



# Rugby Strategic Transport Assessment Non-Technical Summary Report

## Traffic Modelling Analysis and Overview

**Warwickshire County Council/Rugby Borough Council**

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## 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 A Strategic Transport Assessment (STA) report<sup>1</sup> was produced, to document the approach to assessing the different development options, and the resulting conclusions and recommendations.
- 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<sup>2</sup>.
- 1.4 The STA Addendum Report supplements the original STA to reflect:
- An updated Local Plan Delivery Year (now 2042, originally 2045)
  - A final list of development sites for the Regulation 19 submission
- 1.5 The objective of the assessment is to understand the implications of the proposed development allocation strategy which RBC is promoting through its Regulation 19 submission. The reports detail the following:
- Assumptions around measures to achieve greater mode choice and the effect it has on the network operation.
  - Predicted traffic impacts on the highway network;
  - Required mitigation measures and the phasing of such measures;
  - A method of deriving a scheme cost contributions between the Regulation 19 sites
  - Implications on the Strategic Road Network

## Method of Assessment

- 1.6 The assessment of the Regulation 19 Local Plan sites has been undertaken using two microsimulation traffic models that have been created by SLR, on behalf of WCC.
- 1.7 The first of these models is the Rugby Wide Area (RWA) model, which has been built to cover Rugby town centre and the surrounding strategic routes into the town, inclusive of the A426, A4071, A428 and A5.

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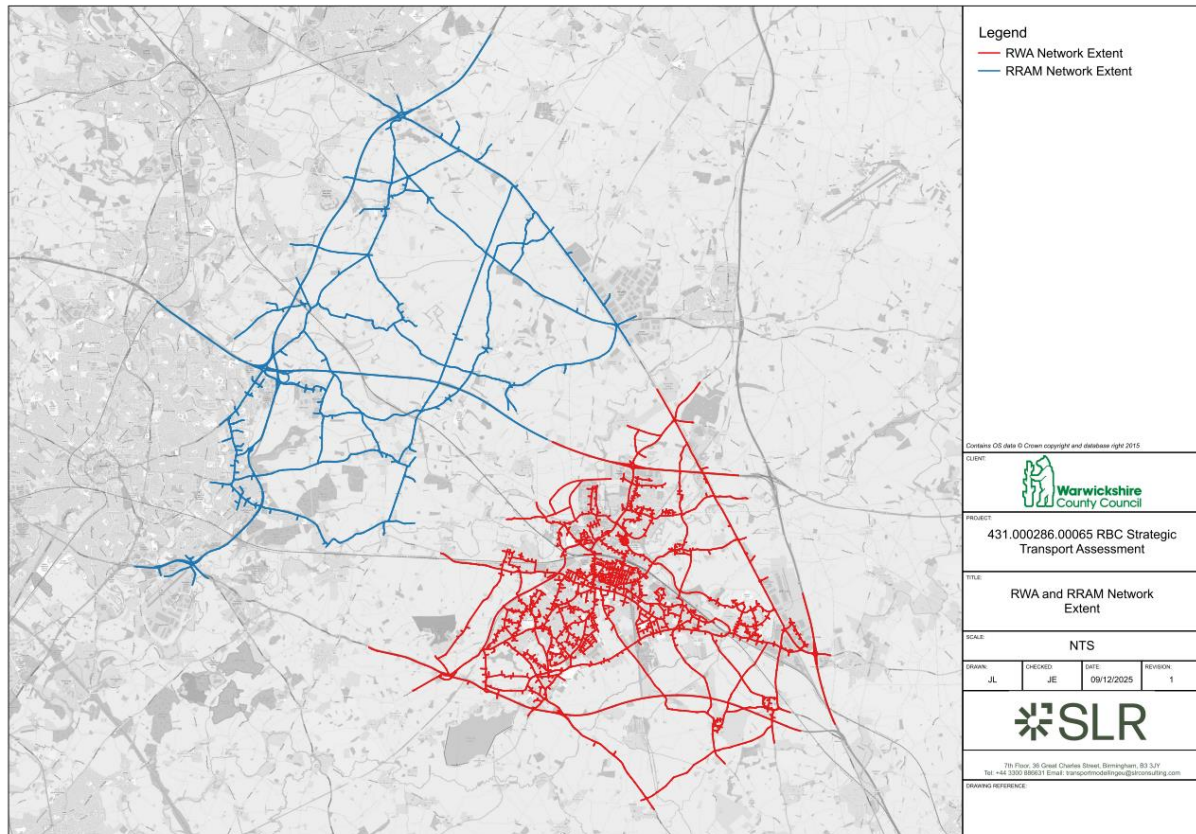
<sup>1</sup> 000065.R001.Rugby Wide Area Strategic Transport Assessment Report

<sup>2</sup> 000065.R002.Rugby Wide Area Strategic Transport Assessment Addendum Report



- 1.8 The second model utilised is the Rugby Rural Area Model (RRAM), which has been built to capture the A46/A45/A5 and M6 in the western part of the Rugby Borough.
- 1.9 The resultant coverage of the two models combined is shown within the following figure.

**Figure 1 RRAM and RWA Model Coverage**



- 1.10 The microsimulation models have been developed in a manner such that the existing or baseline position is replicated (for the RWA model this is reflective of 2024 traffic conditions, and for the RRAM model this is reflective of 2018 traffic conditions).

Following this, future year benchmark scenarios for each model are developed, to capture all approved and adopted (current Local Plan) development proposals, infrastructure and predicted traffic growth within the Borough. The Regulation 19 development sites have then been added, and the outputs extracted for reporting against the benchmark scenario.

- 1.11 Given that the only difference between the models at this stage is the inclusion of the Regulation 19 Local Plan proposals, it is possible to isolate out the impacts associated with the delivery of the Local Plan sites, through the consideration of these two models side by side.
- 1.12 The assessment of impacts arising from the traffic modelling focuses on both strategic level impacts (average journey time), and more localised impacts (informed by analysis of junction queueing).
- 1.13 The assessment has considered the effects of developments outside of the areas captured within the microsimulation modelling via spatial analysis. This analysis derived traffic flow

estimates for all sites, assigned to the transport network, and then undertook analysis of potential effects outside of the modelled areas. This was also used to inform estimates of future traffic flows, associated with the sites identified in the new Local Plan which were generated outside of the models but with alternate trip ends within the models so as to ensure external traffic growth is considered within the assessments.

## Scenarios

- 1.14 There are two existing scenarios for the RWA which have been reviewed for this assessment:
- **2042 Reference Case** – this represents the model prediction of network conditions with traffic growth associated with development consents included.
  - **2042 Local Plan Reference Case** – this scenario allows for the additional development identified in the existing Adopted Local Plan, along with and remaining IDP measures from that plan (e.g. the SW Rugby Appendix K schemes)
- 1.15 Within the RRAM model, there is no remaining developments within the adopted plan expected to be delivered and so that modelling assessment is based on the 2041 Reference Case scenario.
- 1.16 The demands for the allocated sites have then been included on top of traffic growth associated with existing consents and already allocated sites (since this is the expected position prior to the inclusion of the additional developments identified through the New Local Plan).
- 1.17 Any change of use proposals (such as conversion of Coton Park East from the existing residential consent to Employment) has also resulted in the removal of traffic associated with these proposals to avoid double counting.
- 1.18 This has resulted in several Local Plan scenarios then being derived and tested:

### RWA Models:

- **2042 Local Plan Reference Case** – as detailed above – benchmark scenario
- **2042 Local Plan Do Minimum** – Local Plan Reference Case + Regulation 19 sites
- **2042 Local Plan Do Something (Mode Shift)** – as Do Minimum + mode shift applied to the model demands
- **2042 Local Plan Do Something (Mode Shift) + Mitigation** – as per Do Something (mode shift) + highway mitigation schemes identified

### RWA Models:

- **2042 Reference Case** – model inclusive of all consents within the study area (no Adopted Local Plan site lie within this study area)
- **2042 Local Plan Do Minimum** – as per Reference Case + Regulation 19 sites
- **2042 Local Plan Do Something** – as per Do Minimum + Signal Timing optimisation at identified key SRN junctions



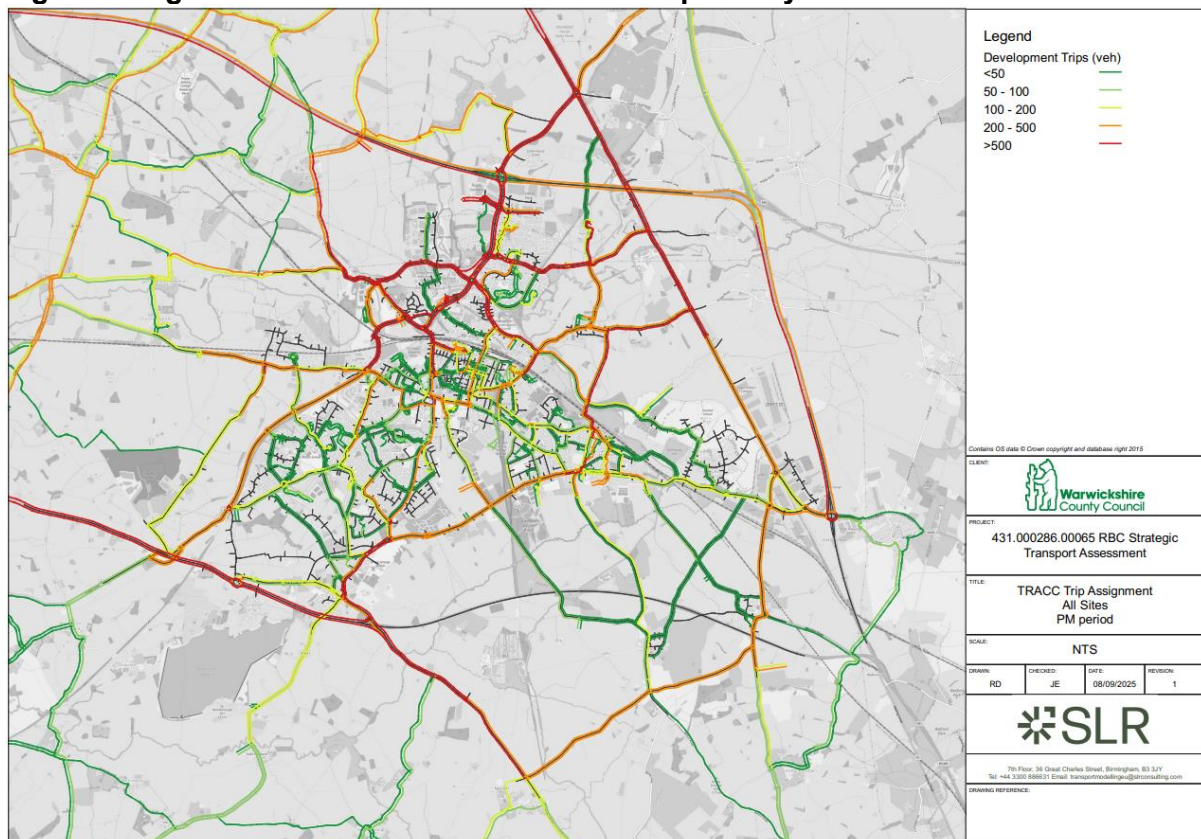
## Stages of Assessment

- 1.19 The first phase of the STA considered RBCs emerging spatial strategy alongside the implications of delivering several sites identified as 'omission' sites for the purpose of the assessment.
- 1.20 The modelling considered network conditions to a 2045 future year, benchmarking the additional impact of delivering the new Local Plan sites against the benchmark scenario (i.e. the currently anticipated conditions predicted to occur through traffic growth forecasts generated by existing consented developments and Local Plan allocations identified within the existing, adopted, Local Plan (to 2031).
- 1.21 The second phase of the assessment, the STA Addendum, builds upon the initial assessment, by considering a refined spatial strategy which RBC is seeking to promote through the Regulation 19 submission.
- 1.22 The principal approach of the STA is focused on identifying the need for, and testing the impact of, the phased delivery of interventions to accompany the Regulation 19 sites. Initially, improvements to travel mode choice, delivered through implementation of the ambitions which are set out within the Local Walking and Cycling Infrastructure Plan (LCWIP) and Bus Service Improvement Plan (BSIP) provide the first phase of mitigation.
- 1.23 Once the effect of these measures has been captured within the assessment, the residual impacts arising from the remaining traffic growth has been considered and highway mitigation defined accordingly.
- 1.24 The following plot provides the cumulative traffic flows across the Borough once the trips generated by each Regulation 19 site have been accounted for, and provides and highlights the parts of the network most impacted by the proposals, and where further interventions are likely to be focused.





**Figure 2 Regulation 19 Sites Predicted Traffic Impacts by Route**



## Scheme Assumptions

- 1.25 Prior to the testing of the Regulation 19 Local Plan sites, there were a series of assumptions adopted regarding schemes which are not currently funded but are understood to be required to facilitate the current Local Plan. This relates to schemes at the following locations, which are included within the modelling:
- A426/A4071 Avon Mill Roundabout
  - A426/A5 Gibbet Hill Roundabout
  - A426/Boughton Road/Brownsover Road Roundabout
- 1.26 It is important to note that the Regulation 19 sites do not trigger the need for schemes at these three locations, rather, they are necessary to maintain a reasonable level of network performance because of the inclusion of the approved/planned growth within the study area.



## 2.0 Key Findings

### Regulation 19 Sites Testing

2.1 The key findings determined through the STA process are provided within the following:

- Inclusion of the Regulation 19 sites within the traffic models triggers a need for interventions, to maintain a reasonable level of network performance, when compared to benchmark (pre-Local Plan Regulation 19) predicted conditions.
- Initial interventions considered the reduction in vehicle trips on the network, intended to reflect a shift towards more sustainable modes of travel (walking, cycling, bus), in line with current policy guidance. This resulted in notable improvements in the model operation, on local routes across Rugby town centre, but continued to highlight congestion issues on the more strategic routes across the wider network (A426, A5, A4071 etc).
- Accordingly, further interventions have been included within the models, in the form of infrastructure schemes, along with a review and optimisation of traffic signal timings at key junctions on the A46 to the west of the Borough.
- With the five schemes included, the modelling indicates that the Regulation 19 Local Plan sites can be delivered, with only limited residual impacts over and above the benchmark conditions.
- With regards the more strategic routes, contained within the RRAM model, the inclusion of the Regulation 19 sites, and the revised spatial strategy that this reflects, significantly reduced impact on the network compared with the original STA spatial strategy, with a now much reduced impact at the A45/A46 Toll Bar End interchange.

### Phasing Testing

2.2 The main conclusions to draw from the Phasing assessment are as follows:

- Within the first five years of the plan there is a need for an intervention at the A426/A5 Gibbet Hill Roundabout, which the modelling predicts will form a key constraint to the network performance. In addition to this, a need for an intervention at the A5/A428 Halfway House roundabout is required within the early stages of the plan
- Within the first ten years of the plan, in addition to the two schemes required within the first five years, an additional scheme at the A4071/Potsford Dam roundabout, in the form of widening to the current roundabout proposals, is required.
- Beyond this point, two further schemes are likely to be required by the end of the plan period, at the A4071/B4112 Newbold Road roundabout and A426/Newton Manor Lane roundabout

### Cost Apportionment

2.3 The report has identified a scheme contributions framework based upon the following:

- Proximity to schemes (within 5km or 10km)



- Traffic impact thresholds (>5% of additional traffic flow at each scheme location)

2.4 The STA has outlined how sustainable transport measures (LCWIP and BSIP) are critical to facilitate the required levels of mode shift, and that contributions towards these schemes would be expected from most sites.

## SRN Assessment

2.5 The report has also provided analysis to consider the impact of the Regulation 19 sites strategy on the National Highways Strategic Road Network (SRN). This identified the following:

- Most SRN junctions within the study area see less than a 10% increase in traffic flows following the inclusion of the Regulation 19 sites
- Dynamic signal control currently in place at the signalised junctions on the SRN is expected to mitigate residual queue issues at the majority of junctions
- Residual impacts are anticipated at the A426/A5 Gibbet Hill roundabout, and A5/A428 Halfway House roundabout which require further interventions.

2.6 The analysis concludes that the Regulation 19 spatial strategy minimises the impacts at sensitive SRN locations.

## Conclusions

2.7 The STA reports concludes that the Regulation 19 sites can be delivered with the identified mode shift and mitigation measures, with only limited residual impacts.

2.8 The spatial strategy is such that impacts on the most sensitive parts of the network are limited, and as such the residual impacts are manageable through the identified interventions.

2.9 The following **Table 1** summarises the number of schemes (LCWIP and BSIP) which lie within a 400m radius of each site. **Table 2** then summarises the highway mitigation requirements identified through this assessment, which should be considered critical to the delivery of the new Local Plan:



**Table 1 Regulation 19 Development Sites vs Scheme Locations within 400m**

Ref	Regulation 19 Site Name	No. LCWIP Schemes within 400m	No. BSIP Schemes within 400m	Total No.Schemes within 400m
6	Land E of Fosse Way, Stretton-on-Dunsmore	0	2	2
14	Land N of Ansty Park, Ansty	1	1	2
17	South-West Rugby Employment Ph 2	3	0	3
39	Dyers Lane, Wolston	0	1	1
54	Oakdale Nursery, Brandon	3	0	3
59	Newton Manor Lane, Rugby	3	2	5
62	Morgan Sindall House, Corporation St	9	8	17
64	Coton Park East, Rugby	3	0	3
81	Land west of Fosse Way, Stretton	0	0	0
87	Hillcrest Farm, Newton	1	1	2
95	Crowner Fields Farm, Ansty	0	0	0
100	Land at High St, Ryton-on-Dunsmore	1	2	3
121	Land at Walsgrave Hill	2	0	2
129	Land N of Lilbourne Road, Clifton	0	1	1
136	Land North of Warwick Road, Wolston	0	0	0
153	Westway Car Park, Rugby	7	8	15
172	Elizabeth Way, Long Lawford	0	1	1
202	Newton Road, Clifton upon Dunsmore	0	1	1
253	Lawford Fields Farm, Long Lawford	1	1	2
279	Stagecoach Depot, Railway Terrace	2	1	3
283	Rugby Central Shopping Centre	8	8	16
294	Land adj to 9 Railway Terrace, Rugby	5	8	13
307	North Road, Clifton	1	1	2
309	Land North of the B4109, Wolvey	0	1	1
315	Land south of Rugby Road, Brinklow	1	1	2
316	Land at Long Lawford	1	1	2
332	Albert Street	4	8	12
337	West Farm and Home Farm, Brinklow	0	1	1
338	Land south of Crick Road, Houlton	2	1	3
348	The Croft, Stretton-on-Dunsmore	0	0	0
349	Land rear of 30 Albert Street	5	8	13
350	Rounds Gardens South	5	8	13
351	Rounds Gardens North	6	4	10
352	Former snooker hall, Railway Terrace	1	1	2



Ref	Regulation 19 Site Name	No. LCWIP Schemes within 400m	No. BSIP Schemes within 400m	Total No.Schemes within 400m
353	Town Hall	5	8	13
354	92 Lower Hillmorton Road	2	2	4
355	Land adjacent 44 Craven Road	1	1	2
356	The Railings (NHS)	5	0	5
357	28-29 High Street	7	8	15
358	Coventry Road (Smaller Cut)	0	1	1

**Table 2 Highway Mitigation Requirements**

SCHEME	STAGE REQUIRED				EXISTING OR PREDICTED ISSUE
	Prior to New Local Plan	2032	2038	2042	
A426/A4071 Avon Mill	X				Existing
A426/Boughton Road Roundabout	X				Existing
A426/A5 Gibbet Hill Roundabout	X				Existing
A5/A428 Halfway House Roundabout		X			Predicted
M1 Junction 18 Signal Optimisation		X			Predicted
A4071/Potsford Dam Roundabout			X		Predicted
A426/Newton Manor Lane Roundabout				X	Predicted
A4071/B4112 Newbold Road Roundabout				X	Predicted

*\*Predicted issue is one that is triggered by the inclusion of the new Local Plan sites.*





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