SLR Consulting Limited

Rugby Borough Council, Warwickshire County Council

RBC Strategic Transport Assessment

SLR Project No.: 431.000286.00065

16 December 2025

Revision: 1

SW RUGBY EMPLOYMENT SITE SENSITIVITY TEST

1.0 Introduction

1.1 SLR Consulting Ltd (SLR) have been assisting Rugby Borough Council (RBC) and Warwickshire County Council (WCC), in the assessment of options pertaining to the delivery of growth in housing and employment through the new Rugby Borough Council Local Plan, expected to be adopted in 2027.

1.2 An 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, which was documented within the Strategic Transport Assessment (STA) report[1].

1.3 RBC subsequently identified the sites which it intended to promote through the Regulation 19 consultation. These sites have then been re-assessed with the findings and recommendations presented within the STA Addendum Report[2].

1.4 As part of the ongoing Strategic Transport Assessment (STA), SLR undertook further analysis around amendments to the development quantum assessed at the South-West Rugby Employment Phase II site.

1.5 The modelling work reported within STA Addendum, assessed the impact of 130,000m^2 floor area at this site. RBC have subsequently requested consideration of a reduced floor area of 60,000m^2.

1.6 The original STA assessment, and Regulation 19 assessment have both been undertaken on the basis that the SW Rugby Employment Phase II site would consist of 130,000m^2 of employment floor space. The resultant mitigation and cost apportionment strategy has been derived on this basis.

[1] 000065.R001.Rugby Wide Area Strategic Transport Assessment Report

[2] 000065.R002.Rugby Wide Area Strategic Transport Assessment Addendum Report

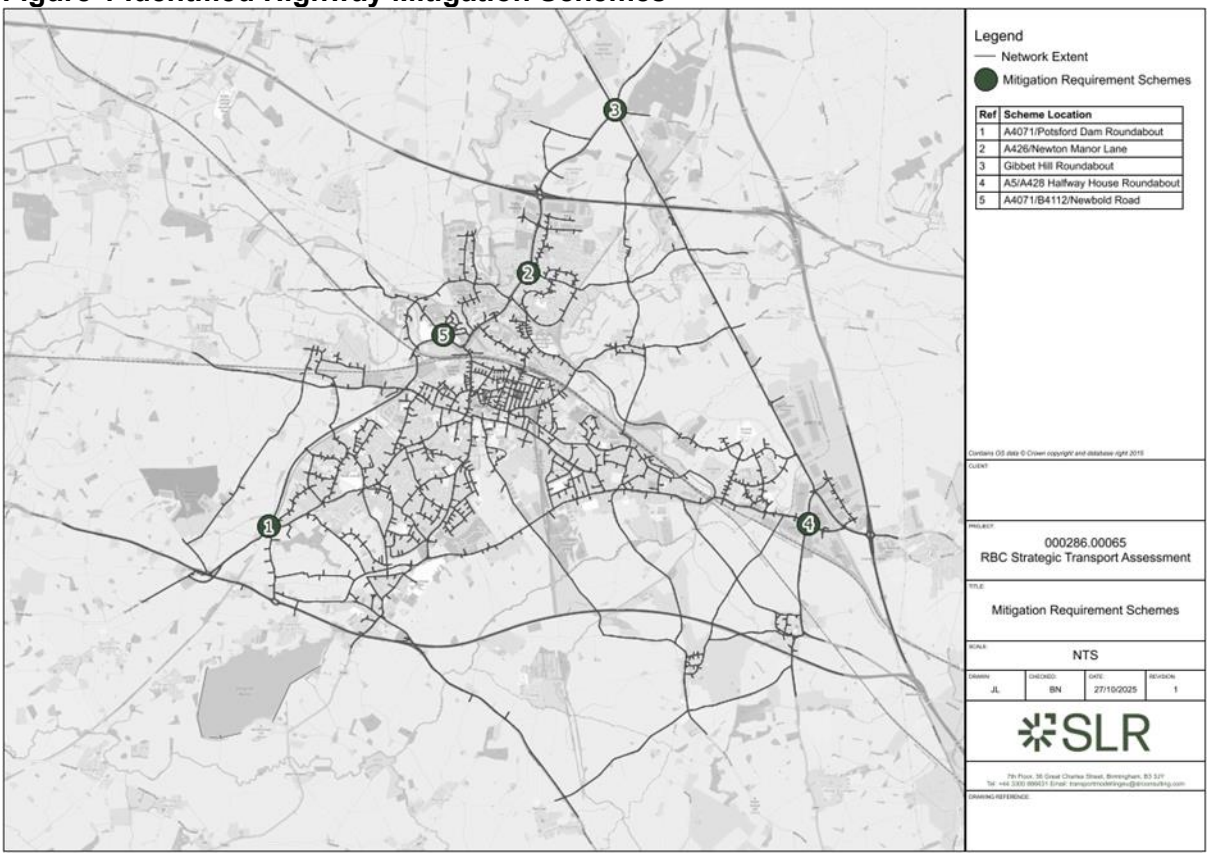
1.7 This note has been compiled to report on the modelling impacts of reducing the floor area at the SW Rugby Employment Phase II site, to establish whether the originally reported mitigation requirements remain necessary, and to update the cost-apportionment analysis previously undertaken based on the new traffic demands.

2.0 Background

2.1 The original reporting identified highway infrastructure that would be necessary to support the cumulative impacts of the Regulation 19 sites, which resulted in five highway schemes, as detailed within the following list and figure. These schemes are in addition to the mode shift assumptions applied to the model demands:

- A426/A5 Gibbet Hill Roundabout
- A4071/Potsford Dam Roundabout
- A5/A428 Halfway House Roundabout
- A4071/B4112 Newbold Road Roundabout
- A426/Newton Manor Lane Roundabout

Figure 1 Identified Highway Mitigation Schemes



2.2 The schemes identified are those considered to represent the appropriate strategic level mitigation strategy necessary to manage the effects, on the transport network, of the delivery of the Local Plan. It should be noted that there is an expectation that more localised impacts,

which occur as a result of the individual sites, would be identified through the associated Transport Assessments.

2.3 The cost apportionment analysis undertaken for these schemes identified that the SW Rugby Employment Phase II site contributed a significant amount of the additional traffic at two of these scheme locations, as detailed below:

- **A4071/Potsford Dam Roundabout Scheme** – contributes 77% of the additional traffic flows from Regulation 19 sites (sites within 5k of scheme and over 5% of additional traffic)
- **A4071/B4112 Newbold Road Roundabout Scheme** - contributes 22% of additional traffic flows from the Regulation 19 sites (sites within 5k of scheme and over 5% of additional traffic)

2.4 Based on the above, it is likely that the SW Rugby Employment Phase II site, at a quantum of 130,000m^2, would be dependent upon schemes being delivered at the A4071/Potsford Dam roundabout and the A4071/B4112 roundabout.

2.5 A reduction in the development quantum at this site to 60,000m^2 has the potential to reduce the need for and/or contribution required towards these two schemes, from the SW Rugby Employment Phase II site.

2.6 The modelling presented within this note reports on the impact of reducing the development build out to 60,000m^2, in order to confirm the resultant mitigation requirements, and to provide an updated cost apportionment analysis.

3.0 Stages of Assessment

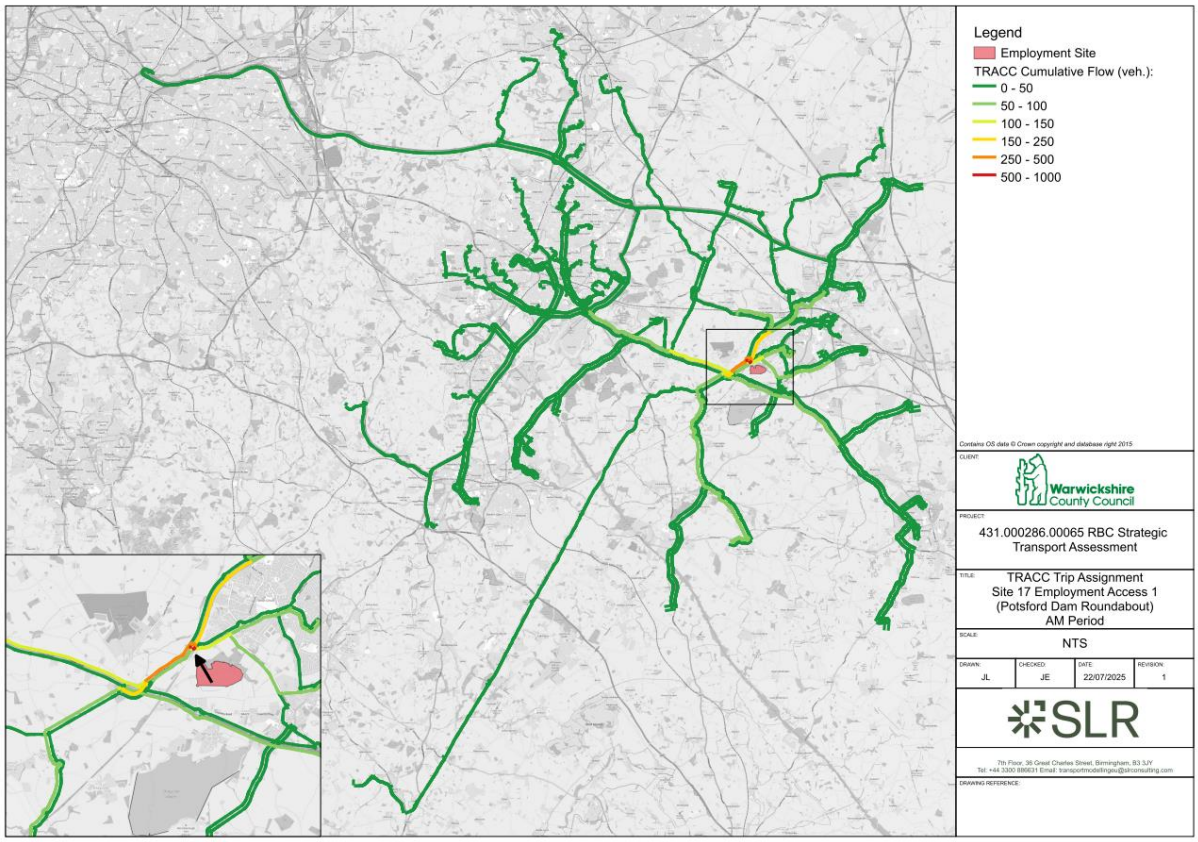
3.1 In order to consider the impacts of reducing the development quantum at the SW Rugby Employment Phase II site, the modelling has been re-visited, to reduce the estimates for traffic generated by this site. The over-arching growth assumptions have also been revised to ensure the modelling is constrained to an 'adjusted' NTEM growth forecast at the spatial level in line with DfT TAG[3]. This revised demand forecast scenario has been referred to as the Updated Regulation 19 Sites testing throughout the remainder of this note.

3.2 Given the location of the SW Rugby Employment Phase II proposals, this revised assessment has been undertaken within the Rugby Wide Area (RWA) model only. The traffic generated by the SW Rugby Employment Phase II is not anticipated to significantly impact the RRAM model network.

3.3 The potential trip distribution pattern is outlined within the following figure, which demonstrates why confining the assessment to the RWA model was considered appropriate at this time.

[3] TAG Unit M4: Forecasting and Uncertainty

Figure 2 SW Rugby Employment Site Traffic Distribution



3.4 The original STA and STA Addendum reports focused on the impact of including the Regulation 19 Local Plan sites in a "Do Minimum" scenario, whereby the sites are added on top of the consented/adopted Local Plan network with no further interventions.

3.5 Following this a Do Something and Do Something + Mitigation scenario has been run and reported, which initially included an element of mode shift (Do Something), before then including highway interventions (Do Something + Mitigation).

3.6 For the purposes of this stage of assessment it is proposed that the following model scenarios are run and reported, with the aim of establishing the mitigation requirements should the SW Rugby Employment Phase II site be delivered at 60,000m^2:

- **2042 Local Plan Reference Case**
- **2042 Local Plan Updated Regulation 19 Do Minimum** – as per the Local Plan Reference Case + the Updated Regulation 19 site demands
- **2042 Local Plan Updated Regulation 19 Do Something (Reduced Mitigation) –** as per the Do Minimum + Mode Shift + Highway Mitigation previously identified (without the A4071/Potsford Dam and A4071/B4112 schemes)
- **2042 Local Plan Updated Regulation 19 Do Something (Full Mitigation)** – as per the Do Minimum + Mode Shift + all Highway Mitigation previously identified

3.7 In line with the original reporting, the focus is on the strategic level average journey time impacts, before considering the localised queue impacts, with specific regard to the junctions for which mitigation schemes have previously been identified.

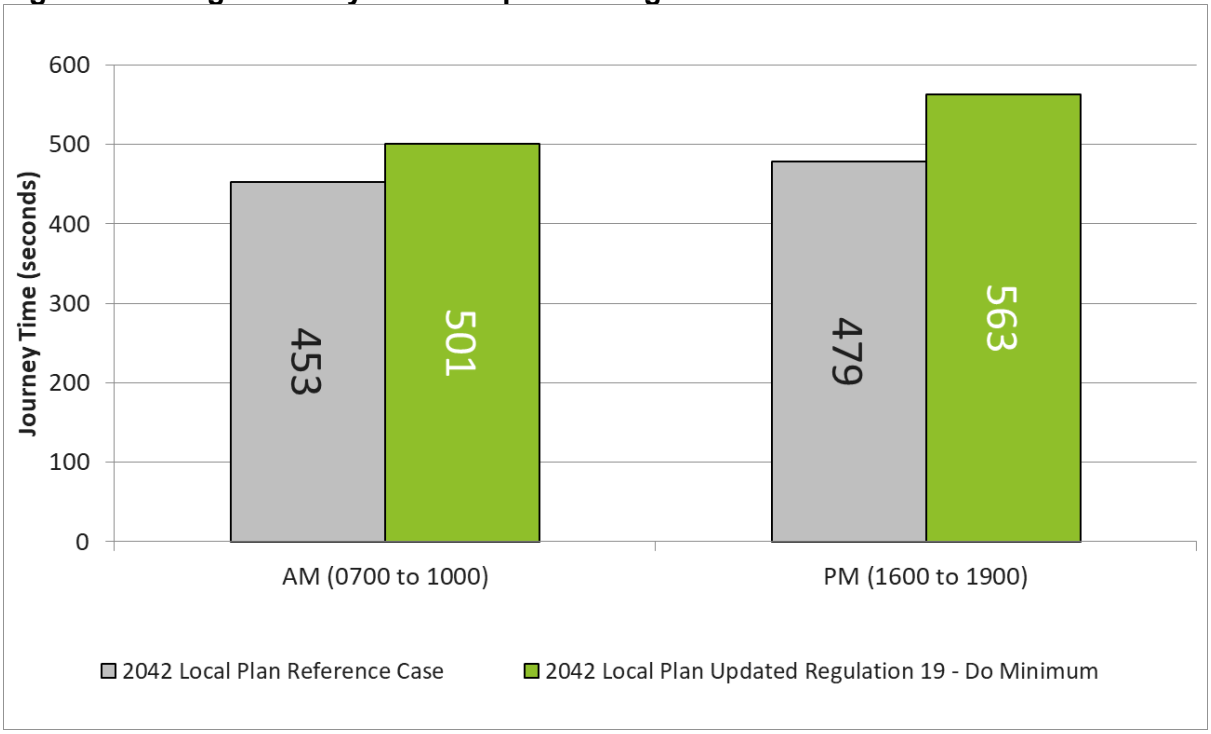
4.0 Revised Development Impacts

Do Minimum Assessment

4.1 The initial stage of analysis focuses on the Do Minimum scenario, whereby the updated Regulation 19 sites are included within the Local Plan Reference Case model, with no further interventions. This forms the 2042 Local Plan Do Minimum scenario.

4.2 The average journey times across the model network have been compared against the Local Plan Reference Case within the following figure.

Figure 3 Average Journey Times –Updated Regulation 19 Do Minimum Assessment



4.3 The average journey time results present the increase in delay across the model, once the updated Regulation 19 sites are included. The results indicate an approximate average journey time increase of 50 seconds during the AM period, and 80 seconds in the PM period.

4.4 The parts of the network most impacted by the inclusion of the updated Regulation 19 sites are demonstrated with the following queue analysis plots.

Figure 4 2042 RWA Local Plan Updated Reg 19 Do Minimum Queue Impacts – AM Peak Hour

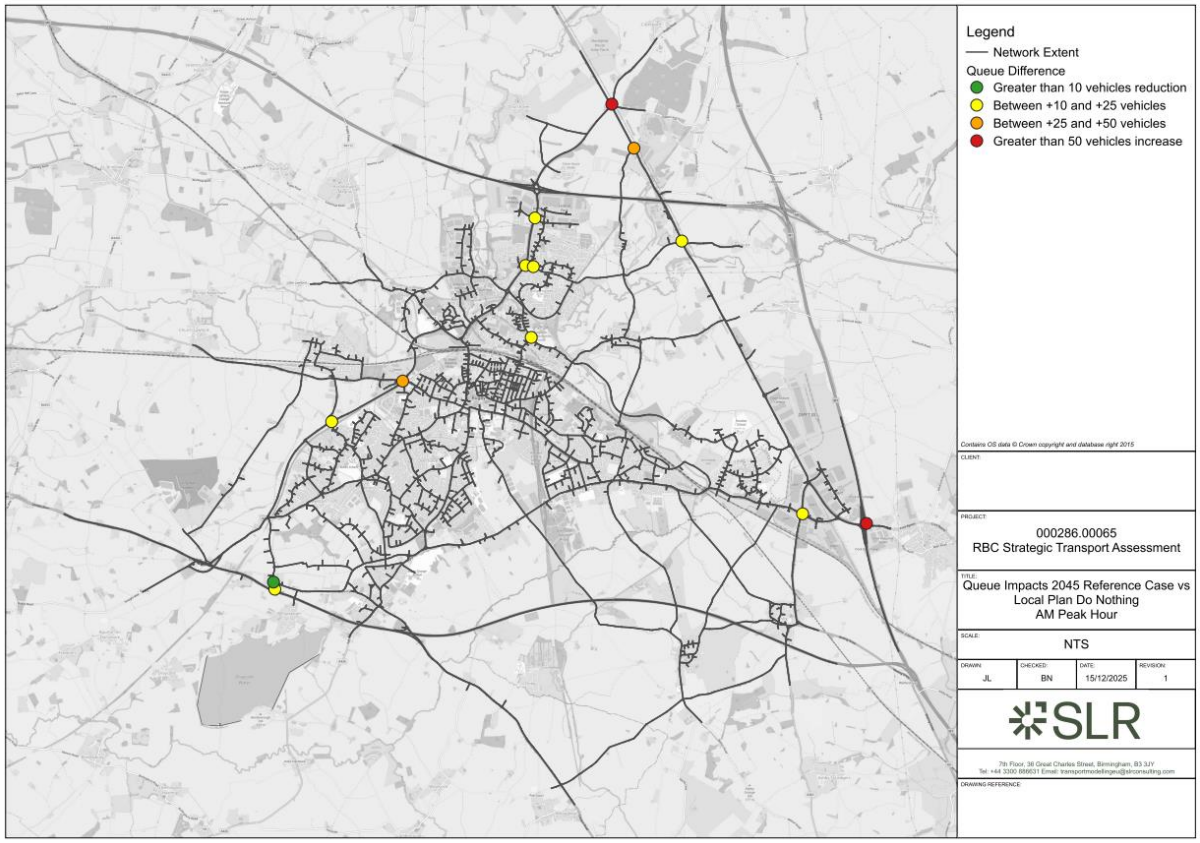
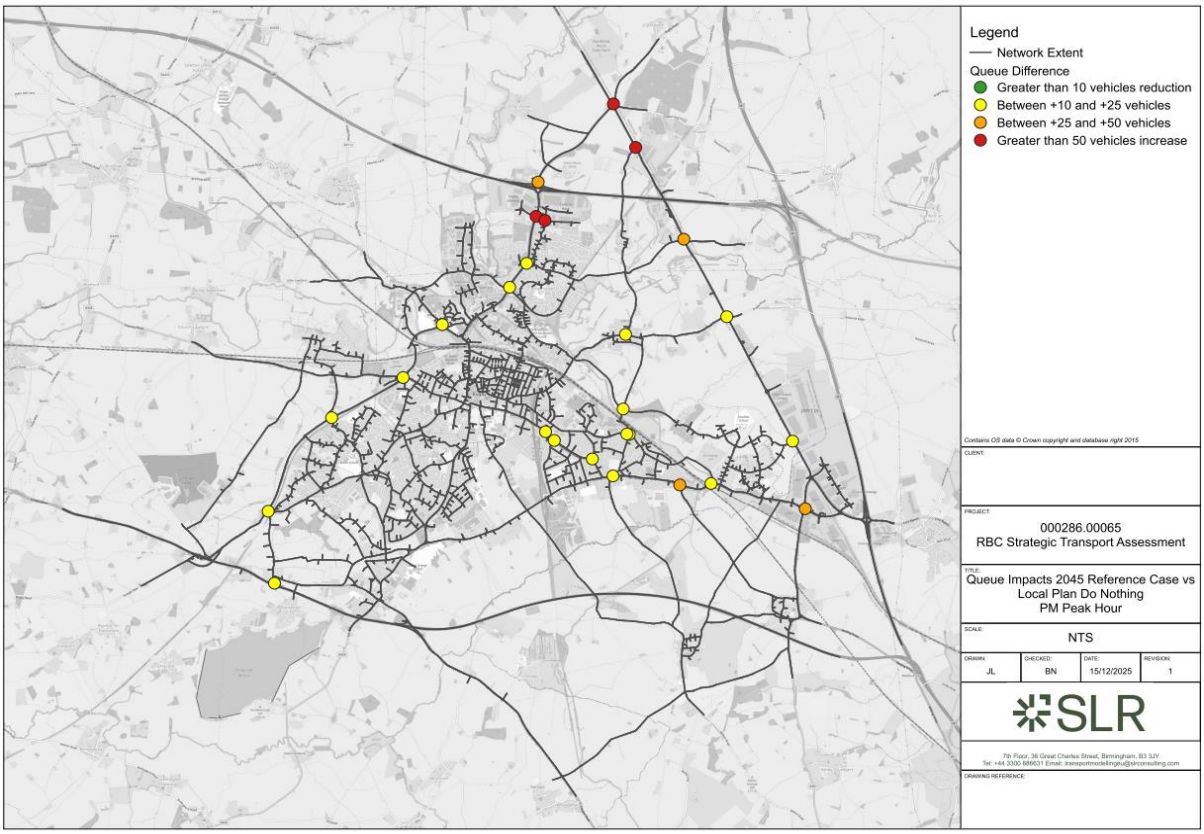


Figure 5 2042 RWA Local Plan Updated Reg 19 Do Minimum Queue Impacts – PM Peak Hour



4.5 The analysis presented within the previous two figures identify the areas of the network predicted to experience queue increases, once the updated Regulation 19 sites are included within the modelling. As per the original STA and STA Addendum results, the impacts are mainly focused on the more strategic routes through the model, namely the A4071, A5 and A426.

4.6 There remains a clear need for the previously identified interventions, both in terms of mode shift changes (to reduce localised impacts across the town centre and within the Hillmorton area), but also at the A426/A5 Gibbet Hill roundabout, M1 Junction 18, the A5/A428 Halway House roundabout and at the A426/Newton Manor Lane roundabout, where queue impacts are predicted to be severe without further interventions.

4.7 Within the updated Regulation 19 assessment, the queue impacts are less significant at both the A4071/Potsford Dam roundabout, and A4071/B4112 roundabout, during the AM peak hour, with no notable increase in queueing reported at either location. However, the PM peak hour analysis indicates queue increases at both locations.

4.8 Do Something Assessment

4.9 Based upon the Do Minimum results, the following stage of analysis presents outputs from two Do Something scenarios.

4.10 In both Do Something scenarios, the previously adopted levels of mode shift have been retained, as the first mitigation measure. Following this the previously identified mitigation measures have been included in a “Full Mitigation” scenario, with the A4071/Potsford Dam roundabout, and A4071/B4112 roundabout schemes removed in a “Reduced Mitigation” scenario.

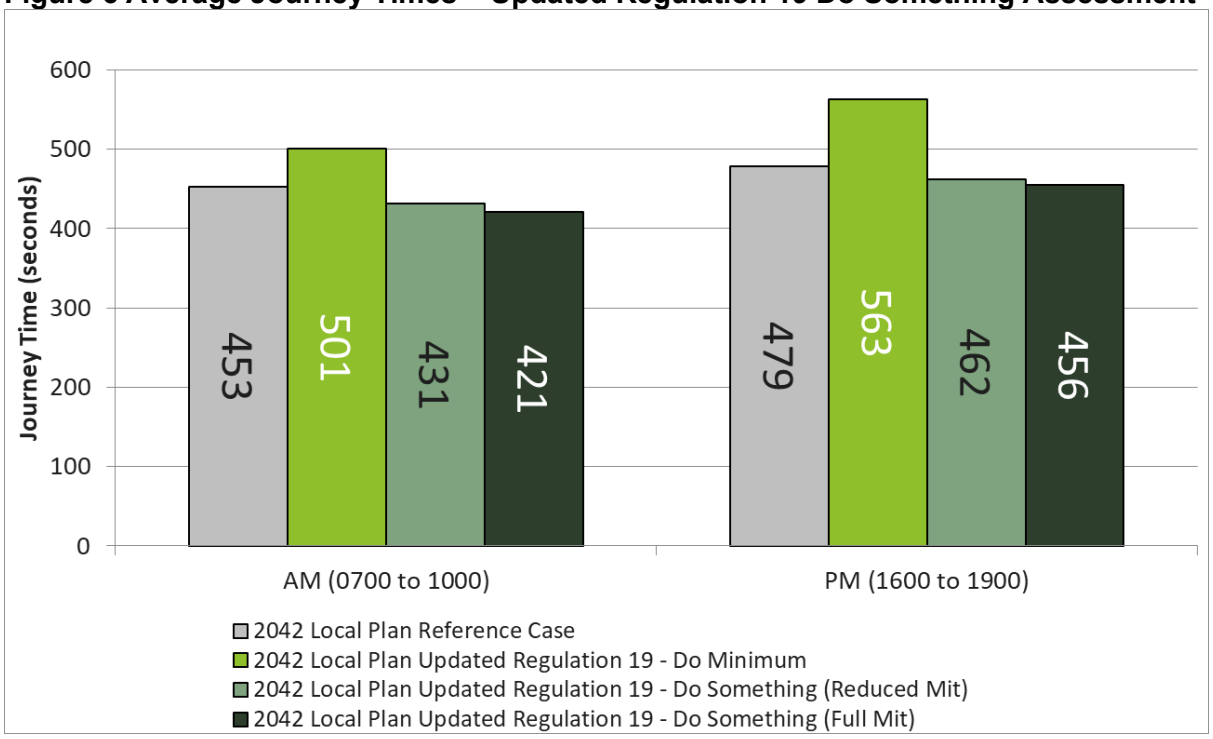
4.11 The mitigation inclusions by scenario are confirmed within the following table:

Table 1 Mitigation Inclusions

SCHEME	SCENARIO	
	2042 Local Plan Do Something Reduced Mitigation	2042 Local Plan Do Something Full Mitigation
A426/A4071 Avon Mill	✓	✓
A426/Boughton Road Roundabout	✓	✓
A426/A5 Gibbet Hill Roundabout	✓	✓
A5/A428 Halfway House Roundabout	✓	✓
M1 Junction 18 Signal Optimisation	✓	✓
A4071/Potsford Dam Roundabout	X	✓
A426/Newton Manor Lane Roundabout	✓	✓
A4071/B4112 Roundabout	X	✓

4.12 The resultant impact on the average journey times, at a network wide level, are presented within the following figure:

Figure 6 Average Journey Times – Updated Regulation 19 Do Something Assessment



4.13 The results presented indicate that within both the “Reduced Mitigation” and “Full Mitigation” scenarios, average journey times are reduced compared to the Local Plan Do Minimum.

4.14 The results demonstrate that the inclusion of the schemes identified are predicted to mitigate the impacts of the Regulation 19 sites, when compared to the Local Plan Reference Case scenario.

4.15 The reduction in average journey times in the “Reduced Mitigation” scenario (when compared to the Local Plan Do Minimum) is such that most of the additional delay occurring through the inclusion of the Regulation 19 sites, at a strategic level, is mitigated. This delay is then further reduced upon inclusion of the “Full Mitigation”.

4.16 Further analysis of the localised impacts is presented within the following figures, initially reporting the “Reduced Mitigation” queue impacts, followed by the “Full Mitigation” scenario. In both instances the queue impacts are compared with the Local Plan Reference Case scenario.

Figure 7 2042 RWA Local Plan Updated Reg 19 Do Something (Reduced Mitigation) Queue Impacts – AM Peak Hour

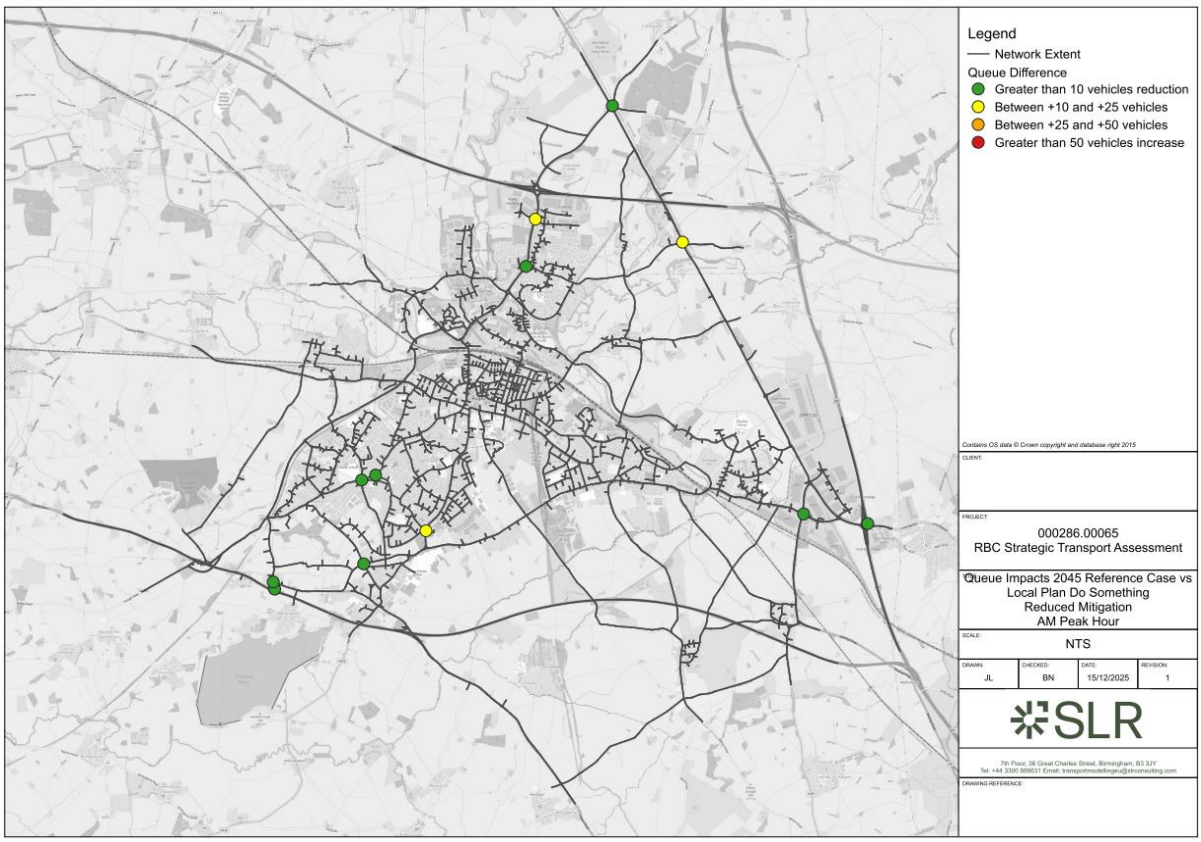
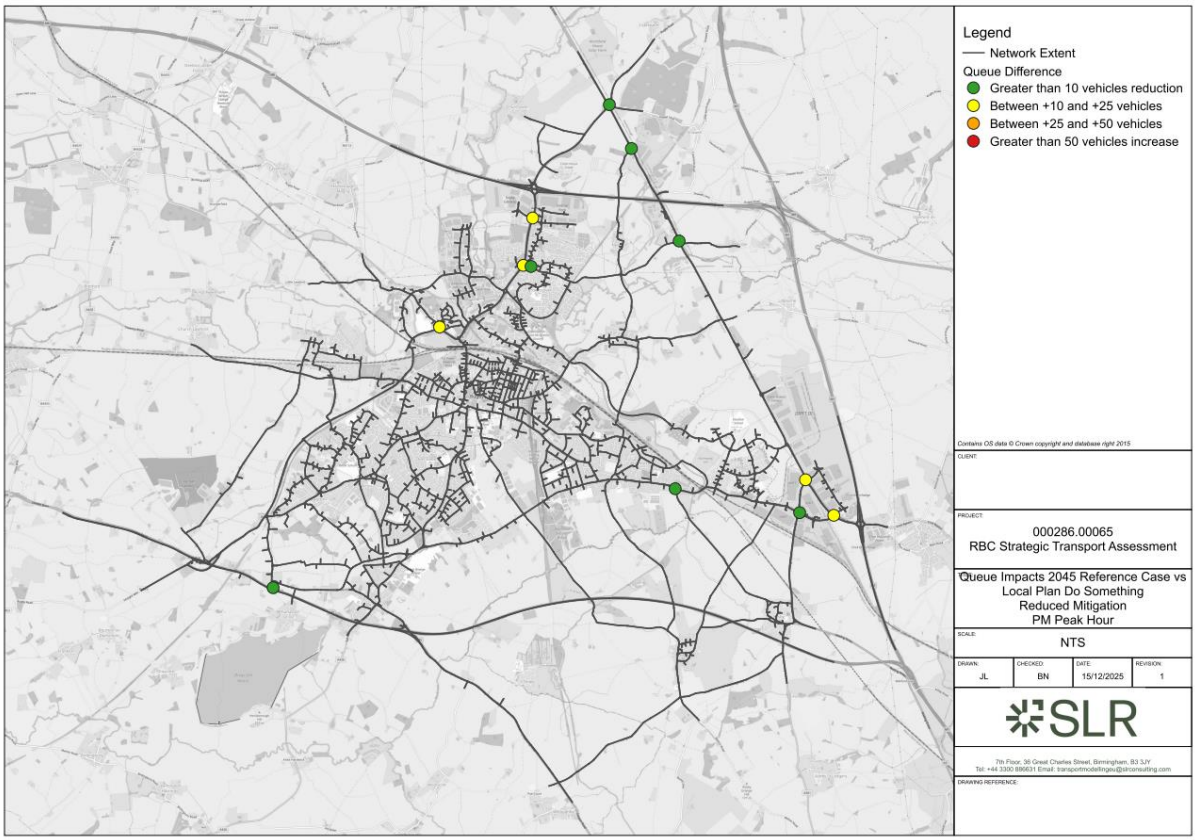


Figure 8 2042 RWA Local Plan Updated Reg 19 Do Something (Reduced Mitigation) Queue Impacts – PM Peak Hour



4.17 The queue results presented within the previous two figures indicate the modelled impact of the updated Regulation 19 sites in a “Reduced Mitigation” Do Something scenario. The results indicate that the inclusion of the mitigation schemes, and mode shift, significantly reduce the impacts previously identified in the Do Minimum scenarios on the key strategic routes through the model.

4.18 This scenario does suggest that mitigation may be required at the A4071/B4112 roundabout, where queue impacts continue to be modelled during the PM peak hour. However, the modelling does not suggest any significant worsening of queue conditions over the Local Plan Reference Case at the A4071/Potsford Dam roundabout.

4.19 Further to this, the queue impacts are presented within the following two figures for the “Full Mitigation” Do Something scenario.

Figure 9 2042 RWA Local Plan Updated Reg 19 Do Something (Full Mitigation) Queue Impacts – AM Peak Hour

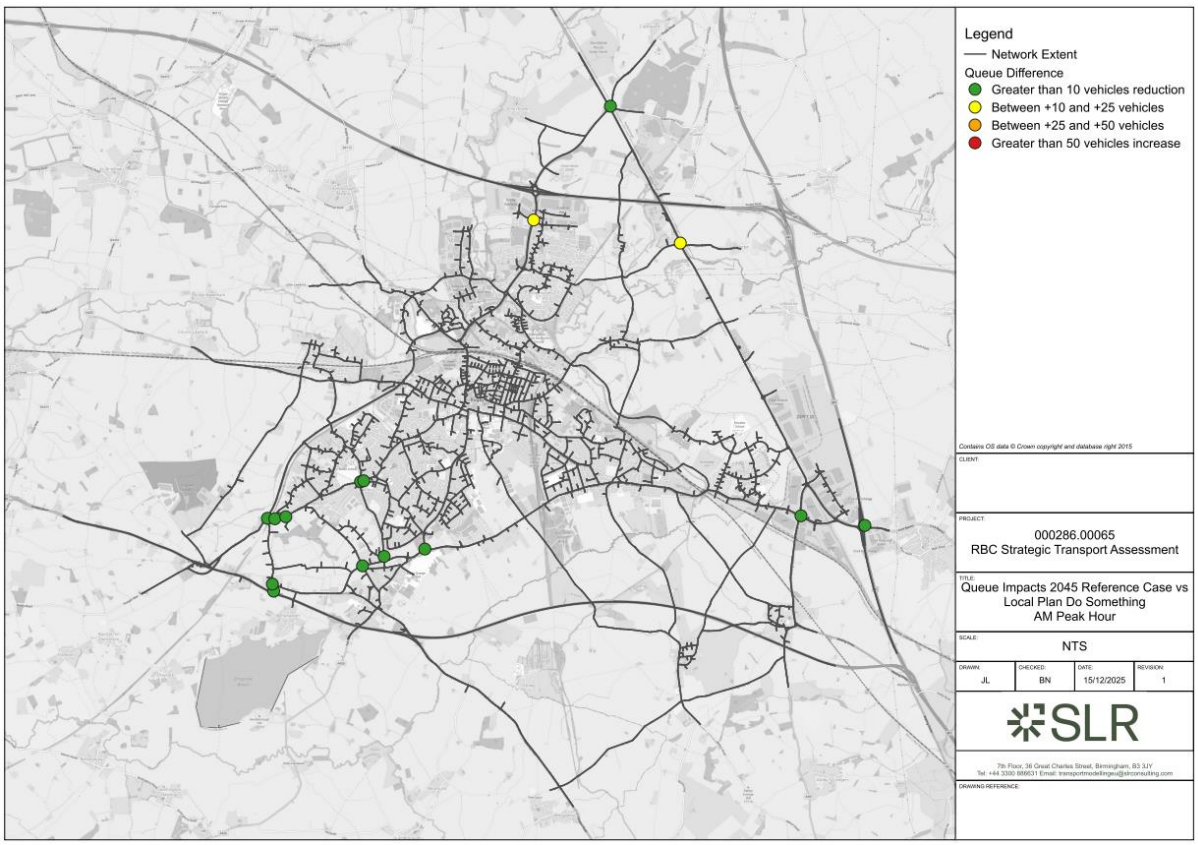
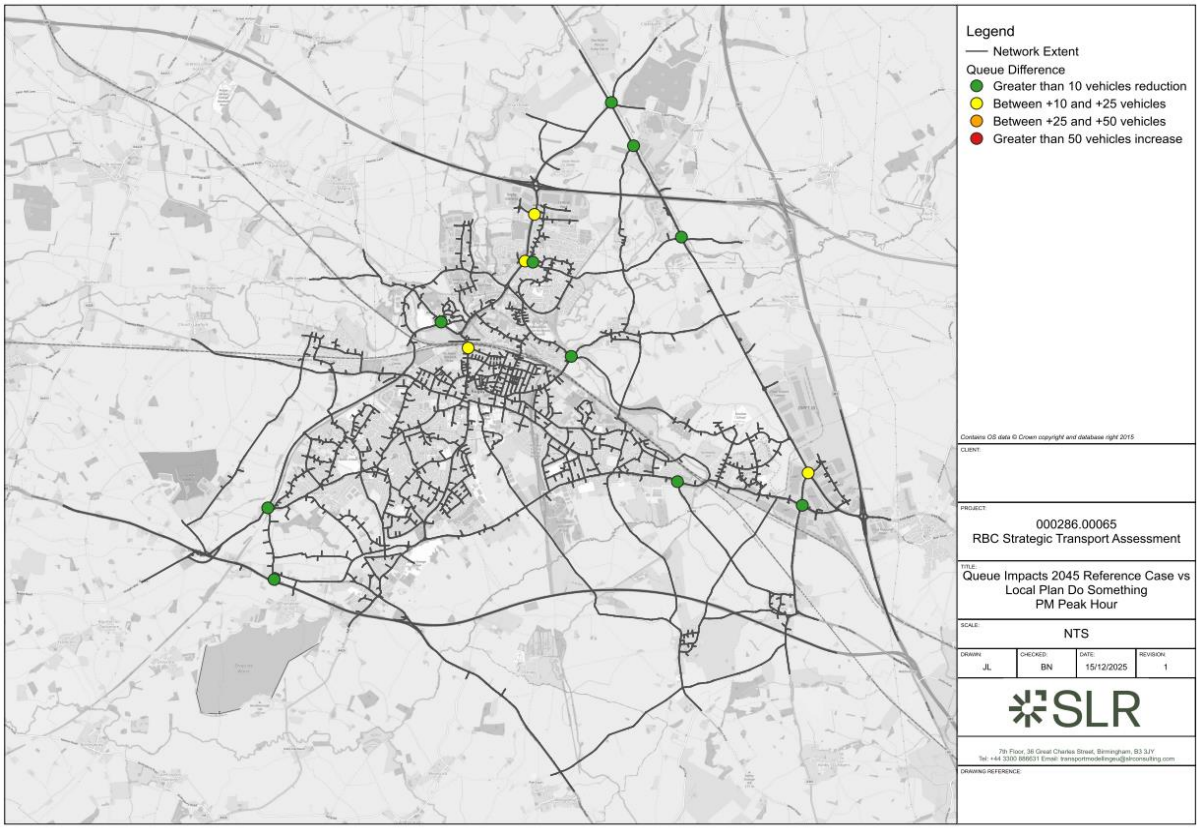


Figure 10 2042 RWA Local Plan Updated Reg 19 Do Something (Full Mitigation) Queue Impacts – PM Peak Hour



4.20 The previous two figures report the modelled queue impacts within the “Full Mitigation” Do Something scenario. These results are in line with those reported within the original STA, and STA Addendum report, and indicate that the inclusion of the A4071/B4112 scheme removes the queue impacts modelled in the PM peak hour at this junction which occurs within the “Reduced Mitigation” scenario. The scheme results in betterment of the junction operation relative to the Local Plan Reference Case conditions.

4.21 The A4071/Potsford Dam roundabout also experiences a reduction in queues over the Local Plan Reference Case scenario. The inclusion of this scheme also reduces queues at other junctions within the SW Rugby area compared with the “Reduced Mitigation” scenario, as mitigating the A4071/Potsford Dam junction makes the Potsford Dam Link a more attractive route, in turn reducing traffic on other routes within this area.

4.22 Based upon the analysis presented, there remains a need for the highway mitigation identified in the original STA and STA Addendum reporting, once the updated Regulation 19 sites have been accounted for within the modelling.

4.23 An exception to this is the A4071/Potsford Dam roundabout, which may become less essential based upon the analysis presented within this section. This is considered in further detail within the following section.

A4071/Potsford Dam Roundabout Detailed Queue Analysis

4.24 The original STA and STA Addendum report both identified queue impacts that would require mitigation at the A4071/Potsford Dam roundabout, and accordingly, a concept scheme was derived and included within the Do Something scenarios at this location.

4.25 With the reduced development quantum at the SW Rugby Employment Phase II site, tested as part of this updated Regulation 19 sites assessment, the requirement for a scheme at this junction initially appears to be less critical, with the Do Minimum scenario suggesting minor increases in queuing in the PM peak hour. Within the Do Something (Reduced Mitigation) the queue impacts show no worsening over the Local Plan Reference Case scenario.

4.26 More detailed analysis of the queue impacts within each scenario has been presented within the following figures for the AM and PM peak hours, to better understand the updated Regulation 19 site impacts at this junction.

Figure 11 A4071/Potsford Dam Roundabout – AM Peak Hour Queue Impacts

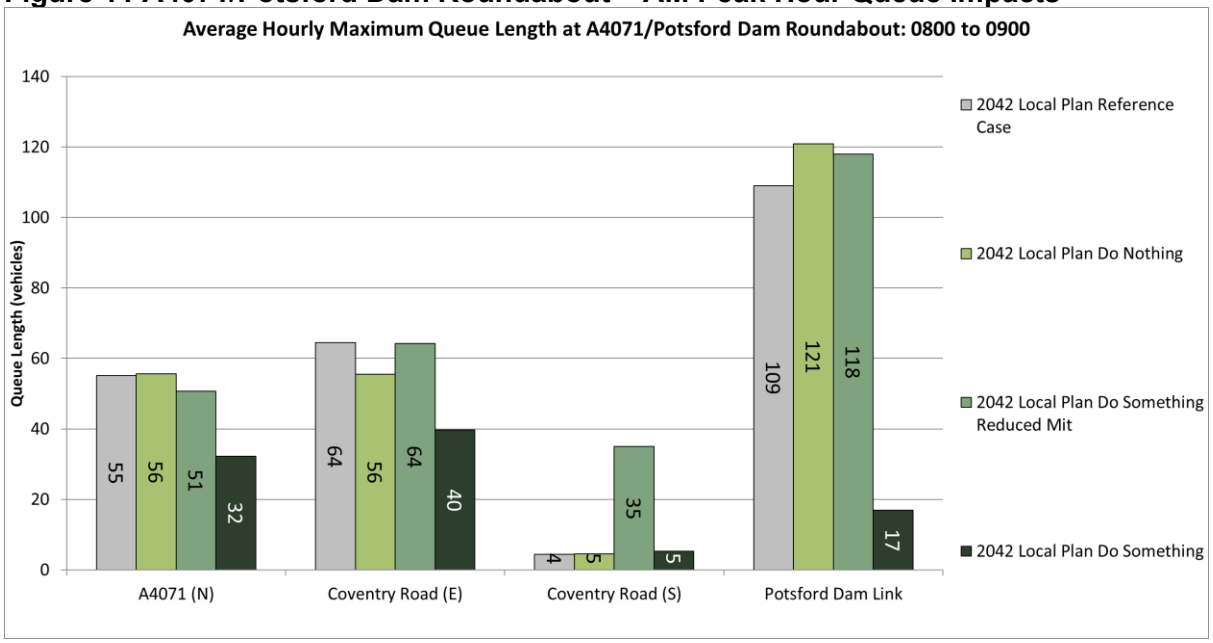
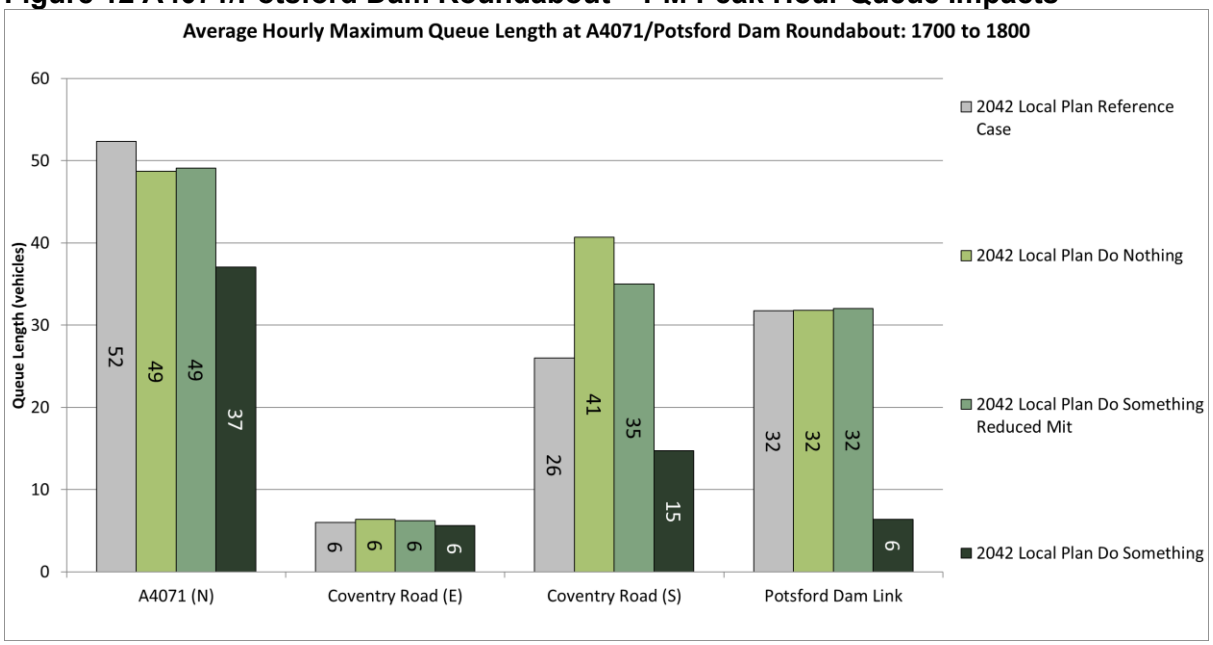


Figure 12 A4071/Potsford Dam Roundabout – PM Peak Hour Queue Impacts



4.27 The analysis presented within the previous figures indicates that the queue increases at this junction in the Updated Regulation 19 are not significant when compared to the Local Plan Reference Case. Despite this, it is the case that the extent of queues, particularly on the Potsford Dam Link approach during the AM peak hour, are such that the junction will be operating over capacity, and the predicted level of queueing is likely to be considered a constraint to further development.

4.28 Although the inclusion of the revised (reduced) level of development at the SW Rugby Employment Phase II site does not trigger a material worsening of the operation of this junction, it is the case that the junction is predicted to experience significant queueing on three of the four approach arms across the AM and PM peak hours.

4.29 Should the previously concept scheme be delivered, the queues reduce significantly across each arm, increasing capacity for further growth opportunities in this area.

4.30 On this basis, this scheme may be considered less essential, should the SW Rugby Employment Phase II quantum be reduced to 60,000m^2, however, it is likely the case that by not delivering a scheme, queues on approach to this junction remain significant, albeit not worsened.

4.31 A further consideration relates to traffic re-assignment, which occurs in a scenario whereby the scheme is not delivered will, as traffic seeks to avoid this junction, which results in undesirable routing through more unsuitable routes, such as Cawston Lane and Dunchurch.

4.32 It is therefore the case that the inclusion of the scheme should be considered in support of the updated Regulation 19 sites, not only to mitigate the impacts from the SW Rugby Employment Phase II site, but also in order to reduce the cumulative impacts of the plan.

5.0 Cost Apportionment Update

5.1 As part of the STA Addendum Report[4] ongoing Strategic Transport Assessment (STA), RBC requested SLR provide commentary around the likely costs and funding strategies required to enable the mitigation identified within the reporting to be delivered. This consists of potential contributions to the sustainable measures (LCWIP and BSIP measures), and contributions to the highway mitigation schemes that have been identified, through the STA to support the development and traffic growth predicted to occur because of RBCs New Local Plan.

5.2 The approach is intended to provide a possible means by which RBC, and the developers who are promoting sites through the local plan, can be provided with more certainty around the potential costs implications which may be incurred by each site, as they come forward, associated with the delivery of an appropriate level of strategic mitigation

5.3 As detailed earlier in this note, the original assessment identified contributions from the SW Rugby Employment Phase II site at two of the scheme locations, specifically the A4071/Potsford Dam roundabout, and A4071/B4112 roundabout. This is in addition to contributions which would likely be sought towards LCWIP and BSIP sustainable modes measures.

5.4 As part of this updated assessment, and as the traffic flows generated by the SW Rugby Employment Phase II site have reduced, it is appropriate to re-visit the cost apportionment analysis for the two aforementioned schemes, to establish the updated likely contributions from this site, accounting for the changes in traffic demand predictions.

5.5 The criteria for cost apportionment remains consistent with the previously outlined approach, whereby sites would be assumed to be required to directly fund schemes which are within

[4] 000065.R002.Rugby Wide Area Strategic Transport Assessment Addendum Report – Chapter 6

5km of the site itself, and the site contributes over 5% of the additional traffic flows through the junction. The updated analysis is presented for the two schemes in the following tables:

Table 2 Cost Apportionment – A4071/Potsford Dam Scheme (Sites with 5km of Scheme, Scheme with over 5% Additional Traffic Flows)

A4071/POTSFORD DAM SCHEME – ESTIMATED COST - £3.82 MILLION		
Sites Within 5km AND > 5% of additional traffic flows	**% Flows Through Junction**	**Approx Apportionment**
S-W Rugby Employment Ph II	**60.55%**	**£2.3m**
Lawford Fields Farm	19.01%	£0.72m
Land at Long Lawford	20.44%	£0.78m

Table 3 Cost Apportionment – A4071/B4112 Newbold Road (Sites with 5km of Scheme, Scheme with over 5% Additional Traffic Flows)

A4071/B4112 NEWBOLD ROAD – ESTIMATED COST - £0.74 MILLION		
Sites Within 5km AND > 5% of additional traffic flows	**% Flows Through Junction**	**Approx Apportionment**
S-W Rugby Employment Ph II	**12.42%**	**£92,422**
Coton Park East	36.28%	£269,919
Lawford Fields Farm	12.61%	£93,813
Land at Long Lawford	38.69%	£287,843

5.6 The above tables highlight the potential revised cost apportionment to be assigned to relevant Regulation 19 Local Plan sites, in support of the schemes identified as necessary through this STA, once the SW Rugby Employment Phase II site is reduced to 60,000m^2 of floor area. These are subject to changes in the cost of schemes, and revisions to the development traffic estimates through the planning process, but provide an initial indication of the likely apportionment for each site.

6.0 Conclusions

6.1 SLR Consulting Ltd (SLR) have been assisting Rugby Borough Council (RBC) and Warwickshire County Council (WCC), in the assessment of options pertaining to the delivery of growth in housing and employment through the new Rugby Borough Council Local Plan, expected to be adopted in 2027.

6.2 An 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,

which was documented within the Strategic Transport Assessment (STA) report[5]. RBC subsequently identified the sites which it intended to promote through the Regulation 19 consultation. These sites have then been re-assessed with the findings and recommendations presented within the STA Addendum Report[6].

6.3 As part of the ongoing Strategic Transport Assessment (STA), RBC requested SLR provide further analysis around amendments to the development quantum assessed at the South-West Rugby Employment Phase II site. The original modelling work, as reported within the STA, and STA Addendum, assessed the impact of 130,000m^2 floor area at this site. RBC have subsequently requested consideration of a reduced floor area of 60,000m^2.

6.4 This note has been compiled to report on the modelling impacts of reducing the floor area at the SW Rugby Employment Phase II site, to establish whether the originally reported mitigation requirements remain necessary, and to update the cost-apportionment analysis previously undertaken.

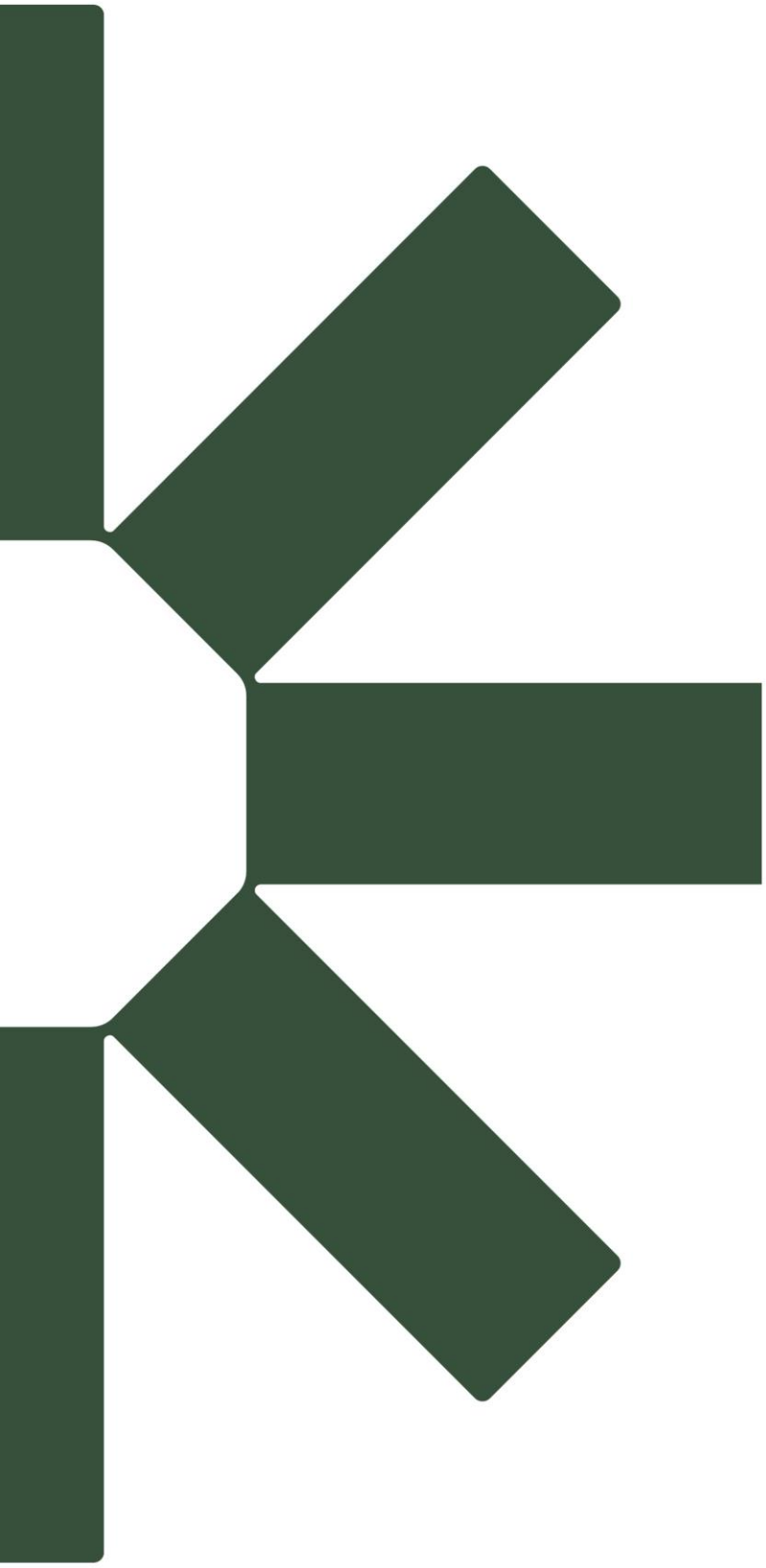
6.5 Based upon the analysis presented, there remains a need for the highway mitigation identified in the original STA and STA Addendum reporting, once the updated Regulation 19 sites have been accounted for within the modelling.

6.6 The modelling does indicate that the A4071/Potsford Dam roundabout may become less critical based upon the analysis presented within this note. However, the analysis also indicates that, although the inclusion of the revised (reduced) level of development at the SW Rugby Employment Phase II site does not trigger an obvious worsening of the operation of this junction, the junction is predicted to experience significant queueing on three of the four approach arms across the AM and PM peak hours. The consequence of this issue is that traffic flows will increase around Cawston and Dunchurch as traffic reassigns to less appropriate routes to avoid the congestion.

6.7 Should the previously tested concept scheme be delivered, the queues reduce significantly across each arm, increasing capacity for further growth opportunities in this area. On this basis, this scheme may be considered less essential, should the SW Rugby Employment Phase II quantum be reduced to 60,000m^2, however, it is likely the case that by not including, queues on approach to this junction remain significant, albeit not worsened, and that the resulting traffic re-assignment to avoid this junction results in undesirable routing through more unsuitable routes.

6.8 It is therefore the case that the inclusion of the scheme should be considered in support of the updated Regulation 19 sites, not only to mitigate the impacts from the SW Rugby Employment Phase II site, to reduce the cumulative impacts of the plan and seek to manage traffic levels by ensuring it is retained, as far as practicable, on appropriate routes through Rugby.

[5] 000065.R001.Rugby Wide Area Strategic Transport Assessment Report
[6] 000065.R002.Rugby Wide Area Strategic Transport Assessment Addendum Report



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