

## Warwickshire County Council

### South Warwickshire Local Plan STA Testing

SLR Project No.: 431.000286.00100.05

12 May 2026

Revision: 01

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## RE: SUAWA STA REVISED DEVELOPMENT STRATEGY ('GOLF' SCENARIO) ASSESSMENT

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### 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.
- 1.3 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 Stratford-upon-Avon Wide Area (SuAWA) microsimulation model, adopting an approach consistent with the original reporting<sup>1</sup>. This re-assessment is detailed within this Report.

### Background

- 1.4 The original STA Testing summary report documented the approach to assessing the 'Foxtrot scenario' development option within the proposed plan, and the resulting conclusions and recommendations for the SuAWA highway network. This note should be read in conjunction with the original report.
- 1.5 Following the submission of the outputs from this testing, SDC/WDC produced a revised development list, herein referred to as the 'Golf Scenario', as part of the refinements to the Local Plan. 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,

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<sup>1</sup> 000286.00100.05.R001. SuAWA STA Testing Summary

and the conclusions derived from that stage of testing. On this basis, the original conclusions drawn from the first stage of testing reported remain valid, and the objective of this assessment is to understand the implications of the proposed revision to the Local Plan development allocation strategy.

- 1.6 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 strategy within the 'Golf Scenario'.
  - The mitigation measures required to support the growth and minimise the effect on the operation of the transport network.

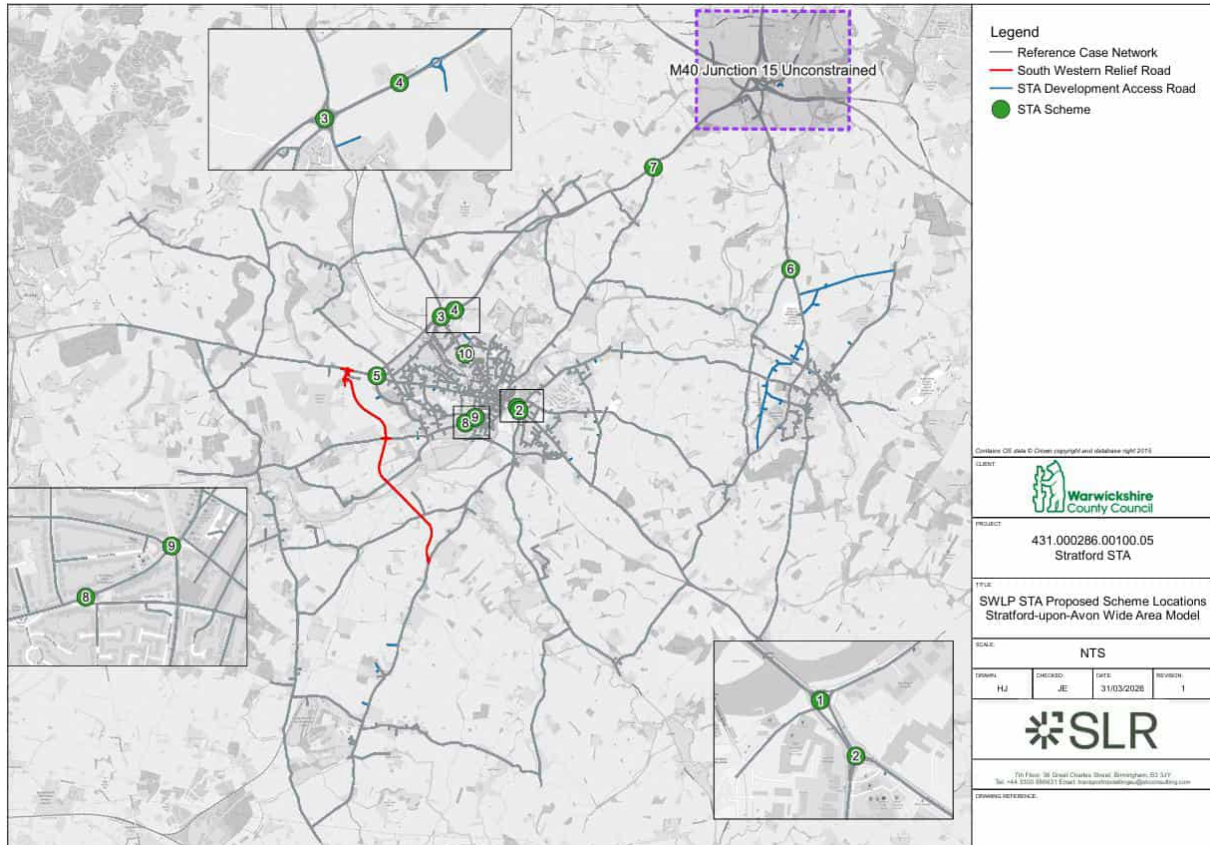
## 2.0 Initial Report Findings ('Foxtrot')

- 2.1 Based upon the analysis presented within the original reporting, the modelling demonstrated 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, supported by a "normal" level of mode shift, was identified as necessary to address this congestion. The schemes derived are detailed within the original modelling report, with their locations presented within **Figure 1**, overleaf.
- 2.3 The initial reporting was structured into a series of stages to determine the scale and nature of the mitigation required.
- 2.4 Before testing specific schemes, the network around M40 Junction 15, including the Longbridge and Sherbourne roundabouts, was 'unconstrained' in all assessment scenarios. National Highways have acknowledged the need for capacity improvements in this location and a scheme is currently being designed. Although drawings were not publicly available at the time of assessment, the scheme is expected to include changes to Junctions 13 and 14, which fall outside the SuAWA model area.
- 2.5 It is therefore considered more appropriate to complete the assessment of the SWLP proposals against the scheme using the Warwick and Leamington Wide Area model. Unconstraining the junction within the SuAWA model releases traffic that would otherwise be held at this location, enabling a more robust assessment of impacts across the remainder of the network.
- 2.6 A separate assessment scenario was also developed to consider the delivery of the South West Relief Road (SWRR). This scenario demonstrated that the SWRR is essential to ensure a reasonable level of network operation. The SWRR prevents gridlocking within Stratford Town Centre and addresses several localised issues, including congestion around Binton Bridge.



2.7 A further 10 highway schemes were developed to mitigate the additional localised impacts identified in the initial assessment. Several schemes are located along the A46 corridor, at the Marraway, Bishopton and Wildmoor roundabouts, to provide the capacity required for strategic movements between M40 Junction 15 and the SWRR. Additional schemes were required to the south and west of Stratford Town Centre, notably the introduction of signal control at junctions south of Clopton Bridge.

**Figure 1 Identified Mitigation Schemes in SuAWA Network ('Foxtrot Scenario')**



2.8 Following the delivery of the above mitigation within the model network, the model becomes stable and capable of accommodating the Local Plan growth applied via the 'Foxtrot Scenario'. However, the average delay across the full network is around 5-6% higher than the benchmark 2050 Reference Case scenario, indicating some residual impacts remain. A summary of these impacts is provided below:

- A3400 Shipston Road / Seven Meadows Road Roundabout – Queueing on the eastbound approach
- A3400 Shipston Road / Clifford Lane Roundabout – Queueing on the northbound approach
- A46 / SWRR Access Roundabout – Queueing on the westbound approach
- Evesham Road / SWRR Access Roundabout – Queueing on the westbound approach

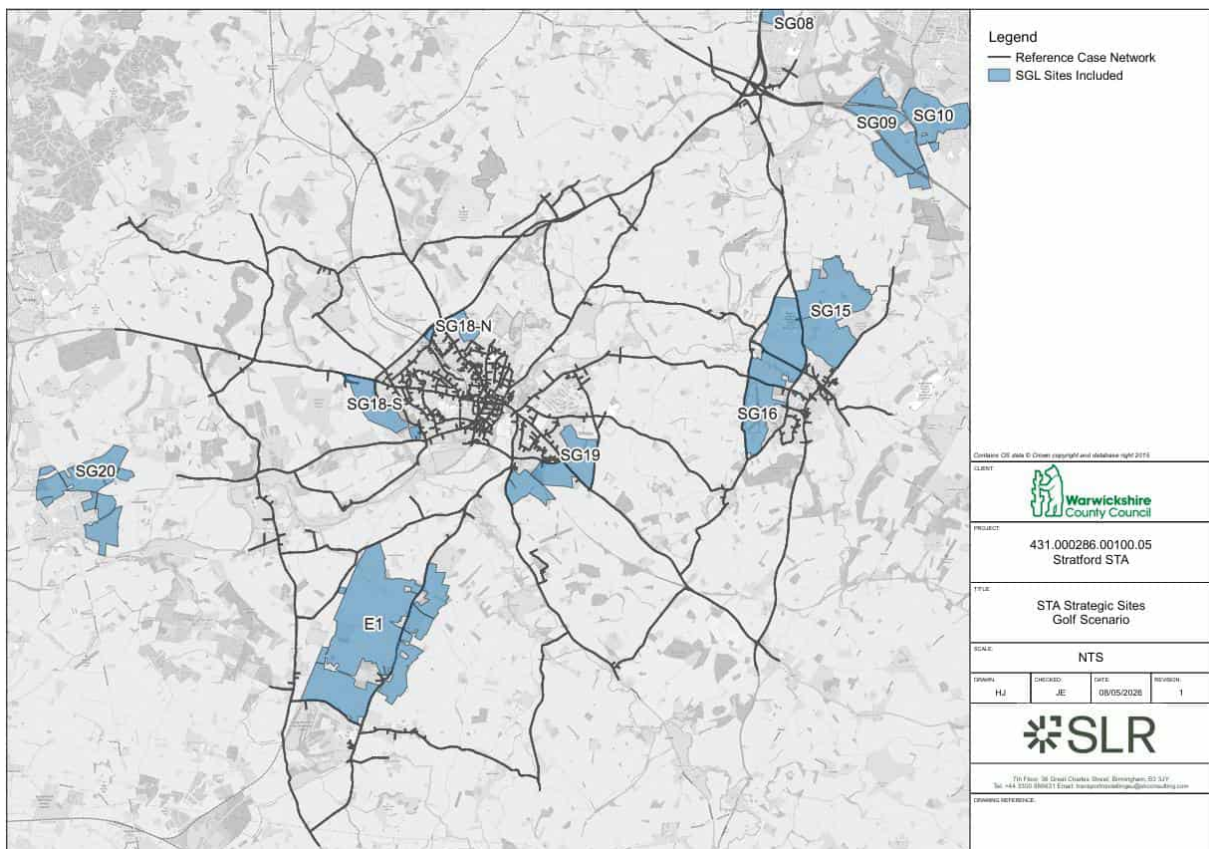


### 3.0 Revised Development Strategy Inclusions

#### Strategic Growth Locations (SGL)

- 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 build out totals at each of the Strategic Growth Location (SGL) development sites for consideration. These revised totals form the basis of the ‘Golf Scenario’ assessed within this report.
- 3.2 In addition to changes to site boundaries and development quantum across several locations, the revised strategy introduces two new SGL sites: SG19 (East of Stratford-on-Avon) and SG20 (Bidford-on-Avon).
- 3.3 The revised SGL locations across the SuAWA model network are presented within **Figure 2**, with revised build out totals provided within **Table 1**. Sites located within the SuAWA model network are highlighted within the table.

**Figure 2 SGL Site Locations (‘Golf Scenario’)**



**Table 1 Revised SGL Sites Details**

STA Site	Description	'Foxtrot'		'Golf'	
		Dwellings	Employment (ha)	Dwellings	Employment (ha)
SG01	South of Coventry	3,940	1.5	4,500	1.5
SG02	Stoneleigh Park Employment	0	93.85	0	93.85
SG04	South of Kenilworth	626	0	751	0
SG05	East of Lillington	1,363	0	916	0
SG06	North of Leamington	2,143	0	1,784	0
SG08	West of Warwick	1,200	0	493	0
SG09	South of Europa Way	750	121	558	121
SG10	Bishops Tachbrook	1,945	0	1,550	0
B1	Hatton	4,500	0	4,000	0
SG12	Southam	3,940	5	3,086	5
SG13	Gaydon Lighthorne Heath	0	157.01	0	133.69
<b>SG15</b>	<b>North of Wellesbourne</b>	<b>3,250</b>	<b>27</b>	<b>1,550</b>	<b>27</b>
<b>SG16</b>	<b>South of Wellesbourne</b>	<b>0</b>	<b>62.81</b>	<b>0</b>	<b>62.81</b>
<b>SG18-N</b>	<b>West of Stratford-Upon-Avon</b>	<b>905</b>	<b>0</b>	<b>768</b>	<b>0</b>
<b>SG18-S</b>	<b>West of Stratford-Upon-Avon</b>	<b>669</b>	<b>0</b>	<b>687</b>	<b>0</b>
<b>SG19*</b>	<b>East of Stratford-Upon-Avon</b>	<b>0</b>	<b>0</b>	<b>2,585</b>	<b>0</b>
SG20*	Bidford-on-Avon	0	0	3,120	11
SG23	North of Henley-in-Arden	2,600	3.3	1,969	3.3
<b>E1</b>	<b>Long Marston Airfield</b>	<b>4,000</b>	<b>69.8</b>	<b>4,500</b>	<b>15</b>

*\*Additional Site Identified in 'Golf Scenario'*

- 3.4 Using the revised build out totals presented above, a new set of STA development demand matrices was produced for this assessment. All internal sites, highlighted above, were included using the same access strategy, including associated link roads, as assumed within the original 'Foxtrot' assessment.
- 3.5 SG20 (Bidford-on-Avon) is a new site located outside the SuAWA model network. As such, its access strategy has not been assessed within SuAWA. For the purposes of demand development, it has been assumed that the SWRR is delivered, with access via Evesham Road in place. This ensures that SG20-related trips entering the SuAWA network do so via Evesham Road for movements towards Stratford and Wellesbourne centres, as well as strategic trips via the A46 and M40 Junction 15, rather than routing through Temple Grafton.

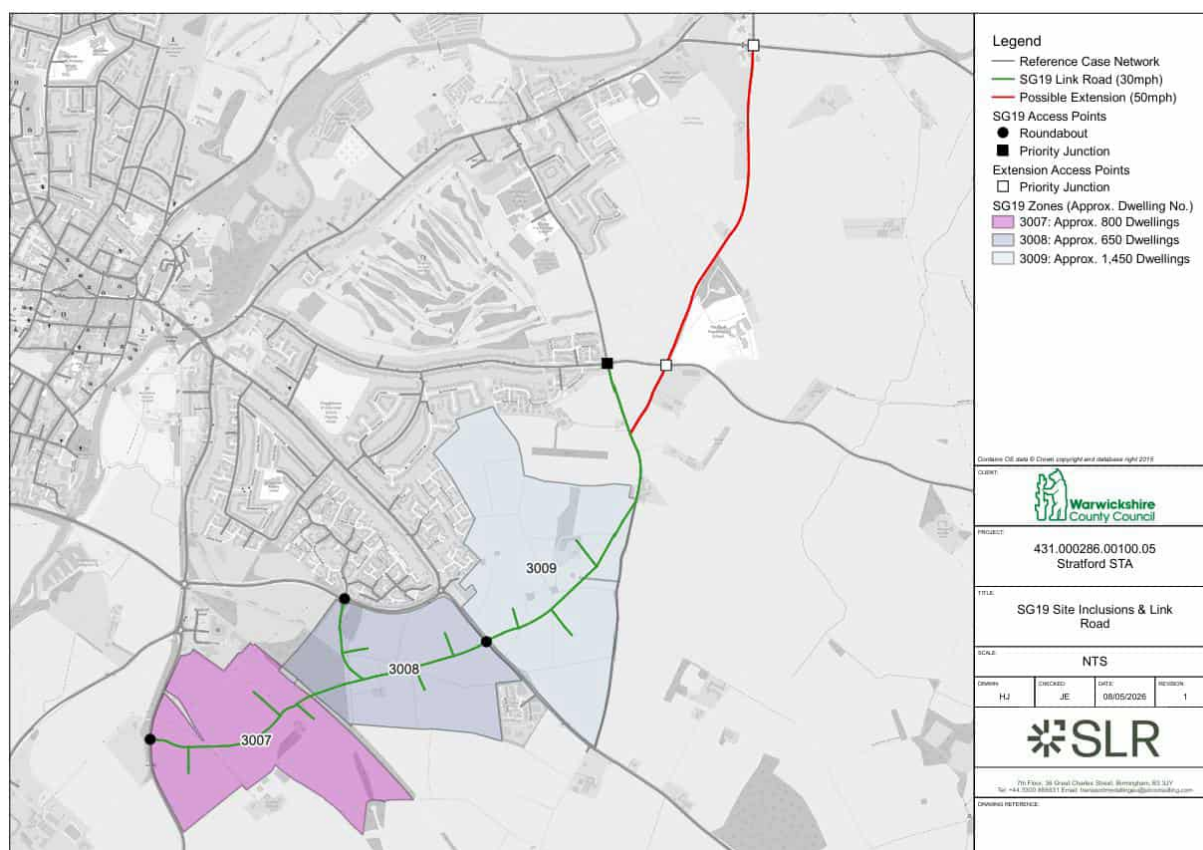


## SG19 (East of Stratford-Upon-Avon) SGL Site Access Strategy

- 3.6 The proposed access strategy for SG19 has been included into the revised SuAWA assessment in line with recent discussions between WCC and SDC.
- 3.7 For the purposes of this assessment, the 2,585 dwellings allocated to SG19 have been distributed across three land parcels, represented by model zones 3007–3009, as shown in **Figure 3**. The distribution reflects the relative size of each parcel and the latest planning information provided by SDC.
- 3.8 The full allocation is due to be accessed by a new link road running across the site between Shipston Road and Loxley Road, with additional access provided via Trinity Way and the A422 Banbury Road. On the eastern edge of the site, the link road would connect to Loxley Road through an upgraded and widened Boundary Lane.
- 3.9 A further extension of the link road to the northeast has also been considered. This would create a more direct connection between Loxley Road and Wellesbourne Road, delivered through a widening and upgrade of Pimlico Lane. This extended connection has been tested as part of the revised assessment.
- 3.10 A direct connection to Trinity Way would be provided via a fourth arm added to the existing Trinity Way / Wordsworth Avenue roundabout.
- 3.11 Other access junctions off the existing network have been included as follows:
- 3-arm priority roundabout on the A3400 Shipston Road
  - 4-arm priority roundabout (connecting the western and eastern land parcels) on the A422 Banbury Road
  - Priority junction on Boundry Lane (with Boundry Lane widened/upgraded between access and Loxley Road – widening not applied if Link Road extended to Wellesbourne Road)
  - Upgraded 4-arm crossroads at Loxley Road / Pimlico Lane, with ghost island right turns provided in both directions along Loxley Road – Extended Link Road Scenario only.
  - Upgraded priority junction, with ghost island right turn, on Wellesbourne Road (existing Pimlico Road junction).
- 3.12 The main access link road between Shipston Road, Trinity Way and Loxley Road has been modelled with a 30 mph speed limit. The proposed Pimlico Lane upgrade, forming the extended connection to Wellesbourne Road, has been assumed to operate at 50 mph.
- 3.13 The extent of the SG19 link road, including the assumed land parcels, access locations, speed limit and potential northeast extension, is presented within **Figure 3**.



**Figure 3 SG19 Access Strategy, Land Parcels and Proposed Link Road**



## Non-Strategic Growth Locations (NSGL)

- 3.14 The NSGL development assumptions remain unchanged from the original modelling, with the exception of site 833 (East of Banbury Road). This site lies entirely within the boundary of SG19, specifically within model zone 3009 shown in **Figure 3**. As a result, the additional dwellings associated with NSGL site 833 have been omitted from this revised assessment to avoid double-counting.

## Revised Demand and Growth Level Summary

- 3.15 Following development of the revised demand sets for the 'Golf Scenario', the resulting totals were reviewed and capped against the target growth factor, consistent with the approach documented in the initial assessment.
- 3.16 Further adjustments were then applied to reflect the effects of mode shift, using the same methodology adopted in the original assessment and all other SWLP STA modelling assessments. This produced an updated set of Do Something demands, which form the basis of the Golf Scenario used throughout the remainder of this report.
- 3.17 Given the use of capping, to a similar factor as applied within the previous assessment, the resulting growth levels within this revised assessment remain at a similar level to those previously used, with around a 7-8% increase in demand compared to the benchmark 2050 Reference Case scenario, a 24-26% increase over the 2023 model baseline.

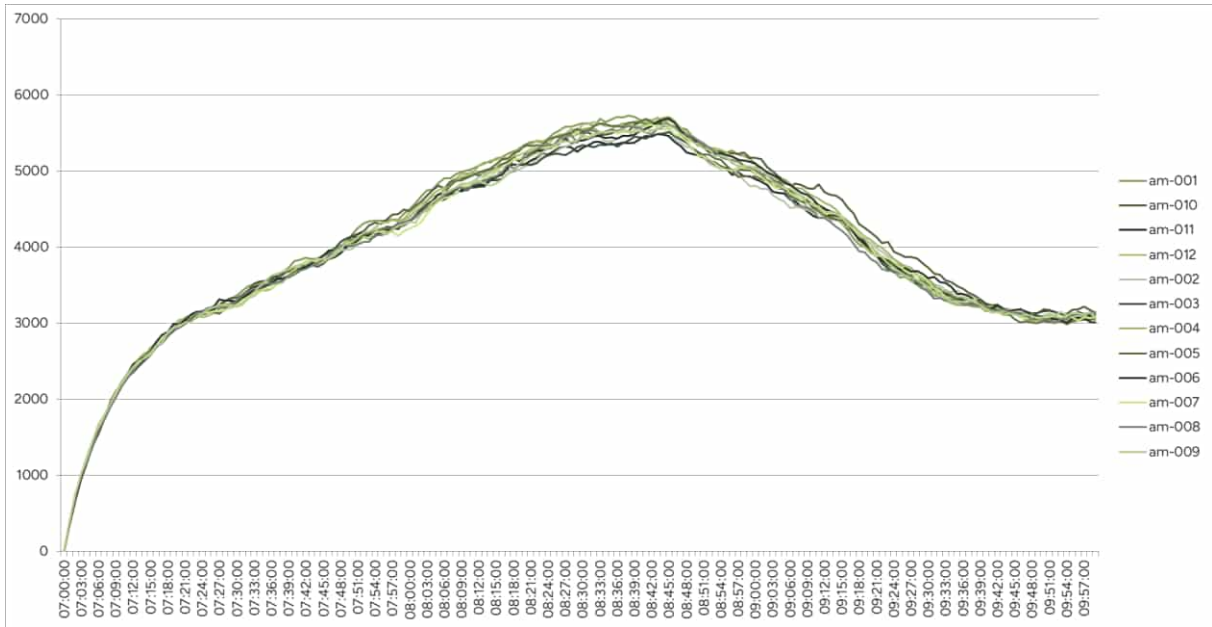


## 4.0 Revised ('Golf') Do Something Assessment

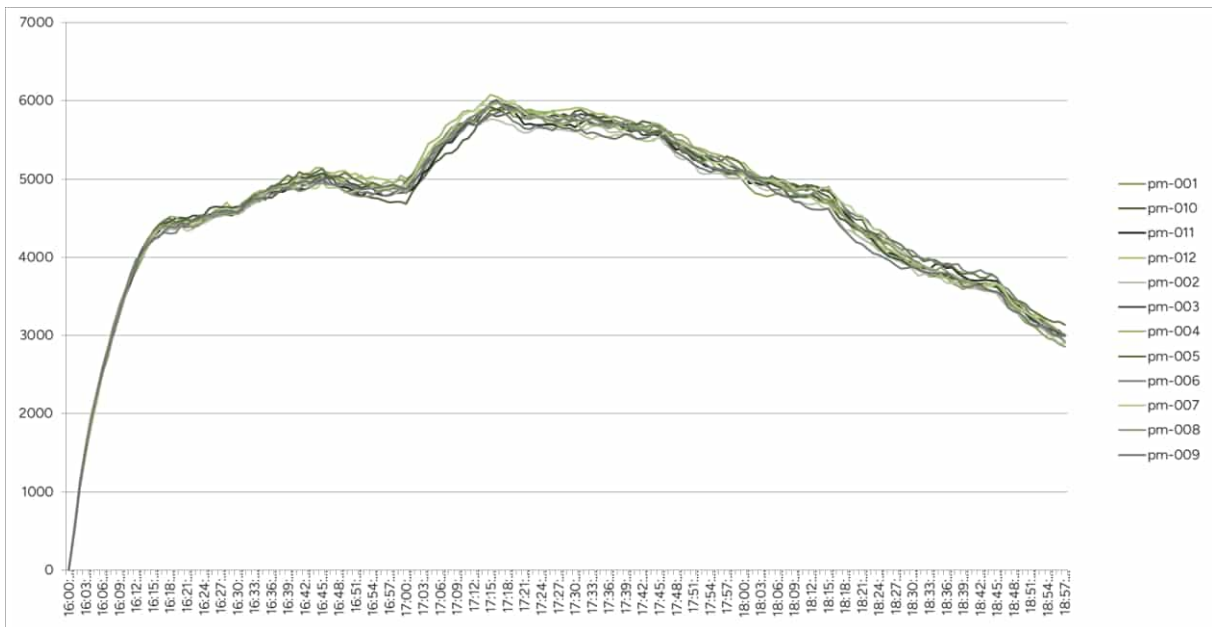
- 4.1 A revised set of model demands representing the 'Golf Scenario', as defined in the previous section and incorporating the assumed levels of mode shift, has been developed. Using these inputs, the 2050 Local Plan Do Something ('Golf') scenario has been run and reported.
- 4.2 In the first instance, the same highway mitigation strategy applied in the previous assessment has been retained. This includes delivery of the South West Relief Road (SWRR) and the removal of the constraint at M40 Junction 15.
- 4.3 The resultant model performance, relative to the benchmark 2050 Reference Case scenario, has been reported within this section.
- 4.4 Two model scenarios have been assessed, both inclusive of the primary SG19 access strategy (link road between Shipston Road and Loxley Road). The second scenario additionally tests the northeast extension of this link towards Wellesbourne Road. These scenarios are labelled as follows:
- **2050 STA Do Something – Golf**
  - **2050 STA Do Something – Golf – SG19 Extension:** *Includes SG19 link road extension to Wellesbourne Road*
- 4.5 Consistent with the original reporting, the initial assessment of model performance is based on peak-period vehicle profiles, used to determine overall network stability. Subsequent analysis compares the resulting impacts with both the 2050 Reference Case and the previous 'Foxtrot' scenario.
- 4.6 The core assessment first considers strategic-level impacts, including changes in average journey times, before examining localised impacts, such as predicted changes in junction queueing.
- 4.7 The AM and PM vehicle profiles for both Do Something scenarios are presented in the following figures. As outlined previously, a model network is considered stable and operational when vehicle profiles across multiple random-seed runs exhibit the expected peak-period pattern: a rise in vehicle numbers to a peak, followed by a steady decline, with minimal variation between runs.



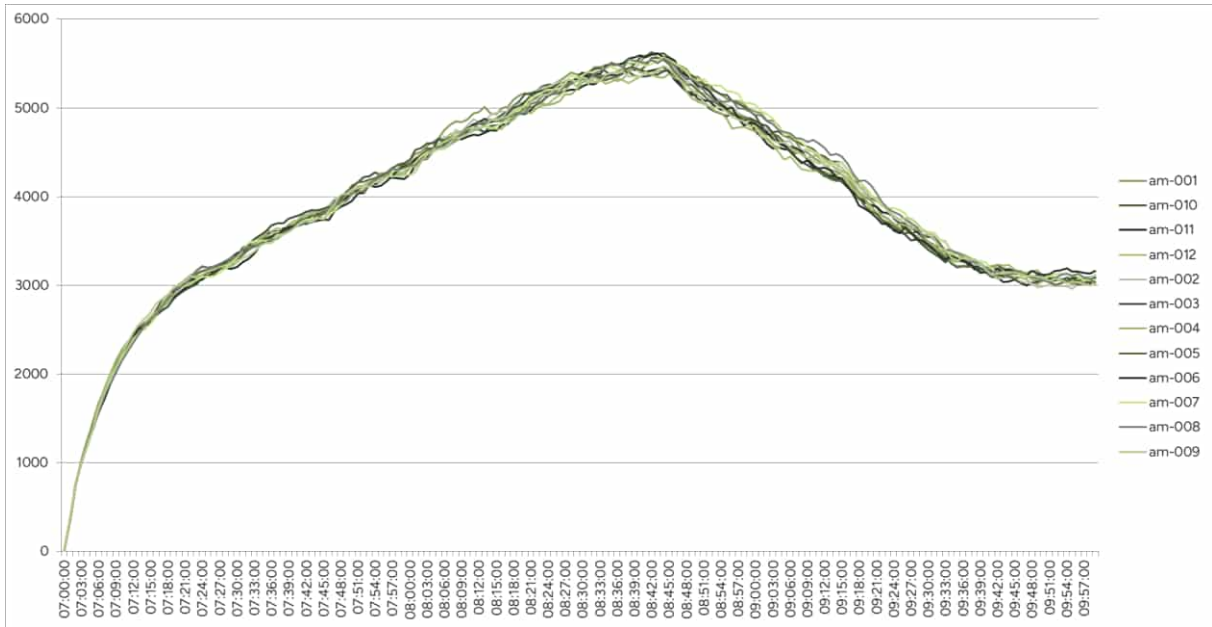
**Figure 4 Vehicle Profile – STA Do Something ‘Golf’ Scenario – AM Period**



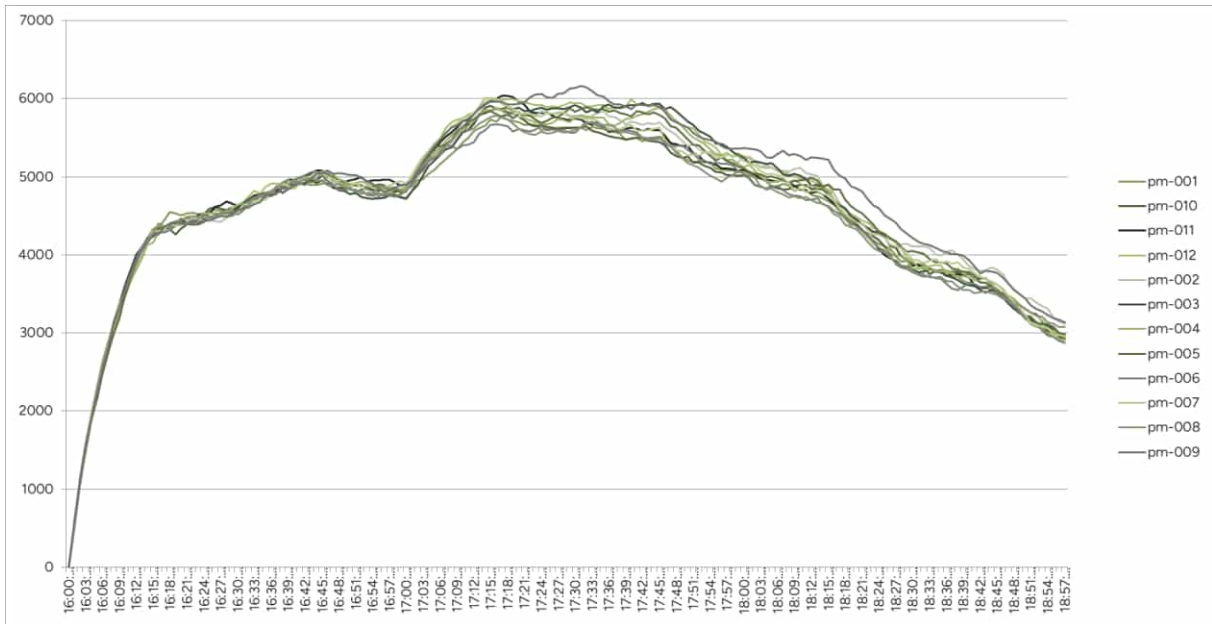
**Figure 5 Vehicle Profile – STA Do Something ‘Golf’ Scenario – PM Period**



**Figure 6 Vehicle Profile – STA Do Something ‘Golf’ + Link Road Extension Scenario – AM Period**



**Figure 7 Vehicle Profile – STA Do Something ‘Golf’ + Link Road Extension Scenario – PM Period**



4.8 The figures presented above demonstrate a high level of stability within the revised ‘Do Something’ SuAWA STA model scenarios. This confirms that the previously adopted mitigation strategy remains appropriate and continues to prevent severe congestion and network gridlocking under the ‘Golf Scenario’ development strategy.

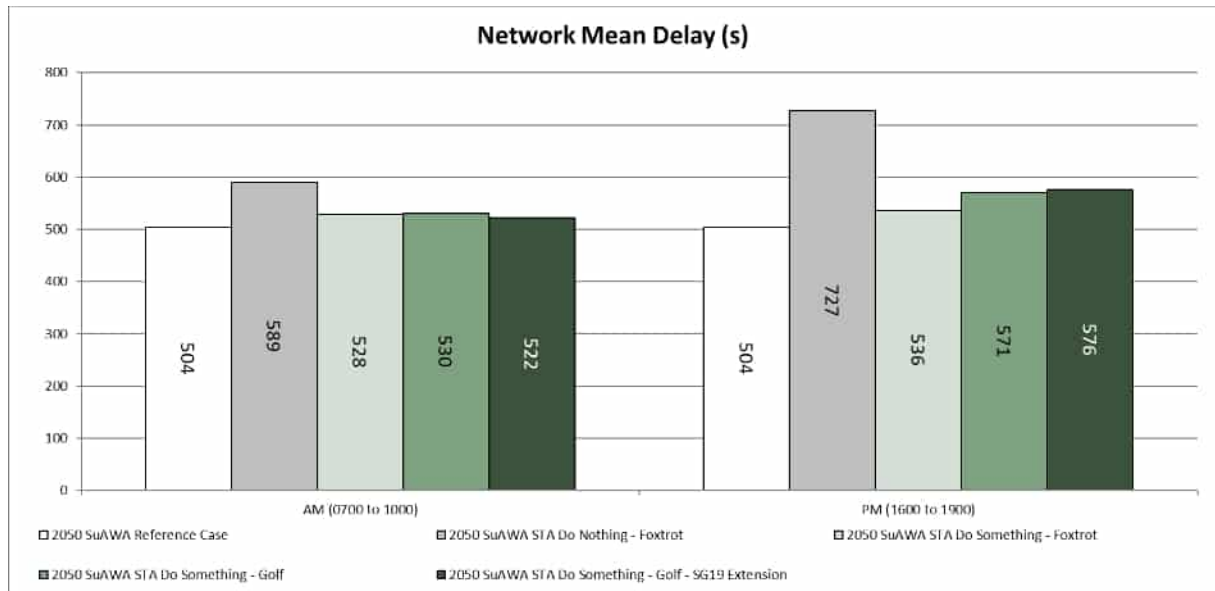
4.9 To understand the nature and scale of any remaining impacts on the revised model network, it is necessary to compare performance against both the 2050 Reference Case and the previously reported ‘Foxtrot’ scenario, which is detailed within the following section.



## Strategic Level/Network Wide Impacts

- 4.10 The following figure presents the strategic level delay impacts within the revised ‘Golf’ development strategy, both with and without the SG19 link road extension, relative to the original ‘Foxtrot’ Local Plan Do Something scenario, the Local Plan Do Nothing (no schemes) and the 2050 Reference Case.

**Figure 8 Network Wide Delay (Seconds) by Scenario**



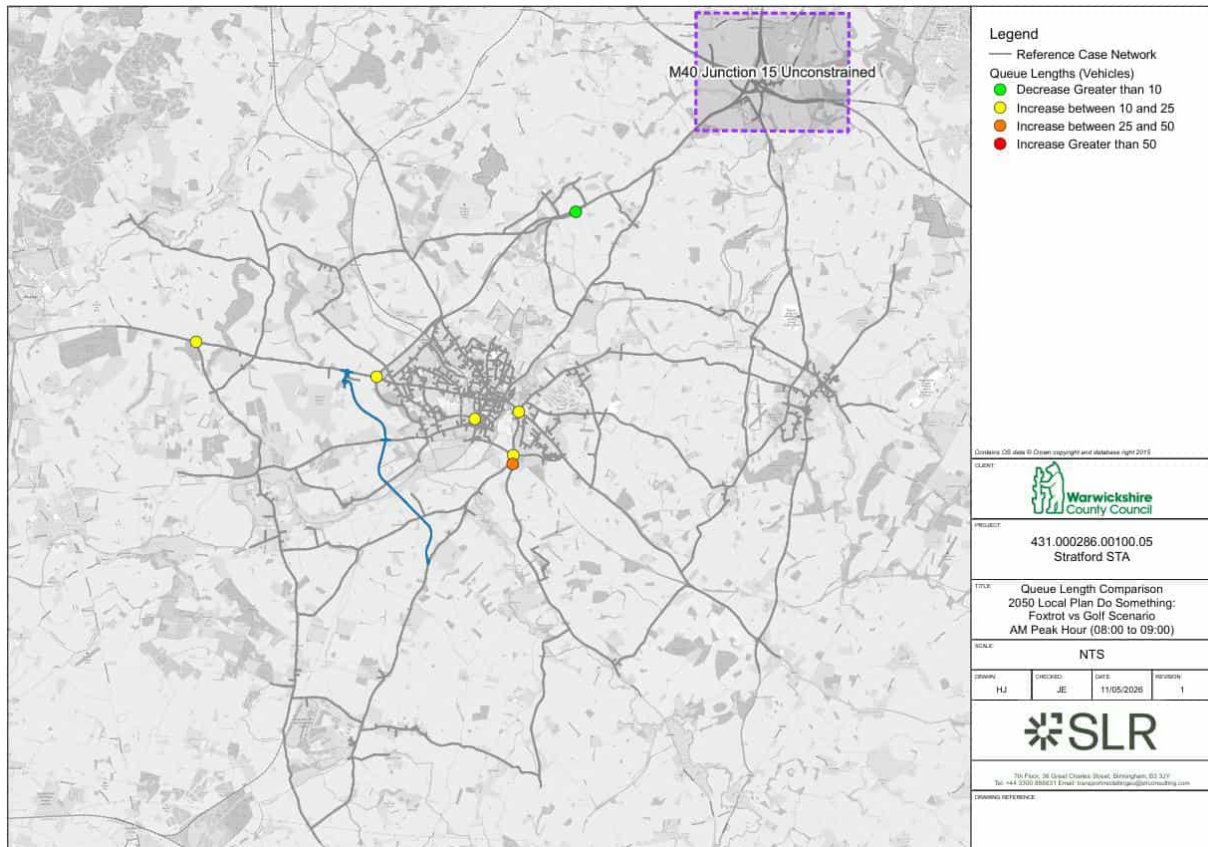
- 4.11 The strategic level results indicate that the revised development strategy has increased overall network delay, particularly during the PM peak, where average journey times rise by approximately 6% compared with the original ‘Foxtrot’ scenario. This represents a further increase relative to the Reference Case, with total delay rising by up to 14%. The level of delay in the AM period is comparable between the ‘Golf’ and ‘Foxtrot’ scenarios
- 4.12 Differences between the two ‘Golf’ scenarios, with and without the SG19 link-road extension, are minimal in both peak periods.

## Localised Queue Impacts

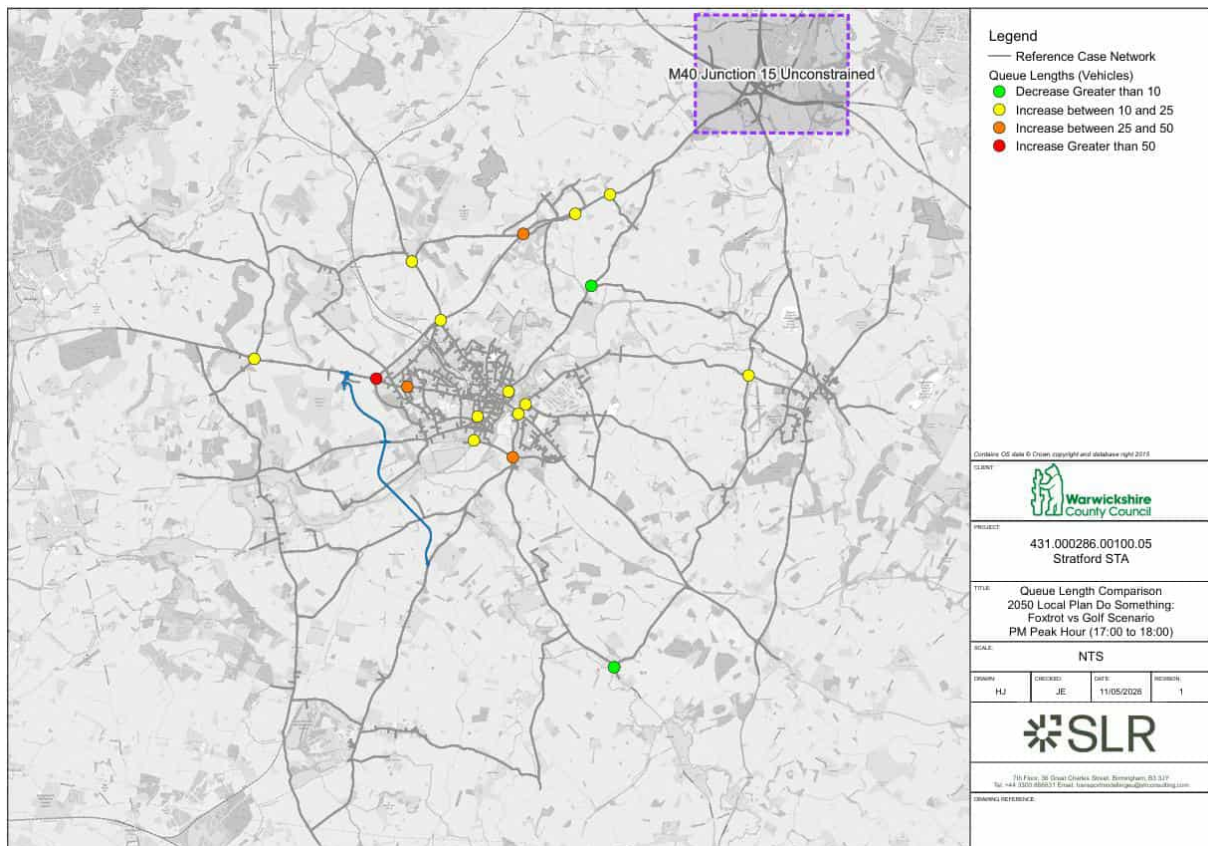
- 4.13 To understand the nature of congestion changes within the revised ‘Golf’ scenario, queue-length outputs have been compared against the original ‘Foxtrot’ scenario. The initial comparison considers the ‘Golf’ scenario without the SG19 link-road extension (i.e. connection to Loxley Road only).



**Figure 9 'Foxtrot' vs 'Golf' Scenario Local Plan 'Do Something' Queue Impacts – AM**

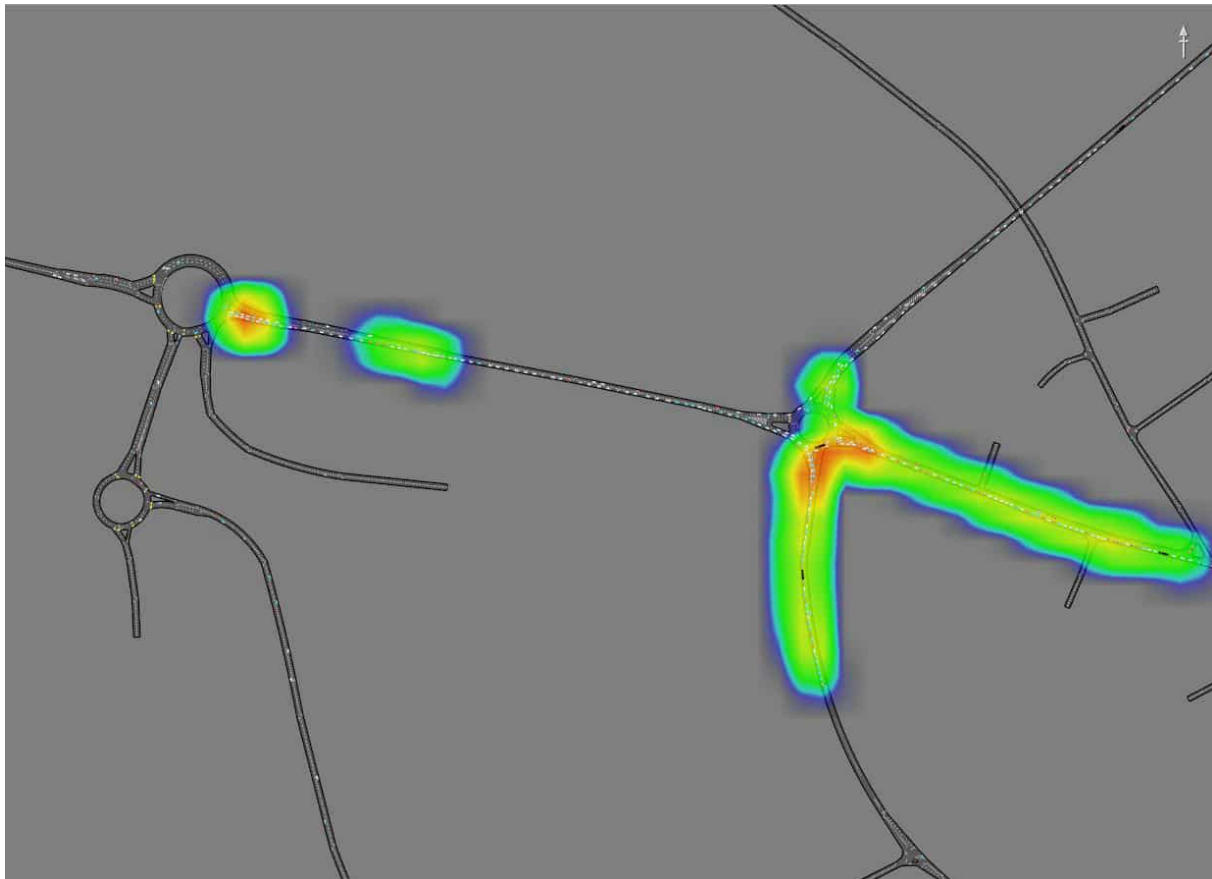


**Figure 10 'Foxtrot' vs 'Golf' Scenario Local Plan 'Do Something' Queue Impacts – PM**



- 4.14 The queue length comparisons presented above show that several key junctions experience increased queueing under the revised strategy. The only severe impact (defined as an increase of more than 50 vehicles) occurs at the A46 / Alcester Road (Wildmoor) roundabout during the PM peak.
- 4.15 Visual model run observations indicate that this issue is caused by downstream queueing from the proposed A46 access roundabout for the South West Relief Road (SWRR). As shown within the screenshot in **Figure 11**, below, the A46 westbound queue extends onto the Wildmoor roundabout, resulting in secondary queues on all approaches. This includes the A422 Alcester Road arm from Stratford Town Centre, resulting in further upstream congestion along that corridor.

**Figure 11 Local Plan Do Something ‘Golf’ Scenario – A46 Wildmoor Queueing**



- 4.16 In the original ‘Foxtrot’ assessment, queueing at the A46 / SWRR junction was identified as a potential concern. However, in that instance the queue did not extend onto the Wildmoor roundabout itself. The new interaction, likely driven by increased demand associated with SG19 and SG20, both of which load additional traffic onto the SWRR, represents a significant operational issue.
- 4.17 It is therefore recommended that the A46 / SWRR access roundabout design be revised to accommodate the revised demand within an updated Do Something scenario.

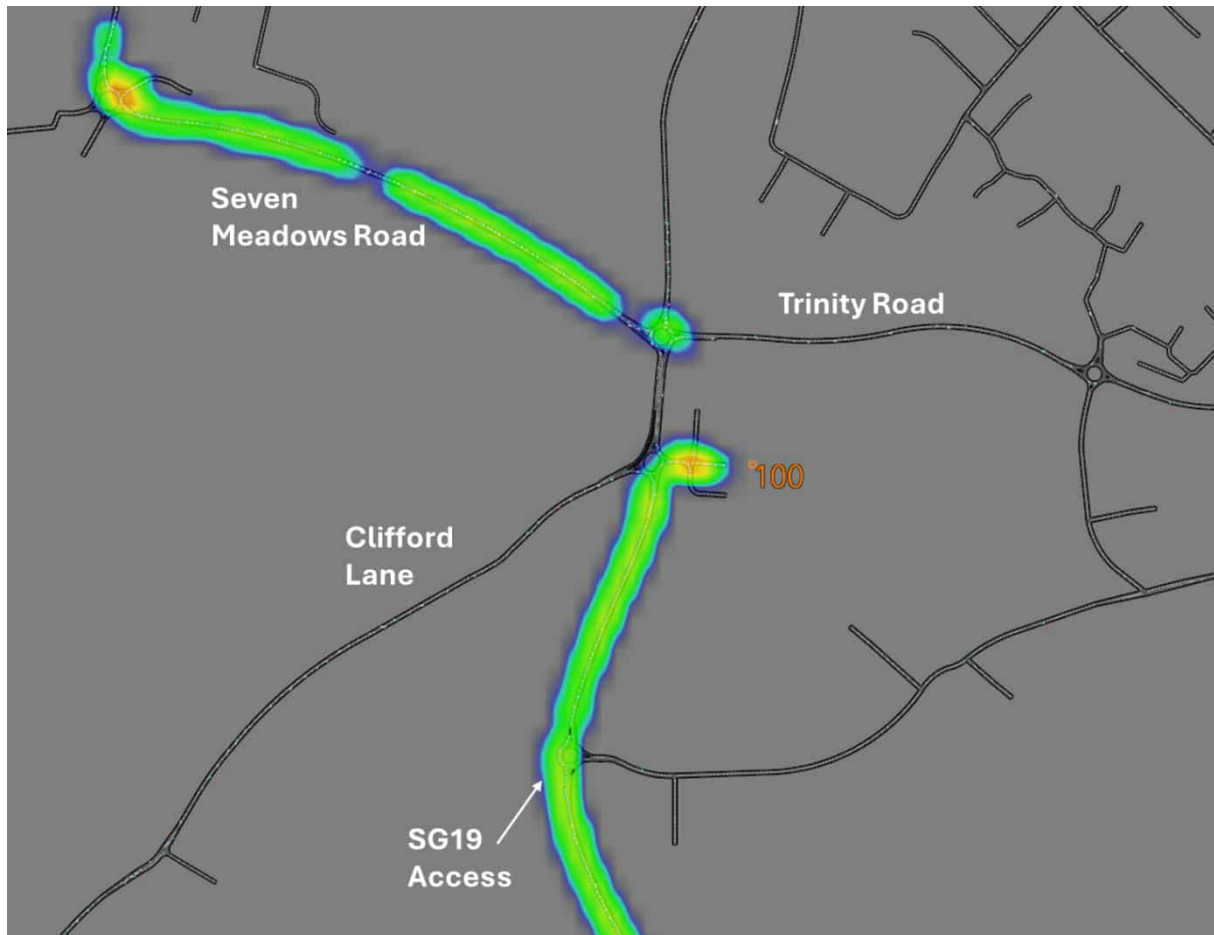


- 4.18 Several minor and medium impacts are also reported within the Town Centre, notably to the south along Shipston Road, at the Trinity Way / Seven Meadows Road and Clifford Lane / Waitrose roundabouts.
- 4.19 The Shipston Road roundabouts were previously identified as areas of concern, especially the long northbound PM peak queue, but no mitigation was included. However, the observed queueing within the 'Golf' scenario network is likely to trigger the need for intervention, given the increased sensitivity of this corridor due to the SG19 access roundabout to the south.
- 4.20 The extent of queueing across the two Shipston Road roundabouts, and the SG19 access, in both AM and PM peaks is shown in the following figures.

**Figure 12 Local Plan Do Something 'Golf' Scenario – Shipston Road AM**



**Figure 13 Local Plan Do Something 'Golf' Scenario – Shipston Road PM**



- 4.21 During the PM peak, the previously reported northbound queue into the Clifford Lane roundabout remains. Although the queue length is similar to that in the 'Foxtrot' scenario, the addition of the SG19 access roundabout means the queue now extends beyond an upstream junction, confirming that a mitigation scheme is required.
- 4.22 A significant number of unreleased vehicles are also observed on the eastern arm of the Clifford Lane roundabout (access to the Waitrose / Rosebird Centre). This represents a new issue, not present in the Reference Case or 'Foxtrot' scenario, and likely requires addressing within the revised junction scheme.
- 4.23 Additional queueing is observed at the Trinity Road / Seven Meadows Road roundabout, particularly on the westbound approach. Further queues occur on the eastbound Trinity Road and Clifford Lane approaches, the latter caused by northbound congestion feeding into the northern roundabout.
- 4.24 While several of these issues, such as the queue on Seven Meadows Road, were present within both the 'Foxtrot' Local Plan scenario and even the Reference Case, the addition of the SG19 allocation is likely to trigger the need for improvements at both roundabouts. Details of the revised scheme are provided in the following section.



- 4.25 The revised 'Golf' scenario also shows a minor worsening of queueing at the Evesham Road / Seven Meadows Road / Shottery Road roundabout compared with the 'Foxtrot' scenario. As shown in Figure 14, this area is a critical bottleneck, located between the SWRR, the SG19 allocation, and Stratford Town Centre, via the SWRR access on Evesham Road.

**Figure 14 Local Plan Do Something 'Golf' Scenario – Evesham Road / Grove Road PM**



- 4.26 The screenshot above shows long queues on the southwestbound approach to the roundabout, extending onto Rother Street and into the surrounding local network, with unreleased vehicles on several side roads.
- 4.27 Congestion can also be seen at the A422 Alcester Road / Grove Road signalised junction to the north. Although not severe, signal optimisation could reduce queueing and improve throughput in response to the changes in demand between the 'Foxtrot' and 'Golf' Local Plan scenarios.
- 4.28 In the original 'Foxtrot' assessment, a widening scheme was proposed at this roundabout, increasing three approaches from one to two lanes, including the southwest arm. Keep-clear / yellow box markings were also proposed on Evesham Place / Rother Street to protect side-road movements.

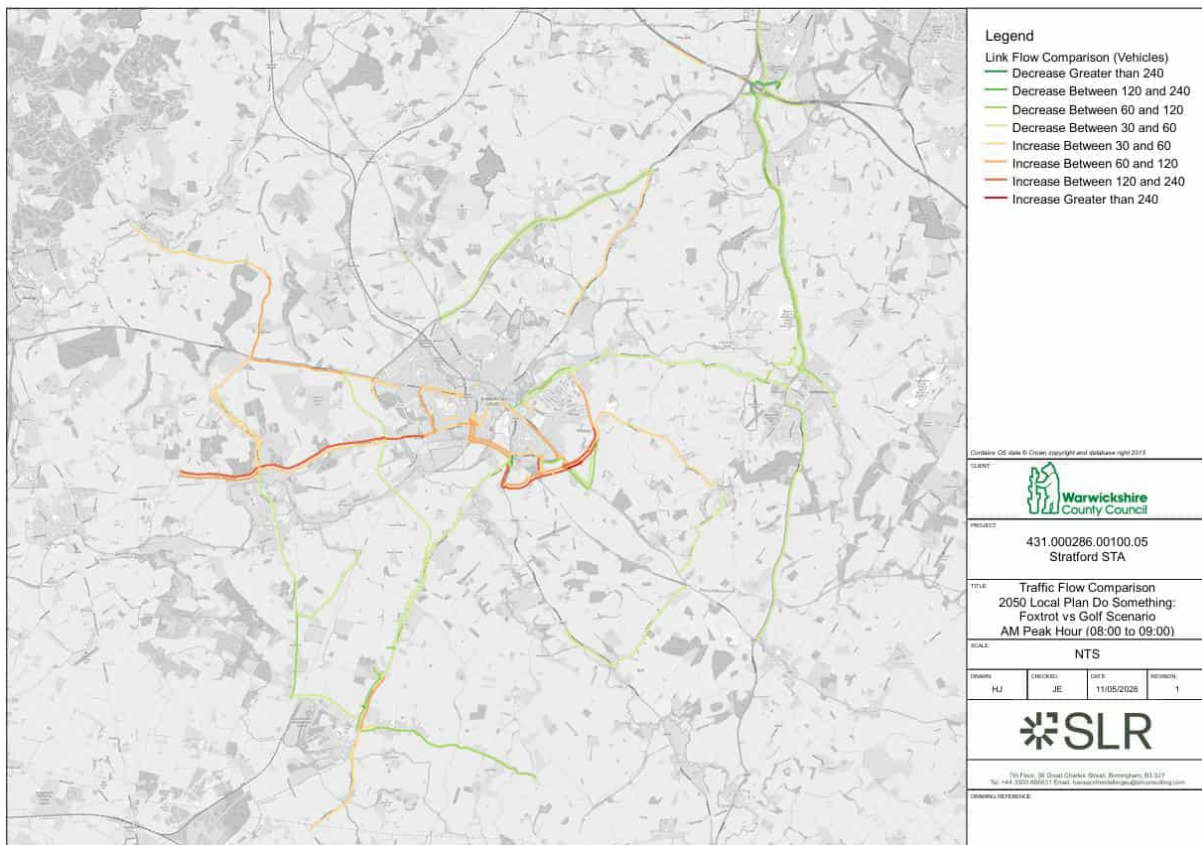


- 4.29 The worsening of the southbound queue, the re-emergence of side-road blocking and the increased demand in the 'Golf' scenario indicate that a revised scheme will be required as part of the updated Do Something scenario.
- 4.30 Further details on the signal optimisation and capacity enhancement schemes applied to the network are provided in the following section.

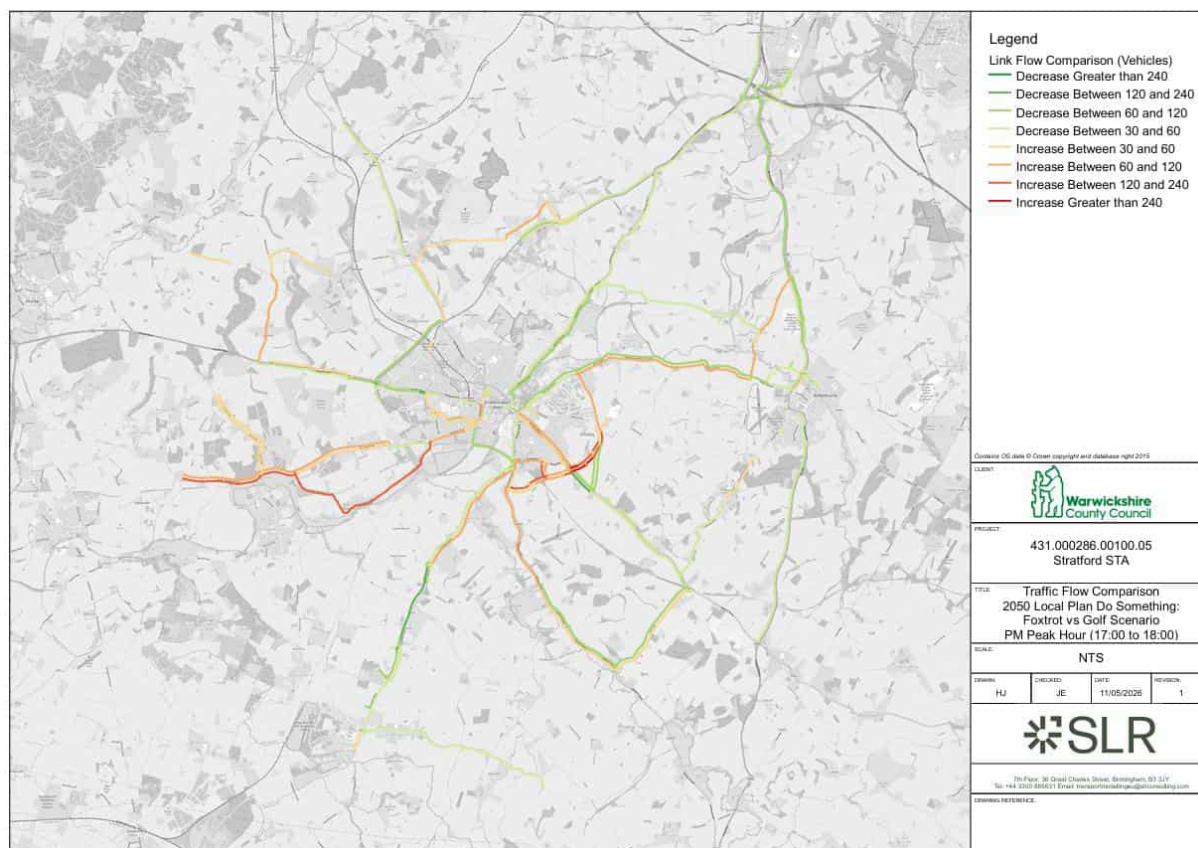
## Link Flow Comparisons

- 4.31 The following figures present the changes in peak-hour vehicle flows across the model network between the 'Foxtrot' and 'Golf' Local Plan scenarios (without the SG19 link-road extension). These comparisons help identify changes in routing behaviour, particularly around the new SG19 link road to the southeast, which may not be fully captured through queue-length analysis.

**Figure 15 'Foxtrot' vs 'Golf' Scenario Local Plan 'Do Something' Flow Comparisons – AM**



**Figure 16 'Foxtrot' vs 'Golf' Scenario Local Plan 'Do Something' Flow Comparisons – PM**



- 4.32 The results show substantial increases in vehicle flows on routes surrounding the SG19 site, particularly on Seven Meadows Road (though this reduces in the PM peak due to congestion) and Banbury Road outbound from Stratford Town Centre. To the east, flows increase significantly around the SG19 access on Loxley Road, although flows on Loxley Road itself remain broadly unchanged, likely due to the reduced quantum at SG15 (Wellesbourne).
- 4.33 Without the SG19 link-road extension to Wellesbourne Road, a large increase in traffic is observed on Knights Lane, with two-way flows doubling during both peak hours. Given the narrow, rural nature of Knights Lane, this level of through-traffic is not considered to be within acceptable limits.
- 4.34 Restricting through-movement on Knights Lane could be considered, however this would force traffic either through the constrained Banbury Road / Tiddington Road junction in Stratford Town Centre or onto a lengthy diversion southwest of Wellesbourne.
- 4.35 It is therefore considered appropriate to include the SG19 link-road extension, upgrading Pimlico Lane between SG19 and Wellesbourne Road to a 50-mph standard to encourage through-trips away from Stratford Town Centre. All subsequent 'Golf' scenarios in this report include this extension.



- 4.36 As noted earlier, strategic-level delay is broadly similar with or without the link-road extension; therefore, updated queue and flow comparisons against the 'Foxtrot' scenario are not presented. A comparison to the 2050 Reference Case is provided later in this section.
- 4.37 Elsewhere in the SuAWA network, a notable increase in traffic occurs on the western section of the B439 Evesham Road, driven by the addition of SG20 (Bidford-on-Avon).
- 4.38 During the PM peak, a significant increase in vehicles is observed travelling through Luddington, acting as a rat-run to avoid delays on Evesham Road. This behaviour is linked to the long westbound queue approaching the proposed SWRR access roundabout.
- 4.39 The increase in demand along Evesham Road following the delivery of the revised development strategy, in particularly SG19 and SG20, increases the delay, as shown in **Figure 17**, prompting more vehicles to divert through Luddington.

**Figure 17 Local Plan Do Something 'Golf' Scenario – Evesham Road / SWRR PM**

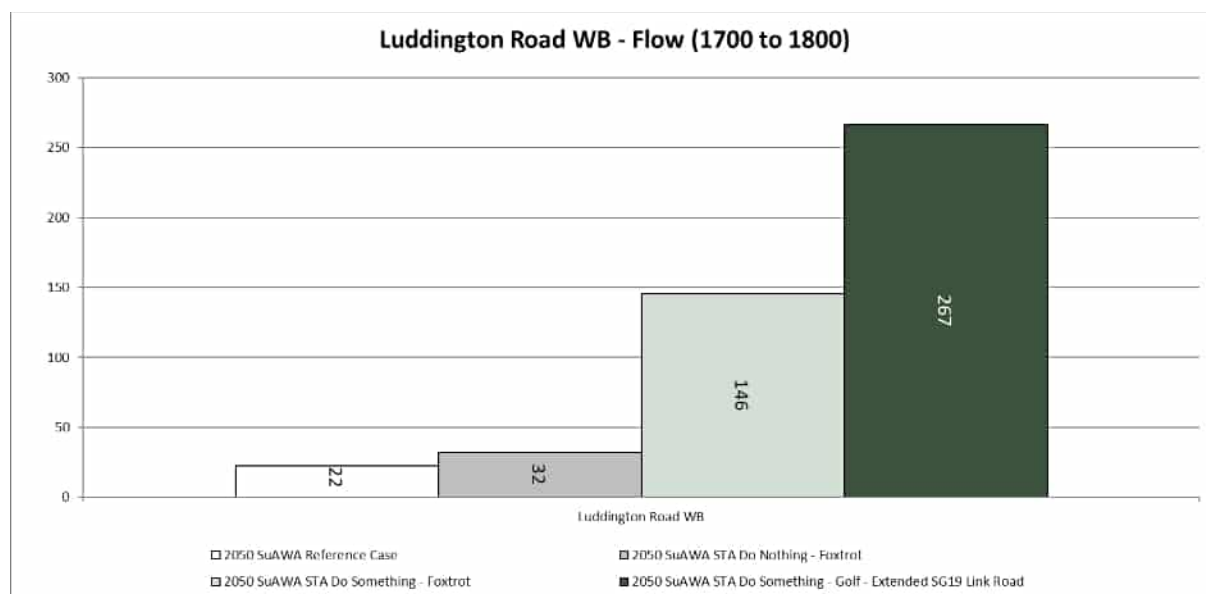


- 4.40 Model outputs show an increase in westbound delay on Evesham Road of 70–100 seconds compared with the 'Foxtrot' scenario, and up to 4 minutes compared with the Reference Case.



4.41 This results in an 80% increase in westbound flow through Luddington Road relative to the 'Foxtrot' scenario, equivalent to a twelve-fold increase over the Reference Case as shown within **Figure 18**.

**Figure 18 Luddington Road Vehicle Flow by Scenario – PM Peak Hour**



4.42 This issue can be mitigated by revising the proposed SWRR access roundabout, including widening and lane alterations to provide two-lane operation eastbound and westbound. This improvement is included within the revised 'Do Something' mitigation package described in the following section.

### Revised ('Golf') Do Something Impact Summary

4.43 The previous section reviewed the performance of the SuAWA STA 'Do Something' network, originally developed for the 'Foxtrot' strategy, following the inclusion of the revised 'Golf' development strategy.

4.44 While the network remains reasonably stable, several areas of localised congestion were identified. Mitigation is therefore required to manage delay and prevent reassignment onto rural or residential routes. Key issues are summarised below:

- Shipston Road / Clifford Lane / Waitrose Roundabout: Long northbound queue extending beyond SG19 development access junction on Shipston Road.
- Shipston Road / Seven Meadows Road / Trinity Way: Long queues on eastbound and northbound approaches, extending through Clifford Lane.
- A46 South West Relief Road access roundabout: Long westbound queues extending into Wildmoor Roundabout.
- Evesham Road South West Relief Road access roundabout: Long westbound queues causing large-scale reassignment through Luddington.
- Evesham Road / Seven Meadows Road roundabout: Increased southbound queueing extending beyond several side roads, with unreleased vehicles.



- 4.45 The proposed mitigation measures included within this revised modelling assessment are detailed in the following section. This section also assessed the proposal to extend the SG19 link road between Loxley Road and Wellesbourne Road via an upgrade to Pimlico Lane. Without this extension, the upgraded link terminates at Loxley Road, resulting in a substantial increase in traffic on Knights Lane, exceeding twice the Reference Case flow.
- 4.46 Given the unsuitability of Knights Lane for this level of traffic, the extended link road is considered the preferred option and is used as the 'Golf Do Something' scenario for the remainder of this report.

## 5.0 Revised ('Golf') Scenario Mitigation Schemes

- 5.1 As outlined in the previous chapter, a number of highway improvement schemes have been identified as necessary, within the updated Local Plan 'Do Something' scenario to mitigate the localised congestion and reassignment effects arising from the revised 'Golf' development strategy.
- 5.2 All schemes included in the 'Foxtrot' model testing have been retained, with the exception of the Evesham Road / Seven Meadows Road roundabout, where a revised layout has been applied within the 'Golf' scenario. Given the localised issues identified in the preceding section, it is assumed that mitigation at each of these locations remains necessary.
- 5.3 Indicative schemes have been developed for each location and have been detailed within **Appendix A**. The schemes proposed within the modelling have not been subject to any detailed design or safety review at this stage. It should not be assumed that the schemes recommended through this study are fixed and will be delivered in the exact form described within this report.
- 5.4 It is intended that the schemes proposed are outline schemes, subject to refinement through further optimisation and detailed design prior to implementation. At this stage of the Local Plan process, it would be impractical to expect fully designed schemes. Therefore, the concept and location of each intervention should be considered the key output.
- 5.5 An summary of each additional scheme has been provided below:
- **Scheme G1: Shipston Road / Seven Meadows Road / Trinity Way:** Enhancement of the existing committed scheme. Includes widening from 2 to 3 lanes on the northbound and eastbound (Seven Meadows Road) approaches; a two-lane exit on the northern arm; and two-lane right-turn capacity from Seven Meadows Road onto Shipston Road southbound.
  - **Scheme G2: Shipston Road / Clifford Lane / Waitrose Roundabout:** Revision of the committed scheme. Removes the free-flow slip from Clifford Lane to Shipston Road northbound. Introduces a two-lane exit on the northern arm with full dualling to the next roundabout, allowing two-lane northbound flow. Also widens the Waitrose exit to two lanes with associated circulatory widening.



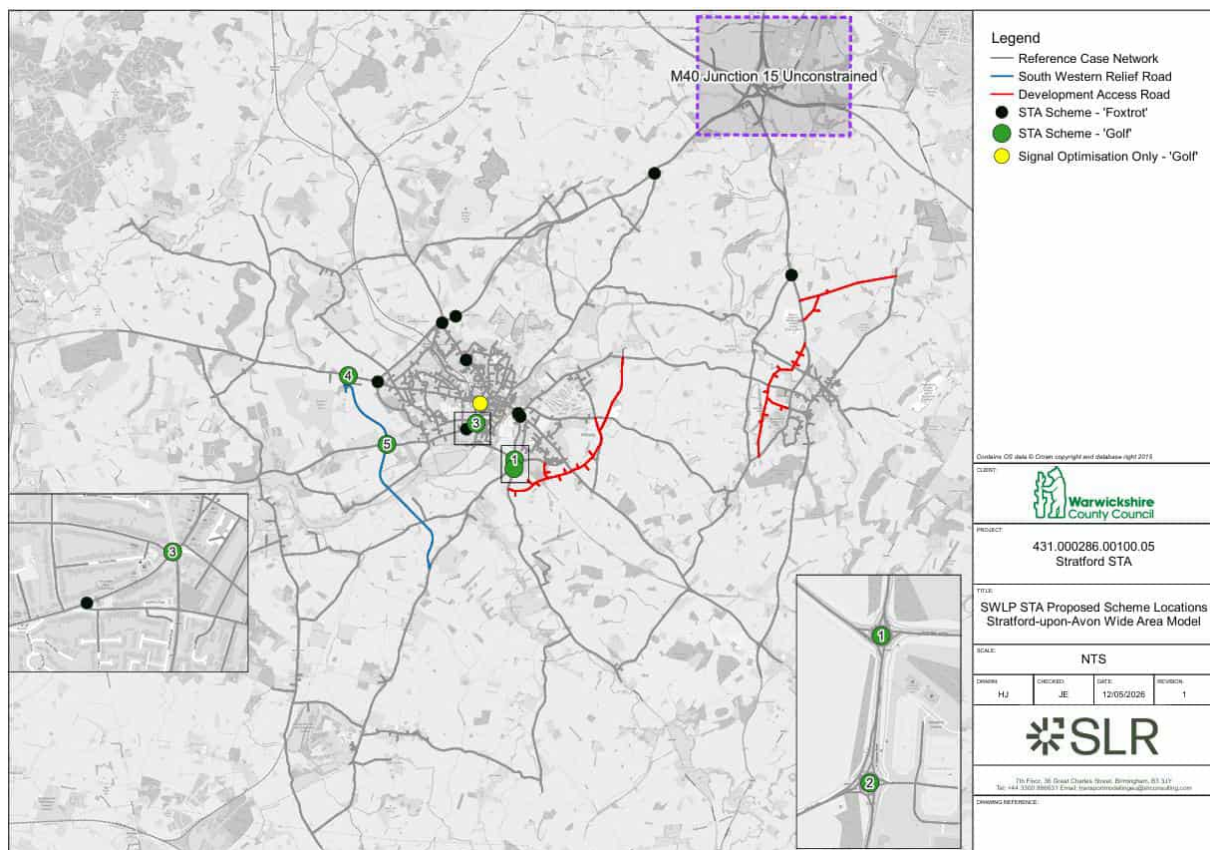
- **Scheme G3: Evesham Road / Seven Meadows Road roundabout:** Further enhancement of the scheme tested in the 'Foxtrot' scenario, extending the two-lane section on Evesham Place to the Rother Street junction.
- **Scheme G4: A46 South West Relief Road Access roundabout:** Partial signalisation of the A46 westbound approach.
- **Scheme G5: Evesham Road South West Relief Road Access roundabout:** Widening of Evesham Road exits to provide two-lane operation eastbound and westbound, replacing the previous assumption of two-lane northbound flow via the SWRR.

5.6 Schemes G4 and G5 relate to junctions that do not currently exist on-street, as they form part of the proposed South West Relief Road (SWRR). Given the SWRR's essential role in accommodating SWLP growth, it is recommended that the current proposed layouts for these junctions be revised in line with the changes described above.

5.7 A review of signal timings across the model network has also been undertaken to ensure optimal throughput. Most timings from the original assessment remain appropriate, with the exception of the Alcester Road / Grove Road junction, where timings have been adjusted to reflect the revised demand patterns.

5.8 The location of the additional schemes required to support the revised Local Plan development strategy are presented within **Figure 19** below.

**Figure 19 SuAWA 'Do Something' Scheme Locations – Revised 'Golf' Scenario**



5.9 These schemes have been incorporated into an updated 2050 Local Plan ‘Do Something’ scenario, referred to as ‘Do Something 2’ throughout the remainder of this report.

## 6.0 Revised (‘Golf’) Do Something 2 Scenario

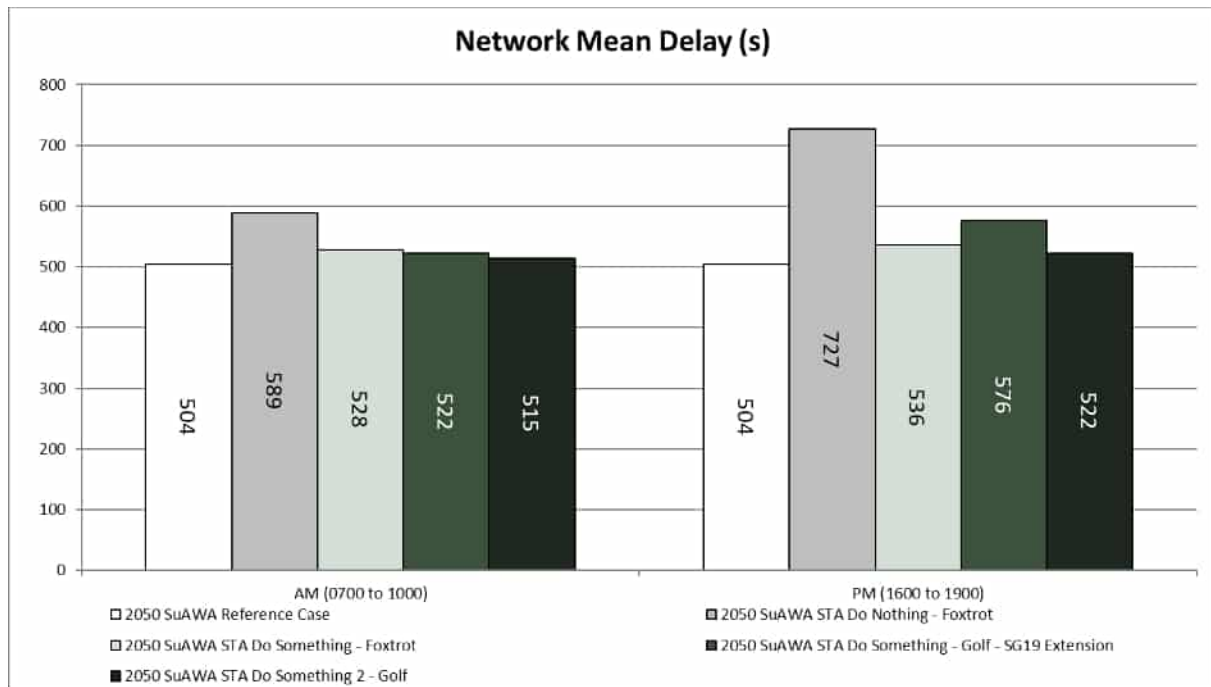
6.1 This section presents the modelling results for the ‘Do Something 2’ scenario, which incorporates the mitigation schemes described in Chapter 5. The scenario also includes the ‘Golf’ Local Plan development strategy, all mitigation adopted in the previous ‘Foxtrot’ assessment, and the extended SG19 link road between Shipston Road and Wellesbourne Road.

6.2 Consistent with the approach used throughout this report and the original assessment, the analysis first considers strategic-level impacts, including changes in average journey times, before examining localised impacts, such as predicted changes in junction queueing.

### Strategic Level Impact

6.3 Network-wide journey times for all scenarios, including the ‘Do Something 2’ scenario, is presented in **Figure 22**.

**Figure 20 Network Wide Delay (Seconds) – ‘Do Something 2’ Scenario**



6.4 The results above show the inclusion of the highway schemes within the ‘Do Something 2’ scenario results in a notable strategic level improvement in delay within the ‘Golf’ Local Plan scenario, particularly during the PM Peak Hour. This also represents a slight overall improvement when compared to the previously reported ‘Foxtrot’ scenario results.



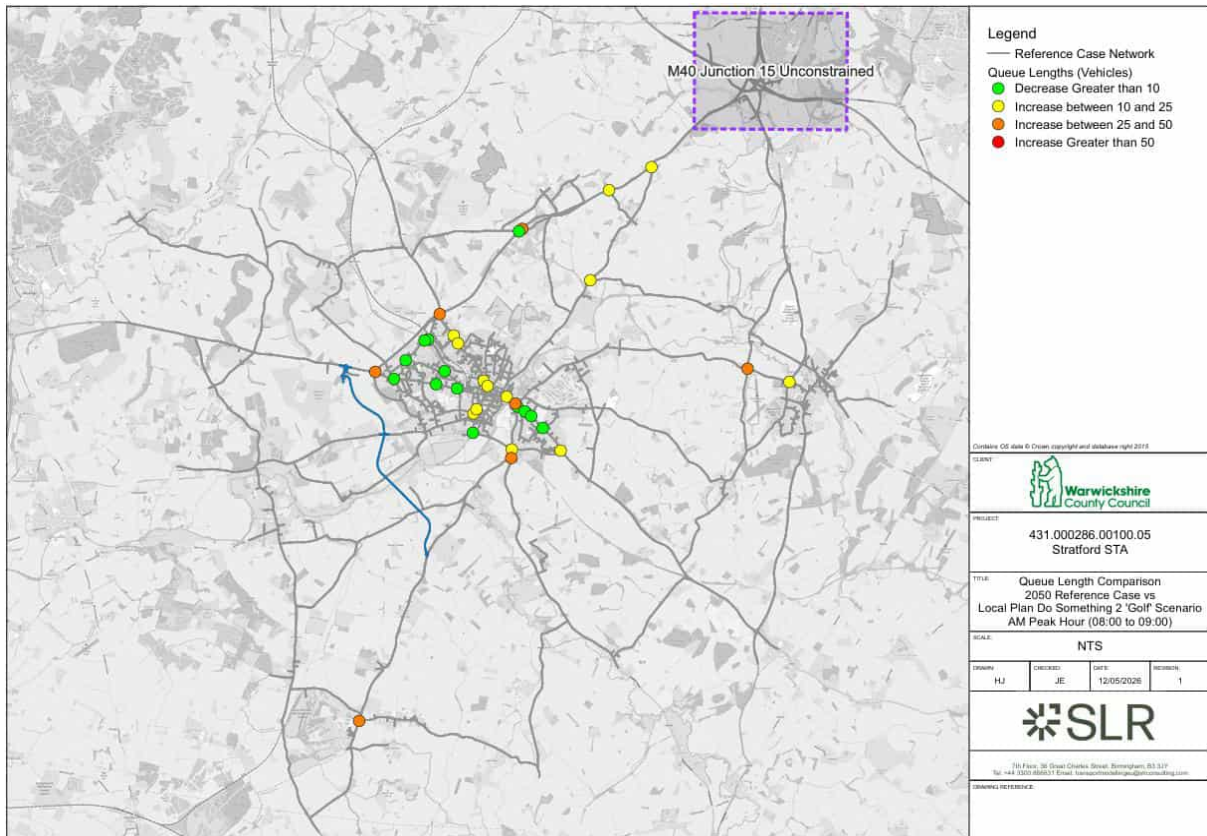
6.5 Despite these improvements, total network delay remains 2/3% higher than the 2050 Reference Case, indicating that some residual impacts persist even with the enhanced mitigation package.

### Localised Queue Impacts

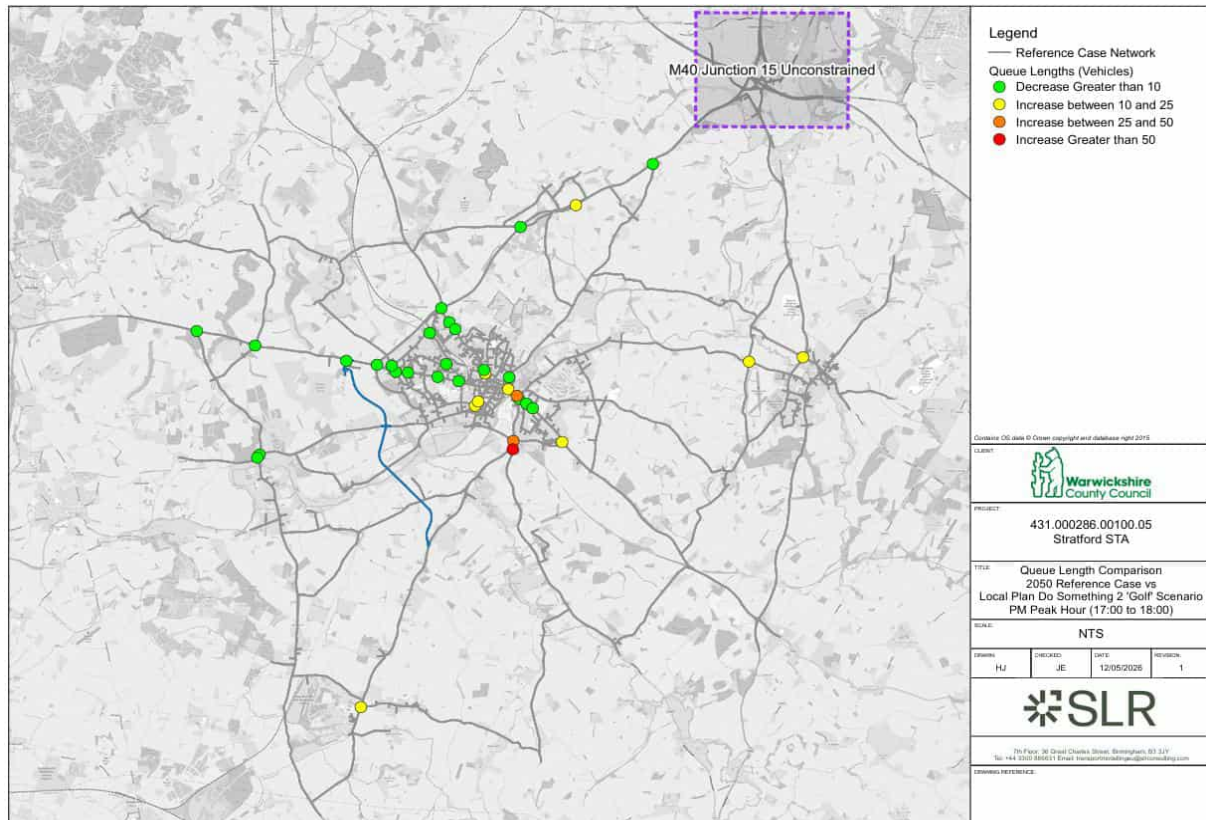
6.6 A detailed junction-by-junction impact analysis, covering queue lengths, journey times and vehicle-flow changes across all scenarios, is provided in **Appendix B**. The following summarises the final reported impacts between the 2050 Reference Case and the ‘Do Something 2’ scenario.

6.7 To assess the extent of localised congestion within the revised SuAWA ‘Do Something’ network, changes in queue lengths have been compared against the 2050 Reference Case in the figures below.

**Figure 21 2050 Reference Case vs ‘Golf’ STA Local Plan DS2 Scenario Queue Length Comparisons – AM**



**Figure 22 2050 Reference Case vs ‘Golf’ STA Local Plan DS2 Scenario Queue Length Comparisons – PM**



- 6.8 The only severe impact, queue increase over 50 vehicles, reported within this revised assessment, occurs on the northbound approach to the Shipston Road / Clifford Lane roundabout. Despite the widening scheme, which increases the northern exit from one to two lanes and allows both northbound lanes to serve the straight-ahead movement, queues remain significant relative to the Reference Case.
- 6.9 However, the scheme delivers a substantial improvement from the unmitigated scenario, reducing the queue from approximately 200 vehicles to 85 vehicles.
- 6.10 Despite this reduction, in addition to the 70% increase in throughput observed on this approach, the remaining queue still appears to interact with the proposed SG19 access roundabout, as shown in, as shown within **Figure 23**. This suggests that a further review of the roundabout layout will be required, particularly following the delivery of SG19.
- 6.11 However, it should be noted that the location and form (roundabout/signalised etc) of the SG19 access on Shipston Road, adopted within this modelling assessment, are indicative only at this stage. No detailed access design is currently available. A future access could be positioned further south, potentially reducing the extent of queue interaction.
- 6.12 Another potential mitigation option is to increase the attractiveness of the SG19 link road as a through-route, thereby reducing pressure on the Shipston Road roundabout. In this assessment, the link road between Shipston Road and Banbury Road has been modelled at 30 mph, The cost factor, an arbitrary value applied within Paramics to artificially



increase/decrease the perceived cost of a particular route, was retained at the default value of 1.

- 6.13 This ensured a robust assessment of the Shipston Road roundabout, as a manual reduction in cost of the link road could be applied to ensure all trips between Shipston Road and Banbury Road bypass the roundabouts and Trinity Way. While this may reflect the link road's directness, it is unlikely to be realistic given that the route passes through a proposed residential area.

**Figure 23 Local Plan Do Something 2 'Golf' Scenario – Shipston Road PM**

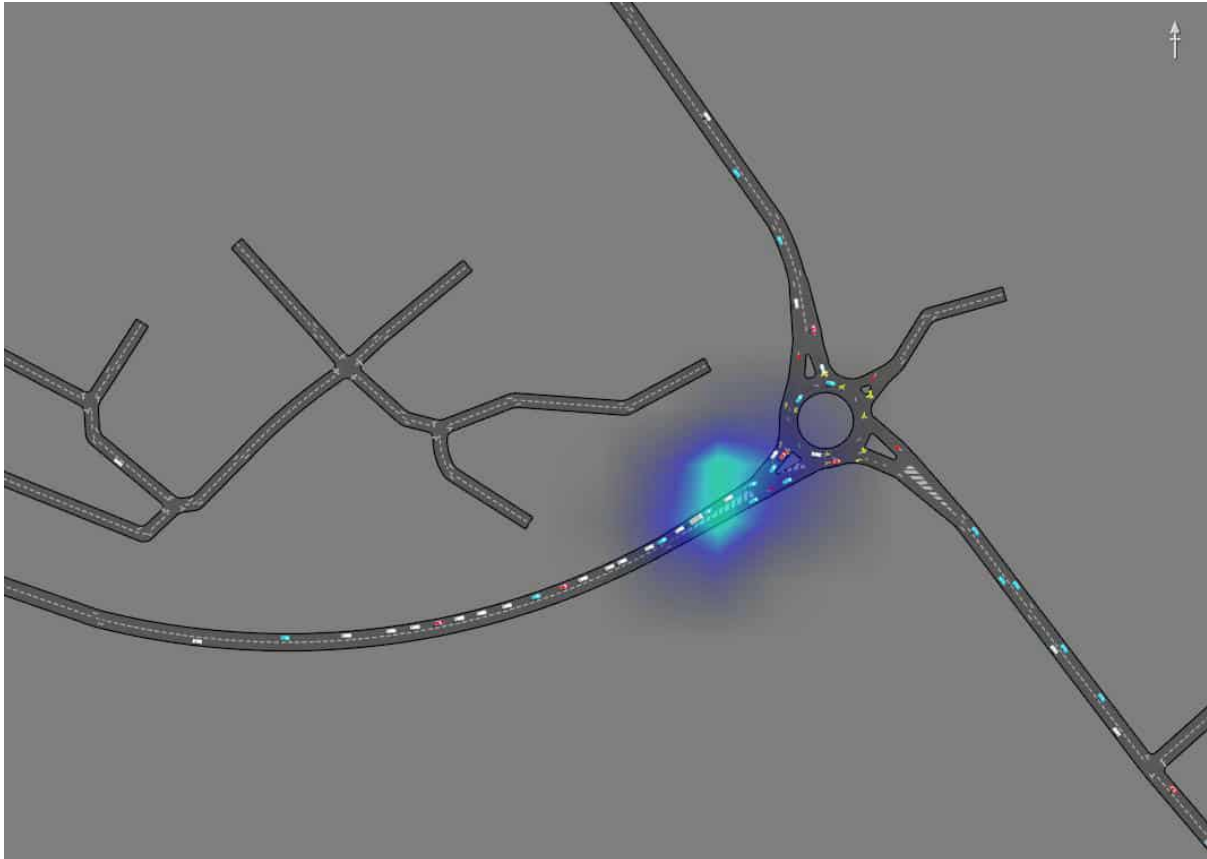


- 6.14 **Figure 23** also shows the queue on the Waitrose / Rosebird Centre eastern arm. Prior to the scheme—which widens this approach to two lanes—this arm experienced significant delay and unreleased vehicles. The scheme improves throughput by up to 20%, though some residual delay remains due to the higher-speed nature of the other approaches.
- 6.15 At the Shipston Road / Seven Meadows Road / Trinity Way roundabout, where widening has also been applied, a medium increase in queue length is reported relative to the Reference Case, particularly on the Trinity Way and northbound approaches.



- 6.16 However, the scheme delivers a significant improvement on the Seven Meadows Road approach and increases overall throughput by around 200 vehicles (6%).
- 6.17 A minor queue increase (approximately 15 vehicles) is also observed on the Trinity Way approach to the A422 Banbury Road roundabout, as shown in **Figure 24**. While this may warrant review during SG19's planning stage, it is not considered a major concern, as the queue does not interact with another junction.

**Figure 24 Local Plan Do Something 2 'Golf' Scenario – Banbury Road / Trinity Way AM/PM**

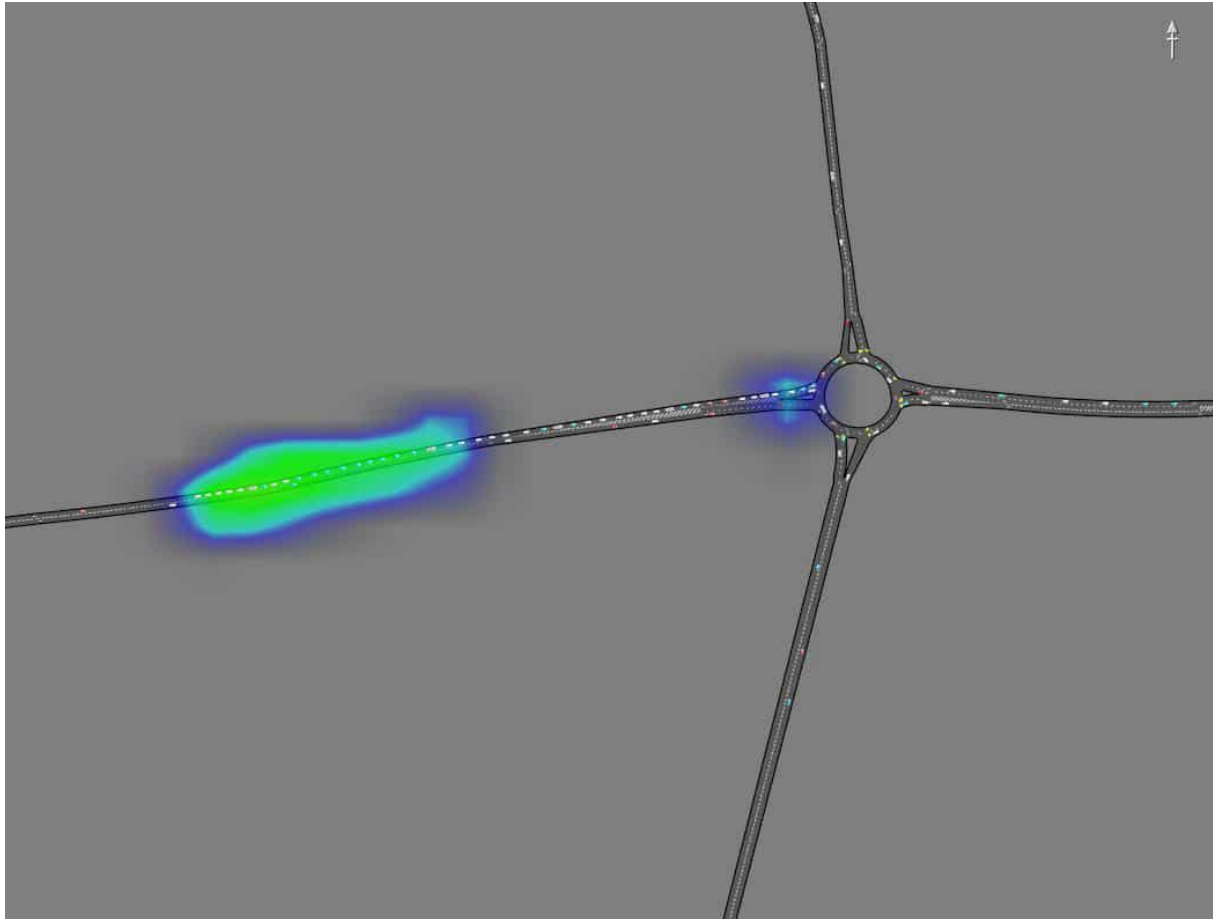


- 6.18 The revised scheme at the Evesham Place / Seven Meadows Road / Shottery Road roundabout, extending the two-lane southeast approach, also improves queue lengths and throughput. These benefits are reinforced by the increased throughput on Seven Meadows Road resulting from the Shipston Road roundabout scheme.
- 6.19 Junction performance has also improved following the revisions to the SWRR access junctions, addressing the issues identified earlier in the assessment.
- 6.20 At the A46 SWRR access roundabout, the introduction of signal control on the westbound approach significantly reduces queueing, from a maximum of approximately 58 vehicles to around 10, preventing queues from extending back onto Wildmoor Roundabout.



- 6.21 At the Evesham Road SWRR access roundabout, the provision of two westbound through-lanes delivers a major improvement in queueing and throughput on the westbound approach, substantially reducing the previously observed reassignment through Luddington.
- 6.22 The scheme initially resulted in queue increases on other approaches, particularly the eastbound approach during the AM peak (**Figure 25**). This has been addressed by revising the design to also provide two eastbound through-lanes, which reduces queueing without triggering significant eastbound reassignment through Luddington.

**Figure 25 Local Plan Do Something 2 ‘Golf’ Scenario – Evesham Road / SWRR AM**



- 6.23 In addition to the improvements described above, several minor and medium queue increases are reported across the SuAWA network. These generally align with those identified in the original ‘Foxtrot’ assessment, and the conclusions remain consistent with the initial reporting. Key findings are summarised below:
- A46 Wildmoor, Bishopton and Wildmoor Roundabouts: Significant improvements in queues and throughput following targeted schemes. Minor/medium increases remain on some approaches, but only where Reference Case queues were low.
  - A46 SG18-N Access: Potential for westbound queues from Bishopton to extend back through the SG18-N access roundabout. Mitigated by dualling between junctions, reducing direct interaction; monitoring recommended at detailed design stage.
  - Bridgefoot Gyratory Southbound approach: High queue observed, but journey-time impact remains limited.



- Clopton Bridge / Tiddington Road junction: Signalisation south of Clopton Bridge results in a minor queue increase on the bridge (previously free-flow). However, the scheme is necessary to balance queues on Tiddington Road and at the adjacent Banbury Road / Shipston Road junction, which is also proposed for signalisation.

## **‘Golf Do Something 2’ Impact Summary**

- 6.24 The inclusion of the additional highway schemes identified through the revised ‘Golf’ scenario assessment delivers a strategic-level improvement over the previously reported ‘Foxtrot’ scenario. Overall network delay remains only slightly higher, by around 2–3%, than the 2050 Reference Case, representing a relatively modest residual impact.
- 6.25 The primary outstanding issue relates to the Shipston Road / Clifford Lane roundabout. Although the revised scheme significantly reduces PM peak northbound queueing, from approximately 200 vehicles to around 85, some interaction with the SG19 access roundabout to the south remains.
- 6.26 This has not been explored further in this assessment due to uncertainty regarding the exact location and form of the SG19 access, as well as the future attractiveness of the SG19 link road for through-trips. These matters should be addressed as part of any detailed assessment of the SG19 development proposals.
- 6.27 All other highway schemes included within the ‘Do Something 2’ scenario deliver major improvements in junction performance and effectively mitigate the previously reported secondary impacts, such as A46 queueing extending into Wildmoor Roundabout and significant reassignment through Luddington village.
- 6.28 A review of the wider SuAWA network, following the updated demand and mitigation package, indicates no material changes to the conclusions of the initial reporting. No additional major impacts are identified elsewhere in the network.

## **7.0 Summary and Conclusions**

### **Background**

- 7.1 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).
- 7.2 An original assessment of an initial set of options was undertaken by SLR, to consider the emerging development strategy named as the ‘Foxtrot’ scenario, establishing the potential effect on the operation on the highway network.
- 7.3 SDC/WDC subsequently identified a revision to the development quantum at several sites, along with the addition of two new strategic allocations, SG19 and SG20. This revised



strategy forms the 'Golf' scenario. These changes have been reassessed within the microsimulation models using a methodology consistent with the original reporting.

- 7.4 All assumptions applied in the original SuAWA modelling have been retained for the 'Golf' scenario, including:
- Capping of growth levels
  - Mode Shift Assumptions
  - Inclusion of the South West Relief Road (SWRR)
  - Development access arrangements
  - Removal of priority constraints at M40 Junction 15.
- 7.5 The Local Plan 'Do Something' model network, incorporating the mitigation schemes identified in the Foxtrot assessment, was used as the starting point for this revised analysis.
- 7.6 The SG19 site lies within the SuAWA model area and has therefore been included using the proposed access strategy, consistent with discussions between WCC and SDC. This includes a direct link road connecting Shipston Road, Banbury Road and Loxley Road, with a proposed extension to Wellesbourne Road via an upgrade of Pimlico Lane.
- 7.7 The findings of the revised 'Golf' scenario assessment have been presented in this report, covering:
- The potential impact, on the highway network, of traffic growth arising from the revised 'Golf' scenario allocation strategies.
  - The further mitigation measures, in addition to those applied within the original 'Foxtrot' scenario modelling, required to support the revised growth levels and minimise the effect on the operation of the transport network.

## Findings

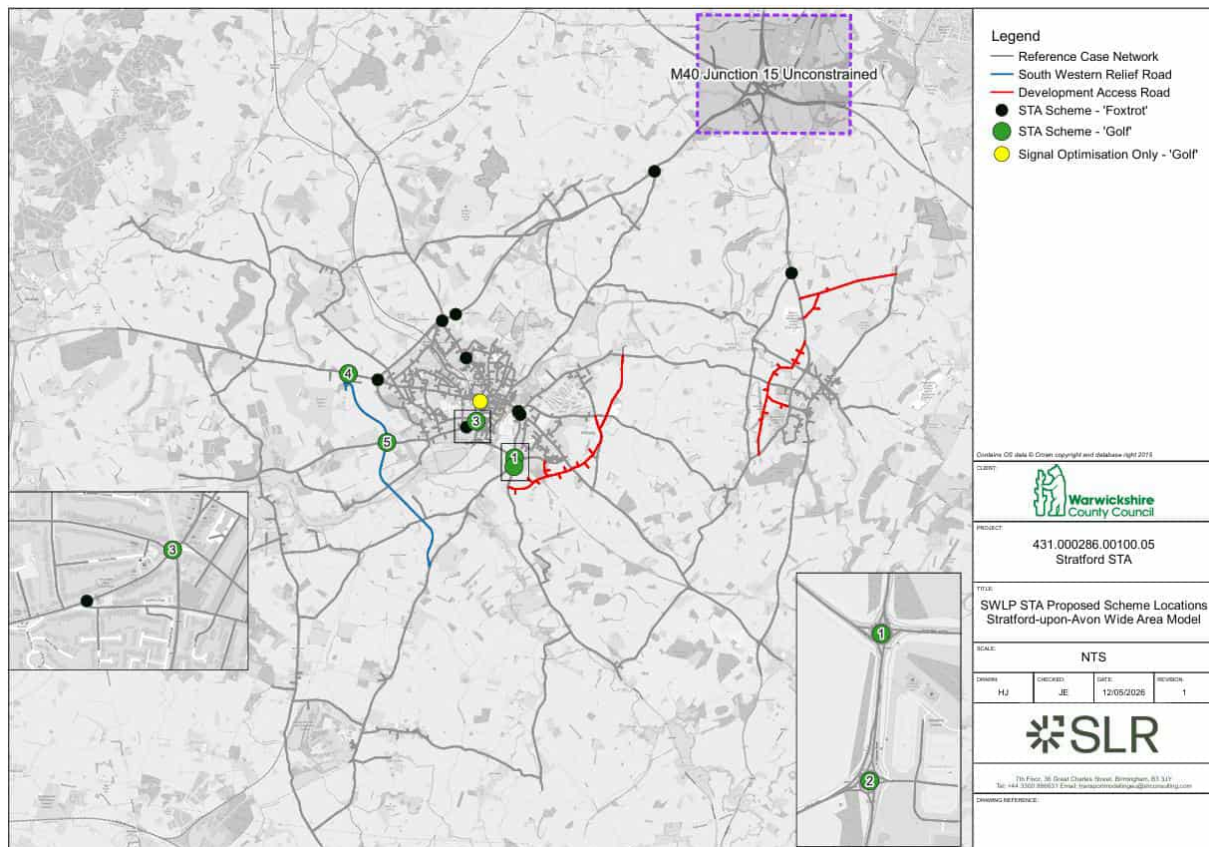
- 7.8 The assessment of the revised 'Golf' scenario on the previously reported 'Do Something' network shows that, while the network remains reasonably stable, several areas of localised congestion emerge.
- 7.9 Most of these issues were also identified in the original Foxtrot assessment. In several locations, changes in demand or network conditions mean that additional mitigation is required. Key locations include:
- Shipston Road / Clifford Lane / Waitrose Roundabout: Northbound queue now extends beyond the SG19 access.
  - Shipston Road / Seven Meadows Road / Trinity Way: Long queues on eastbound and northbound approaches.
  - A46 South West Relief Road access roundabout: Westbound queues extending onto Wildmoor Roundabout.



- Evesham Road South West Relief Road access roundabout: Westbound queues causing reassignment through Luddington.
- Evesham Road / Seven Meadows Road roundabout: Increased southbound queueing and unreleased vehicles.

- 7.10 Mitigation schemes have therefore been applied at each of these locations to increase throughput and reduce residual impacts. Full details are provided in **Appendix A**.
- 7.11 The assessment also considered the proposed extension of the SG19 link road between Loxley Road and Wellesbourne Road. Without this extension, a substantial increase in traffic occurs on Knights Lane, with flows rising by more than 100%.
- 7.12 Given the rural nature of Knights Lane, this level of traffic is unsuitable. The extended link road has therefore been included within the revised 'Do Something 2' scenario.
- 7.13 The location of each of the highway schemes, both within the original and revised assessment, across the SuAWA model network are presented within **Figure 26** below.

**Figure 26 SuAWA 'Do Something' Scheme Locations – Revised 'Golf' Scenario**



- 7.14 Following inclusion of the revised 'Do Something 2' schemes, the model network performs better than the originally reported 'Foxtrot' scenario, with overall delay across the SuAWA model network comparable to the 2050 benchmark Reference Case scenario.



- 7.15 Some localised congestion remains, most notably at the Shipston Road / Clifford Lane roundabout. Although the revised scheme significantly improves northbound queueing, some interaction with the SG19 access persists. This requires further investigation during the detailed assessment of SG19, once the access location and link-road design are confirmed.
- 7.16 A detailed junction-by-junction comparison the model outputs across the remaining areas of the SuAWA model network, for each scenario reported, has been provided within **Appendix B**.

## Conclusions

- 7.17 The modelling demonstrates that, to support the revised 'Golf' Local Plan development strategy, a number of additional highway schemes are required beyond those identified in the original Foxtrot assessment.
- 7.18 Once this mitigation is applied, the network operates at a level comparable to the 2050 Reference Case, representing forecast conditions without Local Plan development.
- 7.19 Several localised congestion issues remain, broadly consistent with those identified in the Foxtrot assessment. The only notable new issue relates to the interaction between the Shipston Road / Clifford Lane roundabout and the SG19 access, which will require further consideration as part of the SG19 planning process.

## Recommendations for Further Analysis

- 7.20 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.
  - 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.
- 7.21 These are stages which would be beneficial in providing a better understanding of the network operation 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 the assessment work presented to date.



# Appendix A 'Golf' Scenario Scheme Inclusions



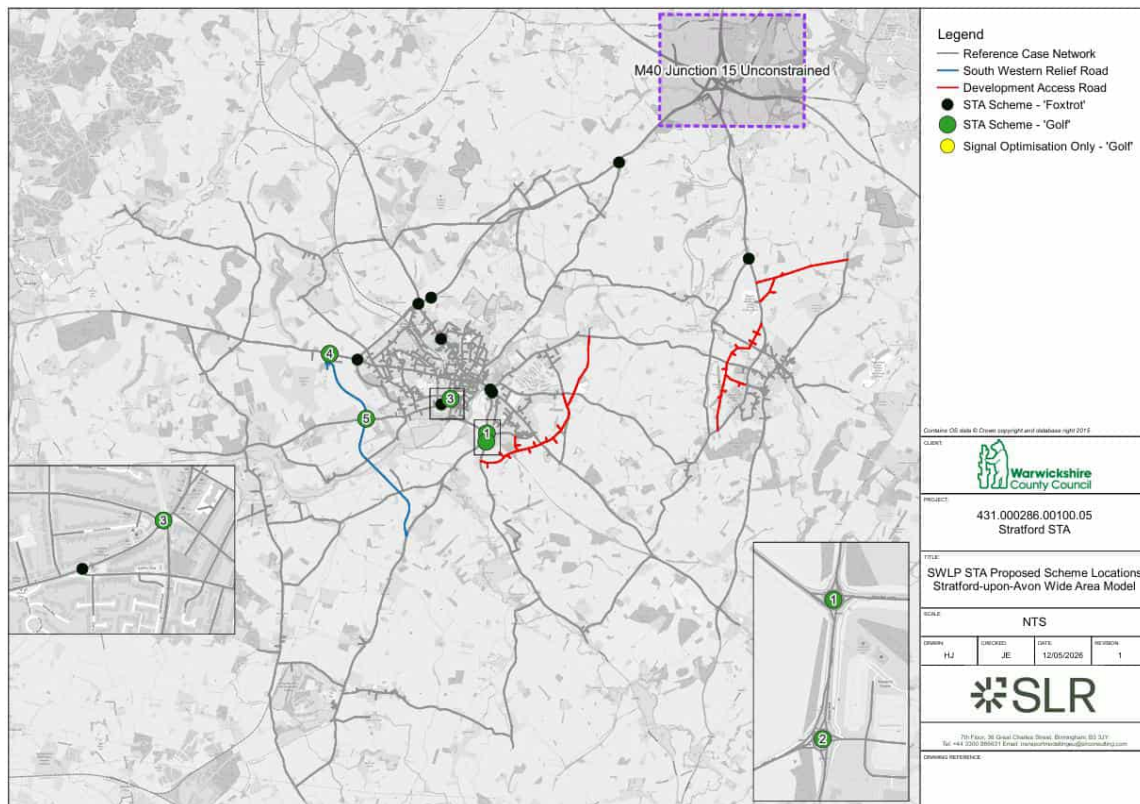


# Proposed Highway Schemes

Additional Concept Mitigation – 'Golf' Scenario



# 'Do Something 2' Scenario – Required Schemes



- Schemes and assumptions applied within original 'Foxtrot' modelling assessment have been retained
  - Includes SWRR and M40 J15
- A list and brief summary of each additional scheme is provided within the next slide.
- This is followed by the individual details and assumptions for each.

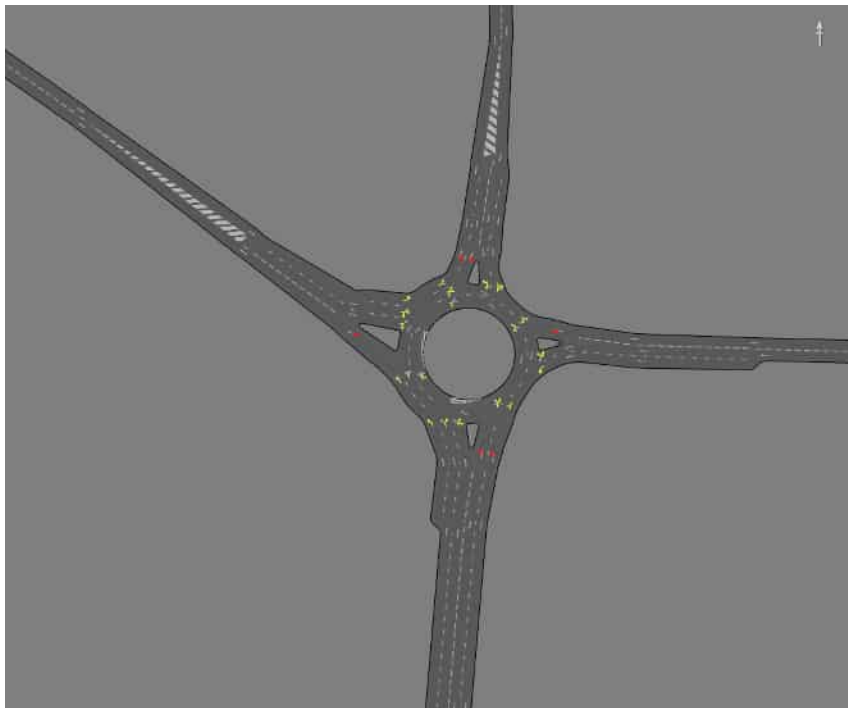


# 'Do Something 2' Scenario – Required Schemes

Ref	Junction	Description
G1	Shipston Road / Seven Meadows Road / Trinity Way	Enhancement of the existing committed scheme. Includes widening from 2 to 3 lanes on the northbound and eastbound (Seven Meadows Road) approaches; a two-lane exit on the northern arm; and two-lane right-turn capacity from Seven Meadows Road onto Shipston Road southbound
G2	Shipston Road / Clifford Lane / Waitrose Roundabout	Revision of the committed scheme. Removes the free-flow slip from Clifford Lane to Shipston Road northbound. Introduces a two-lane exit on the northern arm with full dualling to the next roundabout, allowing two-lane northbound flow. Also widens the Waitrose exit to two lanes with associated circulatory widening.
G3	Evesham Road / Seven Meadows Road	Further enhancement of the scheme tested in the 'Foxtrot' scenario, extending the two-lane section on Evesham Place to the Rother Street junction
G4	A46 South West Relief Road Access	Signalisation of A46 Westbound approach
G5	Evesham Road South West Relief Road Access	Widening of Evesham Road exits to provide two-lane operation eastbound and westbound, replacing the previous assumption of two-lane northbound flow via the SWRR



# Proposed Mitigation – Scheme G1



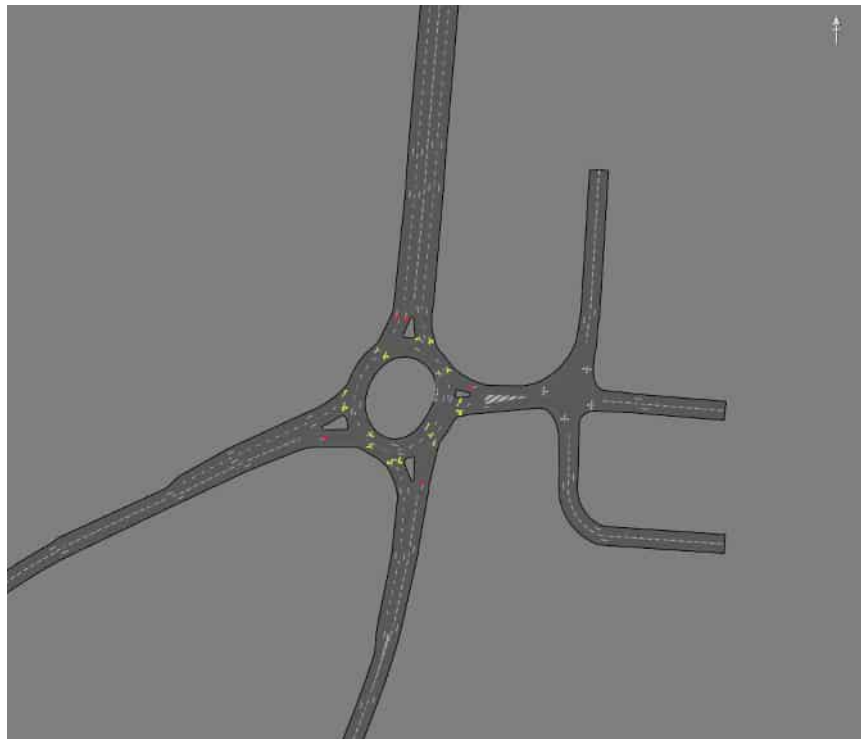
- Shipston Road / Seven Meadows Road / Trinity Way Roundabout
- Revision of existing committed scheme (see below)
- Widening from 2 to 3 lanes on following approaches:
  - Shipston Road NB
  - Seven Meadows Road EB
- 2 lane exit on Shipston Road northern arm
- Allows for two-lane right-turn capacity from Seven Meadows Road onto Shipston Road southbound



*Committed Scheme:*



# Proposed Mitigation – Scheme G2



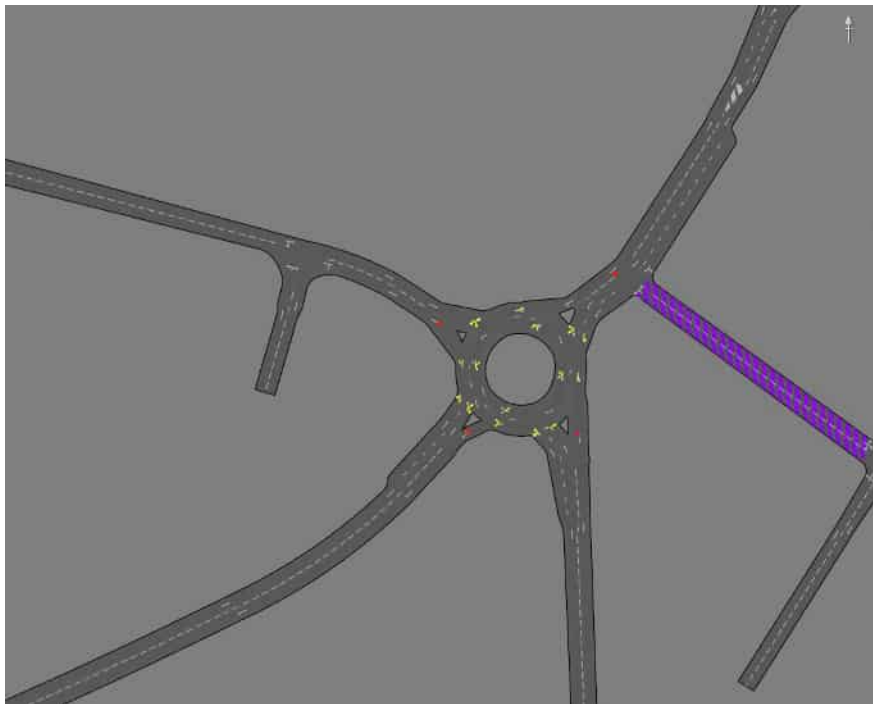
- Shipston Road / Clifford Lane / Waitrose Roundabout
- Revision of existing committed scheme (see below)
- Free-flow slip from slip from Clifford Lane to Shipston Road northbound removed
- Two-lane exit on the northern arm with full dualling to Trinity Way roundabout
- Allows two-lane northbound flow
- Widening of the westbound approach to two lanes



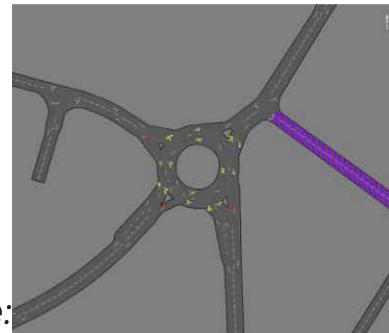
*Committed Scheme:*



# Proposed Mitigation – Scheme G3



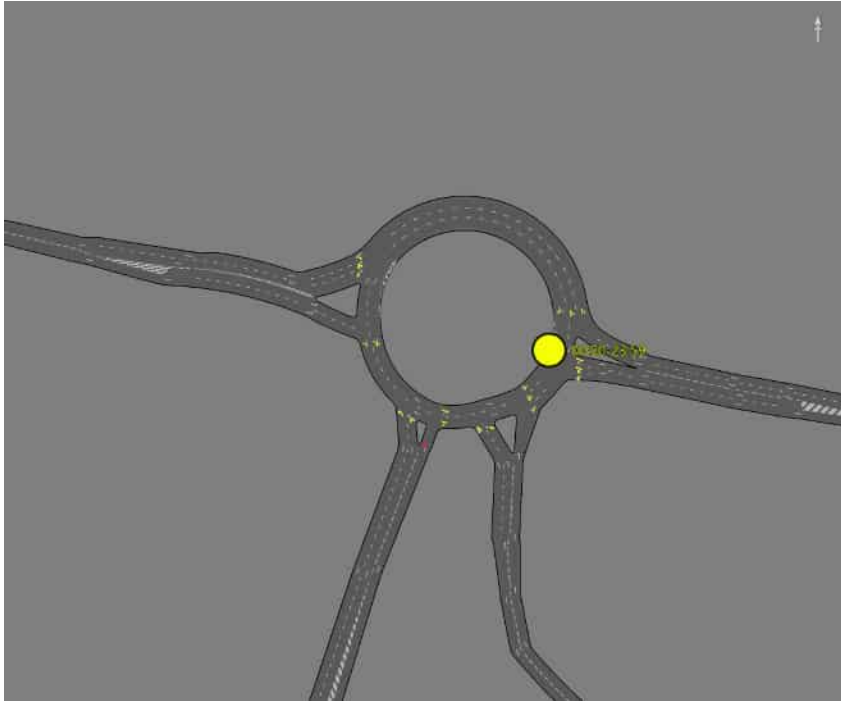
- A4390 Evesham Place / Evesham Road / Seven Meadows Road Roundabout
- Update to scheme adopted as part of original 'Foxtrot' assessment (see below)
- All widening at the junction and keep clear/yellow boxes previously added remain in place
- Update comprises extension of two lane approach to Evesham Place (southwestbound)



'Foxtrot' Scheme:



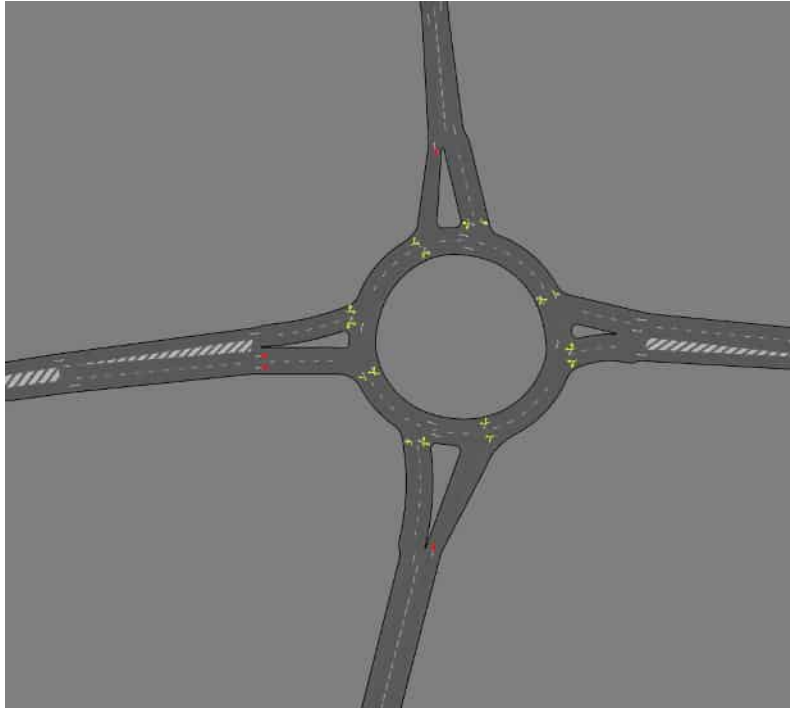
# Proposed Mitigation – Scheme G4



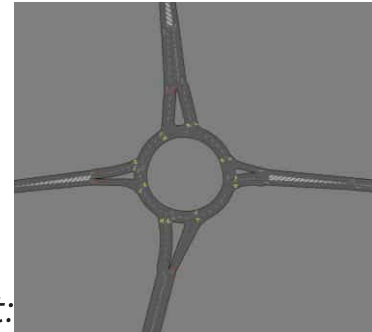
- A46 South West Relief Road (SWRR) Access Roundabout
- Signalisation of westbound approach only
- Remainder of junction layout, including the number of lanes, consistent with previous testing



# Proposed Mitigation – Scheme G5



- Evesham Road South West Relief Road (SWRR) Access Roundabout
- Revision to initial assumed layout to allow 2-lanes eastbound and westbound (Evesham Road)
- 2-lane exits on both Evesham Road arms
- Changes to SWRR arms, reduced lanes on exit from 2 to 1, with only 1 lane northbound and southbound



*Initial Layout:*

# Appendix B Detailed Junction Impact Analysis





# 'Do Something 2' Impact Analysis

Detailed summary of the impact following inclusion of the additional highway schemes required alongside the 'Golf' Scenario



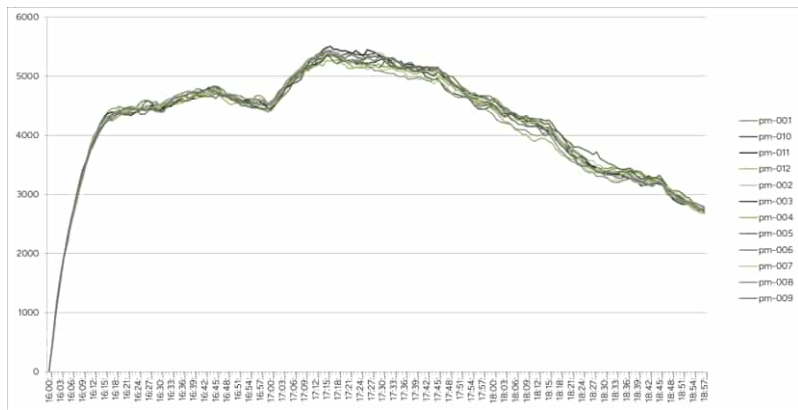
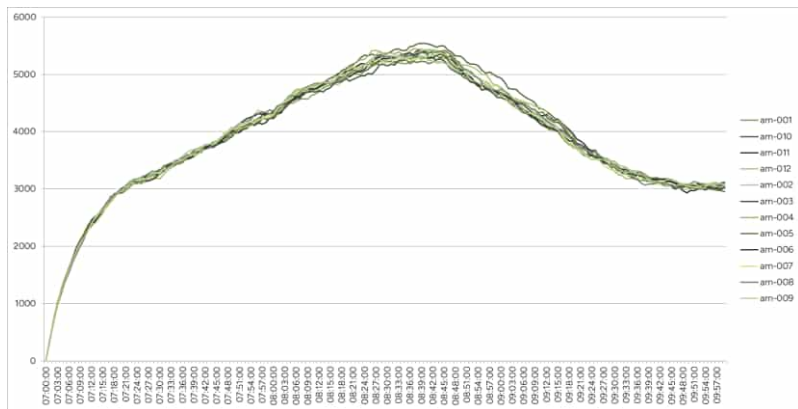
# Scenarios

- 2050 SuAWA Reference Case
  - Forecast scenario, inclusive of committed development and infrastructure
- 2050 SuAWA STA Do Nothing – Foxtrot
  - Inclusive of STA development and associated access strategy only ('Foxtrot' scenario) – No highway mitigation or SWRR
- 2050 SuAWA STA Do Something – Foxtrot
  - Above inclusive of mode shift, SWRR and original 'Foxtrot' highway mitigation package
- 2050 SuAWA STA Do Something – Golf
  - Above with revised SWLP development strategy ('Golf Scenario') – Includes extended SG19 link road to Wellesbourne Road
- 2050 SuAWA STA Do Something 2 – Golf
  - Above inclusive of further highway mitigation schemes

*\*All scenarios reported within this stage of the assessment include the removal of the priority constraint at M40 Junction 15*



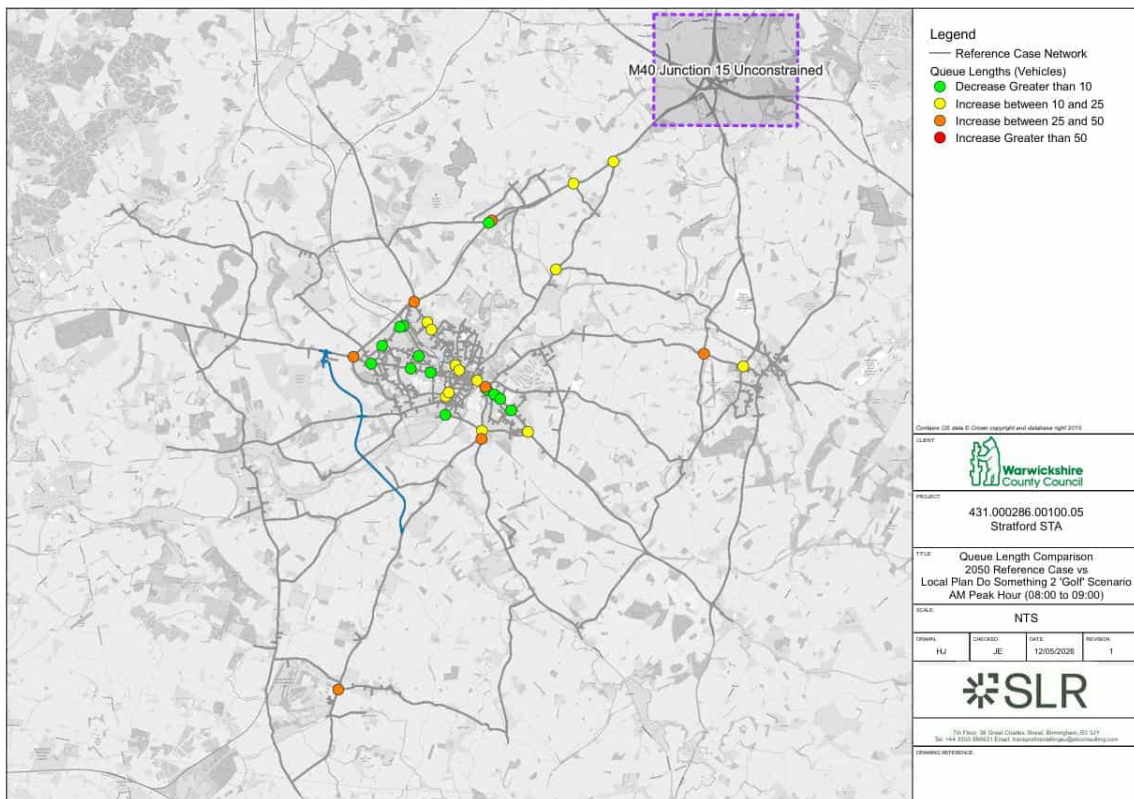
# “Do Something 2 – Golf” Scenario – Vehicle Profile



- High stability within network across the AM and PM period periods
- Vehicle profile presents the expected pattern over each period, with little variance between runs



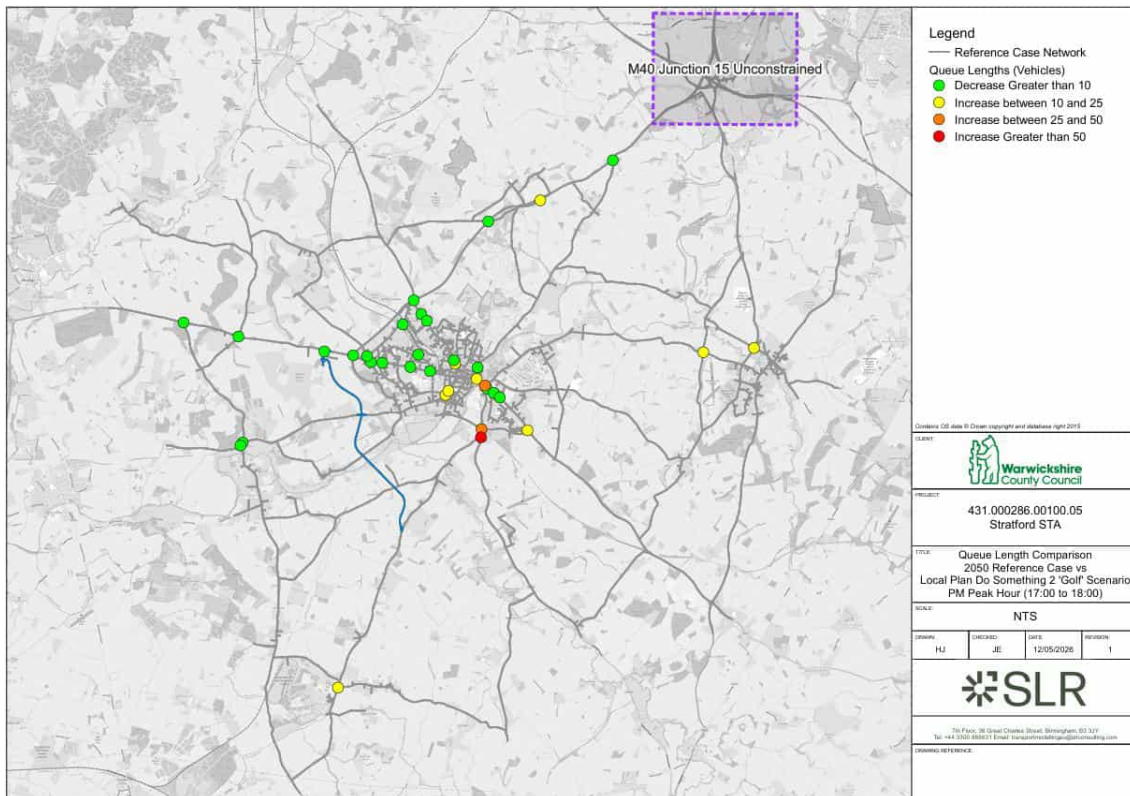
# 'Do Something 2' Scenario – Queue Impacts



- Comparison of final reported 'DS2' queueing levels with benchmark 2050 Reference Case Scenario
- AM Peak Hour
- Some medium impacts reported at junctions where schemes previously adopted (Bishopton, Wildmoor and Clopton Bridge / Tiddington Road), despite overall improvement, with an increase on one previously uncongested approach.



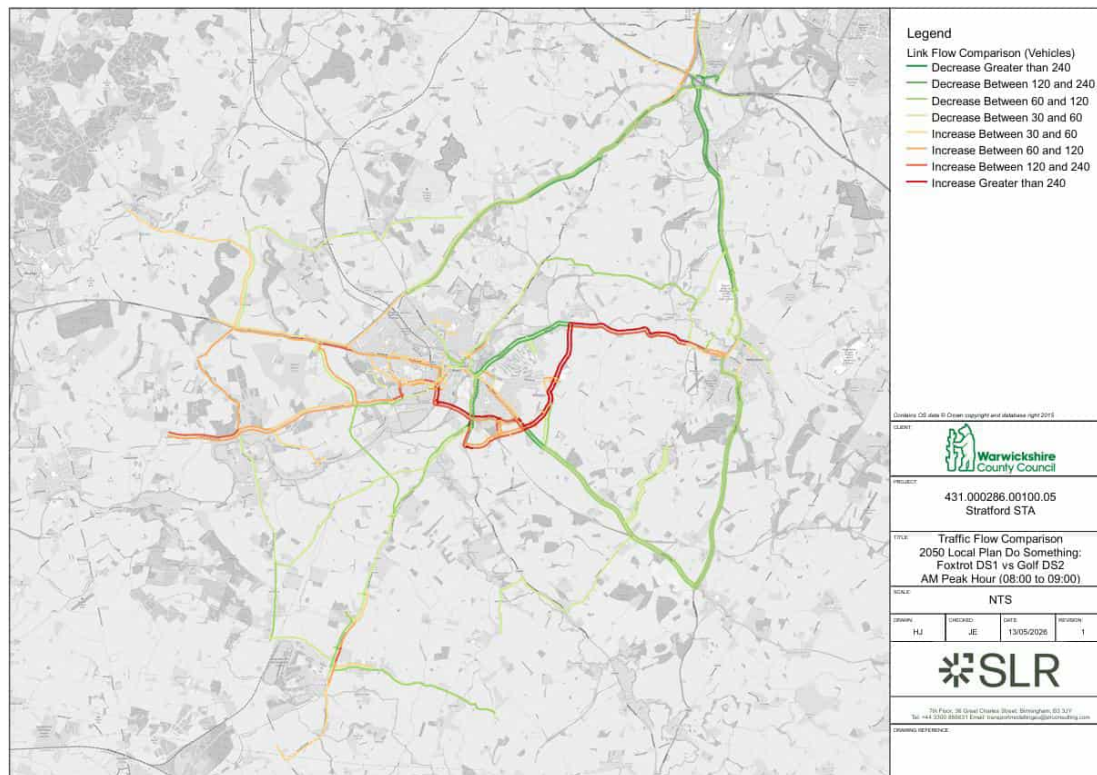
# 'Do Something 2' Scenario – Queue Impacts



- Comparison of final reported 'DS2' queueing levels with benchmark 2050 Reference Case Scenario
- PM Peak Hour
- Only remaining severe impact (>50 vehicle increase) at the Shipston Road / Clifford Lane junction – northbound approach
- Improvements across the network including east of the A46 SWRR access (lower queues at Wildmoor and A422 corridor) following addition of signalisation scheme



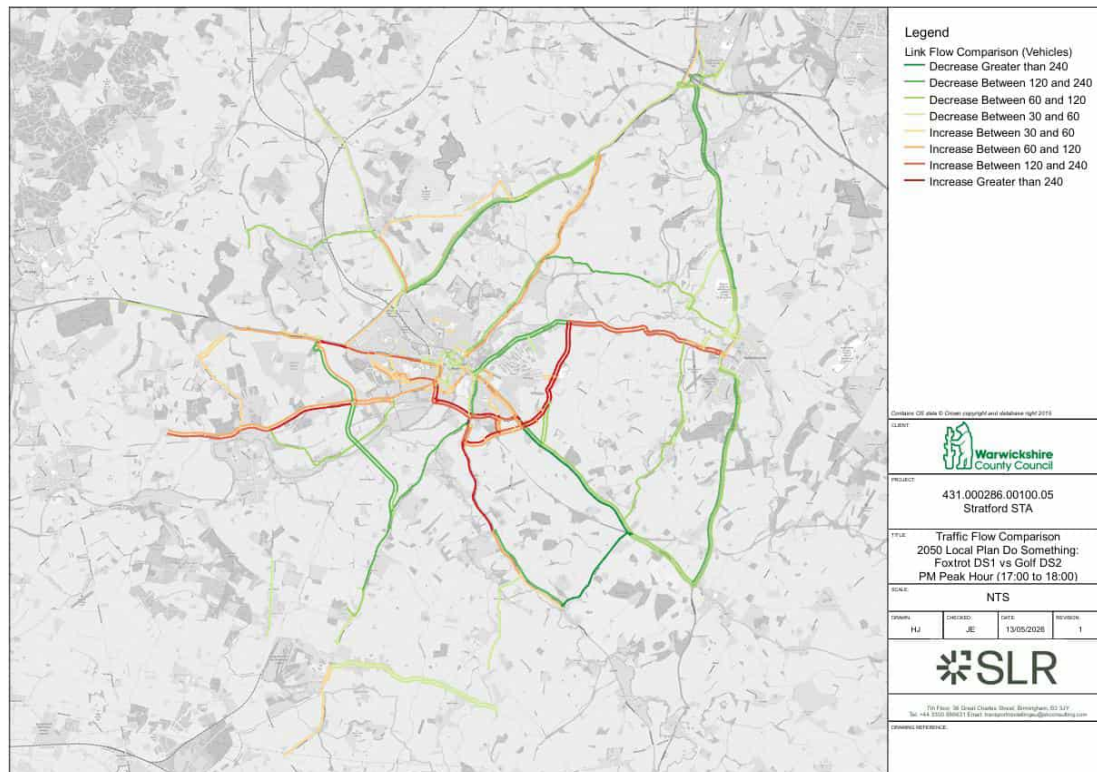
# 'Do Something 2' Scenario – Flow Reassignment



- Presents the changes in traffic flows between the original 'Fox Trot' Do Something scenario and the revised 'Golf' Do Something 2 scenario
- Presented to identify changes in demand across the SuAWA model network following revision of the development strategy and inclusion of additional schemes
- AM Peak Hour
- Large increase in demand around SG19 site on Wellesbourne Road, Trinity Way and Seven Meadows Road
- Increase along Evesham Road to/from Bidford-on-Avon (SG20)



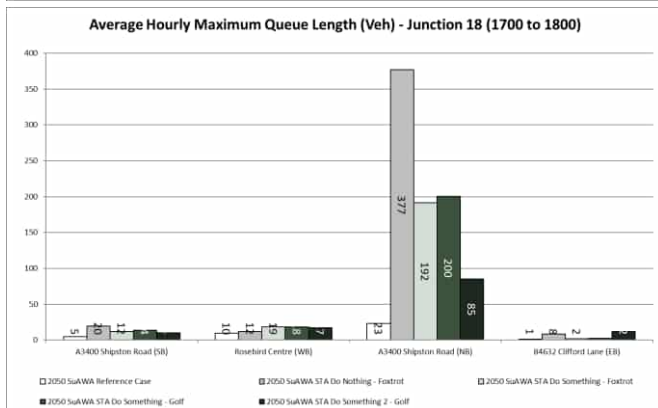
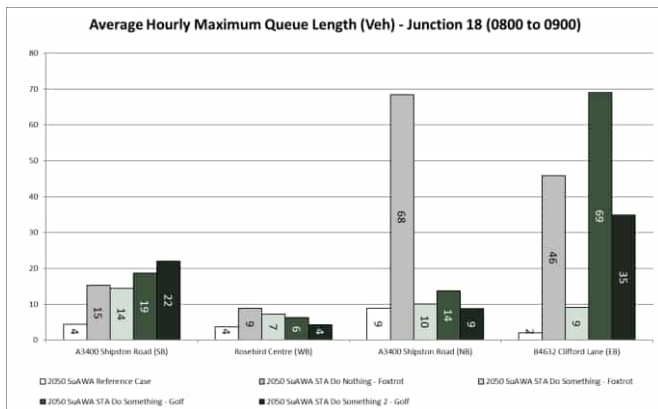
# 'Do Something 2' Scenario – Flow Reassignment



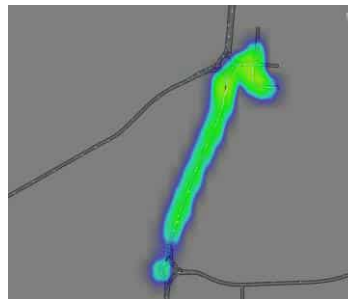
- PM Peak Hour
- Also shows increase in traffic flow due to higher throughput at previously constrained junctions:
  - Shipston Road NB into Clifford Lane roundabout
  - Evesham Road (along with associated reduction of reassignment through Luddington)
  - A46 WB towards SWRR access



# 'Do Something 2' Scenario Impacts (1/12)

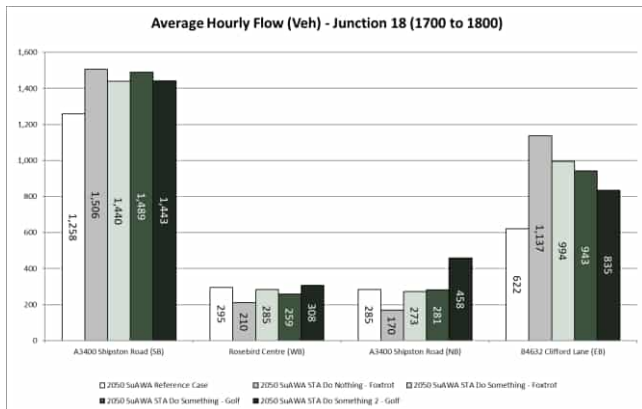
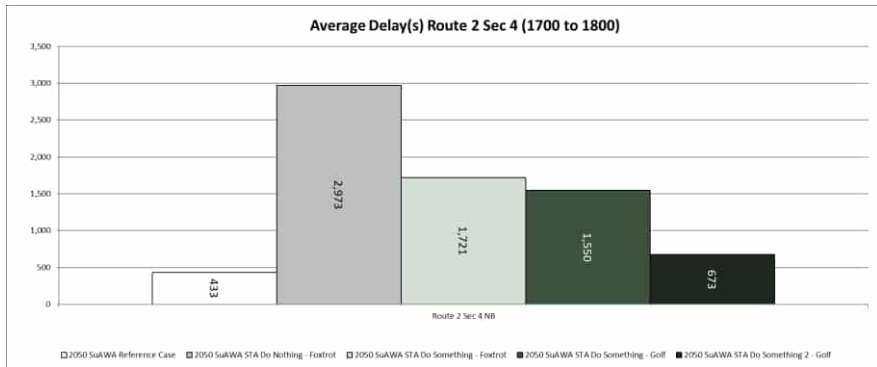


- Shipston Road / Clifford Lane / Waitrose
- Queue lengths on each approach
- New scheme results in major reduction in queue on northbound approach. Also provides improvement in terms of journey time and throughput (next slide)
- PM queue reduced by around 60% but still extends towards the proposed SG19 access (see below). No amendment made at this stage due to uncertainty around final location and form of the SG19 development
- AM queue improvement on Clifford Lane, over levels seen prior to scheme inclusion, resulting from upstream improvement on the northbound approach to the Shipston Road / Seven Meadows Road roundabout

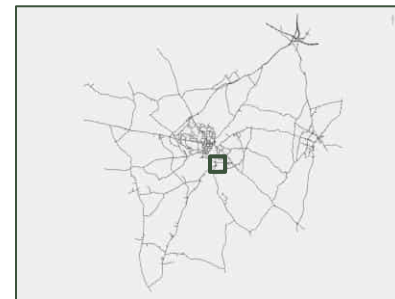




# 'Do Something 2' Scenario Impacts (2/12)

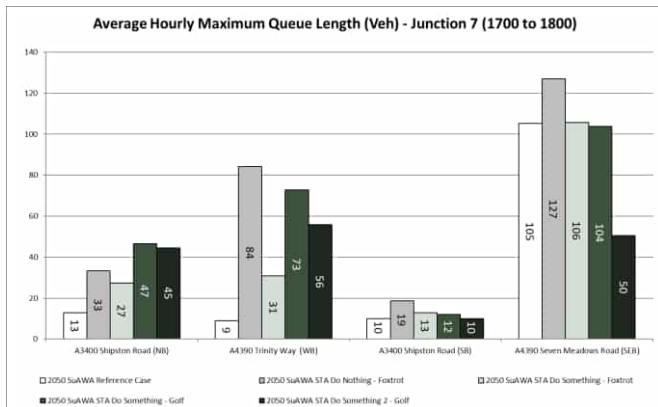
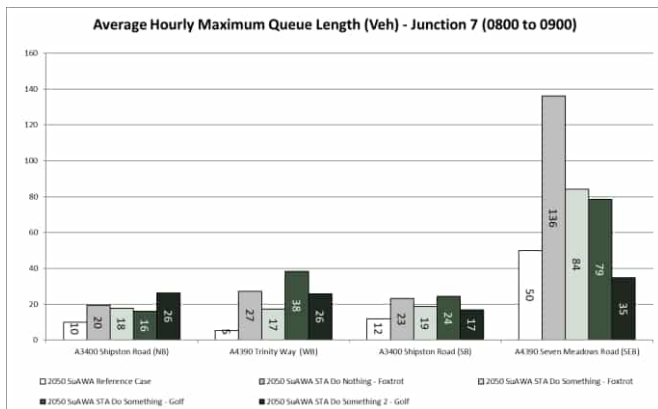


- Shipston Road / Clifford Lane / Waitrose
- First presents changes in journey time on the northbound approach to the junction, then the changes in throughput on each approach
- Both PM Peak Hour
- 50% (~17 minute) reduction in journey time compared to previously reported 'Foxtrot' scenario. Still 4 minute increase on Reference Case
- 70% increase in northbound throughput

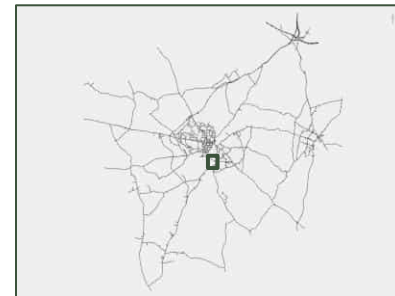
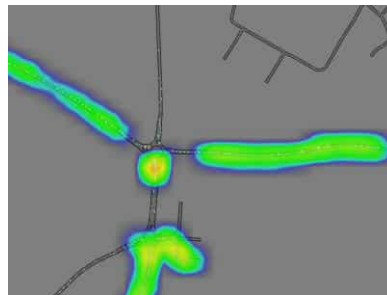




# 'Do Something 2' Scenario Impacts (3/12)

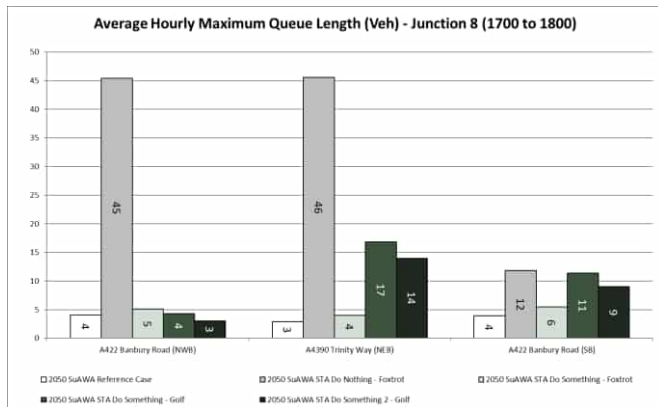
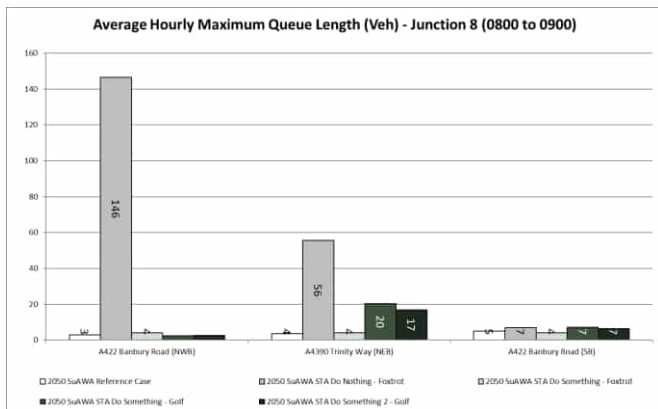


- Shipston Road / Seven Meadows Road / Trinity Way
- Queue lengths on each approach
- Targeted scheme applied to reduce queueing on Seven Meadows Road
- Also reduces queueing levels on Trinity Way, but still represents an increase compared to Reference Case and 'Foxtrot' scenario (PM shown below)
- Northbound approach queue increase in AM due to removal of left turn slip at upstream Clifford Lane roundabout. Analysis of queue lengths at that roundabout (shown previously) revealed major decrease in queueing

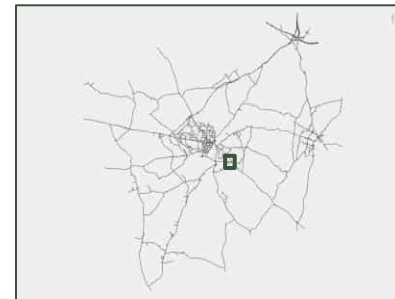
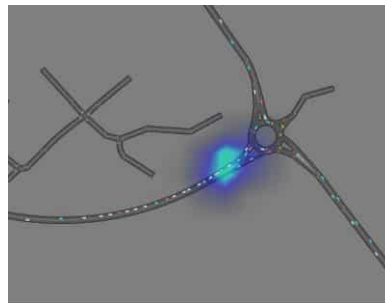




# 'Do Something 2' Scenario Impacts (4/12)

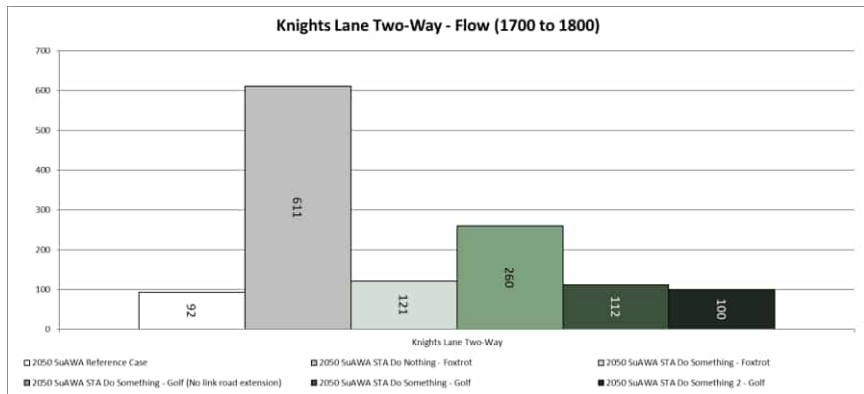
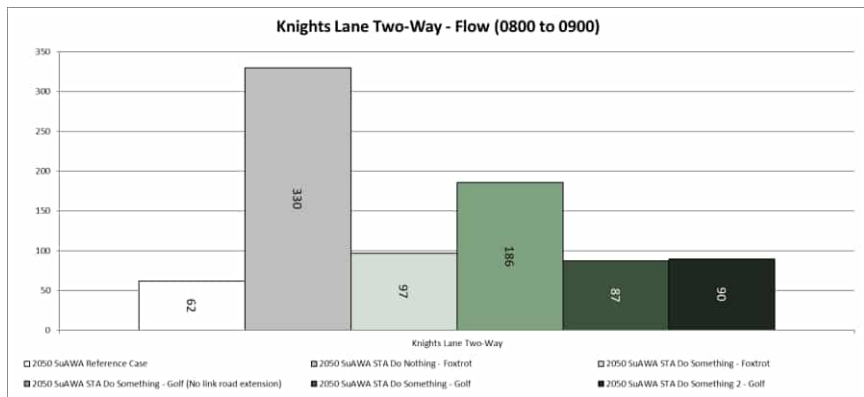


- Banbury Road / Trinity Way
- Queue lengths on each approach
- Increase in demand at roundabout within 'Golf' scenario, resulting in queueing on Trinity Road approach (see below)
- May be addressed during detailed planning stage for SG19 but not considered a major issue in this STA, as the queue does not extend beyond an adjacent roundabout

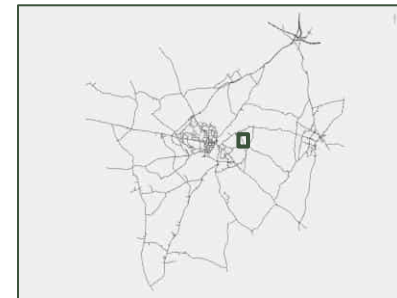




# 'Do Something 2' Scenario Impacts (5/12)

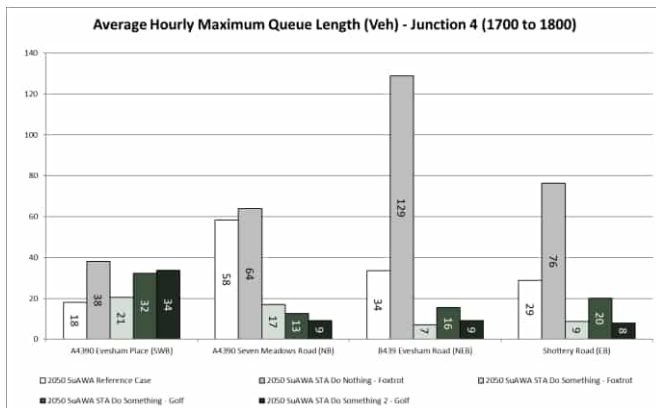
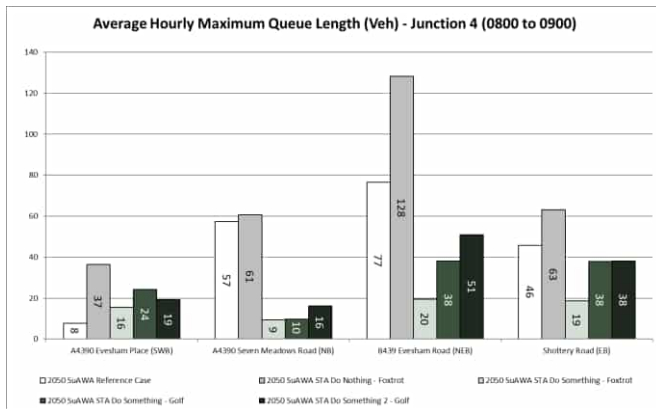


- Two-way vehicle flow on Knights Lane
- 'Golf' scenario without extended link road, to Wellesbourne Road, added for this comparison
- Over 100% increase in flow along this road if SG19 is delivered without the extended link road
- Current layout of Knights Lane not suitable to accommodate large increase (see below)
- Concluded that extended SG19 link road, upgrading the existing Pimlico Road, is essential for delivery of revised SWLP strategy

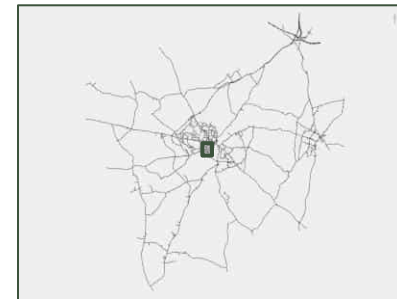




# 'Do Something 2' Scenario Impacts (6/12)

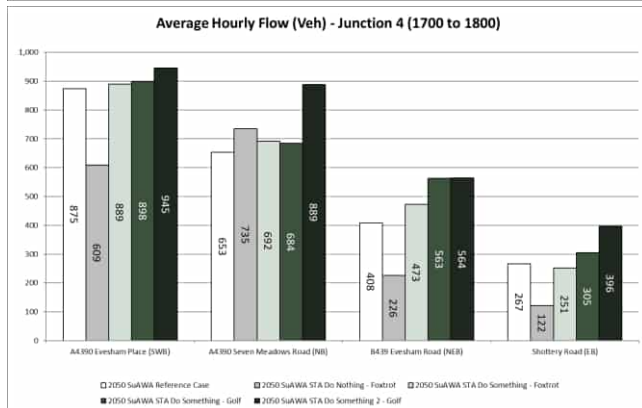
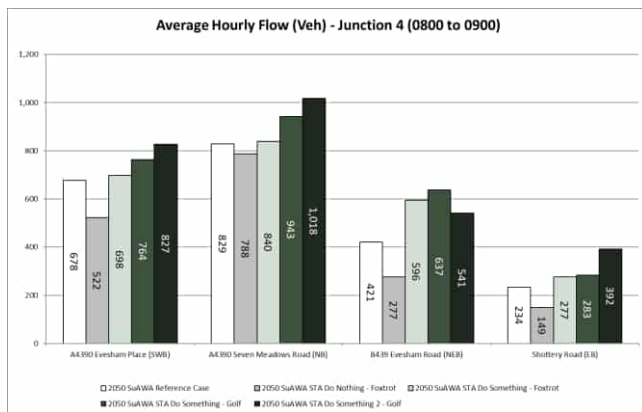


- A4390 Evesham Place / Evesham Road / Seven Meadows Road Roundabout
- Queue lengths on each approach
- No notable impact on queue lengths with and without the revised scheme
- Does result in major throughput increase, particularly from Seven Meadows Road (next slide)

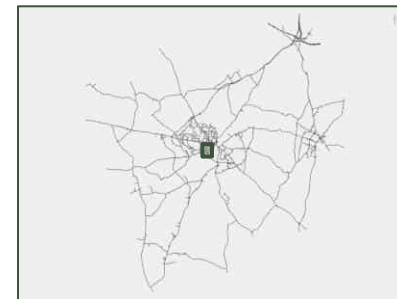




# 'Do Something 2' Scenario Impacts (7/12)

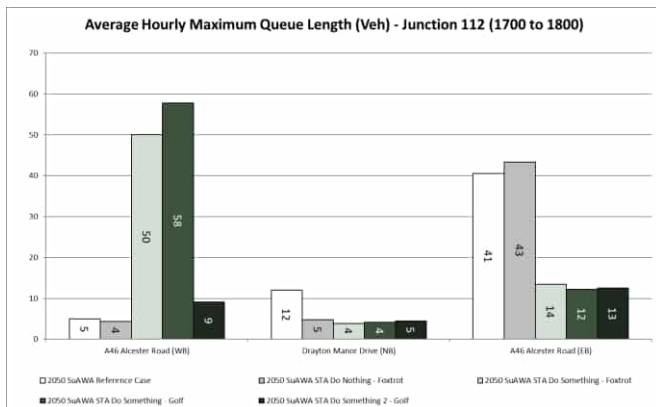
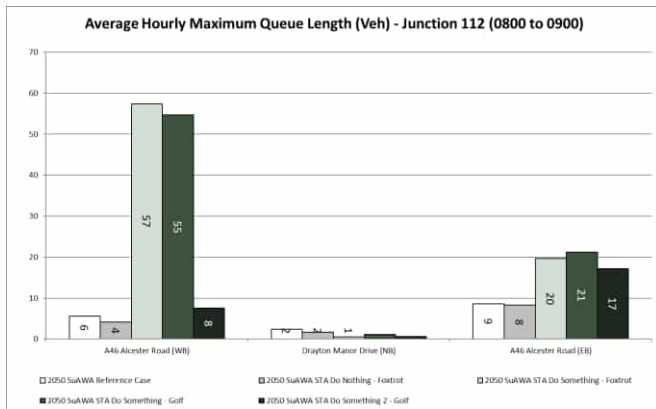


- A4390 Evesham Place / Evesham Road / Seven Meadows Road Roundabout
- Throughput on each approach
- Increase in throughput from Seven Meadows Road approach, following delivery of schemes at the Shipston Road roundabout
- Widening scheme at this junction results in slight throughput increase from Evesham Place (southwestbound)

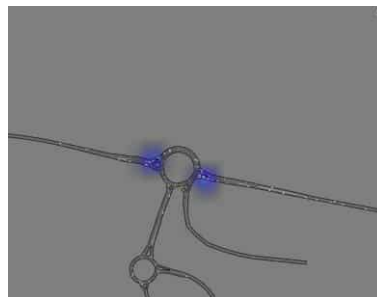




# 'Do Something 2' Scenario Impacts (8/12)

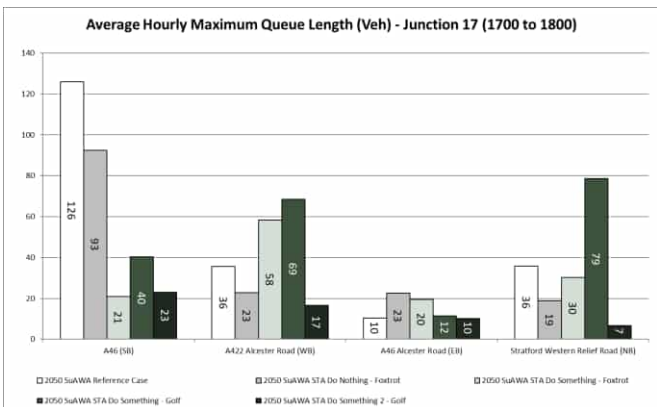
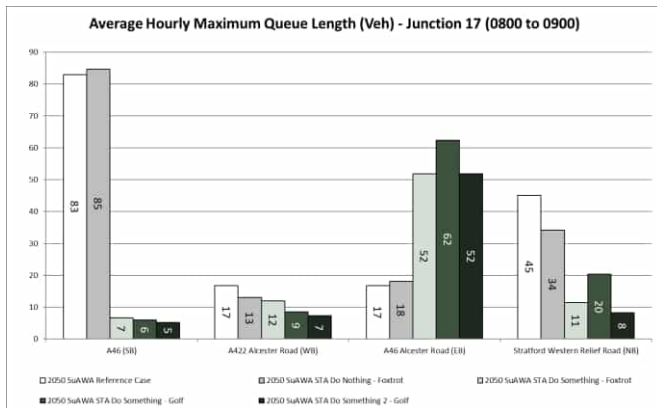


- A46 South West Relief Road (SWRR) access roundabout
- Queue lengths on each approach
- Partial signalisation of junction (westbound approach) significantly reduces queue and prevents previously observed interaction with Wildmoor roundabout (next slide)

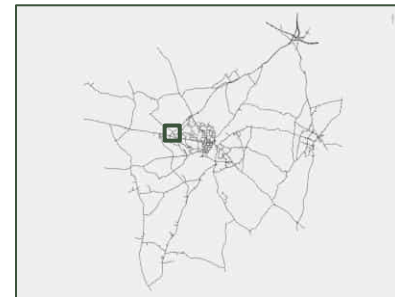
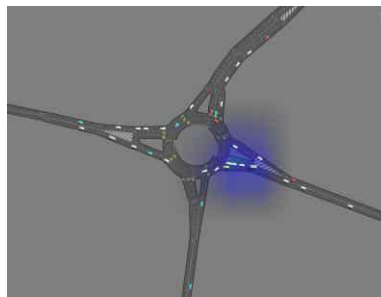




# 'Do Something 2' Scenario Impacts (9/12)

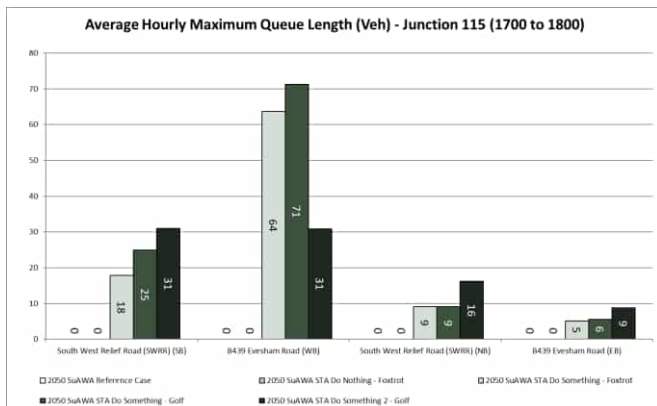
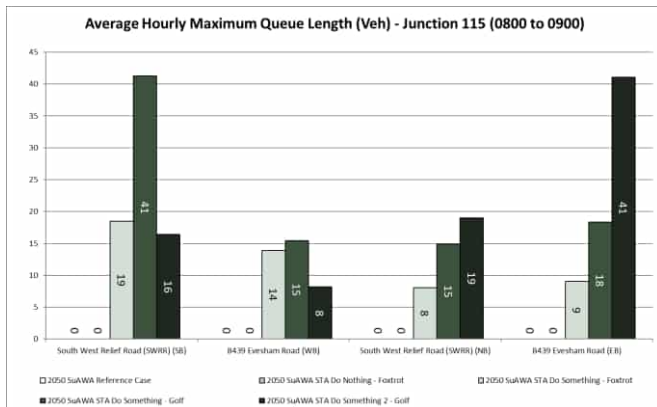


- A46 / A422 Alcester Road / West of Shottery Relief Road (Wildmoor Roundabout)
- Queue lengths on each approach
- Addition of signalisation at adjacent A46 / SWRR (previous slide) prevents queue extending through Wildmoor, significantly reducing final queuing levels particularly on A422 Alcester Road and Shottery Relief Road approaches

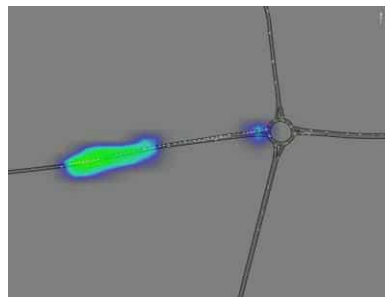




# 'Do Something 2' Scenario Impacts (10/12)

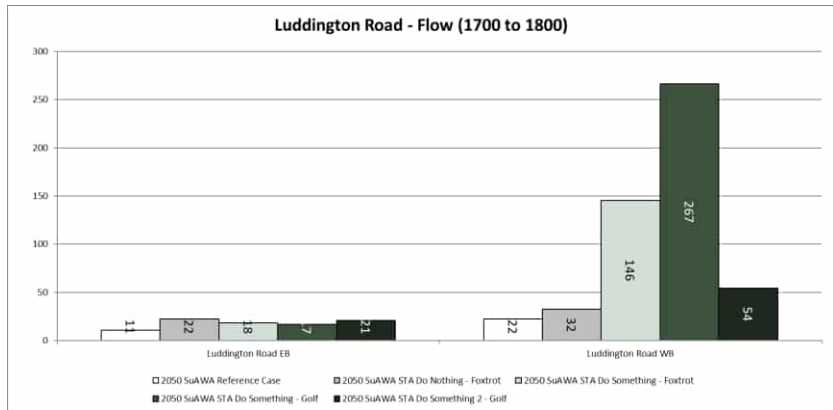
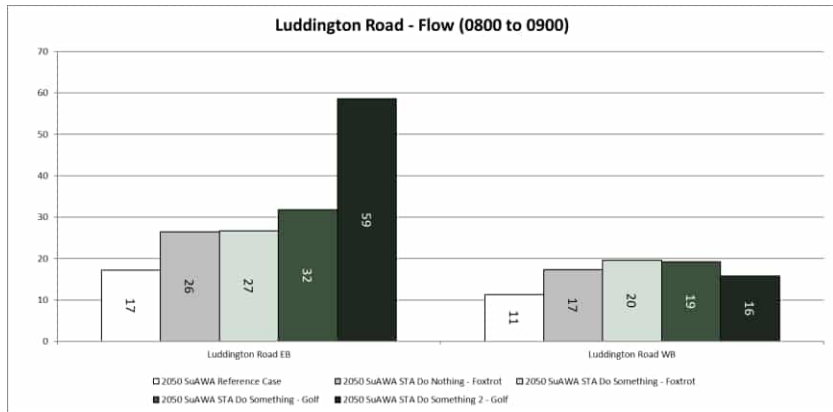


- Evesham Road South West Relief Road (SWRR) access roundabout
- Queue lengths on each approach
- Revision to proposed layout at junction applied to reduce queueing on westbound approach (PM)
- Westbound improved, with resulting reassignment through Luddington reduced (next slide)
- Residual impact on eastbound approach, despite similar widening applied (see below)

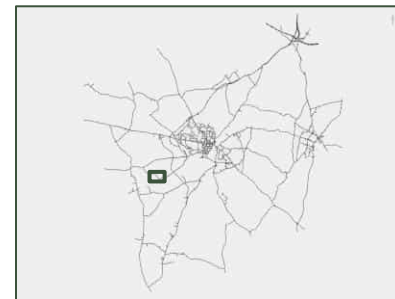




# 'Do Something 2' Scenario Impacts (11/12)

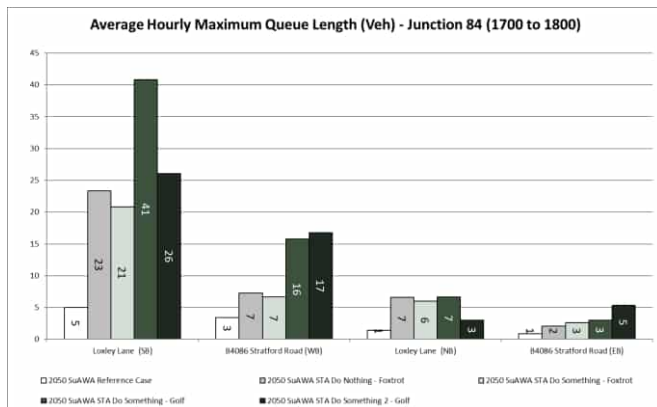
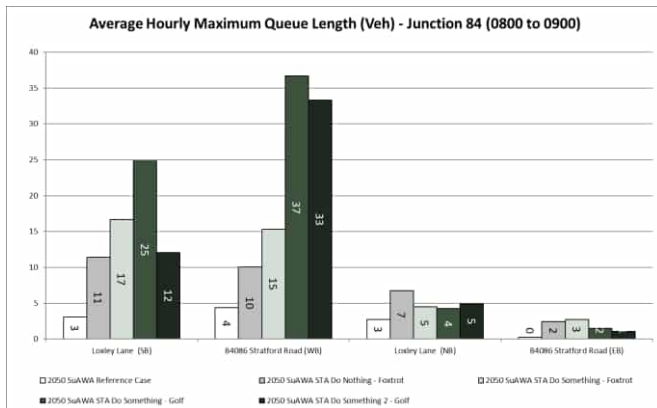


- Traffic flow through Luddington
- Reduction in queueing/delay at the Evesham Road SWRR access significantly reduces the reassignment through Luddington during the PM peak hour
- Residual eastbound impact at the same junction (previous slide) causes a smaller amount of reassignment to occur within the AM peak hour.





# 'Do Something 2' Scenario Impacts (12/12)



- B4086 Stratford Road / Loxley Lane
- Queue lengths on each approach
- Medium impact shown in comparison of revised 'Golf' Local Plan scenario to Reference Case
- Increase in queueing caused by increase in traffic flow along Stratford Road, as shown in flow comparison figures in earlier slides.
- Longer queues on southbound approach (see below) and westbound approach (right turners)
- Further stages may consider scheme (signalisation and/or ghost island) to mitigate impact, if high flow on Stratford Road remains.

