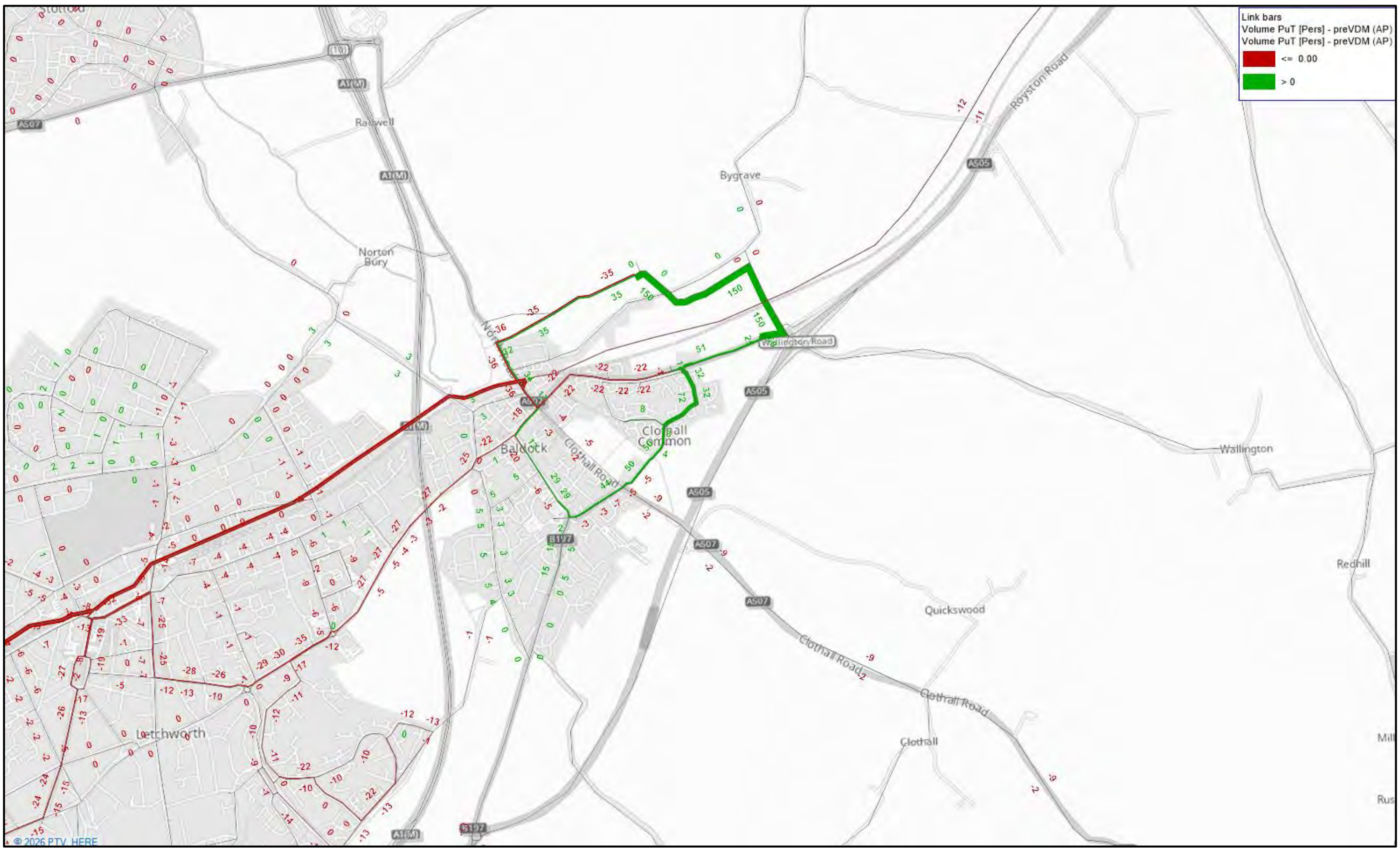


Figure 100: Public Transport Flow Difference Scenario S3-1 (2043 NTEM with development option 1) Post-VDM minus Pre-VDM PM Peak

2043 LOCAL PLAN SCENARIO S5

The highway and public transport flows differences between the Scenario S5 post-VDM model and pre-VDM model in the Am and PM peaks are shown in **Figure 101** to **Figure 104**.

These show a general increase in highway traffic in both peak periods and a decrease in public transport passengers, with the highest changes on the major roads.

Figure 101: Highway Flow Difference Scenario S5 (2043 LP Do Minimum) Post-VDM minus Pre-VDM AM Peak

TECHNICAL NOTE 2

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 102: Public Transport Flow Difference Scenario S5 (2043 LP Do Minimum) Post-VDM minus Pre-VDM AM Peak

TECHNICAL NOTE 2

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 103: Highway Flow Difference Scenario S5 (2043 LP Do Minimum) Post-VDM minus Pre-VDM PM Peak

Figure 104: **Public Transport Flow Difference Scenario S5 (2043 LP Do Minimum) Post-VDM minus Pre-VDM PM Peak**

2043 LOCAL PLAN SCENARIO S6-1

The highway and public transport flows differences between the Scenario S6-1 post-VDM model and pre-VDM model in the Am and PM peaks are shown in **Figure 105** to **Figure 108**. These show a general increase in highway traffic in both peak periods and a decrease in public transport passengers, with the highest changes on the major roads. However, within Baldock and around the development areas, there is an increase in public transport trips, especially on the development link road and along the route of the proposed new bus route.

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 105: Highway Flow Difference Scenario S6-1 (2043 LP with development option 1) Post-VDM minus Pre-VDM AM Peak

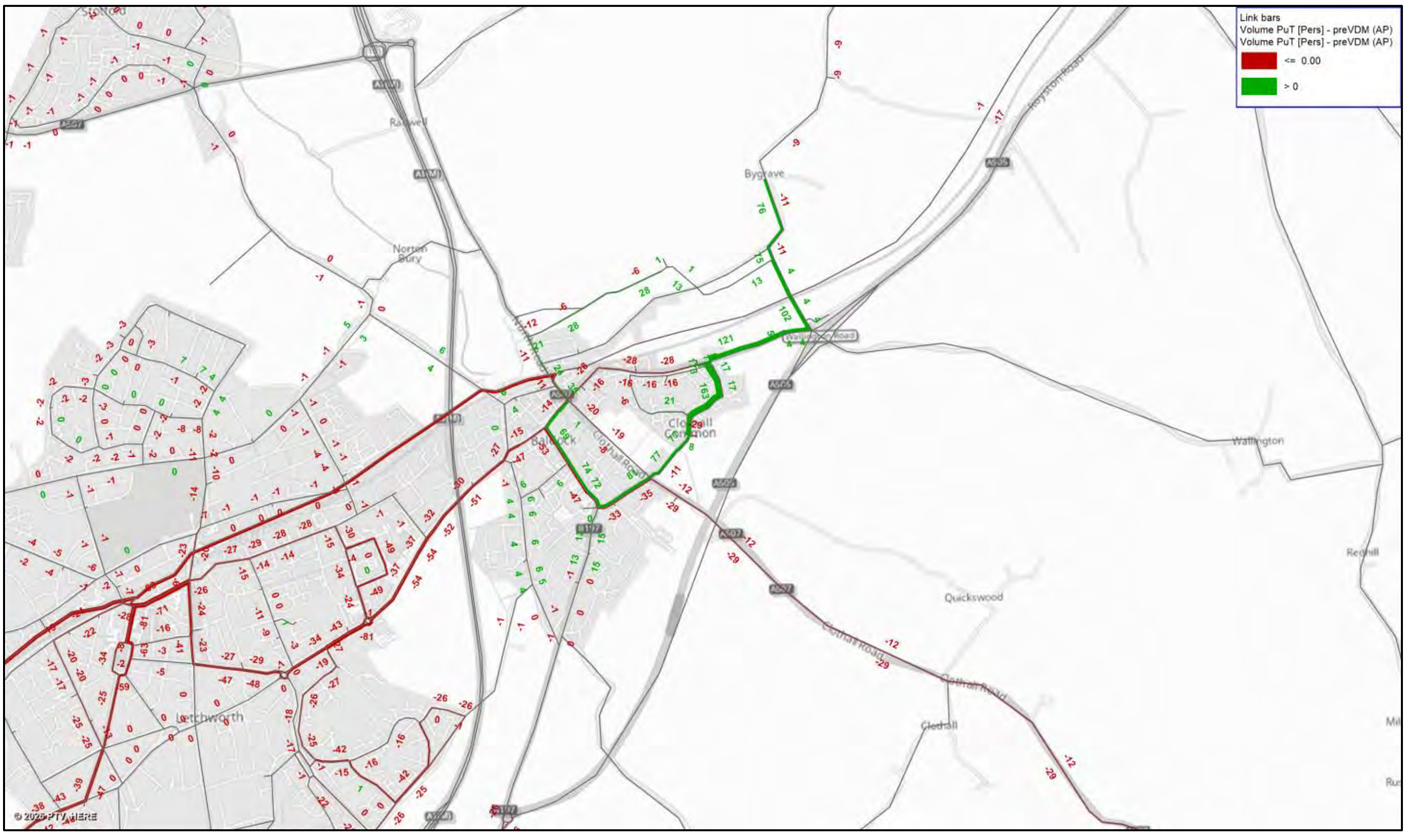


Figure 106: Public Transport Flow Difference Scenario S6-1 (2043 LP with development option 1) Post-VDM minus Pre-VDM AM Peak

DATE:	29 April 2026	**CONFIDENTIALITY:**	Confidential
SUBJECT:	Forecast Model Results		
PROJECT:	Growing Baldock Development	**AUTHOR:**	Alice Connolly
CHECKED:	Laura Lelliott	**APPROVED:**	Christine Elphicke / Shaista Farooq

Figure 107: Highway Flow Difference Scenario S6-1 (2043 LP with development option 1) Post-VDM minus Pre-VDM PM Peak

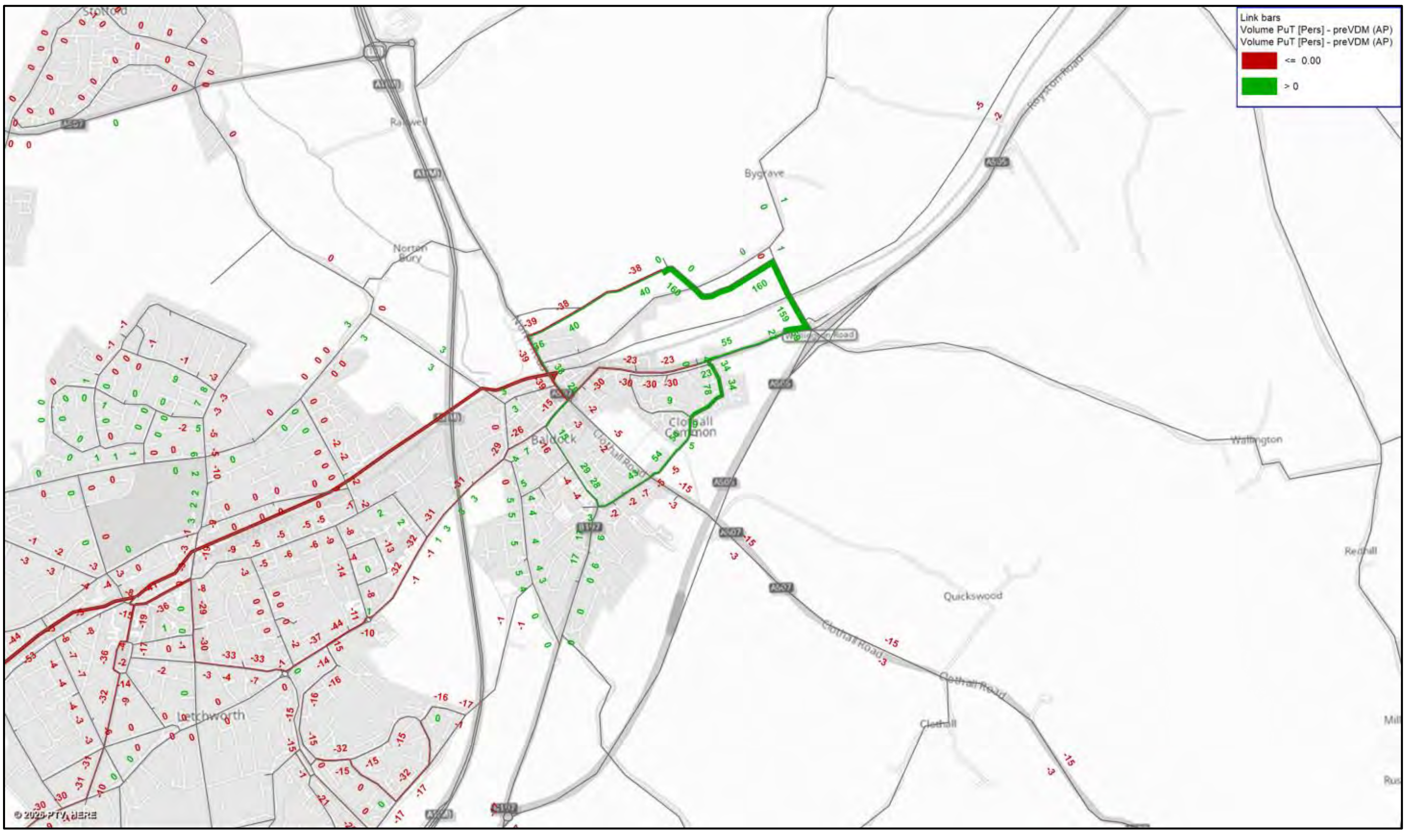


Figure 108: Public Transport Flow Difference Scenario S6-1 (2043 LP with development option 1) Post-VDM minus Pre-VDM PM Peak

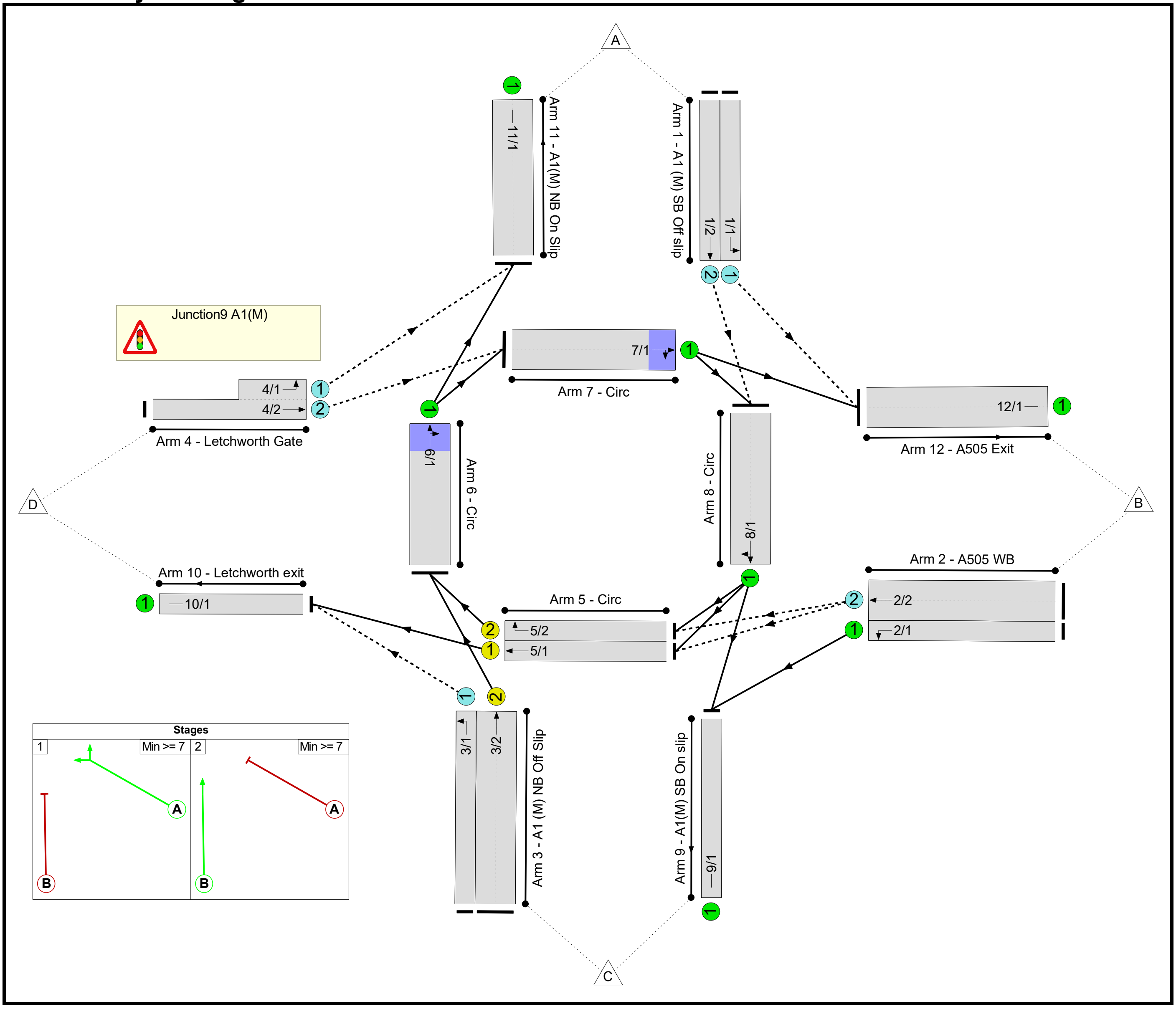
Appendix B – Modelling Output Reports

Detailed Input Data And Results

User and Project Details

Project:	**Growing Baldock**
Title:	**A1(m) Junction 10**
Location:	Baldock, SG6 2EA
Client:	Urban & Civic
Site Ref(s):	J13
Design Layout Ref:	-
Date Started:	01.08.2025
Date Completed:	-
Checked By:	NL/ZT
Additional detail:	
File name:	A1m.A505 Rdbt_EXISTING.lsg3x
Author:	Jay James
Company:	ITP by Haskoning
Address:	
Linsig Version:	3, 3, 0, 6

Network Layout Diagram



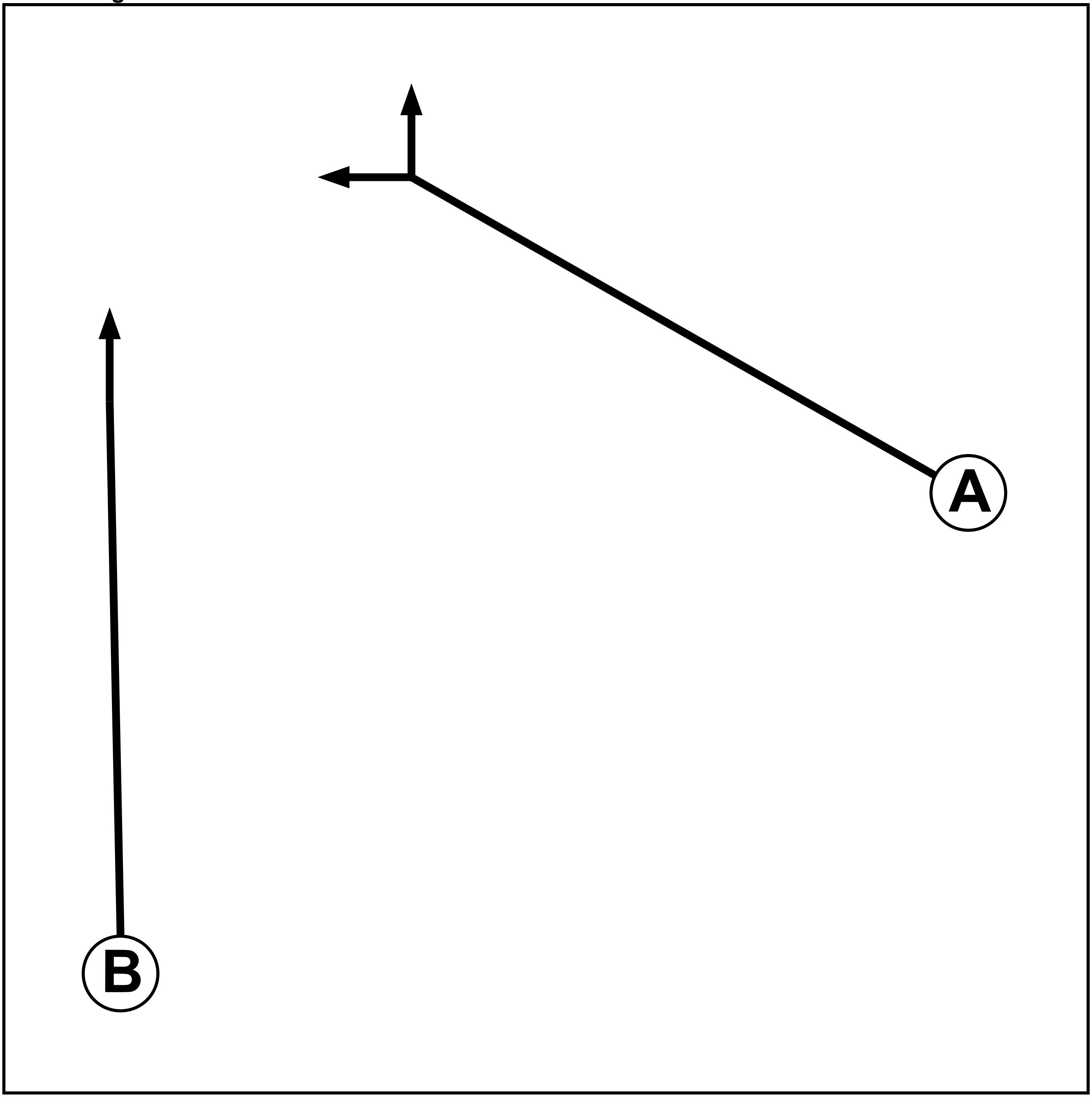
Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2029 AM	2029 AM	Base Network Control Plan 1	08:00 - 09:00	72	-16.7	91.43
2	2029 PM	2029 PM	Base Network Control Plan 1	17:00 - 18:00	72	-19.0	134.93
3	2029 wDev AM	2029 w Dev AM	Base Network Control Plan 1	08:00 - 09:00	72	-23.7	154.46
4	2029 wDev PM	2029 w Dev PM	Base Network Control Plan 1	17:00 - 18:00	72	-21.4	163.63
5	2043 AM	2043 AM	Base Network Control Plan 1	08:00 - 09:00	72	-34.3	181.51
6	2043 PM	2043 PM	Base Network Control Plan 1	17:00 - 18:00	72	-36.7	220.34
7	2043 Option1 AM	2043 Option 1 AM	Base Network Control Plan 1	08:00 - 09:00	72	-61.7	289.78
8	2043 Option1 PM	2043 Option 1PM	Base Network Control Plan 1	17:00 - 18:00	72	-53.4	306.81
9	2043 Option2 AM	2043 Option 2 AM	Base Network Control Plan 1	08:00 - 09:00	72	-54.1	255.54
10	2043 Option2 PM	2043 Option2 PM	Base Network Control Plan 1	17:00 - 18:00	72	-53.0	305.38

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1	Gen		Stage Stream 1	2	2	Junction9 A1(M)	

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		7	7
B	Traffic		7	7

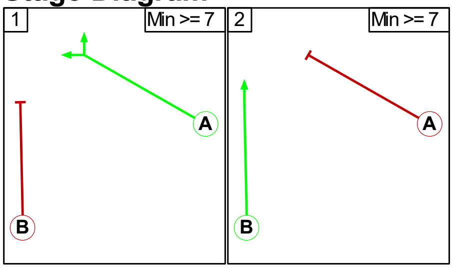
Phase Intergreens Matrix

		Starting Phase	
		A	B
Terminating Phase	A		5
	B	7	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

		To Stage	
		1	2
From Stage	1		5
	2	7	

Lane Input Data

Junction: Junction9 A1(M)												
Lane	**Lane Type**	**Phases**	**Start Disp. (s)**	**End Disp. (s)**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A1 (M) SB Off slip)	O		2	3	60.0	Geom	-	3.46	0.00	Y	Arm 12 Left	Inf
1/2 (A1 (M) SB Off slip)	O		2	3	60.0	Geom	-	3.25	0.00	N	Arm 8 Ahead	Inf
2/1 (A505 WB)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Left	100.00
2/2 (A505 WB)	O		2	3	60.0	User	4178	-	-	-	-	-
3/1 (A1 (M) NB Off Slip)	O		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	100.00
3/2 (A1 (M) NB Off Slip)	U	B	2	3	60.0	User	4000	-	-	-	-	-
4/1 (Letchworth Gate)	O		2	3	5.0	Geom	-	3.25	0.00	Y	Arm 11 Left	26.00
4/2 (Letchworth Gate)	O		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	40.00
5/1 (Circ)	U	A	2	3	20.5	User	1714	-	-	-	-	-
5/2 (Circ)	U	A	2	3	20.5	User	1714	-	-	-	-	-
6/1 (Circ)	U		2	3	14.3	User	3600	-	-	-	-	-
7/1 (Circ)	U		2	3	16.7	User	3600	-	-	-	-	-
8/1 (Circ)	U		2	3	14.3	User	3600	-	-	-	-	-
9/1 (A1(M) SB On slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (Letchworth exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A1(M) NB On Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
12/1 (A505 Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Give-Way Lane Input Data

Junction: Junction9 A1(M)											
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)**
1/1 (A1 (M) SB Off slip)	12/1 (Left)	715	0	7/1	0.22	All	-	-	-	-	-
1/2 (A1 (M) SB Off slip)	8/1 (Ahead)	1000	0	7/1	0.40	All	-	-	-	-	-
2/2 (A505 WB)	5/1 (Ahead)	1000	0	8/1	0.33	All	-	-	-	-	-
	5/2 (Ahead)	1000	0	8/1	0.33	All					
3/1 (A1 (M) NB Off Slip)	10/1 (Left)	1200	0	5/1	0.33	All	-	-	-	-	-
4/1 (Letchworth Gate)	11/1 (Left)	1439	0	6/1	1.09	All	-	-	-	-	-
4/2 (Letchworth Gate)	7/1 (Ahead)	1350	0	6/1	0.22	All	-	-	-	-	-

Lane Connector Input Data

Junction: Junction9 A1(M)				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	12/1	Internal	5	35
1/2	8/1	Internal	5	35
2/1	9/1	Internal	26	35
2/2	5/1	Internal	9	35
2/2	5/2	Internal	9	35
3/1	10/1	Internal	26	35
3/2	6/1	Internal	6	35
4/1	11/1	Internal	5	35
4/2	7/1	Internal	7	35
5/1	10/1	Internal	26	35
5/2	6/1	Internal	6	35
6/1	7/1	Internal	7	35
6/1	11/1	Internal	26	35
7/1	8/1	Internal	6	35
7/1	12/1	Internal	26	35
8/1	5/1	Internal	9	35
8/1	5/2	Internal	9	35
8/1	9/1	Internal	26	35

Scenario 1: '2029 AM' (FG1: '2029 AM', Plan 1: 'Base Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 1

Scenario 2: '2029 PM' (FG2: '2029 PM', Plan 1: 'Base Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	0.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2029 wDev AM' (FG3: '2029 w Dev AM', Plan 1: 'Base Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 3

Scenario 4: '2029 wDev PM' (FG4: '2029 w Dev PM', Plan 1: 'Base Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 4

Scenario 5: '2043 AM' (FG5: '2043 AM', Plan 1: 'Base Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 5

Scenario 6: '2043 PM' (FG6: '2043 PM', Plan 1: 'Base Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 6

Scenario 7: '2043 Option1 AM' (FG7: '2043 Option 1 AM', Plan 1: 'Base Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	Lane Width (m)	Gradient (%)	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 7

Scenario 8: '2043 Option1 PM' (FG8: '2043 Option 1PM', Plan 1: 'Base Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 8

Scenario 9: '2043 Option2 AM' (FG9: '2043 Option 2 AM', Plan 1: 'Base Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 9

Scenario 10: '2043 Option2 PM' (FG10: '2043 Option2 PM', Plan 1: 'Base Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1 (M) SB Off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1 (M) SB Off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1 (M) NB Off Slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1 (M) NB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.25	0.00	Y	Arm 11 Left	26.00	100.0 %	1834	1834
4/2 (Letchworth Gate)	3.50	0.00	Y	Arm 7 Ahead	40.00	100.0 %	1894	1894
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
9/1 (A1(M) SB On slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 10

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2029 AM'	08:00	09:00	01:00	
2: '2029 PM'	17:00	18:00	01:00	
3: '2029 w Dev AM'	08:00	09:00	01:00	
4: '2029 w Dev PM'	17:00	18:00	01:00	
5: '2043 AM'	08:00	09:00	01:00	
6: '2043 PM'	17:00	18:00	01:00	
7: '2043 Option 1 AM'	08:00	09:00	01:00	
8: '2043 Option 1PM'	17:00	18:00	01:00	
9: '2043 Option 2 AM'	08:00	09:00	01:00	
10: '2043 Option2 PM'	17:00	18:00	01:00	

Traffic Flows, Desired

FG1: '2029 AM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	6	0	256	262
	B	127	263	637	338	1365
	C	0	1167	0	695	1862
	D	172	295	600	26	1093
	Tot.	299	1731	1237	1315	4582

FG2: '2029 PM'

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	0	0	146	146
	B	126	295	949	252	1622
	C	0	1362	0	872	2234
	D	95	153	873	20	1141
	Tot.	221	1810	1822	1290	5143

FG3: '2029 w Dev AM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	0	256	277
	B	127	316	670	358	1471
	C	0	1170	0	698	1868
	D	179	339	587	26	1131
	Tot.	306	1846	1257	1338	4747

FG4: '2029 w Dev PM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	162	178
	B	126	313	984	277	1700
	C	0	1363	0	855	2218
	D	100	183	865	20	1168
	Tot.	226	1875	1849	1314	5264

FG5: '2043 AM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	260	276
	B	161	343	749	358	1611
	C	0	1176	0	785	1961
	D	194	322	631	22	1169
	Tot.	355	1857	1380	1425	5017

FG6: '2043 PM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	9	0	172	181
	B	135	402	1004	306	1847
	C	0	1371	0	900	2271
	D	123	168	910	20	1221
	Tot.	258	1950	1914	1398	5520

FG7: '2043 Option 1 AM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	83	0	255	338
	B	188	433	1004	459	2084
	C	0	1204	0	823	2027
	D	211	410	608	20	1249
	Tot.	399	2130	1612	1557	5698

FG8: '2043 Option 1PM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	41	0	167	208
	B	138	442	1126	392	2098
	C	0	1372	0	913	2285
	D	143	224	888	19	1274
	Tot.	281	2079	2014	1491	5865

FG9: '2043 Option 2 AM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	78	0	261	339
	B	196	387	954	440	1977
	C	0	1191	0	807	1998
	D	209	409	606	21	1245
	Tot.	405	2065	1560	1529	5559

FG10: '2043 Option2 PM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	42	0	167	209
	B	138	451	1106	380	2075
	C	0	1373	0	915	2288
	D	143	223	890	19	1275
	Tot.	281	2089	1996	1481	5847

Scenario 1: '2029 AM' (FG1: '2029 AM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	6	0	256	262
	B	127	263	637	338	1365
	C	0	1167	0	695	1862
	D	172	295	600	26	1093
	Tot.	299	1731	1237	1315	4582

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 2: '2029 PM' (FG2: '2029 PM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	146	146
	B	126	295	949	252	1622
	C	0	1362	0	872	2234
	D	95	153	873	20	1141
	Tot.	221	1810	1822	1290	5143

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 3: '2029 wDev AM' (FG3: '2029 w Dev AM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	0	256	277
	B	127	316	670	358	1471
	C	0	1170	0	698	1868
	D	179	339	587	26	1131
	Tot.	306	1846	1257	1338	4747

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 4: '2029 wDev PM' (FG4: '2029 w Dev PM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	162	178
	B	126	313	984	277	1700
	C	0	1363	0	855	2218
	D	100	183	865	20	1168
	Tot.	226	1875	1849	1314	5264

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 5: '2043 AM' (FG5: '2043 AM', Plan 1: 'Base Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	260	276
	B	161	343	749	358	1611
	C	0	1176	0	785	1961
	D	194	322	631	22	1169
	Tot.	355	1857	1380	1425	5017

Traffic Flows, Difference
Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 6: '2043 PM' (FG6: '2043 PM', Plan 1: 'Base Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	9	0	172	181
	B	135	402	1004	306	1847
	C	0	1371	0	900	2271
	D	123	168	910	20	1221
	Tot.	258	1950	1914	1398	5520

Traffic Flows, Difference
Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 7: '2043 Option1 AM' (FG7: '2043 Option 1 AM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	83	0	255	338
	B	188	433	1004	459	2084
	C	0	1204	0	823	2027
	D	211	410	608	20	1249
	Tot.	399	2130	1612	1557	5698

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 8: '2043 Option1 PM' (FG8: '2043 Option 1PM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	41	0	167	208
	B	138	442	1126	392	2098
	C	0	1372	0	913	2285
	D	143	224	888	19	1274
	Tot.	281	2079	2014	1491	5865

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 9: '2043 Option2 AM' (FG9: '2043 Option 2 AM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	78	0	261	339
	B	196	387	954	440	1977
	C	0	1191	0	807	1998
	D	209	409	606	21	1245
	Tot.	405	2065	1560	1529	5559

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 10: '2043 Option2 PM' (FG10: '2043 Option2 PM', Plan 1: 'Base Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	0	167	209
	B	138	451	1106	380	2075
	C	0	1373	0	915	2288
	D	143	223	890	19	1275
	Tot.	281	2089	1996	1481	5847

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Traffic Lane Flows

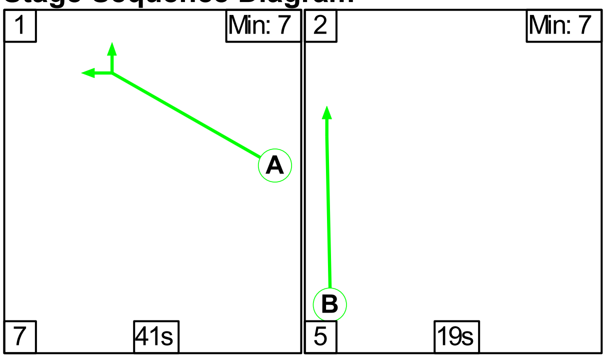
Lane	Scenario 1: 2029 AM	Scenario 2: 2029 PM	Scenario 3: 2029 wDev AM	Scenario 4: 2029 wDev PM	Scenario 5: 2043 AM	Scenario 6: 2043 PM
Junction: Junction9 A1(M)						
1/1	6	0	21	16	16	9
1/2	256	146	256	162	260	172
2/1	637	949	670	984	749	1004
2/2	728	673	801	716	862	843
3/1	695	872	698	855	785	900
3/2	1167	1362	1170	1363	1176	1371
4/1 (short)	172	95	179	100	194	123
4/2 (with short)	1093(In) 921(Out)	1141(In) 1046(Out)	1131(In) 952(Out)	1168(In) 1068(Out)	1169(In) 975(Out)	1221(In) 1098(Out)
5/1	620	418	640	459	640	498
5/2	390	421	443	439	504	537
6/1	1557	1783	1613	1802	1680	1908
7/1	2351	2703	2438	2744	2494	2871
8/1	882	1039	869	1047	913	1102
9/1	1237	1822	1257	1849	1380	1914
10/1	1315	1290	1338	1314	1425	1398
11/1	299	221	306	226	355	258
12/1	1731	1810	1846	1875	1857	1950

Detailed Input Data And Results

Lane	Scenario 7: 2043 Option1 AM	Scenario 8: 2043 Option1 PM	Scenario 9: 2043 Option2 AM	Scenario 10: 2043 Option2 PM
Junction: Junction9 A1(M)				
1/1	83	41	78	42
1/2	255	167	261	167
2/1	1004	1126	954	1106
2/2	1080	972	1023	969
3/1	823	913	807	915
3/2	1204	1372	1191	1373
4/1 (short)	211	143	209	143
4/2 (with short)	1249(In) 1038(Out)	1274(In) 1131(Out)	1245(In) 1036(Out)	1275(In) 1132(Out)
5/1	734	578	722	566
5/2	621	580	583	589
6/1	1825	1952	1774	1962
7/1	2675	2945	2614	2956
8/1	883	1074	888	1076
9/1	1612	2014	1560	1996
10/1	1557	1491	1529	1481
11/1	399	281	405	281
12/1	2130	2079	2065	2089

Scenario 1: '2029 AM' (FG1: '2029 AM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



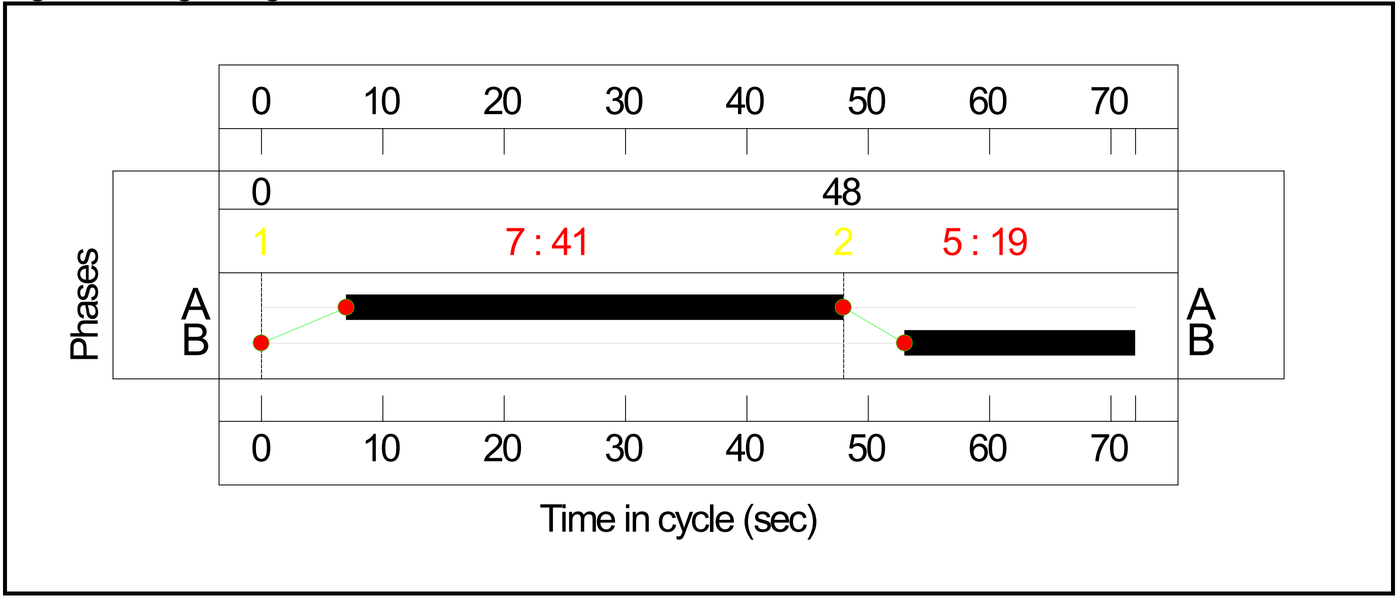
Stage Timings

Stage	1	2
Duration	41	19
Change Point	0	48

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	41	7	48
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	19	53	0

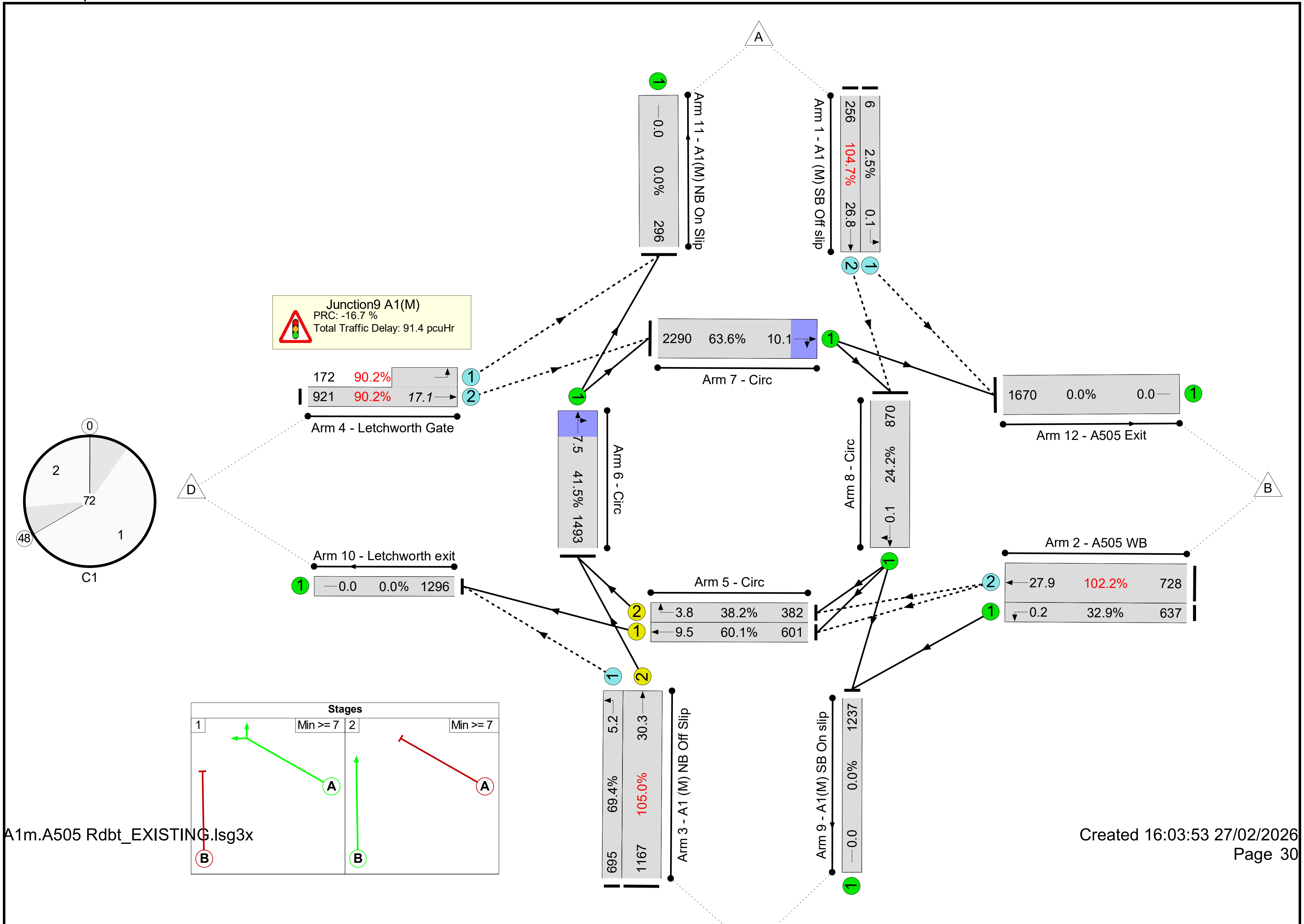
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	53	0
5/1	Circ Ahead	U	A	7	48
5/2	Circ Right	U	A	7	48

Network Layout Diagram


Junction9 A1(M)
PRC: -16.7 %
Total Traffic Delay: 91.4 pcuHr
Arm 11 - A1(M) NB On Slip
0.0 0.0% 296
Arm 1 - A1 (M) SB Off slip
256 104.7% 26.8
6 2.5% 0.1
2290 63.6% 10.1
Arm 7 - Circ
172 90.2%
921 90.2% 17.1
Arm 4 - Letchworth Gate
1670 0.0% 0.0
Arm 12 - A505 Exit
7.5 41.5% 1493
Arm 6 - Circ
870 24.2% 0.1
Arm 8 - Circ
Arm 10 - Letchworth exit
0.0 0.0% 1296
Arm 5 - Circ
3.8 38.2% 382
9.5 60.1% 601
Arm 2 - A505 WB
27.9 102.2% 728
0.2 32.9% 637
A
B
D
C1
72
48
Stages
Min >= 7
5.2 69.4% 695
30.3 105.0% 1167
Arm 3 - A1 (M) NB Off Slip
1237 0.0% 0.0
Arm 9 - A1(M) SB On slip

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**
Junction9 A1(M)	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	6	1961	238	2.5%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	256	2080	244	104.7%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	637	1936	1936	32.9%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	728	4178	712	102.2%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	695	1936	1002	69.4%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	19	-	-	1167	4000	1111	105.0%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1093	1894:1834	1022+191	90.2 : 90.2%
5/1	Circ Ahead	U	N/A	N/A	A		1	41	-	-	620	1714	1000	60.1%
5/2	Circ Right	U	N/A	N/A	A		1	41	-	-	390	1714	1000	38.2%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1557	3600	3600	41.5%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2351	3600	3600	63.6%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	882	3600	3600	24.2%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1237	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1315	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	299	Inf	Inf	0.0%

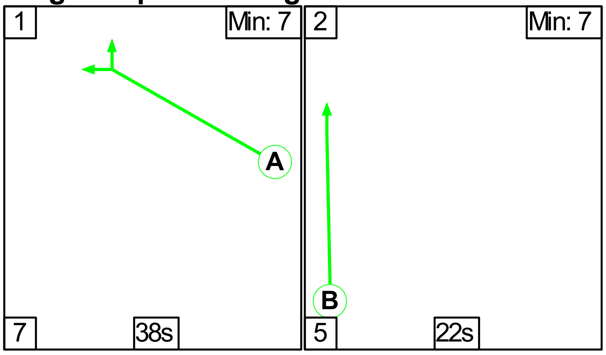
Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1731	Inf	Inf	0.0%
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: A1(m) Junction 10	**-**	**-**	**3554**	**290**	**0**	**18.0**	**73.5**	**0.0**	**91.4**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3554**	**290**	**0**	**18.0**	**73.5**	**0.0**	**91.4**	**-**	**-**	**-**	**-**	
1/1	6	6	6	0	0	0.0	0.0	-	0.0	12.5	0.0	0.0	0.1	
1/2	256	244	244	0	0	1.6	11.4	-	13.0	182.9	15.4	11.4	26.8	
2/1	637	637	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.2	0.2	
2/2	728	712	712	0	0	1.1	17.9	-	19.0	94.1	18.9	9.0	27.9	
3/1	695	695	405	290	0	0.0	1.1	-	1.2	6.1	4.1	1.1	5.2	
3/2	1167	1111	-	-	-	10.8	36.0	-	46.8	144.4	12.3	18.0	30.3	
4/2+4/1	1093	1093	2186	0	0	1.0	4.3	-	5.3	17.5	12.8	4.3	17.1	
5/1	601	601	-	-	-	2.1	0.8	-	2.9	17.1	8.8	0.8	9.5	
5/2	382	382	-	-	-	0.7	0.3	-	1.0	9.6	3.4	0.3	3.8	
6/1	1493	1493	-	-	-	0.2	0.4	-	0.5	1.3	7.3	0.2	7.5	
7/1	2290	2290	-	-	-	0.4	0.9	-	1.3	2.0	9.6	0.4	10.1	
8/1	870	870	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1237	1237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1296	1296	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	296	296	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1670	1670	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -16.7 Total Delay for Signalled Lanes (pcuHr): 50.69 Cycle Time (s): 72
PRC Over All Lanes (%): -16.7 Total Delay Over All Lanes(pcuHr): 91.43

Scenario 2: '2029 PM' (FG2: '2029 PM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



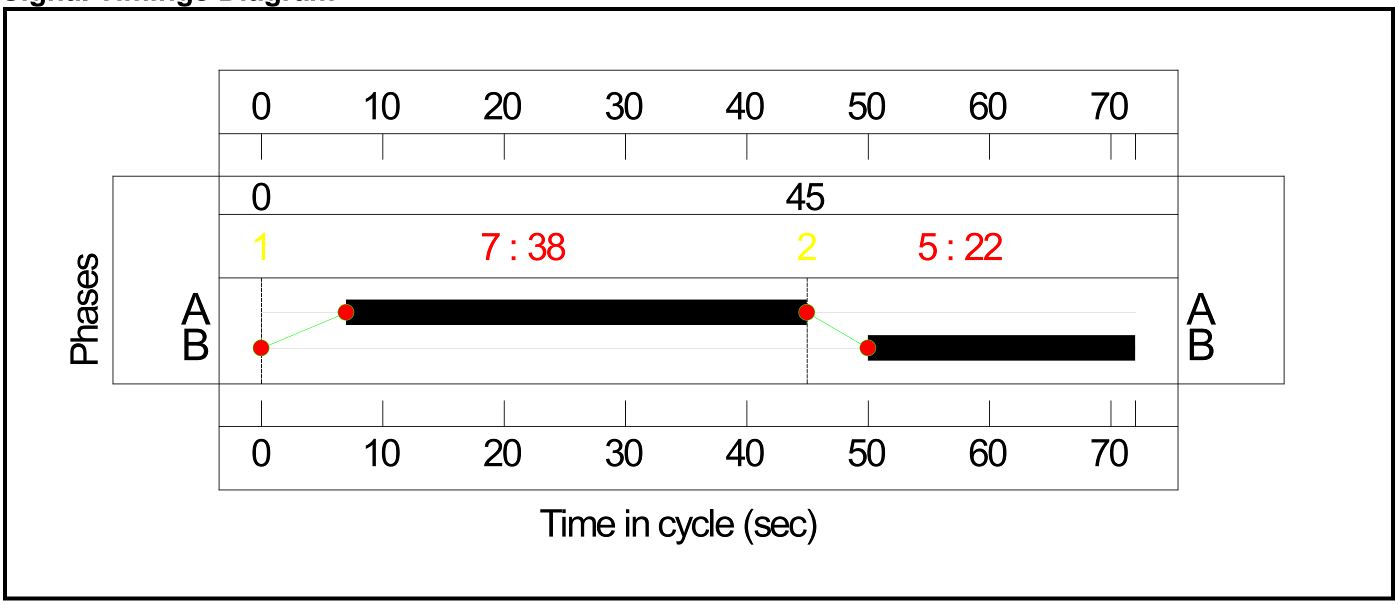
Stage Timings

Stage	1	2
Duration	38	22
Change Point	0	45

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	38	7	45
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	22	50	0

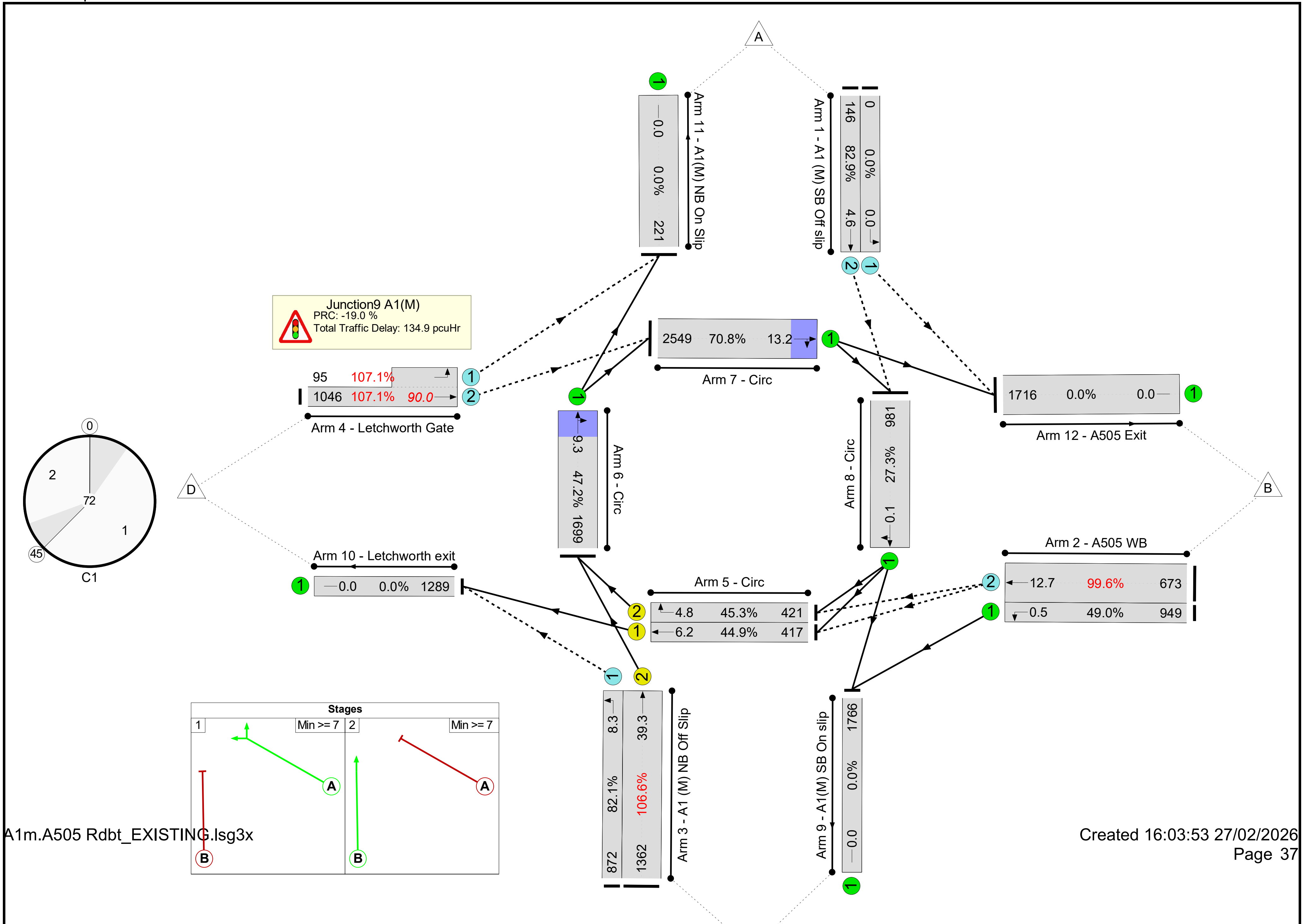
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	50	0
5/1	Circ Ahead	U	A	7	45
5/2	Circ Right	U	A	7	45

Network Layout Diagram



A
B
D
Junction9 A1(M)
PRC: -19.0 %
Total Traffic Delay: 134.9 pcuHr
Arm 11 - A1(M) NB On Slip
0.0 0.0% 221
Arm 1 - A1 (M) SB Off slip
146 82.9% 4.6
0 0.0% 0.0
2549 70.8% 13.2
Arm 7 - Circ
1716 0.0% 0.0
Arm 12 - A505 Exit
95 107.1%
1046 107.1% 90.0
Arm 4 - Letchworth Gate
9.3 47.2% 1699
Arm 6 - Circ
981 27.3% 0.1
Arm 8 - Circ
Arm 2 - A505 WB
12.7 99.6% 673
0.5 49.0% 949
Arm 10 - Letchworth exit
0.0 0.0% 1289
Arm 5 - Circ
4.8 45.3% 421
6.2 44.9% 417
8.3 82.1% 872
39.3 106.6% 1362
Arm 3 - A1 (M) NB Off Slip
1766 0.0% 0.0
Arm 9 - A1(M) SB On slip
0
72
45
2
1
C1
Stages
1 Min >= 7
2 Min >= 7

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**107.1%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**107.1%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	0	1961	187	0.0%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	146	2080	176	82.9%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	949	1936	1936	49.0%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	673	4178	676	99.6%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	872	1936	1062	82.1%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	22	-	-	1362	4000	1278	106.6%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1141	1894:1834	976+89	107.1 : 107.1%
5/1	Circ Ahead	U	N/A	N/A	A		1	38	-	-	418	1714	928	44.9%
5/2	Circ Right	U	N/A	N/A	A		1	38	-	-	421	1714	928	45.3%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1783	3600	3600	47.2%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2703	3600	3600	70.8%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1039	3600	3600	27.3%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1822	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1290	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	221	Inf	Inf	0.0%

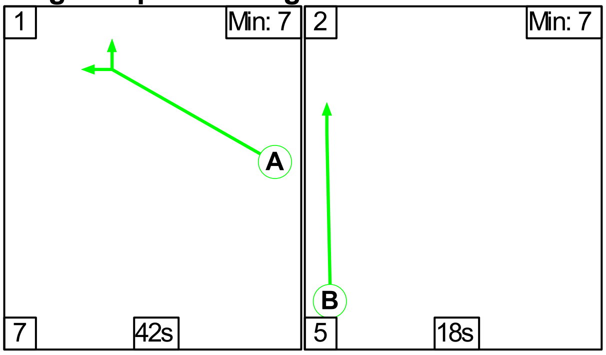
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1810	Inf	Inf	0.0%

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: A1(m) Junction 10	**-**	**-**	**3434**	**400**	**0**	**21.7**	**113.3**	**0.0**	**134.9**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3434**	**400**	**0**	**21.7**	**113.3**	**0.0**	**134.9**	**-**	**-**	**-**	**-**	
1/1	0	0	0	0	0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
1/2	146	146	146	0	0	0.7	2.1	-	2.8	68.8	2.5	2.1	4.6	
2/1	949	949	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5	
2/2	673	673	673	0	0	0.5	12.3	-	12.8	68.6	6.5	6.1	12.7	
3/1	872	872	472	400	0	0.1	2.2	-	2.4	9.8	6.1	2.2	8.3	
3/2	1362	1278	-	-	-	12.8	49.1	-	61.9	163.6	14.7	24.5	39.3	
4/2+4/1	1141	1071	2143	0	0	4.1	44.4	-	48.5	153.1	45.5	44.4	90.0	
5/1	417	417	-	-	-	1.6	0.4	-	2.0	17.0	5.8	0.4	6.2	
5/2	421	421	-	-	-	0.9	0.4	-	1.4	11.6	4.4	0.4	4.8	
6/1	1699	1699	-	-	-	0.3	0.4	-	0.7	1.5	9.1	0.2	9.3	
7/1	2549	2549	-	-	-	0.6	1.2	-	1.8	2.6	12.6	0.6	13.2	
8/1	981	981	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1766	1766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1289	1289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	221	221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1716	1716	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -18.4 Total Delay for Signalled Lanes (pcuHr): 65.24 Cycle Time (s): 72
PRC Over All Lanes (%): -19.0 Total Delay Over All Lanes(pcuHr): 134.93

Scenario 3: '2029 wDev AM' (FG3: '2029 w Dev AM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



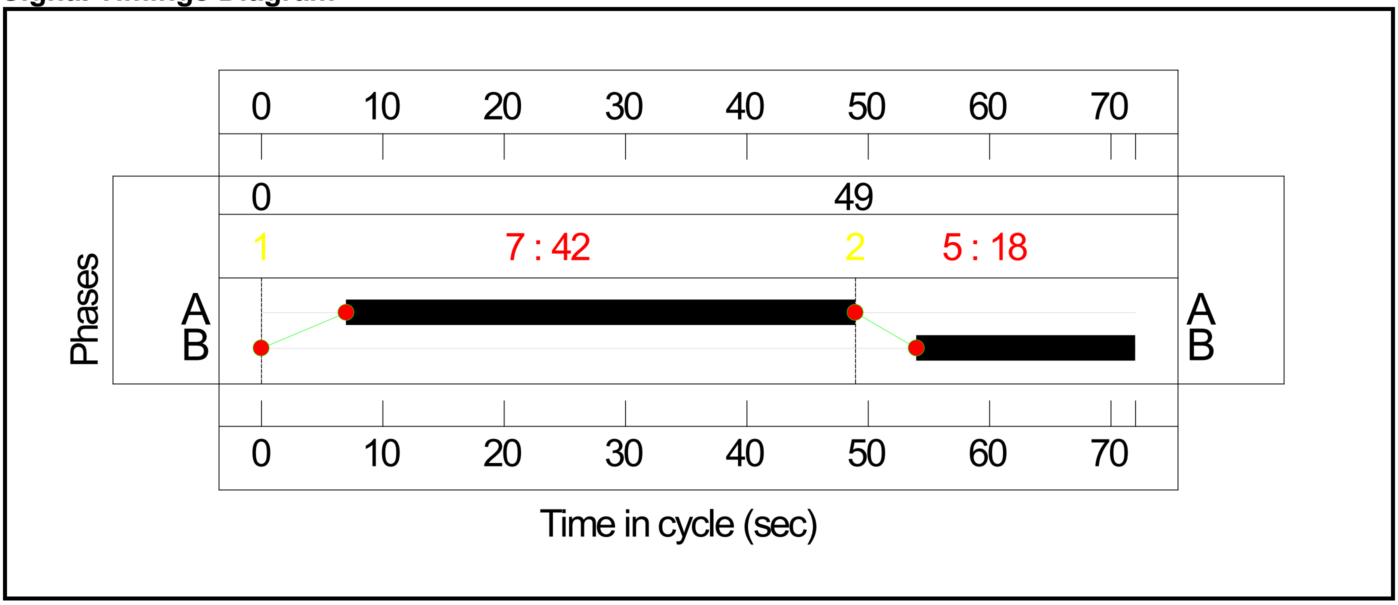
Stage Timings

Stage	1	2
Duration	42	18
Change Point	0	49

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	42	7	49
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	18	54	0

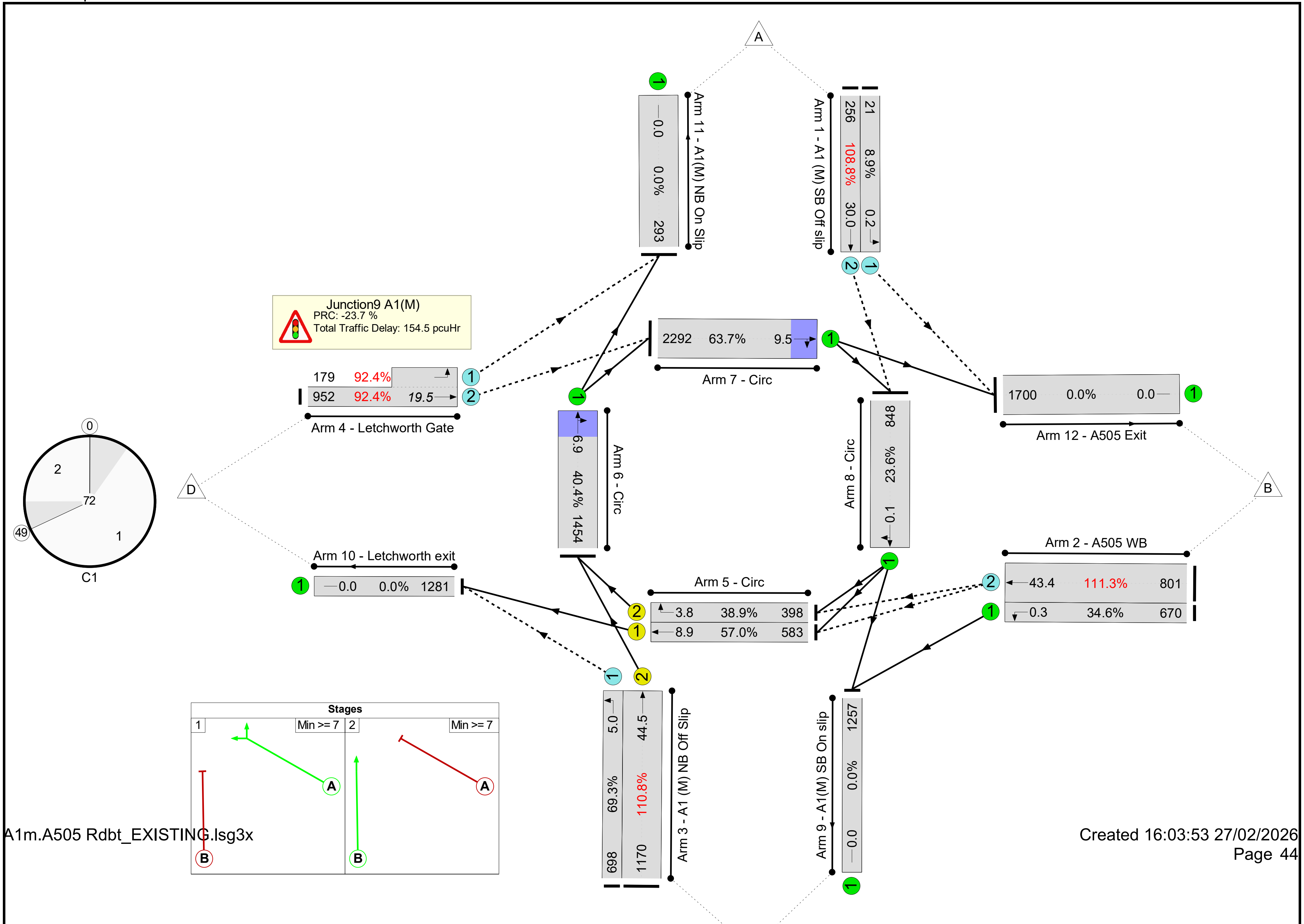
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	54	0
5/1	Circ Ahead	U	A	7	49
5/2	Circ Right	U	A	7	49

Network Layout Diagram


A
B
D
Junction9 A1(M)
PRC: -23.7 %
Total Traffic Delay: 154.5 pcuHr
Arm 11 - A1(M) NB On Slip
0.0 0.0% 293
Arm 1 - A1 (M) SB Off slip
256 108.8% 30.0
21 8.9% 0.2
2292 63.7% 9.5
Arm 7 - Circ
1700 0.0% 0.0
Arm 12 - A505 Exit
179 92.4%
952 92.4% 19.5
Arm 4 - Letchworth Gate
6.9 40.4% 1454
Arm 6 - Circ
848 23.6% 0.1
Arm 8 - Circ
Arm 2 - A505 WB
43.4 111.3% 801
0.3 34.6% 670
Arm 10 - Letchworth exit
0.0 0.0% 1281
Arm 5 - Circ
3.8 38.9% 398
8.9 57.0% 583
5.0 69.3% 698
44.5 110.8% 1170
Arm 3 - A1 (M) NB Off Slip
1257 0.0% 0.0
Arm 9 - A1(M) SB On slip
0
2
72
49
1
C1
Stages
1
Min >= 7
2
Min >= 7
A
B

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**111.3%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**111.3%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	21	1961	236	8.9%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	256	2080	235	108.8%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	670	1936	1936	34.6%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	801	4178	720	111.3%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	698	1936	1008	69.3%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	18	-	-	1170	4000	1056	110.8%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1131	1894:1834	1030+194	92.4 : 92.4%
5/1	Circ Ahead	U	N/A	N/A	A		1	42	-	-	640	1714	1024	57.0%
5/2	Circ Right	U	N/A	N/A	A		1	42	-	-	443	1714	1024	38.9%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1613	3600	3600	40.4%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2438	3600	3600	63.7%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	869	3600	3600	23.6%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1257	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1338	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	306	Inf	Inf	0.0%

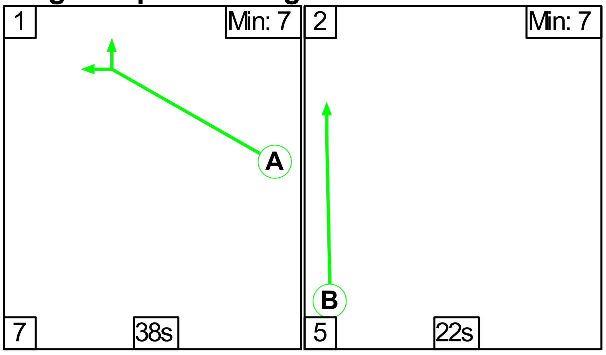
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1846	Inf	Inf	0.0%

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: A1(m) Junction 10	**-**	**-**	**3655**	**281**	**0**	**23.6**	**130.9**	**0.0**	**154.5**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3655**	**281**	**0**	**23.6**	**130.9**	**0.0**	**154.5**	**-**	**-**	**-**	**-**	
1/1	21	21	21	0	0	0.0	0.0	-	0.1	12.9	0.2	0.0	0.2	
1/2	256	235	235	0	0	2.1	14.7	-	16.7	235.1	15.4	14.7	30.0	
2/1	670	670	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3	
2/2	801	720	720	0	0	3.8	45.1	-	48.9	219.8	20.9	22.5	43.4	
3/1	698	698	417	281	0	0.0	1.1	-	1.2	6.0	3.9	1.1	5.0	
3/2	1170	1056	-	-	-	13.4	61.9	-	75.4	231.9	13.5	31.0	44.5	
4/2+4/1	1131	1131	2262	0	0	1.1	5.4	-	6.6	20.9	14.0	5.4	19.5	
5/1	583	583	-	-	-	1.9	0.7	-	2.5	15.6	8.2	0.7	8.9	
5/2	398	398	-	-	-	0.7	0.3	-	1.0	9.2	3.5	0.3	3.8	
6/1	1454	1454	-	-	-	0.1	0.3	-	0.5	1.2	6.8	0.2	6.9	
7/1	2292	2292	-	-	-	0.3	0.9	-	1.2	1.9	9.0	0.4	9.5	
8/1	848	848	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1281	1281	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1700	1700	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -23.2 Total Delay for Signalled Lanes (pcuHr): 78.91 Cycle Time (s): 72
PRC Over All Lanes (%): -23.7 Total Delay Over All Lanes(pcuHr): 154.46

Scenario 4: '2029 wDev PM' (FG4: '2029 w Dev PM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



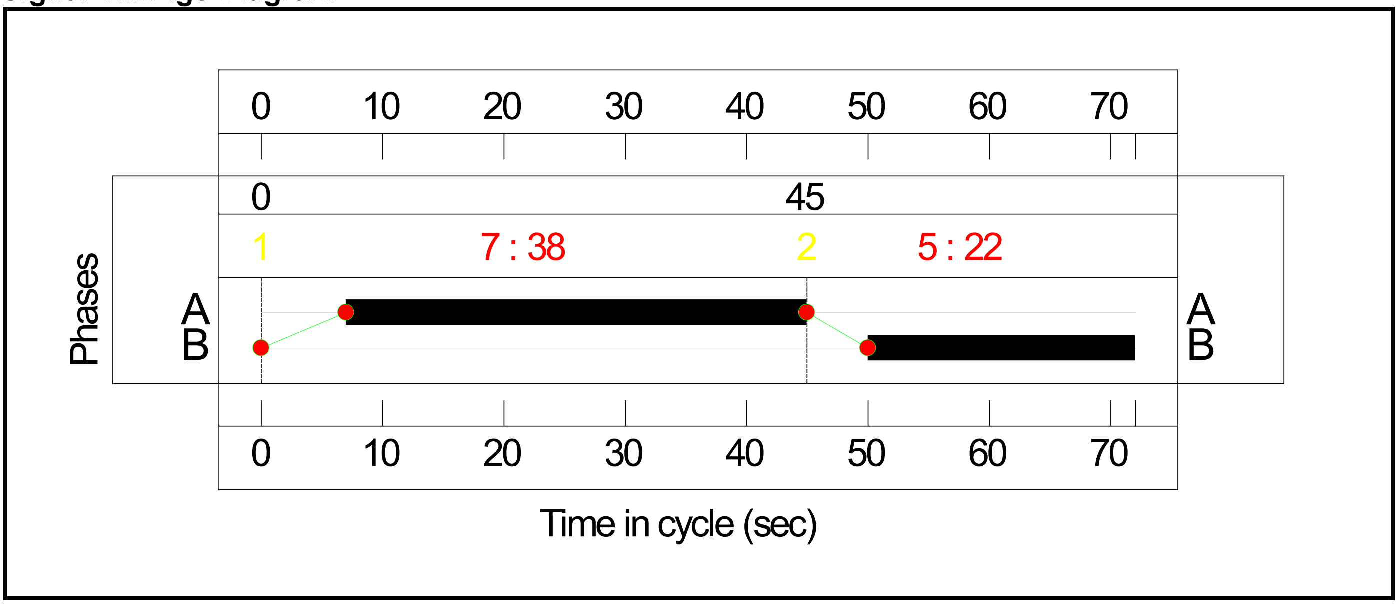
Stage Timings

Stage	1	2
Duration	38	22
Change Point	0	45

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	38	7	45
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	22	50	0

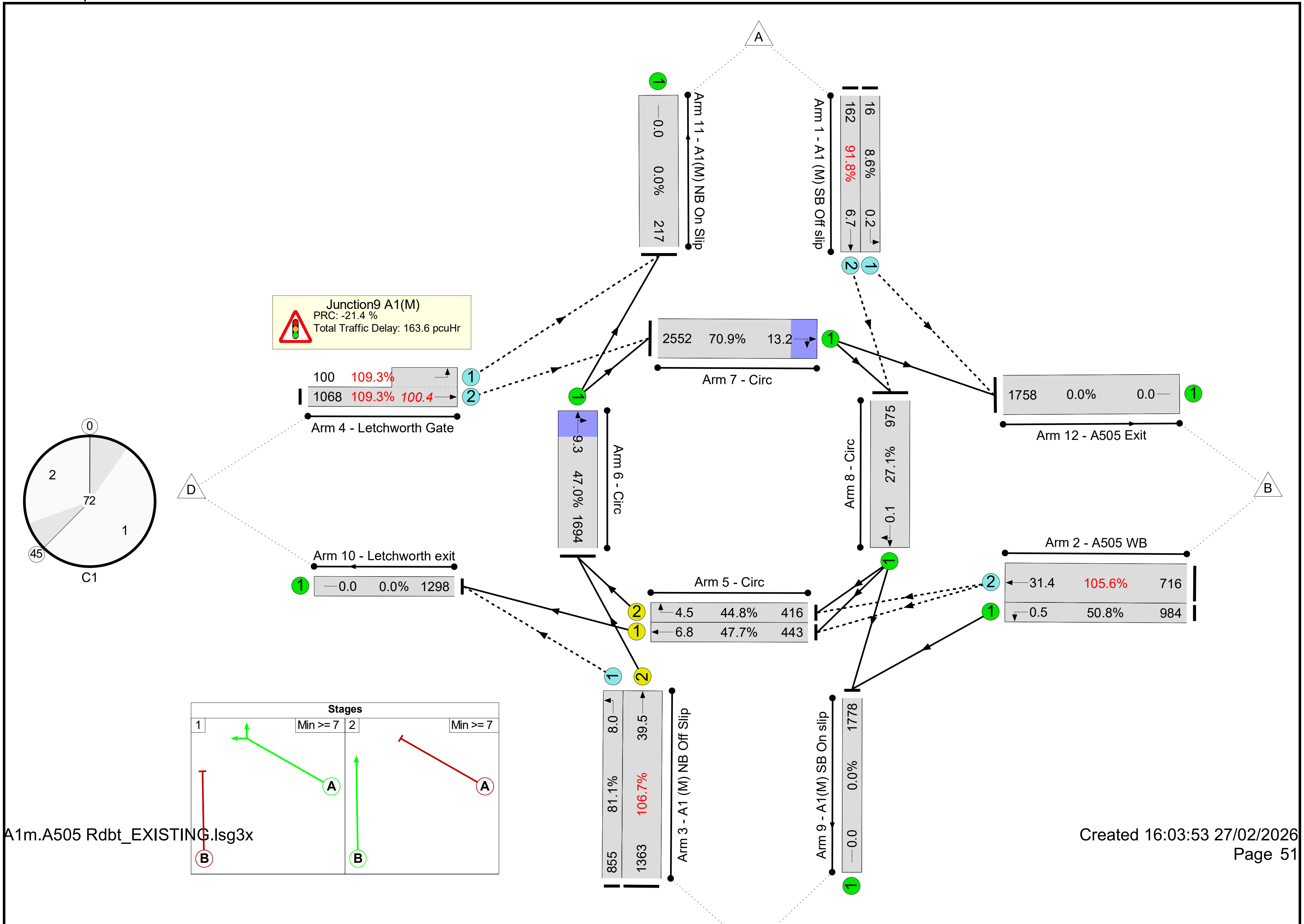
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	50	0
5/1	Circ Ahead	U	A	7	45
5/2	Circ Right	U	A	7	45

Network Layout Diagram


A
B
D
Junction9 A1(M)
PRC: -21.4 %
Total Traffic Delay: 163.6 pcuHr
Arm 11 - A1(M) NB On Slip
0.0
0.0%
217
Arm 1 - A1 (M) SB Off slip
162
91.8%
6.7
16
8.6%
0.2
2552
70.9%
13.2
Arm 7 - Circ
1758
0.0%
0.0
Arm 12 - A505 Exit
100
109.3%
1068
109.3%
100.4
Arm 4 - Letchworth Gate
9.3
47.0%
1694
Arm 6 - Circ
975
27.1%
0.1
Arm 8 - Circ
Arm 2 - A505 WB
31.4
105.6%
716
0.5
50.8%
984
Arm 10 - Letchworth exit
0.0
0.0%
1298
Arm 5 - Circ
4.5
44.8%
416
6.8
47.7%
443
8.0
81.1%
855
39.5
106.7%
1363
Arm 3 - A1 (M) NB Off Slip
1778
0.0%
0.0
Arm 9 - A1(M) SB On slip
0
72
45
C1
Stages
Min >= 7
Min >= 7

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**109.3%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**109.3%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	16	1961	186	8.6%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	162	2080	176	91.8%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	984	1936	1936	50.8%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	716	4178	678	105.6%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	855	1936	1054	81.1%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	22	-	-	1363	4000	1278	106.7%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1168	1894:1834	977+92	109.3 : 109.3%
5/1	Circ Ahead	U	N/A	N/A	A		1	38	-	-	459	1714	928	47.7%
5/2	Circ Right	U	N/A	N/A	A		1	38	-	-	439	1714	928	44.8%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1802	3600	3600	47.0%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2744	3600	3600	70.9%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1047	3600	3600	27.1%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1849	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1314	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	226	Inf	Inf	0.0%

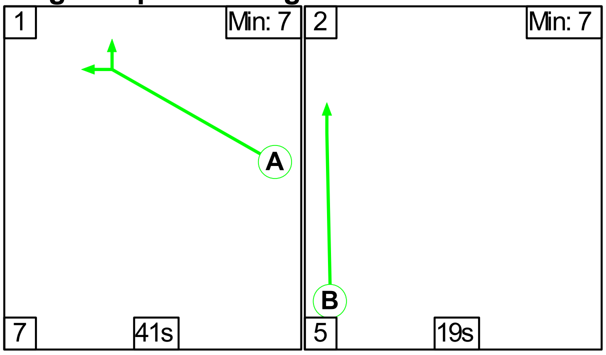
Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1875	Inf	Inf	0.0%
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: A1(m) Junction 10	**-**	**-**	**3470**	**392**	**0**	**24.3**	**139.3**	**0.0**	**163.6**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3470**	**392**	**0**	**24.3**	**139.3**	**0.0**	**163.6**	**-**	**-**	**-**	**-**	
1/1	16	16	16	0	0	0.0	0.0	-	0.1	18.2	0.2	0.0	0.2	
1/2	162	162	162	0	0	0.8	3.7	-	4.5	100.1	3.0	3.7	6.7	
2/1	984	984	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5	
2/2	716	678	678	0	0	2.1	25.9	-	28.0	140.9	18.5	12.9	31.4	
3/1	855	855	463	392	0	0.1	2.1	-	2.3	9.5	5.9	2.1	8.0	
3/2	1363	1278	-	-	-	12.9	49.5	-	62.4	164.8	14.8	24.7	39.5	
4/2+4/1	1168	1075	2151	0	0	4.8	54.9	-	59.7	183.9	45.6	54.9	100.4	
5/1	443	443	-	-	-	1.7	0.5	-	2.1	17.4	6.3	0.5	6.8	
5/2	416	416	-	-	-	0.9	0.4	-	1.3	11.5	4.1	0.4	4.5	
6/1	1694	1694	-	-	-	0.3	0.4	-	0.7	1.5	9.1	0.2	9.3	
7/1	2552	2552	-	-	-	0.6	1.2	-	1.8	2.6	12.6	0.6	13.2	
8/1	975	975	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1778	1778	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1298	1298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	217	217	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1758	1758	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -18.5 Total Delay for Signalled Lanes (pcuHr): 65.87 Cycle Time (s): 72
PRC Over All Lanes (%): -21.4 Total Delay Over All Lanes(pcuHr): 163.63

Scenario 5: '2043 AM' (FG5: '2043 AM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



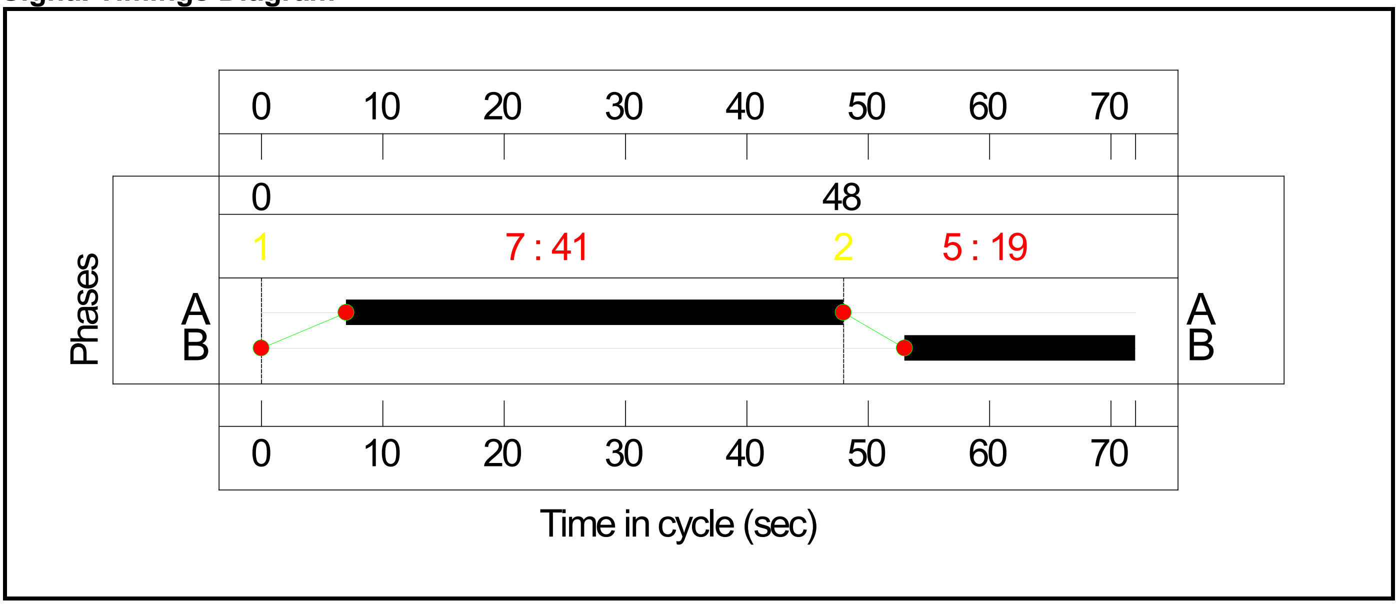
Stage Timings

Stage	1	2
Duration	41	19
Change Point	0	48

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	41	7	48
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	19	53	0

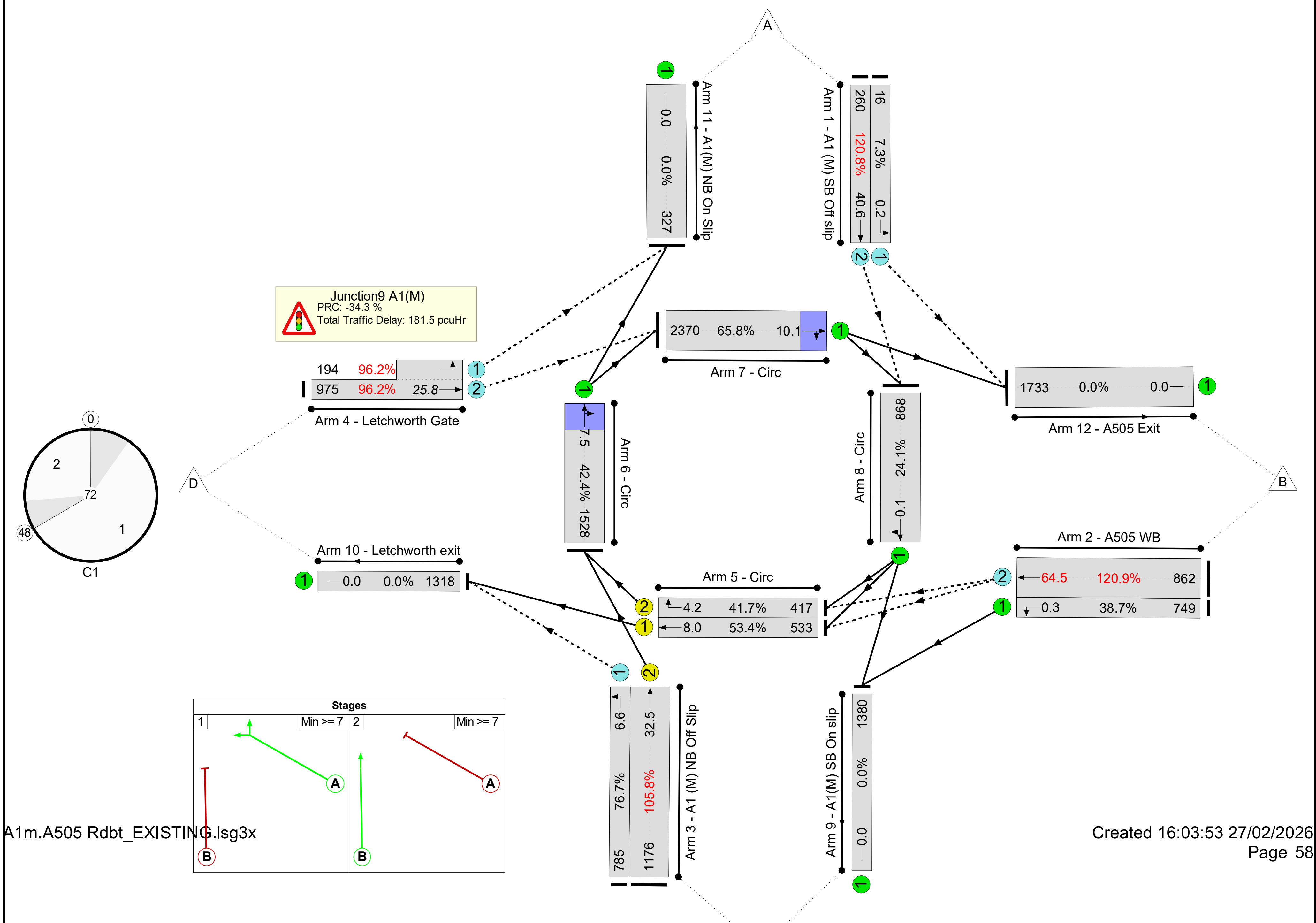
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
3/2	A1 (M) NB Off Slip Ahead	U	B	53	0
5/1	Circ Ahead	U	A	7	48
5/2	Circ Right	U	A	7	48

Network Layout Diagram


Junction9 A1(M)
PRC: -34.3 %
Total Traffic Delay: 181.5 pcuHr
Arm 11 - A1(M) NB On Slip
Arm 1 - A1 (M) SB Off slip
Arm 7 - Circ
Arm 4 - Letchworth Gate
Arm 12 - A505 Exit
Arm 6 - Circ
Arm 8 - Circ
Arm 10 - Letchworth exit
Arm 2 - A505 WB
Arm 5 - Circ
Arm 3 - A1 (M) NB Off Slip
Arm 9 - A1(M) SB On slip
C1
Stages
Min >= 7
Min >= 7

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**120.9%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**120.9%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	16	1961	220	7.3%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	260	2080	215	120.8%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	749	1936	1936	38.7%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	862	4178	713	120.9%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	785	1936	1024	76.7%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	19	-	-	1176	4000	1111	105.8%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1169	1894:1834	1014+202	96.2 : 96.2%
5/1	Circ Ahead	U	N/A	N/A	A		1	41	-	-	640	1714	1000	53.4%
5/2	Circ Right	U	N/A	N/A	A		1	41	-	-	504	1714	1000	41.7%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1680	3600	3600	42.4%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2494	3600	3600	65.8%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	913	3600	3600	24.1%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1380	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1425	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	355	Inf	Inf	0.0%

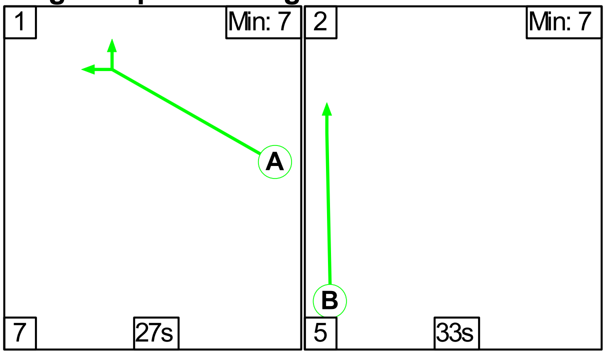
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1857	Inf	Inf	0.0%

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: A1(m) Junction 10	**-**	**-**	**3740**	**327**	**0**	**26.1**	**155.4**	**0.0**	**181.5**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3740**	**327**	**0**	**26.1**	**155.4**	**0.0**	**181.5**	**-**	**-**	**-**	**-**	
1/1	16	16	16	0	0	0.0	0.0	-	0.1	13.9	0.1	0.0	0.2	
1/2	260	215	215	0	0	3.1	25.0	-	28.1	389.1	15.6	25.0	40.6	
2/1	749	749	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.3	0.3	
2/2	862	713	713	0	0	7.0	77.2	-	84.2	351.5	25.9	38.6	64.5	
3/1	785	785	458	327	0	0.1	1.6	-	1.7	7.9	5.0	1.6	6.6	
3/2	1176	1111	-	-	-	11.2	39.8	-	51.1	156.3	12.6	19.9	32.5	
4/2+4/1	1169	1169	2338	0	0	1.5	9.0	-	10.5	32.4	16.8	9.0	25.8	
5/1	533	533	-	-	-	1.8	0.6	-	2.3	15.8	7.4	0.6	8.0	
5/2	417	417	-	-	-	0.8	0.4	-	1.1	9.9	3.9	0.4	4.2	
6/1	1528	1528	-	-	-	0.2	0.4	-	0.5	1.3	7.3	0.2	7.5	
7/1	2370	2370	-	-	-	0.4	1.0	-	1.4	2.1	9.6	0.5	10.1	
8/1	868	868	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1380	1380	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1318	1318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	327	327	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1733	1733	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -17.6 Total Delay for Signalled Lanes (pcuHr): 54.53 Cycle Time (s): 72
PRC Over All Lanes (%): -34.3 Total Delay Over All Lanes(pcuHr): 181.51

Scenario 6: '2043 PM' (FG6: '2043 PM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



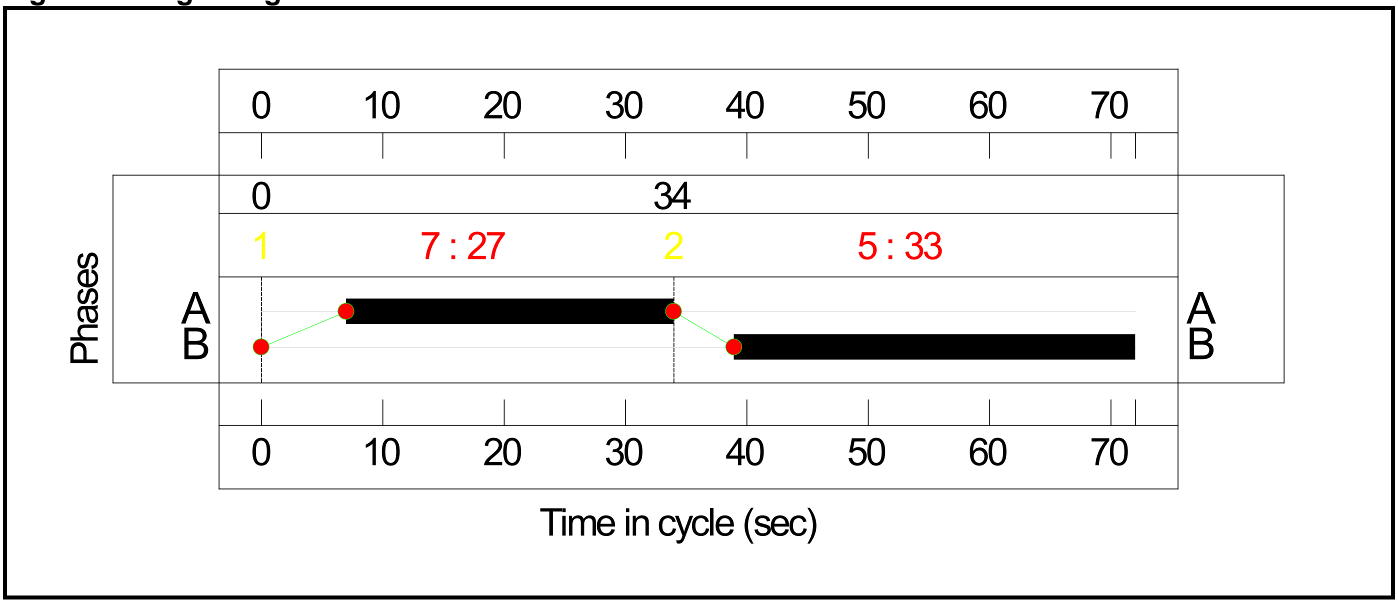
Stage Timings

Stage	1	2
Duration	27	33
Change Point	0	34

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	27	7	34
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	33	39	0

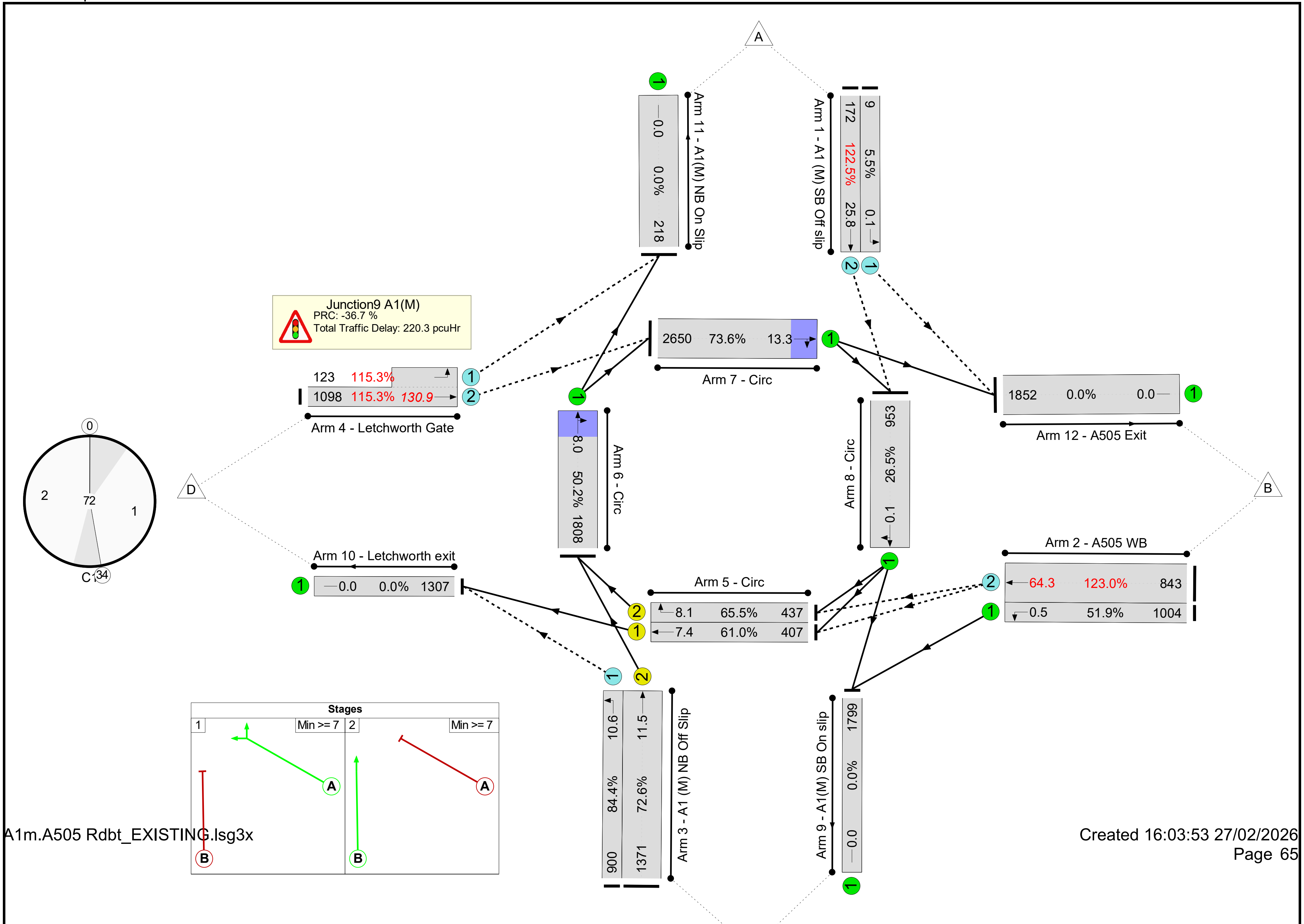
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	39	0
5/1	Circ Ahead	U	A	7	34
5/2	Circ Right	U	A	7	34

Network Layout Diagram



Junction9 A1(M)
PRC: -36.7 %
Total Traffic Delay: 220.3 pcuHr
Arm 11 - A1(M) NB On Slip
Arm 1 - A1 (M) SB Off slip
Arm 7 - Circ
Arm 4 - Letchworth Gate
Arm 12 - A505 Exit
Arm 6 - Circ
Arm 8 - Circ
Arm 10 - Letchworth exit
Arm 2 - A505 WB
Arm 5 - Circ
Arm 3 - A1 (M) NB Off Slip
Arm 9 - A1(M) SB On slip
Stages
Min >= 7

Network Results

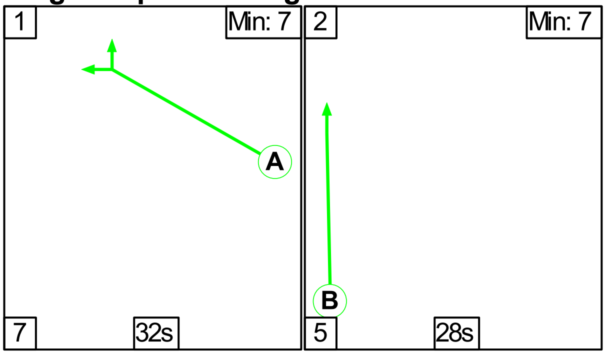
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**123.0%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**123.0%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	9	1961	164	5.5%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	172	2080	140	122.5%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1004	1936	1936	51.9%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	843	4178	685	123.0%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	900	1936	1066	84.4%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	33	-	-	1371	4000	1889	72.6%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1221	1894:1834	952+107	115.3 : 115.3%
5/1	Circ Ahead	U	N/A	N/A	A		1	27	-	-	498	1714	667	61.0%
5/2	Circ Right	U	N/A	N/A	A		1	27	-	-	537	1714	667	65.5%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1908	3600	3600	50.2%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2871	3600	3600	73.6%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1102	3600	3600	26.5%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1914	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1398	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	258	Inf	Inf	0.0%

Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1950	Inf	Inf	0.0%

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: A1(m) Junction 10	**-**	**-**	**3288**	**568**	**0**	**27.8**	**192.5**	**0.0**	**220.3**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3288**	**568**	**0**	**27.8**	**192.5**	**0.0**	**220.3**	**-**	**-**	**-**	**-**	
1/1	9	9	9	0	0	0.0	0.0	-	0.0	18.9	0.1	0.0	0.1	
1/2	172	140	140	0	0	1.9	18.2	-	20.0	418.8	7.7	18.2	25.8	
2/1	1004	1004	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5	
2/2	843	685	685	0	0	7.6	81.5	-	89.1	380.5	23.5	40.7	64.3	
3/1	900	900	332	568	0	0.2	2.6	-	2.9	11.5	8.0	2.6	10.6	
3/2	1371	1371	-	-	-	5.8	1.3	-	7.1	18.7	10.9	0.7	11.5	
4/2+4/1	1221	1060	2121	0	0	7.3	84.6	-	91.9	270.9	46.3	84.6	130.9	
5/1	407	407	-	-	-	2.2	0.8	-	3.0	26.7	6.6	0.8	7.4	
5/2	437	437	-	-	-	2.0	0.9	-	2.9	24.1	7.2	0.9	8.1	
6/1	1808	1808	-	-	-	0.2	0.5	-	0.7	1.4	7.7	0.3	8.0	
7/1	2650	2650	-	-	-	0.6	1.4	-	2.0	2.7	12.6	0.7	13.3	
8/1	953	953	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1799	1799	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1307	1307	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	218	218	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1852	1852	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): 24.0 Total Delay for Signalled Lanes (pcuHr): 13.06 Cycle Time (s): 72
PRC Over All Lanes (%): -36.7 Total Delay Over All Lanes(pcuHr): 220.34

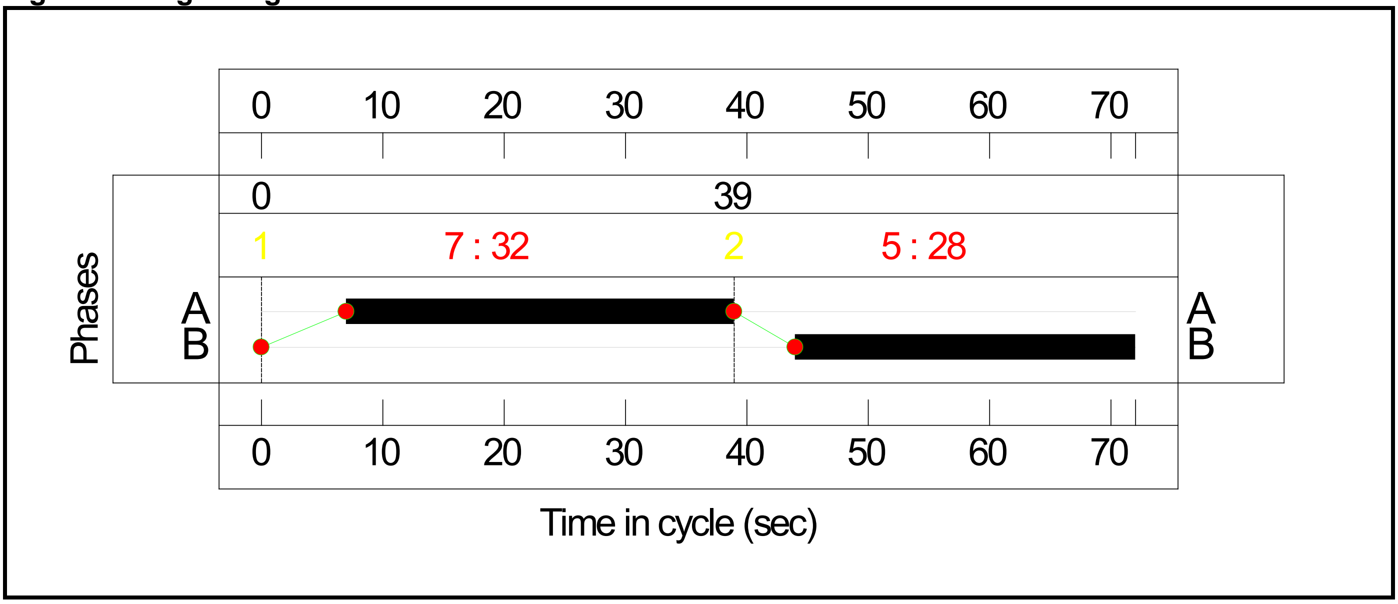
Scenario 7: '2043 Option1 AM' (FG7: '2043 Option 1 AM', Plan 1: 'Base Network Control Plan 1')
Stage Sequence Diagram


Stage Timings

Stage	1	2
Duration	32	28
Change Point	0	39

Phase Timings

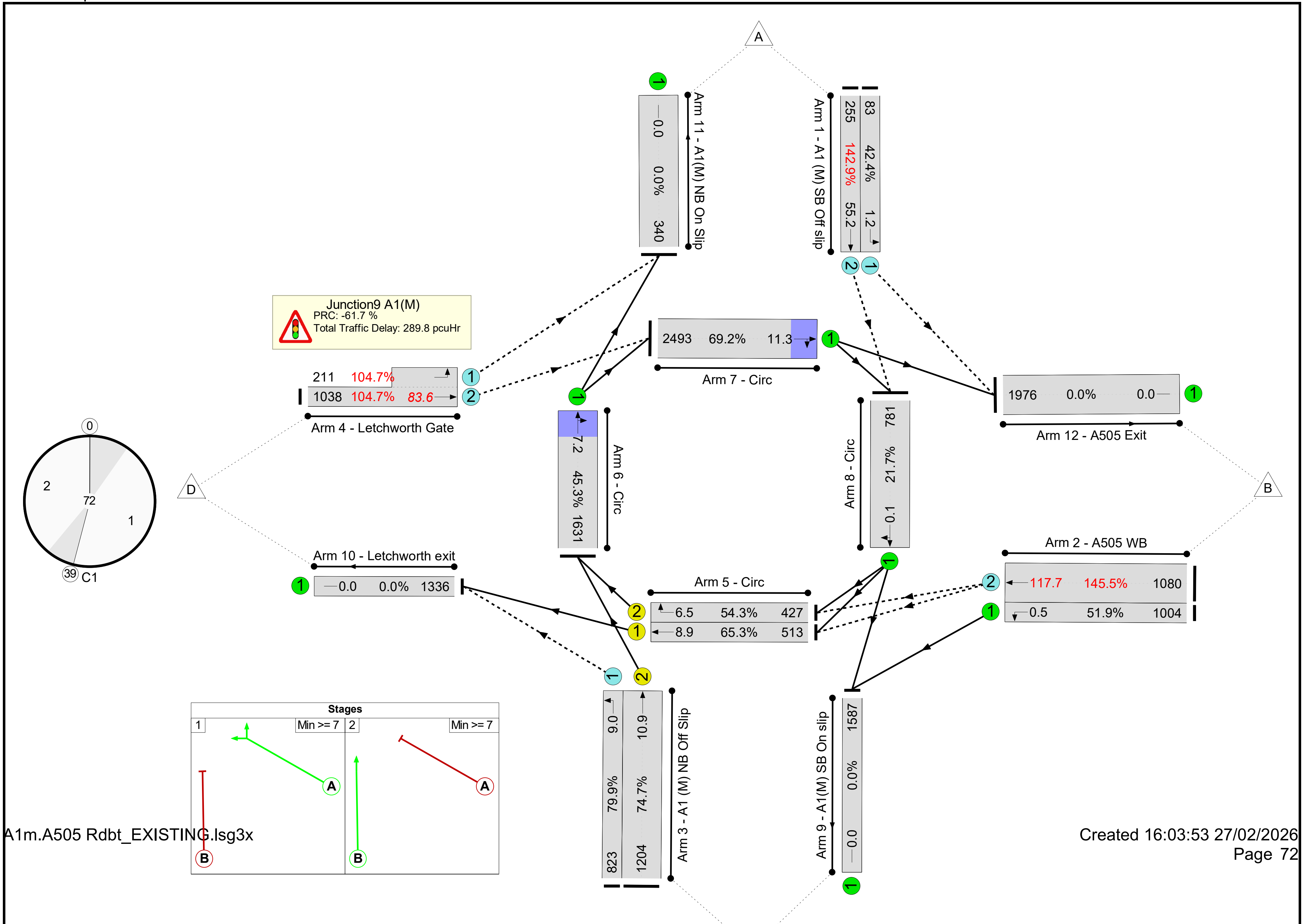
Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	32	7	39
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	28	44	0

Signal Timings Diagram


Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	44	0
5/1	Circ Ahead	U	A	7	39
5/2	Circ Right	U	A	7	39

Network Layout Diagram



Junction9 A1(M)
PRC: -61.7 %
Total Traffic Delay: 289.8 pcuHr
Arm 11 - A1(M) NB On Slip
Arm 1 - A1 (M) SB Off slip
Arm 7 - Circ
Arm 12 - A505 Exit
Arm 4 - Letchworth Gate
Arm 6 - Circ
Arm 8 - Circ
Arm 10 - Letchworth exit
Arm 5 - Circ
Arm 2 - A505 WB
Arm 3 - A1 (M) NB Off Slip
Arm 9 - A1(M) SB On slip
C1
72
Stages
Min >= 7

Network Results

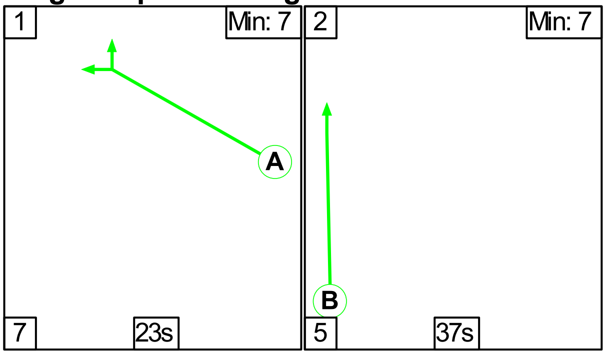
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**145.5%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**145.5%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	83	1961	196	42.4%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	255	2080	178	142.9%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1004	1936	1936	51.9%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	1080	4178	742	145.5%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	823	1936	1031	79.9%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	28	-	-	1204	4000	1611	74.7%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1249	1894:1834	991+201	104.7 : 104.7%
5/1	Circ Ahead	U	N/A	N/A	A		1	32	-	-	734	1714	786	65.3%
5/2	Circ Right	U	N/A	N/A	A		1	32	-	-	621	1714	786	54.3%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1825	3600	3600	45.3%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2675	3600	3600	69.2%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	883	3600	3600	21.7%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1612	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1557	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	399	Inf	Inf	0.0%

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2130	Inf	Inf	0.0%
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: A1(m) Junction 10	**-**	**-**	**3785**	**446**	**0**	**35.2**	**254.6**	**0.0**	**289.8**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3785**	**446**	**0**	**35.2**	**254.6**	**0.0**	**289.8**	**-**	**-**	**-**	**-**	
1/1	83	83	83	0	0	0.2	0.4	-	0.5	23.3	0.9	0.4	1.2	
1/2	255	178	178	0	0	4.1	39.9	-	44.0	620.5	15.3	39.9	55.2	
2/1	1004	1004	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5	
2/2	1080	742	742	0	0	16.5	170.6	-	187.1	623.5	32.4	85.3	117.7	
3/1	823	823	377	446	0	0.2	1.9	-	2.1	9.3	7.1	1.9	9.0	
3/2	1204	1204	-	-	-	6.1	1.5	-	7.6	22.8	10.2	0.7	10.9	
4/2+4/1	1249	1202	2404	0	0	3.5	36.6	-	40.2	115.8	47.0	36.6	83.6	
5/1	513	513	-	-	-	2.5	0.9	-	3.4	23.8	8.0	0.9	8.9	
5/2	427	427	-	-	-	1.5	0.6	-	2.1	17.9	5.9	0.6	6.5	
6/1	1631	1631	-	-	-	0.1	0.4	-	0.6	1.2	7.0	0.2	7.2	
7/1	2493	2493	-	-	-	0.4	1.1	-	1.6	2.3	10.7	0.6	11.3	
8/1	781	781	-	-	-	0.0	0.1	-	0.1	0.6	0.0	0.1	0.1	
9/1	1587	1587	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1336	1336	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	340	340	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1976	1976	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): 20.4 Total Delay for Signalled Lanes (pcuHr): 13.12 Cycle Time (s): 72
PRC Over All Lanes (%): -61.7 Total Delay Over All Lanes(pcuHr): 289.78

Scenario 8: '2043 Option1 PM' (FG8: '2043 Option 1PM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



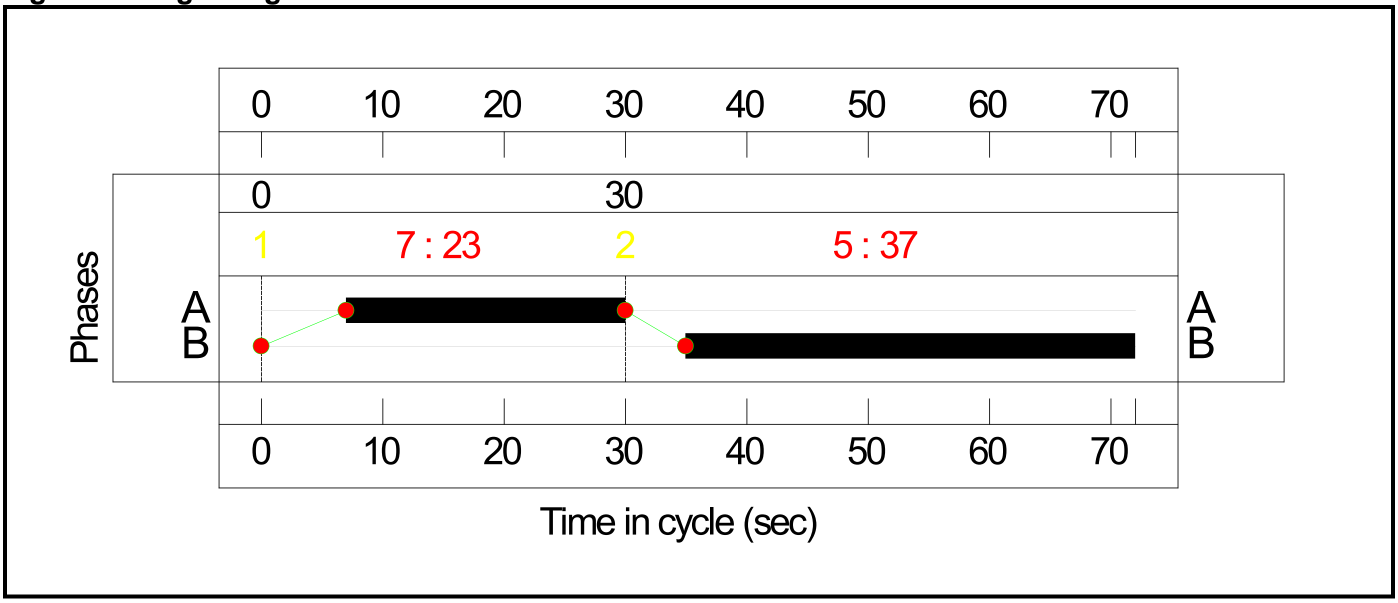
Stage Timings

Stage	1	2
Duration	23	37
Change Point	0	30

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	23	7	30
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	37	35	0

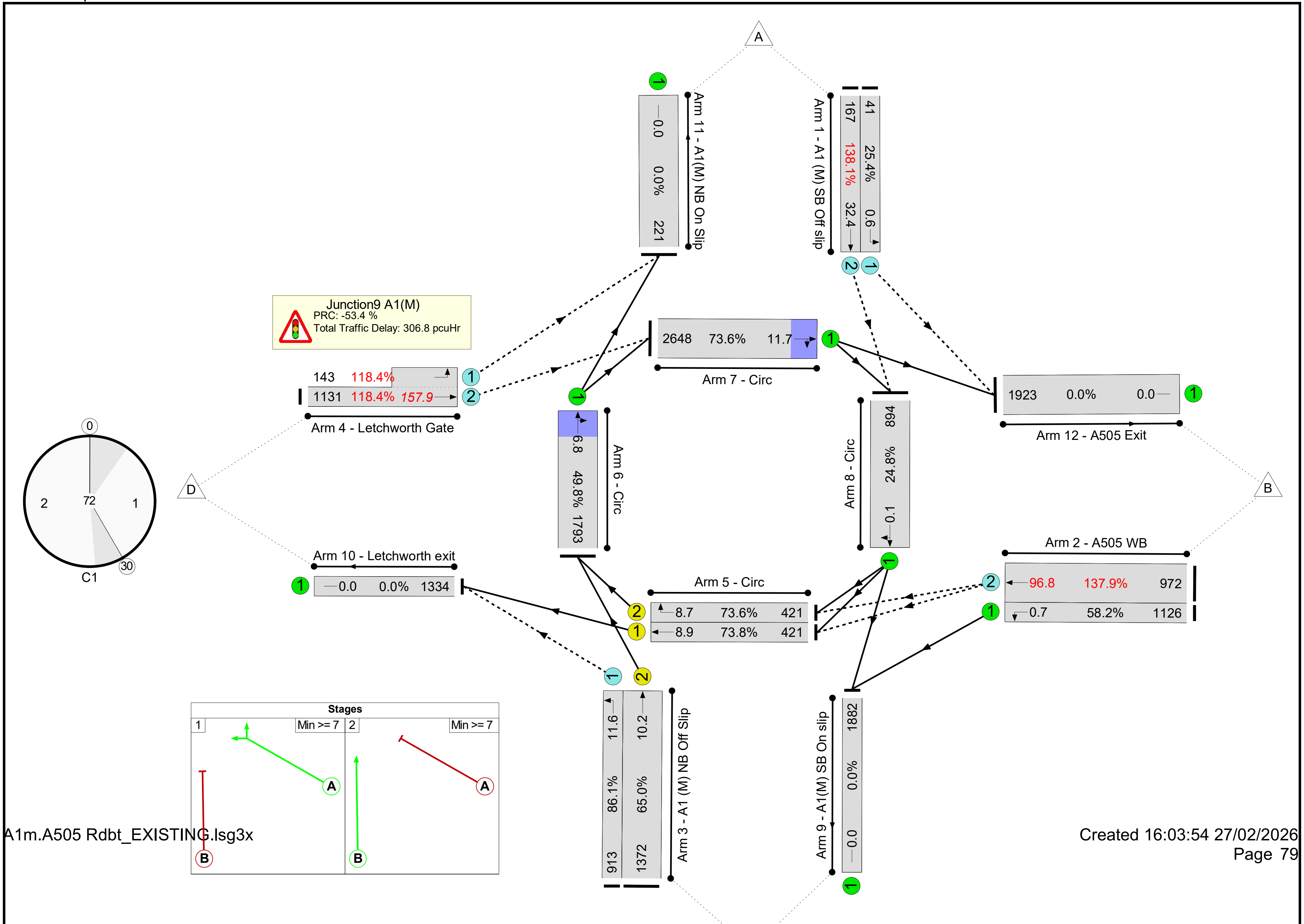
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	35	0
5/1	Circ Ahead	U	A	7	30
5/2	Circ Right	U	A	7	30

Network Layout Diagram


A
B
D
Junction9 A1(M)
PRC: -53.4 %
Total Traffic Delay: 306.8 pcuHr
Arm 11 - A1(M) NB On Slip
0.0
0.0%
221
Arm 1 - A1 (M) SB Off slip
167
138.1%
32.4
41
25.4%
0.6
2648
73.6%
11.7
Arm 7 - Circ
1923
0.0%
0.0
Arm 12 - A505 Exit
143
118.4%
1131
118.4%
157.9
Arm 4 - Letchworth Gate
6.8
49.8%
1793
Arm 6 - Circ
894
24.8%
0.1
Arm 8 - Circ
Arm 2 - A505 WB
96.8
137.9%
972
0.7
58.2%
1126
Arm 10 - Letchworth exit
0.0
0.0%
1334
Arm 5 - Circ
8.7
73.6%
421
8.9
73.8%
421
11.6
86.1%
913
10.2
65.0%
1372
Arm 3 - A1 (M) NB Off Slip
1882
0.0%
0.0
Arm 9 - A1(M) SB On slip
0
72
2
1
30
C1
Stages
1
Min >= 7
2
Min >= 7
A
B

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**138.1%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**138.1%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	41	1961	162	25.4%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	167	2080	121	138.1%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1126	1936	1936	58.2%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	972	4178	705	137.9%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	913	1936	1061	86.1%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	37	-	-	1372	4000	2111	65.0%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1274	1894:1834	956+121	118.4 : 118.4%
5/1	Circ Ahead	U	N/A	N/A	A		1	23	-	-	578	1714	571	73.8%
5/2	Circ Right	U	N/A	N/A	A		1	23	-	-	580	1714	571	73.6%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1952	3600	3600	49.8%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2945	3600	3600	73.6%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1074	3600	3600	24.8%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	2014	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1491	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	281	Inf	Inf	0.0%

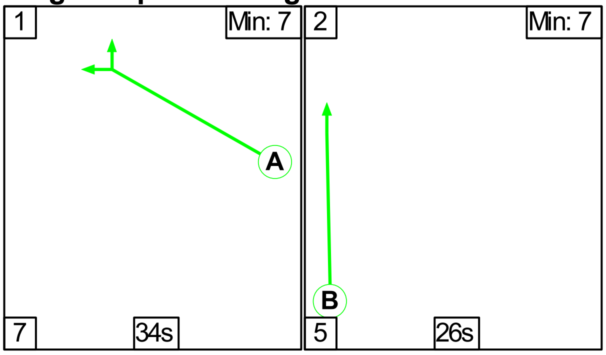
Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2079	Inf	Inf	0.0%
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: A1(m) Junction 10	**-**	**-**	**3281**	**652**	**0**	**35.3**	**271.5**	**0.0**	**306.8**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3281**	**652**	**0**	**35.3**	**271.5**	**0.0**	**306.8**	**-**	**-**	**-**	**-**	
1/1	41	41	41	0	0	0.1	0.2	-	0.3	22.0	0.4	0.2	0.6	
1/2	167	121	121	0	0	2.3	24.7	-	27.0	582.8	7.7	24.7	32.4	
2/1	1126	1126	-	-	-	0.0	0.7	-	0.7	2.2	0.0	0.7	0.7	
2/2	972	705	705	0	0	13.3	135.4	-	148.7	550.6	29.2	67.7	96.8	
3/1	913	913	261	652	0	0.3	3.0	-	3.3	13.0	8.6	3.0	11.6	
3/2	1372	1372	-	-	-	4.7	0.9	-	5.6	14.7	9.7	0.5	10.2	
4/2+4/1	1274	1076	2153	0	0	8.9	101.9	-	110.8	313.2	56.0	101.9	157.9	
5/1	421	421	-	-	-	2.8	1.4	-	4.2	35.7	7.5	1.4	8.9	
5/2	421	421	-	-	-	2.3	1.4	-	3.7	31.3	7.4	1.4	8.7	
6/1	1793	1793	-	-	-	0.1	0.5	-	0.6	1.3	6.6	0.2	6.8	
7/1	2648	2648	-	-	-	0.4	1.4	-	1.8	2.5	11.0	0.7	11.7	
8/1	894	894	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1882	1882	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1334	1334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	221	221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1923	1923	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): 22.0 Total Delay for Signalled Lanes (pcuHr): 13.42 Cycle Time (s): 72
PRC Over All Lanes (%): -53.4 Total Delay Over All Lanes(pcuHr): 306.81

Scenario 9: '2043 Option2 AM' (FG9: '2043 Option 2 AM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



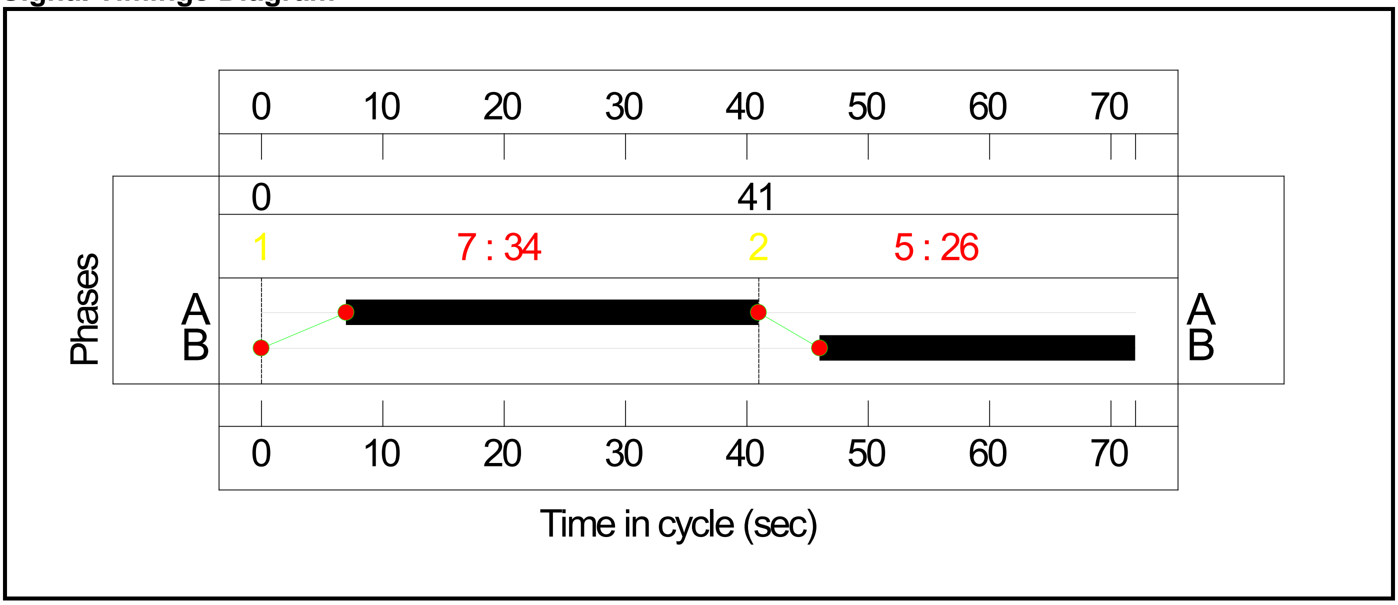
Stage Timings

Stage	1	2
Duration	34	26
Change Point	0	41

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	34	7	41
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	26	46	0

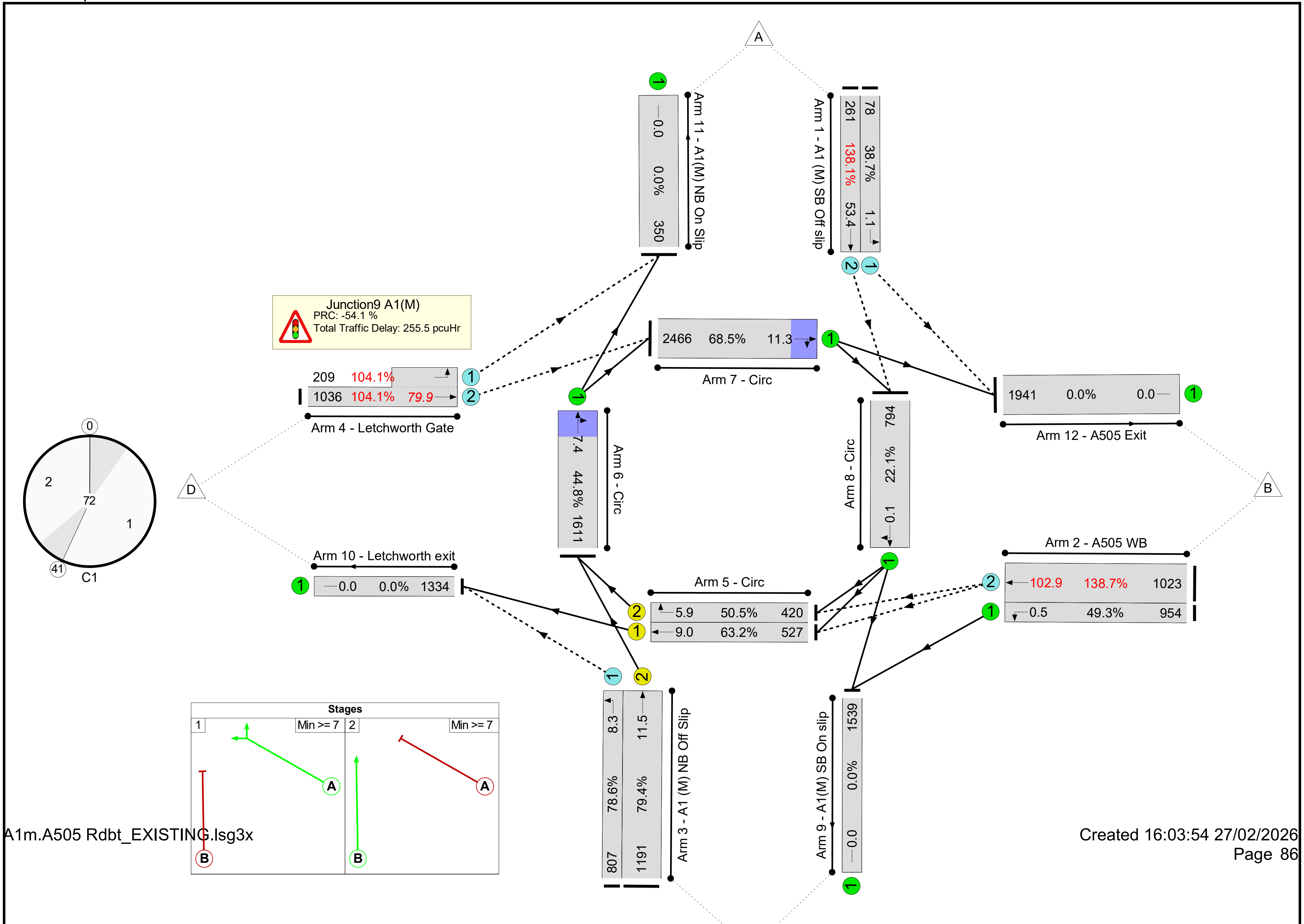
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	46	0
5/1	Circ Ahead	U	A	7	41
5/2	Circ Right	U	A	7	41

Network Layout Diagram


A
B
D
Junction9 A1(M)
PRC: -54.1 %
Total Traffic Delay: 255.5 pcuHr
Arm 11 - A1(M) NB On Slip
0.0 0.0% 350
Arm 1 - A1 (M) SB Off slip
261 138.1% 53.4
78 38.7% 1.1
Arm 7 - Circ
2466 68.5% 11.3
Arm 4 - Letchworth Gate
209 104.1%
1036 104.1% 79.9
Arm 12 - A505 Exit
1941 0.0% 0.0
Arm 6 - Circ
7.4 44.8% 1611
Arm 8 - Circ
794 22.1% 0.1
Arm 10 - Letchworth exit
0.0 0.0% 1334
Arm 5 - Circ
5.9 50.5% 420
9.0 63.2% 527
Arm 2 - A505 WB
102.9 138.7% 1023
0.5 49.3% 954
Arm 3 - A1 (M) NB Off Slip
8.3 78.6% 807
11.5 79.4% 1191
Arm 9 - A1(M) SB On slip
1539 0.0% 0.0
0
2
72
1
41
C1
Stages
1 Min >= 7
2 Min >= 7
A
B

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**138.7%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**138.7%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	78	1961	202	38.7%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	261	2080	189	138.1%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	954	1936	1936	49.3%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	1023	4178	738	138.7%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	807	1936	1026	78.6%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	26	-	-	1191	4000	1500	79.4%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1245	1894:1834	995+201	104.1 : 104.1%
5/1	Circ Ahead	U	N/A	N/A	A		1	34	-	-	722	1714	833	63.2%
5/2	Circ Right	U	N/A	N/A	A		1	34	-	-	583	1714	833	50.5%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1774	3600	3600	44.8%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2614	3600	3600	68.5%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	888	3600	3600	22.1%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1560	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1529	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	405	Inf	Inf	0.0%

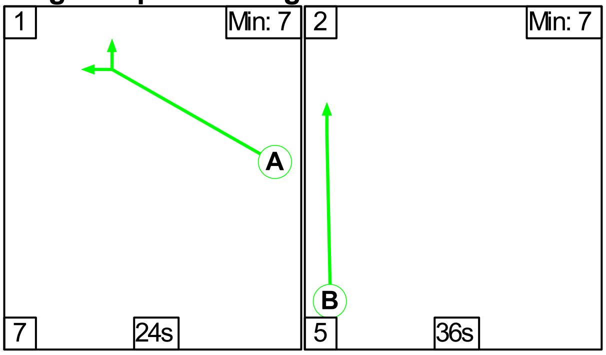
Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2065	Inf	Inf	0.0%
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: A1(m) Junction 10	**-**	**-**	**3806**	**415**	**0**	**32.3**	**223.2**	**0.0**	**255.5**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3806**	**415**	**0**	**32.3**	**223.2**	**0.0**	**255.5**	**-**	**-**	**-**	**-**	
1/1	78	78	78	0	0	0.2	0.3	-	0.5	21.7	0.8	0.3	1.1	
1/2	261	189	189	0	0	4.0	37.7	-	41.7	575.4	15.7	37.7	53.4	
2/1	954	954	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5	
2/2	1023	738	738	0	0	13.8	144.4	-	158.2	556.7	30.7	72.2	102.9	
3/1	807	807	392	415	0	0.2	1.8	-	2.0	8.8	6.5	1.8	8.3	
3/2	1191	1191	-	-	-	6.6	1.9	-	8.5	25.8	10.6	1.0	11.5	
4/2+4/1	1245	1204	2409	0	0	3.3	33.6	-	36.9	106.6	46.3	33.6	79.9	
5/1	527	527	-	-	-	2.4	0.9	-	3.2	22.1	8.1	0.9	9.0	
5/2	420	420	-	-	-	1.3	0.5	-	1.8	15.7	5.4	0.5	5.9	
6/1	1611	1611	-	-	-	0.2	0.4	-	0.6	1.3	7.2	0.2	7.4	
7/1	2466	2466	-	-	-	0.5	1.1	-	1.6	2.3	10.8	0.5	11.3	
8/1	794	794	-	-	-	0.0	0.1	-	0.1	0.6	0.0	0.1	0.1	
9/1	1539	1539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1334	1334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	350	350	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1941	1941	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): 13.4 Total Delay for Signalled Lanes (pcuHr): 13.60 Cycle Time (s): 72
PRC Over All Lanes (%): -54.1 Total Delay Over All Lanes(pcuHr): 255.54

Scenario 10: '2043 Option2 PM' (FG10: '2043 Option2 PM', Plan 1: 'Base Network Control Plan 1')

Stage Sequence Diagram



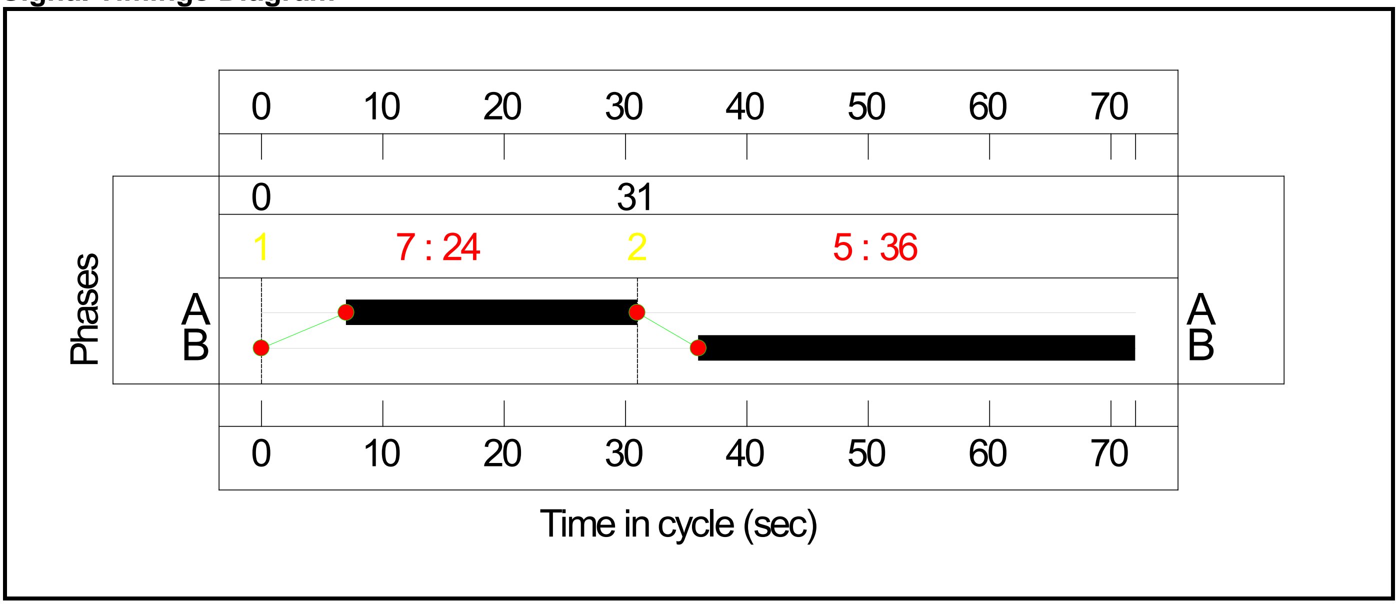
Stage Timings

Stage	1	2
Duration	24	36
Change Point	0	31

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	24	7	31
B	A1 (M) NB Off Slip Ahead A1(M) Off Slip	Traffic	36	36	0

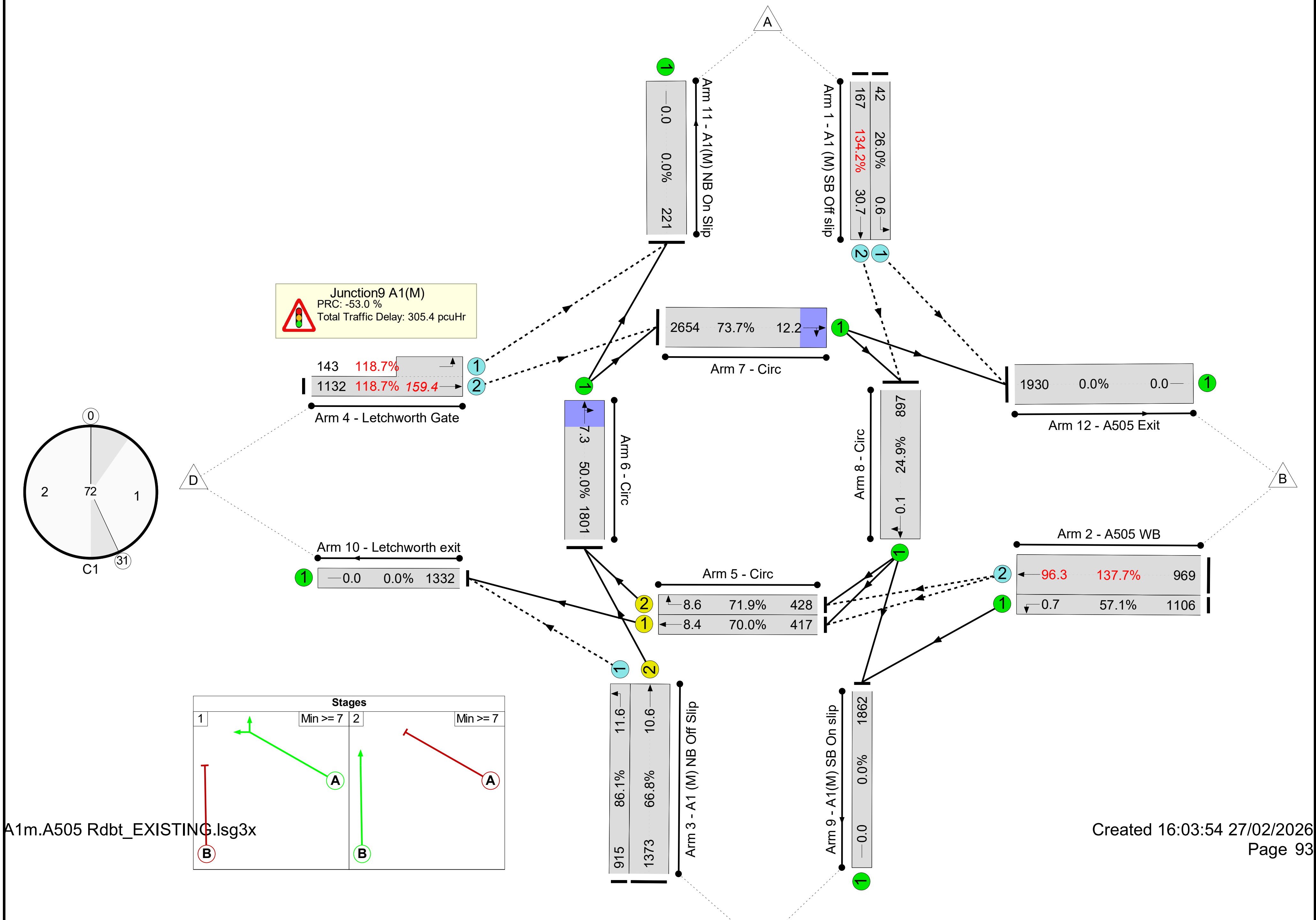
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1 (M) NB Off Slip Ahead	U	B	36	0
5/1	Circ Ahead	U	A	7	31
5/2	Circ Right	U	A	7	31

Network Layout Diagram


A
B
D
Junction9 A1(M)
PRC: -53.0 %
Total Traffic Delay: 305.4 pcuHr
Arm 11 - A1(M) NB On Slip
0.0 0.0% 221
Arm 1 - A1 (M) SB Off slip
167 134.2% 30.7
42 26.0% 0.6
Arm 7 - Circ
2654 73.7% 12.2
Arm 4 - Letchworth Gate
143 118.7%
1132 118.7% 159.4
Arm 12 - A505 Exit
1930 0.0% 0.0
Arm 6 - Circ
7.3 50.0% 1801
Arm 8 - Circ
897 24.9% 0.1
Arm 2 - A505 WB
96.3 137.7% 969
0.7 57.1% 1106
Arm 10 - Letchworth exit
0.0 0.0% 1332
Arm 5 - Circ
8.6 71.9% 428
8.4 70.0% 417
Arm 3 - A1 (M) NB Off Slip
11.6 86.1% 915
10.6 66.8% 1373
Arm 9 - A1(M) SB On slip
1862 0.0% 0.0
C1
72
0
31
Stages
Min >= 7
Min >= 7

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**137.7%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**137.7%**
1/1	A1 (M) SB Off slip Left	O	N/A	N/A	-		-	-	-	-	42	1961	161	26.0%
1/2	A1 (M) SB Off slip Ahead	O	N/A	N/A	-		-	-	-	-	167	2080	124	134.2%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1106	1936	1936	57.1%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	969	4178	704	137.7%
3/1	A1 (M) NB Off Slip Left	O	N/A	N/A	-		-	-	-	-	915	1936	1062	86.1%
3/2	A1 (M) NB Off Slip Ahead	U	N/A	N/A	B		1	36	-	-	1373	4000	2056	66.8%
4/2+4/1	Letchworth Gate Ahead Left	O	N/A	N/A	-		-	-	-	-	1275	1894:1834	954+120	118.7 : 118.7%
5/1	Circ Ahead	U	N/A	N/A	A		1	24	-	-	566	1714	595	70.0%
5/2	Circ Right	U	N/A	N/A	A		1	24	-	-	589	1714	595	71.9%
6/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1962	3600	3600	50.0%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2956	3600	3600	73.7%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1076	3600	3600	24.9%
9/1	A1(M) SB On slip	U	N/A	N/A	-		-	-	-	-	1996	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1481	Inf	Inf	0.0%
11/1	A1(M) NB On Slip	U	N/A	N/A	-		-	-	-	-	281	Inf	Inf	0.0%

Detailed Input Data And Results

12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2089	Inf	Inf	0.0%

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: A1(m) Junction 10	**-**	**-**	**3298**	**636**	**0**	**35.2**	**270.2**	**0.0**	**305.4**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**3298**	**636**	**0**	**35.2**	**270.2**	**0.0**	**305.4**	**-**	**-**	**-**	**-**	
1/1	42	42	42	0	0	0.1	0.2	-	0.3	22.6	0.4	0.2	0.6	
1/2	167	124	124	0	0	2.2	23.1	-	25.3	545.1	7.6	23.1	30.7	
2/1	1106	1106	-	-	-	0.0	0.7	-	0.7	2.2	0.0	0.7	0.7	
2/2	969	704	704	0	0	13.1	134.4	-	147.5	548.1	29.1	67.2	96.3	
3/1	915	915	279	636	0	0.3	3.0	-	3.3	12.9	8.6	3.0	11.6	
3/2	1373	1373	-	-	-	4.9	1.0	-	5.9	15.6	10.1	0.5	10.6	
4/2+4/1	1275	1074	2149	0	0	9.0	103.4	-	112.4	317.4	56.0	103.4	159.4	
5/1	417	417	-	-	-	2.6	1.2	-	3.8	32.7	7.3	1.2	8.4	
5/2	428	428	-	-	-	2.2	1.3	-	3.5	29.4	7.4	1.3	8.6	
6/1	1801	1801	-	-	-	0.1	0.5	-	0.6	1.3	7.0	0.3	7.3	
7/1	2654	2654	-	-	-	0.5	1.4	-	1.9	2.5	11.5	0.7	12.2	
8/1	897	897	-	-	-	0.0	0.2	-	0.2	0.7	0.0	0.1	0.1	
9/1	1862	1862	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1332	1332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	221	221	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1930	1930	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

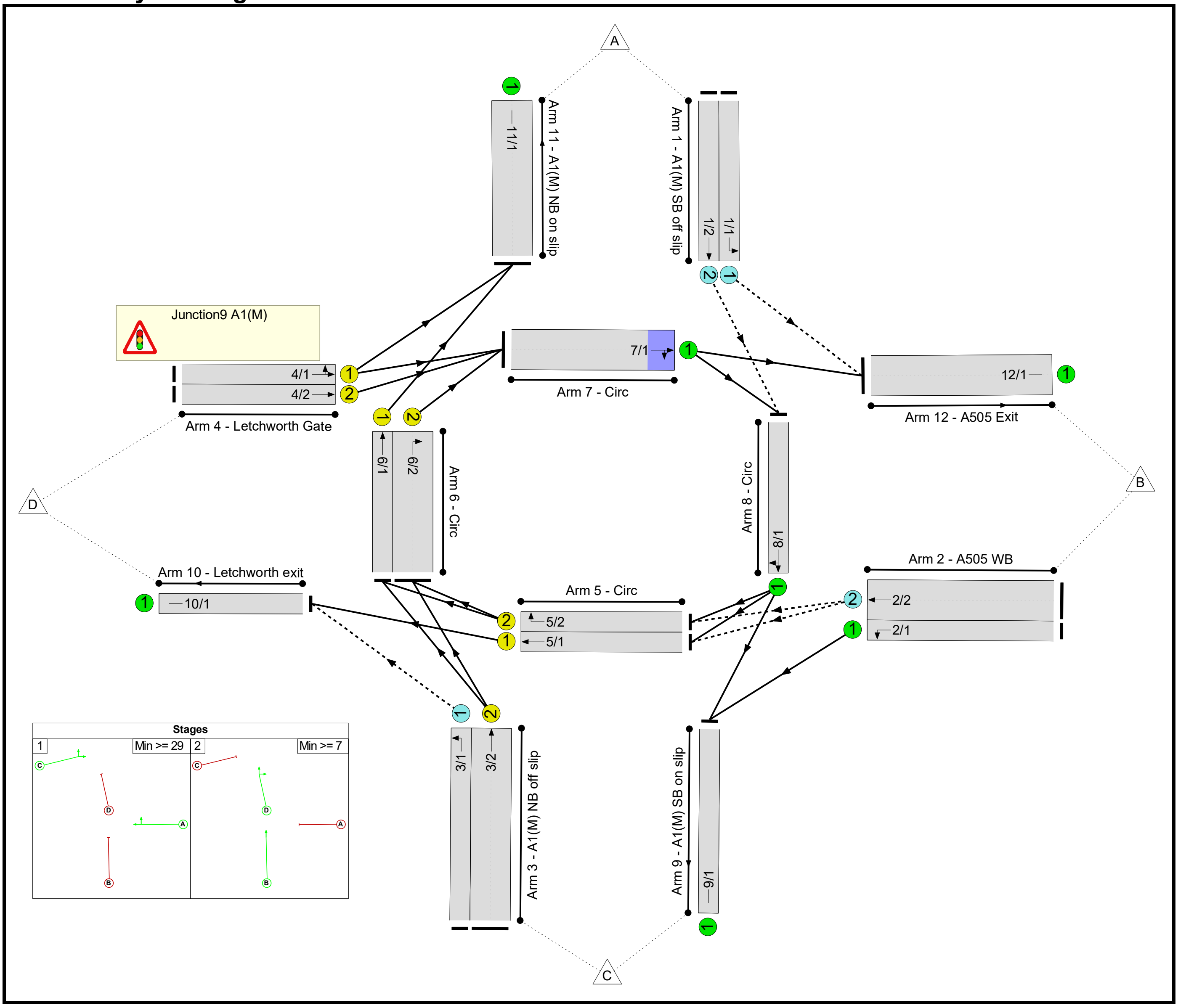
C1 PRC for Signalled Lanes (%): 25.2 Total Delay for Signalled Lanes (pcuHr): 13.23 Cycle Time (s): 72
PRC Over All Lanes (%): -53.0 Total Delay Over All Lanes(pcuHr): 305.38

Detailed Input Data And Results

User and Project Details

Project:	**Growing Baldock**
Title:	**A1(m) Junction 10 - PROPOSED**
Location:	Baldock, SG6 2EA
Client:	Urban & Civic
Site Ref(s):	J13
Design Layout Ref:	-
Date Started:	05.08.2025
Date Completed:	-
Checked By:	NL/ZT
Additional detail:	
File name:	A1m.A505 Rdbt_PROPOSED.lsg3x
Author:	Jay James
Company:	ITP by Haskoning
Address:	
Linsig Version:	3, 3, 0, 6

Network Layout Diagram



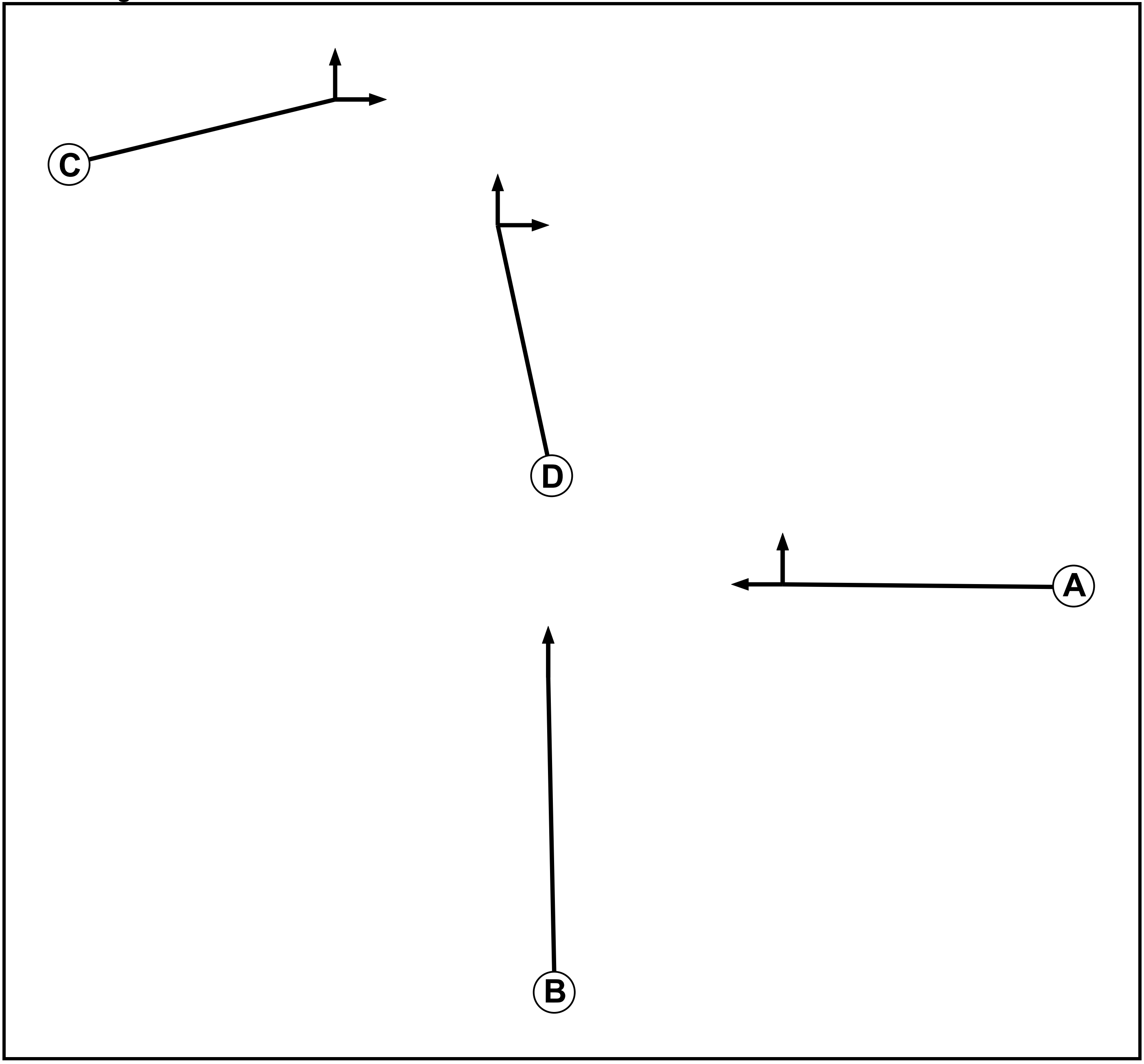
Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2029 w Dev AM	2029 w Dev AM	Network Control Plan 1	08:00 - 09:00	80	-24.1	107.15
2	2029 w Dev PM	2029 w Dev PM	Network Control Plan 1	17:00 - 18:00	80	-21.6	129.82
3	2043 Opt1 AM	2043 Option 1 AM	Network Control Plan 1	08:00 - 09:00	80	-65.8	271.13
4	2043 Opt1 PM	2043 Option 1PM	Network Control Plan 1	17:00 - 18:00	80	-67.4	284.26
5	2043 Opt2 AM	2043 Option 2 AM	Network Control Plan 1	08:00 - 09:00	80	-57.5	237.82
6	2043 Opt2 PM	2043 Option2 PM	Network Control Plan 1	17:00 - 18:00	80	-67.0	286.82

Controller Summary

Controller	Type	SCN	Stage Stream	Num Phases	Num Stages	Controls Junctions	Controller Notes
C1	Gen		Stage Stream 1	4	2	Junction9 A1(M)	

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		-9999	29
B	Traffic		-9999	7
C	Traffic		-9999	7
D	Traffic		-9999	7

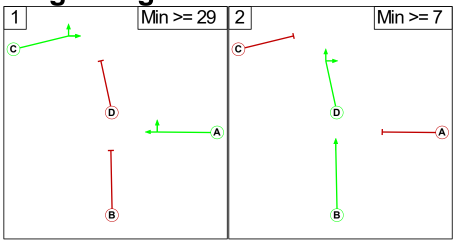
Phase Intergreens Matrix

		Starting Phase			
		A	B	C	D
Terminating Phase	A		7	-	-
	B	5		-	-
	C	-	-		5
	D	-	-	5	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B D

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	7	7
2	1	B	Losing	5	5

Prohibited Stage Change

		To Stage	
		1	2
From Stage	1		12
	2	10	

Lane Input Data

Lane	Lane Type	Phases	Start Disp. (s)	End Disp. (s)	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient (%)	Nearside Lane	Turns	Turning Radius (m)
Junction: Junction9 A1(M)												
1/1 (A1(M) SB off slip)	O		2	3	60.0	Geom	-	3.46	0.00	Y	Arm 12 Left	Inf
1/2 (A1(M) SB off slip)	O		2	3	60.0	Geom	-	3.25	0.00	N	Arm 8 Ahead	Inf
2/1 (A505 WB)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Left	100.00
2/2 (A505 WB)	O		2	3	60.0	User	4178	-	-	-	-	-
3/1 (A1(M) NB off slip)	O		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	100.00
3/2 (A1(M) NB off slip)	U	B	2	3	60.0	User	4000	-	-	-	-	-
4/1 (Letchworth Gate)	U	C	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 7 Ahead	Inf
											Arm 11 Left	26.00
4/2 (Letchworth Gate)	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm 7 Ahead	40.00
5/1 (Circ)	U	A	2	3	20.5	User	1714	-	-	-	-	-
5/2 (Circ)	U	A	2	3	20.5	User	1714	-	-	-	-	-
6/1 (Circ)	U	D	2	3	14.0	Geom	-	3.50	0.00	Y	Arm 11 Ahead	133.00
6/2 (Circ)	U	D	2	3	14.0	User	4178	-	-	-	-	-
7/1 (Circ)	U		2	3	16.7	User	3600	-	-	-	-	-
8/1 (Circ)	U		2	3	14.3	Geom	-	3.80	0.00	Y	Arm 5 Right	62.00
											Arm 9 Ahead	62.00
9/1 (A1(M) SB on slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (Letchworth exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (A1(M) NB on slip)	U		2	3	60.0	Inf	-	-	-	-	-	-

12/1 (A505 Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Give-Way Lane Input Data

Junction: Junction9 A1(M)											
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)**
1/1 (A1(M) SB off slip)	12/1 (Left)	715	0	7/1	0.22	All	-	-	-	-	-
1/2 (A1(M) SB off slip)	8/1 (Ahead)	1000	0	7/1	0.40	All	-	-	-	-	-
2/2 (A505 WB)	5/1 (Ahead)	1000	0	8/1	0.33	All	-	-	-	-	-
	5/2 (Ahead)	1000	0	8/1	0.33	All					
3/1 (A1(M) NB off slip)	10/1 (Left)	1200	0	5/1	0.33	All	-	-	-	-	-

Lane Connector Input Data

Junction: Junction9 A1(M)				
Org Lane	Dest Lane	Junction	Modelled Mean Cruise Time (s)	Platoon Dispersion
1/1	12/1	Internal	5	35
1/2	8/1	Internal	5	35
2/1	9/1	Internal	26	35
2/2	5/1	Internal	9	35
2/2	5/2	Internal	9	35
3/1	10/1	Internal	26	35
3/2	6/1	Internal	6	35
3/2	6/2	Internal	6	35
4/1	7/1	Internal	7	35
4/1	11/1	Internal	26	35
4/2	7/1	Internal	7	35
5/1	10/1	Internal	26	35
5/2	6/1	Internal	6	35
5/2	6/2	Internal	6	35
6/1	11/1	Internal	26	35
6/2	7/1	Internal	7	35
7/1	8/1	Internal	6	35
7/1	12/1	Internal	26	35
8/1	5/1	Internal	9	35
8/1	5/2	Internal	9	35
8/1	9/1	Internal	19	35

Scenario 1: '2029 w Dev AM' (FG1: '2029 w Dev AM', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	66.9 %	1899	1899
				Arm 11 Left	26.00	33.1 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	32.5 %	1948	1948
				Arm 9 Ahead	62.00	67.5 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 1

Scenario 2: '2029 w Dev PM' (FG2: '2029 w Dev PM', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	82.2 %	1915	1915
				Arm 11 Left	26.00	17.8 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	17.4 %	1948	1948
				Arm 9 Ahead	62.00	82.6 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2043 Opt1 AM' (FG3: '2043 Option 1 AM', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	64.6 %	1896	1896
				Arm 11 Left	26.00	35.4 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	31.1 %	1948	1948
				Arm 9 Ahead	62.00	68.9 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 3

Scenario 4: '2043 Opt1 PM' (FG4: '2043 Option 1PM', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	76.6 %	1909	1909
				Arm 11 Left	26.00	23.4 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	17.3 %	1948	1948
				Arm 9 Ahead	62.00	82.7 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 4

Scenario 5: '2043 Opt2 AM' (FG5: '2043 Option 2 AM', Plan 1: 'Network Control Plan 1')
Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	64.8 %	1897	1897
				Arm 11 Left	26.00	35.2 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	31.8 %	1948	1948
				Arm 9 Ahead	62.00	68.2 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 5

Scenario 6: '2043 Opt2 PM' (FG6: '2043 Option2 PM', Plan 1: 'Network Control Plan 1')

Lane Saturation Flows

Junction: Junction9 A1(M)								
Lane	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A1(M) SB off slip)	3.46	0.00	Y	Arm 12 Left	Inf	100.0 %	1961	1961
1/2 (A1(M) SB off slip)	3.25	0.00	N	Arm 8 Ahead	Inf	100.0 %	2080	2080
2/1 (A505 WB)	3.50	0.00	Y	Arm 9 Left	100.00	100.0 %	1936	1936
2/2 (A505 WB Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
3/1 (A1(M) NB off slip)	3.50	0.00	Y	Arm 10 Left	100.00	100.0 %	1936	1936
3/2 (A1(M) NB off slip Lane 2)	This lane uses a directly entered Saturation Flow						4000	4000
4/1 (Letchworth Gate)	3.20	0.00	Y	Arm 7 Ahead	Inf	76.6 %	1909	1909
				Arm 11 Left	26.00	23.4 %		
4/2 (Letchworth Gate)	3.50	0.00	N	Arm 7 Ahead	40.00	100.0 %	2029	2029
5/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						1714	1714
5/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						1714	1714
6/1 (Circ)	3.50	0.00	Y	Arm 11 Ahead	133.00	100.0 %	1943	1943
6/2 (Circ Lane 2)	This lane uses a directly entered Saturation Flow						4178	4178
7/1 (Circ Lane 1)	This lane uses a directly entered Saturation Flow						3600	3600
8/1 (Circ)	3.80	0.00	Y	Arm 5 Right	62.00	17.3 %	1948	1948
				Arm 9 Ahead	62.00	82.7 %		
9/1 (A1(M) SB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
10/1 (Letchworth exit Lane 1)	Infinite Saturation Flow						Inf	Inf
11/1 (A1(M) NB on slip Lane 1)	Infinite Saturation Flow						Inf	Inf
12/1 (A505 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Bonus Green Times
No Bonus Greens are defined For Scenario 6

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2029 w Dev AM'	08:00	09:00	01:00	
2: '2029 w Dev PM'	17:00	18:00	01:00	
3: '2043 Option 1 AM'	08:00	09:00	01:00	
4: '2043 Option 1PM'	17:00	18:00	01:00	
5: '2043 Option 2 AM'	08:00	09:00	01:00	
6: '2043 Option2 PM'	17:00	18:00	01:00	

Traffic Flows, Desired
FG1: '2029 w Dev AM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	0	256	277
	B	127	316	670	358	1471
	C	0	1170	0	698	1868
	D	179	339	587	26	1131
	Tot.	306	1846	1257	1338	4747

FG2: '2029 w Dev PM'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	162	178
	B	126	313	984	277	1700
	C	0	1363	0	855	2218
	D	100	183	865	20	1168
	Tot.	226	1875	1849	1314	5264

FG3: '2043 Option 1 AM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	83	0	255	338
	B	188	433	1004	459	2084
	C	0	1204	0	823	2027
	D	211	410	608	20	1249
	Tot.	399	2130	1612	1557	5698

FG4: '2043 Option 1PM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	41	0	167	208
	B	138	442	1126	392	2098
	C	0	1372	0	913	2285
	D	143	224	888	19	1274
	Tot.	281	2079	2014	1491	5865

FG5: '2043 Option 2 AM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	78	0	261	339
	B	196	387	954	440	1977
	C	0	1191	0	807	1998
	D	209	409	606	21	1245
	Tot.	405	2065	1560	1529	5559

FG6: '2043 Option2 PM'
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	42	0	167	209
	B	138	451	1106	380	2075
	C	0	1373	0	915	2288
	D	143	223	890	19	1275
	Tot.	281	2089	1996	1481	5847

Scenario 1: '2029 w Dev AM' (FG1: '2029 w Dev AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	0	256	277
	B	127	316	670	358	1471
	C	0	1170	0	698	1868
	D	179	339	587	26	1131
	Tot.	306	1846	1257	1338	4747

Traffic Flows, Difference
Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 2: '2029 w Dev PM' (FG2: '2029 w Dev PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	16	0	162	178
	B	126	313	984	277	1700
	C	0	1363	0	855	2218
	D	100	183	865	20	1168
	Tot.	226	1875	1849	1314	5264

Traffic Flows, Difference
Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 3: '2043 Opt1 AM' (FG3: '2043 Option 1 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	83	0	255	338
	B	188	433	1004	459	2084
	C	0	1204	0	823	2027
	D	211	410	608	20	1249
	Tot.	399	2130	1612	1557	5698

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 4: '2043 Opt1 PM' (FG4: '2043 Option 1PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Actual

Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	41	0	167	208
	B	138	442	1126	392	2098
	C	0	1372	0	913	2285
	D	143	224	888	19	1274
	Tot.	281	2079	2014	1491	5865

Traffic Flows, Difference

Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 5: '2043 Opt2 AM' (FG5: '2043 Option 2 AM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	78	0	261	339
	B	196	387	954	440	1977
	C	0	1191	0	807	1998
	D	209	409	606	21	1245
	Tot.	405	2065	1560	1529	5559

Traffic Flows, Difference
Difference :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Scenario 6: '2043 Opt2 PM' (FG6: '2043 Option2 PM', Plan 1: 'Network Control Plan 1')
Traffic Flows, Actual
Actual Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	0	167	209
	B	138	451	1106	380	2075
	C	0	1373	0	915	2288
	D	143	223	890	19	1275
	Tot.	281	2089	1996	1481	5847

Traffic Flows, Difference
Difference :

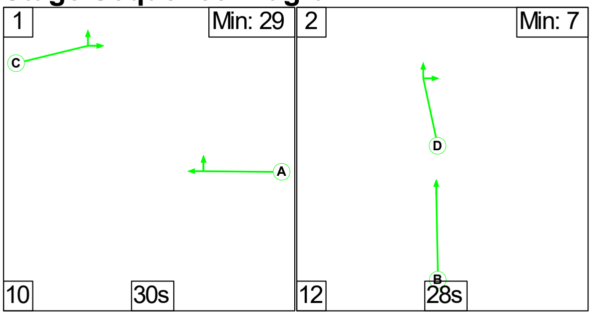
		Destination				
		A	B	C	D	Tot.
Origin	A	0	0	0	0	0
	B	0	0	0	0	0
	C	0	0	0	0	0
	D	0	0	0	0	0
	Tot.	0	0	0	0	0

Traffic Lane Flows

Lane	Scenario 1: 2029 w Dev AM	Scenario 2: 2029 w Dev PM	Scenario 3: 2043 Opt1 AM	Scenario 4: 2043 Opt1 PM	Scenario 5: 2043 Opt2 AM	Scenario 6: 2043 Opt2 PM
Junction: Junction9 A1(M)						
1/1	21	16	83	41	78	42
1/2	256	162	255	167	261	167
2/1	670	984	1004	1126	954	1106
2/2	801	716	1080	972	1023	969
3/1	698	855	823	913	807	915
3/2	1170	1363	1204	1372	1191	1373
4/1	540	561	596	612	594	612
4/2	591	607	653	662	651	663
5/1	640	459	734	578	722	566
5/2	443	439	621	580	583	589
6/1	127	126	188	138	196	138
6/2	1486	1676	1637	1814	1578	1824
7/1	2438	2744	2675	2945	2614	2956
8/1	869	1047	883	1074	888	1076
9/1	1257	1849	1612	2014	1560	1996
10/1	1338	1314	1557	1491	1529	1481
11/1	306	226	399	281	405	281
12/1	1846	1875	2130	2079	2065	2089

Scenario 1: '2029 w Dev AM' (FG1: '2029 w Dev AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



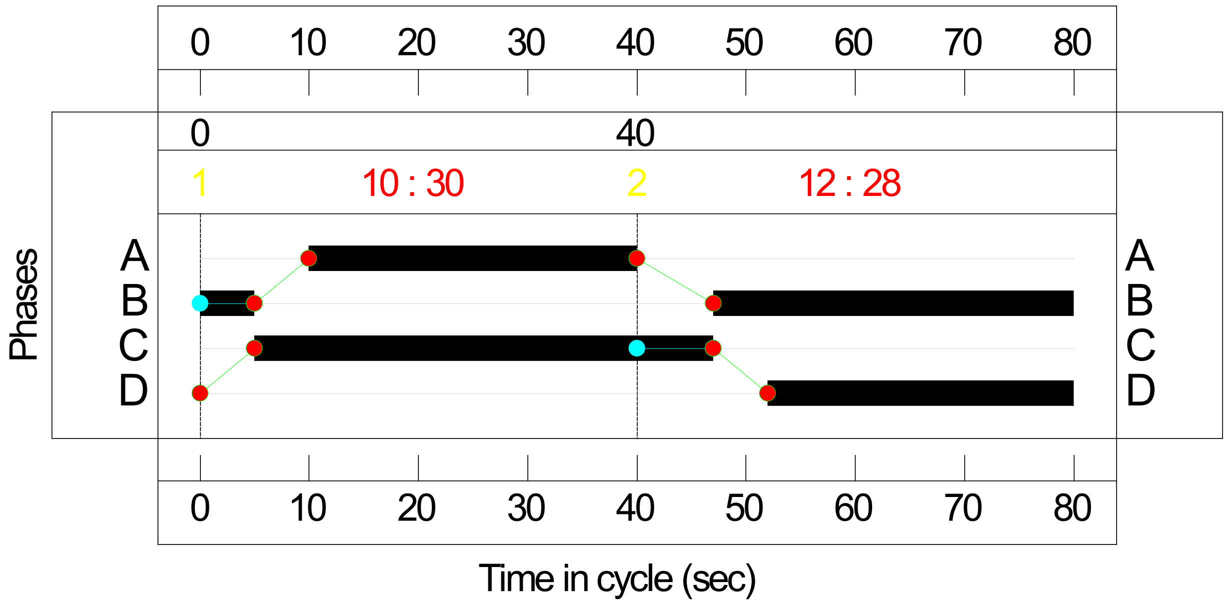
Stage Timings

Stage	1	2
Duration	30	28
Change Point	0	40

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	30	10	40
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	38	47	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	42	5	47
D	Circ Right Ahead Circulatory	Traffic	28	52	0

Signal Timings Diagram

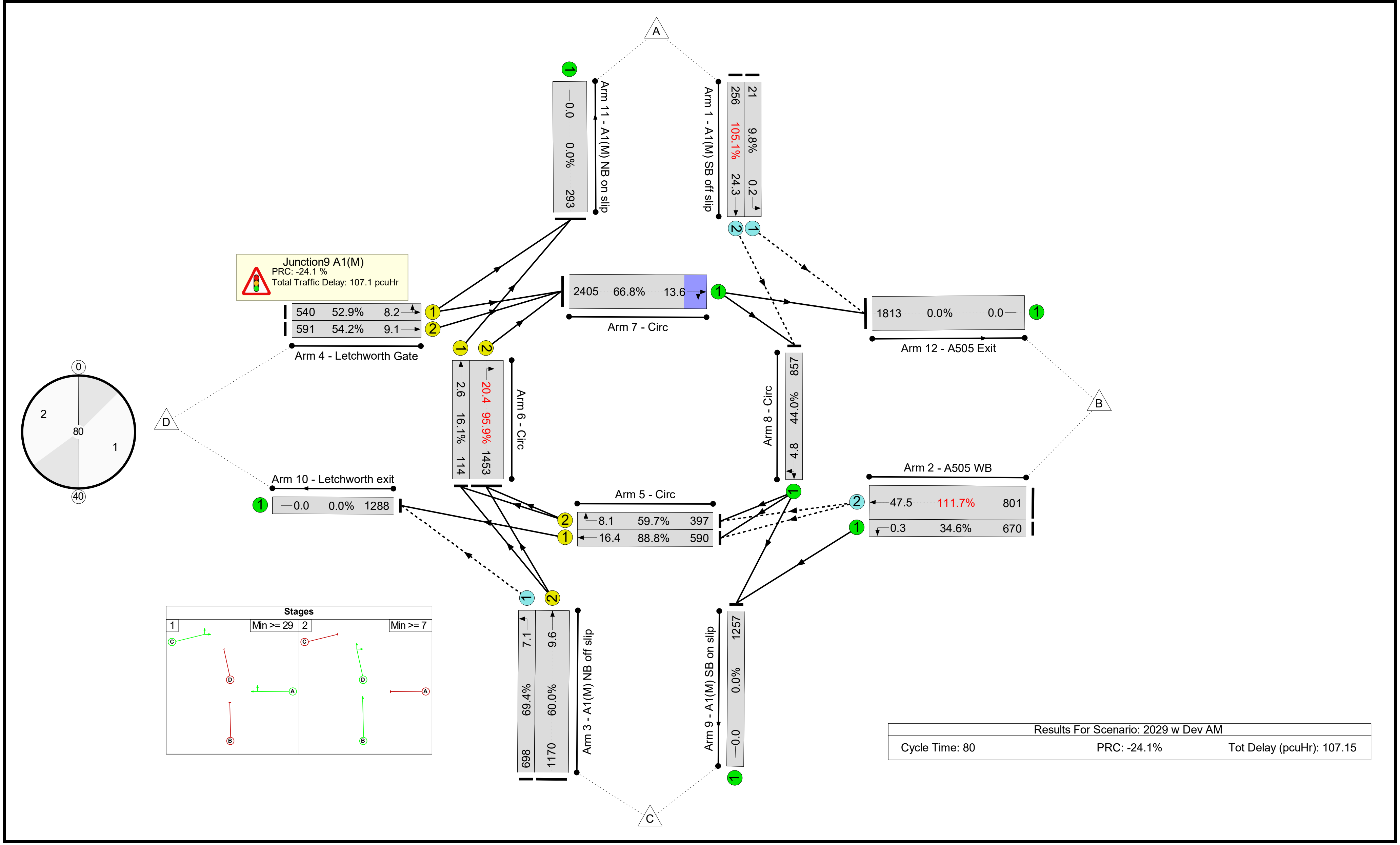


Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1(M) NB off slip Ahead	U	B	47	5
4/1	Letchworth Gate Ahead Left	U	C	5	47
4/2	Letchworth Gate Ahead	U	C	5	47
5/1	Circ Ahead	U	A	10	40
5/2	Circ Right	U	A	10	40
6/1	Circ Ahead	U	D	52	0
6/2	Circ Right	U	D	52	0

Detailed Input Data And Results

Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**111.7%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**111.7%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	21	1961	214	9.8%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	256	2080	244	105.1%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	670	1936	1936	34.6%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	801	4178	717	111.7%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	698	1936	1005	69.4%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	38	-	-	1170	4000	1950	60.0%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	42	-	-	540	1899	1021	52.9%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	42	-	-	591	2029	1091	54.2%
5/1	Circ Ahead	U	N/A	N/A	A		1	30	-	-	640	1714	664	88.8%
5/2	Circ Right	U	N/A	N/A	A		1	30	-	-	443	1714	664	59.7%
6/1	Circ Ahead	U	N/A	N/A	D		1	28	-	-	127	1943	704	16.1%
6/2	Circ Right	U	N/A	N/A	D		1	28	-	-	1486	4178	1515	95.9%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2438	3600	3600	66.8%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	869	1948	1948	44.0%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	1257	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1338	Inf	Inf	0.0%

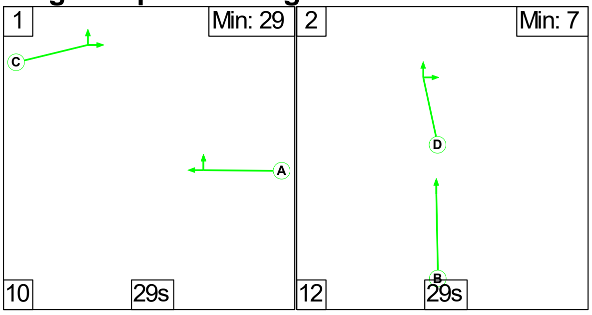
11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	306	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1846	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1252**	**428**	**0**	**30.9**	**76.3**	**0.0**	**107.1**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1252**	**428**	**0**	**30.9**	**76.3**	**0.0**	**107.1**	**-**	**-**	**-**	**-**	
1/1	21	21	21	0	0	0.0	0.1	-	0.1	15.9	0.2	0.1	0.2	
1/2	256	244	244	0	0	2.1	11.7	-	13.9	194.8	12.6	11.7	24.3	
2/1	670	670	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.3	0.3	
2/2	801	717	717	0	0	5.5	46.3	-	51.8	232.9	24.4	23.1	47.5	
3/1	698	698	270	428	0	0.1	1.1	-	1.2	6.3	6.0	1.1	7.1	
3/2	1170	1170	-	-	-	4.8	0.7	-	5.6	17.2	9.3	0.4	9.6	
4/1	540	540	-	-	-	1.8	0.6	-	2.4	15.7	7.7	0.6	8.2	
4/2	591	591	-	-	-	2.0	0.6	-	2.6	15.7	8.5	0.6	9.1	
5/1	590	590	-	-	-	4.8	3.6	-	8.4	51.3	12.8	3.6	16.4	
5/2	397	397	-	-	-	1.8	0.7	-	2.6	23.4	7.4	0.7	8.1	
6/1	114	114	-	-	-	0.9	0.1	-	1.0	30.7	2.5	0.1	2.6	
6/2	1453	1453	-	-	-	6.4	9.1	-	15.5	38.3	15.8	4.5	20.4	
7/1	2405	2405	-	-	-	0.6	1.0	-	1.6	2.4	13.1	0.5	13.6	
8/1	857	857	-	-	-	0.0	0.4	-	0.4	1.7	4.4	0.4	4.8	
9/1	1257	1257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1288	1288	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	293	293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1813	1813	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -6.6 Total Delay for Signalled Lanes (pcuHr): 37.92 Cycle Time (s): 80
PRC Over All Lanes (%): -24.1 Total Delay Over All Lanes(pcuHr): 107.15

Scenario 2: '2029 w Dev PM' (FG2: '2029 w Dev PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



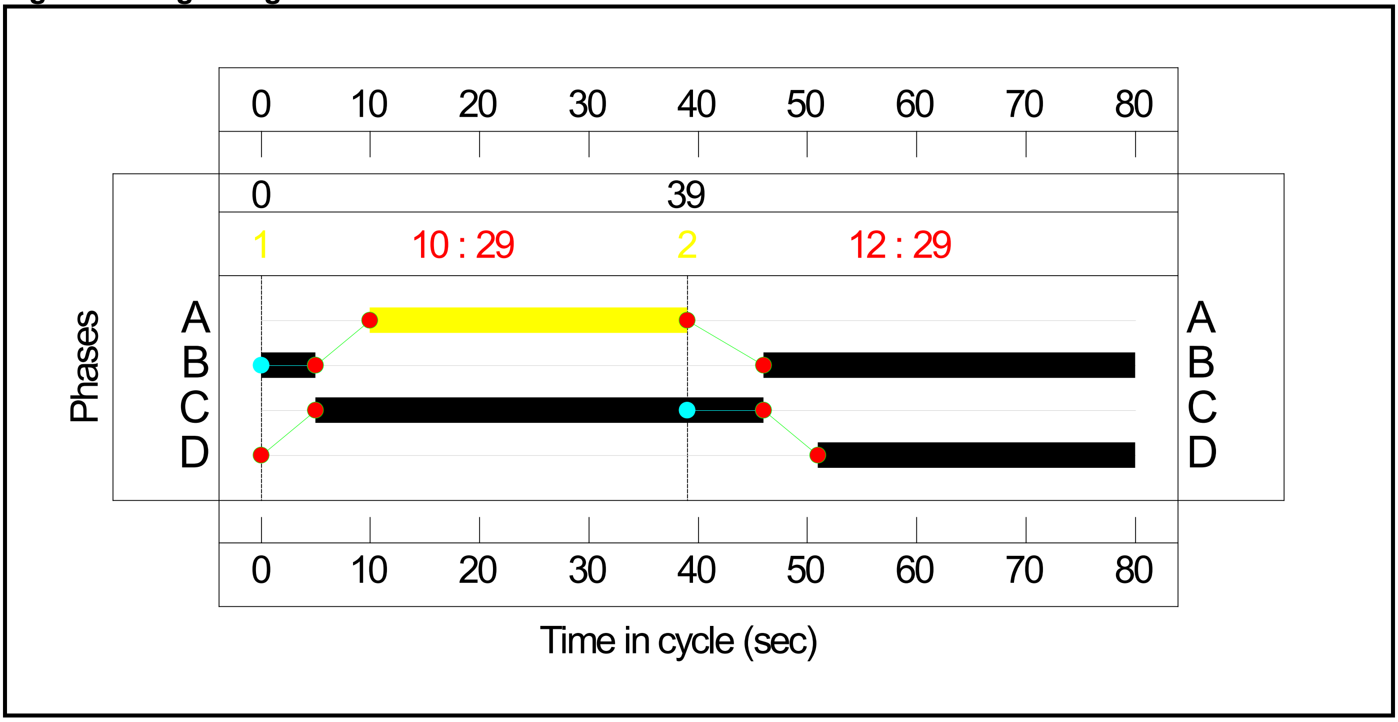
Stage Timings

Stage	1	2
Duration	29	29
Change Point	0	39

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	29	10	39
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	39	46	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	41	5	46
D	Circ Right Ahead Circulatory	Traffic	29	51	0

Signal Timings Diagram

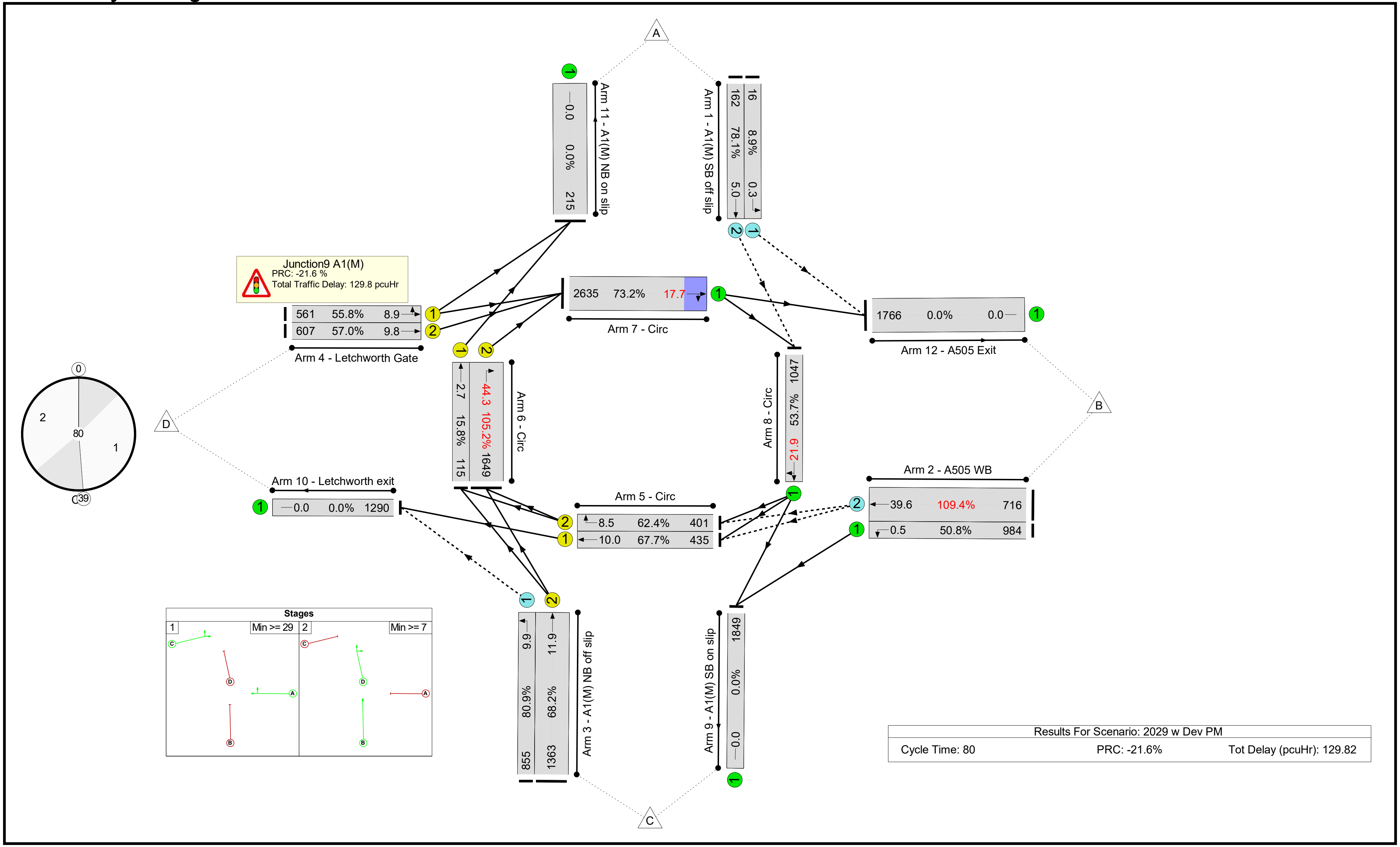


Lane Green Times

Junction: Junction9 A1(M)					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
3/2	A1(M) NB off slip Ahead	U	B	46	5
4/1	Letchworth Gate Ahead Left	U	C	5	46
4/2	Letchworth Gate Ahead	U	C	5	46
5/1	Circ Ahead	U	A	10	39
5/2	Circ Right	U	A	10	39
6/1	Circ Ahead	U	D	51	0
6/2	Circ Right	U	D	51	0

Detailed Input Data And Results

Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**109.4%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**109.4%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	16	1961	180	8.9%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	162	2080	207	78.1%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	984	1936	1936	50.8%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	716	4178	654	109.4%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	855	1936	1056	80.9%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	39	-	-	1363	4000	2000	68.2%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	41	-	-	561	1915	1005	55.8%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	41	-	-	607	2029	1065	57.0%
5/1	Circ Ahead	U	N/A	N/A	A		1	29	-	-	459	1714	643	67.7%
5/2	Circ Right	U	N/A	N/A	A		1	29	-	-	439	1714	643	62.4%
6/1	Circ Ahead	U	N/A	N/A	D		1	29	-	-	126	1943	729	15.8%
6/2	Circ Right	U	N/A	N/A	D		1	29	-	-	1676	4178	1567	105.2%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2744	3600	3600	73.2%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1047	1948	1948	53.7%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	1849	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1314	Inf	Inf	0.0%

Detailed Input Data And Results

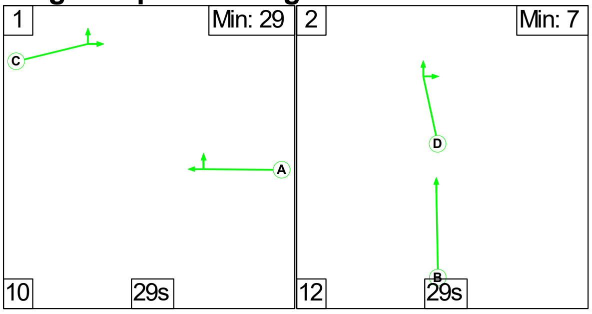
11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	226	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	1875	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1139**	**549**	**0**	**33.9**	**95.9**	**0.0**	**129.8**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1139**	**549**	**0**	**33.9**	**95.9**	**0.0**	**129.8**	**-**	**-**	**-**	**-**	
1/1	16	16	16	0	0	0.1	0.0	-	0.1	26.1	0.2	0.0	0.3	
1/2	162	162	162	0	0	1.1	1.7	-	2.7	60.6	3.3	1.7	5.0	
2/1	984	984	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5	
2/2	716	654	654	0	0	4.8	35.9	-	40.6	204.4	21.7	17.9	39.6	
3/1	855	855	306	549	0	0.2	2.1	-	2.3	9.8	7.8	2.1	9.9	
3/2	1363	1363	-	-	-	5.7	1.1	-	6.8	18.0	11.4	0.5	11.9	
4/1	561	561	-	-	-	2.0	0.6	-	2.6	16.8	8.3	0.6	8.9	
4/2	607	607	-	-	-	2.2	0.7	-	2.8	16.8	9.1	0.7	9.8	
5/1	435	435	-	-	-	3.0	1.0	-	4.0	33.1	8.9	1.0	10.0	
5/2	401	401	-	-	-	1.7	0.8	-	2.5	22.3	7.6	0.8	8.5	
6/1	115	115	-	-	-	0.9	0.1	-	0.9	29.6	2.6	0.1	2.7	
6/2	1649	1567	-	-	-	10.8	49.5	-	60.3	131.5	19.6	24.7	44.3	
7/1	2635	2635	-	-	-	0.7	1.4	-	2.1	2.9	17.1	0.7	17.7	
8/1	1047	1047	-	-	-	0.9	0.6	-	1.4	5.0	21.3	0.6	21.9	
9/1	1849	1849	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1290	1290	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	215	215	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1766	1766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -16.9 Total Delay for Signalled Lanes (pcuHr): 79.95 Cycle Time (s): 80
PRC Over All Lanes (%): -21.6 Total Delay Over All Lanes(pcuHr): 129.82

Scenario 3: '2043 Opt1 AM' (FG3: '2043 Option 1 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



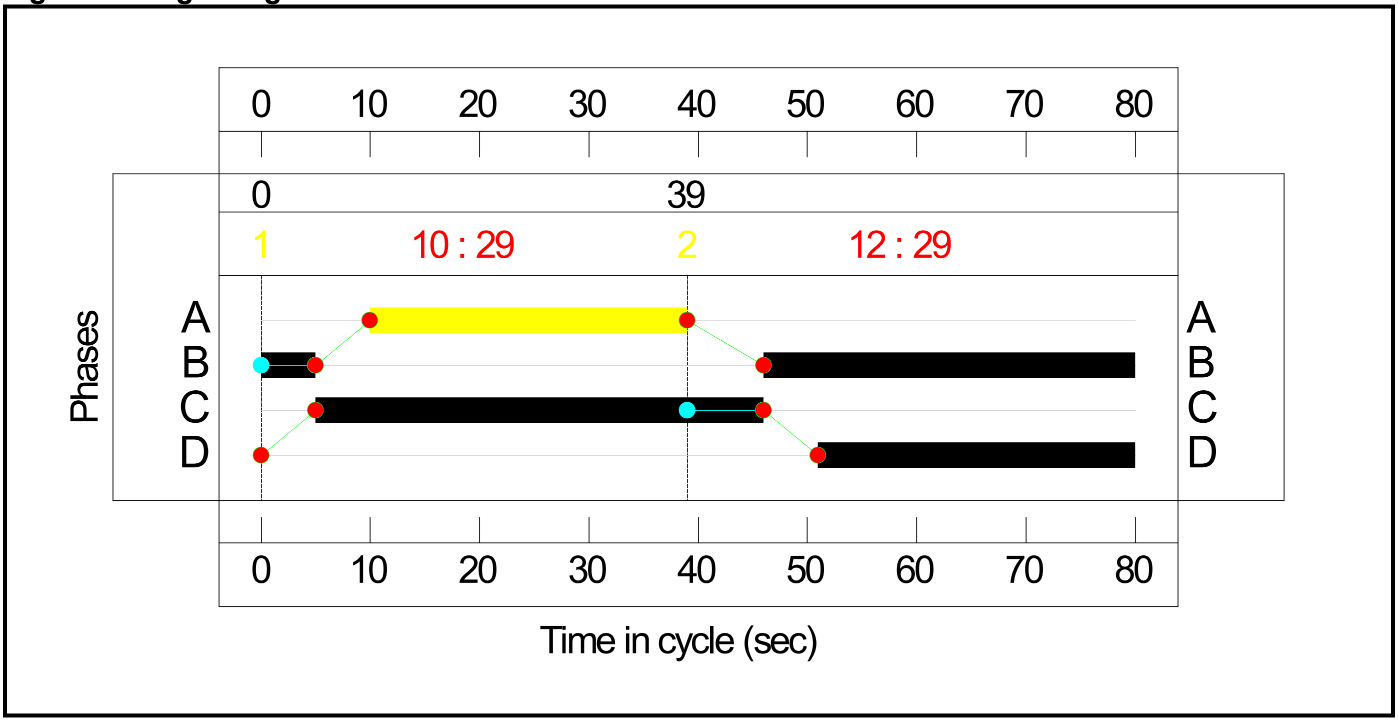
Stage Timings

Stage	1	2
Duration	29	29
Change Point	0	39

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	29	10	39
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	39	46	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	41	5	46
D	Circ Right Ahead Circulatory	Traffic	29	51	0

Signal Timings Diagram

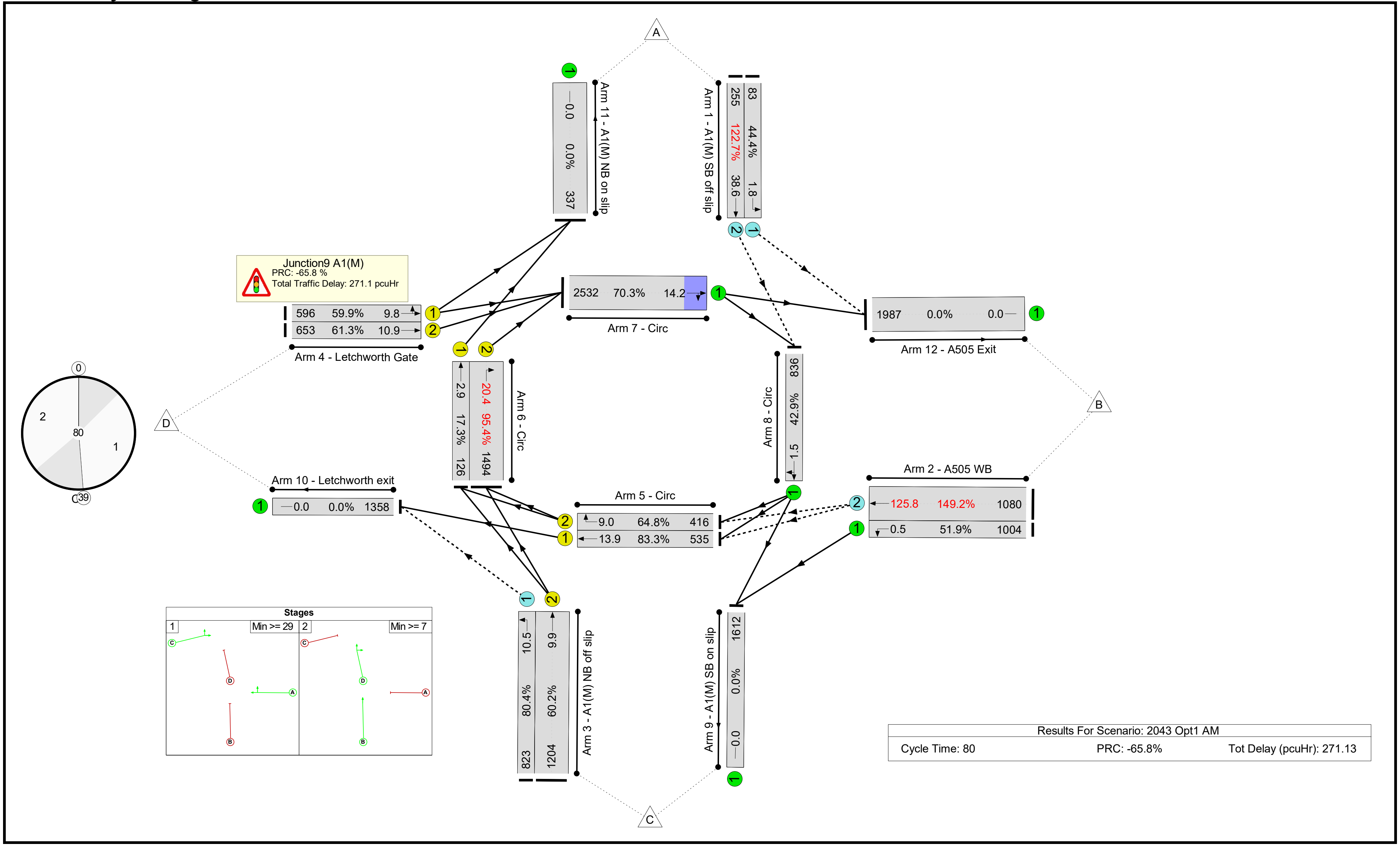


Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1(M) NB off slip Ahead	U	B	46	5
4/1	Letchworth Gate Ahead Left	U	C	5	46
4/2	Letchworth Gate Ahead	U	C	5	46
5/1	Circ Ahead	U	A	10	39
5/2	Circ Right	U	A	10	39
6/1	Circ Ahead	U	D	51	0
6/2	Circ Right	U	D	51	0

Detailed Input Data And Results

Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**149.2%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**149.2%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	83	1961	187	44.4%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	255	2080	208	122.7%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1004	1936	1936	51.9%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	1080	4178	724	149.2%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	823	1936	1023	80.4%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	39	-	-	1204	4000	2000	60.2%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	41	-	-	596	1896	995	59.9%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	41	-	-	653	2029	1065	61.3%
5/1	Circ Ahead	U	N/A	N/A	A		1	29	-	-	734	1714	643	83.3%
5/2	Circ Right	U	N/A	N/A	A		1	29	-	-	621	1714	643	64.8%
6/1	Circ Ahead	U	N/A	N/A	D		1	29	-	-	188	1943	729	17.3%
6/2	Circ Right	U	N/A	N/A	D		1	29	-	-	1637	4178	1567	95.4%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2675	3600	3600	70.3%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	883	1948	1948	42.9%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	1612	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1557	Inf	Inf	0.0%

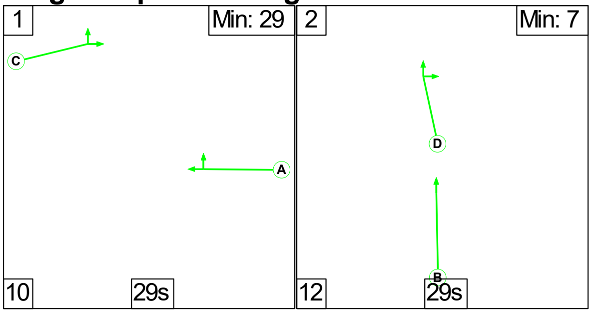
11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	399	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2130	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1288**	**550**	**0**	**47.0**	**224.2**	**0.0**	**271.1**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1288**	**550**	**0**	**47.0**	**224.2**	**0.0**	**271.1**	**-**	**-**	**-**	**-**	
1/1	83	83	83	0	0	0.3	0.4	-	0.7	32.3	1.4	0.4	1.8	
1/2	255	208	208	0	0	3.3	26.0	-	29.3	414.3	12.6	26.0	38.6	
2/1	1004	1004	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5	
2/2	1080	724	724	0	0	19.6	179.6	-	199.1	663.8	36.0	89.8	125.8	
3/1	823	823	273	550	0	0.3	2.0	-	2.3	10.1	8.5	2.0	10.5	
3/2	1204	1204	-	-	-	4.8	0.8	-	5.5	16.6	9.5	0.4	9.9	
4/1	596	596	-	-	-	2.2	0.7	-	2.9	17.7	9.1	0.7	9.8	
4/2	653	653	-	-	-	2.4	0.8	-	3.2	17.7	10.2	0.8	10.9	
5/1	535	535	-	-	-	4.0	2.4	-	6.4	43.3	11.5	2.4	13.9	
5/2	416	416	-	-	-	2.0	0.9	-	2.9	25.2	8.1	0.9	9.0	
6/1	126	126	-	-	-	0.9	0.1	-	1.0	29.6	2.8	0.1	2.9	
6/2	1494	1494	-	-	-	6.4	8.4	-	14.8	35.7	16.3	4.2	20.4	
7/1	2532	2532	-	-	-	0.6	1.2	-	1.8	2.6	13.6	0.6	14.2	
8/1	836	836	-	-	-	0.0	0.4	-	0.4	1.6	1.1	0.4	1.5	
9/1	1612	1612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1358	1358	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	337	337	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1987	1987	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -6.0 Total Delay for Signalled Lanes (pcuHr): 36.86 Cycle Time (s): 80
PRC Over All Lanes (%): -65.8 Total Delay Over All Lanes(pcuHr): 271.13

Scenario 4: '2043 Opt1 PM' (FG4: '2043 Option 1PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



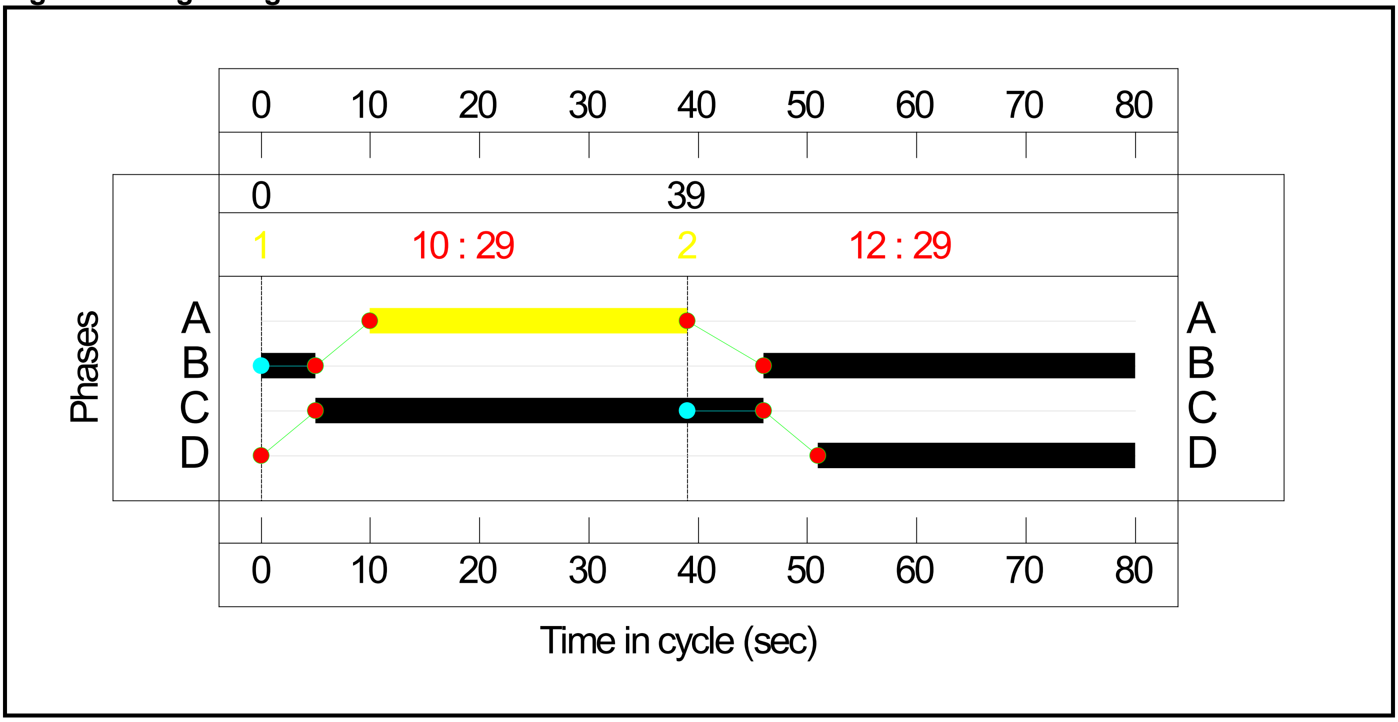
Stage Timings

Stage	1	2
Duration	29	29
Change Point	0	39

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	29	10	39
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	39	46	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	41	5	46
D	Circ Right Ahead Circulatory	Traffic	29	51	0

Signal Timings Diagram

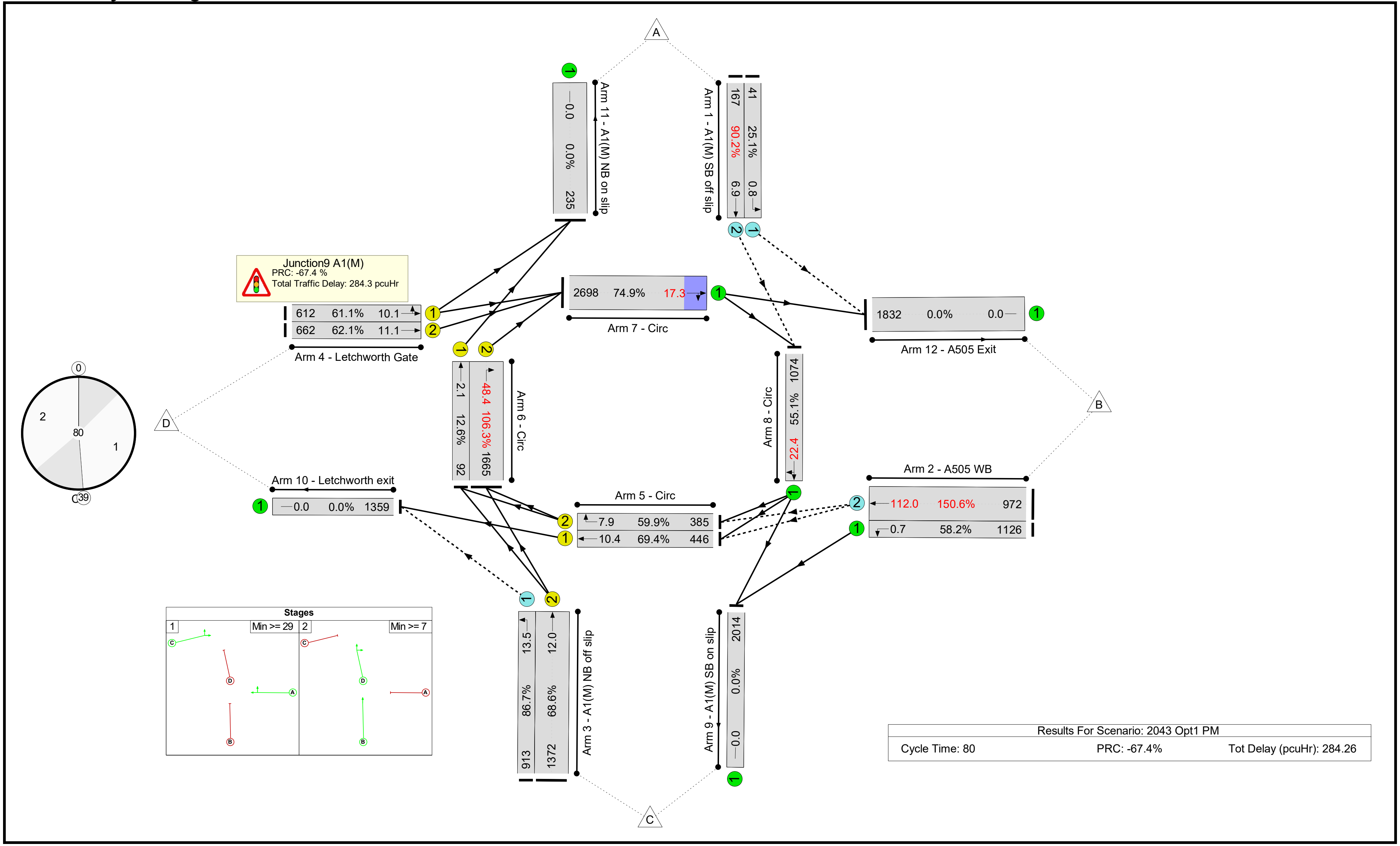


Lane Green Times

Junction: Junction9 A1(M)					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
3/2	A1(M) NB off slip Ahead	U	B	46	5
4/1	Letchworth Gate Ahead Left	U	C	5	46
4/2	Letchworth Gate Ahead	U	C	5	46
5/1	Circ Ahead	U	A	10	39
5/2	Circ Right	U	A	10	39
6/1	Circ Ahead	U	D	51	0
6/2	Circ Right	U	D	51	0

Detailed Input Data And Results

Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**150.6%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**150.6%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	41	1961	163	25.1%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	167	2080	185	90.2%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1126	1936	1936	58.2%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	972	4178	645	150.6%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	913	1936	1053	86.7%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	39	-	-	1372	4000	2000	68.6%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	41	-	-	612	1909	1002	61.1%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	41	-	-	662	2029	1065	62.1%
5/1	Circ Ahead	U	N/A	N/A	A		1	29	-	-	578	1714	643	69.4%
5/2	Circ Right	U	N/A	N/A	A		1	29	-	-	580	1714	643	59.9%
6/1	Circ Ahead	U	N/A	N/A	D		1	29	-	-	138	1943	729	12.6%
6/2	Circ Right	U	N/A	N/A	D		1	29	-	-	1814	4178	1567	106.3%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2945	3600	3600	74.9%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1074	1948	1948	55.1%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	2014	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1491	Inf	Inf	0.0%

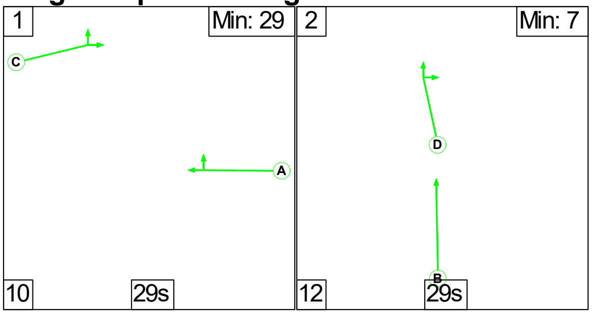
11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	281	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2079	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1156**	**610**	**0**	**48.7**	**235.6**	**0.0**	**284.3**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1156**	**610**	**0**	**48.7**	**235.6**	**0.0**	**284.3**	**-**	**-**	**-**	**-**	
1/1	41	41	41	0	0	0.2	0.2	-	0.4	32.5	0.6	0.2	0.8	
1/2	167	167	167	0	0	1.2	3.4	-	4.6	99.0	3.6	3.4	6.9	
2/1	1126	1126	-	-	-	0.0	0.7	-	0.7	2.2	0.0	0.7	0.7	
2/2	972	645	645	0	0	17.9	164.8	-	182.7	676.8	29.6	82.4	112.0	
3/1	913	913	303	610	0	0.4	3.1	-	3.5	13.9	10.4	3.1	13.5	
3/2	1372	1372	-	-	-	5.8	1.1	-	6.9	18.1	11.4	0.5	12.0	
4/1	612	612	-	-	-	2.3	0.8	-	3.0	17.9	9.3	0.8	10.1	
4/2	662	662	-	-	-	2.5	0.8	-	3.3	17.8	10.3	0.8	11.1	
5/1	446	446	-	-	-	3.0	1.1	-	4.1	32.9	9.3	1.1	10.4	
5/2	385	385	-	-	-	1.5	0.7	-	2.3	21.4	7.1	0.7	7.9	
6/1	92	92	-	-	-	0.7	0.1	-	0.7	29.3	2.0	0.1	2.1	
6/2	1665	1567	-	-	-	11.7	56.7	-	68.4	147.8	20.1	28.3	48.4	
7/1	2698	2698	-	-	-	0.7	1.5	-	2.2	3.0	16.5	0.7	17.3	
8/1	1074	1074	-	-	-	0.8	0.6	-	1.4	4.8	21.8	0.6	22.4	
9/1	2014	2014	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1359	1359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	235	235	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1832	1832	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -18.1 Total Delay for Signalled Lanes (pcuHr): 88.71 Cycle Time (s): 80
PRC Over All Lanes (%): -67.4 Total Delay Over All Lanes(pcuHr): 284.26

Scenario 5: '2043 Opt2 AM' (FG5: '2043 Option 2 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



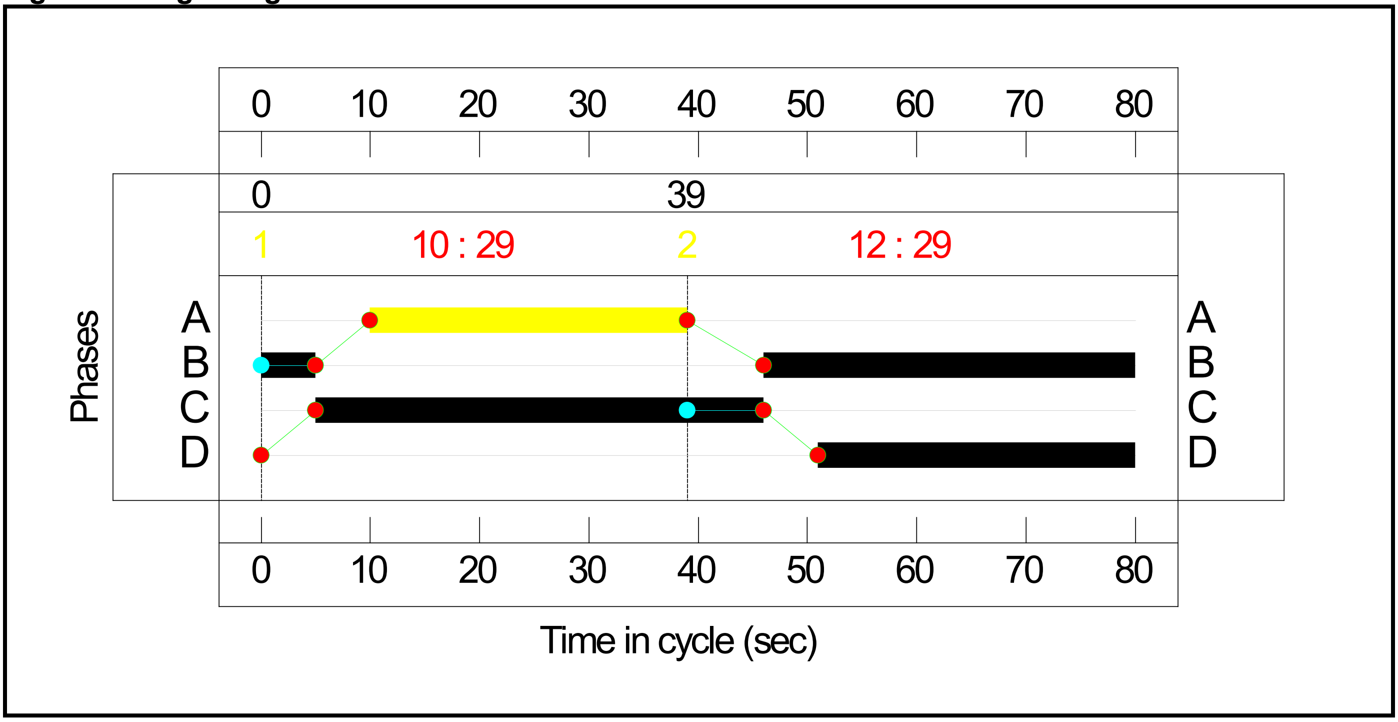
Stage Timings

Stage	1	2
Duration	29	29
Change Point	0	39

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	29	10	39
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	39	46	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	41	5	46
D	Circ Right Ahead Circulatory	Traffic	29	51	0

Signal Timings Diagram

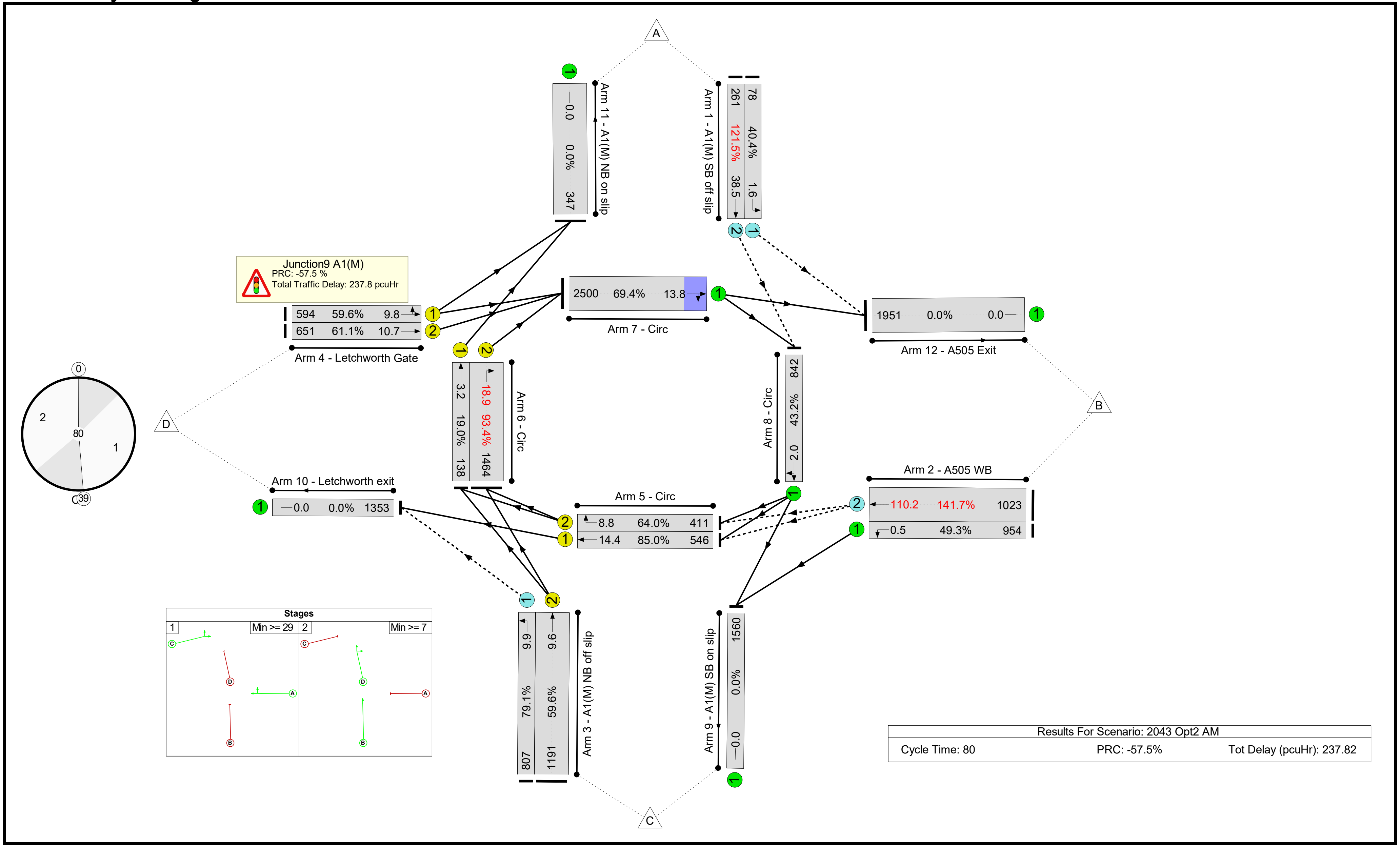


Lane Green Times

Junction: Junction9 A1(M)					
Lane	**Description**	**Type**	**Phases**	**Start Green**	**End Green**
3/2	A1(M) NB off slip Ahead	U	B	46	5
4/1	Letchworth Gate Ahead Left	U	C	5	46
4/2	Letchworth Gate Ahead	U	C	5	46
5/1	Circ Ahead	U	A	10	39
5/2	Circ Right	U	A	10	39
6/1	Circ Ahead	U	D	51	0
6/2	Circ Right	U	D	51	0

Detailed Input Data And Results

Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**141.7%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**141.7%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	78	1961	193	40.4%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	261	2080	215	121.5%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	954	1936	1936	49.3%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	1023	4178	722	141.7%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	807	1936	1020	79.1%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	39	-	-	1191	4000	2000	59.6%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	41	-	-	594	1897	996	59.6%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	41	-	-	651	2029	1065	61.1%
5/1	Circ Ahead	U	N/A	N/A	A		1	29	-	-	722	1714	643	85.0%
5/2	Circ Right	U	N/A	N/A	A		1	29	-	-	583	1714	643	64.0%
6/1	Circ Ahead	U	N/A	N/A	D		1	29	-	-	196	1943	729	19.0%
6/2	Circ Right	U	N/A	N/A	D		1	29	-	-	1578	4178	1567	93.4%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2614	3600	3600	69.4%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	888	1948	1948	43.2%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	1560	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1529	Inf	Inf	0.0%

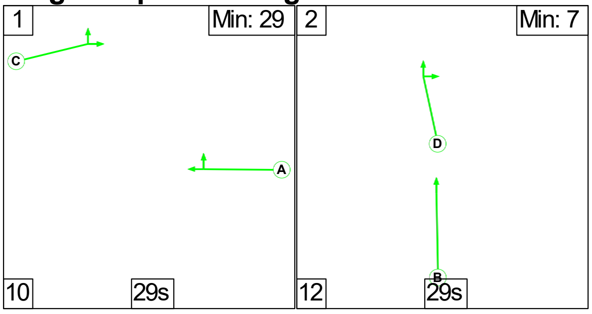
11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	405	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2065	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1284**	**537**	**0**	**43.5**	**194.3**	**0.0**	**237.8**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1284**	**537**	**0**	**43.5**	**194.3**	**0.0**	**237.8**	**-**	**-**	**-**	**-**	
1/1	78	78	78	0	0	0.3	0.3	-	0.6	28.4	1.2	0.3	1.6	
1/2	261	215	215	0	0	3.3	25.6	-	28.9	398.5	12.9	25.6	38.5	
2/1	954	954	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5	
2/2	1023	722	722	0	0	16.5	152.2	-	168.8	593.9	34.1	76.1	110.2	
3/1	807	807	270	537	0	0.3	1.9	-	2.1	9.6	8.1	1.9	9.9	
3/2	1191	1191	-	-	-	4.7	0.7	-	5.4	16.5	9.3	0.4	9.6	
4/1	594	594	-	-	-	2.2	0.7	-	2.9	17.6	9.1	0.7	9.8	
4/2	651	651	-	-	-	2.4	0.8	-	3.2	17.6	9.9	0.8	10.7	
5/1	546	546	-	-	-	4.1	2.7	-	6.8	44.8	11.7	2.7	14.4	
5/2	411	411	-	-	-	2.0	0.9	-	2.9	25.0	7.9	0.9	8.8	
6/1	138	138	-	-	-	1.0	0.1	-	1.2	30.0	3.1	0.1	3.2	
6/2	1464	1464	-	-	-	6.1	6.3	-	12.5	30.7	15.8	3.2	18.9	
7/1	2500	2500	-	-	-	0.6	1.1	-	1.7	2.5	13.2	0.6	13.8	
8/1	842	842	-	-	-	0.0	0.4	-	0.4	1.6	1.6	0.4	2.0	
9/1	1560	1560	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1353	1353	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	347	347	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1951	1951	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -3.8 Total Delay for Signalled Lanes (pcuHr): 34.84 Cycle Time (s): 80
PRC Over All Lanes (%): -57.5 Total Delay Over All Lanes(pcuHr): 237.82

Scenario 6: '2043 Opt2 PM' (FG6: '2043 Option2 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



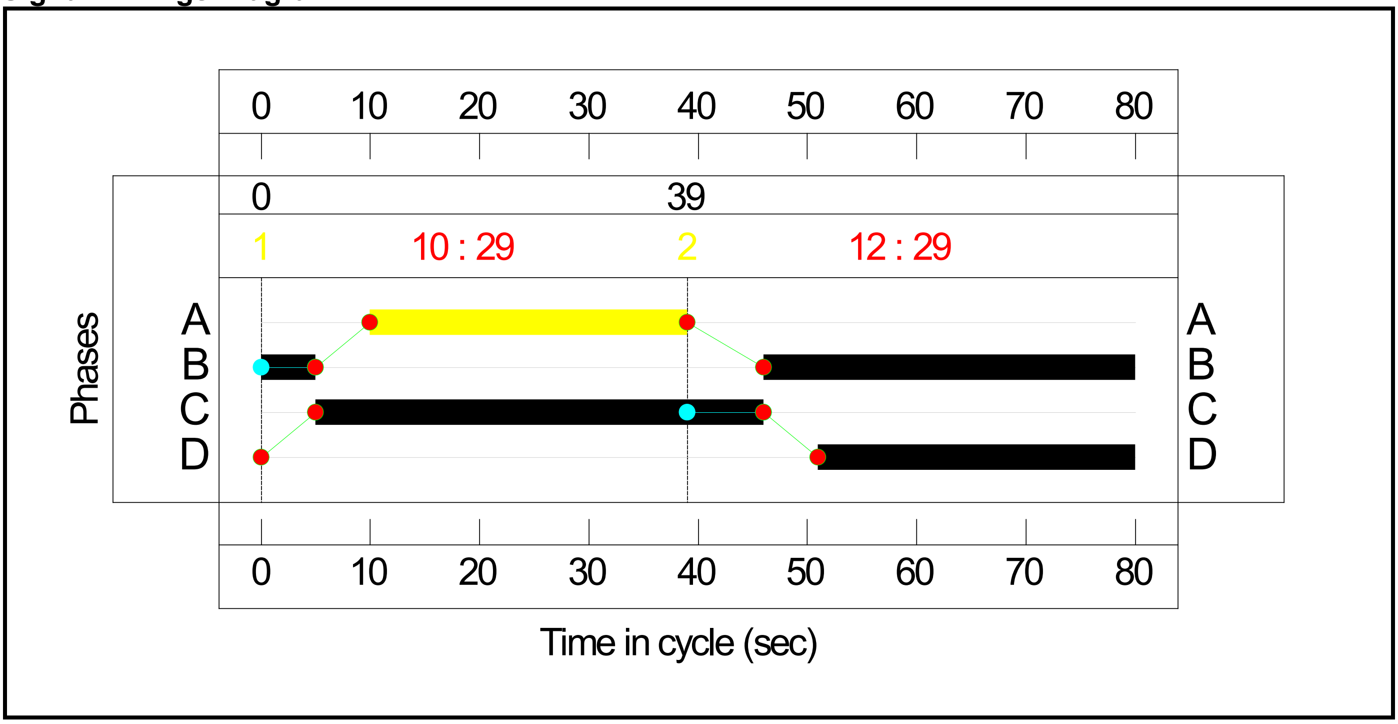
Stage Timings

Stage	1	2
Duration	29	29
Change Point	0	39

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	Circ Right Ahead Circulatory	Traffic	29	10	39
B	A1(M) NB off slip Ahead A1(m) NB	Traffic	39	46	5
C	Letchworth Gate Ahead Left Letchworth Gate	Traffic	41	5	46
D	Circ Right Ahead Circulatory	Traffic	29	51	0

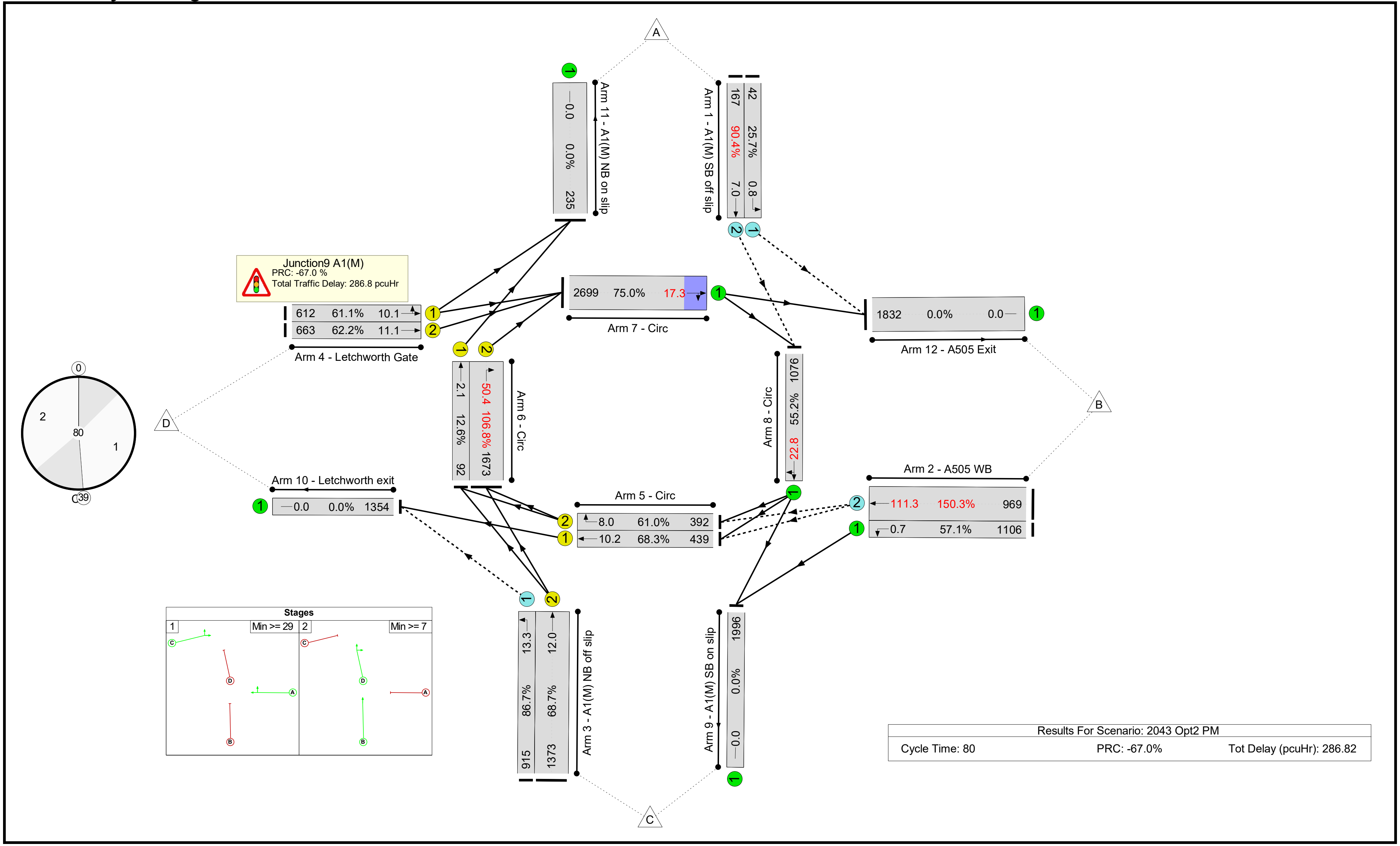
Signal Timings Diagram



Lane Green Times

Junction: Junction9 A1(M)					
Lane	Description	Type	Phases	Start Green	End Green
3/2	A1(M) NB off slip Ahead	U	B	46	5
4/1	Letchworth Gate Ahead Left	U	C	5	46
4/2	Letchworth Gate Ahead	U	C	5	46
5/1	Circ Ahead	U	A	10	39
5/2	Circ Right	U	A	10	39
6/1	Circ Ahead	U	D	51	0
6/2	Circ Right	U	D	51	0

Detailed Input Data And Results
Network Layout 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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A1(m) Junction 10 - PROPOSED	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**150.3%**
Junction9 A1(M)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**150.3%**
1/1	A1(M) SB off slip Left	O	N/A	N/A	-		-	-	-	-	42	1961	163	25.7%
1/2	A1(M) SB off slip Ahead	O	N/A	N/A	-		-	-	-	-	167	2080	185	90.4%
2/1	A505 WB Left	U	N/A	N/A	-		-	-	-	-	1106	1936	1936	57.1%
2/2	A505 WB Ahead	O	N/A	N/A	-		-	-	-	-	969	4178	645	150.3%
3/1	A1(M) NB off slip Left	O	N/A	N/A	-		-	-	-	-	915	1936	1055	86.7%
3/2	A1(M) NB off slip Ahead	U	N/A	N/A	B		1	39	-	-	1373	4000	2000	68.7%
4/1	Letchworth Gate Ahead Left	U	N/A	N/A	C		1	41	-	-	612	1909	1002	61.1%
4/2	Letchworth Gate Ahead	U	N/A	N/A	C		1	41	-	-	663	2029	1065	62.2%
5/1	Circ Ahead	U	N/A	N/A	A		1	29	-	-	566	1714	643	68.3%
5/2	Circ Right	U	N/A	N/A	A		1	29	-	-	589	1714	643	61.0%
6/1	Circ Ahead	U	N/A	N/A	D		1	29	-	-	138	1943	729	12.6%
6/2	Circ Right	U	N/A	N/A	D		1	29	-	-	1824	4178	1567	106.8%
7/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	2956	3600	3600	75.0%
8/1	Circ Right Ahead	U	N/A	N/A	-		-	-	-	-	1076	1948	1948	55.2%
9/1	A1(M) SB on slip	U	N/A	N/A	-		-	-	-	-	1996	Inf	Inf	0.0%
10/1	Letchworth exit	U	N/A	N/A	-		-	-	-	-	1481	Inf	Inf	0.0%

11/1	A1(M) NB on slip	U	N/A	N/A	-		-	-	-	-	281	Inf	Inf	0.0%
12/1	A505 Exit	U	N/A	N/A	-		-	-	-	-	2089	Inf	Inf	0.0%

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: A1(m) Junction 10 - PROPOSED	**-**	**-**	**1159**	**610**	**0**	**49.0**	**237.8**	**0.0**	**286.8**	**-**	**-**	**-**	**-**	
Junction9 A1(M)	**-**	**-**	**1159**	**610**	**0**	**49.0**	**237.8**	**0.0**	**286.8**	**-**	**-**	**-**	**-**	
1/1	42	42	42	0	0	0.2	0.2	-	0.4	32.7	0.7	0.2	0.8	
1/2	167	167	167	0	0	1.2	3.4	-	4.6	99.7	3.6	3.4	7.0	
2/1	1106	1106	-	-	-	0.0	0.7	-	0.7	2.2	0.0	0.7	0.7	
2/2	969	645	645	0	0	17.8	163.7	-	181.4	674.1	29.5	81.8	111.3	
3/1	915	915	305	610	0	0.4	3.1	-	3.5	13.8	10.2	3.1	13.3	
3/2	1373	1373	-	-	-	5.8	1.1	-	6.9	18.1	11.4	0.5	12.0	
4/1	612	612	-	-	-	2.3	0.8	-	3.0	17.9	9.3	0.8	10.1	
4/2	663	663	-	-	-	2.5	0.8	-	3.3	17.9	10.3	0.8	11.1	
5/1	439	439	-	-	-	2.9	1.1	-	4.0	32.5	9.1	1.1	10.2	
5/2	392	392	-	-	-	1.6	0.8	-	2.4	21.7	7.3	0.8	8.0	
6/1	92	92	-	-	-	0.7	0.1	-	0.7	29.2	2.0	0.1	2.1	
6/2	1673	1567	-	-	-	12.1	60.1	-	72.2	155.4	20.3	30.1	50.4	
7/1	2699	2699	-	-	-	0.7	1.5	-	2.2	3.0	16.5	0.7	17.3	
8/1	1076	1076	-	-	-	0.8	0.6	-	1.4	4.8	22.2	0.6	22.8	
9/1	1996	1996	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
10/1	1354	1354	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
11/1	235	235	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
12/1	1832	1832	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1 PRC for Signalled Lanes (%): -18.6 Total Delay for Signalled Lanes (pcuHr): 92.52 Cycle Time (s): 80
PRC Over All Lanes (%): -67.0 Total Delay Over All Lanes(pcuHr): 286.82

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: London Road-A505.j9
Path: C:\Users\923595\Royal HaskoningDHV\P-PC7029-Baldock-OPA - Team\WIP\02 Calculations\Junction Modelling\Models\2026 post-COMET models
Report generation date: 19/03/2026 10:29:49

Summary of junction performance

	AM				PM			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
	Base - 2029 S1							
A - London Road	0.6	2.7	5.31	0.37	0.5	1.8	4.72	0.31
B - A505 N	1.2	1.4	3.63	0.54	2.1	4.3	4.98	0.68
C - A505 S	2.4	5.5	5.00	0.71	2.9	6.7	5.56	0.75
	Base - 2029 S2							
A - London Road	0.8	3.3	6.46	0.45	0.4	1.5	4.23	0.29
B - A505 N	1.3	1.8	3.93	0.57	1.5	2.4	4.04	0.61
C - A505 S	3.1	7.0	5.99	0.76	2.1	4.6	4.46	0.68
	Base - 2043 S3DM							
A - London Road	0.7	3.2	6.04	0.41	0.5	2.3	5.20	0.34
B - A505 N	1.7	2.9	4.53	0.63	3.2	6.8	6.66	0.76
C - A505 S	3.1	6.9	5.91	0.76	4.2	13.5	7.39	0.81
	Base - 2043 S3-1							
A - London Road	4.6	23.6	25.85	0.83	1.0	3.6	7.75	0.51
B - A505 N	7.1	36.6	15.00	0.88	10.8	59.4	20.44	0.93
C - A505 S	14.1	77.7	23.05	0.95	17.6	93.2	27.79	0.96
	Base - 2043 S3-2							
A - London Road	1.5	4.6	10.81	0.61	0.8	3.4	6.75	0.44
B - A505 N	5.5	26.7	11.42	0.85	9.5	48.9	17.78	0.91
C - A505 S	8.5	44.0	14.32	0.90	12.8	70.8	20.65	0.94

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

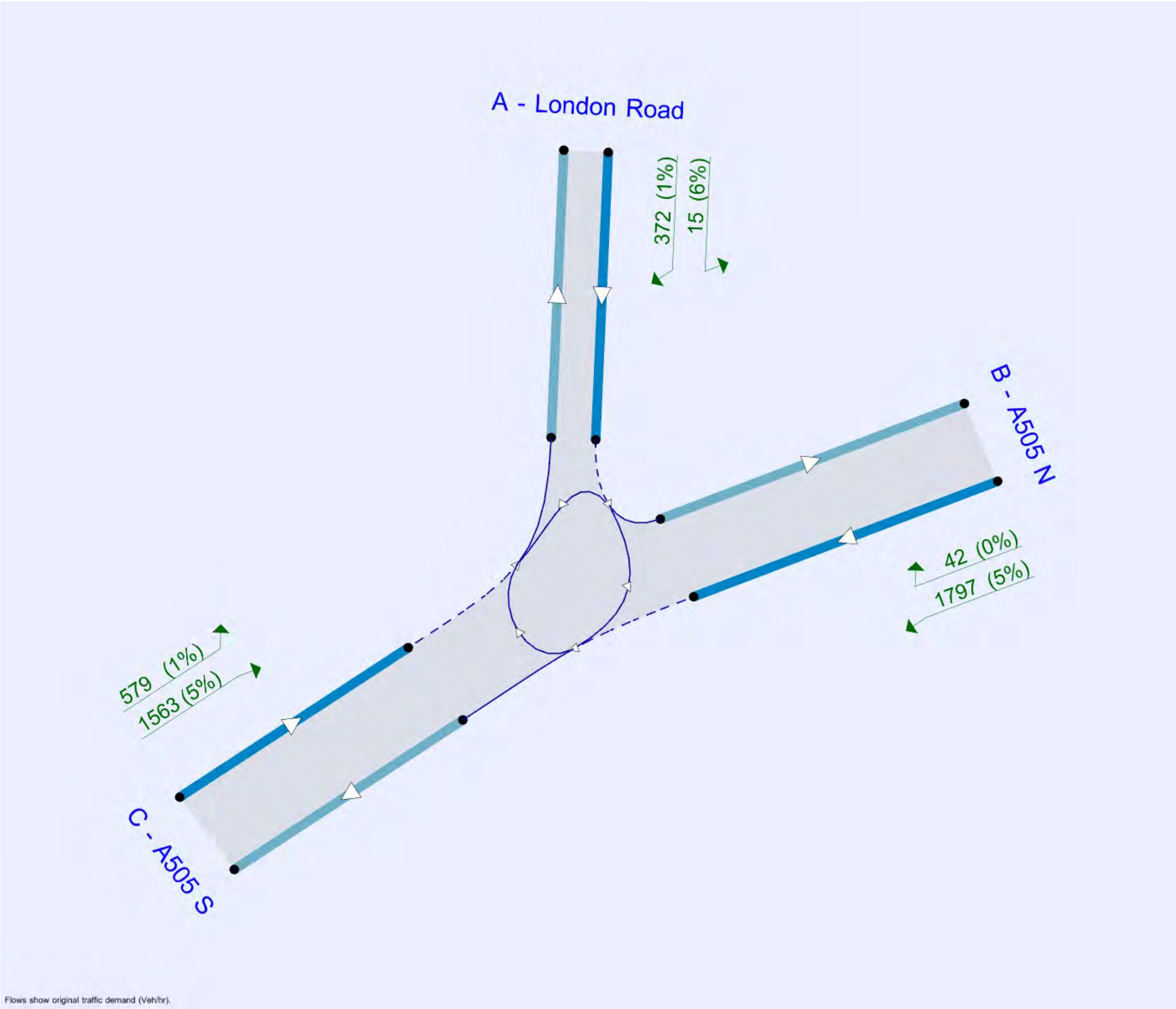
File summary

File Description

Title	
Location	
Site number	
Date	24/02/2026
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CORPORATEROOT\923595
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
✓		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2029 S1	AM	ONE HOUR	07:45	09:15	15
D2	2029 S1	PM	ONE HOUR	16:45	18:15	15
D3	2029 S2	AM	ONE HOUR	07:45	09:15	15
D4	2029 S2	PM	ONE HOUR	16:45	18:15	15
D5	2043 S3DM	AM	ONE HOUR	07:45	09:15	15
D6	2043 S3DM	PM	ONE HOUR	16:45	18:15	15
D7	2043 S3-1	AM	ONE HOUR	07:45	09:15	15
D8	2043 S3-1	PM	ONE HOUR	16:45	18:15	15
D9	2043 S3-2	AM	ONE HOUR	07:45	09:15	15
D10	2043 S3-2	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Base	100.000

Base - 2029 S1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	4.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road	
B	A505 N	
C	A505 S	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A - London Road	4.22	8.63	15.3	21.0	75.0	44.0	
B - A505 N	8.31	8.31	0.0	19.1	75.0	21.0	
C - A505 S	7.31	9.82	29.3	13.7	75.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - London Road	0.503	1882
B - A505 N	0.628	2591
C - A505 S	0.617	2652

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2029 S1	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	355	100.000
B - A505 N		✓	1078	100.000
C - A505 S		✓	1608	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	27	328
	B - A505 N	13	0	1065
	C - A505 S	240	1351	17

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	2	0
	B - A505 N	0	0	8
	C - A505 S	1	7	10

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - London Road	267	268
	B - A505 N	812	876
	C - A505 S	1211	1285
08:00-08:15	A - London Road	319	320
	B - A505 N	969	1046
	C - A505 S	1446	1534
08:15-08:30	A - London Road	391	391
	B - A505 N	1187	1281
	C - A505 S	1770	1879
08:30-08:45	A - London Road	391	391
	B - A505 N	1187	1281
	C - A505 S	1770	1879
08:45-09:00	A - London Road	319	320
	B - A505 N	969	1046
	C - A505 S	1446	1534
09:00-09:15	A - London Road	267	268
	B - A505 N	812	876
	C - A505 S	1211	1285

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.37	5.31	0.6	2.7	A
B - A505 N	0.54	3.63	1.2	1.4	A
C - A505 S	0.71	5.00	2.4	5.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	267	1027	1327	0.201	266	0.3	3.390	A
B - A505 N	812	259	2250	0.361	809	0.6	2.497	A
C - A505 S	1211	10	2493	0.486	1207	0.9	2.792	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	319	1228	1219	0.262	319	0.4	3.998	A
B - A505 N	969	310	2220	0.437	968	0.8	2.875	A
C - A505 S	1446	12	2491	0.580	1444	1.4	3.430	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	391	1503	1071	0.365	390	0.6	5.278	A
B - A505 N	1187	379	2179	0.545	1185	1.2	3.615	A
C - A505 S	1770	14	2490	0.711	1766	2.4	4.946	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	391	1506	1069	0.366	391	0.6	5.305	A
B - A505 N	1187	380	2179	0.545	1187	1.2	3.628	A
C - A505 S	1770	14	2490	0.711	1770	2.4	5.001	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	319	1233	1216	0.262	320	0.4	4.021	A
B - A505 N	969	311	2219	0.437	971	0.8	2.887	A
C - A505 S	1446	12	2491	0.580	1450	1.4	3.468	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	267	1031	1325	0.202	268	0.3	3.409	A
B - A505 N	812	260	2249	0.361	812	0.6	2.509	A
C - A505 S	1211	10	2493	0.486	1212	1.0	2.815	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B - A505 N	0.56	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	0.94	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.35	0.00	0.00	0.35	0.35			N/A	N/A
B - A505 N	0.77	0.07	0.78	1.42	1.42			N/A	N/A
C - A505 S	1.37	0.05	0.46	3.48	5.48			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.57	0.03	0.25	0.57	0.57			N/A	N/A
B - A505 N	1.19	0.03	0.26	1.19	1.19			N/A	N/A
C - A505 S	2.42	0.03	0.27	2.42	2.42			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.57	0.03	0.30	1.46	2.68			N/A	N/A
B - A505 N	1.19	0.03	0.26	1.19	1.19			N/A	N/A
C - A505 S	2.44	0.03	0.26	2.44	2.44			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.36	0.00	0.00	0.36	0.36			N/A	N/A
B - A505 N	0.78	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	1.39	0.14	1.20	2.40	2.96			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B - A505 N	0.57	0.08	0.77	1.35	1.43			N/A	N/A
C - A505 S	0.95	0.06	0.73	1.79	2.48			N/A	N/A

Base - 2029 S1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	5.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2029 S1	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	317	100.000
B - A505 N		✓	1418	100.000
C - A505 S		✓	1730	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	11	306
	B - A505 N	24	0	1394
	C - A505 S	416	1309	5

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	7	1
	B - A505 N	0	0	4
	C - A505 S	1	4	5

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - London Road	239	242
	B - A505 N	1068	1110
	C - A505 S	1302	1345
17:00-17:15	A - London Road	285	288
	B - A505 N	1275	1325
	C - A505 S	1555	1606
17:15-17:30	A - London Road	349	353
	B - A505 N	1561	1623
	C - A505 S	1905	1967
17:30-17:45	A - London Road	349	353
	B - A505 N	1561	1623
	C - A505 S	1905	1967
17:45-18:00	A - London Road	285	288
	B - A505 N	1275	1325
	C - A505 S	1555	1606
18:00-18:15	A - London Road	239	242
	B - A505 N	1068	1110
	C - A505 S	1302	1345

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.31	4.72	0.5	1.8	A
B - A505 N	0.68	4.98	2.1	4.3	A
C - A505 S	0.75	5.56	2.9	6.7	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	239	986	1350	0.177	238	0.2	3.236	A
B - A505 N	1068	233	2350	0.454	1064	0.8	2.792	A
C - A505 S	1302	18	2556	0.509	1298	1.0	2.852	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	285	1180	1250	0.228	285	0.3	3.731	A
B - A505 N	1275	279	2322	0.549	1273	1.2	3.428	A
C - A505 S	1555	22	2554	0.609	1553	1.5	3.588	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	349	1443	1114	0.313	348	0.5	4.700	A
B - A505 N	1561	342	2284	0.684	1558	2.1	4.931	A
C - A505 S	1905	26	2552	0.747	1899	2.9	5.476	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	349	1447	1112	0.314	349	0.5	4.720	A
B - A505 N	1561	342	2284	0.684	1561	2.1	4.981	A
C - A505 S	1905	26	2551	0.747	1905	2.9	5.561	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	285	1185	1247	0.229	286	0.3	3.750	A
B - A505 N	1275	280	2322	0.549	1278	1.2	3.462	A
C - A505 S	1555	22	2554	0.609	1561	1.6	3.643	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	239	991	1347	0.177	239	0.2	3.248	A
B - A505 N	1068	234	2349	0.454	1069	0.8	2.816	A
C - A505 S	1302	18	2556	0.509	1305	1.0	2.879	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.21	0.00	0.00	0.21	0.21			N/A	N/A
B - A505 N	0.83	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	1.03	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.29	0.00	0.00	0.29	0.29			N/A	N/A
B - A505 N	1.21	0.05	0.50	2.85	4.30			N/A	N/A
C - A505 S	1.54	0.04	0.44	4.03	6.70			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.45	0.03	0.25	0.46	0.48			N/A	N/A
B - A505 N	2.12	0.03	0.26	2.12	2.12			N/A	N/A
C - A505 S	2.88	0.03	0.27	2.88	3.43			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.46	0.03	0.32	1.40	1.81			N/A	N/A
B - A505 N	2.14	0.03	0.26	2.14	2.14			N/A	N/A
C - A505 S	2.91	0.03	0.26	2.91	2.91			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.30	0.00	0.00	0.30	0.30			N/A	N/A
B - A505 N	1.23	0.16	1.13	1.86	2.35			N/A	N/A
C - A505 S	1.57	0.10	1.20	3.04	4.07			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.22	0.00	0.00	0.22	0.22			N/A	N/A
B - A505 N	0.84	0.06	0.73	1.43	1.86			N/A	N/A
C - A505 S	1.05	0.05	0.57	2.28	3.32			N/A	N/A

Base - 2029 S2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	5.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029 S2	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	410	100.000
B - A505 N		✓	1118	100.000
C - A505 S		✓	1714	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	36	374
	B - A505 N	17	0	1101
	C - A505 S	259	1436	19

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	2	1
	B - A505 N	0	0	8
	C - A505 S	1	7	9

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - London Road	309	312
	B - A505 N	842	908
	C - A505 S	1290	1369
08:00-08:15	A - London Road	369	373
	B - A505 N	1005	1084
	C - A505 S	1541	1635
08:15-08:30	A - London Road	451	456
	B - A505 N	1231	1328
	C - A505 S	1887	2003
08:30-08:45	A - London Road	451	456
	B - A505 N	1231	1328
	C - A505 S	1887	2003
08:45-09:00	A - London Road	369	373
	B - A505 N	1005	1084
	C - A505 S	1541	1635
09:00-09:15	A - London Road	309	312
	B - A505 N	842	908
	C - A505 S	1290	1369

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.45	6.46	0.8	3.3	A
B - A505 N	0.57	3.93	1.3	1.8	A
C - A505 S	0.76	5.99	3.1	7.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	309	1092	1280	0.241	307	0.3	3.695	A
B - A505 N	842	295	2228	0.378	839	0.6	2.588	A
C - A505 S	1290	13	2491	0.518	1286	1.1	2.978	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	369	1306	1166	0.316	368	0.5	4.509	A
B - A505 N	1005	353	2193	0.458	1004	0.8	3.024	A
C - A505 S	1541	15	2490	0.619	1539	1.6	3.777	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	451	1597	1011	0.446	450	0.8	6.402	A
B - A505 N	1231	431	2147	0.573	1229	1.3	3.914	A
C - A505 S	1887	19	2488	0.759	1881	3.1	5.880	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	451	1602	1008	0.448	451	0.8	6.461	A
B - A505 N	1231	433	2146	0.574	1231	1.3	3.933	A
C - A505 S	1887	19	2488	0.759	1887	3.1	5.987	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	369	1313	1162	0.317	370	0.5	4.552	A
B - A505 N	1005	355	2192	0.458	1007	0.9	3.041	A
C - A505 S	1541	15	2490	0.619	1547	1.6	3.841	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	309	1097	1277	0.242	309	0.3	3.720	A
B - A505 N	842	296	2227	0.378	843	0.6	2.604	A
C - A505 S	1290	13	2491	0.518	1293	1.1	3.010	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.32	0.00	0.00	0.32	0.32			N/A	N/A
B - A505 N	0.60	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	1.07	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.46	0.00	0.00	0.46	0.46			N/A	N/A
B - A505 N	0.84	0.07	0.78	1.36	1.79			N/A	N/A
C - A505 S	1.61	0.04	0.43	4.24	7.04			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.80	0.03	0.26	0.80	0.80			N/A	N/A
B - A505 N	1.33	0.03	0.26	1.33	1.33			N/A	N/A
C - A505 S	3.06	0.03	0.27	3.06	4.98			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.80	0.03	0.29	1.10	3.35			N/A	N/A
B - A505 N	1.34	0.03	0.26	1.34	1.34			N/A	N/A
C - A505 S	3.10	0.03	0.26	3.10	3.10			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.47	0.00	0.00	0.47	0.47			N/A	N/A
B - A505 N	0.85	0.53	0.99	1.40	1.45			N/A	N/A
C - A505 S	1.64	0.09	1.17	3.43	4.64			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.32	0.00	0.00	0.32	0.32			N/A	N/A
B - A505 N	0.61	0.08	0.78	1.36	1.43			N/A	N/A
C - A505 S	1.08	0.05	0.49	2.50	3.72			N/A	N/A

Base - 2029 S2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	4.27	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029 S2	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	318	100.000
B - A505 N		✓	1246	100.000
C - A505 S		✓	1567	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	12	306
	B - A505 N	29	0	1217
	C - A505 S	422	1140	5

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	6	1
	B - A505 N	0	0	5
	C - A505 S	1	5	4

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - London Road	239	242
	B - A505 N	938	984
	C - A505 S	1180	1226
17:00-17:15	A - London Road	286	289
	B - A505 N	1120	1175
	C - A505 S	1409	1464
17:15-17:30	A - London Road	350	354
	B - A505 N	1372	1439
	C - A505 S	1725	1793
17:30-17:45	A - London Road	350	354
	B - A505 N	1372	1439
	C - A505 S	1725	1793
17:45-18:00	A - London Road	286	289
	B - A505 N	1120	1175
	C - A505 S	1409	1464
18:00-18:15	A - London Road	239	242
	B - A505 N	938	984
	C - A505 S	1180	1226

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.29	4.23	0.4	1.5	A
B - A505 N	0.61	4.04	1.5	2.4	A
C - A505 S	0.68	4.46	2.1	4.6	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	239	859	1411	0.170	239	0.2	3.069	A
B - A505 N	938	233	2329	0.403	935	0.7	2.579	A
C - A505 S	1180	22	2539	0.465	1176	0.9	2.636	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	286	1028	1323	0.216	286	0.3	3.469	A
B - A505 N	1120	279	2301	0.487	1119	0.9	3.042	A
C - A505 S	1409	26	2536	0.555	1407	1.2	3.185	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	350	1258	1203	0.291	350	0.4	4.215	A
B - A505 N	1372	342	2263	0.606	1370	1.5	4.017	A
C - A505 S	1725	32	2533	0.681	1722	2.1	4.422	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	350	1261	1202	0.291	350	0.4	4.226	A
B - A505 N	1372	342	2263	0.606	1372	1.5	4.039	A
C - A505 S	1725	32	2533	0.681	1725	2.1	4.459	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	286	1032	1321	0.216	286	0.3	3.479	A
B - A505 N	1120	280	2301	0.487	1122	1.0	3.063	A
C - A505 S	1409	26	2536	0.555	1412	1.3	3.214	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	239	863	1409	0.170	240	0.2	3.078	A
B - A505 N	938	234	2328	0.403	939	0.7	2.595	A
C - A505 S	1180	22	2539	0.465	1181	0.9	2.654	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B - A505 N	0.67	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	0.86	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.27	0.00	0.00	0.27	0.27			N/A	N/A
B - A505 N	0.94	0.06	0.73	1.78	2.44			N/A	N/A
C - A505 S	1.24	0.05	0.49	2.96	4.59			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.41	0.03	0.25	0.46	0.48			N/A	N/A
B - A505 N	1.52	0.03	0.26	1.52	1.52			N/A	N/A
C - A505 S	2.11	0.03	0.26	2.11	2.11			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.41	0.03	0.33	1.32	1.45			N/A	N/A
B - A505 N	1.53	0.03	0.26	1.53	1.53			N/A	N/A
C - A505 S	2.12	0.03	0.26	2.12	2.12			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.28	0.00	0.00	0.28	0.28			N/A	N/A
B - A505 N	0.96	0.51	1.00	1.03	1.03			N/A	N/A
C - A505 S	1.26	0.20	1.16	1.86	2.29			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.21	0.00	0.00	0.21	0.21			N/A	N/A
B - A505 N	0.68	0.09	0.80	1.37	1.44			N/A	N/A
C - A505 S	0.87	0.07	0.81	1.44	1.84			N/A	N/A

Base - 2043 S3DM, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	5.40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2043 S3DM	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	376	100.000
B - A505 N		✓	1243	100.000
C - A505 S		✓	1708	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	29	347
	B - A505 N	15	0	1228
	C - A505 S	255	1435	18

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	2	1
	B - A505 N	0	0	8
	C - A505 S	1	7	10

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - London Road	283	286
	B - A505 N	936	1010
	C - A505 S	1286	1365
08:00-08:15	A - London Road	338	342
	B - A505 N	1117	1206
	C - A505 S	1535	1630
08:15-08:30	A - London Road	414	418
	B - A505 N	1369	1477
	C - A505 S	1881	1996
08:30-08:45	A - London Road	414	418
	B - A505 N	1369	1477
	C - A505 S	1881	1996
08:45-09:00	A - London Road	338	342
	B - A505 N	1117	1206
	C - A505 S	1535	1630
09:00-09:15	A - London Road	283	286
	B - A505 N	936	1010
	C - A505 S	1286	1365

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.41	6.04	0.7	3.2	A
B - A505 N	0.63	4.53	1.7	2.9	A
C - A505 S	0.76	5.91	3.1	6.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	283	1090	1281	0.221	282	0.3	3.600	A
B - A505 N	936	274	2239	0.418	933	0.7	2.750	A
C - A505 S	1286	11	2492	0.516	1282	1.1	2.966	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	338	1304	1167	0.290	338	0.4	4.337	A
B - A505 N	1117	328	2208	0.506	1116	1.0	3.296	A
C - A505 S	1535	13	2490	0.617	1533	1.6	3.754	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	414	1595	1012	0.409	413	0.7	5.996	A
B - A505 N	1369	401	2164	0.632	1366	1.7	4.493	A
C - A505 S	1881	16	2489	0.756	1875	3.0	5.810	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	414	1600	1010	0.410	414	0.7	6.042	A
B - A505 N	1369	402	2164	0.633	1369	1.7	4.526	A
C - A505 S	1881	17	2489	0.756	1880	3.1	5.914	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	338	1311	1163	0.291	339	0.4	4.374	A
B - A505 N	1117	329	2207	0.506	1120	1.0	3.323	A
C - A505 S	1535	14	2490	0.617	1541	1.6	3.814	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	283	1096	1278	0.221	284	0.3	3.623	A
B - A505 N	936	275	2238	0.418	937	0.7	2.768	A
C - A505 S	1286	11	2492	0.516	1288	1.1	2.998	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.28	0.00	0.00	0.28	0.28			N/A	N/A
B - A505 N	0.71	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	1.06	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.41	0.00	0.00	0.41	0.41			N/A	N/A
B - A505 N	1.02	0.06	0.70	1.99	2.88			N/A	N/A
C - A505 S	1.59	0.04	0.44	4.19	6.95			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.68	0.03	0.25	0.68	0.68			N/A	N/A
B - A505 N	1.70	0.03	0.26	1.70	1.70			N/A	N/A
C - A505 S	3.01	0.03	0.27	3.01	4.65			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.69	0.03	0.29	1.35	3.19			N/A	N/A
B - A505 N	1.71	0.03	0.26	1.71	1.71			N/A	N/A
C - A505 S	3.05	0.03	0.26	3.05	3.05			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.41	0.00	0.00	0.41	0.41			N/A	N/A
B - A505 N	1.03	0.30	1.04	1.30	1.67			N/A	N/A
C - A505 S	1.63	0.09	1.18	3.35	4.53			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.29	0.00	0.00	0.29	0.29			N/A	N/A
B - A505 N	0.72	0.07	0.77	1.42	1.50			N/A	N/A
C - A505 S	1.07	0.05	0.50	2.46	3.64			N/A	N/A

Base - 2043 S3DM, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	6.90	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2043 S3DM	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	325	100.000
B - A505 N		✓	1578	100.000
C - A505 S		✓	1874	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	11	314
	B - A505 N	27	0	1551
	C - A505 S	451	1417	6

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	7	1
	B - A505 N	0	0	4
	C - A505 S	1	4	5

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - London Road	245	248
	B - A505 N	1188	1235
	C - A505 S	1411	1457
17:00-17:15	A - London Road	292	296
	B - A505 N	1419	1474
	C - A505 S	1685	1740
17:15-17:30	A - London Road	358	362
	B - A505 N	1737	1806
	C - A505 S	2063	2131
17:30-17:45	A - London Road	358	362
	B - A505 N	1737	1806
	C - A505 S	2063	2131
17:45-18:00	A - London Road	292	296
	B - A505 N	1419	1474
	C - A505 S	1685	1740
18:00-18:15	A - London Road	245	248
	B - A505 N	1188	1235
	C - A505 S	1411	1457

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.34	5.20	0.5	2.3	A
B - A505 N	0.76	6.66	3.2	6.8	A
C - A505 S	0.81	7.39	4.2	13.5	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	245	1068	1308	0.187	244	0.2	3.380	A
B - A505 N	1188	240	2346	0.506	1184	1.0	3.088	A
C - A505 S	1411	20	2555	0.552	1406	1.2	3.120	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	292	1277	1199	0.244	292	0.3	3.965	A
B - A505 N	1419	287	2317	0.612	1416	1.6	3.987	A
C - A505 S	1685	24	2553	0.660	1682	1.9	4.120	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	358	1560	1053	0.340	357	0.5	5.168	A
B - A505 N	1737	352	2278	0.763	1731	3.1	6.510	A
C - A505 S	2063	30	2550	0.809	2055	4.1	7.150	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	358	1567	1050	0.341	358	0.5	5.203	A
B - A505 N	1737	352	2278	0.763	1737	3.2	6.656	A
C - A505 S	2063	30	2550	0.809	2063	4.2	7.386	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	292	1286	1195	0.245	293	0.3	3.994	A
B - A505 N	1419	288	2317	0.612	1425	1.6	4.066	A
C - A505 S	1685	24	2553	0.660	1693	2.0	4.231	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	245	1074	1305	0.188	245	0.2	3.398	A
B - A505 N	1188	241	2345	0.507	1190	1.0	3.122	A
C - A505 S	1411	20	2555	0.552	1414	1.2	3.163	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B - A505 N	1.02	0.55	1.00	1.40	1.45			N/A	N/A
C - A505 S	1.22	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.32	0.00	0.00	0.32	0.32			N/A	N/A
B - A505 N	1.56	0.04	0.44	4.09	6.77			N/A	N/A
C - A505 S	1.92	0.04	0.41	5.15	9.07			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.51	0.03	0.25	0.51	0.51			N/A	N/A
B - A505 N	3.12	0.03	0.28	3.12	6.61			N/A	N/A
C - A505 S	4.08	0.03	0.29	4.08	13.48			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.51	0.03	0.31	1.47	2.27			N/A	N/A
B - A505 N	3.17	0.03	0.27	3.17	3.17			N/A	N/A
C - A505 S	4.16	0.03	0.27	4.16	4.16			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.33	0.00	0.00	0.33	0.33			N/A	N/A
B - A505 N	1.60	0.08	1.11	3.42	4.68			N/A	N/A
C - A505 S	1.97	0.07	1.02	4.80	6.94			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B - A505 N	1.03	0.05	0.46	2.44	3.72			N/A	N/A
C - A505 S	1.24	0.04	0.41	3.17	5.32			N/A	N/A

Base - 2043 S3-1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	20.37	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2043 S3-1	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	609	100.000
B - A505 N		✓	1628	100.000
C - A505 S		✓	2131	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	53	556
	B - A505 N	25	0	1603
	C - A505 S	322	1785	24

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	2	1
	B - A505 N	0	0	8
	C - A505 S	1	7	9

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - London Road	458	463
	B - A505 N	1226	1322
	C - A505 S	1604	1702
08:00-08:15	A - London Road	547	553
	B - A505 N	1464	1579
	C - A505 S	1916	2033
08:15-08:30	A - London Road	671	678
	B - A505 N	1792	1934
	C - A505 S	2346	2490
08:30-08:45	A - London Road	671	678
	B - A505 N	1792	1934
	C - A505 S	2346	2490
08:45-09:00	A - London Road	547	553
	B - A505 N	1464	1579
	C - A505 S	1916	2033
09:00-09:15	A - London Road	458	463
	B - A505 N	1226	1322
	C - A505 S	1604	1702

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.83	25.85	4.6	23.6	D
B - A505 N	0.88	15.00	7.1	36.6	C
C - A505 S	0.95	23.05	14.1	77.7	C

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	458	1356	1140	0.402	456	0.7	5.246	A
B - A505 N	1226	434	2146	0.571	1220	1.3	3.870	A
C - A505 S	1604	19	2488	0.645	1597	1.8	4.010	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	547	1621	998	0.549	545	1.2	7.914	A
B - A505 N	1464	519	2095	0.699	1460	2.3	5.631	A
C - A505 S	1916	22	2486	0.771	1910	3.3	6.187	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	671	1961	817	0.820	659	4.0	21.408	C
B - A505 N	1792	628	2031	0.882	1775	6.7	13.218	B
C - A505 S	2346	27	2483	0.945	2310	12.4	17.895	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	671	1986	804	0.834	668	4.6	25.853	D
B - A505 N	1792	637	2026	0.885	1791	7.1	15.004	C
C - A505 S	2346	27	2483	0.945	2340	14.1	23.051	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	547	1662	976	0.561	560	1.3	8.918	A
B - A505 N	1464	534	2087	0.701	1483	2.4	6.136	A
C - A505 S	1916	23	2485	0.771	1958	3.5	7.357	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	458	1367	1133	0.405	461	0.7	5.372	A
B - A505 N	1226	439	2143	0.572	1230	1.3	3.963	A
C - A505 S	1604	19	2488	0.645	1611	1.8	4.135	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.67	0.55	1.00	1.40	1.45			N/A	N/A
B - A505 N	1.32	0.56	1.21	1.69	1.86			N/A	N/A
C - A505 S	1.79	0.51	1.14	2.75	3.30			N/A	N/A

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	1.19	0.05	0.50	2.81	4.22			N/A	N/A
B - A505 N	2.27	0.04	0.42	6.20	10.95			N/A	N/A
C - A505 S	3.27	0.04	0.43	9.07	16.43			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	4.03	0.04	0.37	9.69	21.73			N/A	N/A
B - A505 N	6.67	0.04	0.36	15.02	36.60			N/A	N/A
C - A505 S	12.43	0.06	1.29	36.40	62.19			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	4.56	0.03	0.33	7.58	23.63			N/A	N/A
B - A505 N	7.14	0.03	0.31	7.14	30.88			N/A	N/A
C - A505 S	14.11	0.04	0.42	35.95	77.70			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	1.30	0.04	0.45	3.31	5.30			N/A	N/A
B - A505 N	2.40	0.05	0.47	6.59	10.85			N/A	N/A
C - A505 S	3.47	0.04	0.44	9.72	17.31			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.69	0.03	0.31	1.34	3.28			N/A	N/A
B - A505 N	1.35	0.03	0.33	2.94	6.90			N/A	N/A
C - A505 S	1.84	0.03	0.32	3.24	9.52			N/A	N/A

Base - 2043 S3-1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	22.86	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2043 S3-1	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	432	100.000
B - A505 N		✓	1840	100.000
C - A505 S		✓	2201	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	17	415
	B - A505 N	42	0	1798
	C - A505 S	593	1601	7

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	6	1
	B - A505 N	0	0	5
	C - A505 S	1	5	4

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - London Road	325	329
	B - A505 N	1385	1453
	C - A505 S	1657	1722
17:00-17:15	A - London Road	388	393
	B - A505 N	1654	1735
	C - A505 S	1979	2056
17:15-17:30	A - London Road	476	481
	B - A505 N	2026	2125
	C - A505 S	2423	2518
17:30-17:45	A - London Road	476	481
	B - A505 N	2026	2125
	C - A505 S	2423	2518
17:45-18:00	A - London Road	388	393
	B - A505 N	1654	1735
	C - A505 S	1979	2056
18:00-18:15	A - London Road	325	329
	B - A505 N	1385	1453
	C - A505 S	1657	1722

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.51	7.75	1.0	3.6	A
B - A505 N	0.93	20.44	10.8	59.4	C
C - A505 S	0.96	27.79	17.6	93.2	D

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	325	1205	1231	0.264	324	0.4	3.957	A
B - A505 N	1385	316	2279	0.608	1379	1.5	3.975	A
C - A505 S	1657	31	2533	0.654	1650	1.9	4.042	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	388	1441	1108	0.351	388	0.5	4.994	A
B - A505 N	1654	379	2241	0.738	1649	2.7	6.035	A
C - A505 S	1979	38	2529	0.782	1972	3.5	6.390	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	476	1737	953	0.499	474	1.0	7.485	A
B - A505 N	2026	463	2190	0.925	1998	9.8	16.703	C
C - A505 S	2423	46	2524	0.960	2378	14.9	20.178	C

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	476	1762	940	0.506	476	1.0	7.752	A
B - A505 N	2026	464	2189	0.925	2022	10.8	20.442	C
C - A505 S	2423	46	2524	0.960	2412	17.6	27.790	D

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	388	1486	1084	0.358	390	0.6	5.201	A
B - A505 N	1654	381	2239	0.739	1686	2.9	6.863	A
C - A505 S	1979	38	2529	0.782	2034	3.7	8.064	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	325	1216	1225	0.265	326	0.4	4.007	A
B - A505 N	1385	318	2277	0.608	1391	1.6	4.085	A
C - A505 S	1657	32	2533	0.654	1664	1.9	4.179	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.36	0.00	0.00	0.36	0.36			N/A	N/A
B - A505 N	1.53	0.54	1.42	1.99	2.56			N/A	N/A
C - A505 S	1.87	0.40	1.17	2.94	3.69			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.54	0.06	0.65	1.33	1.42			N/A	N/A
B - A505 N	2.75	0.04	0.42	7.58	13.69			N/A	N/A
C - A505 S	3.48	0.04	0.43	9.72	17.57			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.98	0.03	0.26	0.98	0.98			N/A	N/A
B - A505 N	9.82	0.05	0.48	27.79	51.63			N/A	N/A
C - A505 S	14.89	0.08	2.49	43.55	69.21			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	1.01	0.03	0.28	1.01	3.62			N/A	N/A
B - A505 N	10.84	0.04	0.36	22.56	59.36			N/A	N/A
C - A505 S	17.62	0.05	0.83	50.51	93.16			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.56	0.08	0.77	1.35	1.43			N/A	N/A
B - A505 N	2.90	0.04	0.44	8.05	14.19			N/A	N/A
C - A505 S	3.72	0.04	0.44	10.41	18.84			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.36	0.03	0.28	0.61	1.06			N/A	N/A
B - A505 N	1.57	0.03	0.32	2.85	8.11			N/A	N/A
C - A505 S	1.92	0.03	0.31	3.00	9.72			N/A	N/A

Base - 2043 S3-2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	12.78	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2043 S3-2	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	471	100.000
B - A505 N		✓	1631	100.000
C - A505 S		✓	2033	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	41	430
	B - A505 N	25	0	1606
	C - A505 S	308	1703	22

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	2	1
	B - A505 N	0	0	8
	C - A505 S	1	7	9

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - London Road	355	358
	B - A505 N	1228	1325
	C - A505 S	1531	1624
08:00-08:15	A - London Road	423	428
	B - A505 N	1466	1582
	C - A505 S	1828	1939
08:15-08:30	A - London Road	519	524
	B - A505 N	1796	1937
	C - A505 S	2238	2375
08:30-08:45	A - London Road	519	524
	B - A505 N	1796	1937
	C - A505 S	2238	2375
08:45-09:00	A - London Road	423	428
	B - A505 N	1466	1582
	C - A505 S	1828	1939
09:00-09:15	A - London Road	355	358
	B - A505 N	1228	1325
	C - A505 S	1531	1624

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.61	10.81	1.5	4.6	B
B - A505 N	0.85	11.42	5.5	26.7	B
C - A505 S	0.90	14.32	8.5	44.0	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	355	1293	1173	0.302	353	0.4	4.382	A
B - A505 N	1228	339	2202	0.558	1223	1.2	3.661	A
C - A505 S	1531	19	2488	0.615	1524	1.6	3.712	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	423	1547	1038	0.408	422	0.7	5.840	A
B - A505 N	1466	405	2162	0.678	1463	2.1	5.122	A
C - A505 S	1828	22	2486	0.735	1823	2.7	5.394	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	519	1881	860	0.603	515	1.5	10.364	B
B - A505 N	1796	495	2110	0.851	1783	5.3	10.614	B
C - A505 S	2238	27	2483	0.902	2217	8.0	12.652	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	519	1898	851	0.609	518	1.5	10.811	B
B - A505 N	1796	497	2108	0.852	1795	5.5	11.418	B
C - A505 S	2238	28	2483	0.902	2236	8.5	14.320	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	423	1570	1025	0.413	427	0.7	6.043	A
B - A505 N	1466	410	2160	0.679	1480	2.2	5.393	A
C - A505 S	1828	23	2486	0.735	1850	2.8	5.859	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	355	1303	1168	0.304	356	0.4	4.440	A
B - A505 N	1228	341	2200	0.558	1231	1.3	3.728	A
C - A505 S	1531	19	2488	0.615	1535	1.6	3.801	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.43	0.00	0.00	0.43	0.43			N/A	N/A
B - A505 N	1.25	0.56	1.12	1.49	1.75			N/A	N/A
C - A505 S	1.58	0.57	1.49	1.98	2.50			N/A	N/A

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.68	0.07	0.74	1.39	1.47			N/A	N/A
B - A505 N	2.07	0.04	0.42	5.62	9.81			N/A	N/A
C - A505 S	2.72	0.04	0.42	7.46	13.60			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	1.48	0.03	0.27	1.48	1.74			N/A	N/A
B - A505 N	5.30	0.03	0.32	7.86	26.71			N/A	N/A
C - A505 S	8.00	0.04	0.38	19.06	44.04			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	1.53	0.03	0.28	1.53	4.63			N/A	N/A
B - A505 N	5.52	0.03	0.28	5.52	15.09			N/A	N/A
C - A505 S	8.50	0.03	0.31	8.50	38.34			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.71	0.08	0.77	1.40	1.48			N/A	N/A
B - A505 N	2.15	0.05	0.59	5.76	9.03			N/A	N/A
C - A505 S	2.84	0.05	0.47	7.92	13.29			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.44	0.04	0.37	1.23	1.39			N/A	N/A
B - A505 N	1.27	0.04	0.35	3.12	6.30			N/A	N/A
C - A505 S	1.62	0.03	0.33	3.59	8.40			N/A	N/A

Base - 2043 S3-2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
20	London Rd - A505	Standard Roundabout		A, B, C	18.24	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2043 S3-2	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - London Road		✓	387	100.000
B - A505 N		✓	1839	100.000
C - A505 S		✓	2149	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	15	372
	B - A505 N	42	0	1797
	C - A505 S	579	1563	7

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - London Road	B - A505 N	C - A505 S
From	A - London Road	0	6	1
	B - A505 N	0	0	5
	C - A505 S	1	5	4

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - London Road	291	295
	B - A505 N	1384	1452
	C - A505 S	1618	1681
17:00-17:15	A - London Road	348	352
	B - A505 N	1653	1734
	C - A505 S	1932	2008
17:15-17:30	A - London Road	426	431
	B - A505 N	2025	2124
	C - A505 S	2366	2459
17:30-17:45	A - London Road	426	431
	B - A505 N	2025	2124
	C - A505 S	2366	2459
17:45-18:00	A - London Road	348	352
	B - A505 N	1653	1734
	C - A505 S	1932	2008
18:00-18:15	A - London Road	291	295
	B - A505 N	1384	1452
	C - A505 S	1618	1681

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS
A - London Road	0.44	6.75	0.8	3.4	A
B - A505 N	0.91	17.78	9.5	48.9	C
C - A505 S	0.94	20.65	12.8	70.8	C

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	291	1177	1245	0.234	290	0.3	3.763	A
B - A505 N	1384	284	2298	0.602	1378	1.5	3.890	A
C - A505 S	1618	31	2533	0.639	1611	1.7	3.876	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	348	1407	1125	0.309	347	0.4	4.625	A
B - A505 N	1653	340	2264	0.730	1649	2.6	5.803	A
C - A505 S	1932	38	2529	0.764	1926	3.1	5.916	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	426	1704	970	0.439	425	0.8	6.586	A
B - A505 N	2025	416	2218	0.913	2000	8.7	15.075	C
C - A505 S	2366	46	2524	0.937	2333	11.4	16.527	C

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	426	1725	959	0.444	426	0.8	6.749	A
B - A505 N	2025	417	2218	0.913	2022	9.5	17.775	C
C - A505 S	2366	46	2524	0.937	2361	12.8	20.654	C

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	348	1439	1109	0.314	349	0.5	4.750	A
B - A505 N	1653	342	2263	0.731	1680	2.8	6.445	A
C - A505 S	1932	38	2529	0.764	1970	3.3	6.856	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - London Road	291	1186	1240	0.235	292	0.3	3.797	A
B - A505 N	1384	286	2297	0.603	1389	1.5	3.989	A
C - A505 S	1618	32	2533	0.639	1624	1.8	3.989	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.30	0.00	0.00	0.30	0.30			N/A	N/A
B - A505 N	1.50	0.55	1.39	1.93	2.35			N/A	N/A
C - A505 S	1.75	0.52	1.11	2.64	3.03			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.44	0.00	0.00	0.44	0.44			N/A	N/A
B - A505 N	2.64	0.04	0.42	7.27	13.13			N/A	N/A
C - A505 S	3.15	0.04	0.42	8.71	15.89			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.77	0.03	0.26	0.77	0.77			N/A	N/A
B - A505 N	8.74	0.04	0.43	23.54	47.56			N/A	N/A
C - A505 S	11.45	0.05	0.75	33.14	59.44			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.79	0.03	0.29	1.23	3.45			N/A	N/A
B - A505 N	9.47	0.03	0.33	15.18	48.85			N/A	N/A
C - A505 S	12.77	0.04	0.38	29.37	70.76			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.46	0.00	0.00	0.46	0.46			N/A	N/A
B - A505 N	2.78	0.04	0.45	7.71	13.30			N/A	N/A
C - A505 S	3.33	0.04	0.45	9.33	16.44			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A - London Road	0.31	0.00	0.00	0.31	0.31			N/A	N/A
B - A505 N	1.53	0.03	0.32	3.01	7.97			N/A	N/A
C - A505 S	1.79	0.03	0.32	3.32	9.32			N/A	N/A

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: J19_Norton Rd.j9
Path: C:\Users\923595\Royal HaskoningDHV\P-PC7029-Baldock-OPA - Team\WIP\02 Calculations\Junction Modelling\Models\2026 post-COMET models
Report generation date: 25/02/2026 15:39:18

Summary of junction performance

	AM				PM			
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC
	Base - 2029							
Stream B-C	13.5	44.9	128.47	1.01	0.8	3.8	14.85	0.45
Stream B-A	8.8	30.5	161.03	0.98	1.1	5.3	26.71	0.53
Stream C-AB	0.5	1.6	7.44	0.27	1.2	5.3	11.52	0.49
	Base - 2029 wDev							
Stream B-C	16.6	52.6	123.77	1.02	1.7	6.7	19.93	0.64
Stream B-A	6.0	20.9	209.38	0.99	0.6	2.5	30.58	0.37
Stream C-AB	2.0	9.6	10.62	0.58	5.1	28.1	24.55	0.79
	Base - 2043							
Stream B-C	27.3	61.3	210.85	1.11	1.6	7.4	23.62	0.63
Stream B-A	13.2	34.6	253.94	1.07	1.4	7.5	37.72	0.60
Stream C-AB	0.6	2.8	7.76	0.33	1.9	8.1	14.01	0.60
	Base - 2043 s-1							
Stream B-C	50.0	85.7	368.99	1.23	3.7	20.0	38.80	0.81
Stream B-A	13.0	30.3	428.09	1.18	1.3	6.2	62.97	0.59
Stream C-AB	3.4	17.5	13.20	0.67	9.4	46.4	40.17	0.88
	Base - 2043 s-2							
Stream B-C	28.9	64.7	201.83	1.11	4.0	21.8	41.78	0.82
Stream B-A	8.5	24.5	289.36	1.07	1.4	6.7	67.63	0.62
Stream C-AB	2.8	13.8	12.09	0.64	8.7	44.1	38.19	0.87

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

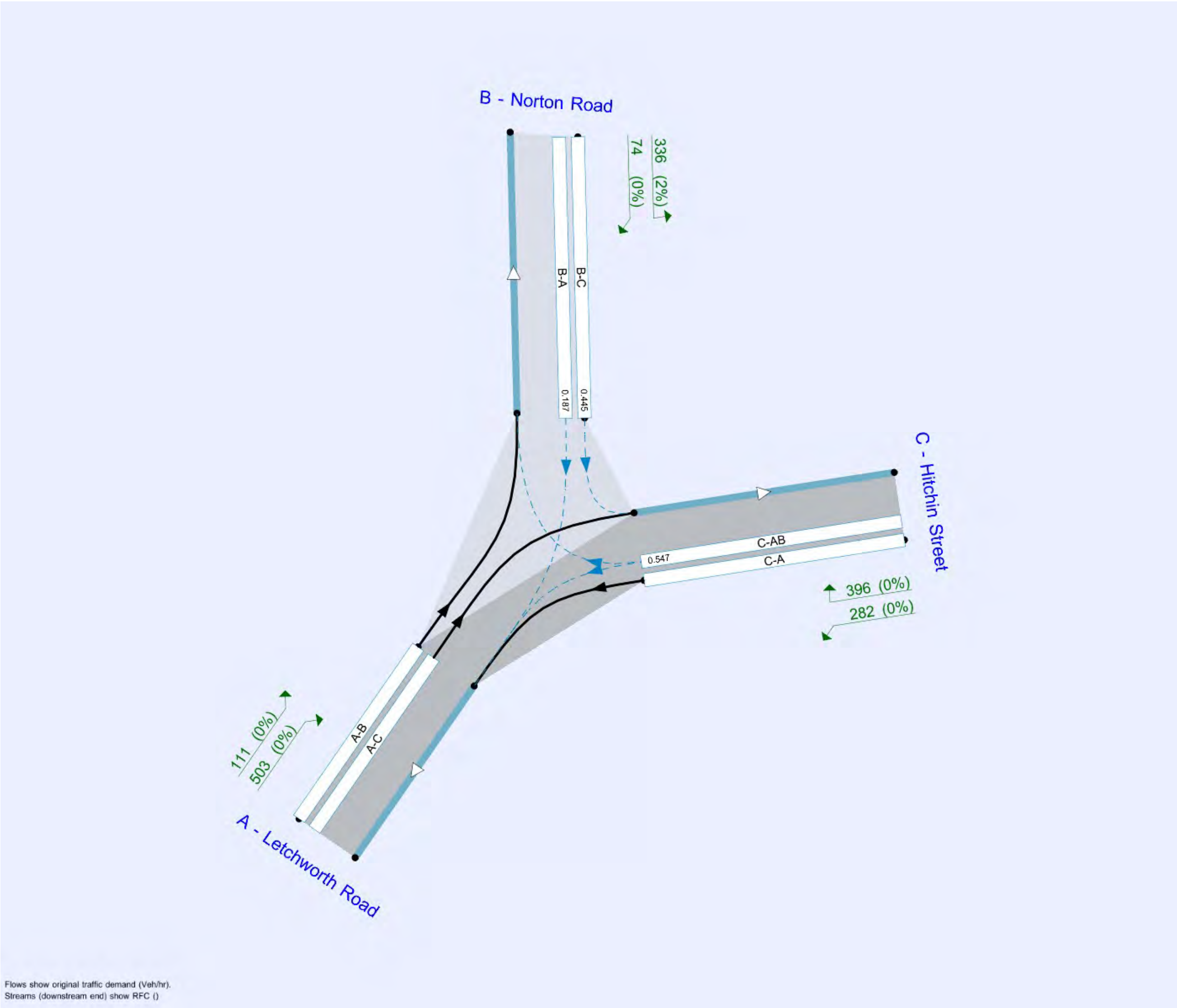
File summary

File Description

Title	Norton Road/Letchworth Road/Hitchin Street
Location	Baldock, SG7 5AP
Site number	J19
Date	20/02/2026
Version	1
Status	Draft
Identifier	
Client	Urban & Civic
Jobnumber	PC7029
Enumerator	CORPORATEROOT\923595
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓			0.85	90.00	100.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2029	AM	ONE HOUR	07:45	09:15	15	✓
D2	2029	PM	ONE HOUR	16:45	18:15	15	✓
D3	2029 wDev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 wDev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2043	AM	ONE HOUR	07:45	09:15	15	✓
D6	2043	PM	ONE HOUR	16:45	18:15	15	✓
D7	2043 s-1	AM	ONE HOUR	07:45	09:15	15	✓
D8	2043 s-1	PM	ONE HOUR	16:45	18:15	15	✓
D9	2043 s-2	AM	ONE HOUR	07:45	09:15	15	✓
D10	2043 s-2	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

Base - 2029, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		51.58	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Letchworth Road		Major
B	Norton Road		Minor
C	Hitchin Street		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Hitchin Street	9.37		✓	2.20	120.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Norton Road	One lane plus flare	9.74	5.02	3.09	2.93	2.93		1.00	57	71

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	544	0.085	0.214	0.135	0.306
B-C	698	0.091	0.231	-	-
C-B	643	0.213	0.213	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2029	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	375	100.000
B - Norton Road		ONE HOUR	✓	532	100.000
C - Hitchin Street		ONE HOUR	✓	538	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	66	309
	B - Norton Road	186	0	346
	C - Hitchin Street	403	135	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.18	0.82
	B - Norton Road	0.35	0.00	0.65
	C - Hitchin Street	0.75	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	1	3
	B - Norton Road	0	0	0
	C - Hitchin Street	2	2	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.010	1.030
	B - Norton Road	1.000	1.000	1.000
	C - Hitchin Street	1.020	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Letchworth Road	282	290
	B - Norton Road	401	401
	C - Hitchin Street	405	413
08:00-08:15	A - Letchworth Road	337	346
	B - Norton Road	478	478
	C - Hitchin Street	484	493
08:15-08:30	A - Letchworth Road	413	424
	B - Norton Road	586	586
	C - Hitchin Street	592	604
08:30-08:45	A - Letchworth Road	413	424
	B - Norton Road	586	586
	C - Hitchin Street	592	604
08:45-09:00	A - Letchworth Road	337	346
	B - Norton Road	478	478
	C - Hitchin Street	484	493
09:00-09:15	A - Letchworth Road	282	290
	B - Norton Road	401	401
	C - Hitchin Street	405	413

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	1.01	128.47	13.5	44.9	F	317	476
B-A	0.98	161.03	8.8	30.5	F	171	256
C-AB	0.27	7.44	0.5	1.6	A	144	217
C-A						349	524
A-B						61	91
A-C						284	425

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	260	65	555	0.470	257	0.0	0.9	11.962	B
B-A	140	35	379	0.370	138	0.0	0.6	14.811	B
C-AB	112	28	626	0.178	111	0.0	0.2	6.971	A
C-A	293	73			293				
A-B	50	12			50				
A-C	233	58			233				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	311	78	499	0.624	308	0.9	1.6	18.624	C
B-A	167	42	320	0.523	165	0.6	1.0	22.999	C
C-AB	139	35	640	0.217	139	0.2	0.3	7.185	A
C-A	345	86			345				
A-B	59	15			59				
A-C	278	69			278				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	381	95	386	0.987	352	1.6	8.9	74.546	F
B-A	205	51	208	0.983	183	1.0	6.4	103.085	F
C-AB	183	46	667	0.274	182	0.3	0.5	7.426	A
C-A	410	102			410				
A-B	73	18			73				
A-C	340	85			340				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	381	95	378	1.007	363	8.9	13.5	128.473	F
B-A	205	51	209	0.979	195	6.4	8.8	161.034	F
C-AB	183	46	667	0.274	183	0.5	0.5	7.441	A
C-A	410	102			410				
A-B	73	18			73				
A-C	340	85			340				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	311	78	446	0.697	355	13.5	2.6	51.308	F
B-A	167	42	272	0.614	195	8.8	1.8	58.142	F
C-AB	139	35	640	0.217	140	0.5	0.3	7.208	A
C-A	345	86			345				
A-B	59	15			59				
A-C	278	69			278				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	260	65	547	0.476	267	2.6	0.9	13.129	B
B-A	140	35	373	0.375	145	1.8	0.6	16.048	C
C-AB	112	28	626	0.178	112	0.3	0.2	7.004	A
C-A	293	73			293				
A-B	50	12			50				
A-C	233	58			233				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.86	0.52	0.99	1.40	1.46			N/A	N/A
B-A	0.57	0.55	1.00	1.40	1.45			N/A	N/A
C-AB	0.24	0.00	0.00	0.24	0.24			N/A	N/A

08:00 - 08:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.58	0.05	0.69	3.87	5.80			N/A	N/A
B-A	1.04	0.05	0.57	2.27	3.31			N/A	N/A
C-AB	0.31	0.00	0.00	0.31	0.31			N/A	N/A

08:15 - 08:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	8.87	0.29	5.09	21.04	28.22			N/A	N/A
B-A	6.41	0.25	3.68	14.84	19.80			N/A	N/A
C-AB	0.45	0.03	0.26	0.46	0.49			N/A	N/A

08:30 - 08:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	13.47	0.32	7.50	33.10	44.91			N/A	N/A
B-A	8.79	0.19	4.33	22.08	30.51			N/A	N/A
C-AB	0.46	0.03	0.34	1.40	1.63			N/A	N/A

08:45 - 09:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	2.58	0.05	0.45	7.14	12.19			N/A	N/A
B-A	1.77	0.04	0.42	4.76	8.25			N/A	N/A
C-AB	0.32	0.00	0.00	0.32	0.32			N/A	N/A

09:00 - 09:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.93	0.03	0.28	1.04	3.68			N/A	N/A
B-A	0.62	0.03	0.28	0.62	1.99			N/A	N/A
C-AB	0.24	0.00	0.00	0.24	0.24			N/A	N/A

Base - 2029, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		6.75	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2029	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	626	100.000
B - Norton Road		ONE HOUR	✓	317	100.000
C - Hitchin Street		ONE HOUR	✓	441	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	121	505
	B - Norton Road	139	0	178
	C - Hitchin Street	220	221	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.19	0.81
	B - Norton Road	0.44	0.00	0.56
	C - Hitchin Street	0.50	0.50	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	0	0
	B - Norton Road	0	0	1
	C - Hitchin Street	0	0	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.000	1.000
	B - Norton Road	1.000	1.000	1.010
	C - Hitchin Street	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Letchworth Road	471	471
	B - Norton Road	239	240
	C - Hitchin Street	332	332
17:00-17:15	A - Letchworth Road	563	563
	B - Norton Road	285	287
	C - Hitchin Street	396	396
17:15-17:30	A - Letchworth Road	689	689
	B - Norton Road	349	351
	C - Hitchin Street	486	486
17:30-17:45	A - Letchworth Road	689	689
	B - Norton Road	349	351
	C - Hitchin Street	486	486
17:45-18:00	A - Letchworth Road	563	563
	B - Norton Road	285	287
	C - Hitchin Street	396	396
18:00-18:15	A - Letchworth Road	471	471
	B - Norton Road	239	240
	C - Hitchin Street	332	332

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.45	14.85	0.8	3.8	B	163	245
B-A	0.53	26.71	1.1	5.3	D	128	191
C-AB	0.49	11.52	1.2	5.3	B	237	355
C-A						168	252
A-B						111	167
A-C						463	695

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	134	34	569	0.235	133	0.0	0.3	8.226	A
B-A	105	26	384	0.272	103	0.0	0.4	12.745	B
C-AB	182	45	594	0.306	180	0.0	0.5	8.666	A
C-A	150	38			150				
A-B	91	23			91				
A-C	380	95			380				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	160	40	525	0.305	160	0.3	0.4	9.846	A
B-A	125	31	346	0.361	124	0.4	0.6	16.167	C
C-AB	227	57	599	0.379	226	0.5	0.7	9.661	A
C-A	169	42			169				
A-B	109	27			109				
A-C	454	113			454				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	196	49	442	0.444	195	0.4	0.8	14.478	B
B-A	153	38	288	0.531	151	0.6	1.1	25.799	D
C-AB	301	75	615	0.490	300	0.7	1.1	11.388	B
C-A	184	46			184				
A-B	133	33			133				
A-C	556	139			556				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	196	49	438	0.447	196	0.8	0.8	14.849	B
B-A	153	38	287	0.533	153	1.1	1.1	26.706	D
C-AB	301	75	615	0.490	301	1.1	1.2	11.518	B
C-A	184	46			184				
A-B	133	33			133				
A-C	556	139			556				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	160	40	521	0.307	161	0.8	0.4	10.044	B
B-A	125	31	345	0.362	127	1.1	0.6	16.664	C
C-AB	227	57	599	0.379	229	1.2	0.7	9.802	A
C-A	169	42			169				
A-B	109	27			109				
A-C	454	113			454				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	134	34	567	0.236	135	0.4	0.3	8.334	A
B-A	105	26	383	0.273	105	0.6	0.4	12.996	B
C-AB	182	45	594	0.306	183	0.7	0.5	8.785	A
C-A	150	38			150				
A-B	91	23			91				
A-C	380	95			380				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.30	0.00	0.00	0.30	0.30			N/A	N/A
B-A	0.37	0.00	0.00	0.37	0.37			N/A	N/A
C-AB	0.47	0.00	0.00	0.47	0.47			N/A	N/A

17:00 - 17:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.43	0.00	0.00	0.43	0.43			N/A	N/A
B-A	0.55	0.55	1.00	1.40	1.45			N/A	N/A
C-AB	0.68	0.55	1.00	1.40	1.45			N/A	N/A

17:15 - 17:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.78	0.03	0.26	0.78	0.78			N/A	N/A
B-A	1.07	0.03	0.28	1.07	3.48			N/A	N/A
C-AB	1.14	0.03	0.27	1.14	1.27			N/A	N/A

17:30 - 17:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.80	0.03	0.30	1.49	3.77			N/A	N/A
B-A	1.10	0.03	0.30	1.51	5.33			N/A	N/A
C-AB	1.17	0.03	0.29	1.17	5.27			N/A	N/A

17:45 - 18:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.45	0.04	0.37	1.19	1.34			N/A	N/A
B-A	0.58	0.05	0.48	1.36	1.48			N/A	N/A
C-AB	0.72	0.13	0.88	1.38	1.44			N/A	N/A

18:00 - 18:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.31	0.03	0.27	0.48	0.75			N/A	N/A
B-A	0.38	0.03	0.34	1.18	1.37			N/A	N/A
C-AB	0.49	0.04	0.44	1.27	1.38			N/A	N/A

Base - 2029 wDev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		47.36	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 wDev	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	397	100.000
B - Norton Road		ONE HOUR	✓	532	100.000
C - Hitchin Street		ONE HOUR	✓	714	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	63	334
	B - Norton Road	99	0	433
	C - Hitchin Street	441	273	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.16	0.84
	B - Norton Road	0.19	0.00	0.81
	C - Hitchin Street	0.62	0.38	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	1	2
	B - Norton Road	1	0	1
	C - Hitchin Street	1	5	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.010	1.020
	B - Norton Road	1.010	1.000	1.010
	C - Hitchin Street	1.010	1.050	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Letchworth Road	299	304
	B - Norton Road	401	405
	C - Hitchin Street	538	551
08:00-08:15	A - Letchworth Road	357	363
	B - Norton Road	478	483
	C - Hitchin Street	642	658
08:15-08:30	A - Letchworth Road	437	445
	B - Norton Road	586	592
	C - Hitchin Street	786	806
08:30-08:45	A - Letchworth Road	437	445
	B - Norton Road	586	592
	C - Hitchin Street	786	806
08:45-09:00	A - Letchworth Road	357	363
	B - Norton Road	478	483
	C - Hitchin Street	642	658
09:00-09:15	A - Letchworth Road	299	304
	B - Norton Road	401	405
	C - Hitchin Street	538	551

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	1.02	123.77	16.6	52.6	F	397	596
B-A	0.99	209.38	6.0	20.9	F	91	136
C-AB	0.58	10.62	2.0	9.6	B	350	525
C-A						305	458
A-B						58	87
A-C						306	460

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	326	81	592	0.551	321	0.0	1.2	13.095	B
B-A	75	19	306	0.244	73	0.0	0.3	15.399	C
C-AB	254	63	681	0.373	251	0.0	0.7	8.342	A
C-A	284	71			284				
A-B	47	12			47				
A-C	251	63			251				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	389	97	554	0.702	385	1.2	2.2	20.793	C
B-A	89	22	234	0.381	88	0.3	0.6	24.501	C
C-AB	331	83	727	0.455	329	0.7	1.1	9.071	A
C-A	311	78			311				
A-B	57	14			57				
A-C	300	75			300				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	477	119	480	0.992	444	2.2	10.3	69.353	F
B-A	109	27	110	0.989	93	0.6	4.7	146.394	F
C-AB	465	116	811	0.574	462	1.1	2.0	10.408	B
C-A	321	80			321				
A-B	69	17			69				
A-C	368	92			368				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	477	119	466	1.022	452	10.3	16.6	123.769	F
B-A	109	27	115	0.947	104	4.7	6.0	209.384	F
C-AB	465	116	809	0.575	465	2.0	2.0	10.621	B
C-A	321	80			321				
A-B	69	17			69				
A-C	368	92			368				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	389	97	520	0.749	442	16.6	3.4	60.291	F
B-A	89	22	175	0.508	108	6.0	1.1	64.836	F
C-AB	331	83	725	0.456	334	2.0	1.2	9.313	A
C-A	311	78			311				
A-B	57	14			57				
A-C	300	75			300				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	326	81	587	0.555	335	3.4	1.3	14.714	B
B-A	75	19	298	0.250	78	1.1	0.3	16.580	C
C-AB	254	63	680	0.373	256	1.2	0.8	8.520	A
C-A	284	71			284				
A-B	47	12			47				
A-C	251	63			251				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.19	0.54	1.12	1.51	1.77			N/A	N/A
B-A	0.31	0.00	0.00	0.31	0.31			N/A	N/A
C-AB	0.71	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	2.20	0.07	1.06	5.51	8.02			N/A	N/A
B-A	0.59	0.04	0.41	1.49	1.65			N/A	N/A
C-AB	1.09	0.53	1.06	1.22	1.61			N/A	N/A

08:15 - 08:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	10.30	0.34	6.04	24.42	32.67			N/A	N/A
B-A	4.70	0.20	2.60	10.71	14.30			N/A	N/A
C-AB	1.99	0.03	0.29	1.99	8.27			N/A	N/A

08:30 - 08:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	16.56	0.51	10.09	39.46	52.60			N/A	N/A
B-A	6.01	0.14	2.75	15.05	20.94			N/A	N/A
C-AB	2.04	0.03	0.30	2.40	9.61			N/A	N/A

08:45 - 09:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	3.45	0.05	0.48	9.73	16.51			N/A	N/A
B-A	1.14	0.04	0.38	2.88	5.10			N/A	N/A
C-AB	1.17	0.31	1.12	1.65	1.88			N/A	N/A

09:00 - 09:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.29	0.03	0.29	1.29	5.75			N/A	N/A
B-A	0.34	0.03	0.27	0.48	1.08			N/A	N/A
C-AB	0.75	0.07	0.77	1.35	1.35			N/A	N/A

Base - 2029 wDev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		12.16	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2029 wDev	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	617	100.000
B - Norton Road		ONE HOUR	✓	348	100.000
C - Hitchin Street		ONE HOUR	✓	629	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	119	498
	B - Norton Road	63	0	285
	C - Hitchin Street	274	355	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.19	0.81
	B - Norton Road	0.18	0.00	0.82
	C - Hitchin Street	0.44	0.56	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	0	0
	B - Norton Road	1	0	1
	C - Hitchin Street	0	1	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.000	1.000
	B - Norton Road	1.010	1.000	1.010
	C - Hitchin Street	1.000	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Letchworth Road	465	465
	B - Norton Road	262	265
	C - Hitchin Street	474	476
17:00-17:15	A - Letchworth Road	555	555
	B - Norton Road	313	316
	C - Hitchin Street	565	569
17:15-17:30	A - Letchworth Road	679	679
	B - Norton Road	383	387
	C - Hitchin Street	693	696
17:30-17:45	A - Letchworth Road	679	679
	B - Norton Road	383	387
	C - Hitchin Street	693	696
17:45-18:00	A - Letchworth Road	555	555
	B - Norton Road	313	316
	C - Hitchin Street	565	569
18:00-18:15	A - Letchworth Road	465	465
	B - Norton Road	262	265
	C - Hitchin Street	474	476

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.64	19.93	1.7	6.7	C	262	392
B-A	0.37	30.58	0.6	2.5	D	58	87
C-AB	0.79	24.55	5.1	28.1	C	437	655
C-A						140	210
A-B						109	164
A-C						457	685

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	215	54	581	0.369	212	0.0	0.6	9.704	A
B-A	47	12	314	0.151	47	0.0	0.2	13.431	B
C-AB	318	80	642	0.496	314	0.0	1.1	10.865	B
C-A	155	39			155				
A-B	90	22			90				
A-C	375	94			375				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	256	64	550	0.466	255	0.6	0.9	12.147	B
B-A	57	14	265	0.214	56	0.2	0.3	17.203	C
C-AB	412	103	672	0.613	409	1.1	1.9	13.679	B
C-A	153	38			153				
A-B	107	27			107				
A-C	448	112			448				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	314	78	496	0.632	311	0.9	1.6	19.061	C
B-A	69	17	191	0.364	68	0.3	0.5	29.146	D
C-AB	580	145	734	0.791	569	1.9	4.8	21.813	C
C-A	112	28			112				
A-B	131	33			131				
A-C	548	137			548				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	314	78	494	0.636	314	1.6	1.7	19.927	C
B-A	69	17	187	0.371	69	0.5	0.6	30.581	D
C-AB	580	145	733	0.791	579	4.8	5.2	24.554	C
C-A	112	28			112				
A-B	131	33			131				
A-C	548	137			548				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	256	64	548	0.467	259	1.7	0.9	12.596	B
B-A	57	14	260	0.218	58	0.6	0.3	17.875	C
C-AB	412	103	672	0.614	424	5.2	2.2	15.414	C
C-A	153	38			153				
A-B	107	27			107				
A-C	448	112			448				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	215	54	580	0.370	216	0.9	0.6	9.916	A
B-A	47	12	311	0.152	48	0.3	0.2	13.687	B
C-AB	318	80	642	0.496	322	2.2	1.2	11.433	B
C-A	155	39			155				
A-B	90	22			90				
A-C	375	94			375				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.58	0.55	1.00	1.40	1.45			N/A	N/A
B-A	0.17	0.00	0.00	0.17	0.17			N/A	N/A
C-AB	1.13	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.85	0.12	0.91	1.37	1.37			N/A	N/A
B-A	0.27	0.00	0.00	0.27	0.27			N/A	N/A
C-AB	1.94	0.14	1.46	3.79	4.92			N/A	N/A

17:15 - 17:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.63	0.03	0.29	1.63	6.68			N/A	N/A
B-A	0.55	0.03	0.27	0.55	1.09			N/A	N/A
C-AB	4.80	0.05	0.47	13.68	24.16			N/A	N/A

17:30 - 17:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.69	0.03	0.29	1.69	6.46			N/A	N/A
B-A	0.57	0.03	0.33	1.23	2.45			N/A	N/A
C-AB	5.15	0.04	0.36	11.93	28.13			N/A	N/A

17:45 - 18:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.90	0.06	0.66	1.73	2.38			N/A	N/A
B-A	0.28	0.03	0.25	0.45	0.48			N/A	N/A
C-AB	2.17	0.06	0.97	5.51	8.14			N/A	N/A

18:00 - 18:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.60	0.04	0.40	1.11	1.80			N/A	N/A
B-A	0.18	0.03	0.25	0.45	0.48			N/A	N/A
C-AB	1.21	0.04	0.39	3.09	5.46			N/A	N/A

Base - 2043, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		84.53	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2043	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	385	100.000
B - Norton Road		ONE HOUR	✓	579	100.000
C - Hitchin Street		ONE HOUR	✓	571	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	70	315
	B - Norton Road	175	0	404
	C - Hitchin Street	406	165	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.18	0.82
	B - Norton Road	0.30	0.00	0.70
	C - Hitchin Street	0.71	0.29	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	1	2
	B - Norton Road	0	0	0
	C - Hitchin Street	2	1	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.010	1.020
	B - Norton Road	1.000	1.000	1.000
	C - Hitchin Street	1.020	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Letchworth Road	290	295
	B - Norton Road	436	436
	C - Hitchin Street	430	437
08:00-08:15	A - Letchworth Road	346	352
	B - Norton Road	521	521
	C - Hitchin Street	513	522
08:15-08:30	A - Letchworth Road	424	432
	B - Norton Road	637	637
	C - Hitchin Street	629	639
08:30-08:45	A - Letchworth Road	424	432
	B - Norton Road	637	637
	C - Hitchin Street	629	639
08:45-09:00	A - Letchworth Road	346	352
	B - Norton Road	521	521
	C - Hitchin Street	513	522
09:00-09:15	A - Letchworth Road	290	295
	B - Norton Road	436	436
	C - Hitchin Street	430	437

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	1.11	210.85	27.3	61.3	F	371	556
B-A	1.07	253.94	13.2	34.6	F	161	241
C-AB	0.33	7.76	0.6	2.8	A	181	272
C-A						342	514
A-B						64	96
A-C						289	434

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	304	76	557	0.546	299	0.0	1.2	13.747	B
B-A	132	33	350	0.376	129	0.0	0.6	16.160	C
C-AB	139	35	642	0.216	137	0.0	0.3	7.124	A
C-A	291	73			291				
A-B	53	13			53				
A-C	237	59			237				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	363	91	499	0.729	358	1.2	2.4	24.754	C
B-A	157	39	275	0.571	155	0.6	1.2	29.192	D
C-AB	174	44	660	0.264	174	0.3	0.4	7.396	A
C-A	339	85			339				
A-B	63	16			63				
A-C	283	71			283				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	445	111	413	1.078	393	2.4	15.3	103.572	F
B-A	193	48	179	1.074	164	1.2	8.5	141.940	F
C-AB	232	58	696	0.333	231	0.4	0.6	7.734	A
C-A	397	99			397				
A-B	77	19			77				
A-C	347	87			347				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	445	111	402	1.107	397	15.3	27.3	210.853	F
B-A	193	48	180	1.071	174	8.5	13.2	253.938	F
C-AB	232	58	696	0.333	232	0.6	0.6	7.762	A
C-A	397	99			397				
A-B	77	19			77				
A-C	347	87			347				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	363	91	433	0.839	418	27.3	13.7	181.543	F
B-A	157	39	192	0.817	181	13.2	7.1	214.664	F
C-AB	174	44	661	0.263	175	0.6	0.4	7.437	A
C-A	339	85			339				
A-B	63	16			63				
A-C	283	71			283				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	304	76	522	0.582	353	13.7	1.5	27.251	D
B-A	132	33	310	0.424	157	7.1	0.8	27.212	D
C-AB	139	35	642	0.216	139	0.4	0.3	7.172	A
C-A	291	73			291				
A-B	53	13			53				
A-C	237	59			237				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.16	0.20	1.10	1.71	1.95			N/A	N/A
B-A	0.59	0.07	0.72	1.35	1.42			N/A	N/A
C-AB	0.30	0.00	0.00	0.30	0.30			N/A	N/A

08:00 - 08:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	2.45	0.06	1.05	6.32	9.39			N/A	N/A
B-A	1.24	0.05	0.57	2.89	4.34			N/A	N/A
C-AB	0.41	0.00	0.00	0.41	0.41			N/A	N/A

08:15 - 08:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	15.31	1.89	12.12	29.99	36.99			N/A	N/A
B-A	8.48	0.95	6.20	17.19	21.62			N/A	N/A
C-AB	0.62	0.03	0.26	0.62	0.62			N/A	N/A

08:30 - 08:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	27.28	5.30	23.01	50.74	61.27			N/A	N/A
B-A	13.18	1.36	9.71	27.44	34.64			N/A	N/A
C-AB	0.63	0.03	0.33	1.37	2.80			N/A	N/A

08:45 - 09:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	13.69	2.03	11.06	25.97	31.73			N/A	N/A
B-A	7.14	1.02	5.37	13.80	17.11			N/A	N/A
C-AB	0.43	0.00	0.00	0.43	0.43			N/A	N/A

09:00 - 09:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.47	0.03	0.29	1.47	5.98			N/A	N/A
B-A	0.77	0.03	0.28	0.77	2.31			N/A	N/A
C-AB	0.31	0.00	0.00	0.31	0.31			N/A	N/A

Base - 2043, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		10.14	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2043	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	621	100.000
B - Norton Road		ONE HOUR	✓	363	100.000
C - Hitchin Street		ONE HOUR	✓	492	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	110	511
	B - Norton Road	131	0	232
	C - Hitchin Street	222	270	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.18	0.82
	B - Norton Road	0.36	0.00	0.64
	C - Hitchin Street	0.45	0.55	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	0	0
	B - Norton Road	0	0	0
	C - Hitchin Street	1	0	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.000	1.000
	B - Norton Road	1.000	1.000	1.000
	C - Hitchin Street	1.010	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Letchworth Road	468	468
	B - Norton Road	273	273
	C - Hitchin Street	370	372
17:00-17:15	A - Letchworth Road	558	558
	B - Norton Road	326	326
	C - Hitchin Street	442	444
17:15-17:30	A - Letchworth Road	684	684
	B - Norton Road	400	400
	C - Hitchin Street	542	544
17:30-17:45	A - Letchworth Road	684	684
	B - Norton Road	400	400
	C - Hitchin Street	542	544
17:45-18:00	A - Letchworth Road	558	558
	B - Norton Road	326	326
	C - Hitchin Street	442	444
18:00-18:15	A - Letchworth Road	468	468
	B - Norton Road	273	273
	C - Hitchin Street	370	372

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.63	23.62	1.6	7.4	C	213	319
B-A	0.60	37.72	1.4	7.5	E	120	180
C-AB	0.60	14.01	1.9	8.1	B	299	448
C-A						153	229
A-B						101	151
A-C						469	703

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	175	44	548	0.319	173	0.0	0.5	9.546	A
B-A	99	25	359	0.274	97	0.0	0.4	13.652	B
C-AB	227	57	606	0.374	224	0.0	0.6	9.365	A
C-A	144	36			144				
A-B	83	21			83				
A-C	385	96			385				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	209	52	502	0.415	208	0.5	0.7	12.171	B
B-A	118	29	314	0.375	117	0.4	0.6	18.169	C
C-AB	285	71	617	0.463	284	0.6	1.0	10.806	B
C-A	157	39			157				
A-B	99	25			99				
A-C	459	115			459				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	255	64	413	0.618	252	0.7	1.5	21.914	C
B-A	144	36	242	0.597	141	0.6	1.4	34.792	D
C-AB	384	96	644	0.597	381	1.0	1.8	13.677	B
C-A	157	39			157				
A-B	121	30			121				
A-C	563	141			563				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	255	64	407	0.628	255	1.5	1.6	23.622	C
B-A	144	36	239	0.605	144	1.4	1.4	37.723	E
C-AB	384	96	644	0.597	384	1.8	1.9	14.009	B
C-A	157	39			157				
A-B	121	30			121				
A-C	563	141			563				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	209	52	497	0.419	212	1.6	0.7	12.774	B
B-A	118	29	311	0.378	121	1.4	0.6	19.220	C
C-AB	285	71	617	0.462	289	1.9	1.0	11.114	B
C-A	157	39			157				
A-B	99	25			99				
A-C	459	115			459				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	175	44	546	0.320	176	0.7	0.5	9.754	A
B-A	99	25	358	0.276	100	0.6	0.4	13.999	B
C-AB	227	57	607	0.374	228	1.0	0.7	9.567	A
C-A	144	36			144				
A-B	83	21			83				
A-C	385	96			385				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.46	0.00	0.00	0.46	0.46			N/A	N/A
B-A	0.37	0.00	0.00	0.37	0.37			N/A	N/A
C-AB	0.65	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.69	0.10	0.83	1.38	1.44			N/A	N/A
B-A	0.58	0.08	0.78	1.36	1.43			N/A	N/A
C-AB	0.98	0.32	1.01	1.49	1.49			N/A	N/A

17:15 - 17:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.53	0.03	0.29	1.53	6.41			N/A	N/A
B-A	1.35	0.03	0.30	1.80	6.56			N/A	N/A
C-AB	1.81	0.03	0.29	1.81	7.63			N/A	N/A

17:30 - 17:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.62	0.03	0.30	1.72	7.44			N/A	N/A
B-A	1.45	0.03	0.32	2.70	7.47			N/A	N/A
C-AB	1.86	0.03	0.29	1.86	8.09			N/A	N/A

17:45 - 18:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.74	0.05	0.55	1.28	1.80			N/A	N/A
B-A	0.63	0.04	0.45	1.49	1.63			N/A	N/A
C-AB	1.05	0.10	0.98	1.69	1.98			N/A	N/A

18:00 - 18:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.48	0.04	0.37	1.34	1.34			N/A	N/A
B-A	0.39	0.03	0.33	1.01	1.01			N/A	N/A
C-AB	0.68	0.05	0.51	1.50	1.61			N/A	N/A

Base - 2043 s-1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		117.83	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2043 s-1	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	529	100.000
B - Norton Road		ONE HOUR	✓	562	100.000
C - Hitchin Street		ONE HOUR	✓	785	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	60	469
	B - Norton Road	108	0	454
	C - Hitchin Street	474	311	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.11	0.89
	B - Norton Road	0.19	0.00	0.81
	C - Hitchin Street	0.60	0.40	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	1	1
	B - Norton Road	2	0	2
	C - Hitchin Street	1	2	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.010	1.010
	B - Norton Road	1.020	1.000	1.020
	C - Hitchin Street	1.010	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Letchworth Road	398	402
	B - Norton Road	423	432
	C - Hitchin Street	591	599
08:00-08:15	A - Letchworth Road	476	480
	B - Norton Road	505	515
	C - Hitchin Street	706	716
08:15-08:30	A - Letchworth Road	582	588
	B - Norton Road	619	631
	C - Hitchin Street	864	876
08:30-08:45	A - Letchworth Road	582	588
	B - Norton Road	619	631
	C - Hitchin Street	864	876
08:45-09:00	A - Letchworth Road	476	480
	B - Norton Road	505	515
	C - Hitchin Street	706	716
09:00-09:15	A - Letchworth Road	398	402
	B - Norton Road	423	432
	C - Hitchin Street	591	599

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	1.23	368.99	50.0	85.7	F	417	625
B-A	1.18	428.09	13.0	30.3	F	99	149
C-AB	0.67	13.20	3.4	17.5	B	427	641
C-A						293	440
A-B						55	83
A-C						430	646

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	342	85	550	0.621	336	0.0	1.6	16.325	C
B-A	81	20	260	0.313	80	0.0	0.4	19.761	C
C-AB	301	75	702	0.428	297	0.0	0.9	8.837	A
C-A	290	73			290				
A-B	45	11			45				
A-C	353	88			353				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	408	102	495	0.825	399	1.6	3.9	34.585	D
B-A	97	24	169	0.576	94	0.4	1.2	46.456	E
C-AB	399	100	758	0.527	397	0.9	1.5	9.999	A
C-A	306	77			306				
A-B	54	13			54				
A-C	422	105			422				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	500	125	420	1.189	411	3.9	26.0	153.198	F
B-A	119	30	101	1.178	92	1.2	7.9	229.018	F
C-AB	581	145	863	0.674	574	1.5	3.2	12.621	B
C-A	283	71			283				
A-B	66	17			66				
A-C	516	129			516				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	500	125	405	1.233	404	26.0	50.0	346.376	F
B-A	119	30	101	1.177	98	7.9	13.0	422.909	F
C-AB	581	145	863	0.674	581	3.2	3.4	13.202	B
C-A	283	71			283				
A-B	66	17			66				
A-C	516	129			516				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	408	102	451	0.906	442	50.0	41.5	368.994	F
B-A	97	24	111	0.877	105	13.0	10.9	428.090	F
C-AB	399	100	758	0.527	406	3.4	1.7	10.542	B
C-A	306	77			306				
A-B	54	13			54				
A-C	422	105			422				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	342	85	487	0.701	476	41.5	8.0	196.729	F
B-A	81	20	120	0.677	111	10.9	3.6	264.299	F
C-AB	301	75	702	0.428	303	1.7	1.0	9.123	A
C-A	290	73			290				
A-B	45	11			45				
A-C	353	88			353				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.56	0.08	1.09	3.31	4.55			N/A	N/A
B-A	0.44	0.04	0.36	1.12	1.12			N/A	N/A
C-AB	0.93	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	3.89	0.08	1.11	10.20	14.89			N/A	N/A
B-A	1.21	0.04	0.43	3.01	4.92			N/A	N/A
C-AB	1.52	0.33	1.37	2.32	2.82			N/A	N/A

08:15 - 08:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	25.99	8.26	23.33	43.08	50.15			N/A	N/A
B-A	7.89	1.36	6.12	14.88	18.27			N/A	N/A
C-AB	3.24	0.03	0.35	7.18	17.48			N/A	N/A

08:30 - 08:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	49.95	21.97	46.88	75.84	85.74			N/A	N/A
B-A	13.04	1.86	10.50	24.76	30.26			N/A	N/A
C-AB	3.36	0.03	0.32	5.48	17.31			N/A	N/A

08:45 - 09:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	41.52	16.70	38.53	64.82	73.95			N/A	N/A
B-A	10.95	0.96	7.80	23.19	29.55			N/A	N/A
C-AB	1.66	0.15	1.36	2.94	3.82			N/A	N/A

09:00 - 09:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	8.02	0.13	3.13	21.20	30.32			N/A	N/A
B-A	3.64	0.06	0.90	10.18	16.17			N/A	N/A
C-AB	0.99	0.06	0.70	1.94	2.78			N/A	N/A

Base - 2043 s-1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		23.59	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2043 s-1	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	604	100.000
B - Norton Road		ONE HOUR	✓	406	100.000
C - Hitchin Street		ONE HOUR	✓	695	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	111	493
	B - Norton Road	73	0	333
	C - Hitchin Street	293	402	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.18	0.82
	B - Norton Road	0.18	0.00	0.82
	C - Hitchin Street	0.42	0.58	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	0	0
	B - Norton Road	0	0	2
	C - Hitchin Street	0	0	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.000	1.000
	B - Norton Road	1.000	1.000	1.020
	C - Hitchin Street	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Letchworth Road	455	455
	B - Norton Road	306	311
	C - Hitchin Street	523	523
17:00-17:15	A - Letchworth Road	543	543
	B - Norton Road	365	371
	C - Hitchin Street	625	625
17:15-17:30	A - Letchworth Road	665	665
	B - Norton Road	447	454
	C - Hitchin Street	765	765
17:30-17:45	A - Letchworth Road	665	665
	B - Norton Road	447	454
	C - Hitchin Street	765	765
17:45-18:00	A - Letchworth Road	543	543
	B - Norton Road	365	371
	C - Hitchin Street	625	625
18:00-18:15	A - Letchworth Road	455	455
	B - Norton Road	306	311
	C - Hitchin Street	523	523

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.81	38.80	3.7	20.0	E	306	458
B-A	0.59	62.97	1.3	6.2	F	67	100
C-AB	0.88	40.17	9.4	46.4	E	516	774
C-A						122	182
A-B						102	153
A-C						452	679

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	251	63	570	0.440	248	0.0	0.8	11.061	B
B-A	55	14	298	0.185	54	0.0	0.2	14.736	B
C-AB	370	93	669	0.554	364	0.0	1.5	11.692	B
C-A	153	38			153				
A-B	84	21			84				
A-C	371	93			371				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	299	75	534	0.560	298	0.8	1.2	15.076	C
B-A	66	16	239	0.275	65	0.2	0.4	20.658	C
C-AB	485	121	708	0.685	480	1.5	2.7	15.751	C
C-A	140	35			140				
A-B	100	25			100				
A-C	443	111			443				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	367	92	464	0.790	359	1.2	3.2	32.034	D
B-A	80	20	146	0.552	77	0.4	1.1	50.915	F
C-AB	693	173	786	0.882	672	2.7	8.2	30.751	D
C-A	72	18			72				
A-B	122	31			122				
A-C	543	136			543				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	367	92	454	0.807	365	3.2	3.7	38.802	E
B-A	80	20	135	0.594	80	1.1	1.3	62.975	F
C-AB	693	173	786	0.882	689	8.2	9.4	40.166	E
C-A	72	18			72				
A-B	122	31			122				
A-C	543	136			543				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	299	75	527	0.568	309	3.7	1.4	17.124	C
B-A	66	16	227	0.289	69	1.3	0.4	23.320	C
C-AB	485	121	708	0.685	510	9.4	3.1	20.811	C
C-A	140	35			140				
A-B	100	25			100				
A-C	443	111			443				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	251	63	568	0.441	253	1.4	0.8	11.495	B
B-A	55	14	293	0.188	56	0.4	0.2	15.222	C
C-AB	370	93	669	0.554	377	3.1	1.6	12.668	B
C-A	153	38			153				
A-B	84	21			84				
A-C	371	93			371				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.77	0.55	1.00	1.40	1.45			N/A	N/A
B-A	0.22	0.00	0.00	0.22	0.22			N/A	N/A
C-AB	1.45	0.55	1.00	1.45	1.45			N/A	N/A

17:00 - 17:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.23	0.08	0.96	2.39	3.17			N/A	N/A
B-A	0.37	0.00	0.00	0.37	0.37			N/A	N/A
C-AB	2.70	0.13	1.32	5.93	7.98			N/A	N/A

17:15 - 17:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	3.23	0.04	0.39	8.52	17.06			N/A	N/A
B-A	1.10	0.03	0.30	1.36	5.18			N/A	N/A
C-AB	8.19	0.10	2.51	22.51	33.23			N/A	N/A

17:30 - 17:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	3.71	0.03	0.34	7.65	19.98			N/A	N/A
B-A	1.31	0.04	0.37	3.37	6.22			N/A	N/A
C-AB	9.40	0.06	1.11	27.40	46.45			N/A	N/A

17:45 - 18:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.37	0.04	0.43	3.55	5.84			N/A	N/A
B-A	0.42	0.04	0.36	1.22	1.40			N/A	N/A
C-AB	3.14	0.06	0.85	8.67	13.61			N/A	N/A

18:00 - 18:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.81	0.03	0.33	1.80	3.84			N/A	N/A
B-A	0.24	0.03	0.29	0.82	1.19			N/A	N/A
C-AB	1.58	0.04	0.35	3.89	8.07			N/A	N/A

Base - 2043 s-2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		70.82	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2043 s-2	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	452	100.000
B - Norton Road		ONE HOUR	✓	545	100.000
C - Hitchin Street		ONE HOUR	✓	755	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	62	390
	B - Norton Road	103	0	442
	C - Hitchin Street	450	305	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.14	0.86
	B - Norton Road	0.19	0.00	0.81
	C - Hitchin Street	0.60	0.40	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	1	2
	B - Norton Road	2	0	1
	C - Hitchin Street	1	2	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.010	1.020
	B - Norton Road	1.020	1.000	1.010
	C - Hitchin Street	1.010	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A - Letchworth Road	340	347
	B - Norton Road	410	415
	C - Hitchin Street	568	576
08:00-08:15	A - Letchworth Road	406	414
	B - Norton Road	490	496
	C - Hitchin Street	679	688
08:15-08:30	A - Letchworth Road	498	507
	B - Norton Road	600	607
	C - Hitchin Street	831	843
08:30-08:45	A - Letchworth Road	498	507
	B - Norton Road	600	607
	C - Hitchin Street	831	843
08:45-09:00	A - Letchworth Road	406	414
	B - Norton Road	490	496
	C - Hitchin Street	679	688
09:00-09:15	A - Letchworth Road	340	347
	B - Norton Road	410	415
	C - Hitchin Street	568	576

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	1.11	201.83	28.9	64.7	F	406	608
B-A	1.07	289.36	8.5	24.5	F	95	142
C-AB	0.64	12.09	2.8	13.8	B	402	603
C-A						291	436
A-B						57	85
A-C						358	537

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	333	83	576	0.578	327	0.0	1.3	14.208	B
B-A	78	19	284	0.273	76	0.0	0.4	17.197	C
C-AB	288	72	700	0.411	284	0.0	0.8	8.617	A
C-A	281	70			281				
A-B	47	12			47				
A-C	294	73			294				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	397	99	531	0.749	392	1.3	2.7	24.954	C
B-A	93	23	205	0.452	91	0.4	0.8	31.143	D
C-AB	378	95	751	0.503	376	0.8	1.3	9.624	A
C-A	301	75			301				
A-B	56	14			56				
A-C	351	88			351				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	487	122	454	1.072	434	2.7	15.9	98.235	F
B-A	113	28	106	1.066	93	0.8	5.9	175.561	F
C-AB	540	135	845	0.639	535	1.3	2.7	11.700	B
C-A	291	73			291				
A-B	68	17			68				
A-C	429	107			429				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	487	122	439	1.108	435	15.9	28.9	201.830	F
B-A	113	28	109	1.037	103	5.9	8.5	289.356	F
C-AB	540	135	845	0.640	540	2.7	2.8	12.090	B
C-A	291	73			291				
A-B	68	17			68				
A-C	429	107			429				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	397	99	481	0.826	465	28.9	11.9	164.645	F
B-A	93	23	119	0.780	106	8.5	5.1	233.252	F
C-AB	378	95	751	0.504	383	2.8	1.5	10.014	B
C-A	301	75			301				
A-B	56	14			56				
A-C	351	88			351				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	333	83	552	0.602	374	11.9	1.6	24.593	C
B-A	78	19	252	0.307	96	5.1	0.5	25.608	D
C-AB	288	72	700	0.411	290	1.5	0.9	8.855	A
C-A	281	70			281				
A-B	47	12			47				
A-C	294	73			294				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.32	0.29	1.22	1.88	2.30			N/A	N/A
B-A	0.37	0.03	0.26	0.47	0.49			N/A	N/A
C-AB	0.85	0.55	1.00	1.40	1.45			N/A	N/A

08:00 - 08:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	2.70	0.07	1.19	6.92	10.18			N/A	N/A
B-A	0.78	0.04	0.44	1.66	2.45			N/A	N/A
C-AB	1.34	0.40	1.24	1.86	2.20			N/A	N/A

08:15 - 08:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	15.88	1.86	12.50	31.36	38.78			N/A	N/A
B-A	5.88	0.53	3.96	12.23	15.63			N/A	N/A
C-AB	2.67	0.03	0.32	4.46	13.79			N/A	N/A

08:30 - 08:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	28.91	5.74	24.47	53.61	64.65			N/A	N/A
B-A	8.49	0.49	5.51	18.81	24.50			N/A	N/A
C-AB	2.76	0.03	0.31	3.59	13.35			N/A	N/A

08:45 - 09:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	11.93	1.18	8.71	24.92	31.55			N/A	N/A
B-A	5.09	0.84	3.80	9.40	11.56			N/A	N/A
C-AB	1.46	0.18	1.27	2.42	2.94			N/A	N/A

09:00 - 09:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.59	0.03	0.29	1.59	6.81			N/A	N/A
B-A	0.46	0.03	0.27	0.48	1.25			N/A	N/A
C-AB	0.90	0.06	0.74	1.65	2.11			N/A	N/A

Base - 2043 s-2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
19	High Street/South Road/London Road	T-Junction	Two-way		23.54	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2043 s-2	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Letchworth Road		ONE HOUR	✓	614	100.000
B - Norton Road		ONE HOUR	✓	410	100.000
C - Hitchin Street		ONE HOUR	✓	678	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	111	503
	B - Norton Road	74	0	336
	C - Hitchin Street	282	396	0

Proportions

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0.00	0.18	0.82
	B - Norton Road	0.18	0.00	0.82
	C - Hitchin Street	0.42	0.58	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	0	0	0
	B - Norton Road	0	0	2
	C - Hitchin Street	0	0	0

Average PCU Per Veh

		To		
		A - Letchworth Road	B - Norton Road	C - Hitchin Street
From	A - Letchworth Road	1.000	1.000	1.000
	B - Norton Road	1.000	1.000	1.020
	C - Hitchin Street	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A - Letchworth Road	462	462
	B - Norton Road	309	314
	C - Hitchin Street	510	510
17:00-17:15	A - Letchworth Road	552	552
	B - Norton Road	369	375
	C - Hitchin Street	610	610
17:15-17:30	A - Letchworth Road	676	676
	B - Norton Road	451	459
	C - Hitchin Street	746	746
17:30-17:45	A - Letchworth Road	676	676
	B - Norton Road	451	459
	C - Hitchin Street	746	746
17:45-18:00	A - Letchworth Road	552	552
	B - Norton Road	369	375
	C - Hitchin Street	610	610
18:00-18:15	A - Letchworth Road	462	462
	B - Norton Road	309	314
	C - Hitchin Street	510	510

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.82	41.78	4.0	21.8	E	308	462
B-A	0.62	67.63	1.4	6.7	F	68	102
C-AB	0.87	38.19	8.7	44.1	E	502	753
C-A						120	180
A-B						102	153
A-C						462	692

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	253	63	568	0.445	250	0.0	0.8	11.207	B
B-A	56	14	297	0.187	55	0.0	0.2	14.783	B
C-AB	362	90	661	0.547	356	0.0	1.4	11.662	B
C-A	149	37			149				
A-B	84	21			84				
A-C	379	95			379				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	302	76	532	0.568	300	0.8	1.3	15.417	C
B-A	67	17	238	0.280	66	0.2	0.4	20.853	C
C-AB	472	118	698	0.677	467	1.4	2.6	15.623	C
C-A	137	34			137				
A-B	100	25			100				
A-C	452	113			452				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	370	92	460	0.804	361	1.3	3.5	33.801	D
B-A	81	20	143	0.570	78	0.4	1.2	53.427	F
C-AB	672	168	771	0.873	652	2.6	7.7	29.866	D
C-A	74	19			74				
A-B	122	31			122				
A-C	554	138			554				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	370	92	450	0.822	368	3.5	4.0	41.778	E
B-A	81	20	132	0.616	80	1.2	1.4	67.634	F
C-AB	672	168	771	0.873	668	7.7	8.7	38.194	E
C-A	74	19			74				
A-B	122	31			122				
A-C	554	138			554				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	302	76	524	0.576	312	4.0	1.4	17.776	C
B-A	67	17	226	0.295	70	1.4	0.4	23.733	C
C-AB	472	118	698	0.677	495	8.7	3.0	20.105	C
C-A	137	34			137				
A-B	100	25			100				
A-C	452	113			452				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	253	63	566	0.447	255	1.4	0.8	11.669	B
B-A	56	14	293	0.190	56	0.4	0.2	15.274	C
C-AB	362	90	661	0.547	367	3.0	1.5	12.583	B
C-A	149	37			149				
A-B	84	21			84				
A-C	379	95			379				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.79	0.55	1.00	1.40	1.45			N/A	N/A
B-A	0.23	0.00	0.00	0.23	0.23			N/A	N/A
C-AB	1.40	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.27	0.08	0.97	2.54	3.43			N/A	N/A
B-A	0.38	0.00	0.00	0.38	0.38			N/A	N/A
C-AB	2.58	0.13	1.25	5.65	7.58			N/A	N/A

17:15 - 17:30

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	3.45	0.04	0.41	9.36	17.90			N/A	N/A
B-A	1.17	0.03	0.30	1.76	5.78			N/A	N/A
C-AB	7.65	0.09	1.98	21.34	32.05			N/A	N/A

17:30 - 17:45

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	4.02	0.04	0.35	8.98	21.80			N/A	N/A
B-A	1.42	0.04	0.38	3.70	6.72			N/A	N/A
C-AB	8.70	0.05	0.77	25.24	44.14			N/A	N/A

17:45 - 18:00

Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	1.42	0.04	0.42	3.70	6.19			N/A	N/A
B-A	0.43	0.04	0.37	1.25	1.43			N/A	N/A
C-AB	2.99	0.06	0.83	8.20	12.88			N/A	N/A

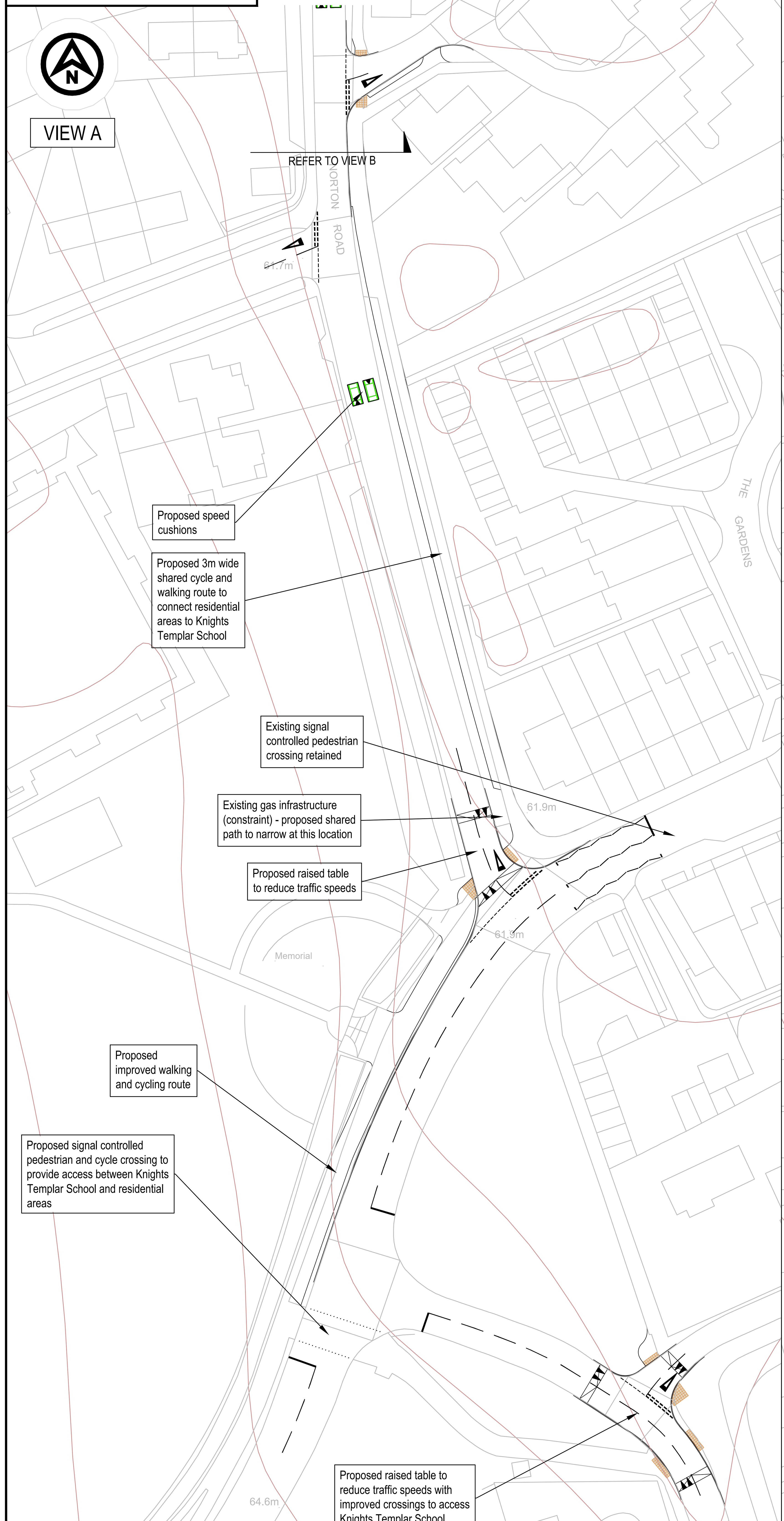
18:00 - 18:15

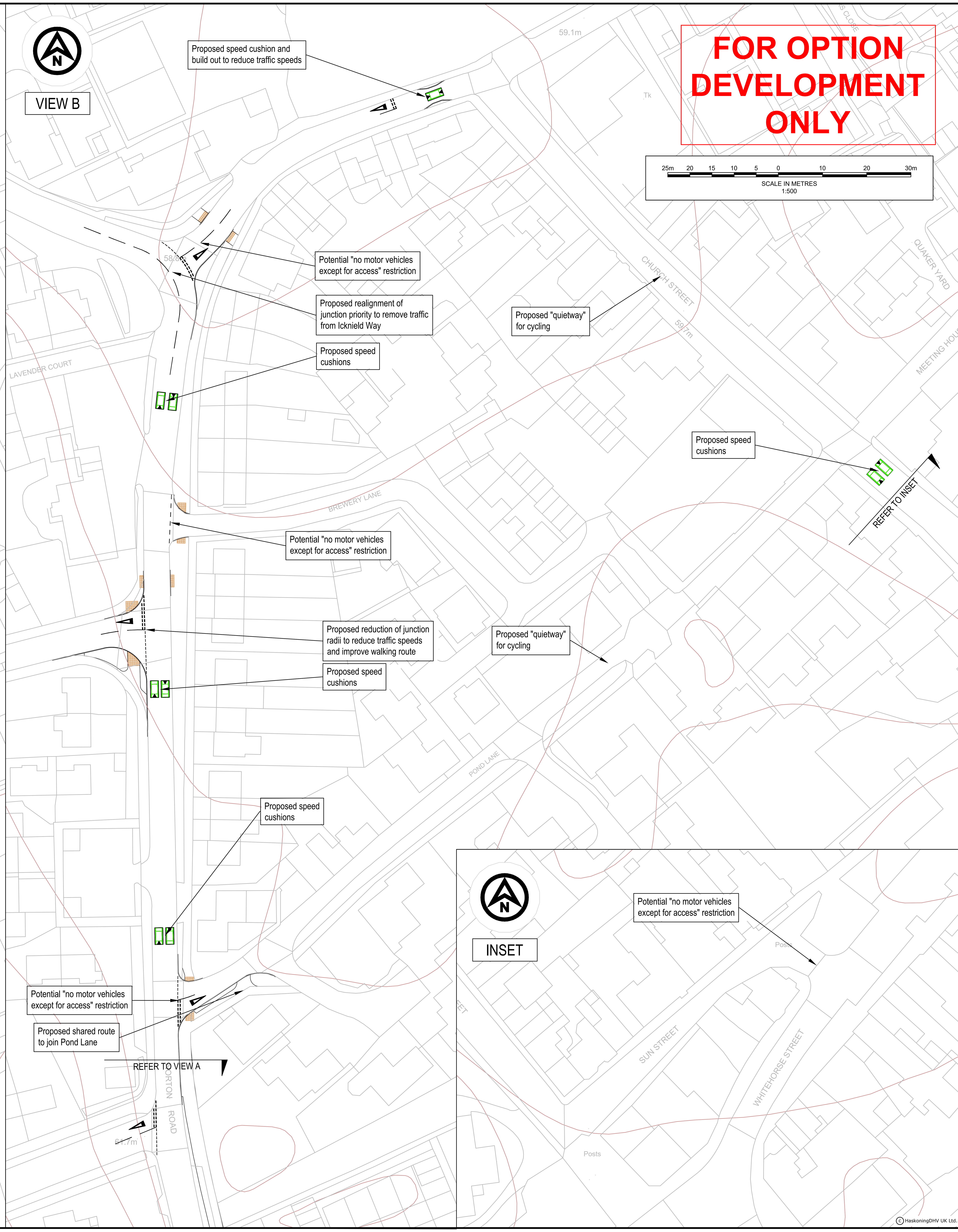
Stream	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-C	0.83	0.03	0.32	1.80	3.98			N/A	N/A
B-A	0.24	0.03	0.29	0.86	1.23			N/A	N/A
C-AB	1.53	0.04	0.35	3.78	7.74			N/A	N/A

Appendix C – Proposal for Norton Road

DRAWING No.
PC7029-ITP-CE-GB-DR-D-0118

DO NOT SCALE





GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
3. ALL LEVELS AND CO-ORDINATES ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
4. THIS DRAWING HAS BEEN BASED UPON ORDNANCE SURVEY / TOPOGRAPHICAL INFORMATION SUPPLIED BY OTHERS, ITP SHALL NOT BE LIABLE FOR ANY INACCURACY OR DEFICIENCIES ARISING FROM IT.
5. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND DOES NOT REPRESENT A CONSTRUCTION STAGE DRAWING.

LEGEND:

- PROPOSED KERB LINE
- PROPOSED TACTILE PAVING FOR UNCONTROLLED PEDESTRIAN CROSSINGS
- PROPOSED TACTILE PAVING FOR CONTROLLED PEDESTRIAN CROSSINGS
- PROPOSED SHARED FOOT & CYCLEWAY
- PROPOSED FOOTWAY
- PROPOSED CYCLEWAY
- PROPOSED AREA FOR SOFT LANDSCAPING
- PROPOSED AREA FOR HARD LANDSCAPING
- GROWING BALDOCK DEVELOPMENT SITE PLANNING BOUNDARY

REV	DATE	DESCRIPTION	BY	CHK	APP
P01	05.02.26	ISSUED FOR COMMENT	BKB	MLG	GB

REVISIONS

DRAWING STATUS: PLANNING

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: NORTON ROAD - PROPOSED TRAFFIC CALMING

itp by Haskoning

Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	MLG	GB
DATE	SCALE AT A1	PROJECT NUMBER
JAN 26	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-ITP-CE-GB-DR-D-0118	S3	P01

Appendix D – Phasing Plan and Summary Sheet

Ref	Task	Dependencies		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
BA1	Units per parcel		Cumulative units																	
1.0	Provide footway between P1 and existing route on Bygrave Road		Complete before commencing P1																	
1.1	Build temporary access on A507 North Road in location of future bus-only access (utilise for construction vehicle routing for later stages of P1)		Complete before 310 units on BA1 occupied																	
1.2	Improve walking and cycling routes to Knights Templar School along Icknield Way and Norton Road		Complete before 310 units on BA1 occupied																	
1.3	Build main access on A507 North Road (permanent form) including signalised crossings		Complete before 550 units on BA1 occupied																	
1.4	Convert construction traffic access to bus-only use (permanent form) including signalised crossings		Complete before 770 units on BA1 occupied																	
1.5	Run interim 30-minute frequency shuttle bus service.		Complete before 450 units on BA1 occupied																	
1.6	Implement traffic gating on A507 North Road southbound using signal timings at future bus-only access (and then main BA1 access)		Complete before 310 units on BA1 occupied																	
1.7	Build single lane alternating traffic system under the A507 Station Road railway bridge		Complete before 310 units on BA1 occupied																	
1.8	Upgrade junction at A507 Station Road and Icknield Way East and remove access to/from Icknield Way and Football Close loop		Complete before 310 units on BA1 occupied																	
1.9	Complete full length of North Road / Station Road segregated cycle route between Icknield Way East and bus-only access		Complete before 310 units on BA1 occupied																	
1.10	Reopen pedestrian access to the station from A507 North Road		Subject to Network Rail negotiations; U&C to advise																	
1.11	Enlarge roundabout at junction of B656 Royston Road and A505 eastbound slip roads		Complete before 850 units on BA1 occupied																	
1.12	Build a multi-modal bridge		Complete before 850 units on BA1 occupied																	
1.13	Connect North Road to B656 Royston Road and A505 via a new access road		Complete before 850 units on BA1 occupied																	
1.14	Convert Bygrave Road to a walking and cycling greenway with local access (phased as parcels complete eastwards)		Complete before 1,125 units on BA1 occupied																	
1.15	Run 15-minute frequency Baldock Flyer loop bus service		Implement at 850th occupation on BA1																	
1.16	Upgrade Whitehorse signalised cross-roads and introduce turning ban between A507 Station Road and B656 Royston Road		Complete before 1,125 units occupied on BA1																	
1.17	Provide capacity improvements at A1(M) Junction 9 including partial signalisation		Complete before new access road open																	
1.18	Build new active travel underpass linking BA1 to B656 Royston Road		Complete before 850 units occupied on BA1																	
1.19	Extend 7.5t weight restrictions across Baldock and review directional signage		Implemented by HCC with U&C support																	
1.20	Extend 20mph speed limits to North Road, Station Road and Clothall Road		Implemented by HCC with U&C support																	
BA2																				
2.2	Build access on A507 Clothall Road		Complete before occupation																	
2.3	Build footway between access and Wallington Road, including signalised crossing point at access and improvements to Wallington Road roundabout		Complete before occupation																	
2.5	Provide pedestrian route to Laxton Gardens		Subject to Crown Estate negotiations; U&C to advise																	
BA3																				
3.1	Build access on Wallington Road		Complete before occupation																	
3.2	Upgrade footpath to A507 Clothall Road to tie in with crossing point to BA2, e.g. all-weather surface upgrades and directional signage		Complete before occupation																	
3.3	Upgrade footpaths to Hartsfield School and Pinnocks Lane via A507 Clothall Road, e.g. all-weather surface upgrades and directional signage		Complete before occupation																	
3.4	Upgrade walking and cycling routes through Clothall Common from B656 Royston Road, e.g directional signage		Complete before occupation (only if school included on site)																	
3.5	Upgrade A507 Clothall Road / Wallington Road / South Road with improved crossing points and traffic calming geometry		Complete before occupation (only if school included on site)																	
3.6	Wayfinding improvements to coincide with relocation of Knights Templar School (if applicable), e.g. town-wide pedestrian and cycle signage		Complete before occupation (KTS relocation scenario only)																	
BA10																				
10.1	Build access points on B656 Royston Road, including integrated signalised crossings and traffic calming		Complete before occupation on BA10																	
10.2	Build segregated cycle route on B656 Royston Road and Yeomanry Drive corridor between Icknield Way East and BA1 railway underpass		Complete before 850th occupation on BA1 (to tie in with underpass)																	
10.3	Build bus gate between Royston Road and Yeomanry Drive		Complete before 850th occupation on BA1 (to tie in with MMB and bus loop)																	
10.4	Build remainder of segregated cycle route on B656 Royston Road corridor to junction of B656 Royston Road and A505 eastbound slip roads		Complete before 2,370 units occupied on BA1																	
10.5	Install signalised pegasus crossing on B656 Royston Road at location of existing bridleway crossing		Complete before 2,370 units occupied on BA1																	

Notes

The schedule outlines works to the public highway or other off-site interventions. It is assumed that internal design and phasing will be designed to coincide with these works.

The phasing is based on buildability and dependencies rather than requirements for delivering mode shift, although this will follow.

Not all elements may be carried out by U&C. There are some elements that may be more appropriate or necessary for HCC to deliver.

Shaded areas indicate approximate build-out of residential units as provided by U&C on 20th November 2025

Bars indicate approximate periods of work based on estimation only. The actual time required may be longer or shorter than indicated.

Assumed 45 completions per quarter

BA1	BA2	BA3	BA10
Complete before 1 unit occupied			
Footway between Parcel 1 and existing route on Bygrave Road	Access on A507 Clothall Road	Access on Wallington Road	Access points on B656 Royston Road, including integrated signalised crossings and traffic calming
	Footway between access and Wallington Road, including signalised crossing point at access and improvements to Wallington Road	Upgraded A507 Clothall Road / Wallington Road / South Road with improved crossing points and traffic calming geometry	
Complete before 310 units occupied		Upgraded footpath on A507 Clothall Road to tie in with crossing point to BA2	
Temporary access on A507 North Road in location of future bus-only access		Upgraded footpaths to Hartsfield School and Pinnocks Lane via A507 Clothall Road	
Traffic gating on A507 North Road southbound using signal timings at future bus-only access (and then main BA1 access)		Upgraded walking and cycling routes through Clothall Common from B656 Royston Road	
Single lane alternating traffic system under the A507 Station Road railway bridge		Wayfinding improvements to coincide with relocation of Knights Templar School (if applicable)	
Upgrades to junction at A507 Station Road and Icknield Way East and remove access to/from Icknield Way and Football Close loop			
Improve walking and cycling routes to Knights Templar School along Icknield Way and Norton Road			
Complete full length of North Road / Station Road segregated cycle route between Icknield Way East and bus-only access			
Complete before 450 units occupied			
30-minute frequency shuttle bus service.			
Complete before 550 units occupied			
Main access on A507 North Road (permanent form) including signalised crossings			
Complete before 770 units occupied			
Bus-only access on A507 North Road (permanent form) including signalised crossings			
Complete before 850 units occupied			
Enlarge roundabout at junction of B656 Royston Road and A505 eastbound slip roads			
New access road connecting North Road to B656 Royston Road and A505			
Bus gate between Royston Road and Yeomanry Drive*			
15-minute frequency Baldock Flyer loop bus service			
Multi-modal bridge			
New active travel underpass linking BA1 to B656 Royston Road			
Segregated cycle route on B656 Royston Road and Yeomanry Drive corridor between Icknield Way East and BA1 railway underpass*			
Complete before multi-modal bridge open			
Capacity improvements at A1(M) Junction 9 including partial signalisation			
Complete before 1,125 units occupied			
Upgrades to Whitehorse Road signalised cross-roads and turning ban between A507 Station Road and B656 Royston Road			
Bygrave Road converted to walking and cycling greenway with local access (phased as parcels complete eastwards)			
Complete before 2,370 units occupied			
Segregated cycle route on B656 Royston Road corridor to junction of B656 Royston Road and A505 eastbound slip road*			
Signalised pegasus crossing on B656 Royston Road at location of existing bridleway crossing*			

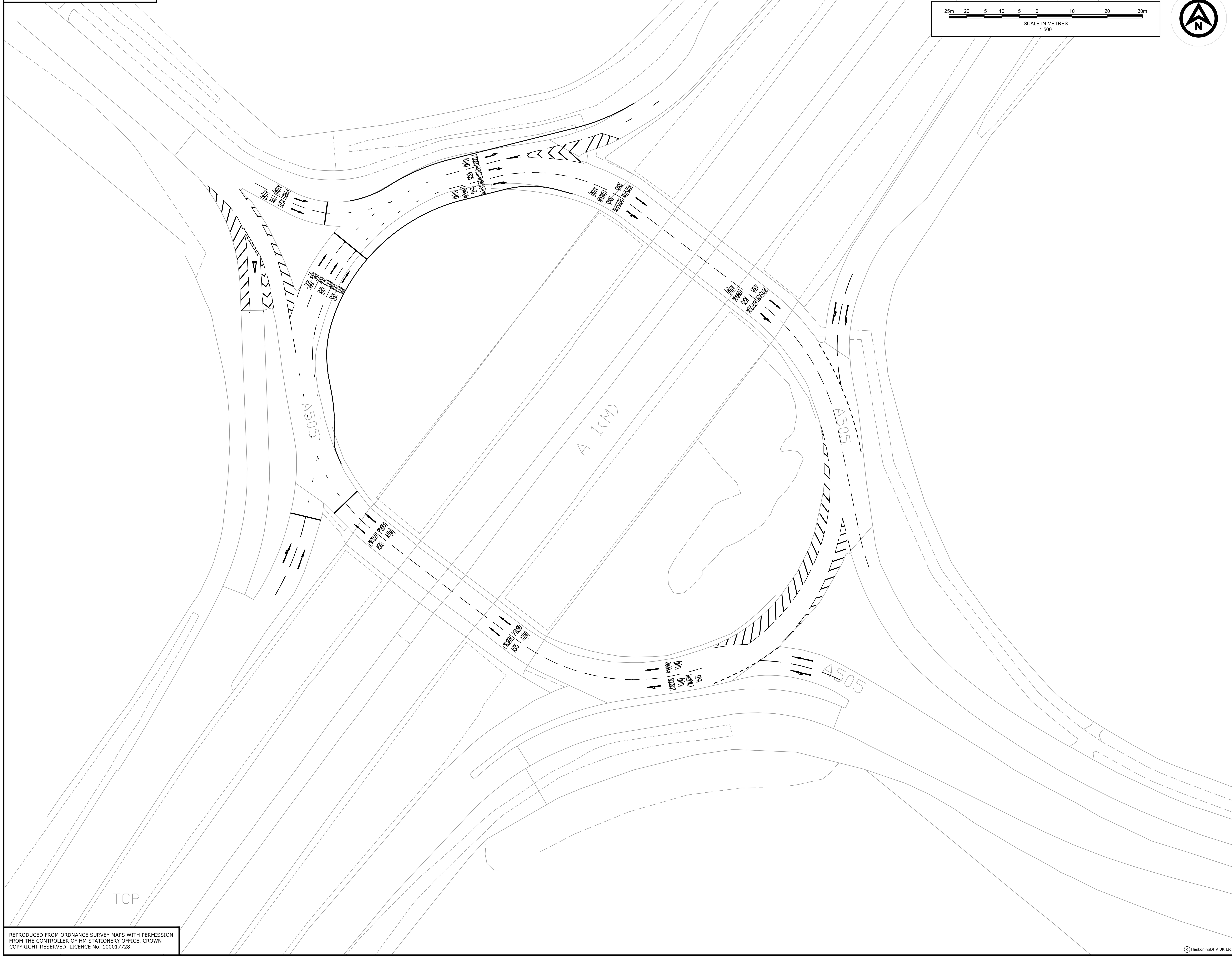
Key
Highway
Public Transport
Active Travel

* Interventions are part of other parcels but included in BA1 column as triggered by occupation on BA1

Appendix E – A1(M) Junction 9 Plan

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0132

DO NOT SCALE



GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
3. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
4. THIS DRAWING HAS BEEN BASED UPON SURVEY / OS INFORMATION SUPPLIED BY OTHERS, ROYAL HASKONING DHV SHALL NOT BE LIABLE FOR ANY INACCURACY OR DEFICIENCIES ARISING FROM IT.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
6. ALL MATERIALS AND WORKMANSHIP WILL BE AS SPECIFIED IN THE SPECIFICATION UNLESS NOTED OTHERWISE.
7. ALL LEVELS, DIMENSIONS AND LOCATIONS ARE TO BE CHECKED BY THE MAIN CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON SITE.
8. ALL HIGHWAY WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS AND AS AMENDED IN THE CLAUSES AND APPENDICES IN THE "SPECIFICATION OF CONTRACT DOCUMENTS".

LEGEND:

- PROPOSED KERB LINE
- PROPOSED SIGN & POST
- PROPOSED TACTILE PAVING
- PROPOSED SHARED FOOT & CYCLEWAY
- PROPOSED FOOTWAY
- PROPOSED CYCLEWAY
- PROPOSED AREA FOR SOFT LANDSCAPING (MATERIALS TO BE DETERMINED)
- PROPOSED AREA FOR HARD LANDSCAPING (MATERIALS TO BE DETERMINED)
- PROPOSED TRAFFIC CALMING

REV	DATE	DESCRIPTION	BY	CHK	APP
P01	07.08.25	UPDATED LANE LAYOUT	BKB	GB	GB
I01	04.08.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: PLANNING

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: A1(M) JUNCTION 9 OPTION 1 LAYOUT

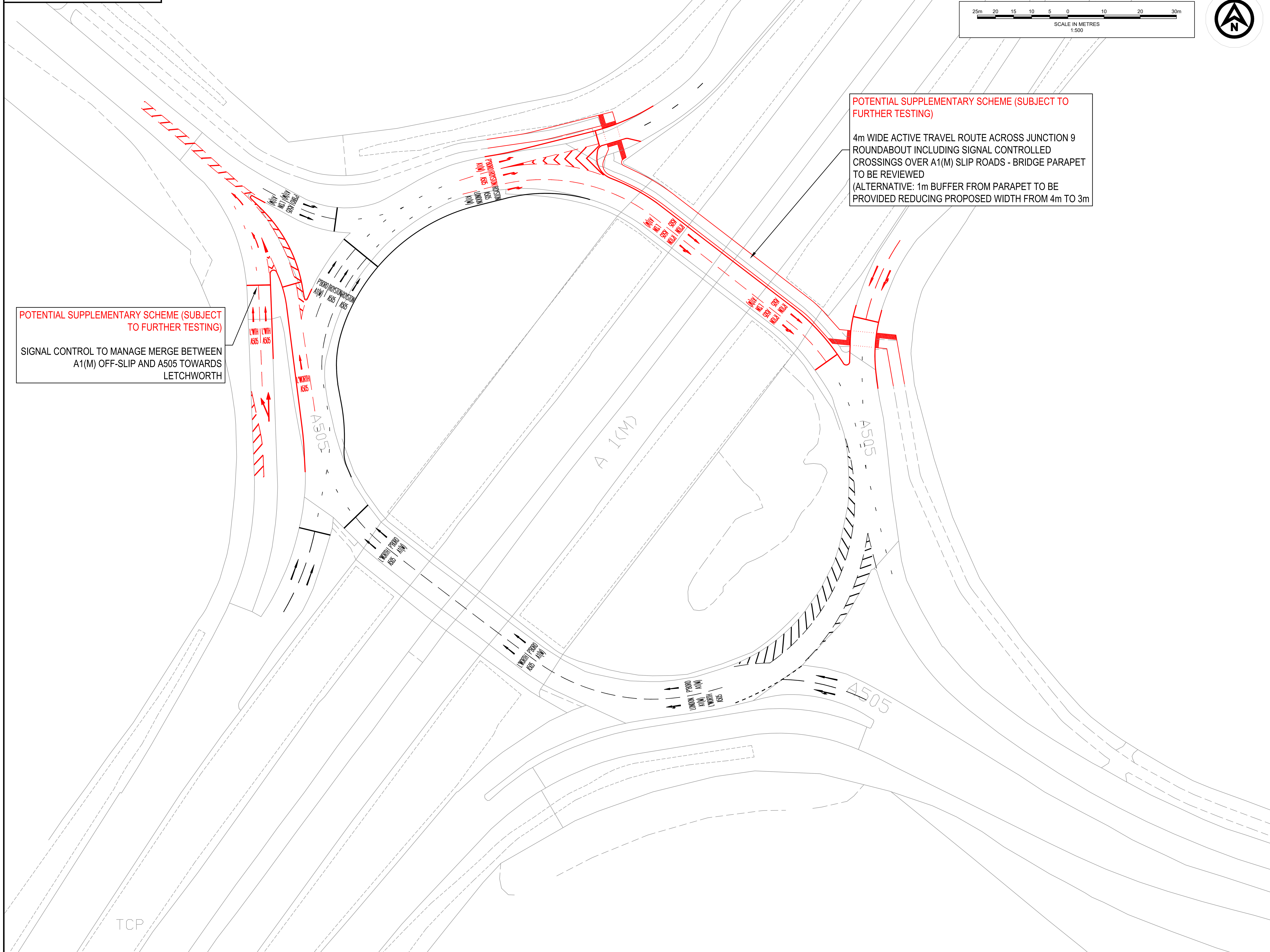
itp by Haskoning
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	GB	GB
DATE	SCALE AT A1	PROJECT NUMBER
AUG 25	1:500	PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0132	S3	P01

DRAWING No.
PC7029-RHD-CE-GB-DR-D-0132

DO NOT SCALE



GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
3. ALL LEVELS AND CO-ORDINATES ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
4. THIS DRAWING HAS BEEN BASED UPON ORDNANCE SURVEY / TOPOGRAPHICAL INFORMATION SUPPLIED BY OTHERS, ITP SHALL NOT BE LIABLE FOR ANY INACCURACY OR DEFICIENCIES ARISING FROM IT.
5. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND DOES NOT REPRESENT A CONSTRUCTION STAGE DRAWING.

LEGEND:

- PROPOSED KERB LINE/EDGING
- PROPOSED TACTILE PAVING FOR UNCONTROLLED PEDESTRIAN CROSSINGS
- PROPOSED TACTILE PAVING FOR CONTROLLED PEDESTRIAN CROSSINGS
- PROPOSED SHARED FOOT & CYCLEWAY
- PROPOSED FOOTWAY
- PROPOSED CYCLEWAY
- PROPOSED AREA FOR SOFT LANDSCAPING
- PROPOSED AREA FOR HARD LANDSCAPING

REV	DATE	DESCRIPTION	BY	CHK	APP
P02	18.03.26	ADDED ACTIVE TRAVEL/EXTRA CONTROLS	BKB	GB	GB
P01	07.08.25	UPDATED LANE LAYOUT	BKB	GB	GB
I01	04.08.25	ISSUED FOR DISCUSSION	BKB	GB	GB

REVISIONS

DRAWING STATUS: PLANNING

CLIENT: Urban&Civic

PROJECT: GROWING BALDOCK

TITLE: A1(M) JUNCTION 9 OPTION 1 LAYOUT

itp by Haskoning
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
BKB	GB	GB
DATE: AUG 25	SCALE AT A1: 1:500	PROJECT NUMBER: PC7029

DRAWING No.	SUITABILITY	REVISION
PC7029-RHD-CE-GB-DR-D-0132	S3	P02