

Warwickshire County Council

South Warwickshire Local Plan STA Testing

SLR Project No.: 431.000286.00100.06

13 May 2026

Revision: 01

RE: KSWA STA REVISED DEVELOPMENT STRATEGY ASSESSMENT

1.0 Introduction

1.1 SLR Consulting have been commissioned by Warwickshire County Council to undertake the traffic modelling analysis, in support of the Strategic Transport Assessment (STA), with the aim of identifying the predicted impacts resulting from the delivery of the developments included within the new South Warwickshire Local Plan (SWLP).

1.2 A previous assessment of an initial set of options was undertaken by SLR to consider the emerging development strategy and its potential effect on the operation of the Highway Network. SDC/WDC subsequently identified a revision to the number of dwellings at various sites within the plan, plus an additional 1,500 dwellings at the Kings Hill Site taking the total to 4,000 dwellings. These sites have then been re-assessed within the microsimulation models, adopting an approach consistent with the original reporting. This reassessment is detailed further within this Report.

Background

1.3 An original STA Testing summary report¹ documented the approach to assessing the different development options within the proposed plan, and the resulting conclusions and recommendations for the KSWA highway network. This note should be read in conjunction with the original report.

1.4 Following the submission of the outputs from this testing, SDC/WDC produced a revised development list, as part of the refinements to the Local Plan.

1.5 It should be noted that, since the original STA reporting provides relative comparisons, pertaining to the performance of different options for growth, against a consistent Reference Case, it was not considered necessary to revisit the original modelling, and the conclusions

¹ 000286.00100.03.R001. KSWA Initial STA Testing Summary

derived from that stage of testing. On this basis, the original conclusions drawn from the first stage of testing reported remain valid.

Objectives

- 1.6 The objective of this assessment is to understand the implications of the proposed revision to the Local Plan development allocation strategy and the additional Kings Hill demands. The findings from this assessment have been set out within this report, which reports upon:
- The potential impact, on the highway network, of traffic growth arising from the revised allocation strategies and increase in Kings Hill assumptions.
 - The mitigation measures required to support the growth and minimise the effect on the operation of the transport network.

2.0 Initial Report Findings

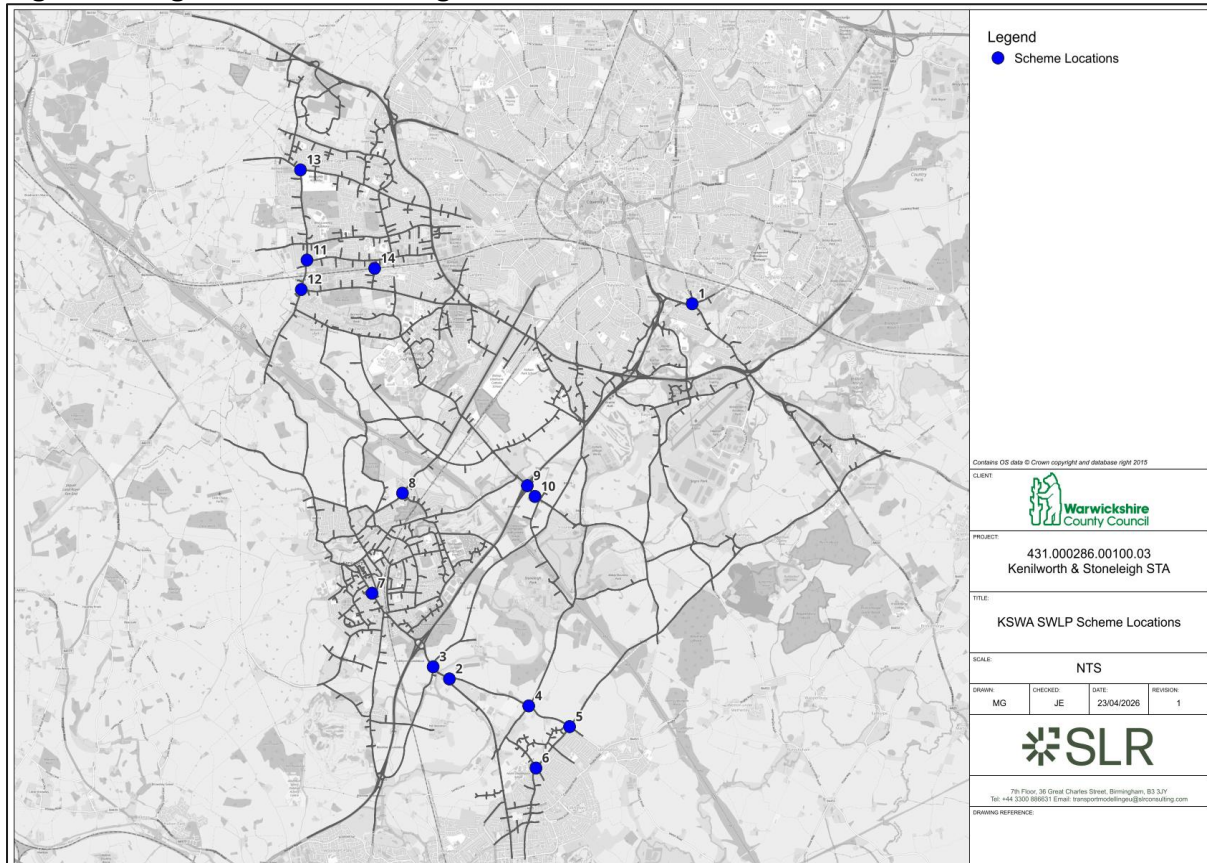
- 2.1 Based upon the analysis presented within the original reporting, the modelling demonstrates that, without intervention, delivery of the South Warwickshire Local Plan would result in severe congestion and network instability by 2050, with the highway network quickly becoming gridlocked.
- 2.2 A comprehensive package of highway mitigation, alongside mode shift assumptions, has been identified as essential. The schemes are detailed within the original modelling report², with the location of the identified schemes provided within **Figure 1**. When this mitigation is applied, the network becomes stable and capable of accommodating Local Plan growth, with AM peak conditions close to the Reference Case, and manageable, albeit higher delays in the PM.
- 2.3 At a more detailed level, the original modelling indicated that proposed mitigation measures reduce AM period impacts at several junctions along the A45 corridor, and work effectively alongside the SG01 Link Road, improving movement between the south-east and north-west of the network. A key factor is managing queues at the A46/Stoneleigh Interchange, through the introduction of the full signalisation scheme, balancing slip road traffic with Stoneleigh Road movements. Capacity improvements and signalisation in the Westwood Heath area also support this route, although congestion remains at the Tile Hill/Station Avenue and Torrington Avenue/Station Avenue junctions.
- 2.4 In addition to this, the modelling indicates that the schemes to the north of Leamington are able to manage to growth associated with the SGL sites in this area.
- 2.5 During the PM, the Do Something scenario performs significantly better than the Do Nothing and Do Minimum scenarios, with fewer unreleased trips and more completed journeys, indicating that the mitigation identified has helped reduce the residual impacts previously being modelled during this period. Mitigation schemes north of Leamington successfully

² 000286.00100.04.R001. KSWA Initial STA Testing Summary



manage additional traffic from SGL sites, resulting in minimal impacts within Kenilworth. However, persistent congestion remains in the north-west of the network, particularly around the A45/Sir Henry Parkes Road and Banner Hill/Tile Hill Lane junctions, largely due to increased traffic from the nearby SG01 development site.

Figure 1 Original Identified Mitigation Schemes in KSWA Network



3.0 Revised Development Strategy Inclusions

- 3.1 Following the submission of the original STA report, and consideration of the findings therein, SDC/WDC have advised SLR of a revision to the dwelling totals at each of the SGL development sites for consideration. The NSGL development details have not changed since the original modelling was completed.
- 3.2 SDC/WDC also advised that the Kings Hill site should be modelled with 4,000 dwellings – the original modelling considered 2,500 dwellings at this site.
- 3.3 The changes advised by SDC/WDC has resulted in the following dwelling totals at each SGL sites being considered within an updated modelling assessment:



Figure 2 SGL Sites

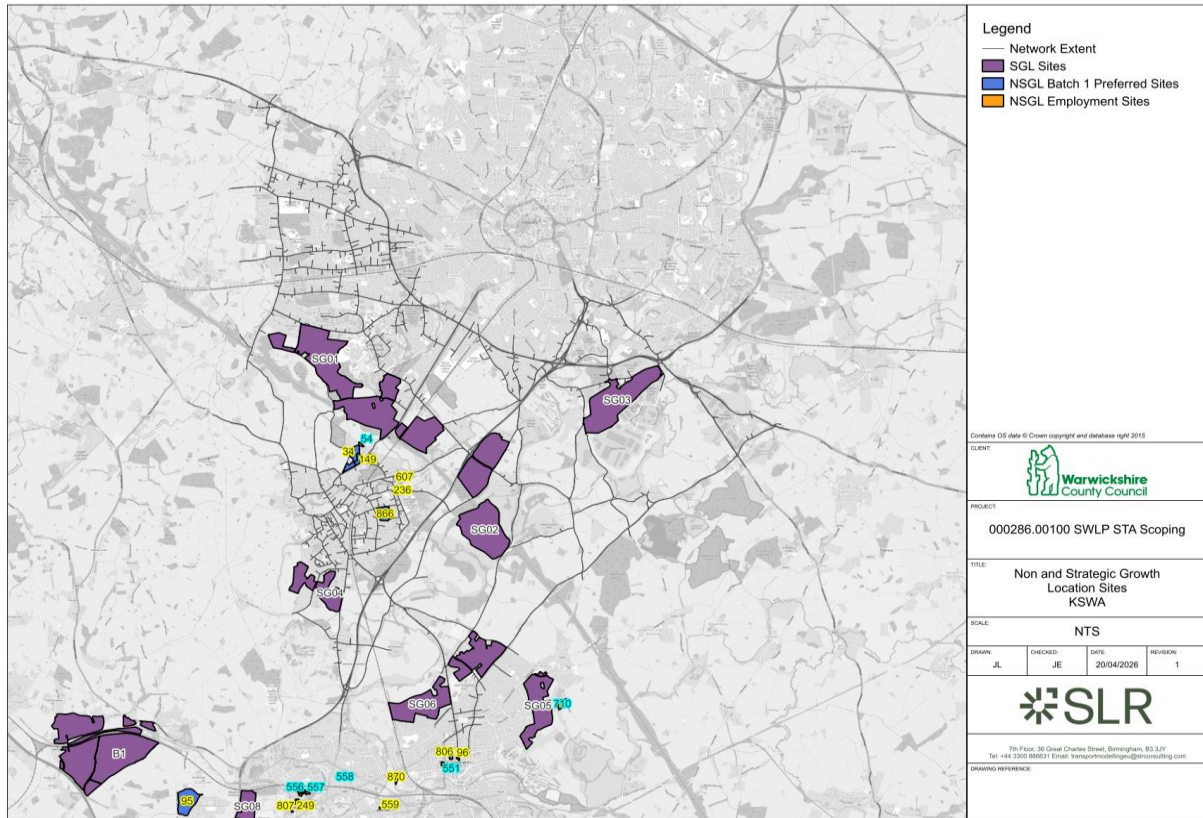


Table 1 Revised SGL Sites Details

STA Sites	Build Out	
	Dwellings	Employment (ha)
SG01	3,940	1.5
SG02	0	93.85
SG04	626	0
SG05	1,363	0
SG06	2,143	0
SG08	493	0
SG09	558	121
SG10	1,550	0
B1	4,000	0
SG12	3,086	5
SG13	0	133.69
SG15	1,550	27
SG16	0	62.81
SG18-N	768	0
SG18-S	687	0
SG19	2,585	0
SG20	3,120	11
SG23	1,969	3.3
E1	4,500	15

**sites highlighted are those which lie within the KSWA model extent*

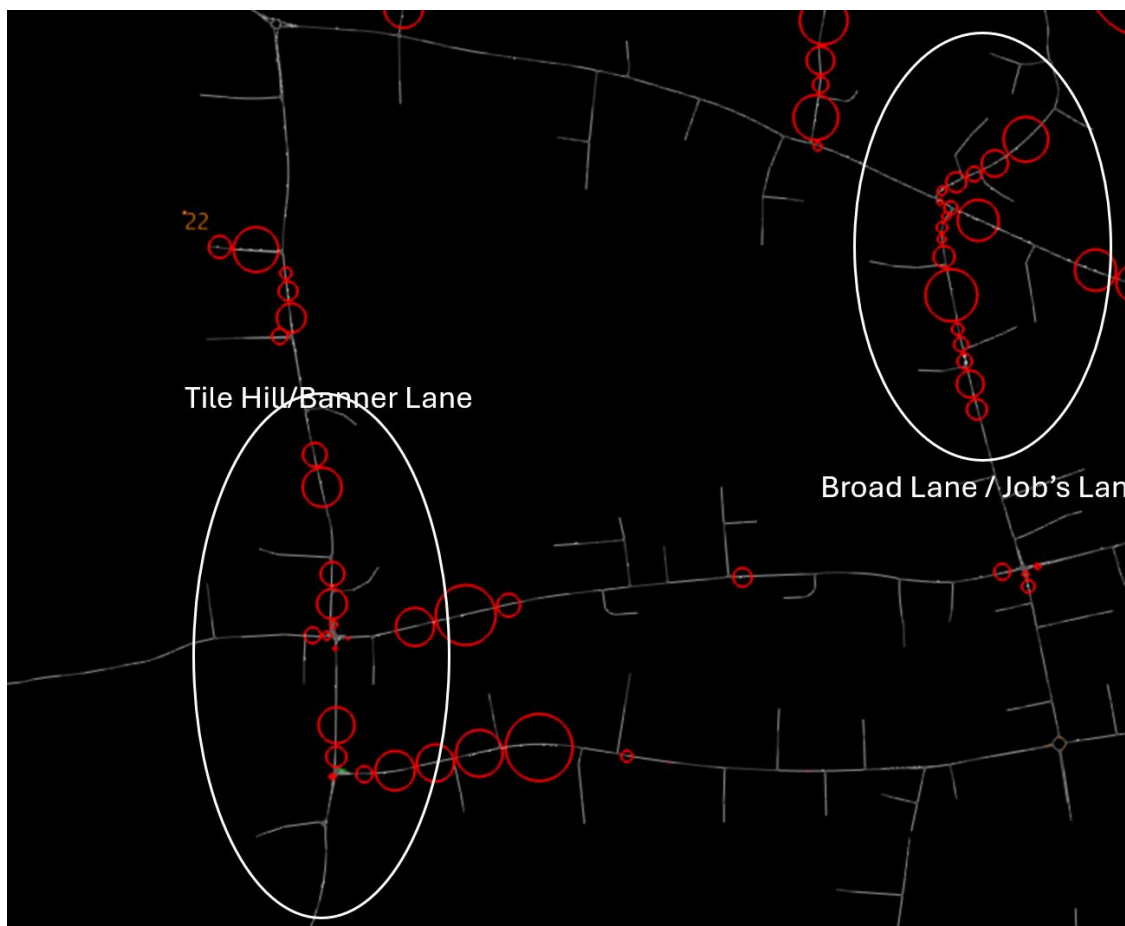
**additional 1,500 dwellings assumed at Kings Hill (Total 4,000)*



4.0 Revised Do Something Assessment

- 4.1 Following confirmation of the sites to be included within the assessment, the approach detailed within the previous section of this report has been undertaken, to form a 2050 Revised Do Something scenario.
- 4.2 At this stage it has been determined that the updated assessment would be undertaken within the previously considered 2050 Local Plan Do Something network, i.e. inclusive of the previously adopted approach to the application of a level of mode shift, and highway mitigation schemes, given that the intention of this stage of testing is to confirm whether the originally identified interventions remain appropriate when considered alongside the updated development site details, or if the revision triggers a change in the mitigation assumptions.
- 4.3 Following an initial review of the Revised Do Something scenario, it was established that a further two schemes were necessary, the congestion observed is outlined within the following figure. Alongside the mitigation schemes detailed within the original report. These schemes were added at the following locations:
- Tile Hill Lane/Banners Lane (Widening to two lanes on all approaches)
 - Broad Lane / Jobs Lane (dedicated right turn lanes)

Figure 3 Observed Congestion at locations where additional mitigation has been identified.

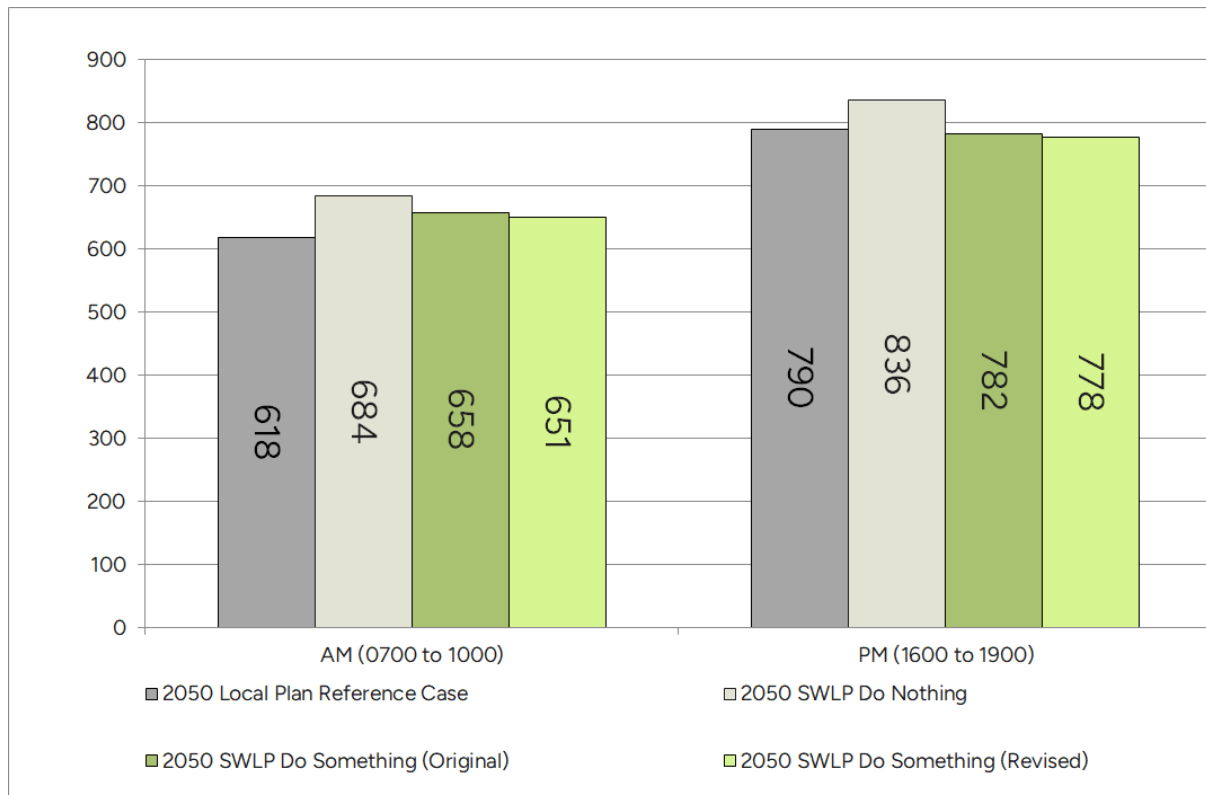


- 4.4 Additional details on these two schemes are outlined within **Appendix A**.
- 4.5 The existing schemes (identified in the original report) remained necessary in the Revises scenario as they were predominantly based on strategic parts of the network, which will continue to experience similar level of traffic flow increases with the revised development schedule included, when compared with the original assessment.
- 4.6 The resultant 2050 Local Plan Revised Do Something scenario, inclusive of the two additional schemes was run and the model performance summarised, relative to a currently adopted (benchmark) scenario, the 2050 Reference Case.
- 4.7 As per the original report, the core reporting has focused initially on the strategic level impacts, in terms of average journey times, before then reporting on localised impacts in the form of predicted changes in queuing at junctions within the network. This is presented within the following section:

Strategic Level/Network Wide Impacts

- 4.8 The following figure summarises the strategic level delay impacts within the 2050 Local Plan Revised Do Something scenario, relative to the 2050 Reference Case, 2050 Local Plan Do Nothing and 2050 Local Plan Do Something (original) scenario.

Figure 4 Average Journey Time Impacts – KSWA Local Plan Revised Do Something Assessment



- 4.9 The results presented within the previous figure indicates the that the revision to the SWLP site inclusions, plus the two additional mitigation schemes within the Do Something



(Revised) scenario report a slight reduction on the originally reported Do Something outputs, at a strategic level, with the average journey times decreasing by 7 seconds during the AM period, and 4 seconds in the PM period.

- 4.10 It remains the case that, with the SWLP sites included, alongside the identified highway mitigation and mode shift, when compared to the Reference Case, average journey times do not increase from the benchmark and report minor reduction in the AM and PM periods.
- 4.11 Further to this, the total completed trips in the revised Do Something scenario have been compared to the Reference Case, and Local Plan Do Nothing and original Do Something scenarios within the following figure.

Figure 5 Total Completed Trips – KSWA Local Plan Do Something Assessment



- 4.12 a notable change to the original AM Do Something outputs with an additional 2,000 more trips completing, while the PM does report an additional circa 2500 vehicles completing, indicating that the original highway mitigation identified plus the addition of the new schemes provides capacity for the assigned traffic demands to be accommodated.

Localised Queue Impacts

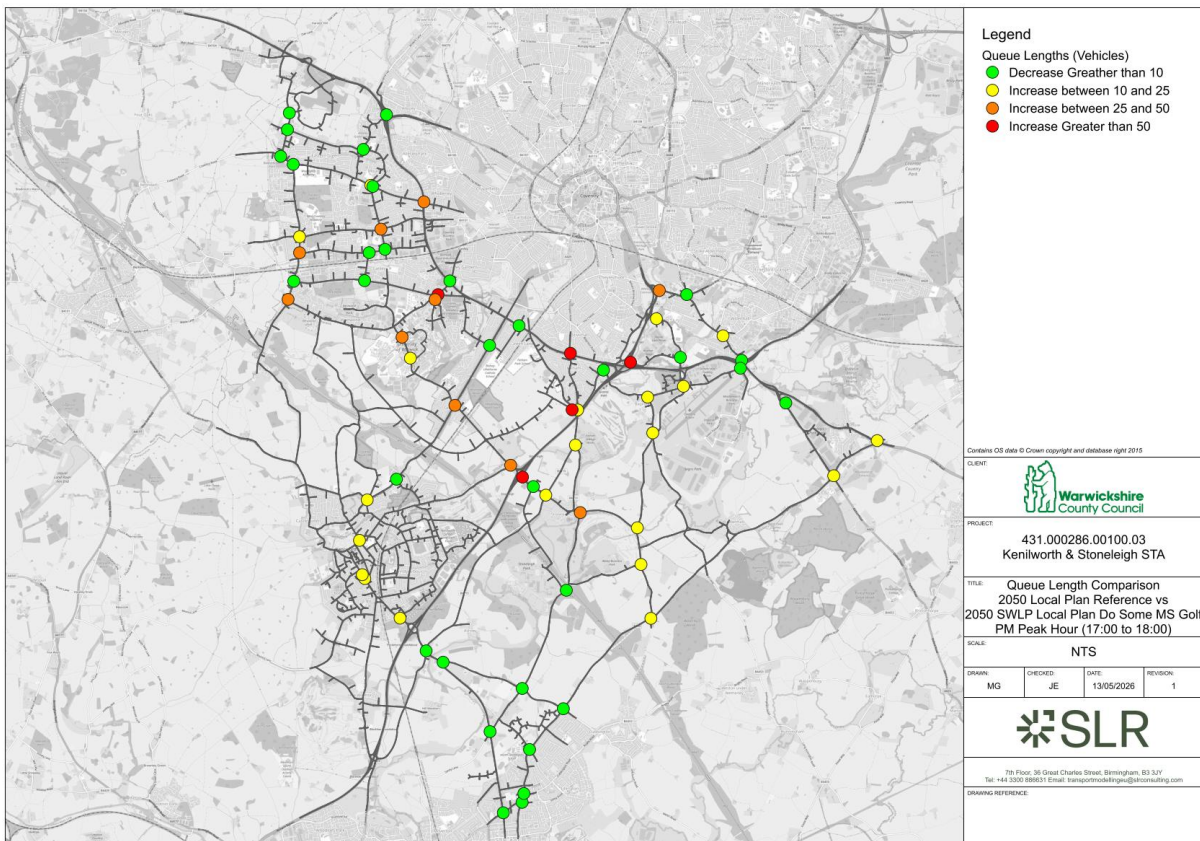
- 4.13 The following analysis presents a more localised impact assessment, based upon changes in queues lengths across the model network. This analysis is presented within the following two figures for the AM and PM peak hours respectively, focusing on the 2050 Local Plan Do Something (Revised) relative to the 2050 Reference Case.



Figure 6 KSWA Do Something Scenario Queue Impacts – AM Peak Hour



Figure 7 KSWA Do Something Scenario Queue Impacts – PM Peak Hour



- 4.14 The queue results presented within the previous two figures indicate the location and extent of changes in queue lengths in the Local Plan Do Something (Revised) scenario, relative to the Reference Case.
- 4.15 As per the original reporting, the AM queue plots indicate that queues are predicted to reduce at a number of junctions along the A45 corridor once the mitigation proposals have been implemented within the model. The results also suggest that the schemes identified complement the SG01 Link Road, and better accommodate the traffic volumes travelling from the south-east of the model to the north-west (and vice versa).
- 4.16 In addition to this, the AM results continue to indicate that the schemes to the north of Leamington are broadly managing the additional traffic generated by the SGL sites in this area, with the queue impacts occurring at the A452/Bericote roundabout a result of the introduction of the signals better balancing queues across the junction, rather than worsening queue conditions.
- 4.17 As per the original reporting, notable impacts remain during the AM period on routes into Westwood heath area. The increase in size of the SG01 site has increased impacts in this area, which led to the introduction of two additional schemes, at Tile Hill/Banners Lane and Broad Lane/Jobs Lane junctions. Despite the inclusion of these schemes, residual issues do remain. It is also notable that the impacts previously modelled at the A46/Stoneleigh Junction remain but are largely due to traffic queueing from downstream junctions rather than the capacity at the junction.
- 4.18 In addition, the increase in dwelling numbers at the Kings Hill site has put further pressure at the St Martins Roundabout and Stivichall Interchange. These areas of the network are known constraints, with limited opportunity for further intervention, however signal timing optimisation could potentially reduce some of the impacts that have been presented, and the overall strategy affords more convenient access to other parts of the network, via the SG01 Link Road, to access the A46, and via Eastern Green, to access the A45, which are the areas that SLR consider are most critical in managing the flow of traffic generated by the SWLP proposals.
- 4.19 During the PM peak hour, as per the AM, queue reductions continue to be noted within the North Leamington area, and reductions in queues are also noted within the north west of the model in the Eastern Green area, further supported by the introduction of the new schemes included.
- 4.20 The PM continues to indicate impacts at Stivichall Interchange and the adjacent St Martins roundabout, with queues extending back along the A46 and impacting A46 Stoneleigh junction. As per the original modelling, observations from the model operation continue to show that congestion along the A45 is the primary reason for junctions either side of this corridor route being impacted, rather than the individual junctions themselves. Further observations suggest that the inclusion of the SG01 Link Road is resulting in traffic re-assignment away from the A45 however, to avoid the delays reported along this corridor.



Revised Do Something Impact Summary

- 4.21 Based upon the analysis presented within this section, the revised Do Something modelling is continuing to show a similar level of impact to the original Do Something scenario, with the location and extent of queues broadly consistent between the two scenarios. To achieve this, an additional two schemes were identified at Tile Hill/Banners Lane (widening of all approaches to 2 Lanes) and Broad Lane/Jobs Lane (introduction of dedicated right turn bays).
- 4.22 The modelling indicates that the schemes to the North of Leamington (South East area of the model) continue to be necessary to manage to growth associated with the SGL sites in this area, and whilst the development quantum at these sites has reduced, the schemes remain necessary to mitigate the impacts.
- 4.23 The modelling is indicating that residual impacts will remain (within the Revised scenario), predominantly around Stivichall Interchange and the adjacent St Martins roundabout, which in turn has knock on impacts at junctions on the A45 corridor, and routes approaching this corridor. The inclusion of the additional demands associated with SG01 and Kings Hill has increases pressures on these junctions, particularly at the St Martins roundabout, however, these locations are known constraints, with limited opportunity for further intervention.
- 4.24 The overall strategy affords more convenient access to other parts of the network, via the SG01 Link Road, to access the A46, and via Eastern Green, to access the A45, which are the areas that SLR consider are most critical in managing the flow of traffic generated by the SWLP proposals.
- 4.25 In summary, it remains the case that in the revised assessment, there is a balance of queue improvements around North Leamington and Eastern Green Areas, against network conditions worsening along the A45 corridor, at Stivichall Interchange and the adjacent St Martins roundabout.

5.0 Summary and Conclusions

- 5.1 SLR Consulting have been commissioned by Warwickshire County Council to undertake the traffic modelling analysis, in support of the Strategic Transport Assessment (STA), with the aim of identifying the predicted impacts resulting from the delivery of the developments included within the new South Warwickshire Local Plan (SWLP).
- 5.2 An original assessment of an initial set of options was undertaken by SLR, to consider the emerging development strategy and its potential effect on the operation on the highway network. SDC/WDC subsequently identified a revision to the number of dwellings at various sites within the plan. These sites have then been reassessed within the microsimulation models, adopting an approach consistent with the original reporting, with the objective of understanding the implications of the proposed revision to the Local Plan development allocation strategy.
- 5.3 The findings from this assessment have been set out within this report, which reports upon:



- The potential impact, on the highway network, of traffic growth arising from the revised allocation strategies.
- The mitigation measures required to support the growth and minimise the effect on the operation of the transport network.

Initial Report Findings

- 5.4 Based upon the analysis presented within the original reporting, the modelling demonstrates that, without intervention, delivery of the South Warwickshire Local Plan would result in severe congestion and network instability by 2050, with the highway network quickly becoming gridlocked.
- 5.5 A comprehensive package of highway mitigation, alongside mode shift assumptions, has been identified as essential. When this mitigation is applied, the network becomes stable and capable of accommodating Local Plan growth, with AM peak conditions close to the Reference Case, and manageable, albeit congestion is still noted within the PM along the A45 corridor. The original modelling identified the need for 14 highway infrastructure schemes, along with signal timing optimisation. The schemes are detailed within Appendix A of the original modelling report³, with the location of the identified schemes provided within the following figure.

Figure 8 Identified Mitigation Schemes in KSWA Network



³ 000286.00100.04.R001. WLWA Initial STA Testing Summary



Revised Do Something Assessment

- 5.6 Following the submission of the original STA report, and consideration of the findings therein, SDC/WDC have advised SLR of a revision to the dwelling totals at each of the SGL development sites for consideration. The NSGL development details have not changed since the original modelling was completed. The changes advised by SDC/WDC has resulted in the following dwelling totals at each SGL sites being considered within an updated modelling assessment:

Table 2 Revised SGL Sites Details

STA Sites	Build Out	
	Dwellings	Employment (ha)
SG01	3,940	1.5
SG02	0	93.85
SG04	626	0
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SG19	2,585	0
SG20	3,120	11
SG23	1,969	3.3
E1	4,500	15

**sites highlighted are those which lie within the KSWA model extent*

- 5.7 Based upon the analysis presented within this note, the revised Do Something modelling is continuing to show a similar level of impact to the original Do Something scenario, with the location and extent of queues broadly consistent between the two scenarios.
- 5.8 The revised Do Something scenario has indicated that there is a requirement for an additional two schemes, to support the growth associated with the development schedule changes introduced within this test. Accordingly, schemes have been included at the following locations:
- Tile Hill Lane/Banners Lane
 - Broad Lane / Jobs Lane
- 5.9 Additional details on these two schemes are outlined within **Appendix A**.



- 5.10 With these schemes accounted for, alongside the originally identified mitigation schemes, the modelling indicates a manageable level of impact across the AM and PM period.
- 5.11 The modelling indicates that the schemes to the north of Leamington continue to manage to growth associated with the SGL sites in this area, and whilst the development quantum at these sites has reduced, the schemes remain necessary to mitigate the impacts.
- 5.12 The modelling is indicating that residual impacts will remain (within the Revised scenario), predominantly around Stivichall Interchange and the adjacent St Martins roundabout. These areas of the network are known constraints, with limited opportunity for further intervention, however signal timing optimisation could potentially reduce some of the impacts that have been presented, and the overall strategy affords more convenient access to other parts of the network, via the SG01 Link Road, to access the A46, and via Eastern Green, to access the A45, which are the areas that SLR consider are most critical in managing the flow of traffic generated by the SWLP proposals.
- 5.13 The inclusion of the additional demand at the SG01 site, and the additional demands at Kings Hill has also increased pressures in the Eastern Green area, albeit these impacts are slightly reduced within the revised assessment due to the introduction of two new schemes identified as necessary.
- 5.14 In summary, it remains the case that in the revised assessment, there is a balance of queue improvements around North Leamington and Eastern Green Areas, against network conditions worsening along the A45 corridor, at Stivichall Interchange and the adjacent St Martins roundabout.

Conclusions

- 5.15 The modelling outputs presented within this report continue to demonstrate that a comprehensive package of highway mitigation, as identified within the original reporting, remains necessary when tested alongside the revised SWLP sites, along with an allowance for a level of mode shift.
- 5.16 When this mitigation is applied, alongside the additional two schemes identified, the network becomes stable and capable of accommodating Local Plan growth, with AM and PM peak conditions close to the Reference Case, and manageable, albeit higher delays are noted in the PM around the A45 Corridor in particular.

Recommendations for Further Analysis

- 5.17 SLR would recommend that, once the core testing has been completed, and an understanding of 2050 network operation, inclusive of the SWLP development proposals, is obtained, it would be beneficial to consider the following:
- Further analysis pertaining to certain assumptions relating to the access and infrastructure assumptions required to support specific SGLs should be undertaken



to establish the significance of assumed infrastructure and the effects of any suggested amendments to the proposed strategies.

- Consideration of how effective the “optimistic” mode shift targets are at managing the residual impacts identified through the modelling completed to date and identify any further opportunities where this can be enhanced.
- Updates to the modelling to address any design changes which are identified, associated with the interventions, as part of WCCs review of the identified proposals.

5.18 These are stages which would be beneficial in providing a better understanding of the network operation and potential influence of mode shift on the conclusions but are unlikely to materially alter the findings presented to date and so are not essential in determining if the impacts of the SWLP proposals can be effectively managed through delivery of interventions which is set out within this assessment.

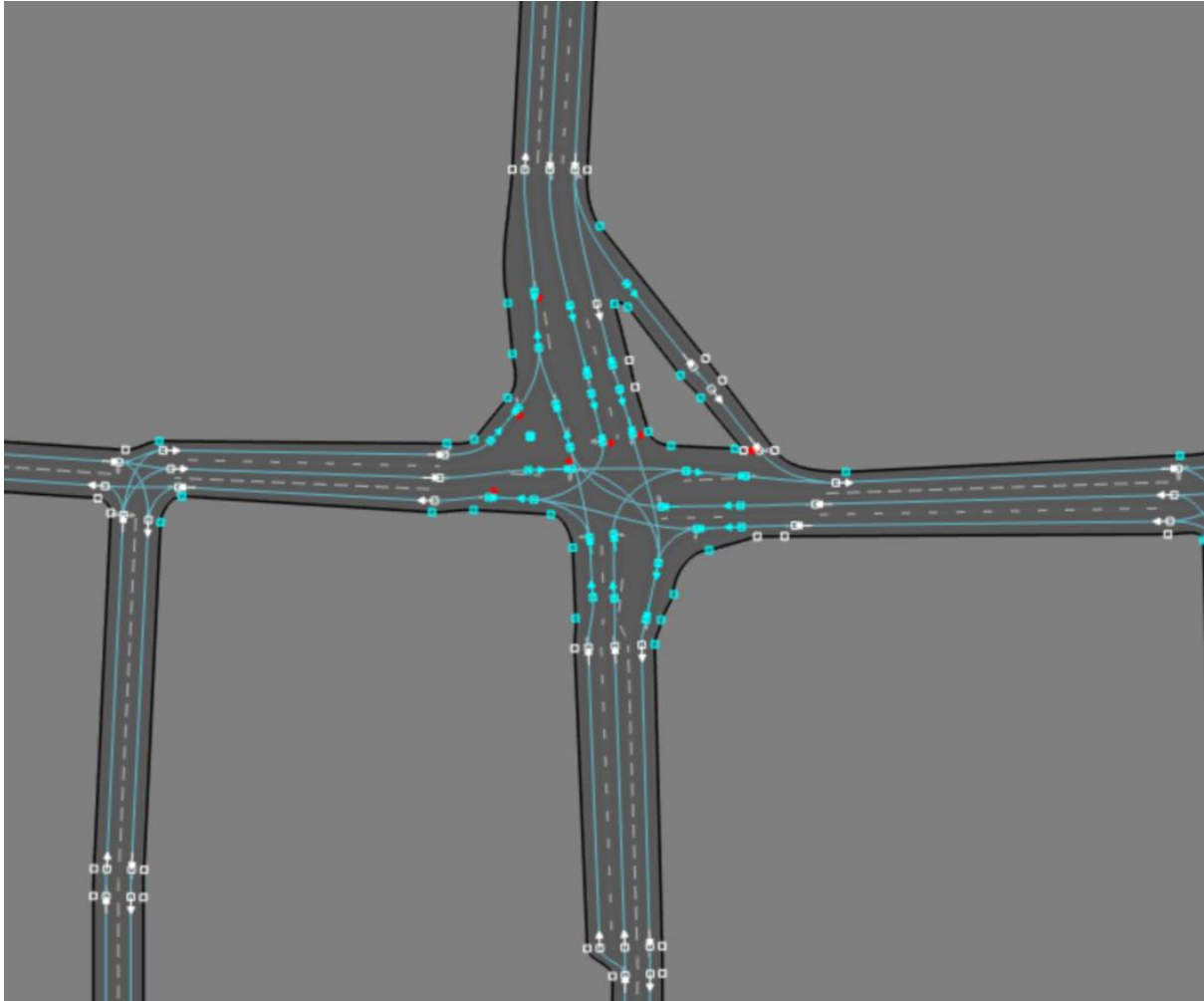


Appendix A Two additional Mitigation Schemes



Tile Hill/ Banners Lane (Scheme 15)

5.19 Widening of all approaches to signalised junction extending to two lanes.



Borad Lane/Job's Lane (Scheme 16)

5.20 Introduction of dedicated right turning bays

