Salisbury Transport Strategy

Final Draft
Problems and Issues Addendum

July 2011

Notice

This report was produced by Atkins Limited for Wiltshire Council for the specific purpose of the Salisbury Transport Strategy.

This report may not be used by any person other than Wiltshire Council without Wiltshire Council's express permission. In any event, Atkins accepts no liability for any costs, liabilities or losses arising as a result of the use of or reliance upon the contents of this report by any person other than Wiltshire Council.

Document History

JOB NUMBER: 5084299			DOCUMENT REF: 5084299 - STS - Problems and Issues v2.4b.docx			
Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date
2.2	Draft to client	GB	GB	TM	TM	27/06/10
2.3	Draft to client	GB	GB	TM	TM	28/06/10
2.4	Final	GB	GB	TM	TM	25/7/10

Contents

Section Page

List of Tables

List of Figures

1. Introduction

Background

1.1 Wiltshire Council is developing an updated transport strategy for the Salisbury and Wilton area to frame the identification of investment and network operation priorities over the coming years. In part this is because many of the components of the existing strategy for Salisbury have been implemented as part of the Council's first and second Local Transport Plans (LTPs). The review of transport strategy is also critically driven by the need to plan effectively for growth in both housing and employment in the South Wiltshire area, of which Salisbury and Wilton are part, over the next 15 or so years.

1.2 The strategy therefore needs to contribute to the formulation of the Local Development Framework (LDF) for Wiltshire – which will define and shape the county's future development and form the basis of future planning decisions. Most immediately the transport strategy supports the formulation of the Core Strategy element of the LDF which sets out the spatial planning framework for South Wiltshire.

1.3 In 2009 Atkins produced a *Problems and Issues Report*[1], which outlined the nature of travel and problems associated with that travel based upon data collected in 2008/9 as part of the Salisbury Transport Model development. The 2009 *Problems and Issues Report* also reported on the transport problems forecast to arise as a result of the then Regional Spatial Strategy (RSS) for the South West; which included a housing requirement of 12,400 homes for South Wiltshire for the period 2006- 2026.

1.4 Since then, the government has now stated its intention to abolish Regional Spatial Strategies. The draft Localism Bill published in December 2010 contains the relevant clause providing the mechanism for its future revocation.

1.5 In light of the intention to formally abolish regional spatial strategies the council has sought to review the level of growth identified within the draft RSS and the south Wiltshire Core Strategy. The review establishes the housing requirement from 2006-2026, and concludes that 9900 is the appropriate housing requirement for south Wiltshire and that over the same period 10,400 jobs should also be delivered. The location of the proposed revised Core Strategy developments is shown in Figure 1.1.

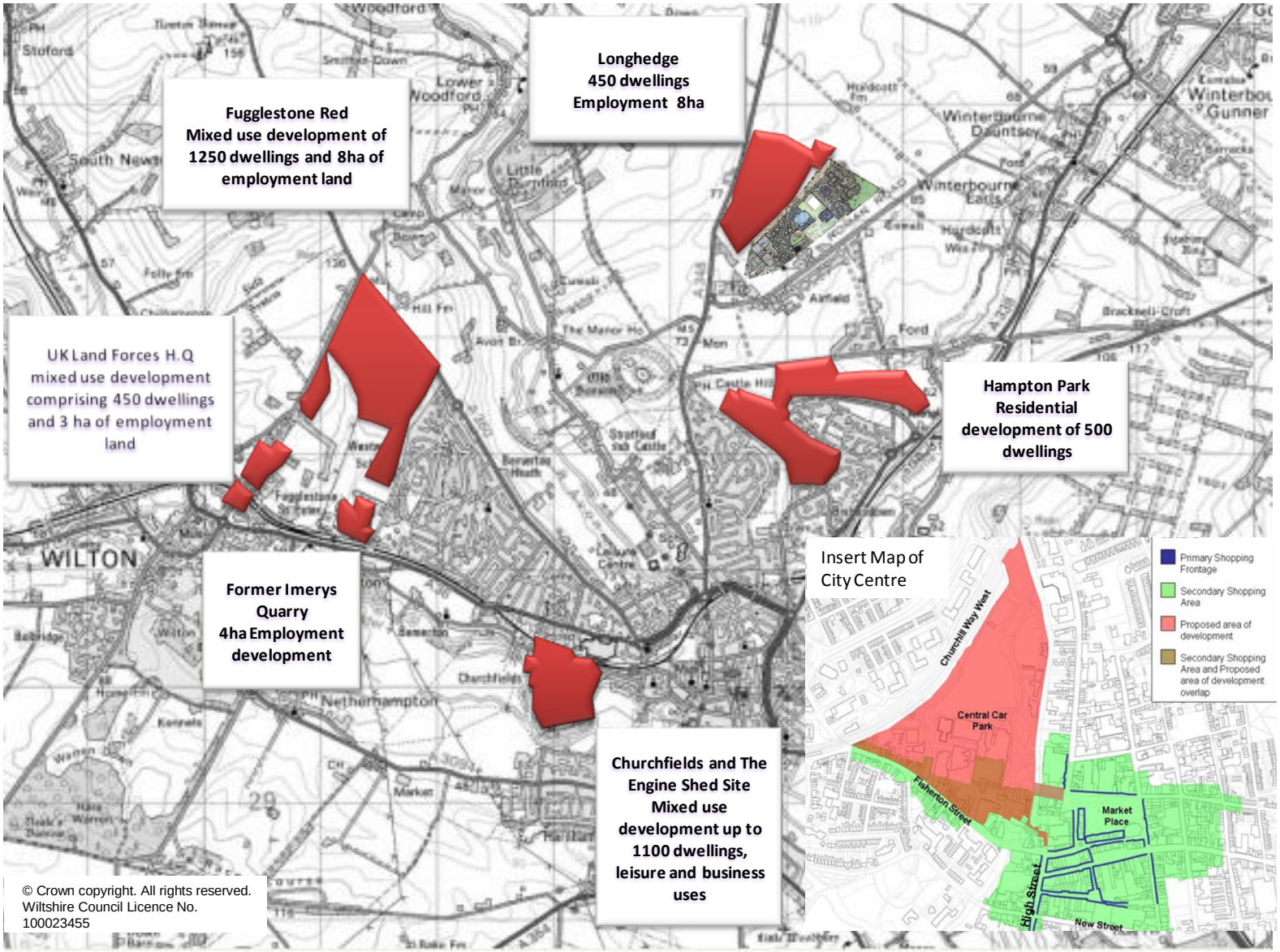
1.6 This *Problems and Issues Addendum* updates the 2009 report with future year transport forecasts based upon the revised Core Strategy land use assumptions provided by Wiltshire Council. The format of this report follows that of the early *Problems and Issues Report*.

1.7 The remainder of this document is structured as follows:

- Chapter Two reviews future year travel patterns as a result of the revised South Wiltshire Core Strategy;
- Chapter Three reviews the performance of the highway and public transport networks; and
- Chapter Four provides a conclusion.

[1] 5084299 - STS - Problems and Issues v1.1

Figure 1.1 – Location of Proposed Core Strategy Development Sites



2. Future Year Travel Patterns

Introduction

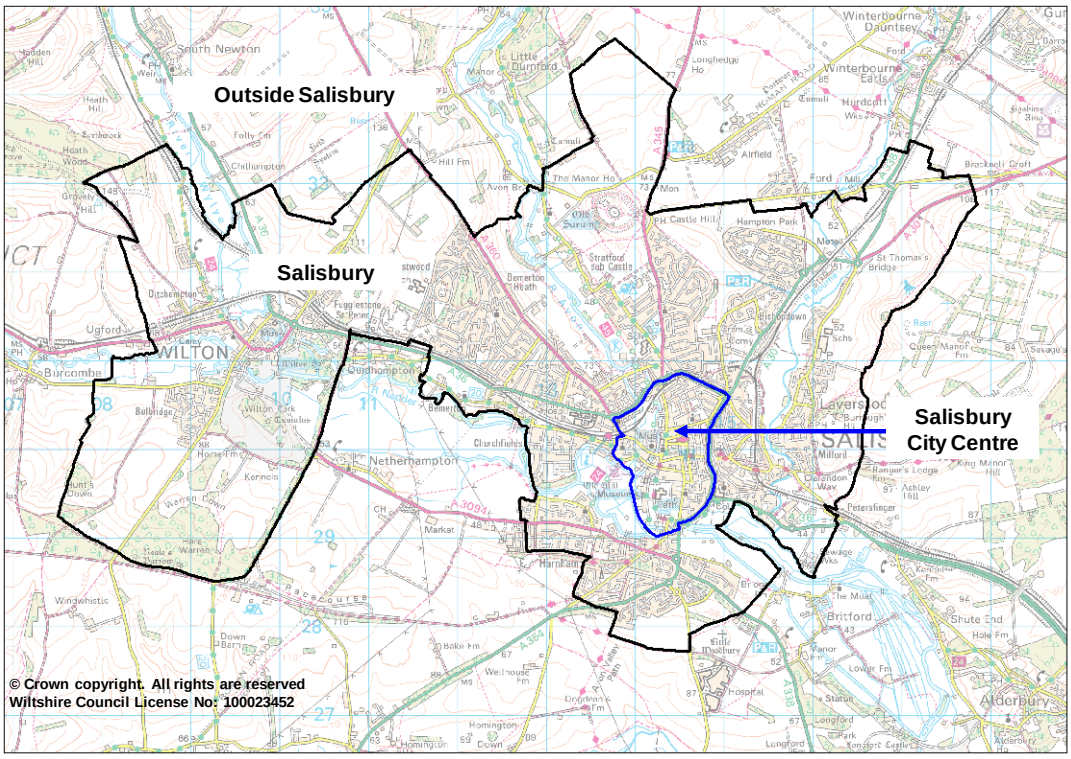
2.1 The Salisbury Transport Models framework has been developed to represent a 2008 base year to which the model has been calibrated and validated; and a 2026 forecast year. The modelling framework for forecasting includes:

- changes to public transport services to reflect the opening of Petersfinger Park and Ride and revised park and ride services (correct at April 2011);
- projections of employment and dwellings supplied by Wiltshire Council; and
- trip ends controlled to the national trip end model (TEMPRO v 6.2) that has been devised by the Department for Transport (DfT) to ensure uniform forecasting across the country.

2.2 One element of the Core Strategy, and aligned to the Salisbury Vision, is redevelopment of the Maltings. One of the possible impacts of this in transport terms would be to remove the supply of long stay parking spaces from Central car park. We have modelled the impact of this and although we forecast a negligible change in demand for visiting Salisbury city centre, there is an increase in demand for long stay car parks on the fringe of the city centre (i.e. Culver Street) and an increase in park and ride demand. The forecasts show that the other car parks and the park and ride sites could accommodate this demand, although there is a reduction in revenue of less than 5% as people move from city centre car parks to park and ride.

2.3 During the course of our analysis we refer to a number of geographic locations. To aid understanding, these are presented below (Figure 2.1).

Figure 2.1 – Definition of Salisbury Study Area



Forecast Demand

2.4 The revised housing and employment land allocation for the South Wiltshire Core Strategy, which now plans for 9,910 dwellings by 2026 and 10,900 jobs, is shown in Table 2.1. The model has a base year of 2008 and therefore includes all developments between 2006 and 2008. In addition, there is an existing Local Plan allocation at Solstice Park which is anticipated to be completed within the life of the Core Strategy.[2]

Table 2.1 – Revised Core Strategy Land Use Allocations for South Wiltshire

Certainty of Development	Dwellings	Employment (jobs)
Completions / commitments since 2006-2008	350	
Completions / commitments since 2008	1,263	
Local Plan Allocations	1,538	1,534
Core Strategy Strategic Sites	5,250	6,463
Core strategy Community area allocations	1,509	2,903
Core Strategy Total	**9,910**	**10,900**
Local Plan allocation at Solstice Park[3]		3,528
Total	**9,910**	**14,428**

2.5 The DfT modelling guidance (WebTAG) advises that trip end calculation for local land use development assumptions are all constrained to be equal to the benchmark trip ends set by TEMPRO background growth. TEMPRO produces trip end growth forecasts by mode, vehicle and time period and this growth is then distributed amongst the new developments. Controlling to TEMPRO ensures consistency amongst different geographic areas and provides a means of establishing growth in traffic beyond South Wiltshire that will affect traffic in Salisbury.

Trip-Making

Overall Levels of Person Trip Making

2.6 Using the Salisbury Transport Models it is possible to understand the forecast demand for travel to/from and through Salisbury in 2026 by motorised modes. The nature of the model means that it is not possible to determine the future levels of walking and cycling.

2.7 Traffic in Salisbury can be characterised as one of the following three movements: internal trips (journeys within Salisbury); trips to/from Salisbury (journeys with only an origin or destination in Salisbury); and external trips (journeys through Salisbury).

2.8 Approximately 200,000 one-way person trips are forecast to made within, to / from and through Salisbury per 12hr day in 2026 (Table 2.2). This is an 11% increase in person trip-making between 2008 and 2026[4]. Trips wholly within Salisbury are forecast to grow by 5% whilst trips between Salisbury and places outside of Salisbury are forecast to increase by approximately 15%. Trips through Salisbury are also forecast to increase by approximately 16% (Figure 2.2).

[2] Hughes, Email: PKA - revised housing figures 9900 20 05 11.xlsx, 23/5/11

[3] Following discussions with Solstice Park consultants PFA we have updated the model to reflect the likely number of jobs at Solstice Park taken by Salisbury residents.

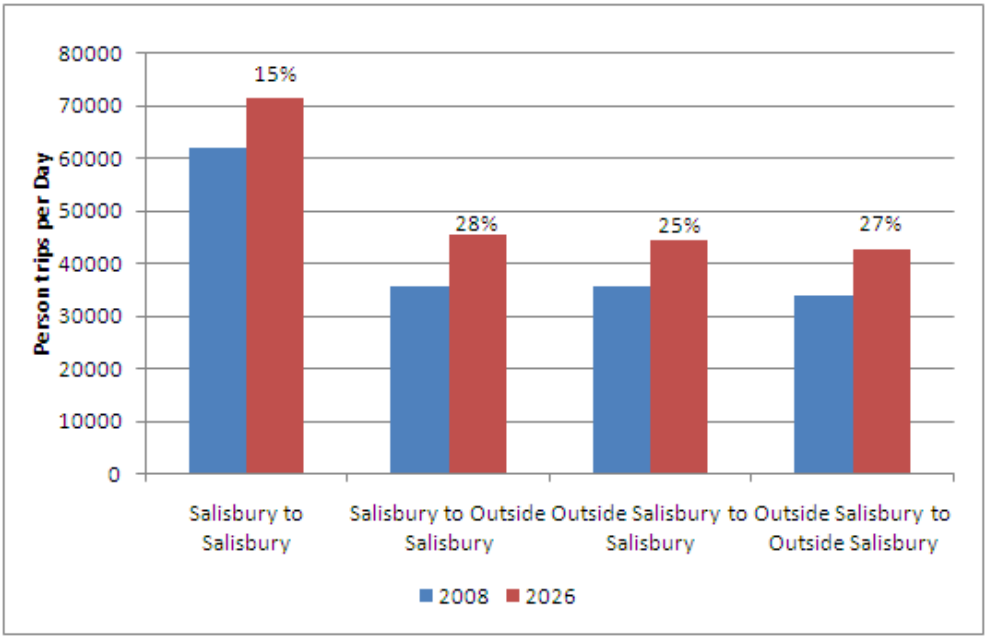
[4] Changes to the area based reporting to include all urban fringe developments within the 'Salisbury' area mean that this addendum is not directly comparable with the previous Problems and Issues Report.

Table 2.2 –Forecast (2026) Person Travel Demand – All Modes (7am to 7pm)

From / To	Salisbury	External	Total
Salisbury	71,500	45,600	117,100
External	44,500	42,800	87,300
Total	116,000	88,400	204,400

Source: Salisbury Transport Models run 26LOP1110

Figure 2.2 – Change in Base Year (2008) and Forecast Year (2026) Person Travel Demand – All Modes (7am to 7pm)



Source: Salisbury Transport Models run 26LOP1110

Mode Share (motorised modes)

2.9 The forecast mode share of travel in Salisbury is still dominated by the car (Table 2.3). There is very little change between the base year and 2026; only a 1% reduction on car mode share and 1% increase in bus mode share for journeys to, from and within Salisbury.

Table 2.3 – Forecast Year (2026) Person Motorised Mode Share (7am to 7pm)

	From / To	Salisbury Urban	External
Highway	**Salisbury Urban**	92%	90%
	External	89%	89%
	From / To	**Salisbury Urban**	**External**
Bus	**Salisbury Urban**	8%	7%
	External	8%	6%
	From / To	**Salisbury Urban**	**External**
Rail	**Salisbury Urban**	0%	3%
	External	3%	5%

Source: Salisbury Transport Models run 26LOP1110

Vehicle Trip-Making

Vehicle Trip-Making by Time of Day

2.10 There is a 26% increase forecast in daily vehicle trips. This increase is a combination of a 23% increase in daily car vehicle trips and a 70% increase in daily light goods vehicle trips (reflecting DfT guidance). It should be noted that the daily person trips by car increases by 23%, reflecting a reduction in vehicle occupancy.

2.11 Forecast year vehicle trip-making by time period is shown in Table 2.4. The largest increases in vehicle demand are forecast to be experienced in the evening peak period, with a 28% increase in this period compared with a 25% increase in the morning peak period.

2.12 In the morning peak there is a 25% increase in highway demand within, to/from and through Salisbury (Figure 2.3). The increase in demand within Salisbury is 17% whilst the largest increase occurs on trips through Salisbury (32%).

2.13 During the inter-peak there is a 26% increase in highway demand within, to/from and through Salisbury (Figure 2.4). The increase in demand within Salisbury is 13% compared to other movements. The largest increase occurs on trips through Salisbury 35%.

2.14 In the evening peak there is a 28% increase in highway demand within, to/from and through Salisbury (

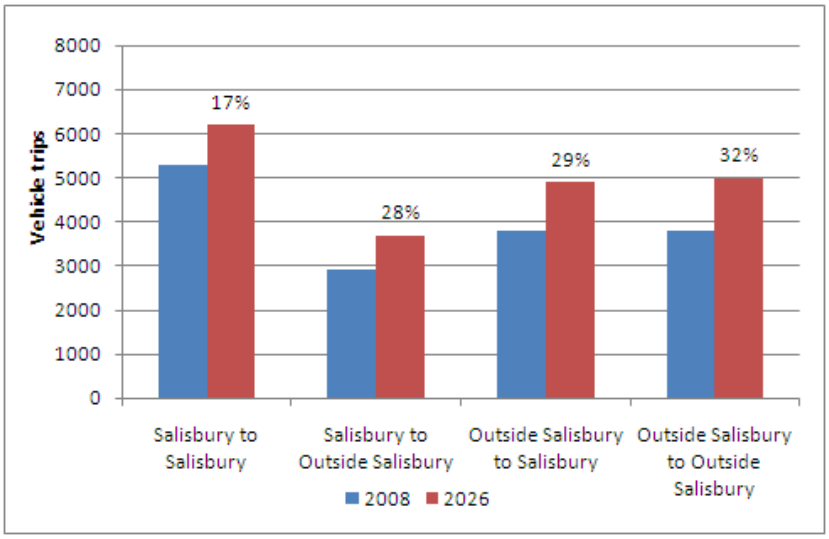
2.15 Figure 2.5). This evening peak has experienced the greatest increase in traffic and reflects the increases in highway demand from other time periods that is typically returning home in the evening peak.

Table 2.4 –Forecast Year (2026) Average Weekday Vehicle Demand by Time Period

From / To	Salisbury Urban	Outside Salisbury	Total
Forecast Morning Peak Hour (8am-9am) Vehicle Demand			
Salisbury Urban	6200	3700	9900
Outside Salisbury	4900	5000	9900
Total	11100	8700	19800
Forecast Inter-Peak Hour (average of 10m- 4pm) Vehicle Demand			
Salisbury Urban	4500	3600	8100
Outside Salisbury	3300	3500	6800
Total	7800	7100	14900
Forecast Evening Peak Hour (5pm-6pm) Vehicle Demand			
Salisbury Urban	6700	4800	11500
Outside Salisbury	3900	4300	8200
Total	10600	9100	19700

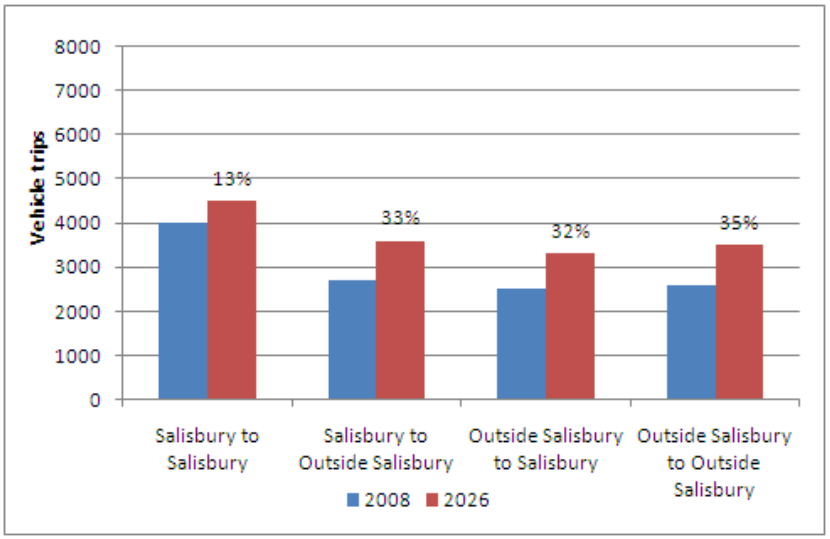
Source: Salisbury Transport Models run 26LOP1110

Figure 2.3 –Base Year (2008) and Forecast Year (2026) Morning Peak Vehicle Demand



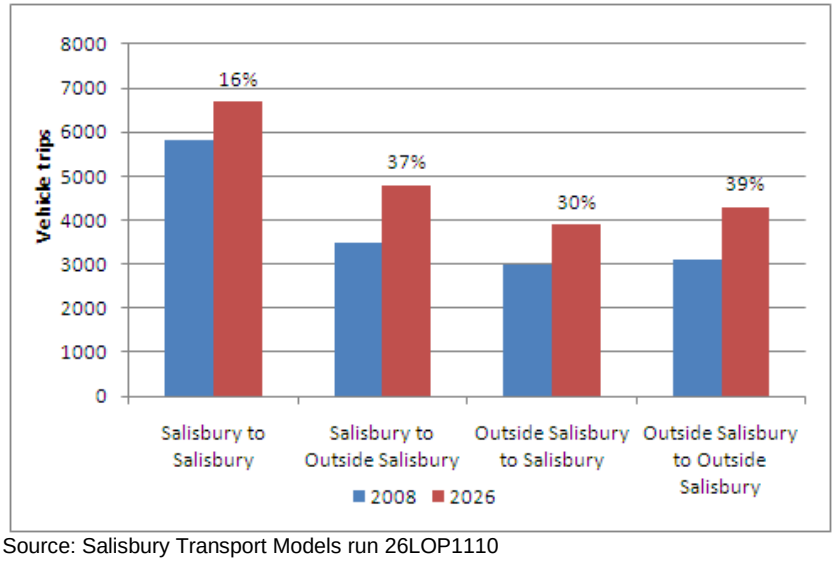
Source: Salisbury Transport Models run 26LOP1110

Figure 2.4 - Base Year (2008) and Forecast Year (2026) Inter-Peak Vehicle Demand



Source: Salisbury Transport Models run 26LOP1110

Figure 2.5 - Base Year (2008) and Forecast Year (2026) Evening Peak Vehicle Demand



Source: Salisbury Transport Models run 26LOP1110

Public Transport Trip-Making

Bus Trip-Making by Time of Day

2.16 As previously described, the car is the dominant mode for travel in, to/from and through Salisbury, although public transport is well used for some journey types. The daily increase in bus demand is 18%. Future year bus demand by time of day is shown in Table 2.5.

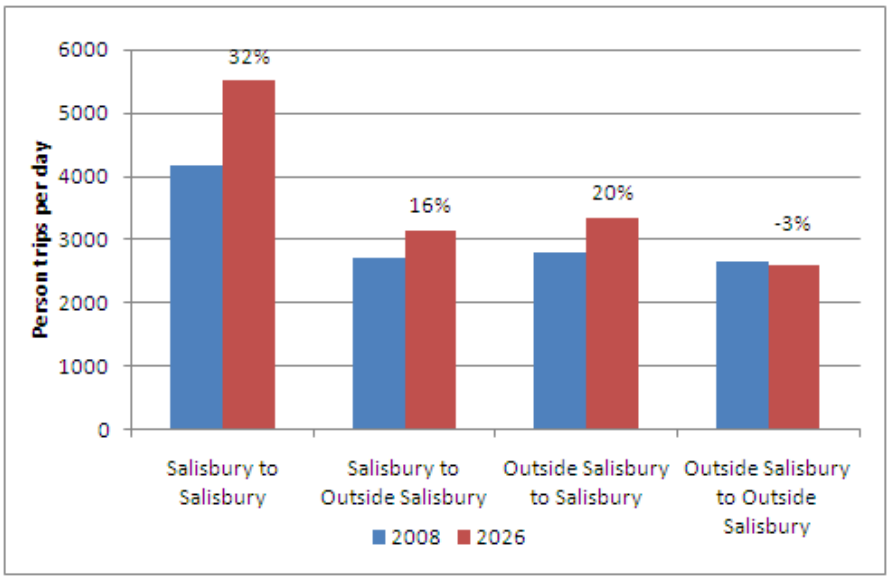
Table 2.5 – Forecast Year (2026) Average Weekday Bus Passenger Demand by Time Period

From / To	Salisbury Urban	Outside Salisbury	Total
Estimated Morning Peak Hour (8am-9am) Bus Demand			
Salisbury Urban	700	190	890
Outside Salisbury	630	295	
Total	1330	485	1815
Estimated Inter-Peak Hour (average of 10m- 4pm) Bus Demand			
Salisbury Urban	490	300	790
Outside Salisbury	285	240	525
Total	775	540	1315
Estimated Evening Peak Hour (5pm-6pm) Bus Demand			
Salisbury Urban	585	485	1070
Outside Salisbury	190	280	470
Total	775	765	1540

Source: Salisbury Transport Models run 26LOP1110

2.17 The largest sector to sector increase in bus trips between the base and forecast year is for trips within Salisbury (Figure 2.6).

Figure 2.6 –Base Year (2008) and Forecast Year (2026) Weekday Daily Bus Demand



Source: Salisbury Transport Models run 26LOP1110

Rail Trip-Making by Time of Day

2.18 There is very little change in rail demand between 2008 and 2026. The forecast demand is shown in Table 2.6. Daily rail trip-making increases by 2% between 2008 and 2026.

Table 2.6 – Forecast Year (2026) Average Weekday Rail Passenger Demand by Time Period

From / To	Salisbury Urban	Outside Salisbury	Total
Estimated Morning Peak Hour (8am-9am) Rail Demand			
Salisbury Urban	0	115	115
Outside Salisbury	205	225	430
Total	205	340	545
Estimated Inter-Peak Hour (average of 10m- 4pm) Rail Demand			
Salisbury Urban	0	115	115
Outside Salisbury	100	165	265
Total	100	280	380
Estimated Evening Peak Hour (5pm-6pm) Rail Demand			
Salisbury Urban	0	270	270
Outside Salisbury	195	295	490
Total	195	565	760

Source: Salisbury Transport Models run 26LOP1110

3. Forecast Year Network Performance

Introduction

3.1 This chapter provides a review of forecast year network performance. The Salisbury Transport Models are used to provide this information and demonstrate the impact that the Core Strategy will have on the highway and public transport networks.

Highway Performance

Network-Wide Results

3.2 The network performance is summarised in terms of the following:

- Total Distance Travelled (pcu kilometres) - the total distance travelled on the modelled highway network multiplied by the number of passenger car units (pcu's);
- Total Travel Time (pcu hours) - the total time travelled on the modelled highway network including delays multiplied by the number of passenger car units (pcu's); and
- Total delay (pcu hours) - the total delay on the modelled highway network multiplied by the number of passenger car units (pcu's)
- Average Network Speed (km/hr) - the average speed across the network.

Simulation Area Results

3.3 It can be seen in Table 3.1 that total distance travelled increases in line with the increase in trip-making shown in the previous chapter. Where the increase in total distance travelled is greater than the increase in trips, it indicates that longer routes are being taken as a result of traffic aiming to avoid congestion – this occurs most notably in the evening peak.

3.4 Similarly, Table 3.1 shows that changes in travel time are higher than the increase in vehicles; indicating increased congestion and delays. Again, travel time has increased in all time periods but most in the evening peak.

3.5 The changes in average speed are a summary of the data above and show that traffic conditions have worsened in all time periods but more so in the morning peak and evening peak.

Table 3.1 – Summary of Change in Base Year (2008) to Forecast Year (2026) Highway Network Performance (Salisbury Area)

Metric	Morning Peak	Inter-Peak	Evening Peak
Total Distance Travelled (pcu km)	24%	25%	28%
Total Travel Time (pcu hr)	37%	29%	39%
Total Delay (pcu hr)	69%	43%	68%
Average Network Speed (km/hr)	-9%	-3%	-8%

Source: Salisbury Transport Models run 26LOP1110

Junction Performance

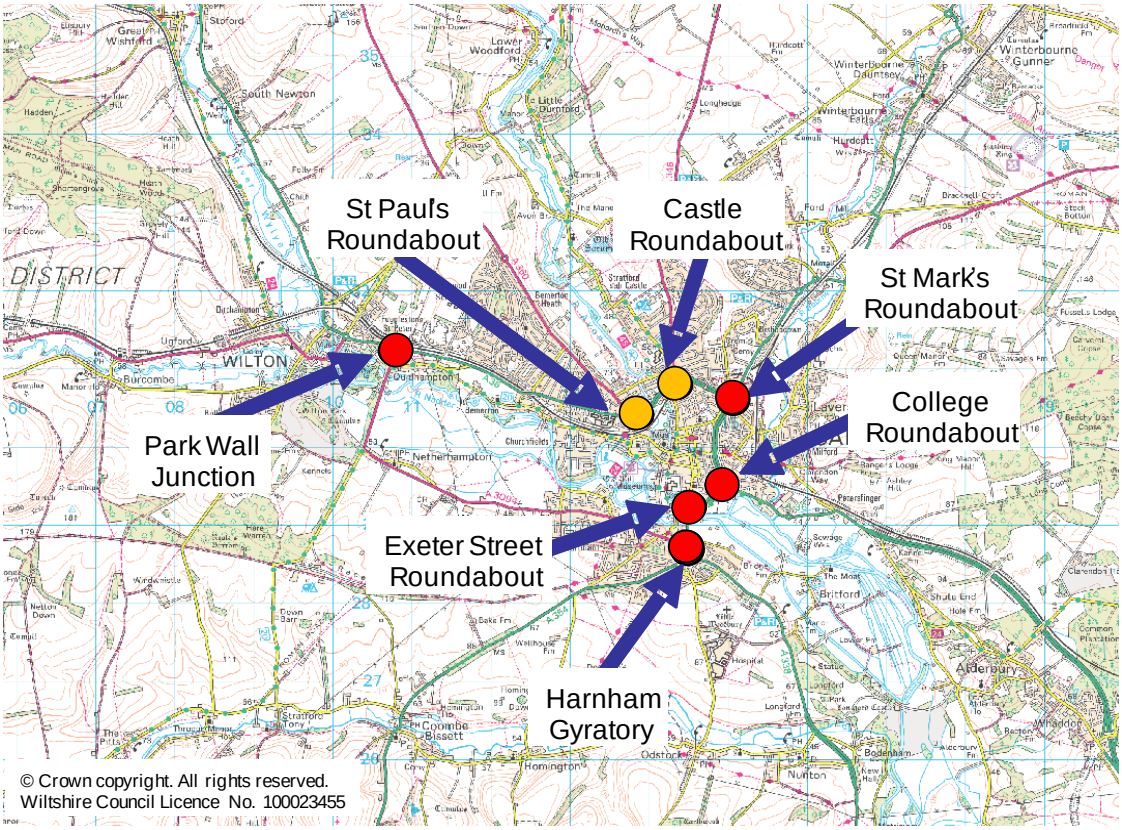
3.6 Using the Salisbury Transport Model, it is possible to assess the performance of junctions in the forecast year (2026) scenario. The analysis considers total traffic volume against total junction capacity in the morning and evening peak to give each junction the following colour coding:

- Green – the junction is operating within 50% of capacity;

- Amber – the junction is operating between 50% and 70% of capacity; and
- Red – the junction is operating over 70% of capacity (or with two or more arms operating in excess of 90% of capacity).

3.7 The results of this analysis are shown in Figure 3.1 for the key junctions in Salisbury, which combines morning and evening peak results. Park Wall Junction, St Marks Roundabout, College Roundabout, and Exeter Street Roundabout all operate close to or at capacity on a number of arms. The analysis shows that there is still some capacity on all of the arms on St Paul's Roundabout, Castle Roundabout and Harnham Gyratory.

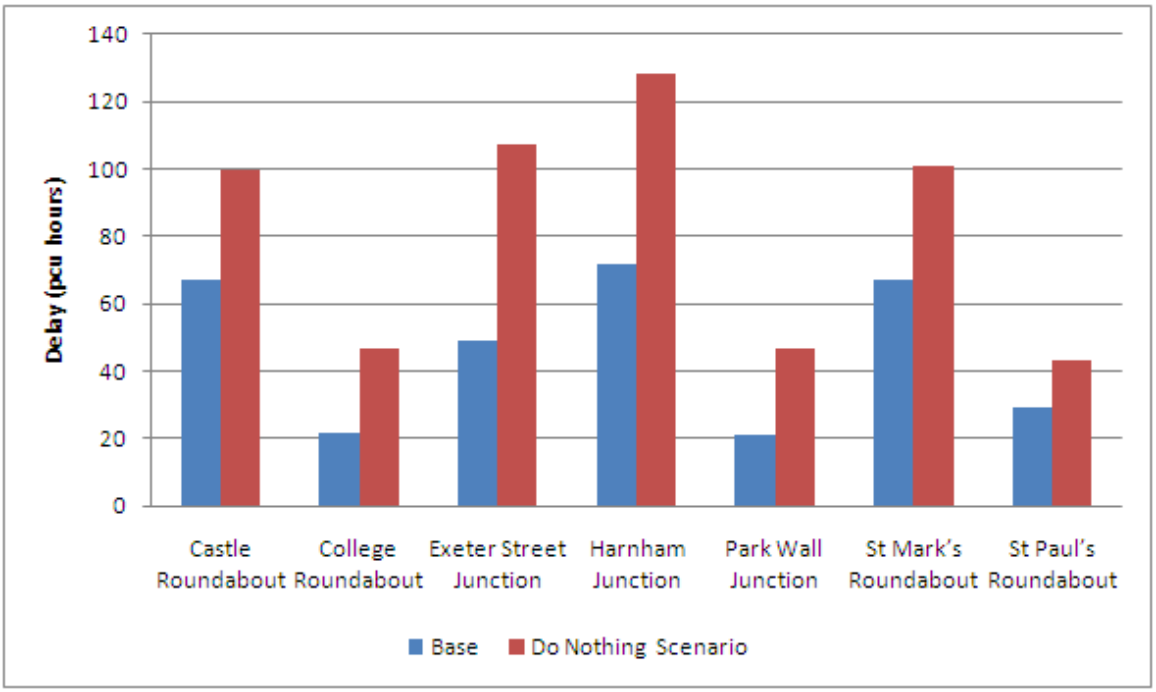
Figure 3.1 – Forecast Year (2026) Performance of Key Junctions



Source: Salisbury Transport Models run 26LOP1110

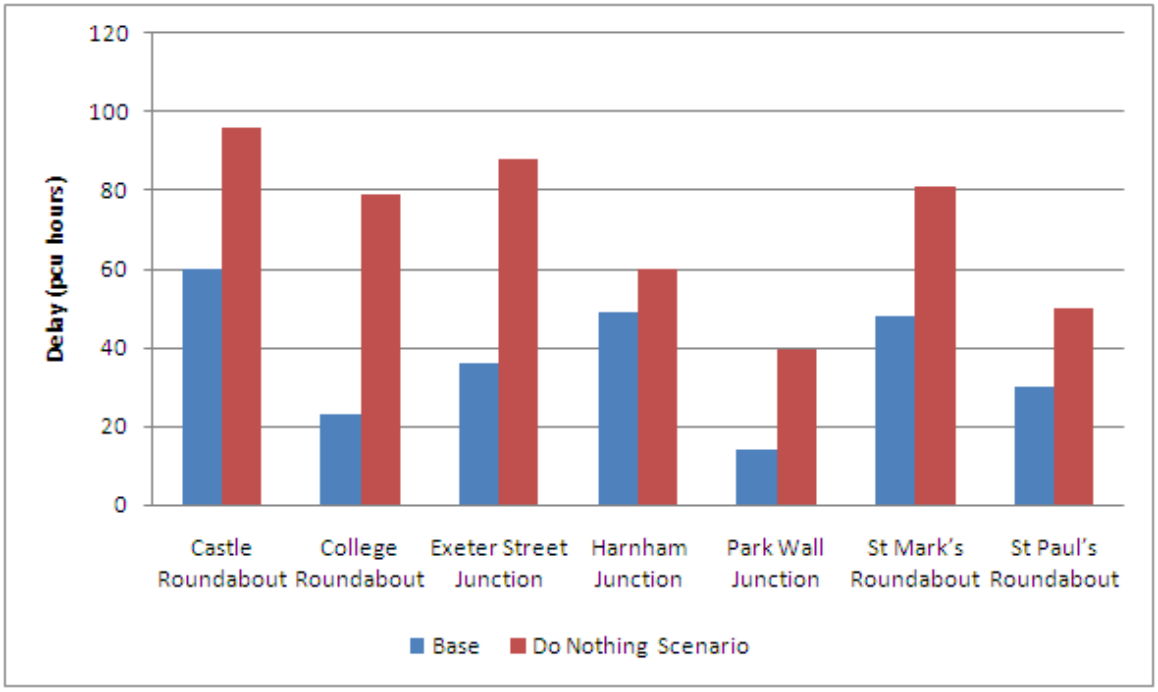
3.8 Morning and evening peak hour delays at the major A36 junctions (and Exeter Street and Harnham Gyratory) are shown in Figure 3.2 and Figure 3.3 respectively. Delays are forecast to double (or more) at, College Roundabout, Exeter Street and at Park Wall Junction in the morning peak hour. In the evening peak delays are forecast to triple at College Roundabout and double at Exeter Street and at Park Wall Junction.

Figure 3.2 – Base Year (2008) and Forecast Year (2026) Morning Peak Hour Junction Delays (pcu hours)



Source: Salisbury Transport Models run 26LOP1110

Figure 3.3 – Base Year (2008) and Forecast Year (2026) Evening Peak Hour Junction Delays (pcu hours)



Source: Salisbury Transport Models run 26LOP1110

Park and Ride Utilisation

3.9 Park and ride demand is forecast to increase by 48% between 2008 and 2026 (Table 3.2). Some of this increase will be as a result of the addition of Petersfinger Park and Ride; the rest is a result of increased attractiveness of park and ride rather than travelling to the city centre by car.

3.10 Some park and ride sites remain more popular than others, with the Beehive and Britford sites forecast to operate close to or at capacity by 2026. [5]

Table 3.2 – Forecast Year (2026) Average Weekday Park and Ride Demand

Site	Capacity	Demand	Occupancy / Turnover
Beehive P&R	400	340	85%
Britford P&R	486	432	89%
London Road P&R	380	284	75%
Wilton P&R	420	272	65%
Petersfinger P&R	650	138	21%
Total	2336	1466	63%

Source: Salisbury Transport Models run 26LOP1110

Local Journey Times

3.11 The changes in morning peak journey times along the A36 between 2008 and 2026 for journeys between Petersfinger and Chilhampton (to the west of Wilton) are shown in Table 3.3 for the base year and 2026 forecast year. Journey times are forecast to increase by one to two minutes depending on time period and direction.

Table 3.3 – Base Year (2008) and Forecast Year (2026) Morning Peak Journey Times (minutes) between Petersfinger and Chilhampton Via A36

	Base Year (2008) (minutes)	Forecast Year (2026) (minutes)
AM westbound	13	15
AM eastbound	13	15
IP westbound	13	14
IP eastbound	13	13
PM westbound	13	15
PM eastbound	13	14

Source: Salisbury Transport Models run 26LOP1110

Traffic Flow

3.12 Traffic volumes at key points along the A36 are shown in Table 3.4. Traffic flow is not forecast to increase at uniform rates across the network due to changed land uses and changed routing.

[5] The Beehive and London Road park and ride catchment areas have been updated to allow greater switching between the sites

Table 3.4 – Base Year (2008) and Forecast Year (2026) Traffic Flows at Key Points Along A36 (pcu/hr)

Scenario	Dir	AM			PM		
		East of Park Wall Jct	North of St Paul's R'about	West of College R'about	East of Park Wall Jct	North of St Paul's R'about	West of College R'about
Base Year (2008)	East	600	1400	1100	600	1100	1000
	West	700	1200	1300	600	1200	1200
Forecast Year (2026)	East	1000	1700	1200	800	1400	1200
	West	800	1200	1400	800	1600	1300

Emissions Analysis

Local Air Quality

3.13 Forecast changes in traffic volumes and speeds between 2008 and 2026 will result in changes in the emissions of local air pollutants in the AQMA.

3.14 Estimates of the resultant changes in emissions can be made by combining outputs from the Salisbury Transport Model (of speed, distance, flow and composition in the morning and inter-peak hours) with NAEI emissions functions and fleet composition forecasts as recommended in DfT guidance.

3.15 The emissions functions estimate emissions (in g/km) produced by a given vehicle type at a given speed and both the functions and composition forecasts account for predicted changes in vehicle technology that will significantly reduce emissions produced per kilometre of travel.

3.16 This approach does not produce direct estimates of air quality in the AQMA as this would require estimates of concentrations of pollutants in the area and the exposure of sensitive receptors to them, requiring detailed information on other sources of pollution, location of receptors and the form of the urban area. However, changes in total emissions of NO_x and PM_{10} released within the area will be a key influence on changes in air quality and therefore this approach provides a good indication of likely scale and direction of change of air quality in the area.

3.17 The changes in NO_X and PM_{10} emissions in the Salisbury AQMA between 2008 and 2026 are shown in Table 3.5. The figures show that the significant forecast improvements in technology and associated reductions in emissions rate more than offset the forecast traffic increase to produce a substantial net reduction in emissions in the area. This would lead to an improvement in air quality in the area.

Table 3.5 – Changes in NO_X and PM_{10} Emissions within the AQMA

Emission	Change between 2008 and 2026
NO_X	-30%
PM_{10}	-26%

Source: Salisbury Transport Model run 26LOP1110

3.18 Table 3.6 shows the change in emissions excluding the impact of technology improvements (i.e. applying the 2008 emissions functions in 2026 as well). The figures shown are largely the result of traffic growth but also reflect changes in traffic composition (balance between HGVs and light vehicles) and speed (which have slightly different impacts on NO_X and PM_{10} emissions).

Table 3.6 – Changes in NO_X and PM_{10} Emissions within the AQMA, assuming no technology improvements from 2008

Emission	Change between 2008 and 2026
NO_X	14%
PM_{10}	18%

Source: Salisbury Transport Model run 26LOP1110

CO_2 Emissions

3.19 A similar approach can be taken to use the model outputs to estimate changes in CO_2 emissions from Salisbury road traffic between 2008 and 2026. In this case changes in fuel consumption are estimated from changes in travel speed and distance (using the fuel consumption functions set out in WebTAG) and then converted into changes in CO_2 emissions on the basis of the average mass of carbon per litre of fuel (as set out in WebTAG).

3.20 CO_2 does not damage local air quality but it is a greenhouse gas that contributes to global climate change. Therefore reductions in emissions levels help to contribute to sub-national and national targets to reduce emissions significantly (as formalised in the Climate Change Act 2008).

3.21 Table 3.7 shows the percentage change in CO_2 emissions forecast between 2008 and 2026 across the Salisbury urban area[6]. Again significant improvements in vehicle technology are forecast over the period between 2008 and 2026, as vehicle manufacturers work to meet the reductions in emissions for new cars required by the EU Framework (95g/km by 2020) and to reduce emissions from LGVs. This leads to improvements in fuel efficiency and therefore net reductions in CO_2 emissions.

Table 3.7 – Changes in CO_2 Emissions within the Salisbury Area

Emission	Change between 2008 and 2026
CO_2	-14%

Source: Salisbury Transport Model run 26LOP1110

3.22 Table 3.8 shows the equivalent figures without the impact of technology improvement i.e. with both 2008 and 2026 emissions calculated using 2008 emissions factors. The increase in emissions shown is again largely the result of traffic growth but also reflects changes in speed and traffic composition (the balance between HGVs and light vehicles).

Table 3.8 – Changes in CO_2 Emissions within the Salisbury Area, assuming no technology improvements from 2008

Emission	Change between 2008 and 2026
CO_2	24%

Source: Salisbury Transport Model run 26LOP1110

Public Transport Network Performance

3.23 The forecast year (2026) public transport network is very similar to the base year (2008) network apart from the following changes: park and ride bus service from Petersfinger Park and Ride and reduced frequencies to/from the other sites. The bus network will be affected by changes in highway network speeds but the rail network will remain the same as the base year.

[6] The estimated change in CO2 emissions between 2008 and 2026 have changed considerably from a 12% net increase to a 14% net reduction since the last version of this report. This largely reflects revisions to the DfT's forecasts for future improvements in vehicle fuel efficiency to meet EU greenhouse gas emission targets by 2020 and assuming a continued improvement to 2026

3.24 The overall public transport network performance for the whole of the modelled area is summarised in terms of the following:

- Total Travel Time (passenger hours) - the total time travelled on the modelled public transport network time;
- Total Distance Travelled (passenger kilometres) - the total distance travelled on the modelled public transport network multiplied by the number of passengers;
- Passenger boardings – the number of public transport boardings.

Bus Network-Wide

3.25 The summary of public transport performance (Table 3.7) shows that the number of public transport passenger boardings has risen in line with the change in bus demand between the base year (2008) and forecast year (2026). The increase in distance travelled is not as large as the increase in travel time and indicating that bus journeys are forecast to become more numerous but shorter.

Table 3.9 – Summary of Change Base Year (2008) and Forecast Year (2026) Bus Network Performance

	Morning Peak	Inter-Peak	Evening Peak
Total Travel Time (pax hr)	15%	14%	15%
Total Distance Travelled (pax km)	6%	9%	8%
Passenger boardings (pax)	22%	21%	19%

Source: Salisbury Transport Models run 26LOP1110

Rail Network-Wide

3.26 Rail network-wide statistics change little from the base year, as the journey times are the same and there is very little change in passenger trip making between base year and forecast year.

4. Conclusions

4.1 Wiltshire Council is developing an updated transport strategy for the Salisbury and Wilton area to frame the identification of investment and network operation priorities over the coming years. The review of transport strategy is critically driven by the need to plan effectively for growth in both housing and employment in the South Wiltshire area, of which Salisbury and Wilton are part, over the next 15 or so years.

4.2 The strategy needs to contribute to the formulation of the Local Development Framework (LDF) for Wiltshire – which will define and shape the county's future development and form the basis of future planning decisions. Most immediately the transport strategy will support the formulation of the Core Strategy element of the LDF which will set out the spatial planning framework for South Wiltshire.

4.3 Wiltshire Council is planning 9910 additional dwellings in South Wiltshire between 2006 and 2026 and 10,900 jobs[7]. The impact of this level of development has been analysed using the Salisbury Transport Model and the key transport problems and issues that are forecast to be faced in Salisbury in the future are summarised below:

Network constraints

- The highway network is currently constrained by the capacity of the A36 junctions at Park Wall Junction, St Mark's Roundabout, Castle Roundabout, St Paul's Roundabout and College Roundabout. The performance of these junctions affects the movement along the A36 and through Salisbury.
- The highway network is also constrained at Exeter Street Roundabout and problems here result in queues along New Harnham Bridge Road.
- The Harnham Gyratory currently performs within capacity once traffic is able to access the gyratory, but there are delays on the approach roads and occasional problems accessing New Harnham Bridge in the morning peak.

Network reliability

- Constraints at Park Wall Junction, St Mark's Roundabout, Castle Roundabout, St Paul's Roundabout, College Roundabout and Exeter Street Roundabout affect journey time reliability to motorists and bus passengers and results in re-routing to avoid these congestion hotspots.
- By 2026, highway congestion is forecast to increase by approximately 35-40%. As a result speeds are predicted to reduce by approximately 8% in the morning and evening peaks respectively.
- Forecasts of transport conditions in 2026 indicate that: traffic delays could be expected to double (or more) at College Roundabout, Exeter Street and at Park Wall junctions and journey times along the A36 are expected to increase by approximately 15% in the morning peak hour.

Environmental factors

- Salisbury has an air quality problem in the city centre; the entire city centre is currently air quality management area. The principle cause of this problem is bus and HGV traffic, although car traffic also contributes to the problem.
- Improvements in fuel and vehicle technology are predicted to reduce emissions of both local air pollutants and carbon.
- High traffic volumes also create noise and visual intrusion problems.

[7] Wiltshire Council Cabinet Meeting 24/5/11 Agenda Item 5 – Wiltshire Core Strategy Consultation Document