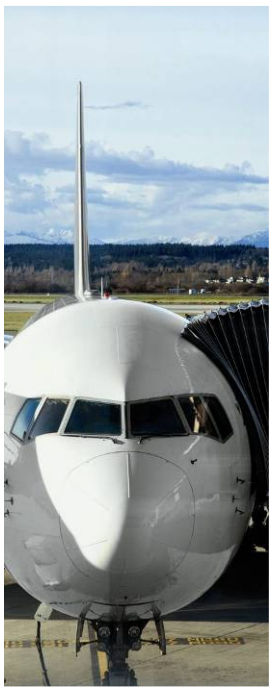


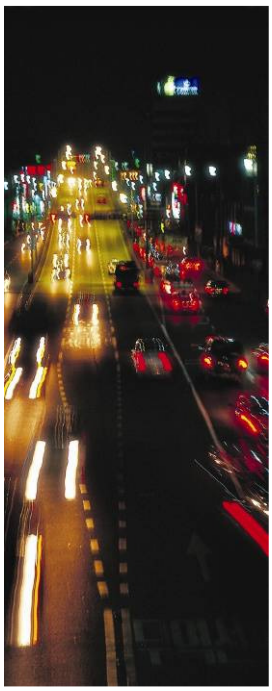

Solihull Core Strategy - PRISM Modelling

Prepared on behalf of SMBC and the Highways Agency

March 2011

Solihull MBC

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Executive Summary

The emerging Solihull Core Strategy will form the main Local Development Framework (LDF) document, which in turn will replace the Unitary Development Plan (UDP) as the main planning framework for the Borough. The Core Strategy sets out the long-term vision of how the Borough will develop, and will shape the provision of housing and employment growth in Solihull.

The aim of this report is to outline the impact of Solihull's Core Strategy on the Solihull road network and the M42 corridor, as forecasted using PRISM (Policy Responsive Integrated Strategic Model).

PRISM is a state-of-the-art disaggregate demand model based upon highly detailed zoning, networks and travel behaviour focusing on the individual traveller. The model has been used extensively in the West Midlands region for similar studies including the Black Country Core Strategy and the Regional Spatial Strategy Evidence base.

The planning data inputs to PRISM have been updated to incorporate the Solihull Core Strategy housing and commercial development growth, and full demand model runs have been undertaken. The Strategy's housing and employment forecasts have been implemented in the 2016 and 2026 PRISM forecasts. The PRISM networks used as the basis for this work are the BB3-MM Do-Something networks. All transport schemes considered to be reasonably expected are included.

The growth in housing and employment in Solihull, as driven by the Core Strategy, is forecast to increase traffic volume on the Solihull and strategic road network, most notably on the M42 corridor and the Solihull Town Centre junctions. The PRISM demand model runs have illustrated that the Core Strategy is forecast to increase pressure on a number of junctions in Solihull Town Centre and junctions 4 to 6 of the M42, with motorway journey times increasing by up to 50%. Junction 6 of the M42 is congested in the 2006 base model, with congestion forecast to become more severe in future years, with journey times on and off the M42 at this junction increasing by up to 80%.

1. Introduction

1.1 The Core Strategy

Mott MacDonald was commissioned by the Highways Agency and Solihull MBC to assess the impacts of the Core Strategy growth on the local and strategic highway network. Stage 1 of this study has already reported and considered the existing transport and land-use planning evidence base. Stage 2 of the study was commissioned in December to consider these impacts further by way of modelling to be undertaken in PRISM.

From 2011 the Solihull Local Development Framework (LDF) will replace the Unitary Development Plan (UDP) as the main planning framework for the Borough. The emerging Core Strategy will form the main LDF document.

Transport is a fundamental consideration of the Solihull LDF Core Strategy and an assessment of potential transport impacts is critical to enabling an informed response to spatial proposals. The movement of people and goods is an essential function of established communities and proposed development sites. Therefore, transport and infrastructure provision, and future plans and demand, form a key part of the evidence base required.

1.2 PRISM Assessment

The stage 2 PRISM assessment was commissioned to incorporate the emerging Core Strategy development growth into PRISM planning data, and undertake full demand model runs for forecast years 2016 and 2026. This report outlines the methodology used to incorporate the Core Strategy, and analyses the impacts of the Core Strategy on the Solihull strategic road network focusing on the M42 corridor. The assessment covers the entire Borough; however it has a particular focus on the M42 corridor (incorporating Solihull Town Centre).

This report is structured as follows:

- Section 2 outlines the methodology used to update PRISM planning data;
- Section 3 provides an analysis of the PRISM outputs and identifies hotspots; and
- Section 4 concludes this report.

2. PRISM Methodology

2.1 PRISM – An Introduction

PRISM (Policy Responsive Integrated Strategic Model) is a WebTAG-compliant multi-modal variable demand model of the West Midlands strategic transport network. PRISM encompasses both the highway and public transport systems in the West Midlands, linked by a state-of-the-art disaggregate demand model. The PRISM travel demand model includes the following demand responses:

- change in trip making/trip frequency;
- change in mode;
- change of destination/trip distribution;
- change in time of travel; and
- change in route.

The models' primary study area is the seven metropolitan districts, including Solihull MBC.

PRISM currently models the AM (07:00 – 09:30) and PM (16:30 – 19:00) peak periods for both highway and public transport, and the inter-peak (09:30 – 16:30) and off-peak (19:00 – 07:00) periods for highway only.

The model has been developed for the base year 2006 and provides forecasts for the years 2016 and 2026.

2.2 Reference Scenario - Birmingham Box 3-Managed Motorways

2.2.1 Network Assumptions

The networks used in assessing Solihull's Core Strategy are those used in the Birmingham Box 3-Managed Motorways (BB3-MM) Do-Something (DS) scenarios. The BB3-MM study modelled the impact of the managed motorway scheme between junctions 5 to 8 of the M6. These networks include those transport schemes that are reasonably expected to be delivered by the respective forecast years (2016 and 2026) including Managed Motorway between junctions 5 and 8 of the M6. These network schemes were workshopped with Solihull MBC in January 2011. The workshop concluded that the schemes (as listed in Table 2.1) remain valid and should be included in the model run.

Table 2.1: Transport Schemes Included in PRISM

Fully approved local authority major schemes	Project sponsor	Delivery year
A38 Northfield Regeneration	Birmingham CC	2008/09
Coventry Bus Network (Primelines)	Coventry CC	2008/09
Hagley Road Bus Showcase	Birmingham CC	2010/11
Outer Circle/Radial Routes Showcase	Birmingham CC	2007/08
Cradley Heath Town Centre Strategy	Sandwell MBC	2006/07
Red Routes Package 1	CEPOG/Wolverhampton CC	2010/11
Wolverhampton Centre Access Interchange	Wolverhampton CC	2011/12
Selly Oak New Road	Birmingham CC	2011/12
Walsall Town Centre Package	Walsall MBC	2009/10
Coleshill Multi Modal Interchange	Warwickshire CC	2006/07
Owen Street Level Crossing Relief Road	Sandwell MBC	2010/11
Brierley Hill Sustainable Access Network	Dudley MBC	2009/10
West Midlands UTC	CEPOG/Wolverhampton CC	2012/13
Birmingham New Street Station	Birmingham CC	2013/14
St Chads	Birmingham CC	2008/09
M40 Junction 15 (Longbridge Roundabout)	Highway Agency	
Hard Shoulder Running M42 Junctions 4-6	Highway Agency	2008/09
Hard Shoulder Running M6 Junctions 4-5	Highway Agency	2009
Controlled Motorway M40 Junction 16 to J3A M42	Highway Agency	
Hard Shoulder Running M6 Junction 8-10a	Highway Agency	
Hard Shoulder Running M5 Junction 4a-6	Highway Agency	
Hard Shoulder Running M6 Junction 2-4	Highway Agency	
Hard Shoulder Running M6 Junction 5-8	Highway Agency	2015
Birmingham International Airport Access Strategy	Birmingham Inter' Airport	2009 ongoing
West Midlands Rail Development Plan Proposals	National Rail	2009 ongoing
West Midlands LTP Rail Enhancements	West Midlands LTP	Ongoing
Birmingham International Airport / NEC Access Scheme (ANITA)	Birmingham Inter' Airport	Complete

2.2.2 *Planning Data*

The planning data used to assess Solihull's Core Strategy growth in PRISM is an adjustment of the RSS2-based demographics used as input to the PRISM BB3-MM appraisal. The adjustment is based on the housing and commercial development information provided by SMBC. The growth proposals have been workshopped with SMBC, and SMBC have provided detailed information on which PRISM zones each growth assumption should be allocated to.

2.2.3 TEMPRO

In order to maintain consistency with other appraisals (including RSS2 and the Black Country Joint Core Strategy (BCJCS)), the BB3-MM planning data was constrained to TEMPRO 5.4 forecasts at the district level.

TEMPRO is the program used to access National Trip End Model (NTEM) planning data. NTEM data provides a set of predictions of growth in travel demand at the level of trip ends. It is used in regional and local models as a nationally-consistent benchmark distribution of growth in planning data and trip ends.

For the assessment of the Core Strategy, Solihull data has not been constrained to TEMPRO 5.4. This is because the aim of the PRISM appraisal is to assess Core Strategy growth impacts rather than a redistribution effect.

Demographic data for the non-Solihull zones, including employment, population and households, remain constrained to TEMPRO.

2.3 Methodology for assessing Solihull's Core Strategy

2.3.1 PRISM Planning Data

2.3.1.1 Household Data

The net housing capacity to be delivered between 2010 and 2026 for each Solihull PRISM zone has been provided by Solihull MBC, see Appendix A. In previous versions of PRISM, RSS2 housing projections have been used to derive housing forecasts. For this study, RSS2 growth between the 2006 base and each forecast year has been replaced with Core Strategy housing growth. In order to calculate housing growth between the 2006 PRISM base year and each forecast year, it is necessary to estimate the number of dwellings to be delivered between 2006 and 2010. The number of additional dwellings between 2006 and 2010 has been assumed to be a relative portion (4:6) of those to be delivered between 2010 and 2016. For example as the Core Strategy proposes that six dwellings are to be delivered in zone 5062 between 2010 and 2016 (a rate of one dwelling per year), it is assumed that four dwellings would have been delivered between 2006 and 2010. So for the period 2006 – 2016, a total of 10 dwellings are forecast to be delivered.

The new Core Strategy housing growth, as outlined above, has been applied to 2006 Base year housing data to calculate 2016 and 2026 housing forecasts. The total number of households for each Solihull PRISM zone for 2016 and 2026 Core Strategy forecasts are provided in Table B.1 of Appendix B. The number of total households to be delivered between the 2006 base and each forecast year in PRISM is higher than those figures provided by SMBC. This is because of the additional housing growth between 2006 and 2010 that has been assumed in order to calculate a robust forecast.

2.3.1.2 Employment Data

The proposed commercial development for Solihull has been provided by Solihull MBC. It is assumed that all proposed commercial developments will be in place by 2026. In previous versions of PRISM, 2016 forecast employment growth from 2006 has been assumed to be a portion of the 2026 forecast growth. This is because in previous appraisals using PRISM, the amount of commercial developments to be in place by 2016 has not been known, and so the commercial growth for 2016 has been constrained to forecast TEMPRO 5.4 growth. For consistency this assumption has been retained to derive 2016 Core Strategy employment growth from 2006.

The process to calculate the PRISM 2026 Core Strategy employment data (jobs per PRISM zone) is as follows:

1. The Solihull zones to which changes to employment data is to be applied have been identified, referring to the proposed commercial development provided by SMBC, see Appendix A.
2. Existing employment density factors as used in the RSS2 reference case have been applied to the m^2 / ha of each proposed Core Strategy commercial development in order to forecast the number of jobs created for each PRISM zone. In the RSS2 appraisal, three separate employment density factors were derived for commercial development, one for retail and two factors for office; Office 1 and Office 2.
3. In order to assign the most appropriate office employment density factor to each development, the list of Office 2 schemes in the RSS2 reference case has been compared to the Core Strategy to find common developments. In the Core Strategy these common developments have been assigned the Office 2 employment density factor (which is around a third of that for the Office 1 density factor). All other office developments have been assigned the Office 1 employment density factor.
4. The growth in jobs from the 2006 base to the 2026 Core Strategy has been calculated.

5. The growth in jobs from the 2006 base to the 2026 RSS2 reference case (before constraining to TEMPRO) has been calculated.
6. The absolute difference between the 2026 RSS2 reference case (before constraining to TEMPRO) forecast growth and the 2026 Core Strategy forecast growth has been calculated.
7. This absolute difference in growth has then been applied to the final 2026 RSS2 reference case employment data (constrained to TEMPRO) to derive the 2026 Core Strategy employment.

In order to calculate the 2016 Core Strategy employment data, a portion of the absolute difference between 2026 RSS2 reference case growth and 2026 Core Strategy growth has then been applied to the constrained 2016 RSS2 reference employment data. The portion applied has been calculated from the RSS2 reference case 2016 and 2026 district TEMPRO employment targets. This method of calculating the number of jobs generated by a commercial developments floor space is consistent with other appraisals using PRISM, including BB3-MM and the BCJCS.

The total numbers of jobs for each Solihull PRISM zone for 2016 and 2026 Core Strategy forecasts are provided in Table B.2 of Appendix B.

3. Analysis

3.1 PRISM Solihull Core Strategy

PRISM planning data inputs have been updated to incorporate Solihull's Core Strategy, as outlined in section 2. PRISM's full demand model has been run and the results for both 2016 and 2026 are summarised in this section.

3.1.1 Traffic Flows

Figures 3.1 and 3.2 show the forecast growth in traffic flow from the 2006 PRISM base year to the 2016 and 2026 Core Strategy scenarios for the AM peak.

In both cases, the plots show changes greater than +/- 5 vehicles. Red bars indicate that forecast traffic flow is higher in the Core Strategy scenario, and green bars indicate that forecast traffic flow is lower. The thickness of the bar indicates the magnitude of change; the thicker the bar, the greater the change.

Figure 3.1: Forecast Change in Traffic Flow: 2016 with CS v 2006 Base – AM Peak

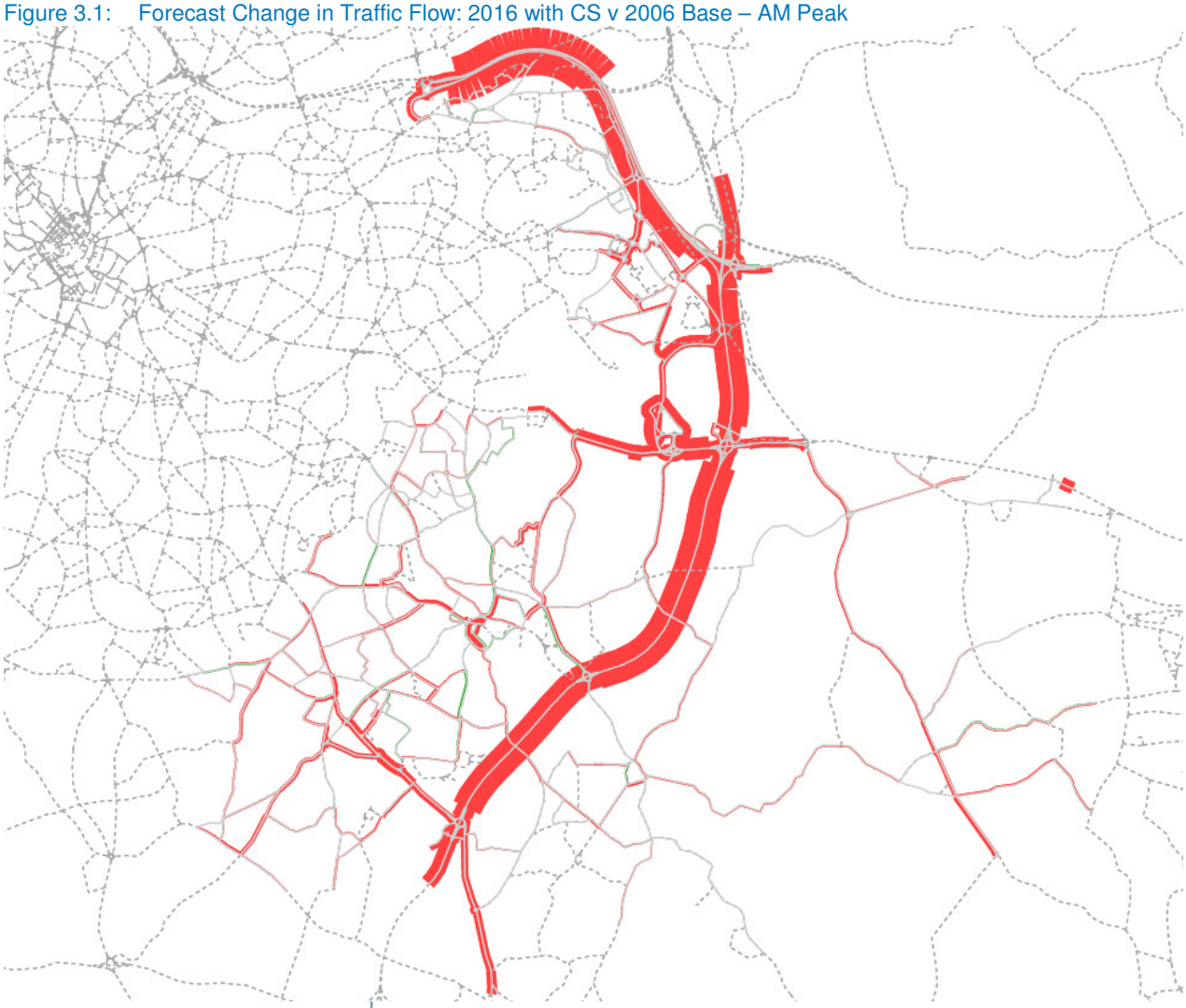

Figure 3.1 shows that the traffic flows are forecast to increase on the majority of the Solihull strategic road network, with the greatest increase on the M42. There are very few links for which traffic flow is forecast to decrease in the 2016 forecast compared to the 2006.

Figure 3.2: Forecast Change in Traffic Flow: 2026 with CS v 2006 Base – AM Peak

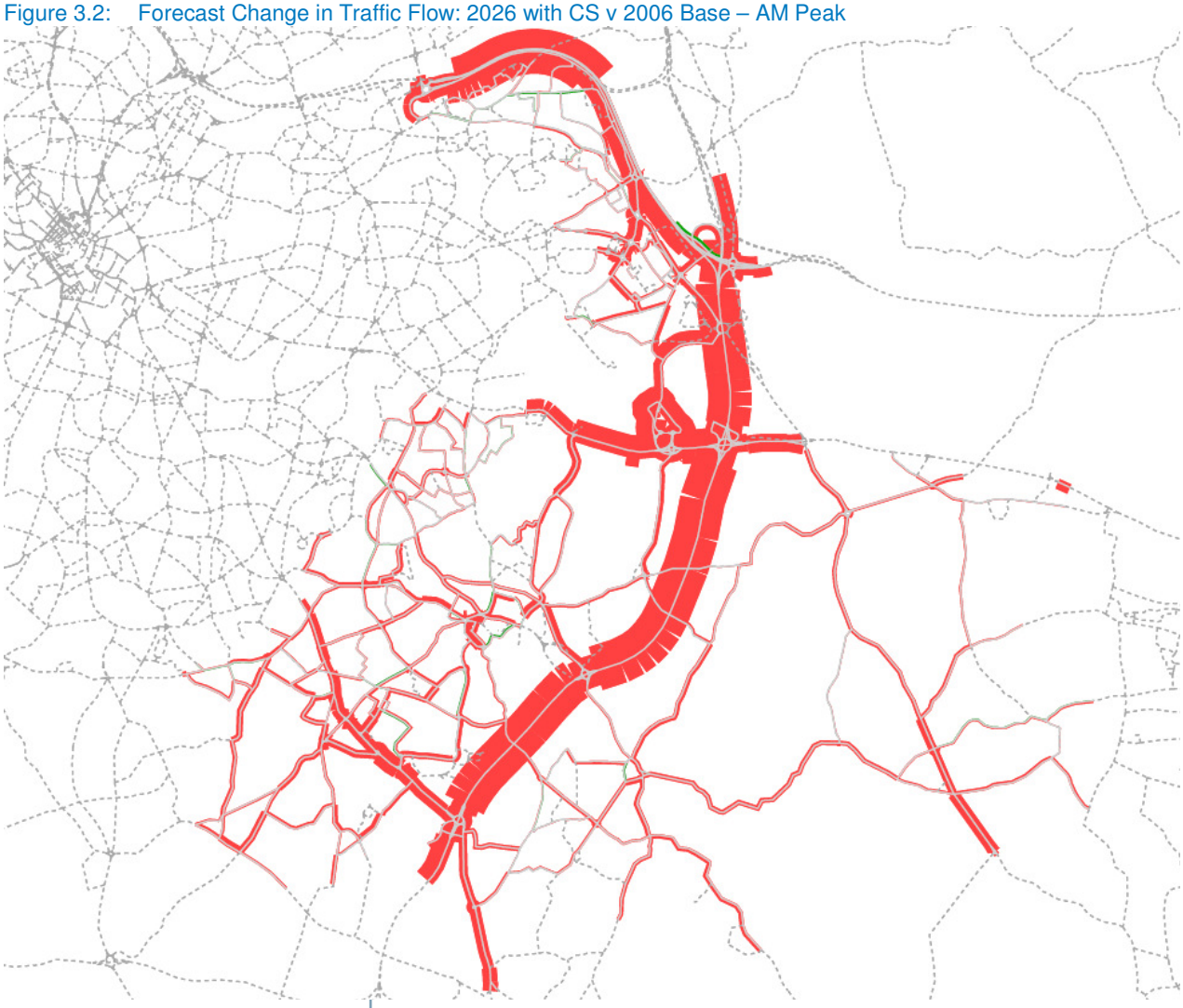

Figure 3.2 is similar to Figure 3.1, showing a forecast increase in traffic flows on the majority of the Solihull strategic road network in 2026. The greatest increase is forecast for the M42 and the A45. There are very few links for which traffic flow is forecast to decrease in the 2026 forecast compared to the 2006.

Table 3.1 shows a summary of the forecast change in traffic flow on the M42, in the 2026 with Core Strategy scenario compared to the 2006 Base for the AM peak.

Table 3.1: Summary of M42 Traffic Flows: 2026 Core Strategy v 2006 Base AM Peak

Junction	Direction	Movement	2006 Base	2026 Core Strategy	Change
J4	SB	On	935	778	-157
		Off	1093	2098	1005
		Through	4102	4642	540
	NB	On	986	1817	831
		Off	512	844	332
		Through	4369	5080	711
J5	SB	On	933	1416	483
		Off	1326	1726	400
		Through	4263	5324	1061
	NB	On	1217	1791	574
		Off	1222	1538	316
		Through	4132	5359	1227
J6	SB	On	1371	1767	396
		Off	1415	1869	454
		Through	4218	5283	1065
	NB	On	944	1431	487
		Off	1816	2500	684
		Through	3534	4650	1116
J7	SB	On	1341	1740	399
		Through	4292	5412	1120
	NB	Off	1095	1358	263
		Through	3384	4723	1339

Table 3.1 shows that overall traffic flow is forecast to increase on the M42 at all junctions in 2026 compared to the 2006 Base. This is due to the increase in the number of homes, population and employment in future forecasts. The Junction 4 southbound on slip is the only part of the M42 in Solihull where traffic flow is forecast to decrease. This forecast decrease is due to vehicles rerouting in the 2026 Core Strategy scenario, to avoid the M42 Junction 4. Instead of using this southbound on-slip, vehicles are forecast to re-route to either M40 Junction 16 or M42 Junction 3 and continue westbound on the M42.

3.1.2 Link Congestion

Figures 3.3 and 3.4 show the level of congestion on the Solihull road network in the AM peak in the 2006 Base and 2026 Core Strategy scenarios. The value plotted is the ratio of congested link time to free flow link time so that the greater the value, the greater the level of

congestion on that link. A ratio value of 1 indicates that the congested (modelled) time on the link is equal to the free flow time. A ratio value of 2 indicates that the congested time on the link is twice that of the free flow time and so on. A darker link denotes a greater level of forecast congestion. Please note that the congestion levels plotted do not include any junction delay, and display delay on links only.

Figure 3.3: 2006 Link Congestion: AM Peak

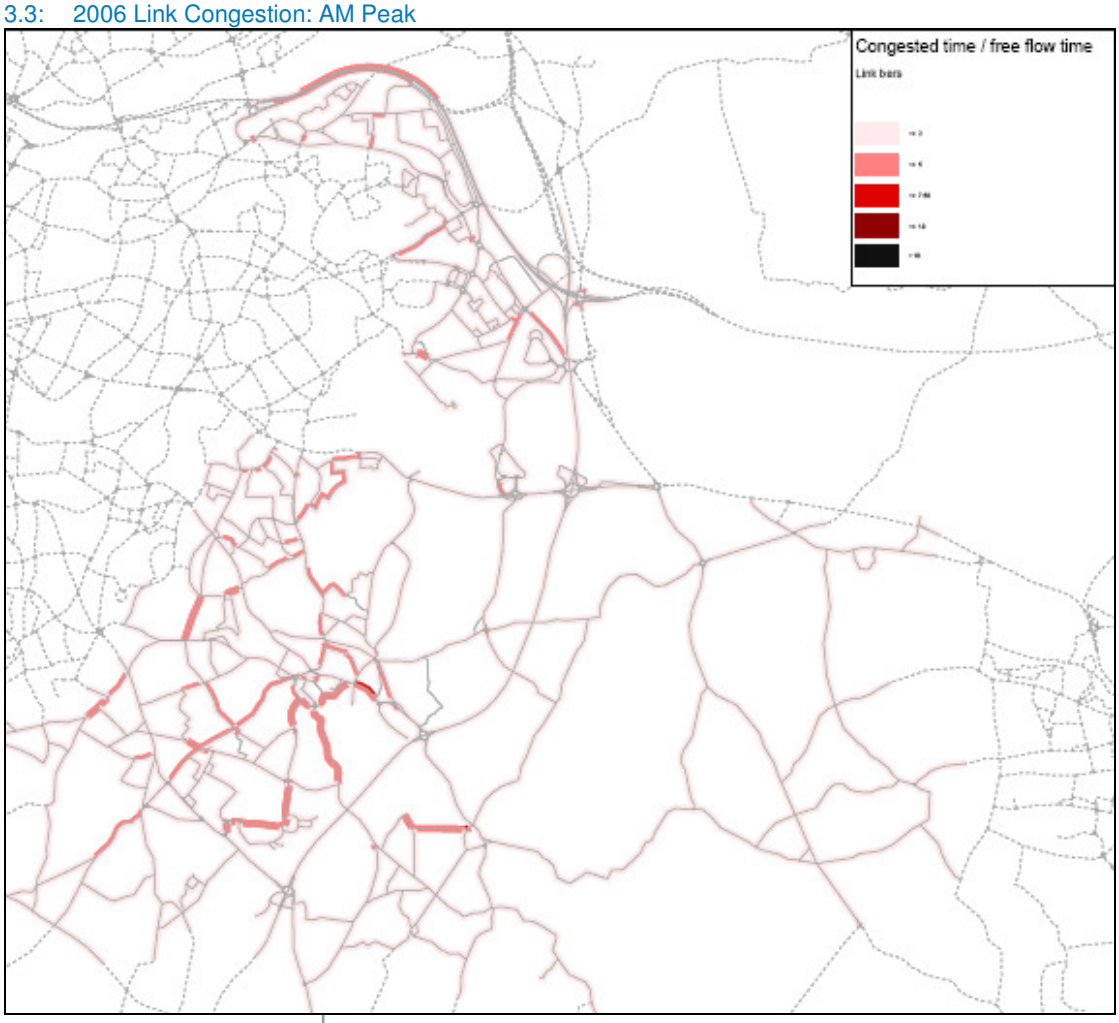

Figure 3.4: 2026 Core Strategy Link Congestion: AM Peak

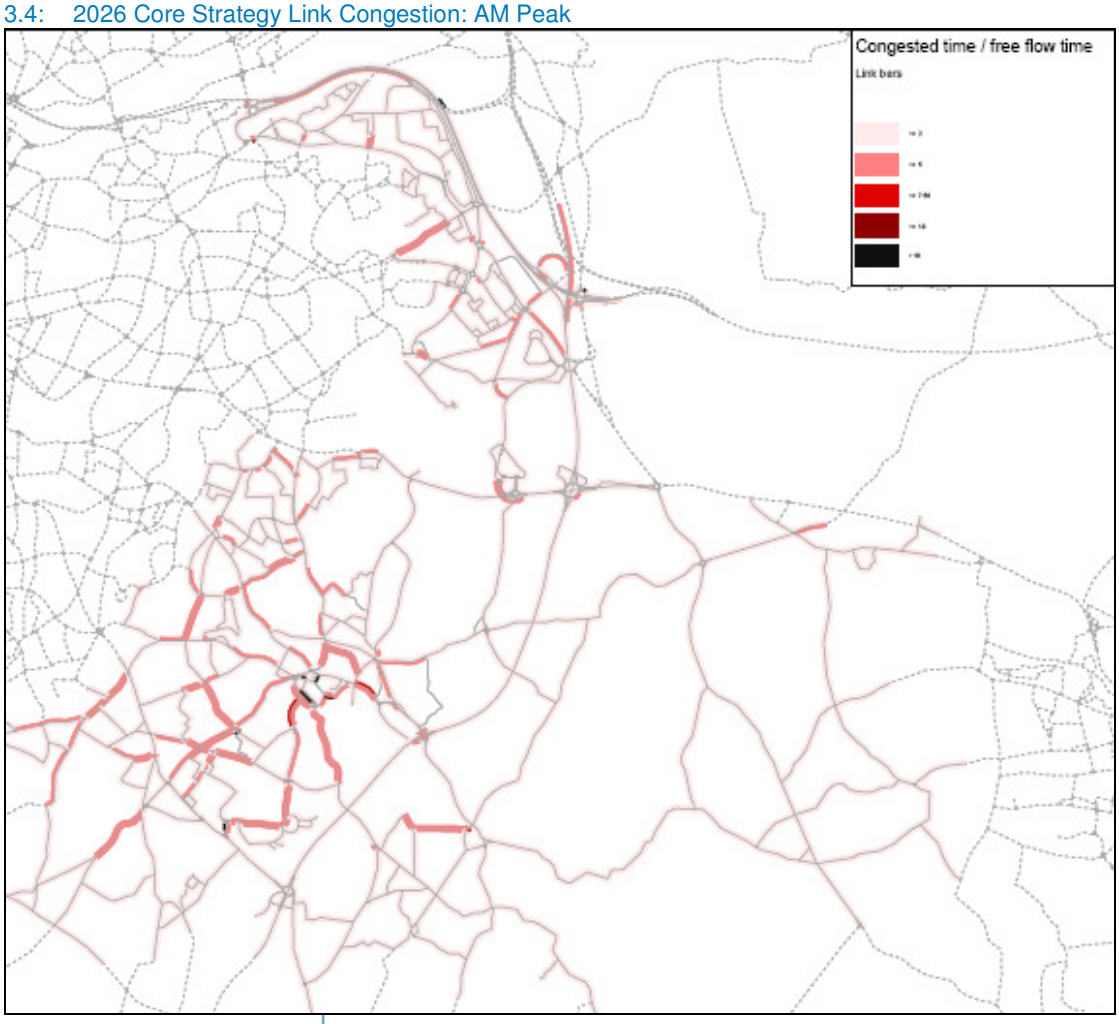

Figure 3.3 indicates that in the 2006 Base, the level of congestion is consistent over the majority of the Solihull strategic road network and that higher levels of congestion are primarily limited to Solihull Town Centre and the Chelmsley Wood area. A similar pattern is apparent in the 2026 Core Strategy scenario, as shown in Figure 3.4, where the forecast highest levels of congestion are also forecast in Solihull Town Centre and Chelmsley Wood. In addition, the congestion on links in the vicinity some M42 junctions is forecast to increase; most notably M42 junction 7 and junction 5.

3.1.3 Node Congestion

Figures 3.5 to 3.7 show the location of forecast congestion hotspots on the Solihull strategic road network in the 2006 Base, 2016 Core Strategy and 2026 Core Strategy scenarios.

Hotspots are defined to be those junctions that experience a ratio of congested to free-flow time of greater than three, as to represent those junctions where congestion is greatest. The ratio greater than three has been chosen for the basis of the plot as this value represents when the congested time through a node is forecast to be three times as long as the free flow time, and is therefore a good indicator of where congestion is greatest.

Figure 3.5: 2006 Congestion Hotspots

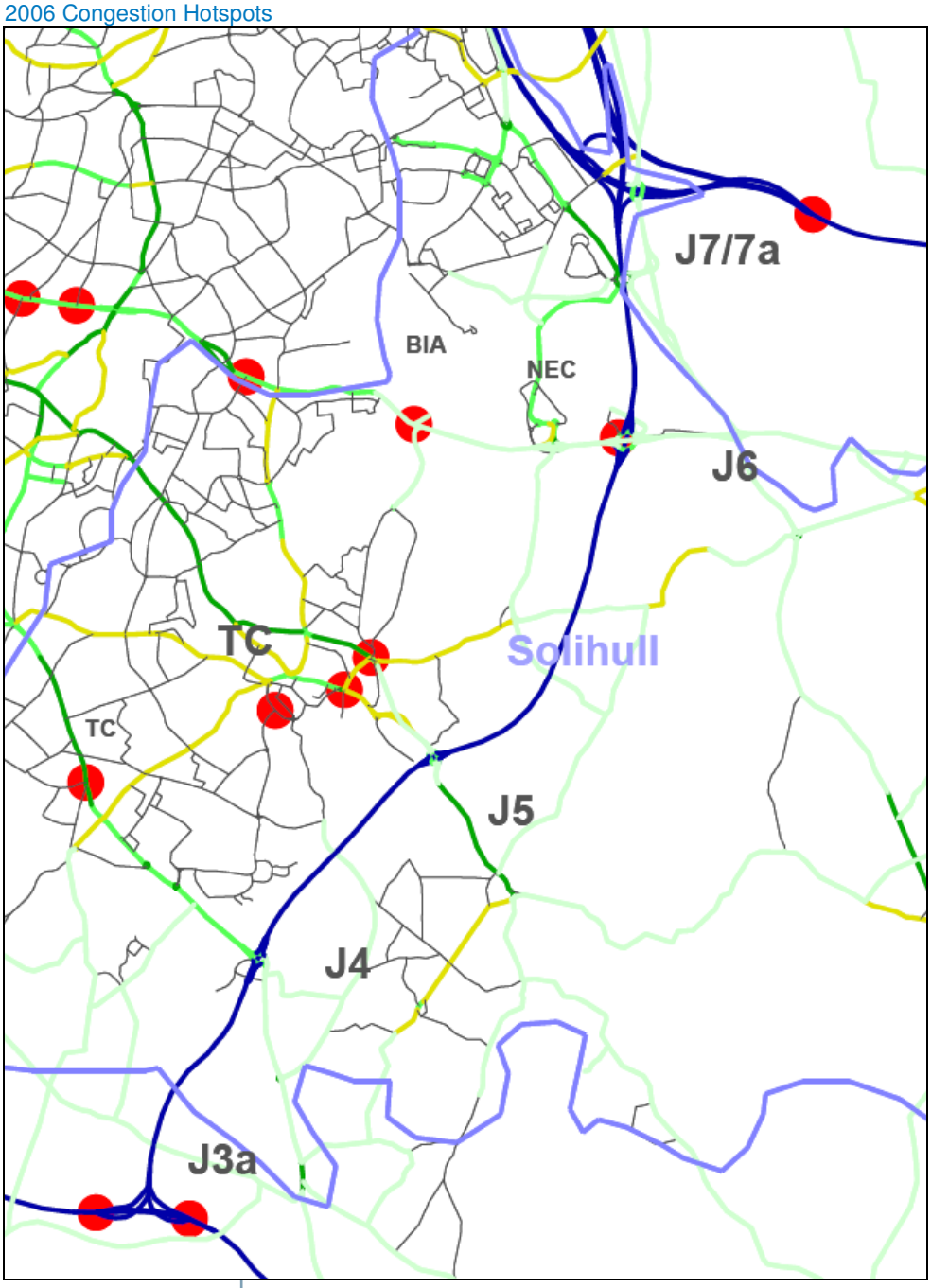

Figure 3.6: 2016 Core Strategy Congestion Hotspots

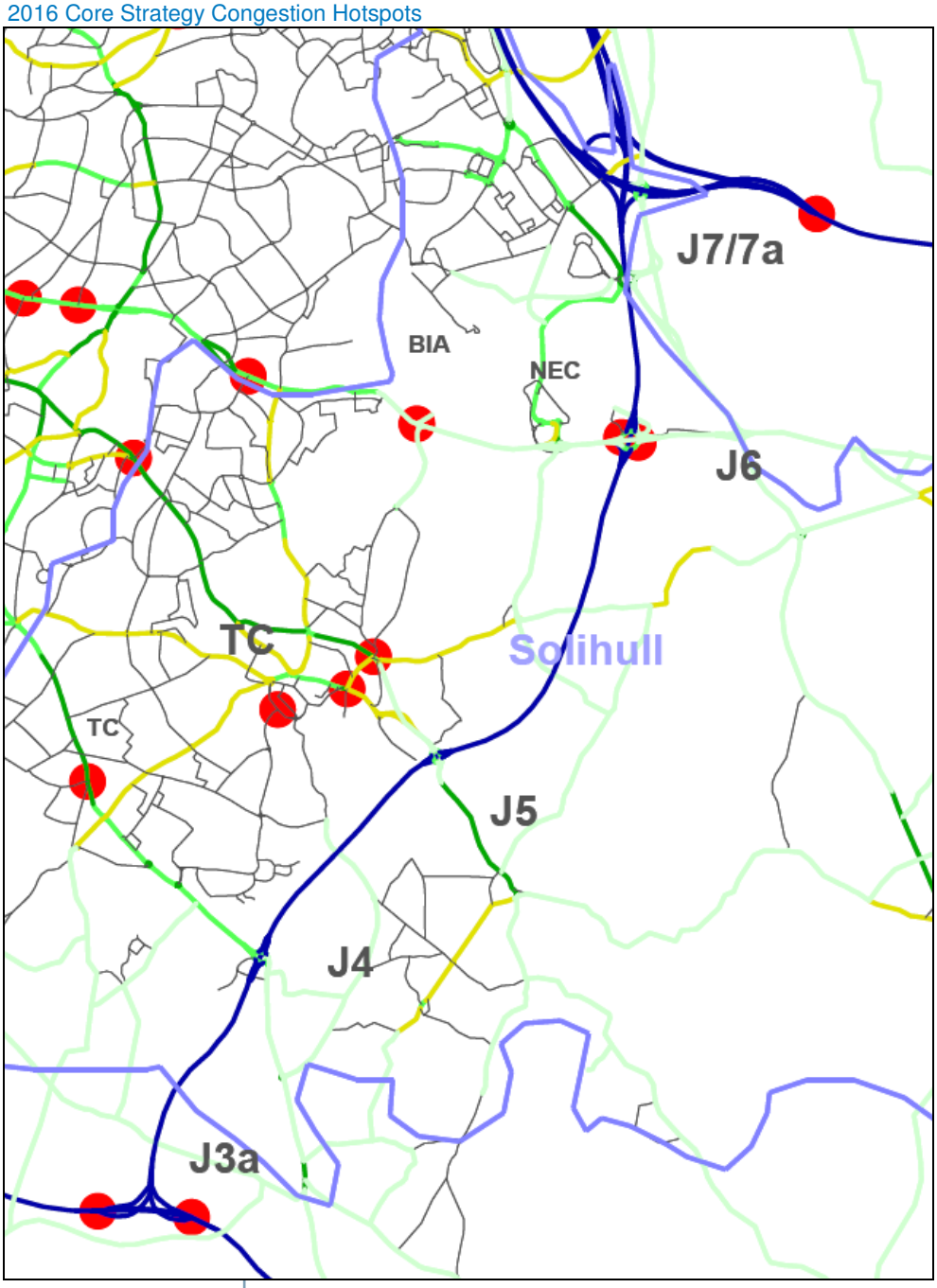

Figure 3.7: 2026 Core Strategy Congestion Hotspots

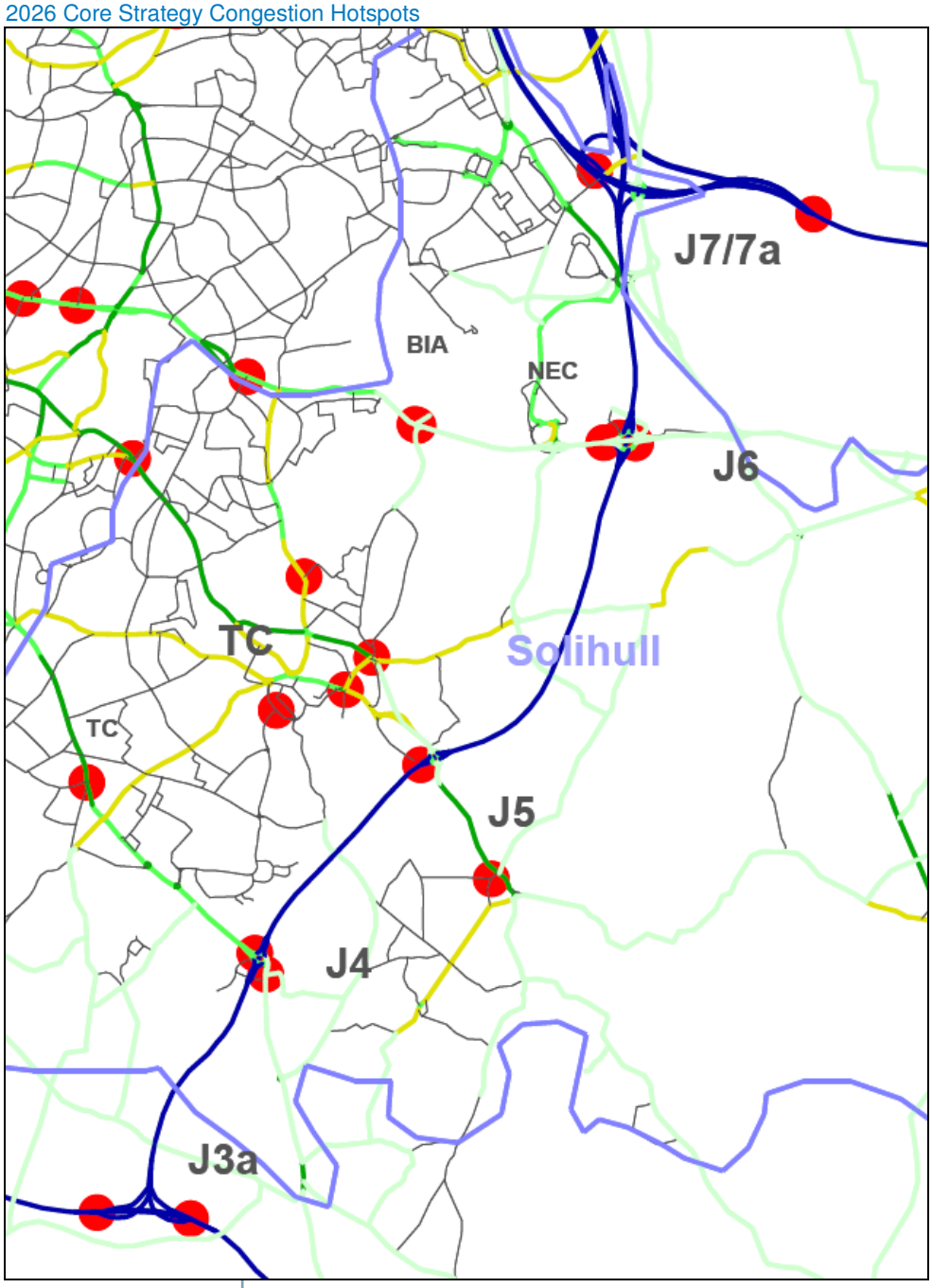

Figure 3.5 and Figure 3.6 illustrate that junctions within Solihull Town Centre and M42 junction 6 are forecast to be congested in the 2006 base year (without Core Strategy growth) and 2016 with Core Strategy growth. Figure 3.7 indicates that, in addition to those junctions

congested in 2006, the M42 junction 4 and junction 5 are also forecast to be congested in the 2026 Core Strategy scenario. The junctions showing the greatest level of congestion relative to free flow time are:

- M42 Junction 4;
- M42 Junction 5;
- M42 Junction 6; and
- Solihull Town Centre junctions.

3.1.4 *Journey Times*

Table 3.2 shows a summary of the travel times on various sections of the M42 corridor through Solihull in the AM peak. Travel times are presented for free-flow and congested time for the 2006 base year and Solihull Core Strategy (SCS) forecast scenarios. The percentage increase from free-flow travel time for each journey and forecast scenario is shown in Table 3.3.

AM peak journey times for each of the junctions include the section of M42 after the preceding or proceeding junction. For example, the 'M42 J6 (BIA side) on SB' journey time includes, as shown in Figure 3.8:

- M42 junction 6 island;
- M42 junction 6 on-slip; and
- M42 junction 6 to junction 5.

Figure 3.8: M42 J6 (BIA side) on SB

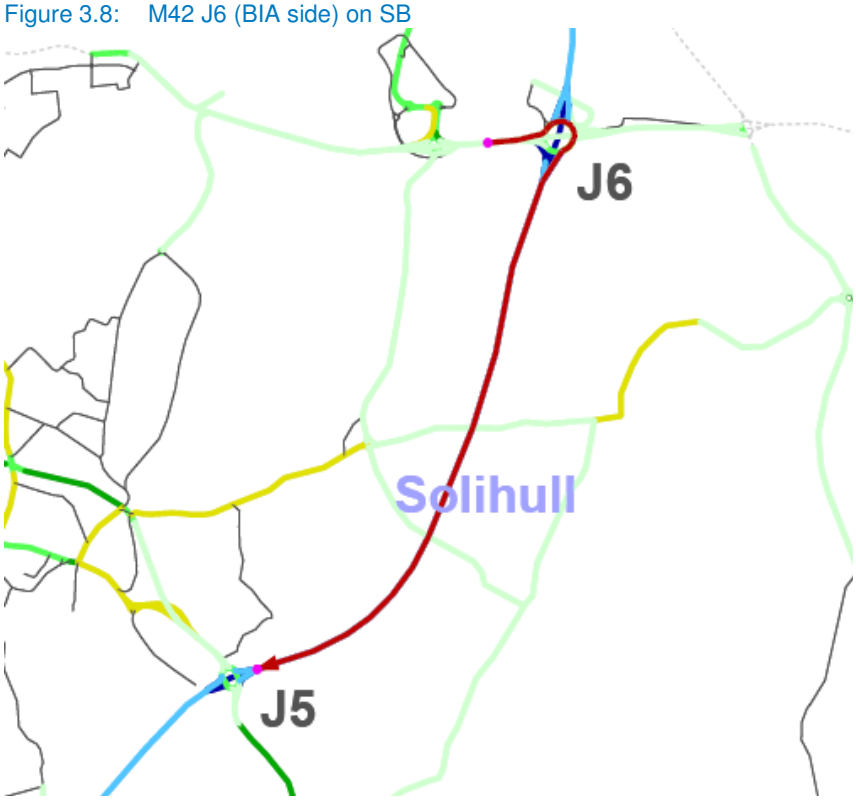

Table 3.2: Journey Times - M42 Corridor

Route	Free-Flow Time (min:sec)	Model Forecast Time (min:sec)		
		2006	2016 SCS	2026 SCS
M42 corridor NB (M42 J3a - M6 J5)	14:42	17:50	17:22	20:21
M42 corridor SB (M42 J3a - M6 J5)	14:39	16:31	18:35	21:57
M42 J6 (BIA side) on SB	05:29	07:33	08:44	09:21
M42 J6 (BIA side) off NB	03:49	04:03	04:28	04:57
M42 J6 (BIA side) on NB	03:09	04:40	05:11	05:42
M42 J6 (BIA side) off SB	03:53	04:46	05:29	05:32
M42 J5 (TC side) on SB	03:00	03:17	03:33	03:54
M42 J5 (TC side) off NB	02:25	02:36	02:45	03:00
M42 J5 (TC side) on NB	03:35	03:48	04:09	04:37
M42 J5 (TC side) off SB	03:53	04:14	04:40	04:57
M42 J4 (Shirley side) on SB	04:24	05:29	05:28	05:38
M42 J4 (Shirley side) off NB	03:38	03:54	04:04	04:13
M42 J4 (Shirley side) on NB	03:53	04:39	04:59	05:26
M42 J4 (Shirley side) off SB	04:27	04:47	05:14	05:40

Table 3.2 shows that journey times are forecast to increase for all M42 routes in the 2026 Core Strategy compared to the 2006 Base. The greatest increases in journey times are for those routes using the M42 Junction 6.

Journey times are also forecast to increase in the 2016 Core Strategy compared to the 2006 Base for the majority of routes. The one notable exception is for the M42 corridor northbound, where journey times are forecast to decrease by around 30 seconds in the 2016 scenario. This improvement in journey time is due to the implementation of Active Traffic Management (ATM) between M6 Junction 4a and 5 in 2016.

A small improvement of one second is also forecast for the M42 Junction 4 southbound on slip route, however such a small change in journey time is negligible.

Table 3.3: Journey Times - % Increase from Free-Flow Time - M42 Corridor

	Model Forecast % Increase from Free-Flow Time		
Route	2006	2016 SCS	2026 SCS
M42 corridor NB (M42 J3a - M6 J5)	21%	18%	38%
M42 corridor SB (M42 J3a - M6 J5)	13%	27%	50%
M42 J6 (BIA side) on SB	38%	59%	71%
M42 J6 (BIA side) off NB	6%	17%	30%
M42 J6 (BIA side) on NB	48%	65%	81%
M42 J6 (BIA side) off SB	23%	41%	42%
M42 J5 (TC side) on SB	9%	18%	30%
M42 J5 (TC side) off NB	8%	14%	24%
M42 J5 (TC side) on NB	6%	16%	29%
M42 J5 (TC side) off SB	9%	20%	27%
M42 J4 (Shirley side) on SB	25%	24%	28%
M42 J4 (Shirley side) off NB	7%	12%	16%
M42 J4 (Shirley side) on NB	20%	28%	40%
M42 J4 (Shirley side) off SB	7%	18%	27%

Table 3.3 indicates that travel time generally increases in the future; an expected impact from the growth in flow and congestion seen in the preceding analyses. This is particularly the case for the M42 corridor SB (J3a to M6 J5) and movement on and off the M42 at junction 6. This is consistent with an increase in the number of hotspots in this area (Figure 3.7).

3.2 Network impacts

3.2.1 SMBC Road network

The M42 Junction 6 and several junctions in Solihull Town Centre are already congested in the 2006 Base. The Solihull Core Strategy is forecast to impact the following additional junctions by 2026;

- A45 / Damson Parkway;
- M42 Junction 4;
- M42 Junction 5;
- M42 Junction 7 / M6 Junction 4; and
- Solihull Town Centre junctions.

4. Conclusions

4.1 Impacts

The growth in housing and employment in Solihull as driven by the Core Strategy is forecast to increase traffic volume on the Solihull strategic road network, most notably on the M42 corridor. Core Strategy growth is forecast to increase pressure on the M42 corridor between junction 3a and junction 7, with journey times increasing by up to 50%. The M42 junction 6 is already congested in 2006. This is forecast to become more severe in the future with journey times on and off the motorway at this junction increasing by up to 80%. All M42 junctions within Solihull show evidence of congestion in the 2026 forecasts. It is recommended that these motorway junctions be modelled using standalone or linked junction assessment software i.e LinSig or TRANSYT or alternatively microsimulation modelling is undertaken in order to assess the impact of the Core Strategy on the entire junction.

Several junctions within Solihull Town Centre also show evidence of congestion. Due to the nature of possible routing in Solihull Town Centre within PRISM, further junction modelling should be undertaken to identify the most congested junctions. A locally validated Solihull PRISM model could help to identify congestion hotspots within Solihull Town Centre.

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Appendix A. Core Strategy Proposed Figures

Table A.1: Housing Potential

Deliverable Capacity 2010-2016 (net)	Deliverable Capacity 2016-2021 (net)	Deliverable Capacity 2021-2026 (net)	PRISM	NAME	DESCRIPTION	WARD	WMR_DIST
7	3	3	5011	Solihull	West Castle Bromwich	Castle Bromwich	Solihull
18	1	1	5012	Solihull	South Castle Bromwich	Castle Bromwich	Solihull
98	77	6	5013	Solihull	North Castle Bromwich	Castle Bromwich	Solihull
42	198	0	5022	Solihull	South Smith's Wood	Smith's Wood	Solihull
100	-226	0	5023	Solihull	Central Smith's Wood	Smith's Wood	Solihull
122	154	0	5031	Solihull	North Kingshurst	Kingshurst	Solihull
46	0	0	5032	Solihull	South Kingshurst	Kingshurst	Solihull
240	0	0	5041	Solihull	North Fordbridge	Fordbridge	Solihull
29	0	532	5042	Solihull	South Fordbridge	Fordbridge	Solihull
0	0	0	5043	Solihull	Central Fordbridge	Fordbridge	Solihull
210	0	0	5051	Solihull	West Chelmsley Wood	Chelmsley Wood	Solihull
542	732	0	5052	Solihull	East Chelmsley Wood	Chelmsley Wood	Solihull
104	0	0	5053	Solihull	Central Chelmsley Wood	Chelmsley Wood	Solihull
30	20	20	5061	Solihull	South East Bickenhill	Bickenhill	Solihull
6	6	6	5062	Solihull	South West Bickenhill	Bickenhill	Solihull
11	8	575	5063	Solihull	North East Bickenhill	Bickenhill	Solihull
235	125	5	5064	Solihull	North West Bickenhill	Bickenhill	Solihull
17	9	9	5066	Solihull	East Bickenhill	Bickenhill	Solihull
22	3	3	5071	Solihull	North Meriden	Meriden	Solihull
124	45	5	5072	Solihull	Central Meriden	Meriden	Solihull
23	3	3	5073	Solihull	South Meriden	Meriden	Solihull
10	28	218	5081	Solihull	South Knowle	Knowle	Solihull
5	18	18	5082	Solihull	North Knowle	Knowle	Solihull
12	5	155	5091	Solihull	East Packwood	Packwood	Solihull
4	3	3	5092	Solihull	South East Packwood	Packwood	Solihull
1	1	1	5093	Solihull	South Packwood	Packwood	Solihull
4	1	1	5094	Solihull	South West Packwood	Packwood	Solihull
87	3	153	5095	Solihull	West Packwood	Packwood	Solihull
10	9	9	5101	Solihull	East Shirley South	Shirley South	Solihull
13	4	4	5102	Solihull	West Shirley South	Shirley South	Solihull
54	10	10	5103	Solihull	Central Shirley South	Shirley South	Solihull
16	15	265	5111	Solihull	East Shirley West	Shirley West	Solihull
43	137	38	5112	Solihull	North Shirley West	Shirley West	Solihull

Deliverable Capacity 2010-2016 (net)	Deliverable Capacity 2016-2021 (net)	Deliverable Capacity 2021-2026 (net)	PRISM	NAME	DESCRIPTION	WARD	WMR_DIST
132	8	8	5113	Solihull	West Shirley West	Shirley West	Solihull
22	20	20	5121	Solihull	South Shirley East	Shirley East	Solihull
52	25	25	5122	Solihull	North Shirley East	Shirley East	Solihull
67	62	62	5131	Solihull	East St Alphege	St Alphege	Solihull
103	87	87	5132	Solihull	West St Alphege	St Alphege	Solihull
25	23	23	5133	Solihull	North St Alphege	St Alphege	Solihull
144	38	38	5141	Solihull	North Olton	Olton	Solihull
110	88	88	5142	Solihull	Central Olton	Olton	Solihull
57	45	45	5143	Solihull	South Olton	Olton	Solihull
34	17	17	5151	Solihull	South Lyndon	Lyndon	Solihull
9	9	9	5152	Solihull	North Lyndon	Lyndon	Solihull
3	1	1	5161	Solihull	West Elmdon	Elmdon	Solihull
15	7	7	5163	Solihull	North Elmdon	Elmdon	Solihull
40	44	44	5171	Solihull	West Silhill	Silhill	Solihull
415	533	958	5172	Solihull	East Silhill	Silhill	Solihull
168	35	35	5173	Solihull	North Silhill	Silhill	Solihull
3681	**2434**	**3510**					

Source: SMBC

Table A.2: Commercial Development

SITE/ADDRESS	GRID REF EAST	GRID REF NORTH	PRISM zone	USE CLASS	SITE AREA HA	SQM Potential	NOTES
Birmingham Business Park Chester Rd, Bickenhill	419081	285595	5066	B1	13	81,000	Regional Investment Site, Remains of site to be developed
Blythe Valley Business Park, M42 Junction 4	413960	275147	5094	B1	15.3	53,351	Regional Investment Site Remains of site to be developed
Blythe Valley Park Extension, M42 junction 4	413496	274837	5094	B1	17	74,320	Regional Investment Site Extension, OL consent granted. Development not started
Land adjacent to Birmingham Business Park, Coleshill Rd, Bickenhill	418925	286085	5066	B1/B8	9.3	32,500	New greenfield site. Potentially 32,500sqm B1 plus. Other development , including hotel (3,000 sqm) and other supporting development. Up to overall 41,790 sqm total building floorspace.
Chep/Higginson site,	418702	284295	5066	B1/B2/B	4	20,000	Currently used for

	GRID REF						
Bickenhill Lane, Bickenhill				8			transport haulage, pallett storage and other activities. Estimated figure assumes mixed B class use.
Land Nth of Clock Interchange, A45, Bickenhill	419000	283124	5065	B1	1.8	15,750	Remains of Trinity Park and office site within Arden Hotel land.
Birmingham Airport, Elmdon, runway extension	417935	282983	5065 & 5062	Airport	NA	NA	Dependent on re-alignment of A45 (Planning permission granted)
TRW, Stratford Rd, Shirley	412517	277355	5102	B1	18.5	84,965	Dependent on redevelopment of existing B1 buildings (about 25,000 sqm)
Solihull Business Park, Highlands Rd, Shirley	413618	277177	5103	B1	7	36,136	Consent for B1(33,976sqm) but B2/B8 would also be acceptable. Figure includes Porche centre comprising workshops (b2) 1,380 sqm and showroom 780 sqm.
Fore business site Stratford Road, Monkspath	414646	27600	5101	B1	2	9,000	Remains of site to be developed
PowerGen premises Stratford Rd, Shirley	411656	279732	5112	B1	1	6,000	4 ha mixed-use site. May include B1 (offices).
Chelmsley Wood Town Centre Chelmsley Rd	417752	286928	5051	A1		3,000	Asda (7,245 sqm) opened July 2009 Some comparison retail to come forward
Shirley Town Centre Stratford Rd, Shirley	411716	279570	5113	A1		18,200	Retail proposals to expand the Centre on a site of nearly 7 ha. Also housing element.
Solihull Town Centre, Warwick Road, Solihull.	415110	279486	5131	A1 B1		80,000 35,000	LDF will plan for up to 55,000 sqm (gross) of additional comparison retail 2006-2021 and have regard to a further 25,000 sqm (gross) 2021-2026. Will also plan for35,000 sqm (gross) of new office floorspace 2006-2026. Figures to be tested locally.

Source: SMBC

Appendix B. PRISM Household and Employment Inputs

Table B.1: Housing Data: Core Strategy PRISM Input

PRISM Zone	2016 Households	2026 Households
5011	1649	1655
5012	1636	1638
5013	1722	1805
5021	1227	1227
5022	1263	1461
5023	2264	2038
5031	2898	3052
5032	654	654
5041	1697	1697
5042	1251	1783
5043	1173	1173
5051	1135	1135
5052	3310	4042
5053	1707	1707
5061	964	1004
5062	1075	1087
5063	1356	1939
5064	1966	2096
5065	258	258
5066	458	476
5071	1287	1293
5072	3087	3137
5073	784	790
5081	2542	2788
5082	1919	1955
5091	1662	1822
5092	1518	1524
5093	618	620
5094	1006	1008
5095	1545	1701
5101	2654	2672
5102	2736	2744
5103	1541	1561
5111	2380	2660
5112	1445	1620
5113	1502	1518
5121	2723	2763
5122	2380	2430
5131	1263	1387

PRISM Zone	2016 Households	2026 Households
5132	2547	2721
5133	2242	2288
5141	2009	2085
5142	1572	1748
5143	1821	1911
5151	2348	2382
5152	1932	1950
5161	1202	1204
5162	506	506
5163	2738	2752
5171	1811	1899
5172	2548	4039
5173	2337	2407
District Total	**89,868**	**95,812**

Table B.2: Employment Data: Core Strategy PRISM Input

PRISM Zone	2016 Jobs	2026 Jobs
5011	775	772
5012	1325	1324
5013	463	462
5021	162	162
5022	339	339
5023	438	438
5031	797	795
5032	154	154
5041	772	769
5042	233	233
5043	545	545
5051	1421	1796
5052	1024	1024
5053	581	581
5061	1794	1782
5062	3760	3746
5063	713	705
5064	1719	1711
5065	4730	4932
5066	14813	17998
5071	1333	1330
5072	1908	1897
5073	1675	1667

PRISM Zone	2016 Jobs	2026 Jobs
5081	2385	2382
5082	1297	1278
5091	418	417
5092	1509	1506
5093	1632	1630
5094	6962	10082
5095	785	784
5101	5236	6327
5102	4046	5791
5103	6195	6706
5111	548	545
5112	1484	1601
5113	2047	2725
5121	3806	3804
5122	1570	1569
5131	13011	17617
5132	9689	9687
5133	5216	5214
5141	916	911
5142	1247	1244
5143	654	653
5151	825	824
5152	413	412
5161	1617	1507
5162	4537	4211
5163	3741	3492
5171	2602	2593
5172	9257	9254
5173	817	807
District Total	**135,936**	**150735**