TECHNICAL NOTE

Job Name:	Horsham Transport Study – Regulation 19 Development Scenario
Job No:	332610655
Note No:	TN001
Date:	12 04 2024
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Checked By:	Robert D urla
Approved By:	Paul Gebbett
Subject:	**Responses to Pre-Regulation 19 Consultation Queries**

1. Introduction

1.1. Following on from the Reg-19 submission of the Horsham Local Plan Transport Assessment LPTA issued in December 2022 and the associated Local Plan Safety Study issued in November 2023, further work has been re uested from HDC to support the transport evidence base. The note deals with comments received from National Highways, who manage the strategic Road Network and West Sussex County Council, who manage the local highway network.

1.2. National Highways NH issued a technical note TN SB132 to Horsham District Council HDC providing a response to the Horsham Transport Study HTS which relates to the impacts of the Horsham District Local Plan 2023-2040 Regulation 19 HDLP . HDC are continuing to engage with NH under the Duty to Cooperate as part of the plan making process.

1.3. From this Technical Note response, actions have been identified in addressing ueries and providing further information related to the Horsham Transport study impacts on the Strategic Road Network SRN As such Stantec have been commissioned to address the ueries related to the Horsham Local Plan Transport Study and the associated modelling outputs, with this Technical Note providing detailed responses to the ueries and re uests for additional information.

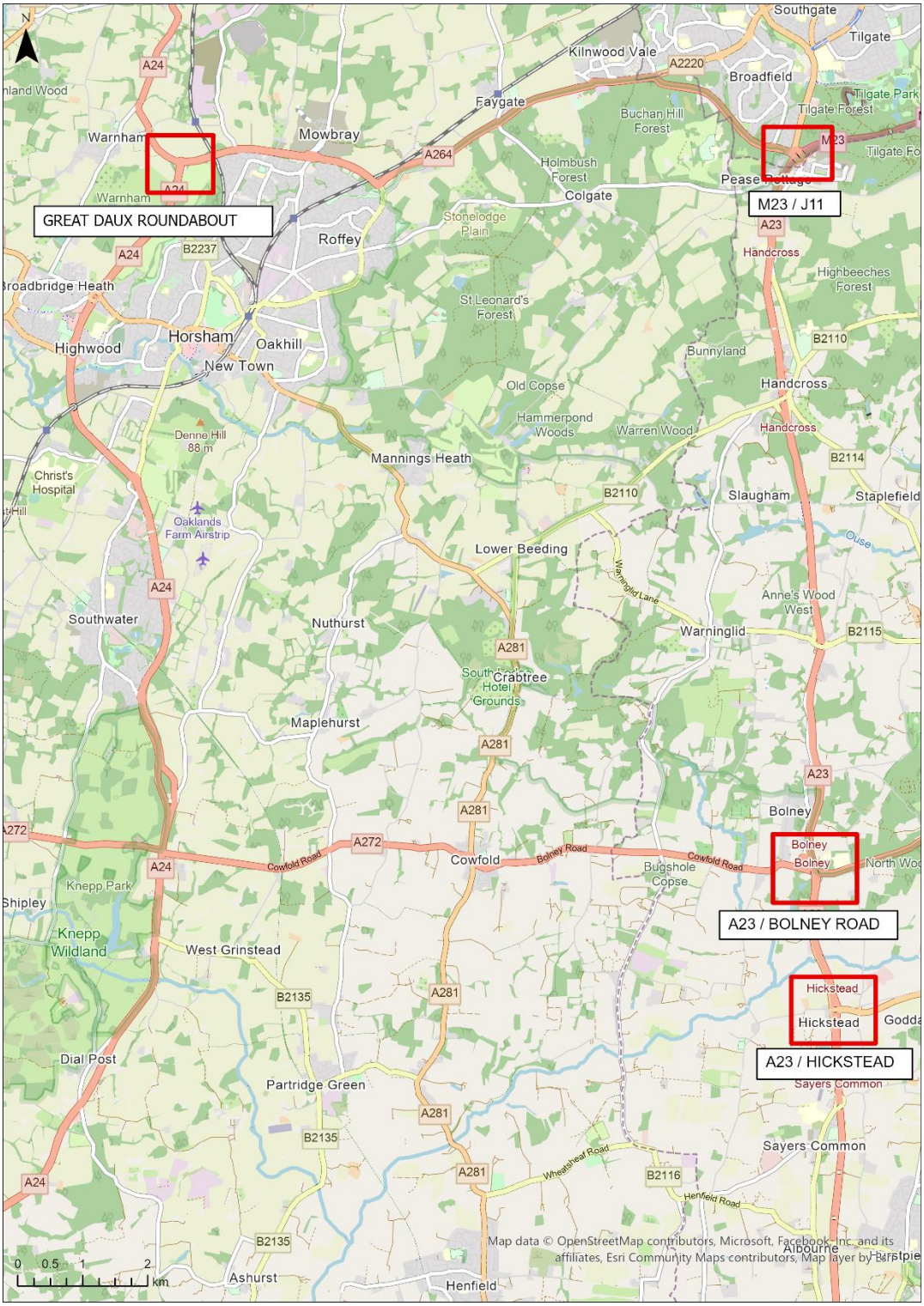
1.4. West Sussex County Council have also provided further comments, which re uire additional work elements in relation to Great Daux Roundabout and apportionment.

1.5. Updates to the status of the proposed mitigated scheme at the Great Daux roundabout, originally set out within the reference case baseline scenario of the HTS, have been subject to changes in its criteria of commitment. Therefore, additional sensitivity tests on the re uirement of a mitigation at the Great Duax roundabout are addressed within this Technical Note.

1.6. An apportionment exercise is re uired for junctions where mitigation is re uired, which will provide details of proportion of trips from individual Local Plan development sites impacting upon these junctions.

1.7. **Figure 1** is a location plan of the key junctions discussed in this Technical Note.

Figure 1: Location plan of key junctions



2. National Highways Comment Responses – Task 1a

2.1. This section responds to element of the NH technical note response TN SB132 related to the review of the Horsham Local Plan Horsham Transport Assessment December 2022. This has led to a request for further detailed outputs.

Query No.1 – Pease Pottage South Bound Merge Criteria

2.2. This response relates to NH TN SB132 Item 34 which is shown below:

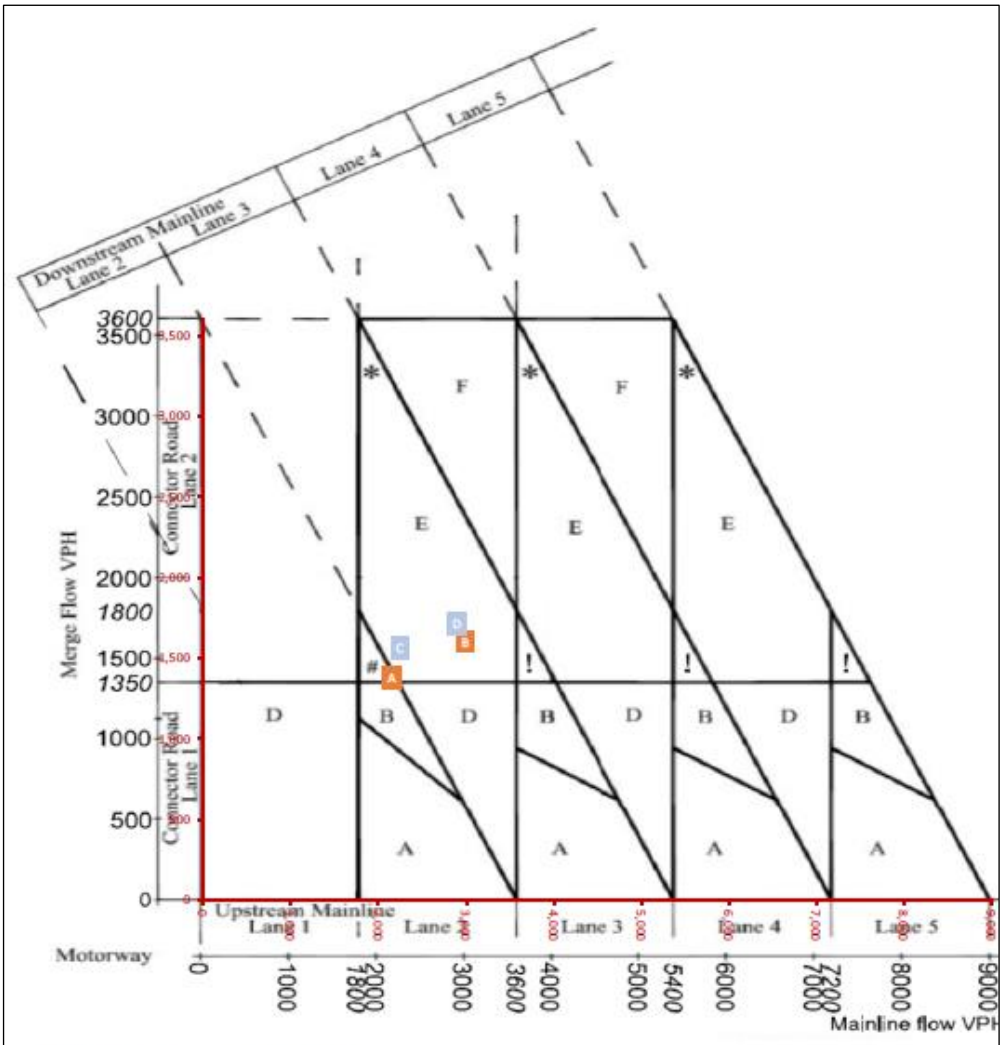
The summary results presented within the main document indicate that there is an expected change in requirements at the M23 J11 Southbound merge from rating B to rating E as a result of the Local Plan impacts. The TA states that "further consideration may be required"; we consider that additional information will need to be provided showing what a compliant merge layout would look like in this location. This will also need to include information relating to any physical constraints, such as land ownership, which would impact on the deliverability of any proposed solution.

2.3. **Figure 2** illustrates the M23 J11 Pease Pottage southbound merge. Further satellite imagery was included in the TA Appendix L page 13.

Figure 2: M23 J11 Pease Pottage southbound merge

2.4. The flows reported in the Transport Assessment TA extract from Table 7-7 and used in the M23 J11 southbound merge assessment are shown in the **Table 1** for completeness. A review of the capacity assessment has been conducted using CD 122 version 1.1.1 based on Figure 3.12b Motorway merging diagram of CD 122.

Table 1: M23 Junction 11 Southbound Merge Assessment Flows (vehicles per hour)



CD122 - Figure 3.12b Motorway merging diagram

Scenario		Upstream Mainline	Merge Flow
A	AM Baseline	2,156	1,381
B	PM Baseline	2,998	1,604
C	AM Local Plan	2,242	1,561
D	PM Local Plan	2,897	1,717

2.5. The results of the assessment for the M23 J11 southbound merge layout re□uirements are summarised in the **Table 2** below □extract from TA Table 7-8.□

Table 2: M23 Junction 11 Southbound Merge Layout Analysis

Approach	Scenario	Merge Layouts		Upstream mainline lanes	Downstream Mainline Lanes	Connector Road Lanes
		AM	PM			

SB Merge	**Current Layout**	A	A	3	3	2
	Reference Case	B	E	2	3	2
	Local Plan	E	E	2	3	2

2.6. In the AM peak, the southbound merge is shown as requiring a layout E in the Local Plan scenario in comparison to layout B within the Reference Case. It worth noting that in the Reference Case the merge flow of 1381 vph and the upstream mainline flow of 2156 vph places the merge type, labelled A in the figure above, in the area marked by the # symbol.

2.7. This indicates an area of uncertainty between Layout B and Layout E. Note 2 of Figure 3.12b CD 122, states that in this area of uncertainty, the choice of layout depends on the upstream and downstream provision and the ability for the mainline to accept the flows from the merge. The current Layout A has an upstream and downstream mainline capacity of 5,400 vph (i.e. 1,800 vph/lane X 3lanes – see CD 122 paragraph 3.8). This mainline capacity is not exceeded by any of the flows predicted in the Reference Case or local plan in the analysis, and Layout B would be expected to be adequate in the AM peak in the Reference Case. This analysis therefore explains why Layout B has been selected in Table 2 above.

2.8. In the PM peak, the southbound merge is shown as requiring layout E in both the Reference Case and in the Local Plan scenario. This suggests that in the absence of the Local Plan generated traffic, there would be a need for Layout E, and with the Local Plan traffic added, does not require a different layout to that which would be required in the Reference Case. In both the Reference Case and Local Plan scenario, the PM peak flows are higher and hence would determine the capacity requirements. As has already been noted the predicted flows in both the Reference Case and the Local Plan scenario do not exceed the current available upstream and downstream mainline capacity of 5,400 vph.

2.9. Furthermore, the overall impact of the Local Plan in the PM peak at the M23 J11 southbound merge is a net increase in flows of only 12 vph or 0.3%.

2.10. Therefore, the impact of the Local Plan does not trigger the need for mitigation resulting from the additional Local Plan traffic. It is concluded that a revised Layout E would potentially be needed in future as a result of background growth and is not as a result of the LP development.

2.11. Were a Layout E required in the Reference Case and consequently the Local Plan, this would trigger the need for a lane gain to accommodate the merging flow. The flows in both the AM and PM peaks for both the Reference Case and Local Plan can be accommodated downstream within the existing 3 lanes hence there would be no justification for four lanes downstream. It would, however, be possible to reconfigure the existing merge layout as a lane gain into the existing lane 1 downstream.

2.12. This would entail reducing the number of lanes through the junction from three lanes to two, providing a lane drop on the southbound diverge, with two lanes through the junction, with the merging southbound on-slip providing a lane gain and third lane south of the merge. This reconfiguration would not require any land take and can be accommodated within the existing highway boundary. There would likely be a need for gantries and signage further downstream of the southbound diverge regarding the lane drop signing the two offside lanes through the junction, with lane 1 designated as an exit lane for southbound diverge traffic.

Query No.2 - Analysis of Junction Delays / Queue Lengths

2.13. This response relates to NH TN SB132 Item 37 which is shown below:

Tables 7.33 and 7.34 summarise the V/C information extracted from the strategic model for the SRN junctions which have been the subject of the merge/diverge analysis, for the AM and PM peaks respectively. Data is presented for the key arms of each junction, but no information is provided in relation to the performance of any associated circulatory carriageways. Paragraphs 7.3.3 to paragraph 7.3.20 briefly state whether it is considered that any mitigation is required on the basis of these results. It is noted that no information is presented with regards to the associated delays or queue lengths for the examined junction arms; this information is required.

2.14. Updated Tables of V/C outputs are provided as Appendix A includes both approach and circulatory carriageway outputs on the SRN.

2.15. Appendix B includes delay outputs at the SRN junctions while Appendix C includes queue length outputs in Passenger Car Units (PCU). Appendix D provides the same queue length information in metres. It is assumed that a PCU is equivalent to a vehicle length of 6 metres.

2.16. The V/C, queue and delay outputs do not indicate any significant issues as a result of the additional Local Plan traffic at any of the SRN junctions.

2.17. The results indicate that none of the junctions has queues extending from the diverge links onto the mainline. Hence there are no safety concerns.

2.18. Additional commentary is provided with regarding Pease Pottage and Bolney signal timings.

Issue No.3 – Additional Junction Traffic Flow Output Diagrams

2.19. This response relates to NH TN SB132 Item 31 which is shown below:

Based on this high-level appraisal, we would expect to see the traffic diagrams presented at Appendix G to include (as a minimum) the Pease Pottage and A23 / Bolney Road junctions, and additionally those junctions identified in Section 7 of the report as potentially requiring mitigation via revision of signal timings. If this is not currently the case, it is requested that these junctions be added to the relevant diagrams before publication of the Regulation 19 consultation materials.

2.20. Flow change diagrams at the Pease Pottage and A23/Bolney Road junctions and A23 Hickstead junctions have been provided below in **Figures 3** to **8**. These show the flow difference as (Local Plan minus Reference Case). Green bandwidth implies an increase in flows with the Local Plan compared to the Reference case and blue bandwidth implies a flow reduction.

Figure 3: M23 J11 Pease Pottage Flow Difference – AM Peak

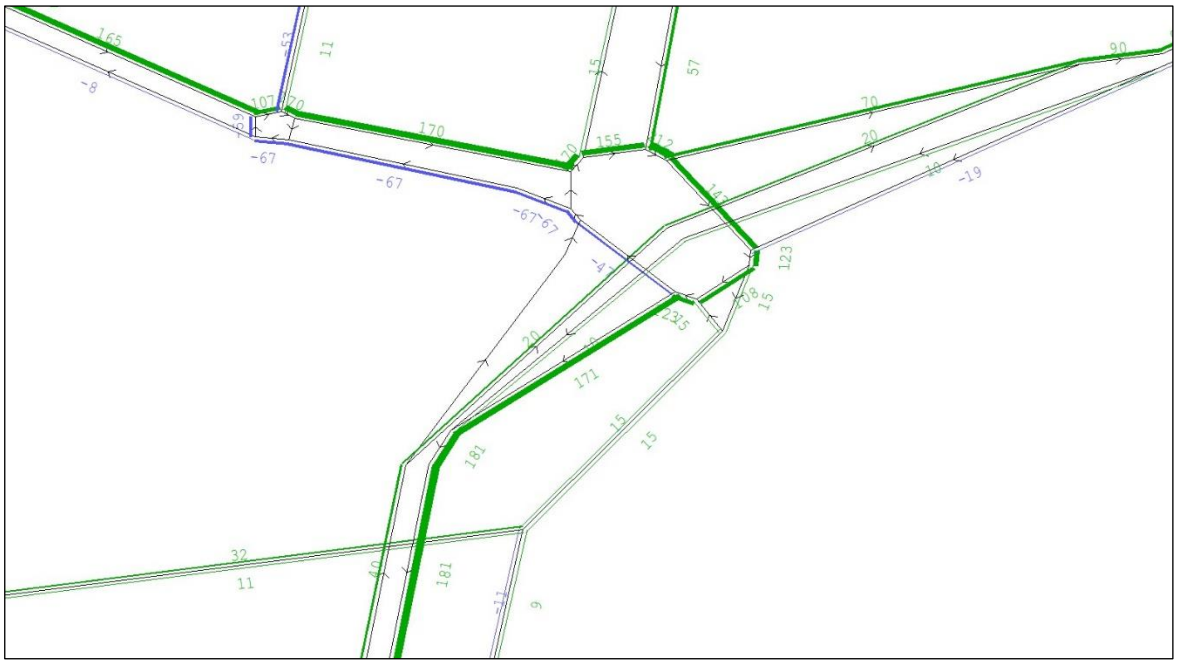


Figure 4: M23 J11 Pease Pottage Flow Difference – PM Peak

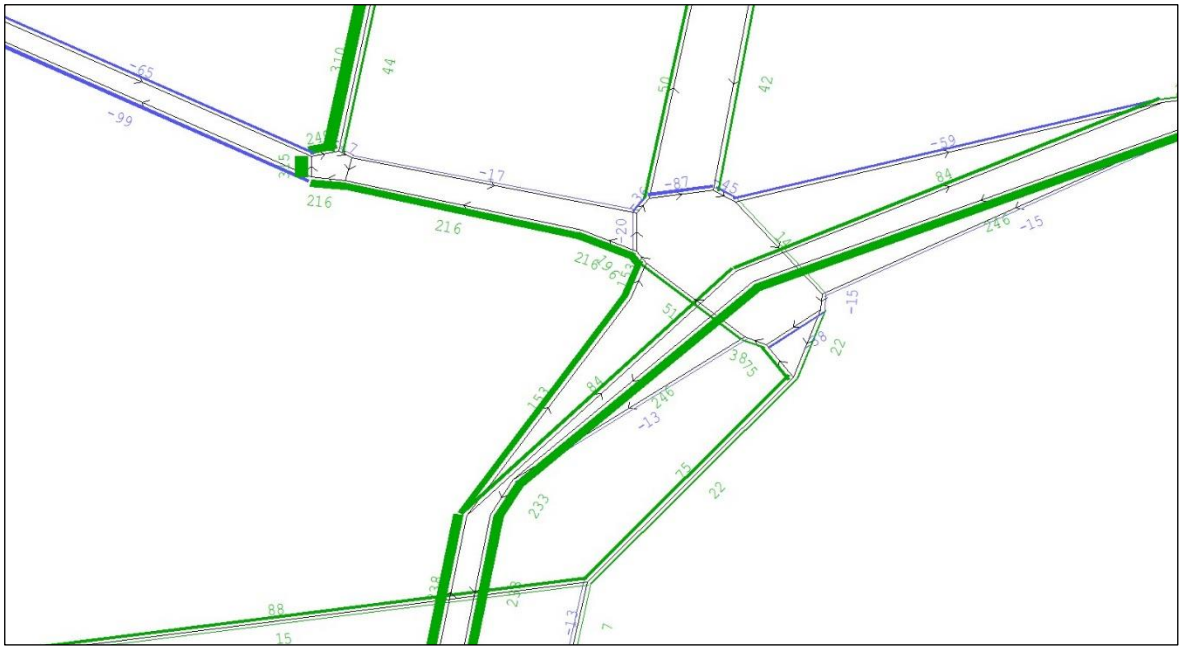


Figure 5: A23/Bolney Road Flow Difference – AM Peak

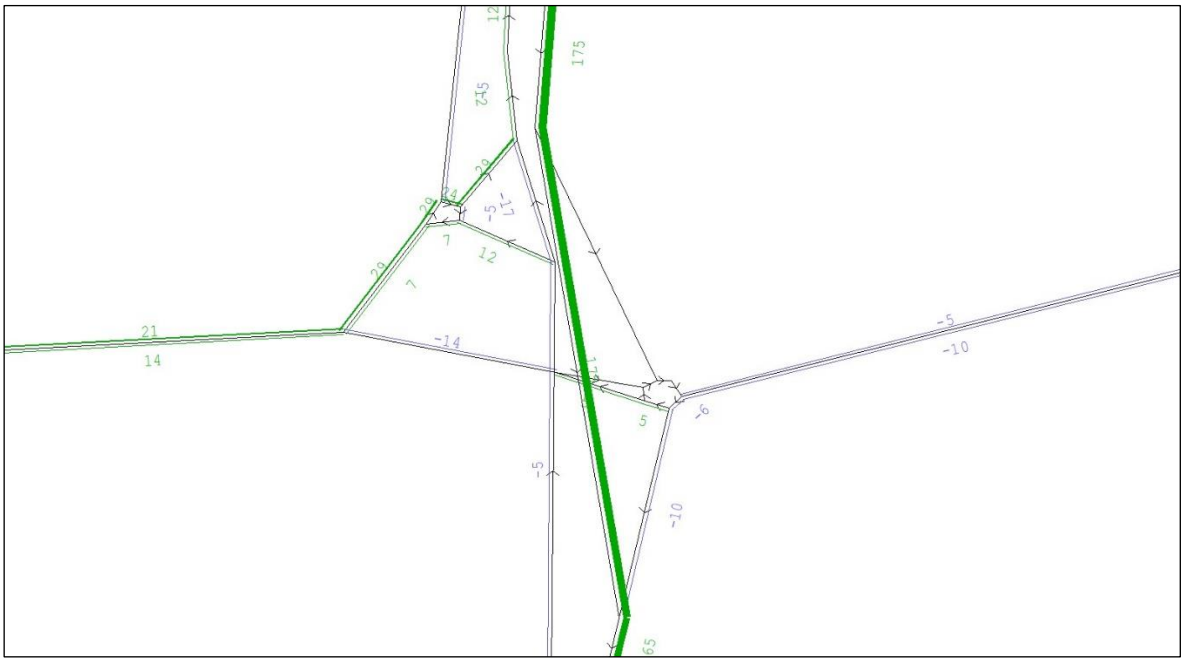


Figure 6: A23/Bolney Road Flow Difference – PM Peak

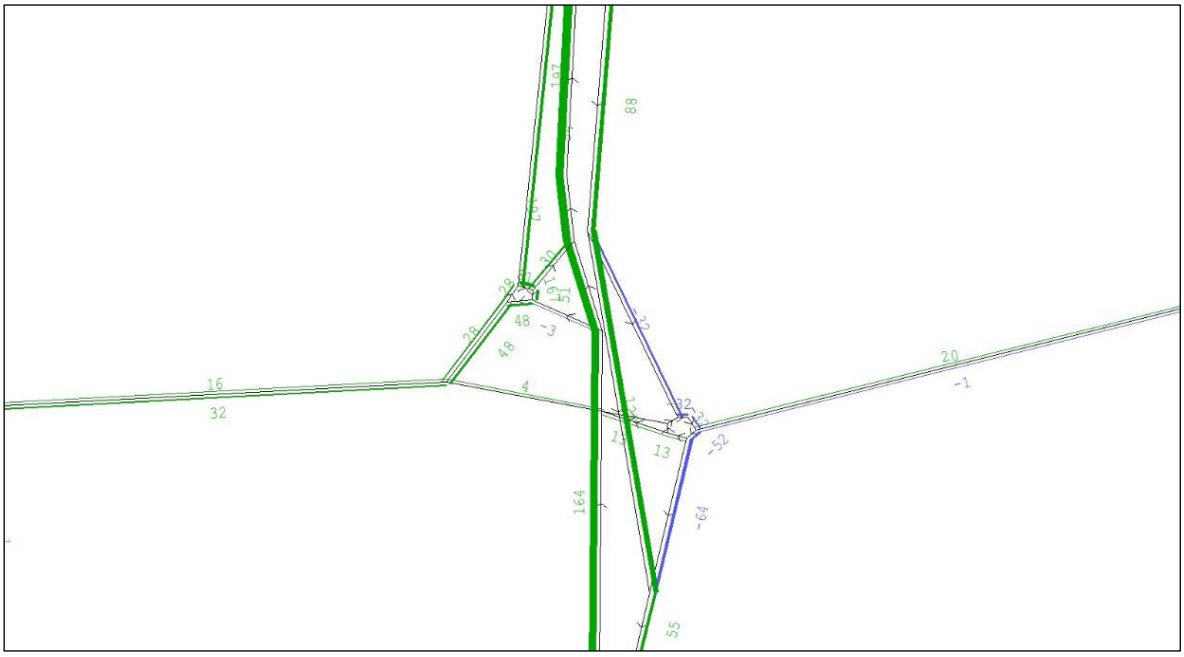


Figure 7: A23 Hickstead Junction Flow Difference-AM Peak

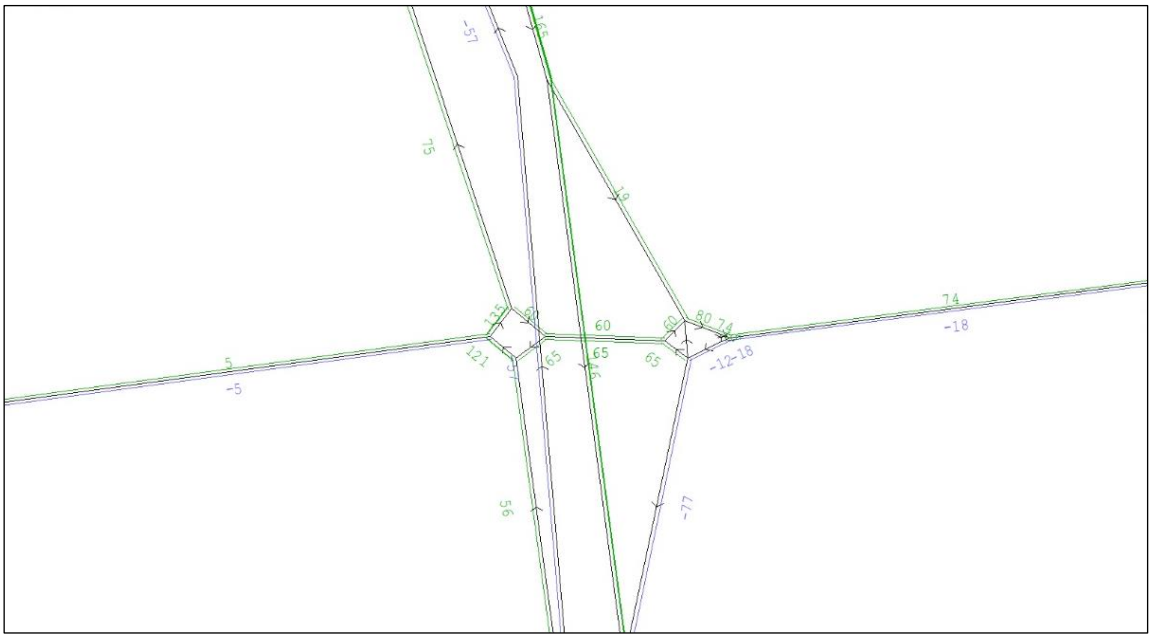
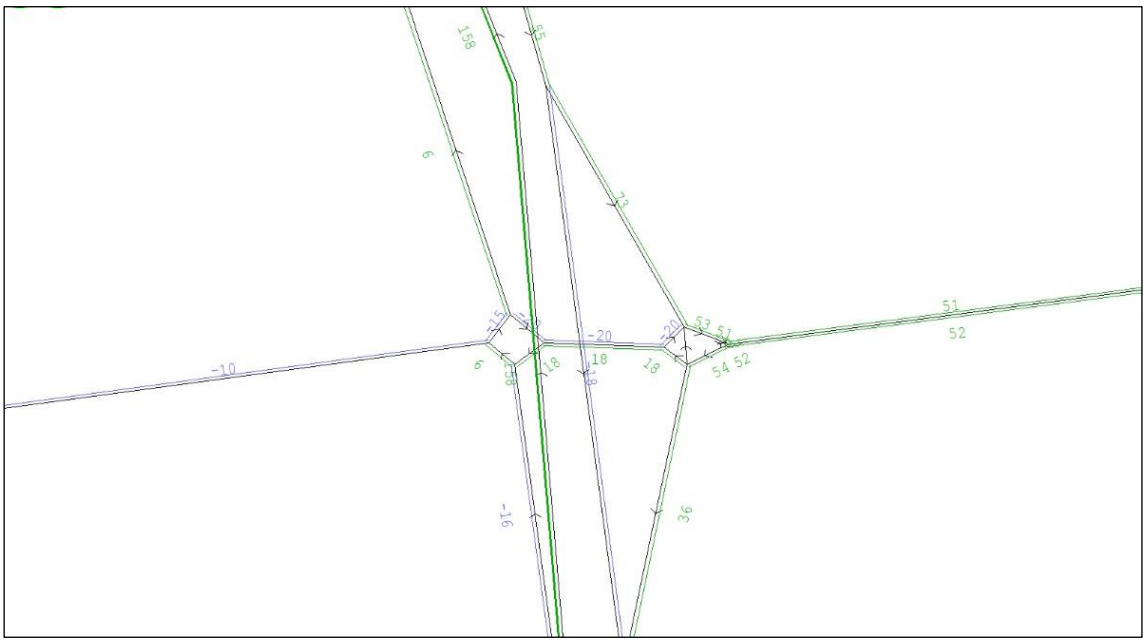


Figure 8: A23 Hickstead Junction Flow Difference-PM Peak



Query No.4 – Pease Pottage Signal Optimisation Sensitivity Test

2.21. This response relates to NH TN SB132 Item 31 which is shown below:

With particular reference to the M23 J11 (Pease Pottage), it is considered that the sensitivity of this junction to change means that it is not possible to fully agree the impacts of the Local Plan proposals on the basis of strategic modelling alone. It is noted that a very similar situation has arisen in the past, as evidenced from the comments in the draft SoCG, and that a Transyt model was put forward as a method of drawing more robust conclusions. We consider that a similar approach will be necessary here to confirm that there are no impacts to safety (for example, as a result of volatility or change to queues on slip roads). We would welcome further discussion around the specification for such a modelling exercise so that his can be arranged and undertaken prior to the planned submission of the plan in June 2024.

2.22. Whilst it is noted that that more detailed modelling may be re□uired and discussed, we identified in the TA that mitigation at the junction could be provided through signal optimisation. The strategic modelling outputs identified a single issue at the junction in the PM peak only, when comparing the Reference Case and Local Plan. The circulatory arm on the west of the junction showed a V□C increase from 97.7□ in the reference Case, to 100.6□ with Local Plan traffic added. This caused blocking back to the A264 eastbound exit. The opposing arm at the signal, the A264 eastbound approach, has a V□C of 56.1□. Therefore, this indicates that there is spare capacity on the A264 approach arm. A sensitivity test has been undertaken to optimise the signals at the junction and to help inform the discussion on whether more detailed modelling would still be re□uired. This showed that the V□C on the circulatory reduced to 98.4□ and blocking back removed. The V□C on the A264 approach increased to 68.5□, so still well within capacity. It is considered that these results from the strategic model are sufficiently robust and proportionate approach to inform the impacts of the LP and in particular that, with the LP, the junction is still operating below capacity when the signals are optimised.

Query No.5 – SRN Accident Data Analysis – Additional Information Request

2.23. This response relates to NH TN SB132 Item 58 which is shown below:

The A23 / A272 Cowfold Road and M23 J11 Pease Pottage junctions were identified as potential accident cluster sites, having five or more collisions recorded within 50m of the junction or of each other across the study period.

It is recommended that the data collected for this exercise is shared with National Highways as the data for Pease Pottage in particular may have relevance to the merge/diverge exercise and its findings.

2.24. An Online PowerBI database of the observed accident data is provided to National Highways, detailing each accident location and raw background information within the SRN study area outlining accident causation:

Query No.6 – A23 Hickstead Junction Modelling Assumptions

2.25. This response relates to NH TN SB132 Item 58 which is shown below:

Further commentary should therefore be provided in relation to the assumptions made around the A23 Hickstead junction, in particular any anticipated impacts to the main interchange roundabout as a result of the identified changes to the mainline and junction flows. A test of the planned improvement scheme associated with the Burgess Hill business park, using the strategic model reference case and local plan flows, should also be undertaken (utilising the assistance of WSCC for access to existing junction models).

NH have requested that "junction specific" modelling is required at the A23 Hickstead Junction and querying the assumption of this being coded within the model. As such Stantec will code in the relevant mitigation schemes (as provided by WSCC) and review and provide outputs from the revised model.

2.26. Sensitivity test modelling has been undertaken in which the schemes included within the modelling at the A23 Hickstead junction has been reviewed and coding updated to include the Goddards Green Science and Technology Park ("S&T Park") mitigation schemes. The S&T Park is allocated for development within the Mid Sussex Site Allocations Development Plan Document adopted in June 2022, but as of April 2024 is yet to come forward for planning application. The sensitivity test has informed the results reported in Appendices A to D. The coding has been informed by the following drawings, which are provided for reference. These were provided by West Sussex County Council.

- Drawing Number 18108 – 012 Proposed Junction Capacity Improvements A2300 A23 Hickstead West Junction - provided as Appendix E.
- Drawing Number 18108 – SK201117.1 Proposed Roundabout Improvements A2300 A23 pertaining to partial signalisation of the eastern roundabout - provided as Appendix F.
- Drawing Number 28108 – SK201130.1 Proposed A23 Widening Works Modified Design to Fit Within Existing Highways Boundary pertaining to the southbound carriageway widening of the A23 with a lane gain between the A23 southbound merge and the A23 southbound diverge downstream at the A23 Hickstead Junction - provided as Appendix G.

2.27. WSCC also provided drawings for designs for the A2300 Cuckfield Road and A2300 Northern Arc Link Road junctions east of the A23 Hickstead Junction. The model is in buffer immediately to the east and hence these junctions are not coded in. The dual carriageway nature of the A2300 east of the A23 Hickstead junction is coded in.

2.28. The modelling shows that any flow changes resulting from the sensitivity test are insignificant and therefore the results reported within the TA are still applicable. In the case of outputs relating directly to Hickstead junction, all the outputs from this sensitivity test are included in the responses to the previous queries above and are provided as Appendices A to D. For completeness a comparison of flows between the LP sensitivity test and the LP reported within the TA are shown in Figure 9 to Figure 14 which demonstrates the insignificant difference in the results. In the AM there are some noticeable flow changes in the sensitivity test compared to the LP TA model at the Hickstead junction, but as noted the flows reported in Appendices A to D are informed by the sensitivity modelling. Wider network flow changes between the LP sensitivity test and the LP reported within the TA can be found in Appendix H.

Figure 9: M23 J11 Pease Pottage LP sensitivity minus LP TA Flow Difference – AM Peak

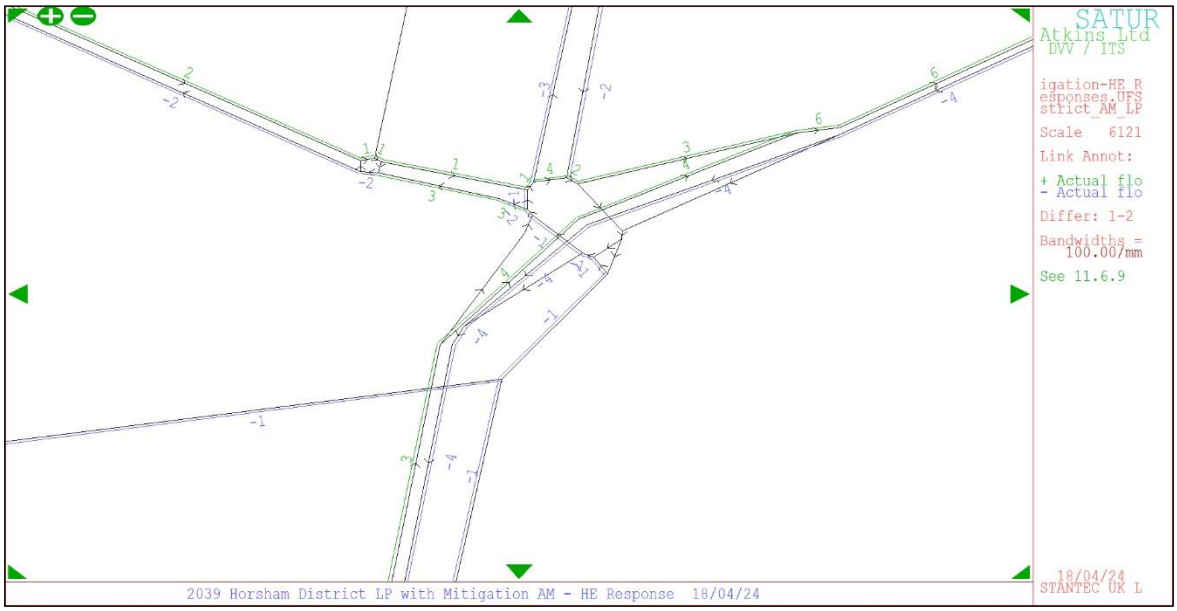


Figure 10: M23 J11 Pease Pottage LP sensitivity minus LP TA Flow Difference Flow Difference – PM Peak

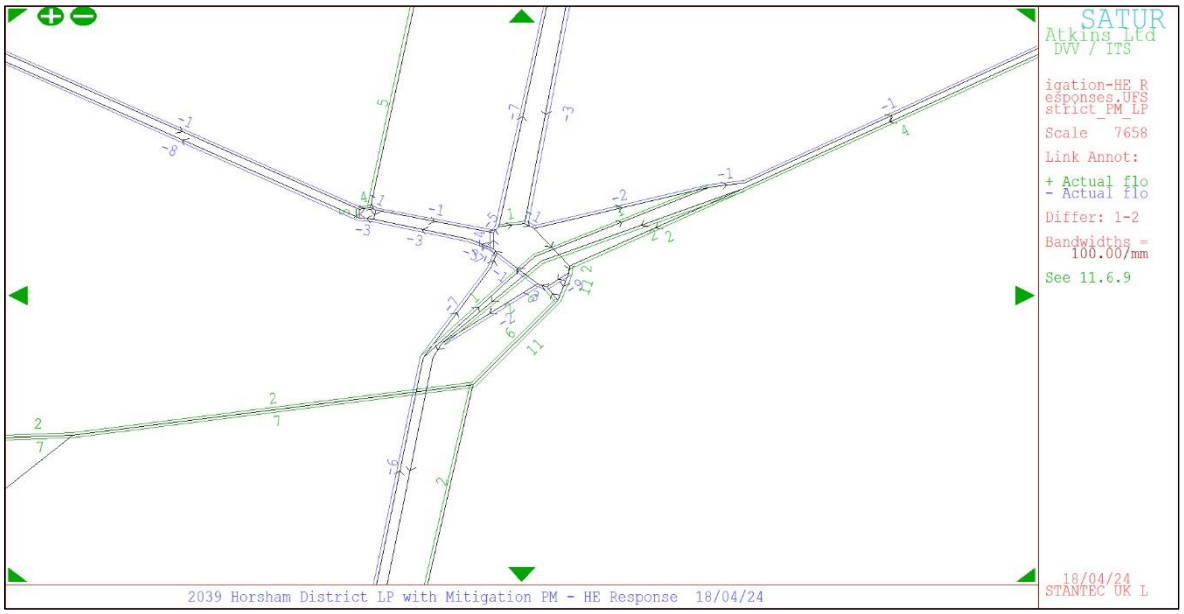


Figure 11: A23/Bolney Road LP sensitivity minus LP TA Flow Difference – AM Peak

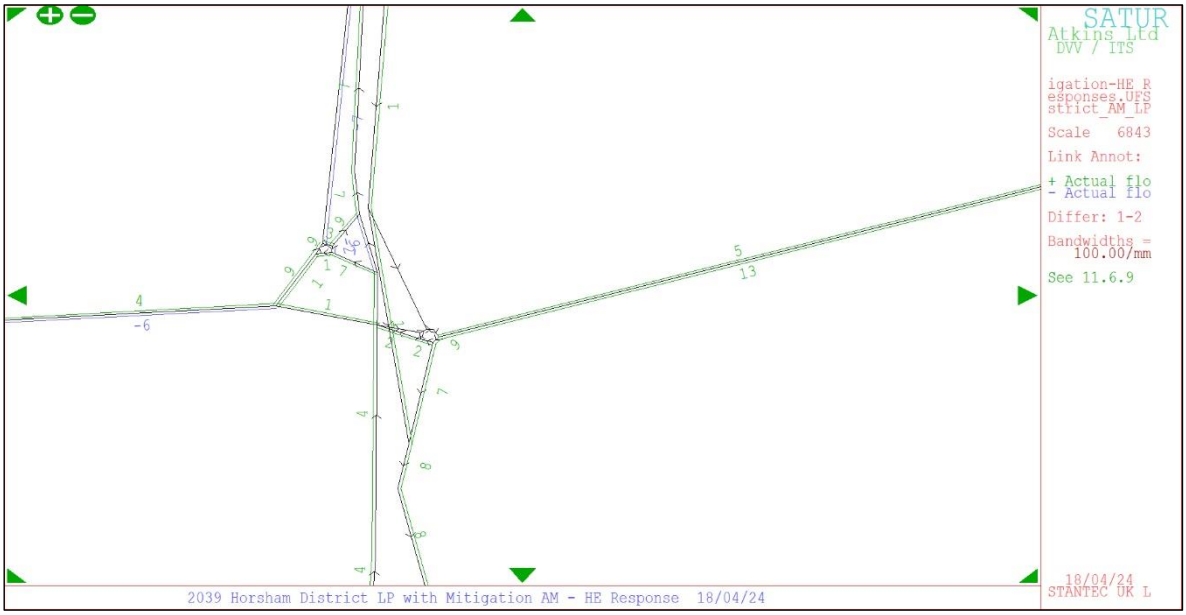


Figure 12: A23/Bolney Road LP sensitivity minus LP TA Flow Difference – PM Peak

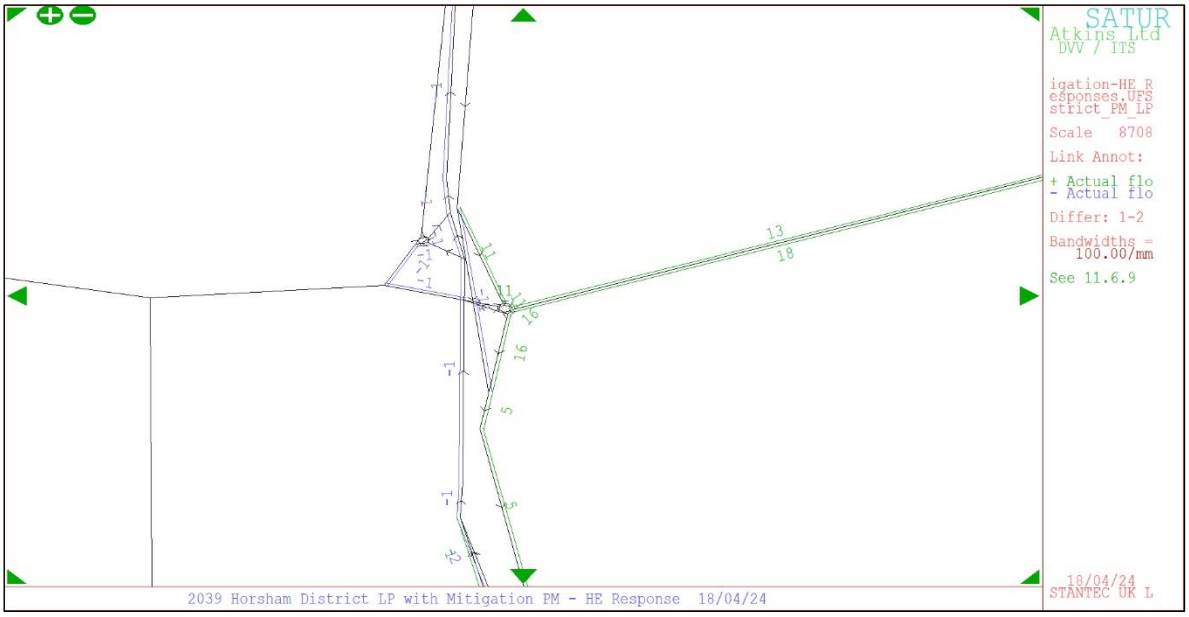


Figure 13: A23 Hickstead Junction LP sensitivity minus LP TA Flow Difference-AM Peak

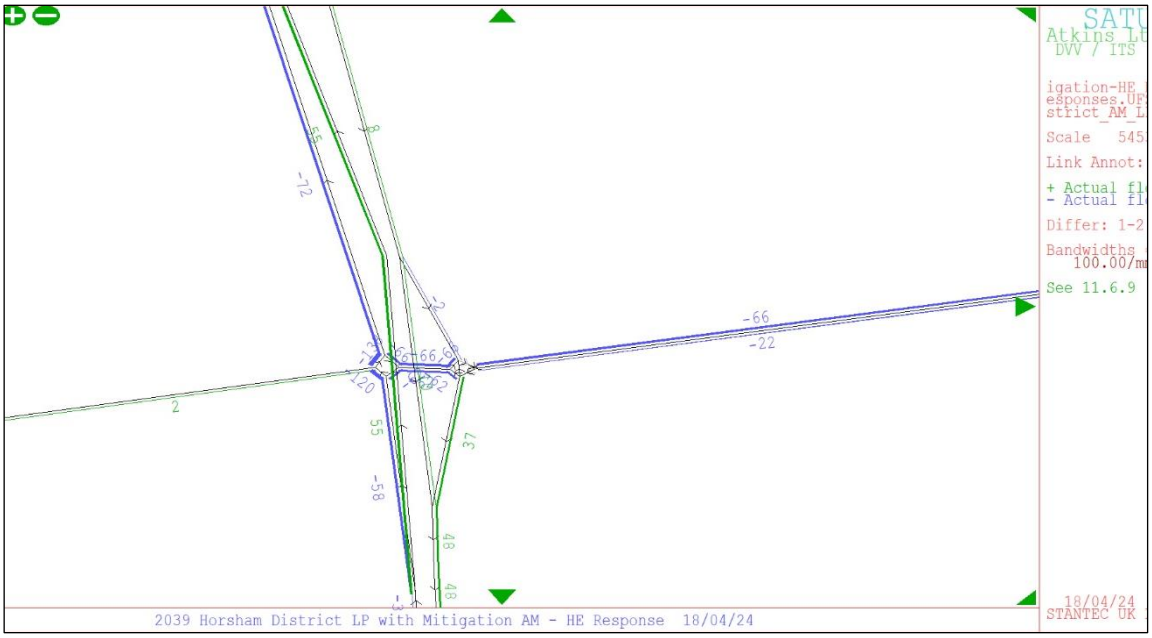
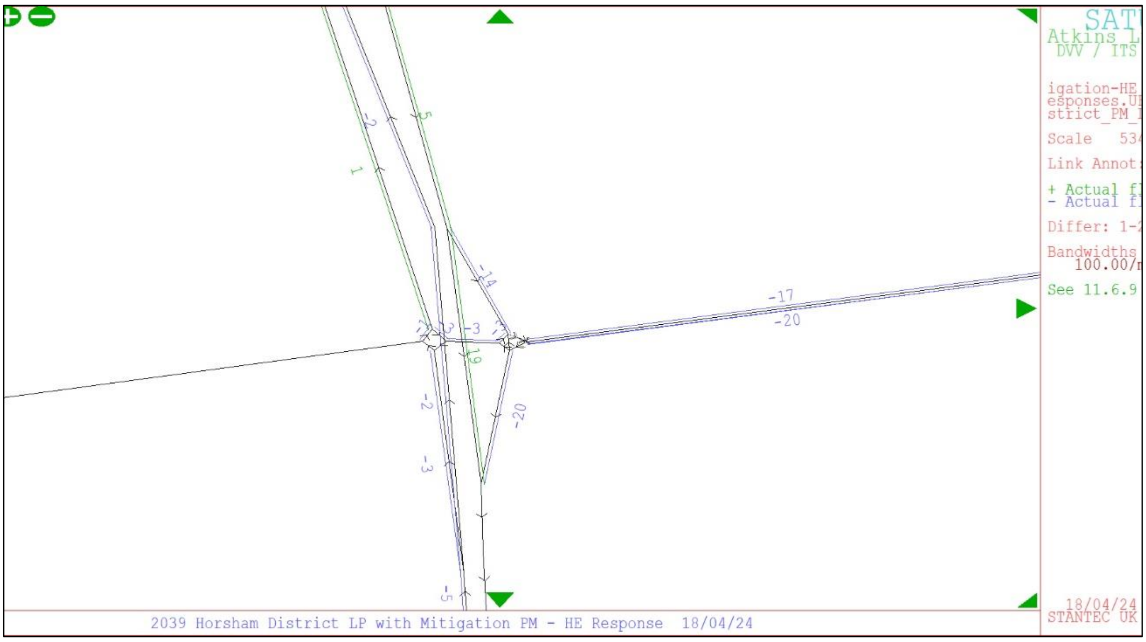


Figure 14: A23 Hickstead Junction LP sensitivity minus LP TA Flow Difference-PM Peak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Great Daux Sensitivity Testing – Task 2a

2.29. Sensitivity analysis of the Great Daux Roundabout that has been requested by WSCC. Ideally using existing modelled data, this will consider the impact of Local Plan development on the roundabout in its existing form. This scenario is alternative to the approach taken in the previous iteration of the Transport Study, which assumed a committed scheme, which was included within the Reference Case.

2.30. For this sensitivity analysis, the existing Great Daux roundabout layout was coded in the Reference Case and Local Plan models and the outputs were reviewed to identify whether there is a need to provide mitigation to deal with capacity issues resulting from the Local Plan traffic. The Local Plan Scenario without highway mitigation includes the network traffic flow reductions from the sustainable transport scenario. The outputs are shown in **Table 3**.

Table 3: Summary of V/C outputs from Sensitivity Test at Great Daux Roundabout

Junction Name	AM			PM		
	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation
A24 South NB Approach to Great Daux	26.8	31.6	71.0	30.3	30.2	66.9
A24 South NB Approach to Great Daux - Circulatory Arm	19.9	19.6	46.5	15.7	15.3	35.1
A24 West EB Approach to Great Daux	94.4	102.9	40.8	105.2	106.2	54.5
A24 West EB Approach to Great Daux - Circulatory Arm	48.8	59.4	52.9	76.3	75.5	66.5
A264 East WB Approach to Great Daux	24.2	24.4	56.9	31.4	31.2	72.8
A264 East WB Approach to Great Daux - Circulatory Arm	18.5	14.6	43.4	3.6	3.9	38.0

2.31. The results indicate that a mitigation scheme is required with the Local Plan traffic added. It is assumed that the North Horsham development scheme already assessed within the existing Local Plan TA would be the mitigation scheme required. This scheme was therefore retained in the with Local Plan scenario and the outputs are included within the table.

Great Daux Safety Assessment

2.32. The safety assessment undertaken previously identified a safety concern at Great Daux roundabout. As a capacity issue has also been identified and a mitigation proposed, it would be expected that any safety concerns would be dealt with through the mitigation scheme put forward to deal with capacity. The Safety Review Note has been updated accordingly, with revised commentary on the status of the Great Daux roundabout not requiring additional safety mitigation or further safety review.

LP Mitigated Junction Apportionment – Task 3

2.33. Analysis has been conducted in order to identify the level of impact from each of the emerging Local Plan strategic sites at each of the junctions identified as requiring mitigation, including Great Daux roundabout. The other junctions are:

- Washington Roundabout
- Buck Barn Junction
- Hop Oast Roundabout

2.34. This analysis can be used to inform the apportionment of the Local Plan proposed mitigated highway improvement schemes and therefore the exercise is conducted by analysing the development traffic throughput from the strategic allocation sites.

2.35. **Tables 4** and **5** provide a summary of the apportionment analysis.

Table 4: Summary of the proportion LP trips passing through some selected junctions AM.

Trips from Zone	Description	Great Daux Roundabout		Washington Roundabout		Buck Barn Crossroads		Hop Oast Roundabout	
		Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips
3010	Land West of Ifield	84	8.7□	59	24.3□	61	17.4□	68	7.8□
3011	Land West of Southwater	196	20.2□	86	35.5□	136	38.9□	515	59.4□
3012	Land East of Billingshurst	34	3.6□	9	3.7□	28	8.0□	4	0.5□
109	North Horsham Densification	654	67.6□	88	36.4□	125	35.8□	281	32.3□
Development Trips		969	100□	242	100□	349	100□	868	100□

Table 5: Summary of the proportion LP trips passing through some selected junctions PM.

Trips from Zone	Description	Great Daux Roundabout		Washington Roundabout		Buck Barn Crossroads		Hop Oast Roundabout	
		Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips	Trips (pcus)	% of Total Trips
3010	Land West of Ifield	222	19.1□	68	25.3□	87	19.6□	155	13.5□
3011	2.36. Land West of Southwater	142	12.2□	66	24.7□	148	33.2□	637	55.4□
3012	Land East of Billingshurst	32	2.8□	9	3.5□	40	9.1□	17	1.4□
109	North Horsham Densification	769	66.0□	125	46.6□	170	38.1□	342	29.7□
Development Trips		1165	100□	269	100□	446	100□	1150	100□

3. Conclusion

3.1. Stantec has reviewed the □ueries raised within NH TN SB132 in relation to HDC engagement with NH under the Duty to Cooperate as part of the plan making process. The outline responses to the □ueries can be assumed to provide sufficient feedback in order to form a resolution through the Regulation 19 consultation.

3.2. The further sensitivity testing and analysis of Hickstead Junction improvements and Pease Pottage junction signal optimisation can be concluded to show no significant risk to the delivery of the Horsham Local Plan in the context of the existing strategic modelling analysis. This negates the need for further, more detailed junction modelling as it is considered that the results provided from the strategic modelling are sufficiently robust and the approach used is proportionate to the extent that no capacity issues have been identified as a result of the LP.

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Approved Project Director
332610655	-	12 04 2024	NM SA	RD	PG
	1	22 04 204	NM SA	RD	PG

APPENDIX A SRN VOLUME TO CAPACITY RATIO (%) VC

			AM			PM		
Turn ID	Label	Junction Name	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation
3352-3366-3374	A23 Bolney Junction - Northwest Roundabout	Entry from Cowfold Rd to Northwest Roundabout	82.3	84.4	84.6	20.0	22.4	22.2
3368-3366-3352	A23 Bolney Junction - Northwest Roundabout	Exit to Cowfold Rd from Northwest Roundabout	16.4	16.7	16.8	13.3	15.5	15.9
3500-3374-3372	A23 Bolney Junction - Northwest Roundabout	Entry from London Rd to Northwest Roundabout	22.0	21.5	21.8	1.2	6.3	6.3
3366-3374-3500	A23 Bolney Junction - Northwest Roundabout	Exit to London Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3346-3368-3366	A23 Bolney Junction - Northwest Roundabout	Entry from A23 NB Diverge to Northwest Roundabout	5.7	6.1	6.1	6.6	6.6	6.7
3374-3372-3402	A23 Bolney Junction - Northwest Roundabout	Exit from Northwest Roundabout to A23 NB Merge	55.1	56.6	56.7	13.3	15.1	14.9
3412-3338-3334	A23 Bolney Junction - Southeast Roundabout	Entry from Bolney Rd to Southeast Roundabout	93.1	92.6	92.5	76.5	74.3	73.9
3344-3338-3412	A23 Bolney Junction - Southeast Roundabout	Exit to Bolney Rd from Southeast Roundabout	31.4	31.2	31.2	36.3	37.3	37.3
3416-3342-3344	A23 Bolney Junction - Southeast Roundabout	Entry from SB Diverge to Southeast Roundabout	0.0	0.0	0.0	16.3	15.1	14.6
3338-3334-3326	A23 Bolney Junction - Southeast Roundabout	Exit to SB Merge from Southeast Roundabout	19.6	19.0	19.0	17.7	14.8	14.3
3348-3340-3342	A23 Bolney Junction - Southeast Roundabout	Entry from Cowfold Rd to Southeast Roundabout	100.0	100.0	100.0	100.0	100.0	100.0
3334-3336-3348	A23 Bolney Junction - Southeast Roundabout	Exit to Cowfold Rd from Southeast Roundabout	45.1	45.4	45.3	41.9	42.6	42.6
3216-3222-3296	A23 Hickstead Junction	Exit to A2300 NB from Western Roundabout	3.9	9.2	9.1	72.7	72.0	72.0
7324-8134-3216	A23 Hickstead Junction	Entry from A2300 NB to Western Roundabout	2.6	10.6	10.4	116.7	115.9	115.9
3190-3216-3222	A23 Hickstead Junction	Entry from Hickstead Ln to Western Roundabout	39.7	41.9	41.8	100.7	97.9	97.9
8134-3216-3190	A23 Hickstead Junction	Exit to Hickstead Ln from Western Roundabout	35.7	38.3	38.3	80.4	81.2	81.2
3214-3218-8134	A23 Hickstead Junction	Entry from A2300 East on Western Roundabout	34.6	37.8	37.8	69.0	70.0	70.0
3222-3218-3214	A23 Hickstead Junction	Exit to A2300 East on Western Roundabout	16.5	19.8	19.7	34.2	33.1	33.1
3218-3214-3224	A23 Hickstead Junction	Entry from A2300 West on Eastern Roundabout	24.8	29.7	29.6	51.5	49.8	49.8
3206-3214-3218	A23 Hickstead Junction	Exit to A2300 West on Eastern Roundabout	36.8	40.2	40.2	73.5	74.4	74.4
3242-3224-10221	A23 Hickstead Junction	Entry from SB Diverge on Eastern Roundabout	60.1	61.2	61.2	86.8	90.9	91.0
10222-3206-3166	A23 Hickstead Junction	Exit to SB Merge on Eastern Roundabout	68.8	64.8	64.7	32.9	35.0	34.9
10221-3220-3236	A23 Hickstead Junction	EB Exit to A2300 on Eastern Roundabout	25.3	27.2	27.2	41.0	42.2	42.3
3220-10222-3206	A23 Hickstead Junction	WB Entry from A2300 on Eastern Roundabout	89.2	88.3	88.2	86.7	90.0	89.8
10221-10222-3206	A23 Hickstead Junction	WB Circulatory from A2300 East on the Eastern Roundabout	83.1	84.2	84.2	85.5	85.7	85.8
2578-2614-7328	A23 Pyecombe Junction	A23 NB Offlsip to A273	79.0	80.7	80.8	100.9	101.2	101.3
2578-2614-8347	A23 Pyecombe Junction	A23 NB Mainline at point of Offslip to A274	94.8	94.7	94.7	76.1	80.1	80.4
2672-2684-2774	A23 Pyecombe Junction	A23 Access from West Road & Mainline West of Pycombe	96.2	95.8	95.9	72.3	75.7	76.0
2678-2684-2774	A23 Pyecombe Junction	A23 Access from West Road West of Pycombe	92.6	94.1	94.3	0.0	0.0	0.0
8345-7330-8268	A23 Pyecombe Junction	A23 NB Point of On Slip Pyecombe Junction - Mainline	99.5	98.9	99.0	76.1	80.1	80.4
7336-7330-8268	A23 Pyecombe Junction	A23 NB On Slip Pyecombe Junction	48.7	47.2	47.5	0.1	0.0	0.0
8268-2672-2684	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction -Mainline	99.4	98.8	98.9	75.4	79.5	79.8
8268-2672-2678	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction	96.4	90.4	91.6	26.3	33.0	33.4
3064-7337-8282	A23 Sayers Common Junction	B2118 merge onto A23 northbound	126.2	125.8	125.9	21.0	24.1	23.8
8349-7337-8282	A23 Sayers Common Junction	B2118 merge onto A23 northbound - Mainline	100.0	100.0	100.0	68.6	71.9	72.1
8286-3108-8283	A23 Sayers Common Junction	B2118 diverge onto A23 southbound	92.2	94.4	94.5	83.4	85.6	85.1
8286-3108-2798	A23 Sayers Common Junction	B2118 diverge onto A23 southbound - Mainline	94.5	96.4	96.5	93.3	93.8	93.7
4770-4806-4812	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Entry Arm	68.9	66.4	66.5	36.3	36.1	36.1
4804-4806-4812	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Circulatory Arm	100.8	101.3	101.3	53.2	53.1	52.9
4816-4814-4804	M23 J10	M23 J10 SB On Slip Approach from Roundabout - Exit Arm	73.1	71.8	71.9	70.0	70.8	70.9
4820-4814-4804	M23 J10	M23 J10 SB On Slip Approach to Roundabout - Circulatory Arm	38.1	39.4	39.3	33.4	35.1	34.7
9002-4824-4830	M23 J10	M23 J10 NB On Slip Approach from Roundabout - Exit Arm	75.4	77.5	77.5	99.0	96.3	96.4
4812-4824-4830	M23 J10	M23 J10 NB On Slip Approach to Roundabout - Circulatory Arm	59.8	58.3	58.5	46.1	46.5	46.5
4858-4826-4820	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Entry Arm	61.1	63.3	63.4	72.8	72.8	72.8
4830-4826-4820	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Circulatory Arm	49.9	50.9	50.9	56.8	60.0	59.4
6524-4260-4264	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Entry Arm	74.2	76.5	77.0	46.0	52.1	51.7
4226-4260-4264	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Circulatory Arm	100.4	101.6	101.5	97.7	100.6	100.4
4224-4226-4178	M23 J11	M23 J11 SB On Slip Approach from Roundabout - Exit Arm	35.7	39.9	40.1	44.3	43.6	44.0
4224-4226-4260	M23 J11	M23 J11 SB On Slip Approach to Roundabout - Circulatory Arm	45.2	44.4	44.1	45.6	46.9	46.9
4280-4274-4294	M23 J11	M23 J11 NB On Slip Approach from Roundabout - Exit Arm	41.0	43.5	43.4	31.2	30.1	29.5
4280-4274-4246	M23 J11	M23 J11 NB On Slip Approach to Roundabout - Circulatory Arm	29.4	33.8	33.8	42.3	42.6	42.5
4292-4246-4238	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Entry Arm	64.8	65.0	64.0	76.6	76.7	76.0
4274-4246-4238	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Circulatory Arm	61.6	70.3	70.4	102.9	103.8	103.7
4260-4264-6523	M23 J11	M23 J11 Exit to A264	100.7	100.7	100.7	48.6	54.9	54.4
4286-4270-4276	M23 J11	M23 J11 Entry from A264	71.5	78.9	78.8	55.9	56.1	55.2
4270-4276-4366	M23 J11	M23 J11 Exit to Brighton Rd A23	42.3	43.1	43.1	33.5	34.3	34.7
4372-4280-4274	M23 J11	M23 J11 Entry from Brighton Rd A23	46.7	50.5	50.3	82.2	84.2	84.8
4246-4238-4214	M23 J11	M23 J11 Exit to Brighton Rd B2114	15.8	16.6	16.4	32.8	32.7	33.3
4214-4224-4226	M23 J11	M23 J11 Entry from Brighton Rd B2114	50.3	50.5	50.9	50.4	51.2	53.6
4260-4264-4270	M23 J11	M23 J11 Exit to A264 - Circulatory Arm	100.8	100.8	100.8	24.1	24.1	24.2
4264-4270-4276	M23 J11	M23 J11 Entry from A264 - Circulatory Arm	101.2	101.2	101.2	77.0	75.3	75.8
4270-4276-4280	M23 J11	M23 J11 Exit to Brighton Rd A23 - Circulatory Arm	32.7	35.6	35.5	24.0	23.1	22.5
4276-4280-4274	M23 J11	M23 J11 Entry from Brighton Rd A23 - Circulatory Arm	71.7	78.0	78.0	53.7	51.5	50.2
4246-4238-4224	M23 J11	M23 J11 Exit to Brighton Rd B2114 - Circulatory Arm	34.0	36.2	35.9	41.1	41.3	40.6
4238-4224-4226	M23 J11	M23 J11 Entry from Brighton Rd B2114 - Circulatory Arm	61.0	64.7	64.3	71.5	71.7	70.3
6043-4980-4958	M23 J9	M23 J9 SB Off Slip	48.4	49.8	49.7	28.2	28.7	27.0
4990-4980-4958	M23 J9	M23 J9 SB Off Slip - Circulatory Arm	4.1	5.0	5.0	30.9	43.8	44.1

APPENDIX B SRN DELAYS IN SECONDS

			AM			PM		
Turn ID	Label	Junction Name	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation
3352-3366-3374	A23 Bolney Junction - Northwest Roundabout	Entry from Cowfold Rd to Northwest Roundabout	3.0	3.0	3.0	3.0	3.0	3.0
3368-3366-3352	A23 Bolney Junction - Northwest Roundabout	Exit to Cowfold Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3500-3374-3372	A23 Bolney Junction - Northwest Roundabout	Entry from London Rd to Northwest Roundabout	7.4	7.6	7.7	3.5	3.6	3.6
3366-3374-3500	A23 Bolney Junction - Northwest Roundabout	Exit to London Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3346-3368-3366	A23 Bolney Junction - Northwest Roundabout	Entry from A23 NB Diverge to Northwest Roundabout	3.1	3.1	3.1	3.0	3.0	3.0
3374-3372-3402	A23 Bolney Junction - Northwest Roundabout	Exit from Northwest Roundabout to A23 NB Merge	0.0	0.0	0.0	0.0	0.0	0.0
3412-3338-3334	A23 Bolney Junction - Southeast Roundabout	Entry from Bolney Rd to Southeast Roundabout	5.9	5.8	5.8	5.6	5.1	5.0
3344-3338-3412	A23 Bolney Junction - Southeast Roundabout	Exit to Bolney Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3416-3342-3344	A23 Bolney Junction - Southeast Roundabout	Entry from SB Diverge to Southeast Roundabout	3.6	3.6	3.6	3.7	3.7	3.7
3338-3334-3326	A23 Bolney Junction - Southeast Roundabout	Exit to SB Merge from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3348-3340-3342	A23 Bolney Junction - Southeast Roundabout	Entry from Cowfold Rd to Southeast Roundabout	3.0	3.0	3.0	3.0	3.0	3.0
3334-3336-3348	A23 Bolney Junction - Southeast Roundabout	Exit to Cowfold Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3216-3222-3296	A23 Hickstead Junction	Exit to A2300 NB from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
7324-8134-3216	A23 Hickstead Junction	Entry from A2300 NB to Western Roundabout	4.8	5.3	5.3	373.6	360.9	360.9
3190-3216-3222	A23 Hickstead Junction	Entry from Hickstead Ln to Western Roundabout	3.1	3.5	3.5	57.4	41.0	41.0
8134-3216-3190	A23 Hickstead Junction	Exit to Hickstead Ln from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3214-3218-8134	A23 Hickstead Junction	Entry from A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3222-3218-3214	A23 Hickstead Junction	Exit to A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3218-3214-3224	A23 Hickstead Junction	Entry from A2300 West on Eastern Roundabout	3.0	3.0	3.0	3.0	3.0	3.0
3206-3214-3218	A23 Hickstead Junction	Exit to A2300 West on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3242-3224-10221	A23 Hickstead Junction	Entry from SB Diverge on Eastern Roundabout	10.7	10.8	10.8	13.8	14.3	14.3
10222-3206-3166	A23 Hickstead Junction	Exit to SB Merge on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
10221-3220-3236	A23 Hickstead Junction	EB Exit to A2300 on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3220-10222-3206	A23 Hickstead Junction	WB Entry from A2300 on Eastern Roundabout	6.9	6.8	6.8	7.9	8.3	8.3
10221-10222-3206	A23 Hickstead Junction	WB Circulatory from A2300 East on the Eastern Roundabout	25.6	25.7	25.7	24.3	24.3	24.3
2578-2614-7328	A23 Pyecombe Junction	A23 NB Offlsip to A273	0.0	0.0	0.0	15.2	21.4	22.4
2578-2614-8347	A23 Pyecombe Junction	A23 NB Mainline at point of Offslip to A274	0.0	0.0	0.0	0.0	0.0	0.0
2672-2684-2774	A23 Pyecombe Junction	A23 Access from West Road & Mainline West of Pycombe	0.0	0.0	0.0	0.0	0.0	0.0
2678-2684-2774	A23 Pyecombe Junction	A23 Access from West Road West of Pycombe	241.2	245.2	245.8	57.6	78.3	80.4
8345-7330-8268	A23 Pyecombe Junction	A23 NB Point of On Slip Pyecombe Junction - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
7336-7330-8268	A23 Pyecombe Junction	A23 NB On Slip Pyecombe Junction	16.5	17.0	17.0	7.9	9.4	9.5
8268-2672-2684	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction -Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8268-2672-2678	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction	0.0	0.0	0.0	0.0	0.0	0.0
3064-7337-8282	A23 Pyecombe Junction	B2118 merge onto A23 northbound	541.1	531.8	535.0	5.1	5.3	5.4
8349-7337-8282	A23 Sayers Common Junction	B2118 merge onto A23 northbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-8283	A23 Sayers Common Junction	B2118 diverge onto A23 southbound	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-2798	A23 Sayers Common Junction	B2118 diverge onto A23 southbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
4770-4806-4812	A23 Sayers Common Junction	M23 J10 NB Off Slip Approach to Roundabout - Entry Arm	17.9	17.7	17.7	15.8	15.8	15.8
4804-4806-4812	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Circulatory Arm	28.3	37.7	38.4	9.7	9.7	9.7
4816-4814-4804	M23 J10	M23 J10 SB On Slip Approach from Roundabout - Exit Arm	15.4	15.3	15.3	15.1	15.2	15.2
4820-4814-4804	M23 J10	M23 J10 SB On Slip Approach to Roundabout - Circulatory Arm	11.1	11.2	11.2	10.8	10.9	10.9
9002-4824-4830	M23 J10	M23 J10 NB On Slip Approach from Roundabout - Exit Arm	15.5	15.7	15.7	17.9	17.6	17.6
4812-4824-4830	M23 J10	M23 J10 NB On Slip Approach to Roundabout - Circulatory Arm	13.0	12.9	12.9	12.0	12.1	12.1
4858-4826-4820	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Entry Arm	11.9	12.1	12.1	12.9	12.9	12.9
4830-4826-4820	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Circulatory Arm	14.7	14.8	14.8	15.2	15.4	15.4
6524-4260-4264	M23 J10	M23 J11 NB Off Slip Approach to Roundabout - Entry Arm	17.1	17.3	17.4	15.1	15.5	15.5
4226-4260-4264	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Circulatory Arm	22.5	43.3	42.3	15.2	26.1	23.0
4224-4226-4178	M23 J11	M23 J11 SB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4224-4226-4260	M23 J11	M23 J11 SB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-4294	M23 J11	M23 J11 NB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-4246	M23 J11	M23 J11 NB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4292-4246-4238	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Entry Arm	14.0	14.0	13.9	14.4	14.4	14.4
4274-4246-4238	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Circulatory Arm	13.7	14.4	14.4	69.4	85.4	85.1
4260-4264-6523	M23 J11	M23 J11 Exit to A264	13.5	13.7	13.7	0.0	0.0	0.0
4286-4270-4276	M23 J11	M23 J11 Entry from A264	14.5	15.1	15.1	13.3	13.3	13.2
4270-4276-4366	M23 J11	M23 J11 Exit to Brighton Rd A23	0.0	0.0	0.0	0.0	0.0	0.0
4372-4280-4274	M23 J11	M23 J11 Entry from Brighton Rd A23	12.7	12.9	12.9	15.5	15.7	15.8
4246-4238-4214	M23 J11	M23 J11 Exit to Brighton Rd B2114	0.0	0.0	0.0	0.0	0.0	0.0
4214-4224-4226	M23 J11	M23 J11 Entry from Brighton Rd B2114	12.9	12.9	13.0	12.9	13.0	13.1
4260-4264-4270	M23 J11	M23 J11 Exit to A264 - Circulatory Arm	13.5	13.7	13.7	0.0	0.0	0.0
4264-4270-4276	M23 J11	M23 J11 Entry from A264 - Circulatory Arm	39.1	39.1	39.1	15.0	14.9	14.9
4270-4276-4280	M23 J11	M23 J11 Exit to Brighton Rd A23 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4276-4280-4274	M23 J11	M23 J11 Entry from Brighton Rd A23 - Circulatory Arm	14.6	15.1	15.1	13.2	13.0	12.9
4246-4238-4224	M23 J11	M23 J11 Exit to Brighton Rd B2114 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4238-4224-4226	M23 J11	M23 J11 Entry from Brighton Rd B2114 - Circulatory Arm	13.7	14.0	13.9	14.5	14.6	14.4
6043-4980-4958	M23 J9	M23 J9 SB Off Slip	8.8	8.9	8.9	7.7	7.7	7.6
4990-4980-4958	M23 J9	M23 J9 SB Off Slip - Circulatory Arm	14.9	14.9	14.9	16.2	16.9	16.9

APPENDIX C SRN QUEUES IN PCU'S/HOUR

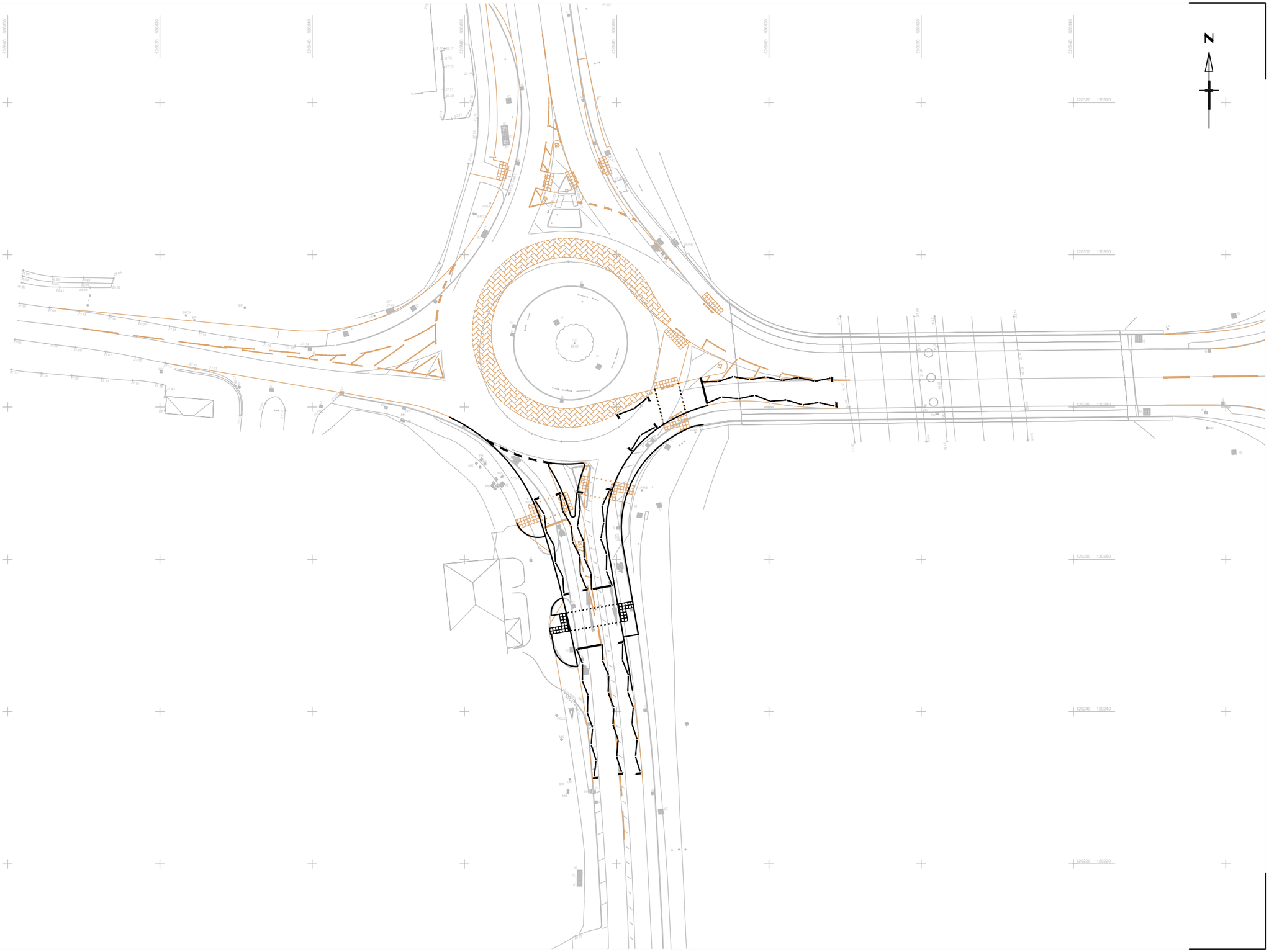
			AM			PM		
Turn ID	Label	Junction Name	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation
3352-3366-	A23 Bolney Junction - Northwest Roundabout	Entry from Cowfold Rd to Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3368-3366-	A23 Bolney Junction - Northwest Roundabout	Exit to Cowfold Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3500-3374-	A23 Bolney Junction - Northwest Roundabout	Entry from London Rd to Northwest Roundabout	0.2	0.2	0.2	0.0	0.0	0.0
3366-3374-	A23 Bolney Junction - Northwest Roundabout	Exit to London Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3346-3368-	A23 Bolney Junction - Northwest Roundabout	Entry from A23 NB Diverge to Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3374-3372-	A23 Bolney Junction - Northwest Roundabout	Exit from Northwest Roundabout to A23 NB Merge	0.0	0.0	0.0	0.0	0.0	0.0
3412-3338-	A23 Bolney Junction - Southeast Roundabout	Entry from Bolney Rd to Southeast Roundabout	0.9	0.8	0.8	0.6	0.5	0.4
3344-3338-	A23 Bolney Junction - Southeast Roundabout	Exit to Bolney Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3416-3342-	A23 Bolney Junction - Southeast Roundabout	Entry from SB Diverge to Southeast Roundabout	0.0	0.0	0.0	0.1	0.1	0.1
3338-3334-	A23 Bolney Junction - Southeast Roundabout	Exit to SB Merge from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3348-3340-	A23 Bolney Junction - Southeast Roundabout	Entry from Cowfold Rd to Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3334-3336-	A23 Bolney Junction - Southeast Roundabout	Exit to Cowfold Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3216-3222-	A23 Hickstead Junction	Exit to A2300 NB from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
7324-8134-	A23 Hickstead Junction	Entry from A2300 NB to Western Roundabout	0.0	0.1	0.1	32.2	29.9	29.9
3190-3216-	A23 Hickstead Junction	Entry from Hickstead Ln to Western Roundabout	0.0	0.1	0.1	9.3	5.4	5.4
8134-3216-	A23 Hickstead Junction	Exit to Hickstead Ln from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3214-3218-	A23 Hickstead Junction	Entry from A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3222-3218-	A23 Hickstead Junction	Exit to A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3218-3214-	A23 Hickstead Junction	Entry from A2300 West on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3206-3214-	A23 Hickstead Junction	Exit to A2300 West on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3242-3224-	A23 Hickstead Junction	Entry from SB Diverge on Eastern Roundabout	3.2	3.3	3.3	5.8	6.3	6.3
10222-3206-	A23 Hickstead Junction	Exit to SB Merge on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
10221-3220-	A23 Hickstead Junction	EB Exit to A2300 on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3220-10222-	A23 Hickstead Junction	WB Entry from A2300 on Eastern Roundabout	3.1	3.0	3.0	3.2	3.5	3.5
10221-10222-	A23 Hickstead Junction	WB Circulatory from A2300 East on the Eastern Roundabout	2.9	2.9	2.9	3.8	3.8	3.8
2578-2614-	A23 Pyecombe Junction	A23 NB Offlsip to A273	0.0	0.0	0.0	8.2	11.5	12.0
2578-2614-	A23 Pyecombe Junction	A23 NB Mainline at point of Offslip to A274	0.0	0.0	0.0	8.2	11.5	12.0
2672-2684-	A23 Pyecombe Junction	A23 Access from West Road & Mainline West of Pycombe	0.0	0.0	0.0	0.0	0.0	0.0
2678-2684-	A23 Pyecombe Junction	A23 Access from West Road West of Pycombe	1.8	1.9	1.9	0.0	0.0	0.0
8345-7330-	A23 Pyecombe Junction	A23 NB Point of On Slip Pyecombe Junction - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
7336-7330-	A23 Pyecombe Junction	A23 NB On Slip Pyecombe Junction	0.7	0.7	0.7	0.0	0.0	0.0
8268-2672-	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction -Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8268-2672-	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction	0.0	0.0	0.0	0.0	0.0	0.0
3064-7337-	A23 Sayers Common Junction	B2118 merge onto A23 northbound	48.9	50.6	50.5	0.1	0.2	0.2
8349-7337-	A23 Sayers Common Junction	B2118 merge onto A23 northbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-	A23 Sayers Common Junction	B2118 diverge onto A23 southbound	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-	A23 Sayers Common Junction	B2118 diverge onto A23 southbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
4770-4806-	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Entry Arm	6.2	5.9	5.9	2.9	2.9	2.9
4804-4806-	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Circulatory Arm	15.3	20.6	21.0	2.9	2.9	2.9
4816-4814-	M23 J10	M23 J10 SB On Slip Approach from Roundabout - Exit Arm	7.0	6.8	6.8	6.6	6.7	6.7
4820-4814-	M23 J10	M23 J10 SB On Slip Approach to Roundabout - Circulatory Arm	3.1	3.2	3.2	2.6	2.8	2.8
9002-4824-	M23 J10	M23 J10 NB On Slip Approach from Roundabout - Exit Arm	7.4	7.7	7.7	11.2	10.7	10.7
4812-4824-	M23 J10	M23 J10 NB On Slip Approach to Roundabout - Circulatory Arm	3.7	3.5	3.5	2.6	2.6	2.6
4858-4826-	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Entry Arm	5.4	5.7	5.7	6.9	6.9	6.9
4830-4826-	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Circulatory Arm	2.9	3.0	3.0	3.4	3.7	3.6
6524-4260-	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Entry Arm	9.1	9.2	9.3	5.2	6.0	6.0
4226-4260-	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Circulatory Arm	10.9	20.7	20.1	7.8	13.2	11.5
4224-4226-	M23 J11	M23 J11 SB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4224-4226-	M23 J11	M23 J11 SB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-	M23 J11	M23 J11 NB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-	M23 J11	M23 J11 NB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4292-4246-	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Entry Arm	6.0	6.0	5.9	7.6	7.7	7.5
4274-4246-	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Circulatory Arm	3.8	4.6	4.6	30.1	37.0	36.9
4260-4264-	M23 J11	M23 J11 Exit to A264	13.9	13.9	13.9	0.0	0.0	0.0
4286-4270-	M23 J11	M23 J11 Entry from A264	6.8	7.8	7.7	4.9	4.9	4.8
4270-4276-	M23 J11	M23 J11 Exit to Brighton Rd A23	0.0	0.0	0.0	0.0	0.0	0.0
4372-4280-	M23 J11	M23 J11 Entry from Brighton Rd A23	2.6	2.9	2.9	5.6	5.8	5.9
4246-4238-	M23 J11	M23 J11 Exit to Brighton Rd B2114	0.0	0.0	0.0	0.0	0.0	0.0
4214-4224-	M23 J11	M23 J11 Entry from Brighton Rd B2114	4.4	4.4	4.4	4.4	4.5	4.7
4260-4264-	M23 J11	M23 J11 Exit to A264 - Circulatory Arm	13.9	13.9	13.9	0.0	0.0	0.0
4264-4270-	M23 J11	M23 J11 Entry from A264 - Circulatory Arm	17.4	17.4	17.4	5.3	5.1	5.2
4270-4276-	M23 J11	M23 J11 Exit to Brighton Rd A23 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4276-4280-	M23 J11	M23 J11 Entry from Brighton Rd A23 - Circulatory Arm	7.1	8.1	8.1	4.8	4.6	4.4
4246-4238-	M23 J11	M23 J11 Exit to Brighton Rd B2114 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4238-4224-	M23 J11	M23 J11 Entry from Brighton Rd B2114 - Circulatory Arm	7.7	8.3	8.2	9.5	9.6	9.3
6043-4980-	M23 J9	M23 J9 SB Off Slip	2.4	2.5	2.5	1.2	1.2	1.1
4990-4980-	M23 J9	M23 J9 SB Off Slip - Circulatory Arm	0.2	0.3	0.3	1.6	2.4	2.5

APPENDIX D SRN QUEUES IN METRES

			AM			PM		
Turn ID	Label	Junction Name	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation	2039 Reference Case	2039 Local Plan Scenario	2039 Local Plan Scenario with Mitigation
3352-3366-	A23 Bolney Junction - Northwest Roundabout	Entry from Cowfold Rd to Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3368-3366-	A23 Bolney Junction - Northwest Roundabout	Exit to Cowfold Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3500-3374-	A23 Bolney Junction - Northwest Roundabout	Entry from London Rd to Northwest Roundabout	0.9	0.9	0.9	0.0	0.1	0.1
3366-3374-	A23 Bolney Junction - Northwest Roundabout	Exit to London Rd from Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3346-3368-	A23 Bolney Junction - Northwest Roundabout	Entry from A23 NB Diverge to Northwest Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3374-3372-	A23 Bolney Junction - Northwest Roundabout	Exit from Northwest Roundabout to A23 NB Merge	0.0	0.0	0.0	0.0	0.0	0.0
3412-3338-	A23 Bolney Junction - Southeast Roundabout	Entry from Bolney Rd to Southeast Roundabout	5.1	4.9	4.9	3.4	2.7	2.6
3344-3338-	A23 Bolney Junction - Southeast Roundabout	Exit to Bolney Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3416-3342-	A23 Bolney Junction - Southeast Roundabout	Entry from SB Diverge to Southeast Roundabout	0.0	0.0	0.0	0.4	0.4	0.4
3338-3334-	A23 Bolney Junction - Southeast Roundabout	Exit to SB Merge from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3348-3340-	A23 Bolney Junction - Southeast Roundabout	Entry from Cowfold Rd to Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3334-3336-	A23 Bolney Junction - Southeast Roundabout	Exit to Cowfold Rd from Southeast Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3216-3222-	A23 Hickstead Junction	Exit to A2300 NB from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
7324-8134-	A23 Hickstead Junction	Entry from A2300 NB to Western Roundabout	0.1	0.3	0.3	193.3	179.5	179.6
3190-3216-	A23 Hickstead Junction	Entry from Hickstead Ln to Western Roundabout	0.1	0.4	0.4	55.7	32.6	32.6
8134-3216-	A23 Hickstead Junction	Exit to Hickstead Ln from Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3214-3218-	A23 Hickstead Junction	Entry from A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3222-3218-	A23 Hickstead Junction	Exit to A2300 East on Western Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3218-3214-	A23 Hickstead Junction	Entry from A2300 West on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3206-3214-	A23 Hickstead Junction	Exit to A2300 West on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3242-3224-	A23 Hickstead Junction	Entry from SB Diverge on Eastern Roundabout	19.4	19.9	19.9	34.7	37.7	37.7
10222-3206-	A23 Hickstead Junction	Exit to SB Merge on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
10221-3220-	A23 Hickstead Junction	EB Exit to A2300 on Eastern Roundabout	0.0	0.0	0.0	0.0	0.0	0.0
3220-10222-	A23 Hickstead Junction	WB Entry from A2300 on Eastern Roundabout	18.3	17.8	17.8	19.0	20.9	20.7
10221-10222-	A23 Hickstead Junction	WB Circulatory from A2300 East on the Eastern Roundabout	17.3	17.6	17.6	22.5	22.6	22.6
2578-2614-	A23 Pyecombe Junction	A23 NB Offlsip to A273	0.0	0.0	0.0	49.0	68.9	72.1
2578-2614-	A23 Pyecombe Junction	A23 NB Mainline at point of Offslip to A274	0.0	0.0	0.0	49.0	68.9	72.1
2672-2684-	A23 Pyecombe Junction	A23 Access from West Road & Mainline West of Pycombe	0.0	0.0	0.0	0.0	0.0	0.0
2678-2684-	A23 Pyecombe Junction	A23 Access from West Road West of Pycombe	11.0	11.4	11.5	0.0	0.0	0.0
8345-7330-	A23 Pyecombe Junction	A23 NB Point of On Slip Pyecombe Junction - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
7336-7330-	A23 Pyecombe Junction	A23 NB On Slip Pyecombe Junction	4.1	3.9	4.0	0.0	0.0	0.0
8268-2672-	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction -Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8268-2672-	A23 Pyecombe Junction	A23 NB Off Slip West of Pyecombe Junction	0.0	0.0	0.0	0.0	0.0	0.0
3064-7337-	A23 Sayers Common Junction	B2118 merge onto A23 northbound	293.5	303.7	302.7	0.7	0.9	0.9
8349-7337-	A23 Sayers Common Junction	B2118 merge onto A23 northbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-	A23 Sayers Common Junction	B2118 diverge onto A23 southbound	0.0	0.0	0.0	0.0	0.0	0.0
8286-3108-	A23 Sayers Common Junction	B2118 diverge onto A23 southbound - Mainline	0.0	0.0	0.0	0.0	0.0	0.0
4770-4806-	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Entry Arm	37.2	35.6	35.6	17.5	17.4	17.4
4804-4806-	M23 J10	M23 J10 NB Off Slip Approach to Roundabout - Circulatory Arm	91.9	123.4	125.9	17.4	17.4	17.3
4816-4814-	M23 J10	M23 J10 SB On Slip Approach from Roundabout - Exit Arm	41.7	40.7	40.8	39.3	39.9	40.0
4820-4814-	M23 J10	M23 J10 SB On Slip Approach to Roundabout - Circulatory Arm	18.5	19.1	19.1	15.8	16.8	16.6
9002-4824-	M23 J10	M23 J10 NB On Slip Approach from Roundabout - Exit Arm	44.3	46.0	46.0	67.1	64.3	64.3
4812-4824-	M23 J10	M23 J10 NB On Slip Approach to Roundabout - Circulatory Arm	21.9	21.1	21.2	15.7	15.8	15.8
4858-4826-	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Entry Arm	32.3	34.1	34.2	41.6	41.6	41.6
4830-4826-	M23 J10	M23 J10 SB Off Slip Approach to Roundabout - Circulatory Arm	17.5	18.0	18.0	20.6	22.0	21.7
6524-4260-	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Entry Arm	54.8	55.4	55.6	31.2	36.2	35.9
4226-4260-	M23 J11	M23 J11 NB Off Slip Approach to Roundabout - Circulatory Arm	65.1	124.4	120.7	46.7	79.0	68.9
4224-4226-	M23 J11	M23 J11 SB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4224-4226-	M23 J11	M23 J11 SB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-	M23 J11	M23 J11 NB On Slip Approach from Roundabout - Exit Arm	0.0	0.0	0.0	0.0	0.0	0.0
4280-4274-	M23 J11	M23 J11 NB On Slip Approach to Roundabout - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4292-4246-	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Entry Arm	36.1	36.2	35.5	45.8	46.0	45.2
4274-4246-	M23 J11	M23 J11 SB Off Slip Approach to Roundabout - Circulatory Arm	23.0	27.7	27.7	180.5	222.1	221.3
4260-4264-	M23 J11	M23 J11 Exit to A264	83.5	83.5	83.5	0.0	0.0	0.0
4286-4270-	M23 J11	M23 J11 Entry from A264	40.5	46.6	46.4	29.1	29.2	28.6
4270-4276-	M23 J11	M23 J11 Exit to Brighton Rd A23	0.0	0.0	0.0	0.0	0.0	0.0
4372-4280-	M23 J11	M23 J11 Entry from Brighton Rd A23	15.7	17.3	17.3	33.8	35.0	35.4
4246-4238-	M23 J11	M23 J11 Exit to Brighton Rd B2114	0.0	0.0	0.0	0.0	0.0	0.0
4214-4224-	M23 J11	M23 J11 Entry from Brighton Rd B2114	26.2	26.3	26.6	26.2	26.8	28.4
4260-4264-	M23 J11	M23 J11 Exit to A264 - Circulatory Arm	83.5	83.5	83.5	0.0	0.0	0.0
4264-4270-	M23 J11	M23 J11 Entry from A264 - Circulatory Arm	104.4	104.3	104.3	31.7	30.7	31.0
4270-4276-	M23 J11	M23 J11 Exit to Brighton Rd A23 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4276-4280-	M23 J11	M23 J11 Entry from Brighton Rd A23 - Circulatory Arm	42.8	48.5	48.4	28.8	27.3	26.5
4246-4238-	M23 J11	M23 J11 Exit to Brighton Rd B2114 - Circulatory Arm	0.0	0.0	0.0	0.0	0.0	0.0
4238-4224-	M23 J11	M23 J11 Entry from Brighton Rd B2114 - Circulatory Arm	46.0	49.8	49.3	57.1	57.4	55.8
6043-4980-	M23 J9	M23 J9 SB Off Slip	14.3	14.9	14.9	7.2	7.3	6.8
4990-4980-	M23 J9	M23 J9 SB Off Slip - Circulatory Arm	1.3	1.6	1.6	9.8	14.6	14.8

Appendix E

A3



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bsi. UKAS MANAGEMENT SYSTEMS
QUALITY MANAGEMENT SYSTEM
ISO 9001 : 2015 FS 594947

client
GLENBEIGH DEVELOPMENTS

project
PROPOSED DEVELOPMENT
GODDARDS GREEN SCIENCE PARK

title
PROPOSED JUNCTION CAPACITY IMPROVEMENTS
A2300 / A23 HICKSTEAD WEST JUNCTION

date	drawn by	checked by
APRIL 2021	T.A.S	C.B.W

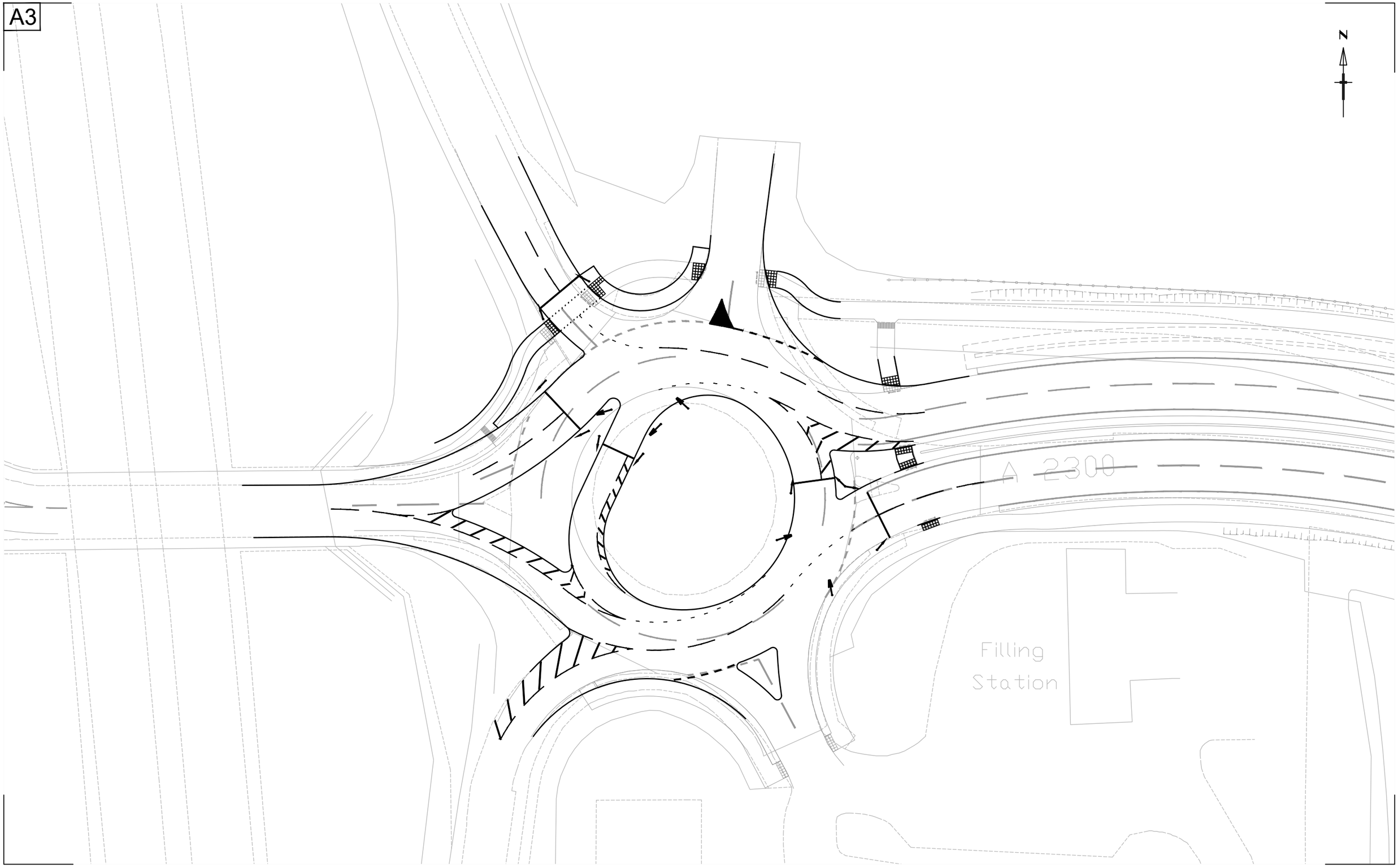
scale	status
1:500	PRELIMINARY

drawing number: 18108 - 012

rev.

Appendix F

A3



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client
GLENBEIGH DEVELOPMENTS

project
PROPOSED DEVELOPMENT
GODDARDS GREEN SCIENCE PARK

title
PROPOSED ROUNDABOUT IMPROVEMENTS
A2300 □A23

date	drawn by	checked by
NOVEMBER 2020	T.A.S	C.B.W

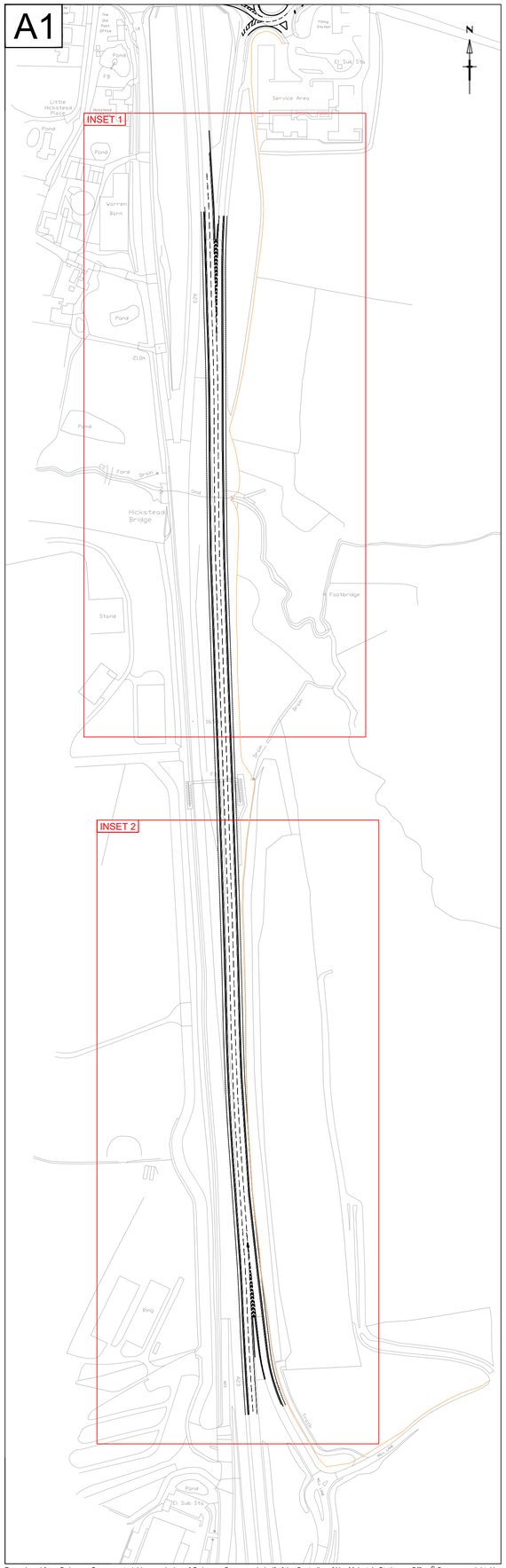
scale	status
1:500	PLANNING

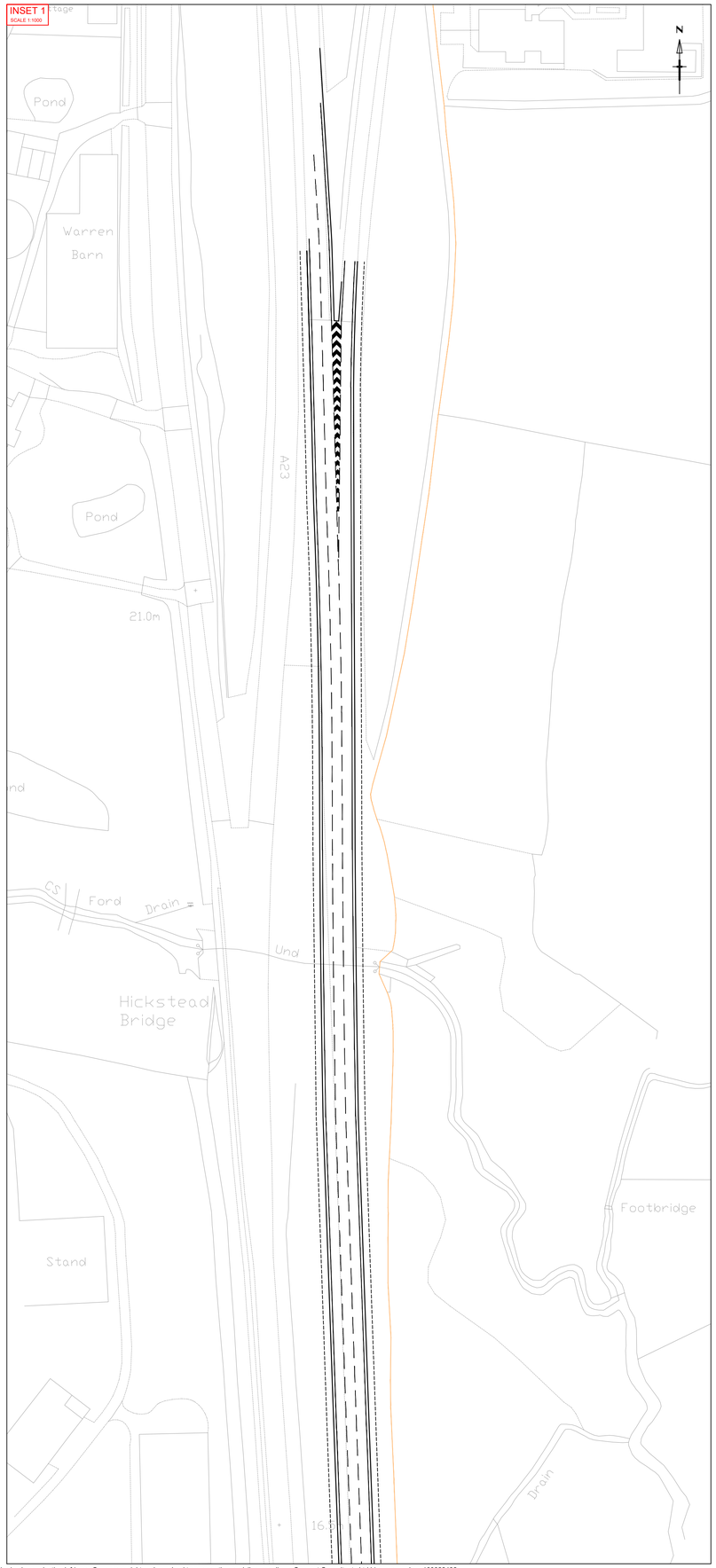
drawing number
18108 - SK201117.1

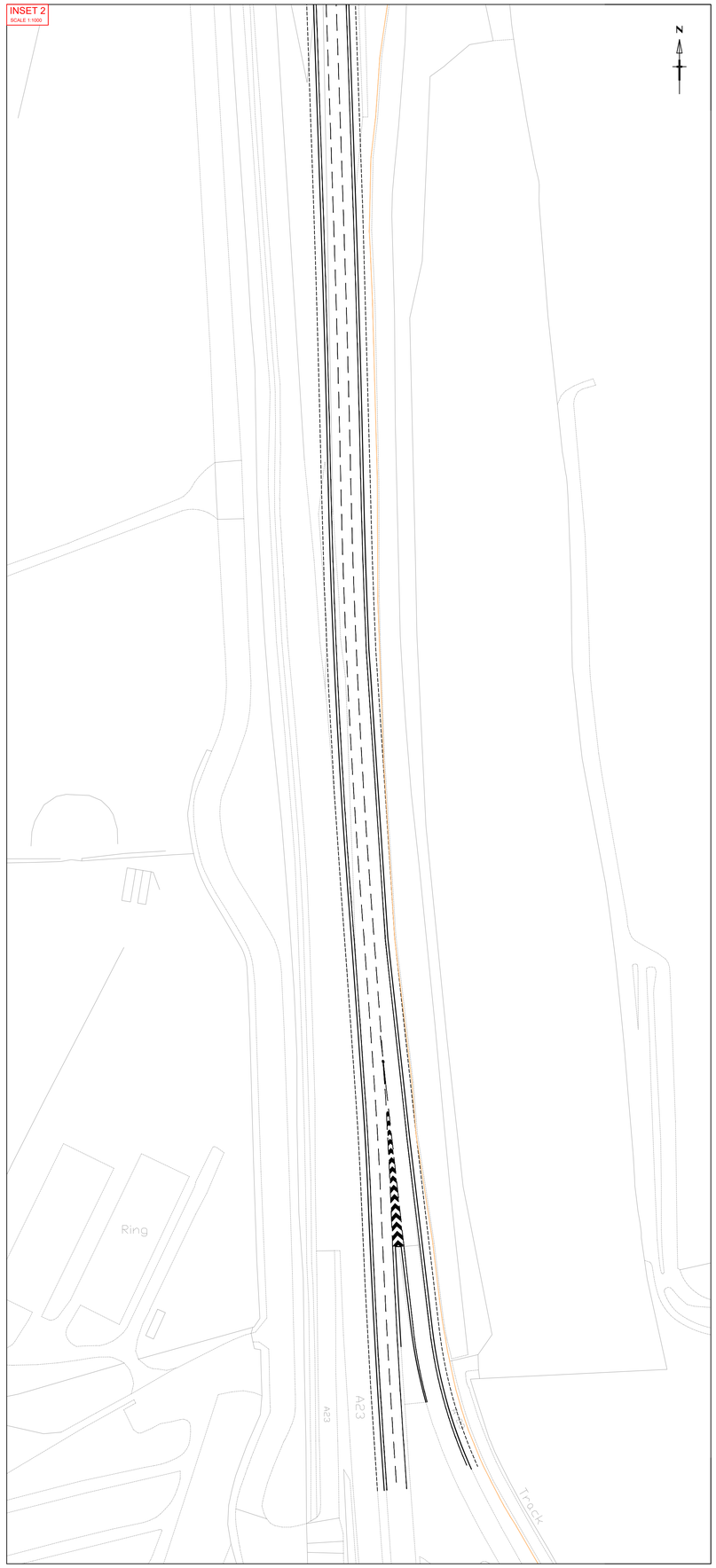
rev.

Appendix G

A1







rev.	amendment	by	date
-	-	-	-

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QUALITY MANAGEMENT SYSTEM ISO 9001 : 2015 FS 599047

client
GLENBEIGH DEVELOPMENTS

project
PROPOSED SCIENCE PARK
A23, GODDARDS GREEN

title
PROPOSED A23 WIDENING WORKS
MODIFIED DESIGN TO FIT WITHIN
EXISTING HIGHWAY BOUNDARY

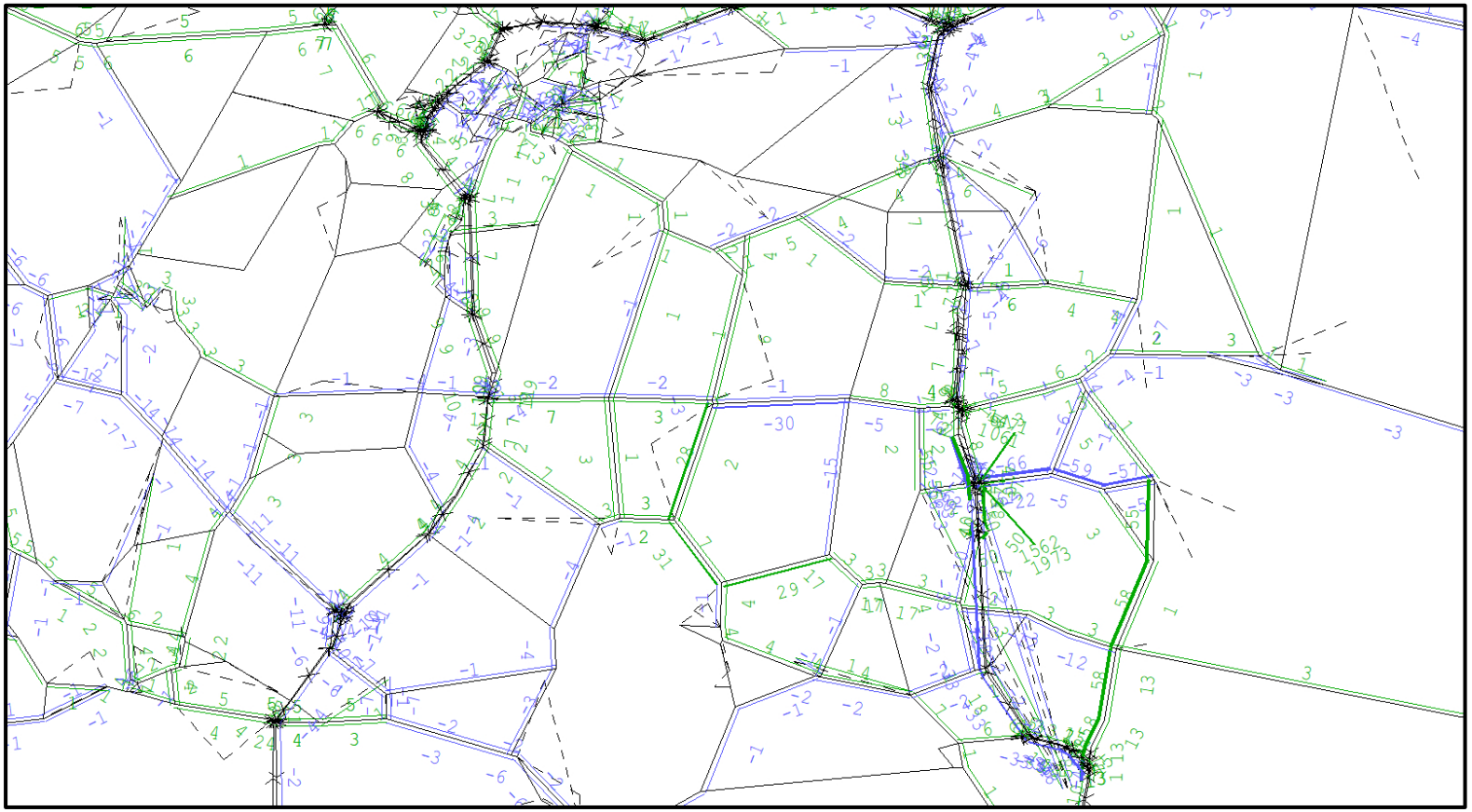
scale	drawn by	checked by
VARIOUS	T.A.S	C.B.W

date	status
NOVEMEBER 2020	CONSTRUCTION

drawing number
28108 - SK201130.1

rev.

LP sensitivity minus LP TA Flow Difference -AM Wider Network



LP sensitivity minus LP TA Flow Difference -PM Wider Network