A34 Stratford Road Enhancement Study

Final Report

Solihull Metropolitan Borough Council

29 June 2018

Notice

This document and its contents have been prepared and are intended solely as information for Solihull Metropolitan Borough Council and use in relation to Final Report

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 95 pages including the cover.

Document history

Revision	Purpose description	Origin-ated	Checked	Reviewed	Author-ised	Date
Rev 1.0	First Draft for Comment	AC/PR				09/02/2018
Rev 2.0	First Draft for Comment	AJ/RH	AJ	ST	AT	19/04/2018
Rev 3.0	Final Report	ST/AJ	AJ	AT	AT	29/06/2018

Client signoff

Client	Solihull Metropolitan Borough Council
Project	A34 Stratford Road Enhancement Study
Job number	5163435
Client signature / date	

Contents

Tables

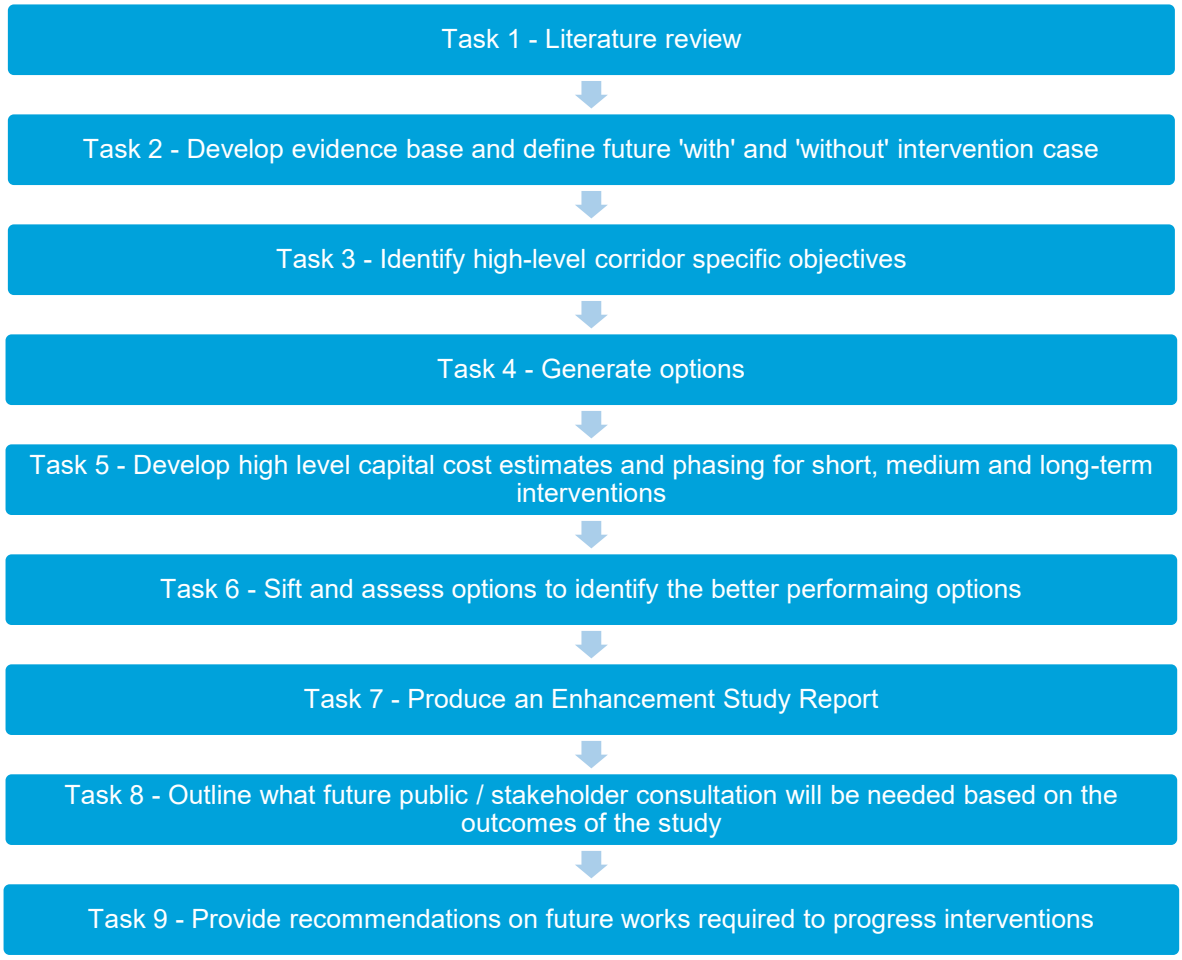
Figures

Executive Summary

Study Background

Solihull Metropolitan Borough Council (SMBC) commissioned Atkins to deliver a Route Enhancement Study for the A34 corridor. The need for this study was identified in the Solihull Connected Delivery Plan (2016-2036). A step change in transport investment is required in Solihull to support sustainable growth by ensuring better integration of land use and transport planning. It includes preparing a Wider Stakeholder Engagement Strategy, outlining what future public / stakeholder consultation may need to be undertaken based on the outcomes of the study and setting out a clear engagement plan that establishes comprehensive and proportionate lines of communication.

The study reviews and analyses the current and future purpose of the corridor, whilst identifying the differences in requirements/function at specific locations and develops a route strategy and a range of key priority schemes for future consideration. These are based on an understanding of the current and future performance of the corridor, in terms of accelerated growth and 'do nothing' scenarios. It has followed a sustainable approach to ensure that an appropriate balance is achieved between providing good and reliable accessibility, as well as helping to ensure that the corridor is an attractive and safe place in which to invest and live. The strategy demonstrates a phased approach to transport and public realm interventions to ensure that the Council's growth plans can be accommodated in a managed and sustainable manner. The methodology is set out below:



A34 Characteristics

The A34 corridor is between the Solihull/Birmingham border near Robin Hood Island and the M42 is predominantly dual carriageway with two lanes in each direction. The corridor is an A-road which according to the DfT's classification is a major road intended to provide large-scale transport links within or between areas1. It is also part of the West Midlands' Key Route Network which aims to create a safer, more efficient and well managed and maintained road network across the region. The corridor is a red route which prohibits stopping on the carriageway at any time and therefore encourages free-flowing traffic.

The A34 corridor is home to a number of retail areas including Shirley High Street (main retail area in Section 2 between Hasluck's Green Road and Union Road) and Solihull Retail Park which attract a number of local and regional trips. The corridor also provides access to residential properties in Shirley, Shirley Heath and Blossomfield.

The corridor is well served by bus with frequent services to Birmingham, Solihull Town Centre and other local centres. A SPRINT route is also planned for the corridor which will improve journey times by public transport and potentially create a less car-dominated area. Cycling provision is present along the corridor with a single shared footway/cycleway between Bills Lane and Monkspath Hall Road and links to Blythe Valley Park. However, cycling provision is not continuous with high quality segregated infrastructure in some parts and no infrastructure in other parts. The section of the corridor between the Hasluck's Green Road and Union Road is lined with retail outlets such as restaurants and supermarkets which continues to a lesser degree up to Monkspath Hall Road. The section between Hasluck's Green Road and Union Road has a significant amount of parking to serve the retail outlets.

There are a number of planned development sites in close proximity to the A34 Corridor allocated for both business and housing use. Table 1 shows the sites that were allocated in SMBC's Local Plan which was published in December 2013. The former Powergen site, close to Haslucks Green Road, is a 3.84-hectare site which has been earmarked for 130 new houses with supporting services. In addition, Blythe Valley Park, close to the M42, has a 7.25-hectare area which has been allocated for 250 houses. In terms of business growth, six hectares of land at Solihull Business Park has been identified for expansion of the site. Similarly, 18.5 hectares of land at the TRW site has been allocated for business use.

Table 1 – Solihull Local Plan Allocation Sites

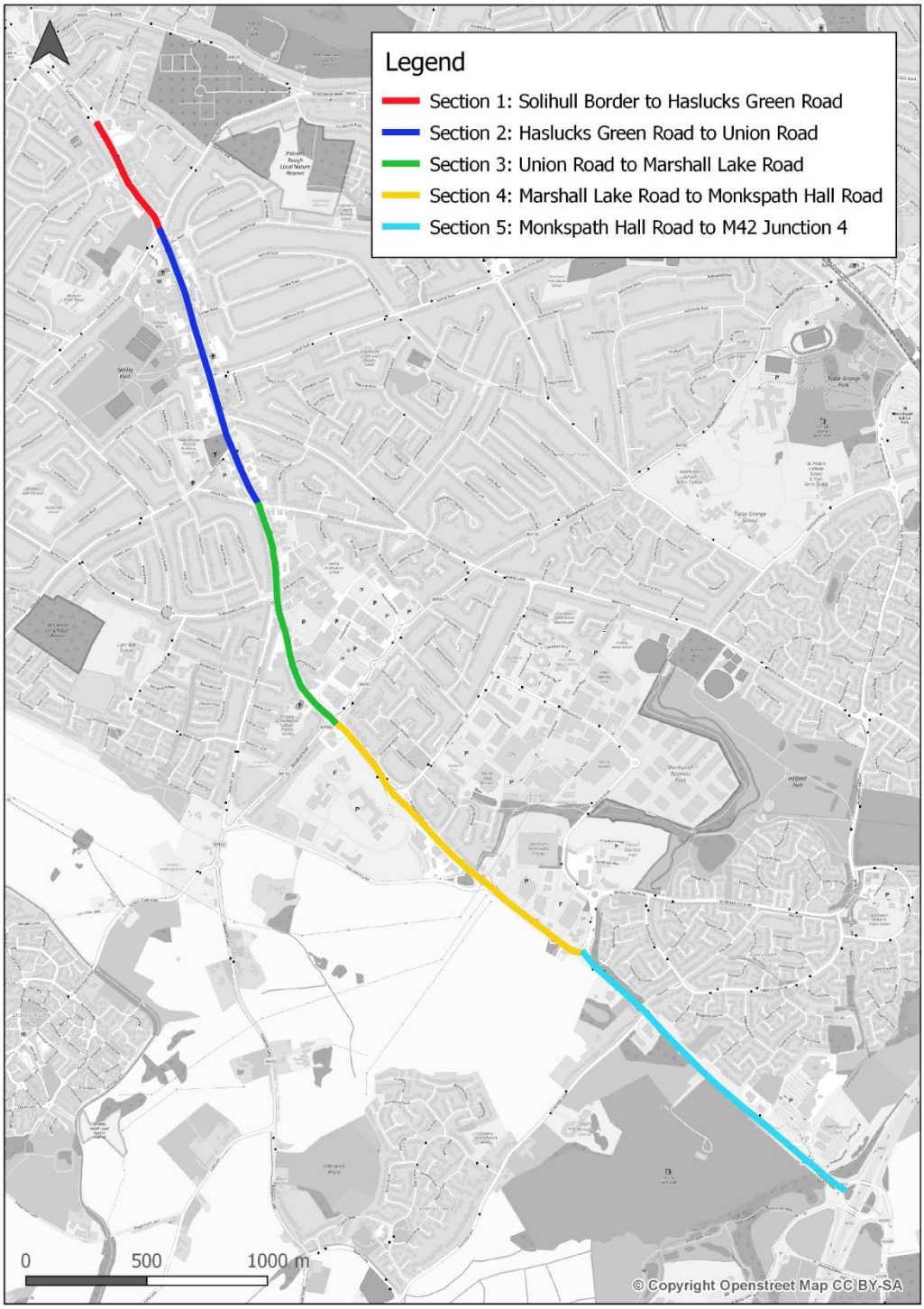
Site	Development Site Size	Planned houses	Business Use Class
Powergen, Haslucks Green Road	3.84-ha	130	
Blythe Valley Park	7.25 ha	350	
Solihull Business Park	6 ha		B1, B2, B8
TRW site	18.5		B1, B2, B8
Fore, Stratford Road, Adj. M42	2 ha		B1

Corridor Sections

The A34 corridor has different functions and area-specific issues that need to be solved to benefit the corridor. Therefore, the corridor was separated into sections to ensure that the characteristics and issues of each section were understood and reflected in the potential options. The corridor sections are illustrated in Figure 1.

[1] DfT (2012) 'Guidance on Road Classification and the Primary Route Network'

Figure 1 - Corridor Sections



Key Issues

There are a number of corridor wide key issues on the A34 corridor which need to be addressed in order to support sustainable growth in the area. These issues can be summarised as follows:

- Car ownership along the corridor is high, resulting in low mode share for public transport and active travel. This is increasing the pressure on the corridor leading to journey unreliability and congestion.
- Cycling provision along the route is inconsistent

- The propensity to cycle in the area is high compared to neighbouring areas, but there is considerable room to increase the number of cycling trips in the study area
- Bus journey times are poor along the corridor and therefore less attractive than car travel
- The corridor experiences delays at peak times
- 94 accidents occurred on the A34 corridor between November 2012 and October 2017
- An AQMA is located close to the A34 corridor at the Solihull Border

In addition to the corridor wide issues, there are a series of issues that are specific to certain sections of the corridor.

Table 2 provides a breakdown of the corridor sections and key issues.

Table 2 – Corridor Sections and Issues

Section	Issues
Section 1: Solihull Border to Hasluck's Green Road	• Delays northbound and southbound by Hasluck's Green Road • Low speeds (<20kmph) by Hasluck's Green Road • Accident cluster by Hasluck's Green Road
Section 2: Hasluck's Green Road to Union Road	• Delays northbound and southbound • Several accidents along corridor during the past five years • Parking on north side of School Road
Section 3: Union Road to Marshall Lake Road	• Delays northbound • Low speeds (<20kmph) at A34/ Marshall Lake Road junction • Several accidents along corridor during the past five years
Section 4: Marshall Lake Road to Monkspath Hall Road	• Delays southbound • Low speeds (<20kmph) at A34/ Dog Kennel Lane • Several accidents along corridor during the past five years
Section 5: Monkspath Hall Road to M42 Junction 4	• Delays northbound and low speeds (<20kmph) at Creynolds Lane junction • Delays northbound and low speeds (<20kmph) close to Notcutts Garden Centre

Corridor Objectives

Corridor specific objectives were identified to help address the current and future challenges on the A34 corridor, whilst supporting the growth aspirations of SMBC and the wider regional and national aspirations for growth. The corridor objectives are as follows:

- Improve journey reliability through improved public transport and active travel infrastructure and smarter choices engagement
- Addressing safety for all users including improved facilities for pedestrians and cyclists and addressing accident 'hotspots'
- Improve conditions for pedestrians including tackling severance and improving the public realm at key centres through community engagement
- Support economic growth by improving the efficiency of the highway network through a range of interventions and technology improvements.

Long List of Options

Using the evidence base produced as part of this study, an option generation process was undertaken to develop a long list of options which addressed 'corridor wide' issues and section specific issues. The aim of option generation was to develop a range of alternative interventions

across all modes which have the potential to achieve the corridor objectives. As part of the option generation process, Atkins undertook the following activities:

- Internal Option Generation Workshop
- Best Practice Review
- Option Generation Workshop

As well as capital cost options, consideration was given to options which promote the use of alternative modes of travel to car such as personalised travel planning (PTP) and travel plans (revenue measures).

Short List of Options (Package of Interventions)

An options appraisal framework was used to score the long list of options in order to identify a short list of options to be taken forward as 'preferred options' for more detailed consideration. The options appraisal framework considered strategic fit, economic, social and environmental benefits, and management and delivery. The appraisal identified one 'corridor wide' option identified as 'Cycle Infrastructure Improvement' this was the only option which would be developed across the entire corridor. A further 13 'section specific' options were identified as preferred options. These options were then packaged into groups according their transport theme. The packaged short list of options is presented in Table 3.

Table 3 – Packaged Short List of Options

Theme Intervention	Options
Cycling Infrastructure Improvement	High quality cycling infrastructure along the entire corridor (potential for full/light segregation)
Public Transport Improvement	Priority Bus Lane
Pedestrian Facility Improvements	Improve pedestrian crossing facilities, Hasluck's Green Road to Union Road section Provide controlled pedestrian crossing facilities south of Blackford Road/A34 Roundabout – Marshall Lake Road to Monkspath Hall Road section.
Highway Efficiency Improvements	Allow right turn out of Creynolds Lane onto A34, including cycle turn Permeability to the wider area - reduce right turns across the Hasluck's Green Road to Union Road section. Parking Management Strategy - remove/reduce parking outside of Shirley High Street.
Junction Improvements	Increase capacity of roundabout at A34 / Union Road (and improve safety) Increase capacity of Shakespeare Drive junction: northbound left turn lane and bus priority southbound. Marshall Lake Road/A34 Roundabout - provide bus priority for left turn (additional capacity at junction). Junction improvement at Tesco/Notcutts roundabout Signalised junction B4102/A34 Safety improvements along the B4102/A34 Junction Safety/Signal improvements on Hasluck's Green Road/A34/Olton Road Junction Junction capacity improvements at Monkspath Hall Road/A34 Roundabout

Next Steps

As outlined above, following the identification of preferred options per corridor section, the options were packaged by 'transport theme' (regardless of where they were located along the corridor) the analysis has identified five 'packages of interventions' The package of interventions have the potential to address the issues identified across the A34 and achieve the A34 study objectives. The key next step is for the package of interventions to undergo further appraisal to enable decision makers to make a rationale and auditable decision on whether options should be taken forward for funding and implementation.

It is imperative that any interventions implemented across the study area are aligned closely to the objective set out within this study. It is suggested that an internal workshop takes place to determine a strategic approach which ensures that a piecemeal approach is avoided when funding opportunities arise. Interventions further appraised must ensure they address current and future issues identified through this corridor study and meet the aspirations of sustainable economic growth.

The figure below identifies the step by step process for each package of interventions which will enable SMBC to make an informed decision on interventions to be put forward for funding and implementation

Package of Interventions	First Key Step (SOC Stage)	Second Key Step (OBC Stage)	Third Key Step (FBC Stage)
Cycling Infrastructure Improvement	Discuss with TfWM regarding opportunity to integrate scheme into LCWIP	• Undertake A34 Cycling Feasibility Study • Engagement with Sustrans and local forums	Undertake Business Case 'five case model'
Public Transport Investment	• Discuss intervention with TfWM	• Undertake preliminary design • Undertake modelling exercise to assess impact of interventions	Undertake Business Case 'five case model'
Pedestrian Infrastructure Improvement	• Engage with local residents to discuss severance issues along corridor	• Pedestrian audit • Opportunity to align with TfWM LCWIP – discuss with TfWM	• Assess the impact of intervention • Undertake Business Case process (if applicable)
Highway Efficiency Improvements	• Engage with Sustans and Living Streets on public realm option • Audit and modelling to assess access restrictions	• Public realm improvement audit • Engagement with business regarding parking restrictions	• Consultation with local residents • Identify funding opportunities
Junction Improvements	• Further detailed analysis of junction performance • Preliminary design of junction improvements	• Junction modelling Walking and cycling junction assessment • Engage with TfWM	• Detailed junction design • Business Case Process • Identify opportunities for funding

1. Introduction

1.1. Study Background

Solihull Metropolitan Borough Council (SMBC) has commissioned Atkins to deliver a Route Enhancement Study for the A34 corridor. The need for this study was identified in the Solihull Connected Delivery Plan (2016-2036). A step change in transport investment is required in Solihull to support sustainable growth by ensuring better integration of land use and transport planning. It includes preparing a Wider Stakeholder Engagement Strategy, outlining what future public / stakeholder consultation may need to be undertaken based on the outcomes of the study and setting out a clear engagement plan that establishes comprehensive and proportionate lines of communication.

The A34 is a strategic and busy radial route linking the M42 via Shirley to Birmingham with key access points to Solihull town centre and Blythe Valley Business Park (BVBP). It currently experiences significant congestion at some locations which is likely to be exacerbated by future planned development. This future development includes significant expansion at UK Central (UKC) Zone 4 – Blythe Valley Park and significant housing allocations to the south of the A34 in the Dickens Heath area. The Council is in the process of delivering relatively small-scale improvements to the A34 corridor, but a strategic, phased approach to intervention is required to ensure that growth plans can be accommodated in a managed and sustainable manner.

Transport for West Midlands (TfWM) is also developing its plans for the provision of Sprint along this route, via Shirley town centre, as part of the HS2 Connectivity Package. As development comes forward it will be essential that a multi-modal approach is taken to promote sustainable growth and help ensure high levels of accessibility while respecting the different 'link and place' environments along the A34 corridor.

The study identifies a high-level strategic approach to the management of movement, and the balance between modes of travel, providing an overall vision for the corridor. SMBC has ambitious plans for growth with the arrival of the first HS2 station north of London, the UKC Programme and 'Managed Growth' agenda. To ensure the A34 corridor can support sustainable land use and economic growth, by accommodating existing travel patterns and future travel demand associated with growth, the study has identified interventions for which detailed appraisal will be required, including setting out the process, resource and technical requirements, and the broad cost.

1.2. Study objectives and outputs

The objectives for the A34 Corridor Enhancement Study are summarised as follows:

- Produce an Enhancement Study with outcomes that will support sustainable growth in Solihull;
- Identify interventions which have the potential to reduce congestion, improve journey time reliability and enhance user experience across relevant modes of transport; and
- Consider how future travel demands can be accommodated in a manner that achieves the appropriate balance between public transport, private and non-motorised user priorities, considering the variation in function of the A34 across the study area.

The key deliverable / output of the commission is the A34 Corridor Enhancement Study report.

The enhanced route strategy contains key priority schemes for future consideration, including include recommendations on future requirements to progress interventions (either as individual projects or as packages if interventions) through the design and business case development process. The consultation and wider stakeholder engagement strategy outlines the aims and objectives of consultation, provides a list of relevant stakeholders and how they should be consulted, and identifies appropriate timescales for public consultation.

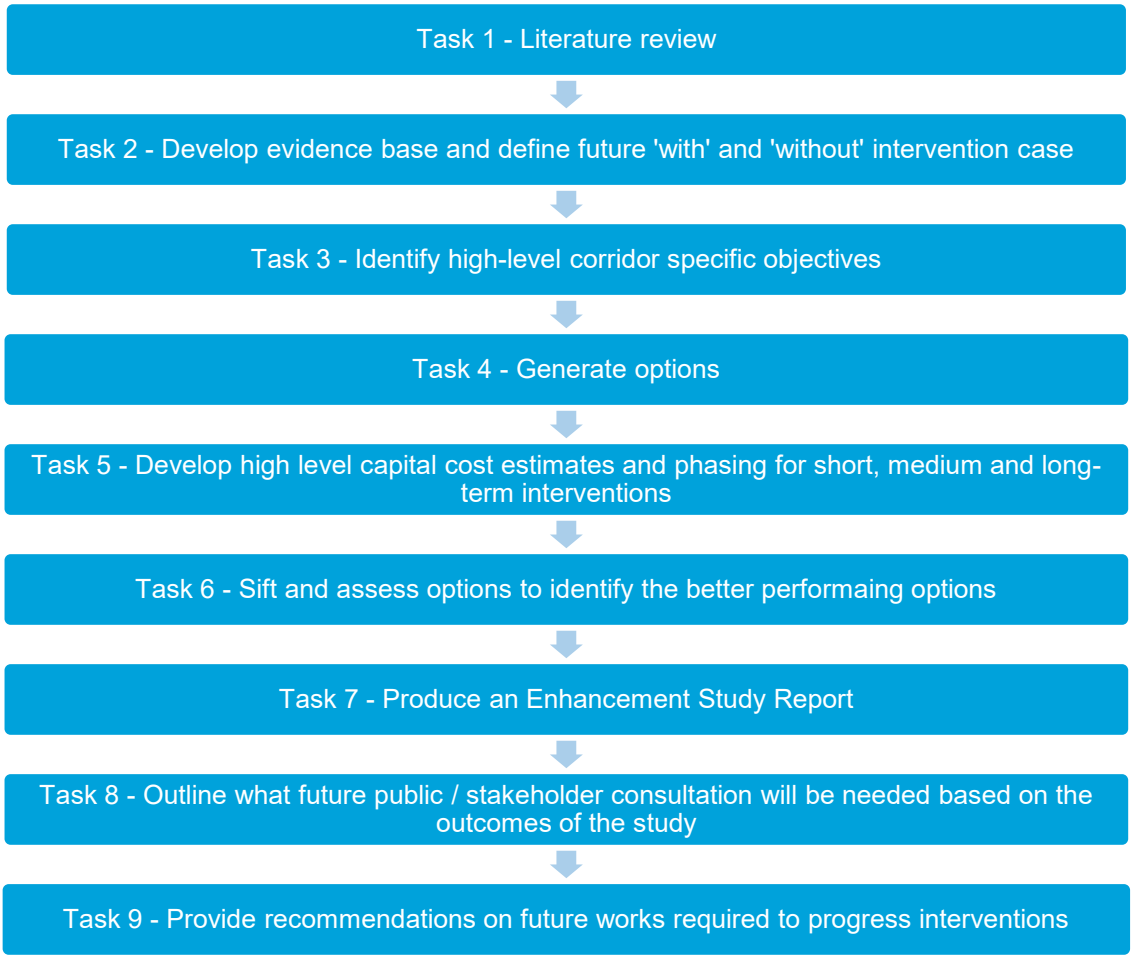
1.3. Study Area

The geographical scope of the A34 Corridor is defined as from the Birmingham/Solihull boundary to the north, via Shirley town centre to M42 Junction 4 in the south. The study area for the A34 Corridor is presented in Figure 2.

Figure 2 - A34 Corridor Study Area

1.4. Methodology

The study reviews and analyses the current and future purpose of the corridor as a whole, whilst identifying the differences in requirements/function at specific locations and develops a route strategy and a range of key priority schemes for future consideration. These are based on an understanding of the current and future performance of the corridor, in terms of accelerated growth and 'do nothing' scenarios. It has followed a sustainable approach to ensure that an appropriate balance is achieved between providing good and reliable accessibility, as well as helping to ensure that the corridor is an attractive and safe place in which to invest and live. The strategy demonstrates a phased approach to transport and public realm interventions to ensure that the Council's growth plans can be accommodated in a managed and sustainable manner. The methodology is set out below:



In summary, the A34 Corridor Enhancement Study comprises:

- A literature review of relevant strategies and studies that summarises key points such as local, regional and national growth aspirations, performance of the corridor and the implications of growth, focusing on the relevance for the A34 corridor. This provides a clear audit trail for SMBC on how each piece of literature has informed the technical process.
- A SWOT analysis for highway, public transport, and walking and cycling and an assessment of agreed future 'with scheme' and 'without scheme' scenarios.
- High level objectives which inform option generation across transport modes.
- Generating options across the major modes (car, public transport, cycling and walking).
- High level capital costings for each identified option, including phasing for short, medium and long-term interventions.
- A sift and assessment of identified options to Identify the better performing options, culminating in the identification of preferred options to be taken forward for a more detailed appraisal.
- Summary of the current performance of the network and the strategic case for intervention based a high-level analysis of the evidence base.
- A Public and Stakeholder Consultation Strategy which identifies clear actions to be taken forward once this commission has been completed.
- Recommendations on future work requirements to progress interventions (either as individual projects or as packages of interventions) through the design and Business Case development processes.

This approach ensures the function and role of the A34 corridor has been considered to avoid a piecemeal and reactive approach, providing an overall framework and direction within which future smaller scale and larger scale transport improvement work can be considered. The study will form part of the evidence base which informs the appraisal of the preferred options in a subsequent business case.

Regular engagement with key partners has been undertaken throughout the commission, including TfWM and the Midland Metro Alliance to ensure the study is aligned with current schemes and studies being developed on the corridor, including SPRINT and METRO. It has been prepared alongside the accompanying Route Enhancement Study for the A34 Corridor. Due to the strategic significance of both corridors, it is imperative that SMBC simultaneously understands the existing and likely future transport movements and land uses of both corridors.

1.5. Structure of the document

The remainder of this report is structured as follows:

- Section 3 provides a review of relevant local, regional and national policy to set the context;
- Section 4 presents the evidence of current and future performance of the corridor;
- Section 5 sets out high level objectives for the corridor;
- Section 6 provides an overview of option generation;
- Section 7 presents the high-level cost estimates and phasing for the options identified;
- Section 8 sets out the sifting process leading to the identification of preferred options;
- Section 9 outlines the consultation strategy; and
- Section 10 summarises the study and presents recommendations for progressing the preferred options.

2. Literature Review

2.1. Introduction

This section provides a review of relevant local, regional and national policy documents combined with a review of current commissions within or close to the corridor that will help to develop a clear understanding of both the strategic and economic context of the A34 corridor and the need for intervention. This enables a picture to be developed of the current role and performance of the A34 corridor and the future function this corridor is expected to have to enable SMBC to deliver sustainable economic growth, as well as supporting regional and national growth aspirations. The review will help to show the potential implications of growth on the corridor 'with' and 'without' intervention.

2.2. Local Policy context

At a local level, we have reviewed relevant policy documents such as Solihull Connected and the adopted and draft Local Plan. Such documents set out the aspirations of SMBC in terms of future growth, identifying development sites, the current and future performance of the corridor, and the implications of growth on the transport network.

2.2.1. Solihull Connected Transport Strategy 2016

2.2.1.1. Vision and growth aspirations

Solihull Connected sets out the long-term strategic vision for how extra travel demand from economic and population growth will be managed in the Borough:

"Solihull Connected will enable great mobility and connections for all by attracting major investment in our transport system and places – enhancing the Borough as an attractive, sustainable and economically vibrant place to live, work and visit."

Solihull Connected is linked to the West Midlands Strategic Transport Plan 'Movement for Growth', which provides the strategic direction for transport across the region. Consideration of traffic flows show that there is a complex mix of national, conurbation-wide and local journeys, covering a multitude of origins and destinations. An improved transport system will serve these exiting flows better, but must also serve the West Midlands for its future challenges, including economic growth and population growth and housing development. Solihull is at the heart of some the UK's most important pieces of transport network (M42, M6, West Coast Main Line, HS2 etc.) and is working with Midlands Connect to identify the strategic investment strategy for the Midlands area.

As outlined within Solihull Connected, the big catalyst for the need to plan for growth is the arrival of the HS2 Interchange in 2026. This presents a huge opportunity to attract investment, housing and jobs growth. However, this needs to be planned carefully to ensure the sustainability of the transport network.

2.2.1.2. Performance of the corridor

The southern fringe is home to 28,164 people, representing 14% of Solihull's population. There are 10,305 jobs in the area and growth plans could see as many as 1,800 more people and 6,600 more jobs by 2031. This area has the highest employment percentage in the Borough with around 45% of residents in employment. Car ownership is 1.7 per household with only 8% of households not having access to a car. Residents from the southern fringe travel on average 14km to get to work.

The BVBP is particularly poorly connected to Solihull, with just 13% of Solihull residents able to access it within half an hour by public transport. In addition, the Solihull Congestion Study 2013, identifies the Stratford Road / Monkspath Hall Road junction as a delay hotspot in the AM peak and the Stratford Road / Creynolds Lane junction as a delay hotspot in the AM and PM peak. It also notes that in the AM peak, the A34 to M42 Junction 4 has experienced a reduction in speed of 2.2% between 2007 and 2011/12. In the PM peak the A34 to Solihull Lane has experienced a reduction in

speed of 11.7%, over the same period. Traffic along this major route is forecast to grow significantly in the future which will put more pressure on the corridor.

2.2.1.3. Implications for growth

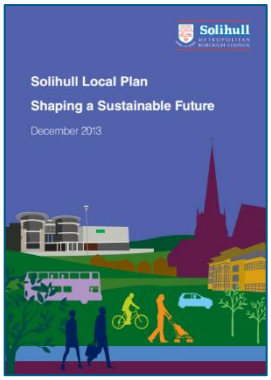
Solihull Connected is accompanied by a Delivery plan which sets out key investment priority areas including: enabling the HS2 Growth Strategy and Solihull Local Plan Review, connecting UKC growth centres, supporting access to business parks and housing sites, promoting a transformation in public transport, cycling improvements, increasing road network reliability and resilience and creating innovative local community transport initiatives. The schemes of relevance to this corridor include:

A34 Stratford Road Corridor Enhancements including Shirley Centre: The A34 is a strategic and busy radial route linking the M42 via Solihull to Birmingham with key access points to UKC and BVBP zones and includes Shirley town centre. It experiences significant congestion at some locations and is potentially subject to future development especially at BVBP. Shirley centre is important locally and economic sustainability is sought. TfWM are considering the feasibility of Sprint along this route via the town centre as part of the HS2 Connectivity Package. As development comes forward it will be essential that a multi-modal route approach / future proofing is taken to promote growth and high levels of accessibility respecting the different link and place environments along the Stratford Road.

The identified growth sites are expected to increase pressure on an already constrained corridor, this is anticipated to result in increased congestion and poor journey time reliability. As further development occurs, BVBP needs vastly improved connections, by public transport and cycling, to the wider Borough and beyond. An alternative southern access to BVBP could alleviate congestion. The area as a whole needs improved public transport and cycling connections between Cheswick Green, Dickens Heath with Stratford Railway Line, Shirley, Dorridge/Knowle and Solihull Town Centre. There is also a need to determine the potential for a new orbital bus service linking the communities. Also improved local streets are required, with reduced severance from busy roads so that people are encouraged to walk and cycle.

2.2.2. Solihull Local Plan: Shaping a Sustainable Future December 2013

2.2.2.1. Vision and growth aspirations



The Local Plan sets out a long-term spatial vision (2011-2028) of how its spatial assets will promote economic and job growth in the Borough. The strategy aims to conserve and improve the character and quality of the environment, an important component of the Borough's attractiveness to investment and success.

The Local Plan vision for Borough is:

"By 2028, Solihull will have built on its distinct reputation as an attractive and aspirational place to live, learn, work and play, with strong links to Birmingham and the wider Local Enterprise Partnership area, to the major urban area of Coventry and rural Warwickshire."

To support the implementation of the vision, the Solihull local plan identifies seven policy themes. Within these themes the following principles apply to the A34 corridor:

- Enable Economic Growth – Ensuring that the role of the A34 Stratford Road and A41 Warwick Road as key transport corridors to support the Plans' target to deliver 32,000 new jobs and 8,665 new homes between 2012 and 2028.
- Connect Communities, Centres and Employment – Improving access to Shirley Town Centre, the Borough's second largest shopping centre and an important centre for commercial activity and services to a broad local catchment. The centre needs to withstand competition from out of town shopping centres on the A34 corridor and the increased offer in Solihull Town Centre.
- Encourage Ease of Access and Movement – Shirley Town Centre, located astride the A34 in the south of the Borough, offers the prospect of further sustainable economic growth through modernisation, new floorspace and public realm improvements. This will assist the regeneration of the town centre and wider area.

2.2.2.2. Performance of the corridor

As a result of the Borough's economic success, level of affluence, attractive residential areas and accessibility via strategic transport network, there is continued development pressure on the Green Belt. These factors, in combination with the relatively high levels of car ownership (1.28 cars per dwelling), have resulted in high levels of greenhouse gas emissions, predominantly associated with congestion along the M42, into Solihull Town Centre and on key routes into Birmingham.

The A34 Stratford Road is one of the principal routes into Birmingham providing excellent connectivity to the strategic road networks. This has resulted in traffic congestion at key destinations such as Shirley Town Centre, which has had a negative effect on the public realm and shopping environment. In addition, Blythe Valley Park suffers from poor public transport provision thus car mode share is high.

2.2.2.3. Implications of growth

The sustainable growth strategy recognises the significant potential for growth based on key economic assets within the M42 Economic Gateway. This area supports more than 100,000 jobs and it is estimated that realising the full potential of the Gateway could create over 36,000 additional jobs by 2026 and add £5.9bn to the West Midlands economy. It is also focused on improving the vitality and competitiveness of Shirley Town Centre, through the provision of sustainable economic growth. Both areas are expected to deliver significant development which has implications for the A34 corridor. This includes:

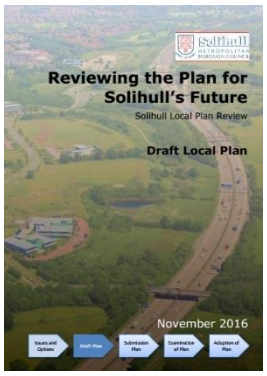
- Diversifying the range of uses at Blythe Valley Business Park (1.75m sq. ft.)
  - Birmingham and Blythe Valley Business Parks have about 33 ha remaining to be developed
- 'Parkgate' a mixed-use scheme anchored by a food-based superstore
- The regeneration of the former PowerGen offices site into a mixed-use development that will complement the Parkgate development. Together, the two sites are likely to cause an increase in local traffic and apply more pressure on parking spaces.
- Key housing allocations (Phase 1 – up to 2018)
  - Powergen, Stratford Road, Shirley – 130 dwellings
  - Blythe Valley Park, Stratford Road, Shirley – 350 dwellings
- Key housing allocations (Phase 2 – up to 2023)
  - Blythe Valley Park, Stratford Road, Shirley – 250 dwellings
- Key employment allocations
  - TRW, Stratford Road, Shirley – 18.5 ha allocated for B1, B2 and B8 use
  - Fore, Stratford Road, Adjacent M42 – 2.0 ha allocated for B1 use

Likely improvements identified to support this growth include a new road crossing at Hasluck's Green Road, improved pedestrian and cycle connectivity with Stratford Road corridor, and potential improvement to M42 Junction 4. Also, to improve accessibility and encouraging sustainable travel new development should be within 400m walk distance of a bus stop served by a commercially run high frequency bus service.

The allocation of sites, particularly those fronting onto the A34, will undoubtedly add further pressure and increased levels of congestion on the corridor. Whilst the Local Plan acknowledges the individual requirements to make sites acceptable in planning terms, it does not identify a solution for the corridor as a whole – meaning that poor performance and journey time reliability will continue without an integrated solution to address issues along the length of the corridor and improve its overall performance.

2.2.3. Solihull Local Plan Review: Draft Plan November 2016

The Council is currently in the process of reviewing its Local Plan. The arrival of HS2 to the Borough and the Interchange station mark a significant shift from the adopted Local Plan, along with the increase from 8,665 to 15,029 new homes to be delivered over the plan period.



2.2.3.1. Vision and growth aspirations

Within the Draft Local Plan (Regulation 18), the vision for the Borough is:

"By 2033, Solihull will have built on its distinct reputation as an attractive and aspirational place to live, learn, invest, work and play. It will have taken advantage of the unique opportunity to maximise the economic and social benefits of the High Speed 2 rail link and interchange both for the Borough and wider area; reflecting the Borough's location at the heart of the national rail and motorway network. In particular the opportunity will have been taken to ensure that the HS2 Interchange is well integrated to the Borough's green infrastructure and key economic assets, including Birmingham Airport, the NEC and JLR to ensure they, and others, can capitalise on this potential. The Borough will play a part in meeting, in a sustainable manner, the needs of its housing market area so that its residents have access to a range and choice of quality accommodation. The Borough will retain its sense of identity, both in its urban and rural area (including appropriate protection of the Green Belt); and the quality of the environment that make it a special place. This vision will contribute towards the ability for everyone to have an equal chance to be healthier, happier, safer and prosperous, through managed growth."

The Local Plan Review highlights two significant areas for change, which are relevant to the A34 corridor:

- Maximising the economic and social benefits of the HS2 rail link and Interchange (UKC Hub Area).
- Mitigating the impacts of HS2 and the growth associated with the Interchange area (UKC Hub Area).

2.2.3.2. Implications of growth

Many allocations remain the same in the review document, but all additions and/or changes that affect the A34 corridor are outlined below:

- UKC economic opportunity Zone 4 – Blythe Valley Park
- TRW/The Green has 18.5 ha of land allocated, this will be reduced to accommodate the residential allocation, and be updated in the next iteration of the plan once a concept masterplan has been developed. The site is likely to require vehicular and pedestrian access improvements, and pedestrian and cycle connectivity enhancements towards Stratford Road to the east and to the south of Shirley.
- Additional housing allocations of 3,500 dwellings in the vicinity of the A34
  - West of Dickens Heath – 700 dwellings
  - TRW/The Green, Stratford Road, Shirley – 400 dwellings
  - Blythe Valley Park – 950 dwellings (instead of the 600 dwellings proposed within the draft Local Plan) – the current planning application proposes up to 1,000 dwellings (including extra care provision of 250 units)
  - South of Dog Kennel Lane – 850 dwellings
  - South of Shirley – 600 dwellings

It is important to note that whilst the key housing sites identified under Phase 1 of the Local Plan (up to 2018) have planning permission, the sites are only partially delivered at this stage therefore the implications of development under Phase 1 are yet to be determined. A summary of planning permission for Phase 1 housing sites can be found below:

- **Powergen, Stratford Road, Shirley –** *"Comprehensive redevelopment of former Powergen site to include the erection of an extra care retirement village comprising 261 units; 113 dwellings with a mixture of houses and apartments; petrol filling station; associated*

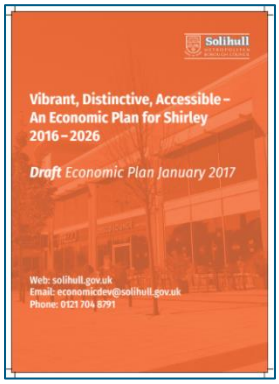
landscaping; on-site roads; car parking; site clearance and demolition and off-site highway works."

- **Blythe Valley Park, Shirley –** *"Hybrid planning application for a mixed use development of land at Blythe Valley Park to comprise: in outline with all matters reserved (save for the new access, internal spine road and elements of landscaping - as described below), up to 750 residential dwellings, up to 98,850sqm of Use Class B1, B2 and B8 floor space, up to 250 unit housing with care facility (Use Class C2/C3) up to 2,500sqm of ancillary town centre uses (Use Class A1-A5), upto 1000sqm of ancillary leisure and community uses (Use Class D2), up to 200 bed hotel (Use Class C1) associated car parking (including shared car parking which could be decked) public open space, public realm and highways works; in full, new vehicular access, internal spine road, soft and hard landscaping (in part) SUDS and balancing ponds"*

The allocation of additional sites along with the uncertainty of future demand is likely to put even more pressure on the A34 corridor, particularly at current pinch points. An enhancement package for the corridor will be required outlining a plan of interventions with associated target points for delivery to ensure that these developments come forward in a sustainable manner and are accessible by all modes of transport, to reduce reliance on travel by car, especially from residential areas to areas of employment.

The delivery of SPRINT routes as part of an inter-connected network of rapid-transit lines across the region, could provide an alternative form of sustainable transport for residents to access employment opportunities, particularly at the UKC Hub. However, future demand for these services and the impact these routes will have on the A34 corridor is currently unknown. The route that may directly impact on the A34 corridor is the Hall Green to UKC Hub/North Solihull SPRINT.

2.2.4. Economic Plan for Shirley January 2017



Shirley Town Centre is a major local centre occupying a prime location on the A34 corridor connecting Junction 4 of the M42 with Birmingham City Centre. Shirley is a major centre of employment that benefits the Solihull economy with over 15,700 jobs. It has experienced above average business and employment growth between 2010 and 2015 (15%), with employment growing 9.7% between 2014 and 2015 – higher than the reported growth of 6.1% for the Borough and well above the 2.2% for England.

Shirley is situated in a strategic location that could support future growth aspirations, just under 8 miles from Birmingham and 3 miles from the M42, part of the Strategic Road Network.

The economic plan was adopted following the Solihull MBC Cabinet Meeting held on the 13th July. There is currently a consultation to establish a Business Improvement District for Shirley.

2.2.4.1. Vision and growth aspirations

The Economic Plan for Shirley sets out a shared vision for Shirley town centre:

"A Vision for Shirley: vibrant, distinctive, accessible – a destination of choice for shoppers and visitors and specialist independent retailers."

The opening of the Parkgate development in 2014 provided new retail, leisure and food and drink outlets, as well as a new library and housing. Opposite Parkgate, the regeneration of the former Powergen site will create an extra care village and traditional homes.

The town centre offers accessible facilities not only to local communities, but to many workers on major employment sites in the wider Shirley area, including The Green and Cranmore, Monkspath and Solihull Business Parks.

The plan sets out five priorities including defining the role of Shirley Town Centre and setting a framework for future development, maximising the benefits of regeneration projects (e.g. Parkgate and former Powergen site) which can make a major contribution to the town centre, enhancing the public realm, developing a Business Improvement District (BID) and reviewing transport and access, including car parking provision.

2.2.4.2. Performance of the corridor

DfT figures (2011) show that most of the neighbourhoods within the three Shirley wards are within five to nine minutes of a major employment centre by public transport or on foot, and within five minutes by car. Alongside this, there has also been a reported increase in the use of car parking facilities within the town centre. Between 2014 and 2016 there was a 6.5% increase in the number of individual visits by car to Shirley town centre. This could potentially be due to the increasing attractiveness of Shirley as a place to shop and of local employment. Currently off-street parking offers 3 hours free, extendable to all day parking for £4.

2.2.4.3. Implications of growth

Despite the strong overall performance of this section of the corridor, there are clear challenges for Shirley Town Centre. A SWOT analysis of the town centre included the following weaknesses and opportunities relating to transport:

Weaknesses

- A34 corridor impact, reducing perceived safe crossing points along the town centre
- Lack of clear signage to off street and on street parking provision
- Poorly co-ordinated development of transport infrastructure for cars, cyclists, and pedestrians
- Congestion and conflict between through and shopping traffic

Opportunities

- Securing future investment in transport infrastructure through Solihull Connected Transport Strategy and Delivery Plan
- Developing a public realm framework and approach for Shirley in support of the Local Plan Review

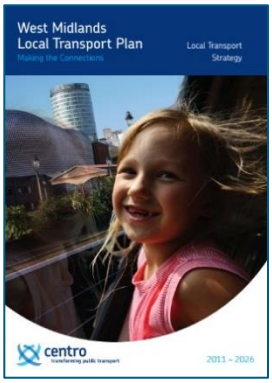
Severance occurs along the A34 corridor and affects regular shoppers and the local Shirley community. Therefore, providing safe crossing points along the A34 for the length of the Town Centre is one of the measures identified within the plan with 6 junctions proposed for improvement to cycle and pedestrian movements including: Hasluck's Green Road, Stanway Road, Solihull Road, Longmore Road, Union Road and Tamworth Lane.

Future long-term transport improvements could be made to encourage more people to use sustainable modes of travel, aligned with the aims for public realm and accessibility, which would have a positive impact on Shirley. There is also a need for both short and long-term parking provision for shoppers and workers in Shirley.

2.3. Regional policy context

At a regional level, we have reviewed the West Midlands Local Transport Plan and the Greater Birmingham and Solihull Strategic Economic Plan (SEP). We have also reviewed other commissions that are currently taking place in close vicinity or along the corridor, including the latest work regarding both the Midland Metro and Sprint. Reviewing these current commissions will help to identify the strategic and economic benefit of the corridor across all modes of transport.

2.3.1. West Midlands Local Transport Plan



The West Midlands Local Transport Plan focused on a 15-year period (2011 to 2026) of growth and rebalancing the local economy by encouraging sustainable economic growth and ensuring demographic growth by meeting housing needs.

The Plan's vision is:

"To make the West Midlands Metropolitan Area more prosperous, healthier and safer, offering a high quality and attractive environment where people will choose to live, work and visit, and where businesses thrive and attract inward investment."

The approach to ensure the delivery of the strategic principles I summarised as:

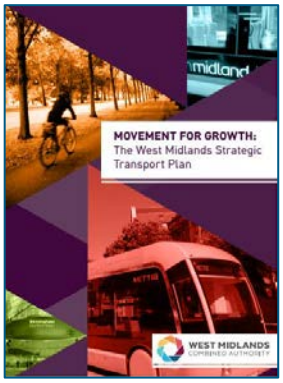
- Making the best use of the transport assets and capacity we already have (Smarter Management)

- Encouraging people to move away from car use through providing attractive, effective and efficient alternatives which reduce our carbon footprint (Smarter Choices)
- Targeting resources at programmes, initiatives and schemes that support either or both of the first two Strategic Principles (Smarter Investment)

Several growth areas are highlighted in the LTP including the National Exhibition Centre, recently expanded LG Arena, Birmingham Airport and Birmingham International Railway Station and the East Birmingham/North Solihull Regeneration scheme. All of these sites are dependent upon nationally strategic motorway 'box' comprising the M5, M6 and M42, the primary road network including the A38, A41, A45 and A34 as well key local links such as the A452.

2.3.2. Movement for Growth: The West Midlands Strategic Transport Plan

Following devolution of power to the West Midland's Combined Authority (WMCA), the Leaders of the West Midlands Metropolitan Area have set a new vision for transport:



"We will make great progress for a Midlands economic 'Engine for Growth', clean air, improved health and quality of life for the people of the West Midlands. We will do this by creating a transport system befitting a sustainable attractive and economically vibrant conurbation in the world's sixth largest economy."

This strategic transport plan sets out the overall approach to deliver this vision, guiding improvements to be made year in, year out, over the long term. These improvements will match the scale of challenges faced to support growth, and regeneration, and to foster environmental and social improvements.

Travel demand is forecast to increase by 22% over the next twenty years, due to increased population and higher employment levels. This combined with a long-term trend for longer journeys, particularly for work, gives a 34 % forecast increase in the number of car kilometres travelled. This is an extra 1.2 million extra car journeys per weekday which is equivalent to the amount of traffic carried by ten 3 lane motorways, a huge increase in urban highway capacity.

Evidence of adding significant new highway capacity in congested urban areas is that induced traffic leads to problems of poor connectivity for people and goods persisting – congestion just involves a higher magnitude of traffic. This is alongside increased requirements for large scale parking where land is scarce and at a premium, and impact on air quality, road safety and severance of communities by busier roads.

The strategic transport plan brings together schemes outlined in the HS2 Connectivity Programme, Midlands Connect and Highways England Road Investment Strategy (RIS), with the aim of developing a co-ordinated 10-year investment programme for transport across the West Midlands. These improvements will be delivered by a number of organisations, through a range of programmes and packages. The Combined Authority's role will be to ensure that this delivery is joined-up and in accord with this overarching long-term plan for transport.

2.3.3. Greater Birmingham & Solihull Strategic Economic Plan (SEP)

The Greater Birmingham and Solihull Strategic Economic Plan (SEP) for 2016-2030 sets out our vision and strategy for delivering smarter, more sustainable and more inclusive growth for the benefit of the Greater Birmingham & Solihull area, the wider West Midlands region and the UK as a whole. Its ambition is to become a top global city region by 2030 as well as the major driver of the UK economy outside of London. To do so, it focuses on the following strategic priorities:

- A world leader in innovation & creativity
- Taking full advantage of our global connections
- Creating stronger conditions for growth

The plan recognises that the local transport networks are enablers of spatial and sectorial growth and they are vital to making local places viable and attractive places in which to live and do business. Birmingham Airport, HS2 and the Key Route Network (KRN) are all identified as economic drivers or enablers.

The West Midlands KRN is part of a vision for a safer, more efficient and well managed and maintained road network across the West Midlands. The primary purpose of the KRN is to support growth ambitions in the region, including the creation of new jobs and delivery of more houses. 23 routes in the region have been designated as part of the KRN for the following purposes:

- Serving the main strategic demand flows of people, goods and services;
- Serving large traffic volumes; and
- Providing connections to the national strategic road network.

Although the day-to-day operations of the KRN still lies with the seven local authorities, the strategic oversight, coordination, and management of the KRN is undertaken by the WMCA. The WMCA has powers to manage road safety, bus lane contravention, permit schemes, and air quality issues on the routes. The A34 forms part of the West Midlands KRN, providing a link between Solihull and Birmingham, and therefore plays an important role in facilitating the realisation of the SEP vision.

2.3.4. Other Transport Schemes

Sprint is an innovative mode of transport with journey times and comfort levels based on those of a light rail system while maximising the flexibility and lower costs associated with bus technology. Sprint results in improved journey times, improved reliability, higher-quality, greener public transport and easier access to transport and communities. The system uses the existing highway network with an appropriate priority for active travel, public and private transport to reduce car dependence and keep the region moving.

Seven routes have been identified as Sprint corridors to be delivered by 2026, which are part of the HS2 connectivity package, ensuring access to key high-speed rail interchanges such as Curzon Street and Birmingham Interchange, and Birmingham Airport. The A34 is a vital element of the Sprint system, and forms part of proposed Route 4, between Hall Green and Birmingham Interchange for HS2.

The Midland Metro is a light-rail line operating between the cities of Birmingham and Wolverhampton, with an extension to Birmingham New Street rail station. There will be £1.3bn invested in extending the light rail system across the West Midlands over the next ten years, delivering a lasting legacy that will enable social and economic regeneration across the region. There are currently several schemes in different stages of development, the only of relevance to Solihull is the East Birmingham to Solihull Extension. The A34 will not be directly impacted of affected by this light rail expansion, but it may indirectly benefit from the wider impacts and resulting changes in travel patterns associated with its implementation.

In December 2017, the DfT published proposals for the creation of a Major Road Network (MRN) as part of the Transport Investment Strategy. Roads designated as part of the MRN will have access to dedicated funding from the National Roads Fund to be used for improvements to the network. The objectives of the MRN are as follows:

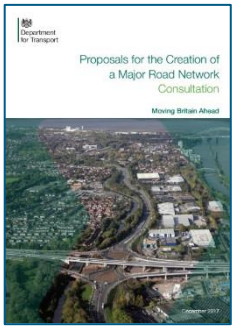
- reduce congestion
- support economic growth and rebalancing
- support housing delivery
- support all road users
- support the Strategic Road Network

The A34 Stratford Road has been identified as part of the indicative MRN. If part of the final proposals, the A34 could therefore have access to significant funding to help reduce road congestion, support economic and housing growth, and support the Strategic Road Network.

2.4. National policy context

The below documents have been reviewed to understand the strategic and economic context of the A34 corridor at the national level.

2.4.1. Department for Transport Major Road Network Study



The Department for Transport (DfT) have committed to creating a Major Road Network (MRN) across England as part of the 2017 Transport Investment Strategy.

The base network for the MRN originates from a Rees Jeffreys Road Fund report published in 2016. The report compiled together a case for securing long term investment for the busiest and most economically important Local Authority A roads that play a strategic economic role – the MRN. The identified MRN includes 3,800 miles of A roads which is almost equal to the length of the Strategic Road Network.

The DfT have now started a consultation on the defined MRN that includes proposals to allocate a portion of the National Roads Fund to the MRN. The MRN links were tested against various criteria using 2040 forecasted flows. Sub-National Bodies, LEPs and Combined Authorities are being asked to respond to the consultation by submitting evidence for roads to be included in the final MRN publication. Among the 3,800 local authority roads identified is a section of the A34 from its junction with the M42 to Hall Green.

In creating this network, the Government has five central policy objectives:

- Reduce congestion – alleviating local and regional congestion, reducing traffic jams and bottlenecks.
- Support economic growth and rebalancing – supporting the delivery of the Industrial Strategy, contributing to a positive economic impact that is felt across the regions.
- Support housing delivery – unlocking land for new housing developments.
- Support all road users – recognising the needs of all users, including cyclists, pedestrians and disabled people.
- Support the Strategic Road Network (SRN) – complementing and supporting the existing SRN by creating a more resilient road network in England.

Mitigating severance is critical to most town centres faced with a dual carriageway slicing through the middle such as the A34 in Shirley town centre. Reducing this impact through innovative and non-intrusive solutions is another aim of the MRN and securing long-term investment.

2.4.2. Highways England The Road to Growth 2017

The Road to Growth is the first strategic economic growth plan for optimising the economic impact of the SRN. The aim of the strategy is to ensure the UK is best placed to respond to current and future challenges facing connectivity of people and services and place the UK in a stronger position internationally to be a strong competitor on the global market.

The plan is a long-term proposition looking to 2050 forecasts of a changing economic climate where key changes in transport reliant sectors have been identified. The plan therefore provides context for the Government's future investment in roads.

The A34 Stratford Road Corridor is not included in this report as this is not part of the Strategic Road Network.

2.4.3. Highways England Route Strategies

Highways England uses the recently published route strategies and strategic studies to plan for future investment and inform the Road Investment Strategy 2 (RIS2), which will be delivered between 2020 and 2025. This builds upon the work undertaken during RIS1, for the period 2015 to 2020.

The A34 is not part of the Strategic Road Network and does not fall within Highways England's jurisdiction. However, the A34 forms a junction with the Strategic Road Network at M42 Junction 4.

It is recognised in the London to Scotland West Route Strategy that the M42 is subject to 'regular congestion issues' (at Junction 6) and that there will be 'growth in demand around Birmingham Airport, the NEC and UK Central (including from the proposed HS2 station)'. The RIS1 investment plan has identified M42 J6 for major improvement, including the upgrading the junction to allow for better movement of traffic on and off the A45 to support access to the airport and preparing capacity for the new HS2 station. The improvement works are expected to be completed by 2023.

2.5. Summary

The A34 Stratford Road is one of the principal routes into Birmingham providing excellent connectivity to the strategic road networks. It is a busy radial route linking the M42 via Solihull to Birmingham with key access points to UKC and BVBP zones and includes Shirley town centre. In future, the corridor will play an increasingly important role is ensuring high levels of accessibility and connectivity to BVBP and Shirley town centre, which is important locally as a vibrant economic centre.

It suffers from traffic congestion at key destinations such as Shirley Town Centre, which has had a negative effect on the public realm and shopping environment. In addition, BVBP is particularly poorly connected to Solihull, with just 13% of Solihull residents able to access it within half an hour by public transport. Therefore, car mode share to BVBP is high.

The allocation of additional sites such as Powergen, TRW/The Green and BVBP mixed use developments, coupled with the uncertainty of future travel demand is likely to put even more pressure on the A34 corridor, particularly at current pinch points. An enhancement package for the corridor will be required outlining a plan of interventions with associated target points for delivery to ensure that these developments come forward in a sustainable manner and are accessible by all modes of transport, to reduce reliance on travel by car, especially from residential areas to areas of employment.

The delivery of SPRINT routes as part of an inter-connected network of rapid-transit lines across the region, could provide an alternative form of sustainable transport for residents to access employment opportunities, particularly at the UKC Hub. However, future demand for these services and the impact these routes will have on the A34 corridor is currently unknown.

TfWM are considering the feasibility of Sprint along this route via the town centre as part of the HS2 Connectivity Package. As development comes forward it will be essential that a multi-modal route approach / future proofing is taken to promote growth and high levels of accessibility respecting the different link and place environments along the Stratford Road.

The above literature review demonstrates the many local, regional and national growth priorities associated with Solihull and the West Midlands. To ensure that growth can be delivered sustainably, it is important to understand the combined impact that both planned growth and the proposed transport schemes in the area will have on this strategic corridor. This will enable a comprehensive route strategy to be developed locally to ensure that appropriate enhancements are identified for this corridor, which will complement the programme of improvements outlined in the regional and national policy, and ensure the future local sustainable growth of the Borough of Solihull.

3. Evidence Base

3.1. Introduction

This section summarises the existing and future conditions anticipated across the A34 corridor. The analysis makes use of the most recently available datasets wherever possible, reviewing the context of the study area in terms of socio-demographics, current levels of service and capacity offered by transport networks, travel patterns and demands of those living in the area, and future growth plans such committed developments and transport improvements.

Using this data, a SWOT analysis is presented for each transport mode to identify strengths, weaknesses, opportunities and threats, to identify any critical pinch points on the transport network. This will be used to inform 'with' and 'without' intervention scenarios for the corridor.

3.2. Characteristics of the Corridor

The A34 corridor between the Solihull/Birmingham border near Robin Hood Island and the M42 is predominantly dual carriageway with two lanes in each direction. The corridor is home to a number of retail areas including Shirley High Street (main retail area in Section 2 between Hasluck's Green Road and Union Road) and Solihull Retail Park which attract a number of local and regional trips. The corridor also provides access to residential properties in Shirley, Shirley Heath and Blossomfield. The corridor is well served by bus with frequent services to Birmingham, Solihull Town Centre and other local centres. Cycling provision is provided along the corridor, however it is not continuous with high quality segregated infrastructure in some parts and no infrastructure in other parts. The section of the corridor between the Hasluck's Green Road and Union Road is lined with retail outlets such as restaurants and supermarkets which continues to a lesser degree up to Monkspath Hall Road. The section between Hasluck's Green Road and Union Road has a significant amount of parking to serve the retail outlets.

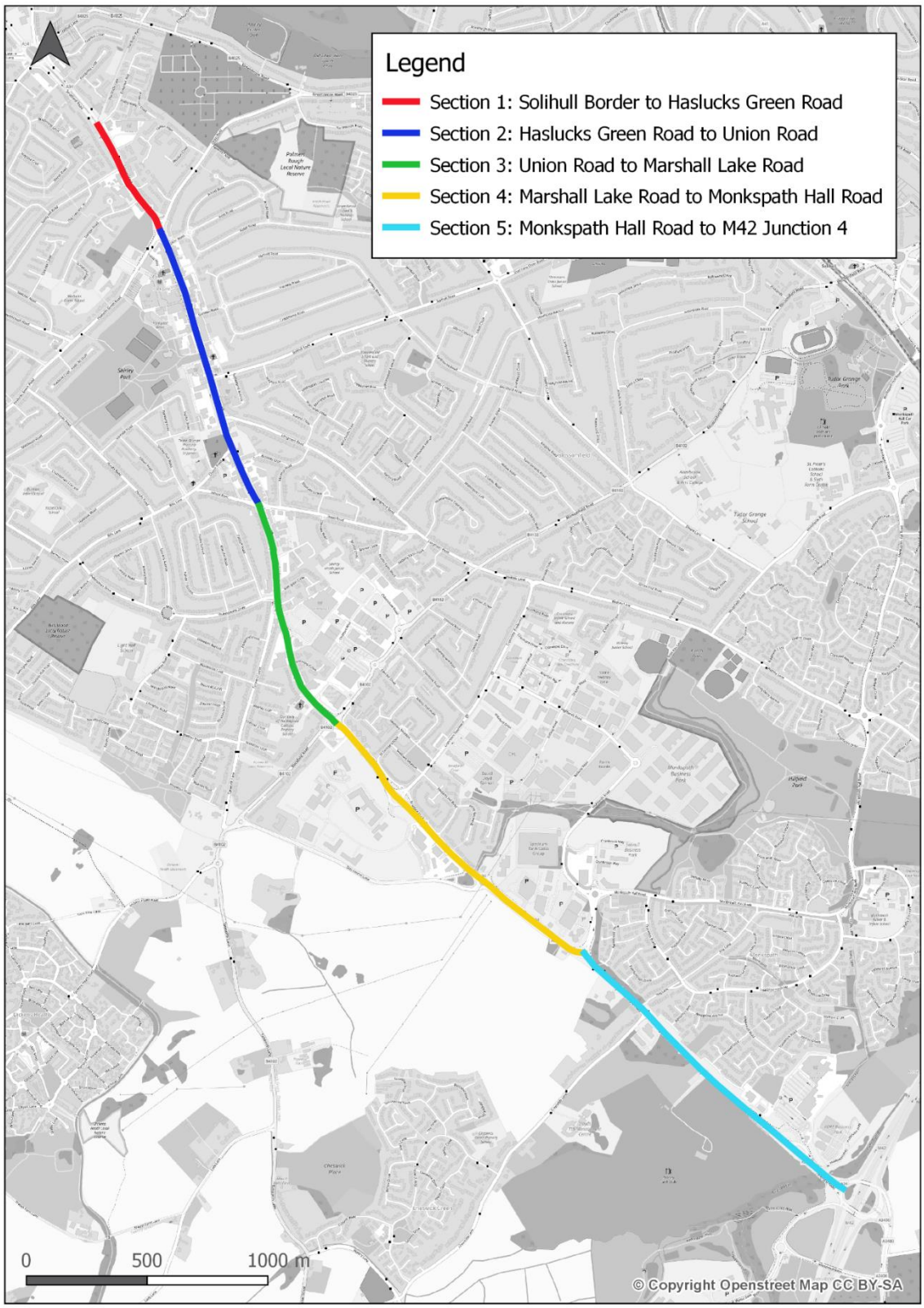
Through our evidence base outlined below, we have identified a number of different sections along the A34 corridor which have various functions and serve separate purposes. The corridor has therefore been separated into the sections below to ensure that that the characteristics of each section are understood and reflected in the potential options. The corridor sections and their characteristics are outlined in Table 4 and illustrated in Figure 3.

Table 4 – Corridor Sections and Characteristics

Section Number	Section Name	Characteristics
1	Solihull Border to Hasluck's Green Road	• Adjacent to residential area • Busy bus route • Busy commuter route • Powergen development and new petrol station planned in area
2	Hasluck's Green Road to Union Road	• Adjacent to residential area • Busy retail area • Busy bus route • Busy commuter route
3	Union Road to Marshall Lake Road	• Adjacent to residential area • Busy retail area • Busy bus route • Busy commuter route
4	Marshall Lake Road to Monkspath Hall Road	• Adjacent to residential area • Retail area • Close to the TRW development site

		• Close to housing development on Dog Kennel Lane • Bus route • Busy commuter route
5	Monkspath Hall Road to M42 Junction 4	• Adjacent to residential area • Retail area • Bus route • Busy commuter route • Provides access to the M42 • Development at Blythe Valley Business Park • Shirley Aquatics housing development

Figure 3 - Corridor Sections



3.3. Socio-Economic Analysis

3.3.1. Population and Growth

According to the Census 2011, the population of Solihull was 206,856, with the Office for National Statistics (ONS) mid-year population estimates showing an increase to the population of 2.3% to 211,763 in 2016. Table 5 presents the total population change between 2011 and 2016, based on mid-year estimates for the Borough of Solihull and surrounding areas, the West Midlands and England and Wales.

Table 5 - 2011 to 2016 Mid-Year Population Estimates Overview

	Total Population Change between 2011 and 2016	% Population Growth between 2011 and 2016
Solihull	4,907	2%
Birmingham	50,286	4%
Coventry	35,996	10%
West Midlands	192,067	3%
England and Wales	2,210,290	4%

Solihull has experienced the lowest growth rate since 2011, although this is very much in line with the steady growth seen across the West Midlands. Only Coventry has experienced significant population growth since 2011, which could be related to the increasing popularity of the University which acts as a key attractor.

Table 6 presents a breakdown of the data by age category, representing the three main demographic groups – students, economically active and retired people.

Table 6 - 2011 to 2016 Percentage Population Growth by Age Category

	Up to 15 years	16 to 64 years	65 years+
Solihull	3.6%	-0.9%	10.3%
Birmingham	4.5%	4.4%	4.8%
Coventry	8.8%	11.5%	6.2%
West Midlands	3.5%	1.2%	10.2%
England and Wales	4.5%	1.3%	11.6%

The data shows the number of people of working age (16-64) has decreased in Solihull, with the number of people over 65 years growing by 10.3%, which is representative of an aging population. This pattern represents the changes seen across the West Midlands, although Solihull is the only area to have experienced a decrease in the number of economically active people.

3.3.2. Population Density

Population density has been assessed across the study area, to identify those local communities that have the highest and lowest density of population, to better understand the local area. Census 2011 data for Solihull, Birmingham, Coventry, the West Midlands and England and Wales is presented in Table 7**.** Figure 4 illustrates the density distribution within the study area covering the A34 corridor.

Table 7 - Population Density, Census 2011

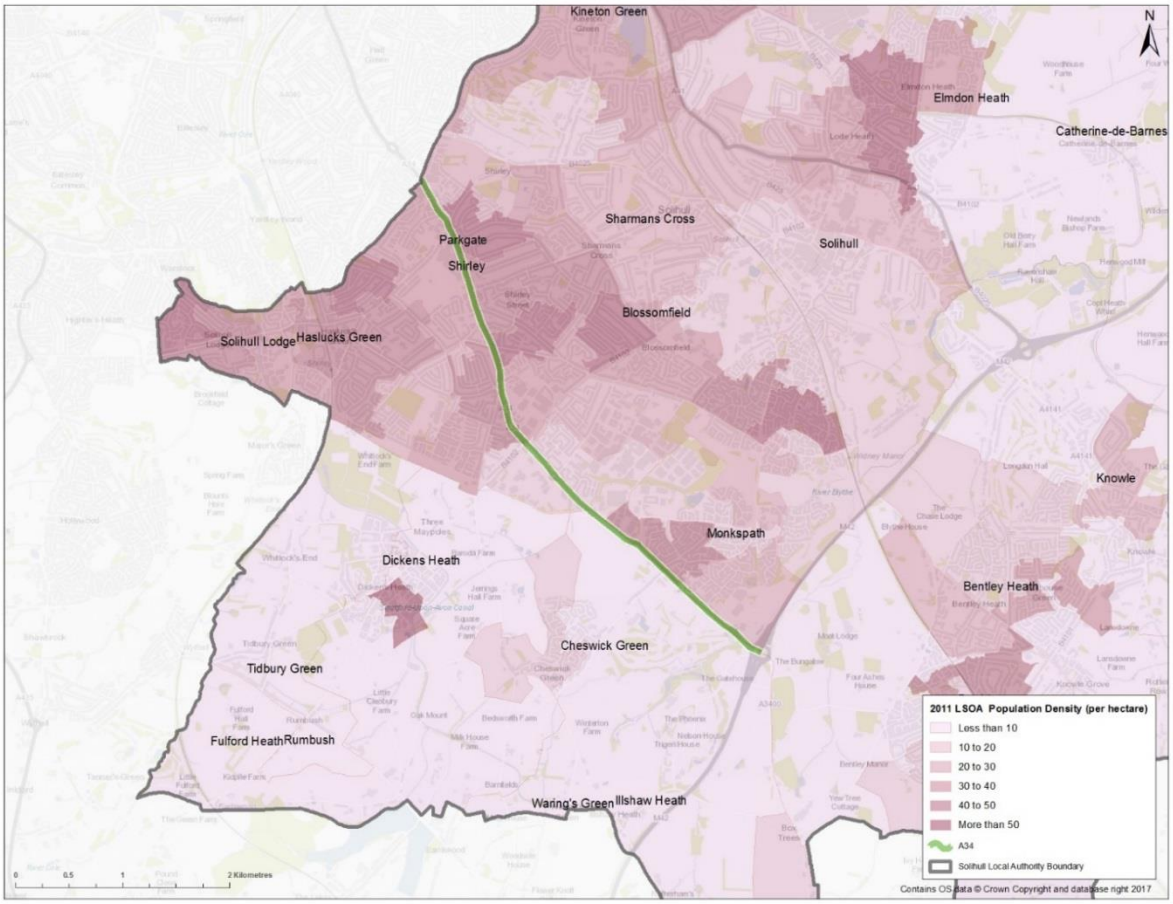
Region	Residential Population Density (persons per hectare)
Solihull	11.6
Birmingham	40.1
Coventry	32.1
West Midlands	4.3
England and Wales	3.7

2011 Census Data Table QS102EW

Solihull is one of the most affluent areas in the West Midlands and has a population density of 11.6 people per hectare, compared to 40.1 people per hectare in Birmingham. This emphasises the variation in the types of area and environment offered to the local communities. It also demonstrates that Solihull is a desirable area and has the potential to attract significant investment and growth in the future.

Figure 4 shows the population density within the study area using Census 2011 data at Lower Super Output Area (LSOA) level.

Figure 4 - Population Density around the A34 Corridor, Census 2011



Population density varies along the A34 corridor. LSOAs in the north of the study area have a higher population density than those in the south, with most areas around Blythe Valley Business Park have less than 10 people per hectare. The highest population density can be seen in the north of the study area located opposite Parkgate, within Shirley Town Centre, with 48 people per

hectare. The average population density either side of the corridor is between approximately 25-40 people per hectare.

3.3.3. Economic Activity

Table 8 presents analysis of Solihull's population employment status, based on Census 2011 data. Of the areas analysed, Solihull has the greatest percentage of people in employment at 63.8%. This is 11.1% more than Birmingham and almost 2% more than the England and Wales average.

Table 8 - Economic Status of Solihull and other relevant regions based on the 2011 Census

Region	In Employment		Students		Out of Work & Retired	
Solihull	94,586	63.8%	10,714	7.2%	43,060	29.0%
Birmingham	400,679	52.7%	107,530	14.1%	252,043	33.2%
Coventry	128,764	55.5%	36,668	15.8%	66,439	28.7%
West Midlands	2,437,526	59.9%	375,774	9.2%	1,253,819	30.8%
England and Wales	25,449,863	61.9%	3,800,181	9.2%	11,876,496	28.9%

Source: 2011 Census Data (QS601EW)

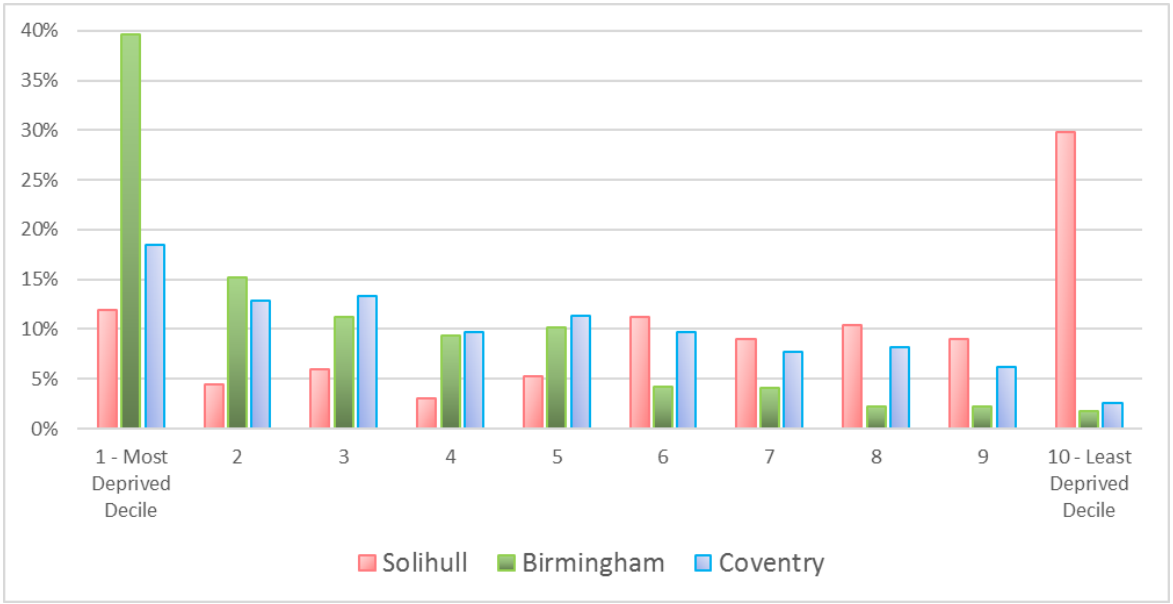
Solihull has a relatively small percentage of students which could impact the future economy negatively as this means there is a relatively small future workforce within the region. In contrast, Coventry has more than double the percentage of students and Birmingham has 10 times more with 107,530 students.

3.3.4. Deprivation

The most recent Indices of Multiple Deprivation (IMD) published by the Department for Communities and Local Government (DCLG) in 2015, has been analysed to identify any pockets of deprivation within Solihull, with a focus on the study area for the A34 corridor.

Figure 5 shows the percentage split of all LSOAs within Solihull, Birmingham and Coventry based on the 2015 IMD decile they fall within, where 1 is most deprived.

Figure 5 - 2015 Index of Multiple Deprivation Bar Graph by decile



Source: 2011 Census Data (QS601EW)

The analysis highlights the significant variance between Solihull and Birmingham, with each at the opposite side of the spectrum where 40% of LSOAs within Birmingham are within the most deprived decile whilst 30% of LSOAs in Solihull are ranked within the least deprived deciles.

3.3.5. Car Ownership

Table 9 presents a summary of car availability within Solihull, with comparisons made Birmingham, Coventry, the West Midlands and England and Wales. The car ownership statistics show that 41% of households within Solihull have access to 2 or more cars or vans. This is almost double that of Birmingham and 9% more than the national average.

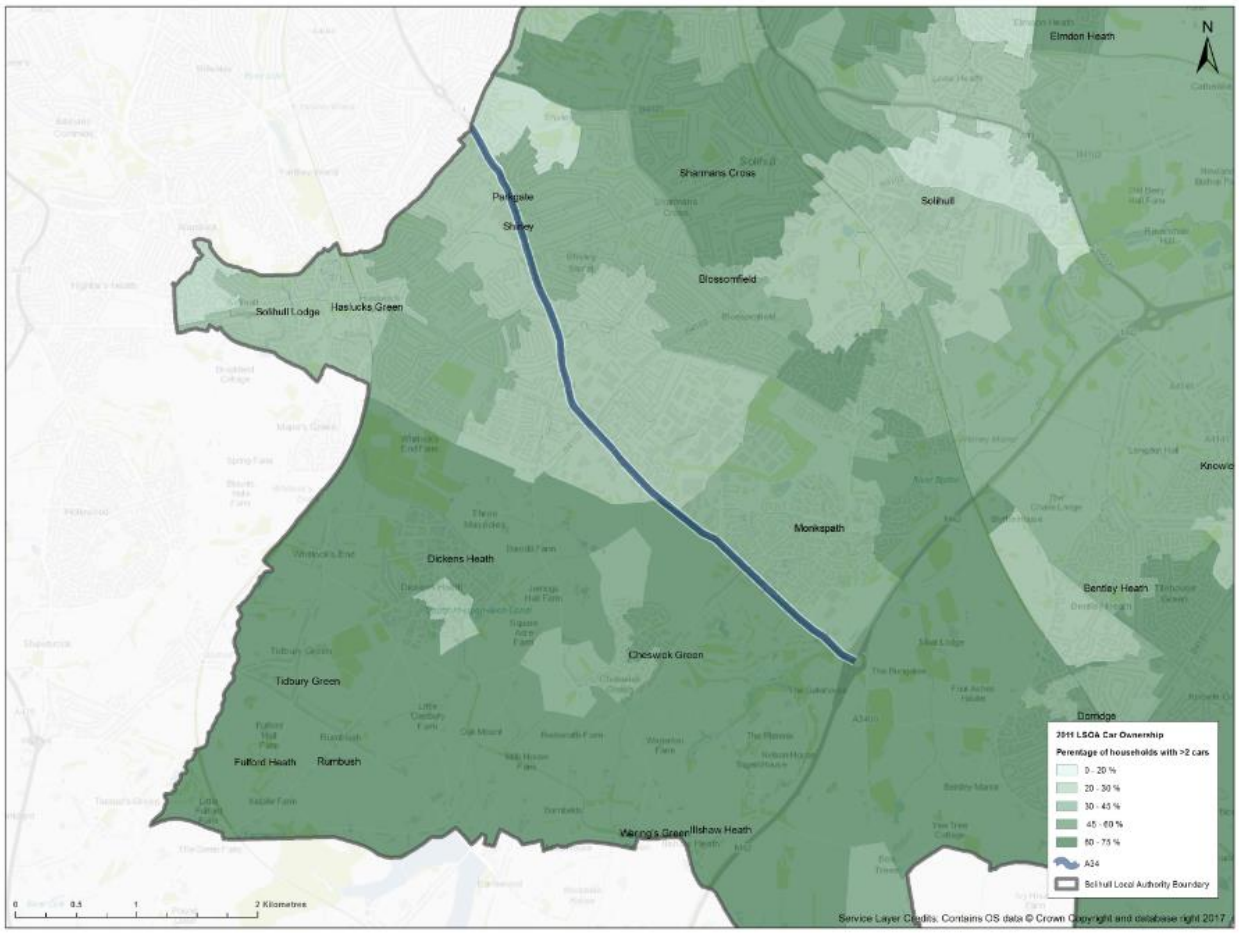
Table 9 - Car Ownership split by percentage, Census 2011

Region	% of Households without a car	% of Households with 1 car	% of Households with 2 or more cars
Solihull	20%	39%	41%
Birmingham	36%	41%	23%
Coventry	32%	42%	26%
West Midlands	25%	42%	34%
England and Wales	26%	42%	32%

Source: 2011 Census Data (QS416EW)

The distribution of households owning two or more cars in the study area for the A34 corridor is presented in Figure 6.

Figure 6 - Percentage of households with 2 or more cars within Solihull, Census 2011



Within the LSOAs located in the study area alongside the A34 corridor, between 21% and 45% of households own 2 or more cars or vans. The highest percentage of households with 2 or more cars (between 63% and 67%) are located around Sharmans Cross, to the north east of the corridor.

The high ownership of cars suggest that Solihull is an affluent area where residents are likely to rely on their own vehicles instead of public transport and might not have the propensity to change, leading to increasing pressure on the local road network. Although in combination with the findings of population growth, analysis indicates there is a shift from working age population to an aging population, which in time may become more reliant on public transport services to access key services, retail and leisure.

3.3.6. Summary of the Socio-Economic Analysis

A summary of the socio-economic analysis findings is presented in the below graphic:

- **In 2016 there were 211,763 residents in Solihull. A 2.3% increase from the 2011 Census.**
- **Solihull has an area of 17,829 hectares and a population density of 11 persons per hectare.**
- **High levels of economic activity have resulted in large areas of Solihull classed as some of the least deprived in England and Wales.**
- **Car ownership is high with 41% of households owning more than 2 cars or vans.**
- **Solihull's existing demographics place it in a strong position to promote economic growth, but challenges such as high car ownership and an aging population need to be addressed.**

3.4. Travel to Work Analysis

Census 2011 travel to work data indicates the total distance travelled to work by Solihull residents is just over 1.1 million kilometres. This represents 0.4% of the England and Wales total and almost 4% of the West Midlands total.

3.4.1. Mode Share

Table 10 shows the 2011 travel to work mode share percentages across Solihull and surrounding areas.

Table 10 - Travel to Work Mode Share

	Solihull	Birmingham	Coventry	West Midlands	England and Wales
Work from Home	5%	3%	3%	5%	5%
On Foot	6%	10%	12%	10%	11%
Bicycle	1%	2%	3%	2%	3%
Tram	0%	0%	0%	0%	4%
Bus	8%	17%	11%	8%	7%
Rail	5%	5%	2%	3%	5%
Taxi	0%	1%	1%	1%	1%
Motorcycle	1%	0%	1%	1%	1%
Car Driver	67%	56%	59%	65%	58%
Car Passenger	5%	5%	8%	6%	5%
Other	0%	1%	1%	1%	1%

Census 2011 Table QS701EW

The percentage of car and passengers is highest in Solihull and this reflects the car ownership figures presented in Table 10, which shows that Solihull has an above average percentage of households with 2 or more cars. The active travel mode share is lower in Solihull than any of the other areas analysed with 6% of walking and only 1% of cycling trips. This is around half the figures reported for West Midlands and surrounding local authorities. The percentage of rail trips are consistent throughout the areas shown at around 5% and the use of bus is more frequent in Birmingham and Coventry, in Solihull this remains at the regional average of 8%.

3.4.2. Travel Distances

The total distance to workplaces is one of the main reasons people chose certain modes to travel to work. The longer the distances the less desirable active travel modes become and people tend to turn to the use of their private vehicles. It is therefore very important to ensure that people and places of work are connected to enable the shift to more sustainable travel modes.

Table 11 presents a summary of the total distance travelled to work by people within each area, divided by distance categories. It also includes the total distance travelled in kilometres as well as the average distance.

Table 11 - Distance travelled to work

Area	Less than 2km	2km to 10km	10km to 40km	40km or more	Total distance (km)	Average distance (km)
Solihull	14%	49%	31%	5%	1,152,211	14
Birmingham	18%	57%	20%	5%	4,378,264	12
Coventry	20%	54%	21%	5%	1,471,883	13
West Midlands	20%	47%	27%	6%	29,521,908	14
England and Wales	20%	44%	29%	7%	23,401,018	15

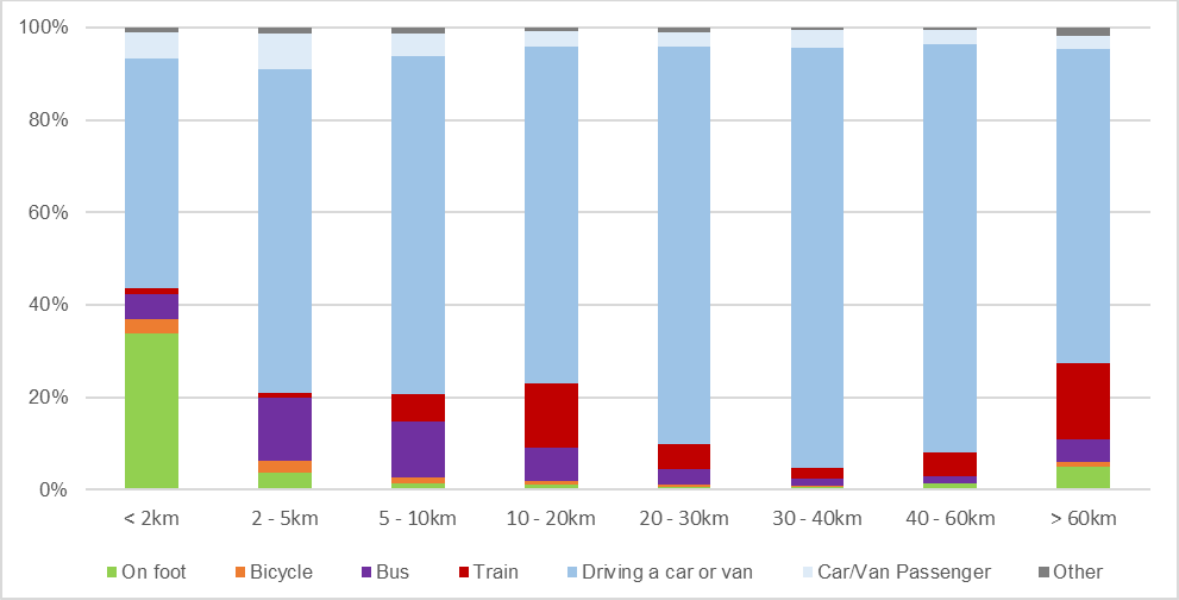
Census 2011 Table QS702EW

The average distance travelled by Solihull residents is 14.2 kilometres which is less than the England and Wales average distance at 15 kilometres, and only 0.1 kilometres higher than the West Midlands average.

Journeys less than 2 kilometres are likely to be walking or cycling trips, however this does not apply to all. There are 14% of journeys within Solihull that fit within this category and a further 49% which are up to 10 kilometres. Trips over 10 kilometres are more likely to be completed using private vehicle or public transport services and 36% of the travel to work journeys within Solihull are within this category.

The proportional bar graph in Figure 7 shows the distance travelled to work by mode within Solihull. The modes presented represent what people would identify as their main mode of travel to work depending on the longest leg of their journey. This explains why 5% of the more than 60km trips are walking trips.

Figure 7 - Distance travelled to work by mode within Solihull



The graph shows that 34% of all trips less than 2 kilometres are completed by walking, however 56% of those account for car drivers or passengers. Higher proportions of bus travel are made for trips between the 2 and 10 kilometres, which are 14% and 12% respectively. Train journeys peak within the longest distance category of over 60 kilometres, at 16% of trips. Car mode share is highest at 91% within the 30 to 40 kilometres category, and it also accounts for over 50% of trips across all distance categories.

3.4.3. Travel to Work Analysis Summary

A summary of the travel to work analysis findings is presented in the below graphic:

- **Solihull has a high percentage of car drivers and passengers, reflecting the car ownership levels in the Borough.**
- **Active travel mode share is lower in Solihull than in neighbouring authorities and across the region, with only 6% of people cycling and 1% walking to work.**
- **Residents in Solihull travel on average 14.2km to work, which is in line with the regional and national average.**
- **91% of all journeys are made by car, with 56% of these being less than 2km in distance.**

3.5. Transport Network Analysis

3.5.1. Active Travel Network

As can be seen in the travel to work analysis, 56% of short journeys are made by car, which increases demand on the local network leading to congestion and poor conditions for cycling. Solihull experiences low levels of cycling, particularly for travel to work trips. Such travel behaviour leads to increased congestion and low levels of physical activity. The impact of the car in the street environment can also lead to factors that discourage cycling including obstructive on-street parking, road safety and general street clutter. The high reliance on travel by car shows the need for strategic connectivity to areas of employment and key services.

A summary of the existing and proposed cycling network is provided to show the availability of infrastructure to enable short distances to be made by active travel. An overview of the propensity

to cycle in Solihull is then presented to show where there is the potential to increase cycling as a mode of travel.

3.5.1.1. Existing and Proposed Cycle Network

Figure 8 show the existing and proposed cycle network in the study area. Cyclists are provided with a single shared footway/cycleway along the A34 corridor between Bills Lane and Monkspath Hall Road.

Figure 8 - Existing and Proposed Cycle Network in the Study Area

3.5.1.2. Propensity to cycle

Figure 9 shows that the biggest producers of cycle commuter trips in the study area are at the north end of the A34 corridor. This includes Hasluck's Green and Sharmans cross where the production of cycling trips is up to 4%.

Figure 10 shows that the biggest attractors of cycle commuter trips in the study area are also at the north end of the A34 corridor. This includes Shirley Heath where the attraction of cycling trips is over 4%.

Figure 9 - Proportional Cycling Commuter Trips – Production

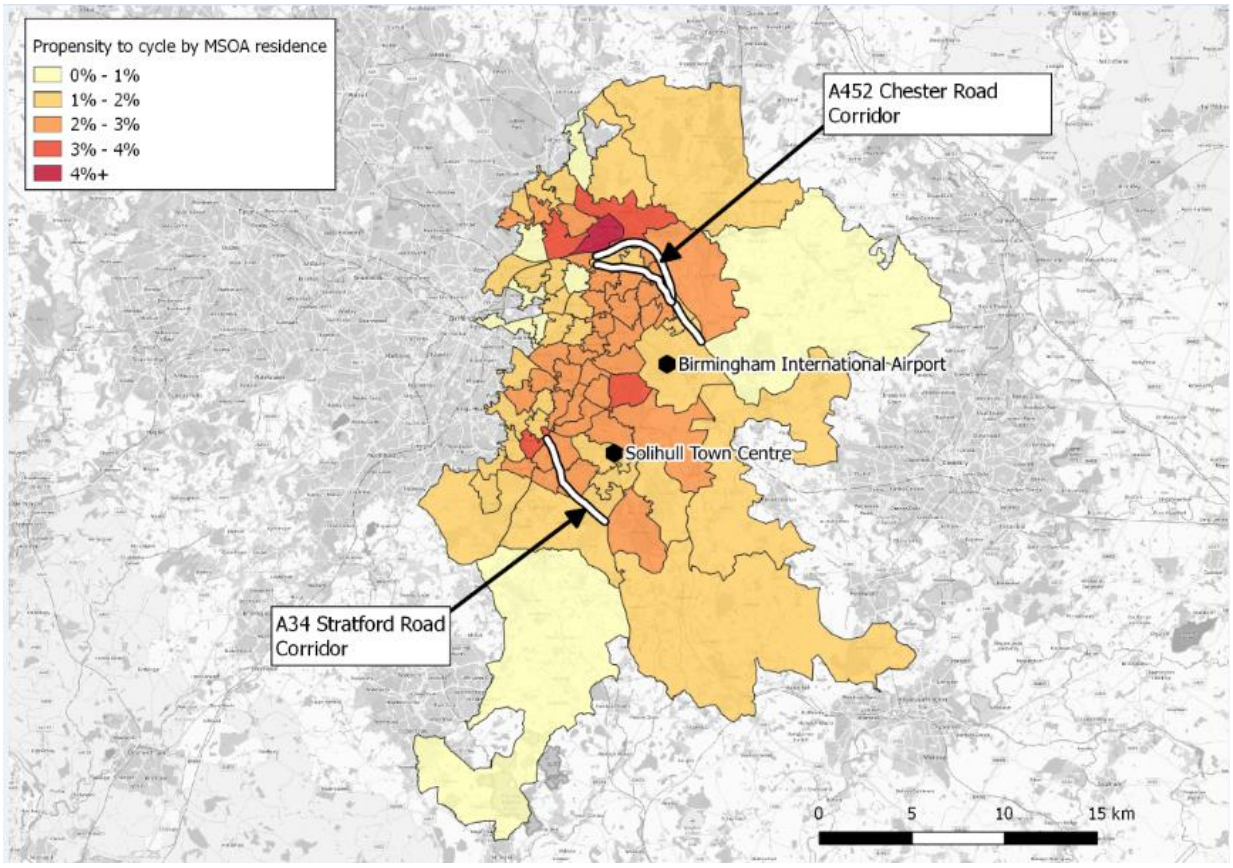
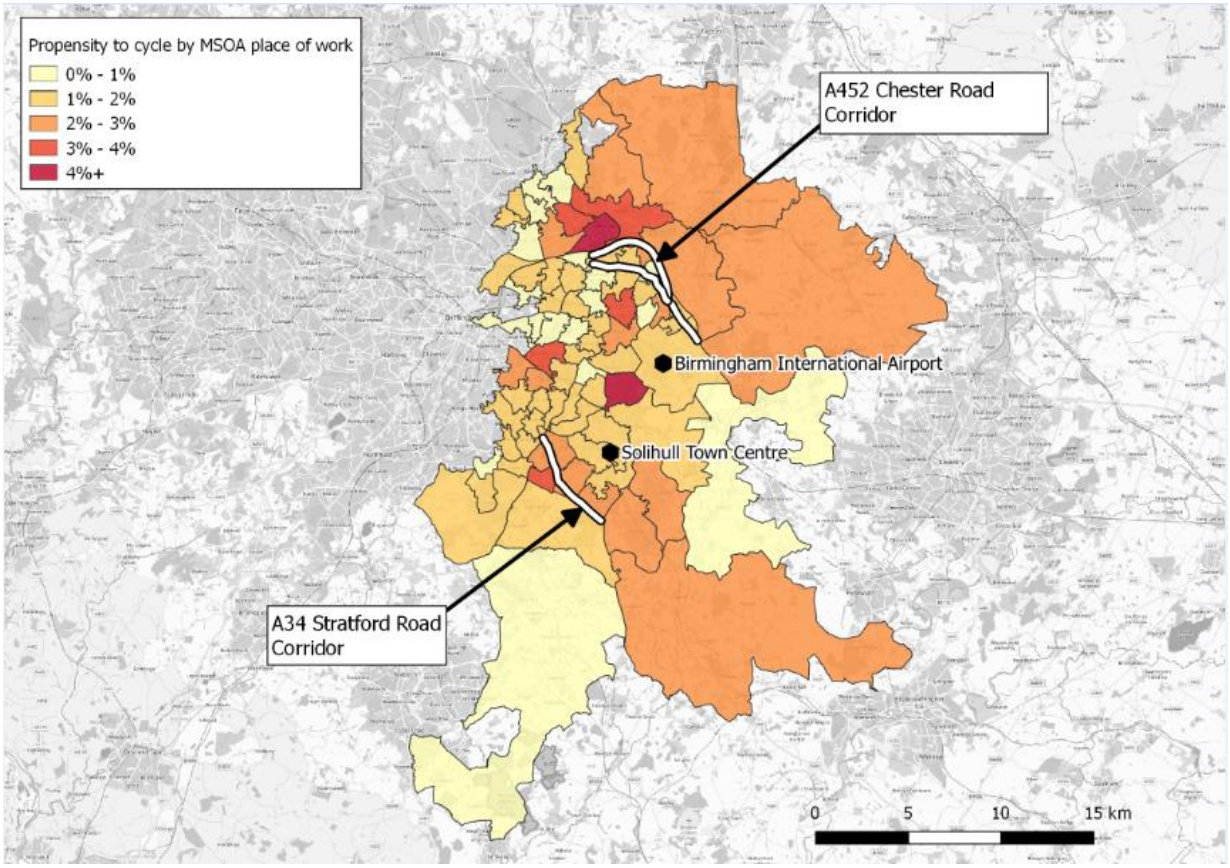


Figure 10 - Proportional Cycling Commuter Trips – Attraction



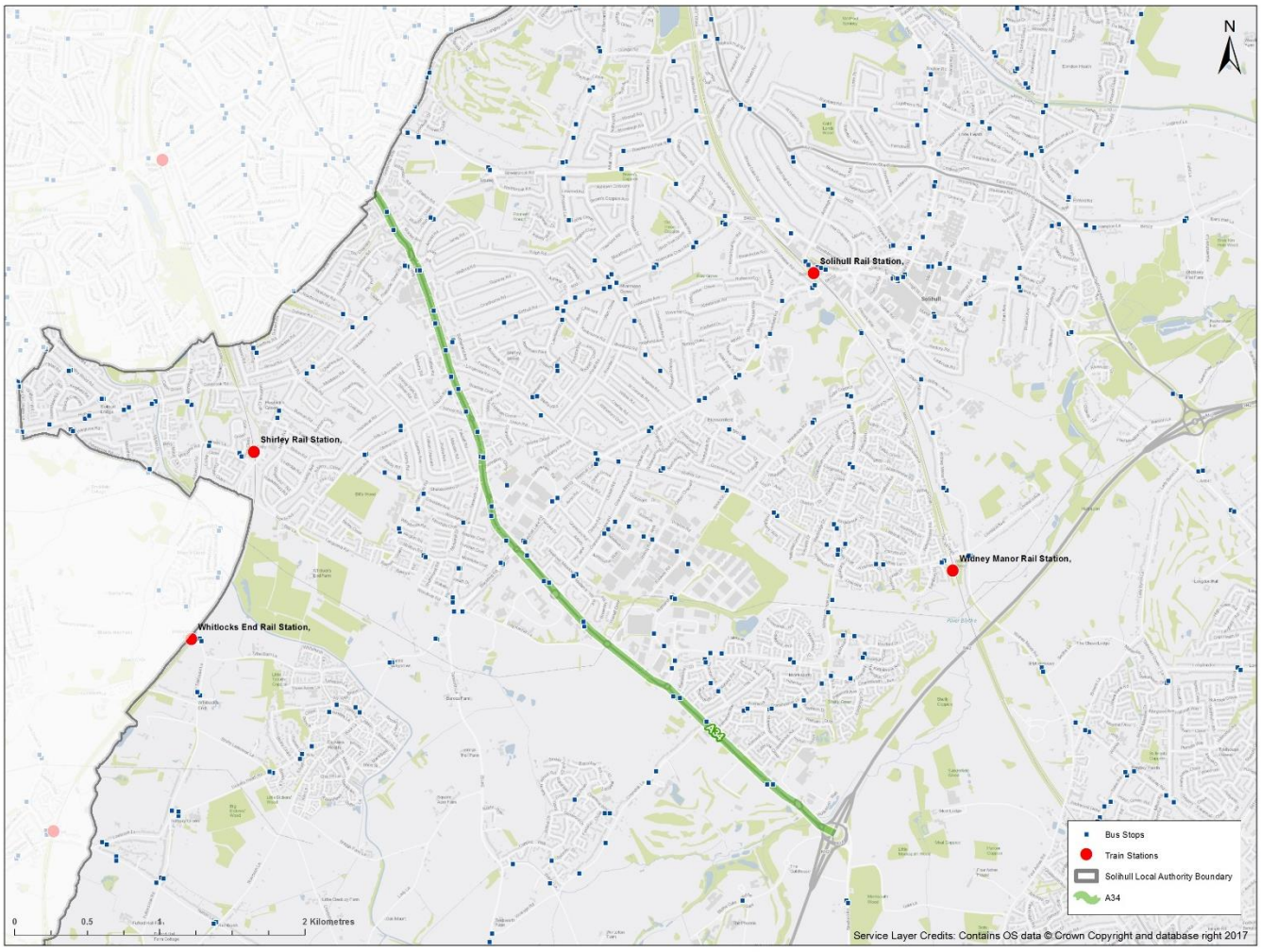
By comparing cycle attraction with cycle trip production, a clear cycling corridor emerges, with the highest attractor being on the west side of the corridor. This data suggests that there is potential for cycling to become a mode of choice for commuters, especially for short trips. Improvements on the corridor could help cyclists travel along the corridor, or allow for quicker and safer crossing across the corridor.

3.5.2. Public Transport Network

3.5.2.1. Rail Services

The A34 corridor is served by both bus and rail as presented in Figure 11. The Chiltern Mainline and North Warwickshire Line run approximately parallel to the A34 corridor and offer passenger connections at Solihull, Widney Manor, Shirley and Whitlocks End rail stations. Shirley Railway Station is the closest rail station to the A34 corridor and is located approximately 1.5km to the west. Solihull Railway Station is located approximately 3km to west of the corridor.

Figure 11 - Public Transport Stops



A summary of the services which operate from Shirley and Solihull Railway Stations are presented in services which serve the A34 Corridor is presented in Table 12.

The table shows that a frequent service is operated to Birmingham City Centre from both stations in addition to other destinations such as Stourbridge and Stratford-upon-Avon. In addition, a twice-hourly service operates between Solihull Railway Station and London Marylebone Railway Station.

Table 12 – Railway Services Summary

Station	Destination	Operator	Average Frequency (minutes)
Shirley Railway Station	Birmingham	West Midlands Trains	20
	Whitlocks End	West Midlands Trains	30
	Stourbridge Junction	West Midlands Trains	20
	Stratford-upon-Avon	West Midlands Trains	60
	Great Malvern	West Midlands Trains	30
	Kidderminster	West Midlands Trains	30
Solihull Railway Station	Birmingham	West Midlands Trains/ Chiltern Railways	10
	Dorridge	West Midlands Trains	15
	Stourbridge Junction	West Midlands Trains	30
	Worcester	West Midlands Trains	60
	London Marylebone	Chiltern Railways	30
	Stratford-upon-Avon	West Midlands Trains	60
	Kidderminster	West Midlands Trains	30
	Leamington Spa	Chiltern Railways	30

3.5.2.2. Bus Services

A summary of the bus services which serve the A34 Corridor is presented in Table 13.

Table 13 - A34 Corridor Bus Services Summary

Service	Route	Typical Peak Frequency (minutes)		
		Weekday	Saturday	Sunday
5	Birmingham - The Baldwin - Shirley - Monkspath - Widney Manor Station - Solihull	20	20	30
6/6A	Birmingham, City Centre to Solihull, Station	5	6	12
76	Solihull - Shirley - Kings Heath - Selly Oak - QE Hospital / Birmingham University	20	20	30
519	Solihull - Redditch	infrequent	infrequent	infrequent
811	Dickens Heath - Hockley Heath	School Service Only	School Service Only	School Service Only
812	Blossomfield Schs - Dickens Heath	School Service Only	School Service Only	School Service Only
865	St.Peters/Our Lady of Wayside Schs - Bransons X	School Service Only	School Service Only	School Service Only
S3/S3W	Wythall to Hockley Heath	30	30	60
X20/X20A	Birmingham - Stratford	60	60	120

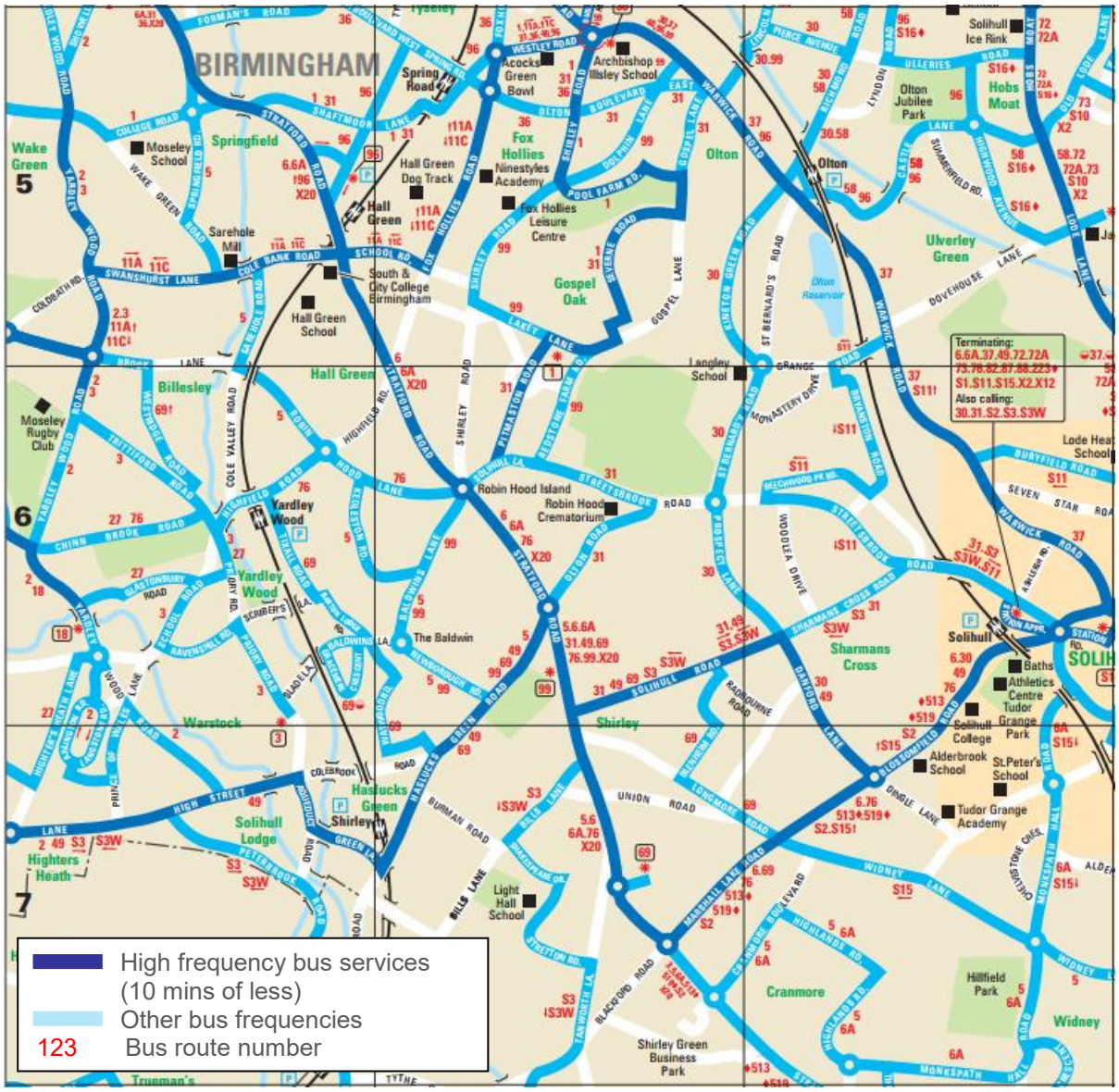
Table 13 demonstrates that the A34 Corridor is well served by bus services, which caters for frequent services to Birmingham and express services to Stratford. The 6/6A offers a very frequent service between Solihull and Birmingham, with a bus every 5 minutes during the weekday peak. Other services also serve Birmingham.

However, journey time is reported to be poor on these services. The corridor does not provide dedicated bus lanes and buses are required to travel alongside general traffic, and experience the

same levels of congestion. This results in bus journeys being less attractive in comparison to car travel.

Figure 12 presents an excerpt from the Solihull Public Transport Map. It illustrates the frequent bus service routes, in particular along the Chester Road, Auckland Road Bradford Road corridor. Less frequent services are also presented.

Figure 12 - Excerpt of Solihull Public Transport Map



SMBC

3.5.2.3. Bus Journey Times

Bus journey time variability has been calculated using journey time data provided by TfWM for September – November 2017. Figure 13 shows the data for Route 6 inbound in the AM peak and PM peak for the section between Cranmore Road and the Hall Green boundary. For the purpose of this data inbound is considered as route towards Birmingham.

The graphs show that for the inbound direction, journey time reliability is relatively consistent with the exception of the A34/Marshall Lake roundabout and the section of the A34 Corridor between St James' Church and Sandy Hill Lane. However, the maps show that journey time variability is a lot greater in the PM peak than the AM peak period, with variations of over 3.5 minutes.

Figure 13 - Route 6 – Inbound

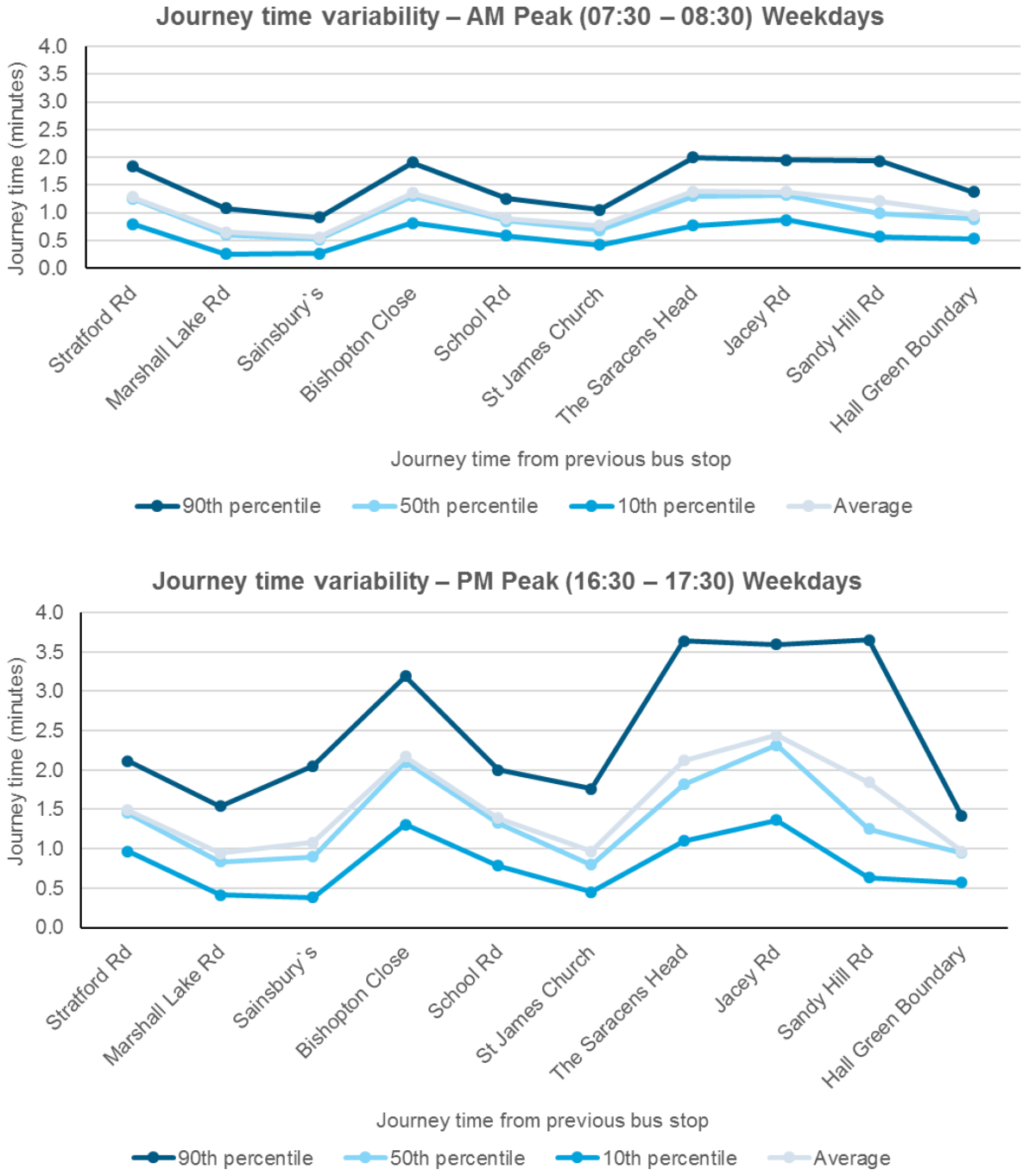
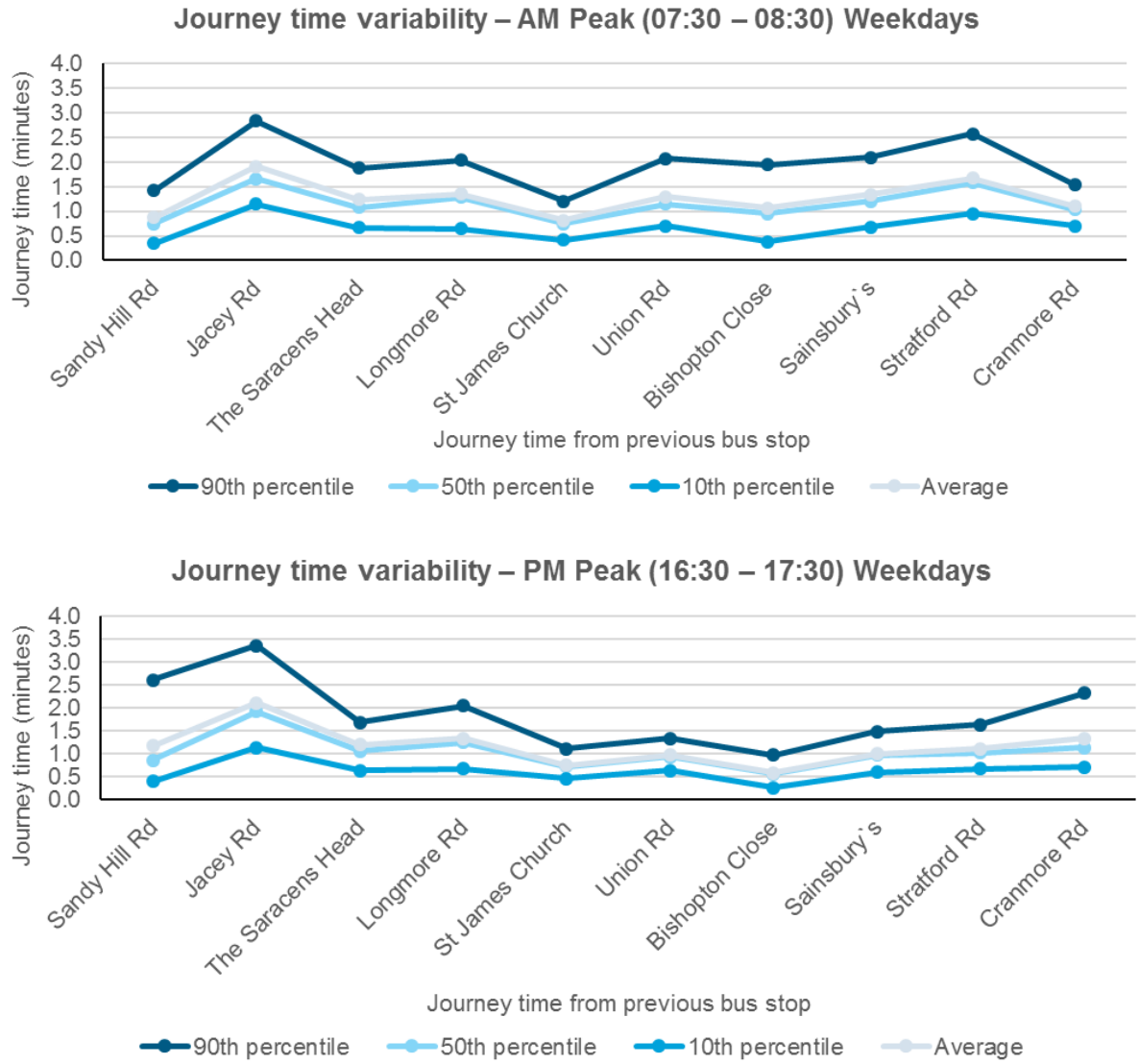


Figure 14 shows the data for Route 6 outbound in the AM peak and PM peak for the section between Cranmore Road and the Hall Green boundary. For the purpose of this data inbound is considered as route towards Solihull.

The graphs show that for the inbound direction, journey time reliability is relatively consistent with the exception of the A34/Marshall Lake roundabout and the section of the A34 Corridor between St James' Church and Sandy Hill Lane. In addition, the A34 Corridor between Union Road and Sainsbury's also has greater variability.

Figure 14 - Route 6 - Outbound



3.5.3. Highway Network

3.5.3.1. Traffic Profile

This section will analyse the profile and behaviour of traffic along the A34 Corridor, it will outline how traffic has changed in the last few years and how traffic flows differ by direction throughout the day. Information from the DfT's count website and TomTom journey time data has been collated to provide this analysis of the highway network.

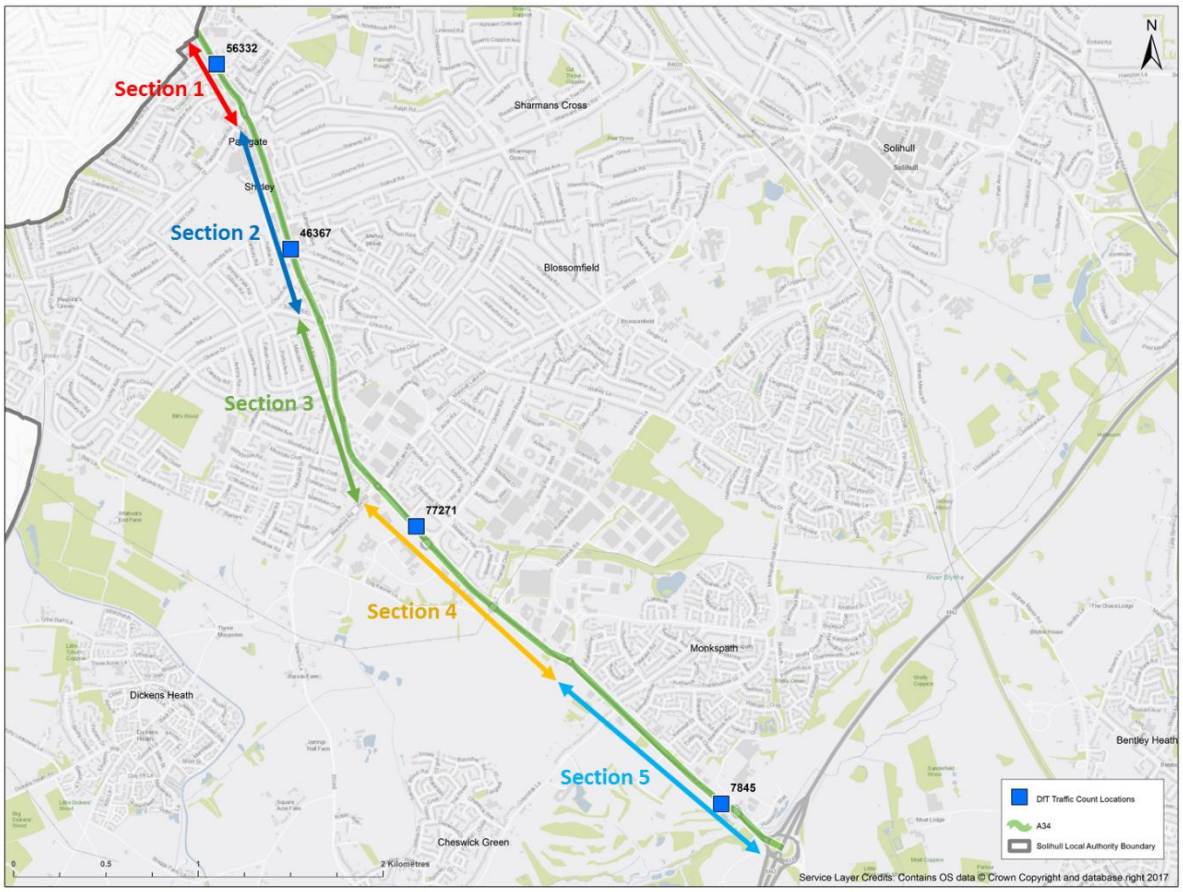
Available traffic count data sourced from the DfT website includes four traffic counts along the A34 Corridor. The location of these is shown in Table 14 and is illustrated in Figure 15. The count points are evenly spread along the A34 Corridor with two counts for each direction placed near key locations such as the junction with the M42, Solihull Business Park and Shirley Town Centre.

Table 14 - DfT Count Points

CP	Easting	Northing	Location Description
7845	414300	276000	Northbound - north of M42 junction 4, around Blythe Business Park

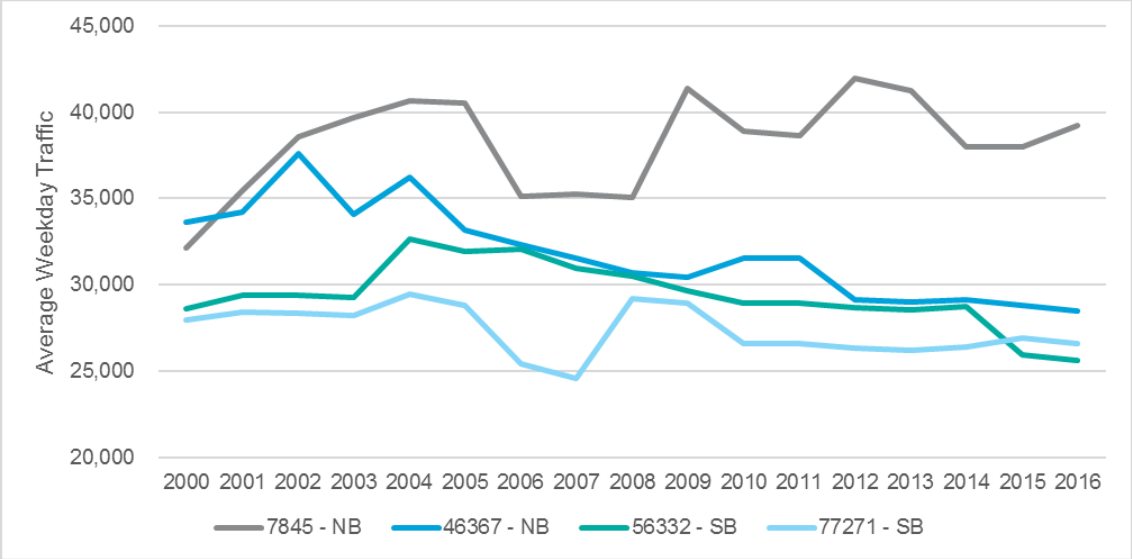
77271	412650	277500	Southbound - south of Solihull Retail Park, near junction with Cranmore Boulevard
46367	411970	279000	Northbound - south of Shirley Park, near junction with Longmore Road
56332	411570	280000	Southbound - north of Shirley Town Centre, near junction with Sandy Hill Road

Figure 15 - DfT Count Points location along the A34 Corridor



The line graph in Figure 16 presents the average weekday traffic flows, by year, for the DfT counts between 2000 and 2016.

Figure 16 - Average weekly traffic for all motorised vehicles



Count point 7845 is located immediately to the west of M42 junction 4 and it experiences the highest flow of traffic with 39,252 vehicles on average in 2016, as traffic coming off the motorway passes this point. This point is also showing an irregular pattern of traffic flow in comparison with the rest of the count points. On average, the other count points have experienced a decrease in traffic levels between 2000 and 2016.

Table 15 shows the average mode share at the count points between 2000 and 2016. The table suggests that all count point sites have a high car/taxi mode share of between 86-88% and a low bicycle mode share of under 1%. Sites 46367 and 56332 have the highest bus/coach mode share but this is still low at around 1.5%. In general, the table shows that cars/taxis are the predominant mode of travel along the corridor.

Table 15 - Mode Share at Count Points, 2000 to 2016

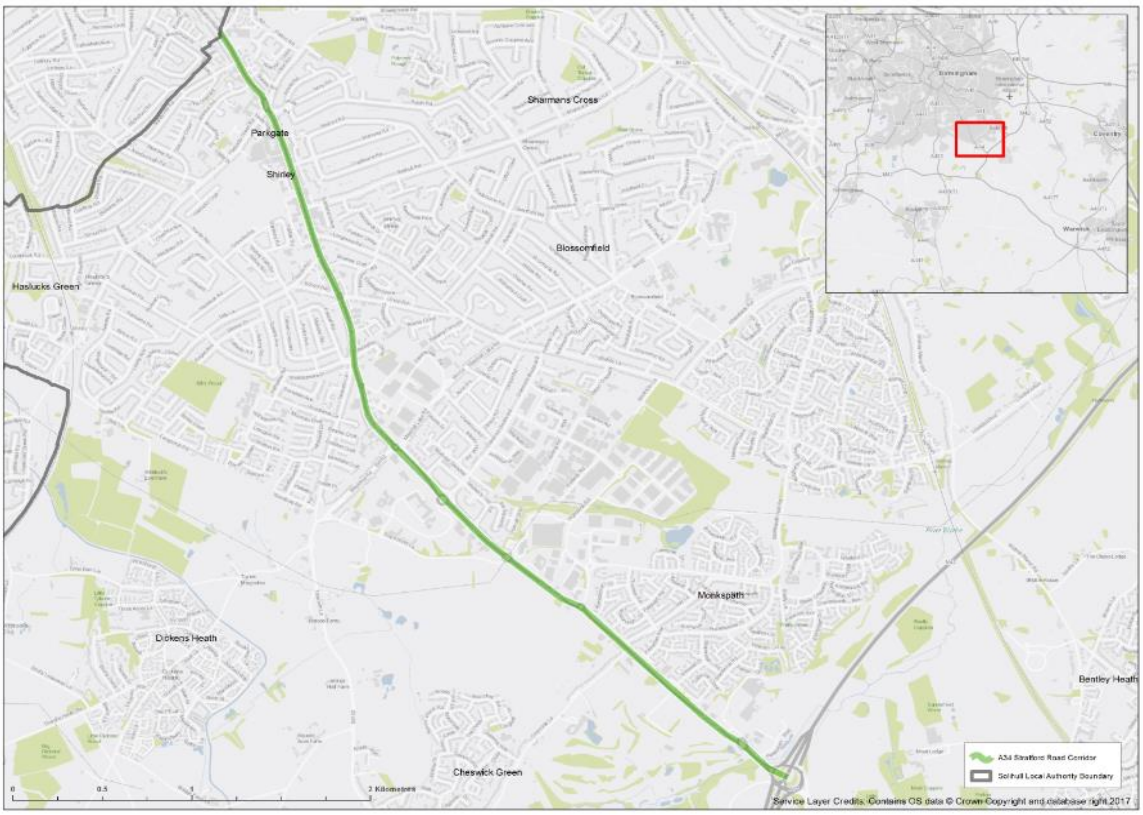
Count Point	Bicycle	Motorcycle	Car/Taxi	Buses/Coach	LGVs	HGVs
7845	0.1%	0.3%	87.1%	0.4%	9.0%	3.1%
46367	0.4%	0.5%	87.5%	1.5%	8.6%	1.5%
56332	0.6%	0.6%	86.7%	1.4%	9.0%	1.7%
77271	0.2%	0.5%	88.1%	0.6%	8.7%	1.9%

3.5.3.2. Journey Time Analysis

Satellite navigation data, sourced from TomTom has been used for a 5.5km route along the A34 Corridor for 90 days between 01 September and 30 November 2017. This date range was chosen to provide the most up to date journey time information to develop an understanding of everyday traffic profile along the A34 northbound and southbound.

The A34 route covered by the TomTom data includes the link between junction 4 on the M42 and just before Sandy Hill Road, shortly after the Hasluck's Green Road/Olton Road roundabout, as outlined in Figure 17.

Figure 17 - A34 Corridor Journey Time Analysis Route



For journey time analysis to be undertaken, it is necessary to group similar time periods together (those with similar levels of flow) so that these periods can be analysed as one. The following distinct time periods have been used for the journey time analysis and these are shown in Table 16.

Table 16 - TomTom Journey Time Analysis - Time Periods

Time Period Name	Days	Times
AM Peak	Mon-Fri	07:30-08:30
AM Late Shoulder	Mon-Fri	08:30-09:30
Inter Peak	Mon-Fri and Sat - Sun	10:00-16:00
PM Peak	Mon-Fri	16:30-1730
fPM Late Shoulder	Mon-Fri	17:30-18:30
7 - Day Night Time	Mon-Fri and Sat - Sun	00:00-02:00

The time periods selected support the understanding of the movement of people at various times of day, for example it is expected that the morning and evening peak will experience the highest level of congestion. However, there is a lot of retail activity on either side of the A34 corridor and therefore the interpeak and weekends are also expected to show higher than average levels of congestion.

Table 17 shows the congestion data for northbound and southbound traffic on the A34 corridor. This presents the difference in travel time during the peak and off-peak periods. Similarly, the speed difference has been calculated using the off-peak speed which is likely to represent free flow conditions.

Table 17 - A34 Corridor Congestion Analysis

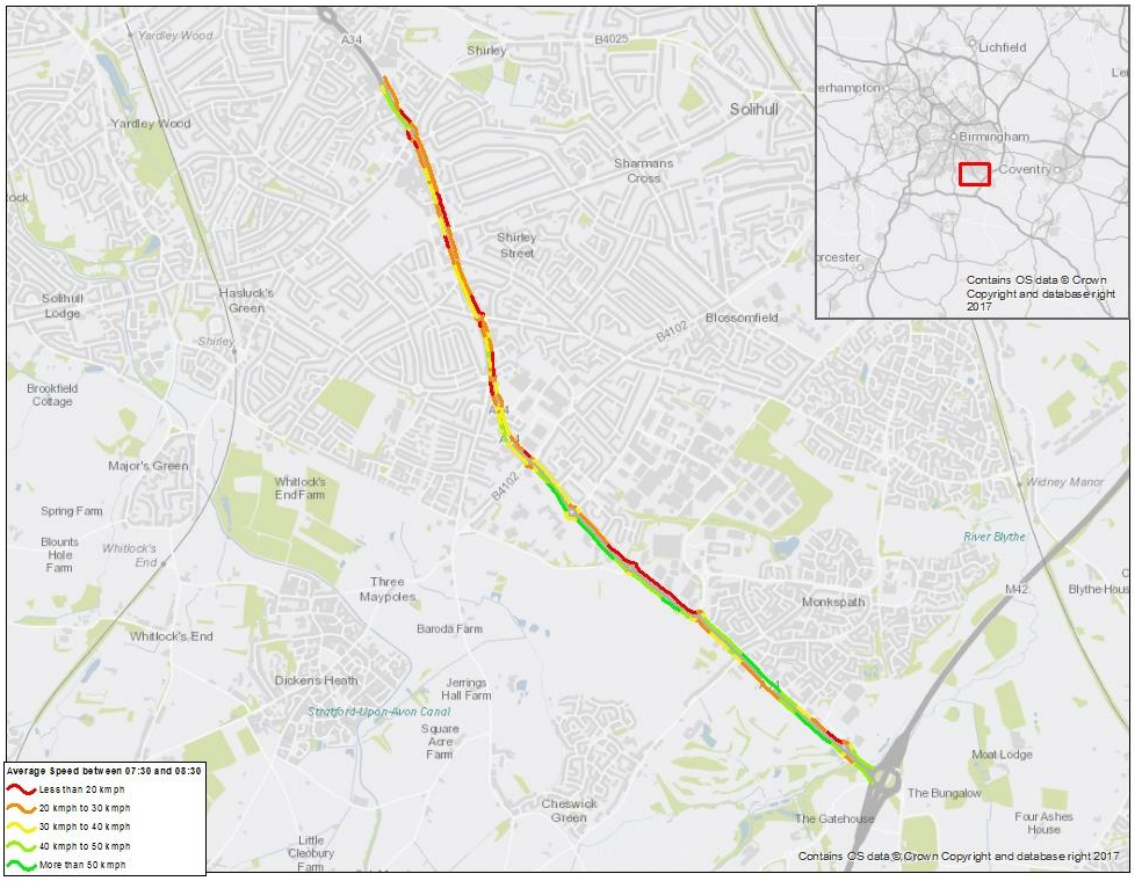
Time Periods	Northbound congestion in minutes (Travel Time minus Off-Peak Travel Time)	Southbound congestion in minutes (Travel Time minus Off-Peak Travel Time)	Speed difference compared to Off-Peak speeds (kph) - Northbound	Speed difference compared to Off-Peak speeds (kph) - Southbound
AM Peak	00:02:22	00:07:03	-10.53	-17.44
AM Late Shoulder	00:03:24	00:05:28	-13.71	-15.05
Interpeak	00:03:58	00:03:07	-15.24	-10.28
PM Peak	00:07:11	00:03:21	-21.55	-10.84
PM Late Shoulder	00:07:11	00:02:47	-21.56	-9.48

Average travel time along the A34 corridor northbound during the off-peak (free flow conditions) is 7.5 minutes at a speed of 44kph (27mph). The most congested time periods northbound are the two PM peak periods, which are over 7 minutes slower than free flow conditions. The AM peak periods experience a less severe delay with an average journey time of just under 10 minutes. Similarly, the difference in speed shows that the PM peak periods delay is almost double that of the AM peak periods, with speeds almost 22kph less than free flow conditions. The interpeak period for northbound traffic is more congested than the average AM peaks with a delay of almost 4 minutes and an average speed of 29kph (18mph).

The average journey time travelling southbound on the A34 corridor during the off-peak is 8.5 minutes. Most of the delay is experienced during the AM peaks with an average journey time of 14.5 minutes, almost double that during free flow conditions. The late PM peak experiences the closest speed to free flow conditions with a difference of only 9.48kph. This is more than half of the speed experienced during the AM peak, which is 21.17kph (13mph).

Northbound and southbound average speed per link (in kph) during the AM peak is presented in Figure **18** and Figure 19 presents the average speed per link (in kph) in the PM peak.

Figure 18 - A34 Corridor AM Peak Speed (KmpH) by link analysis



The most congested links between 7.30am and 8.30am start around Shirley Town Centre and continue to the north up to Hasluck's Green Road. The southbound links between Dog Kennel Road and Monkspath Hall Road also experience significant delay with an average speed of less than 20kmph.

Figure 19 - A34 Corridor PM Peak Speed (KmpH) by link analysis

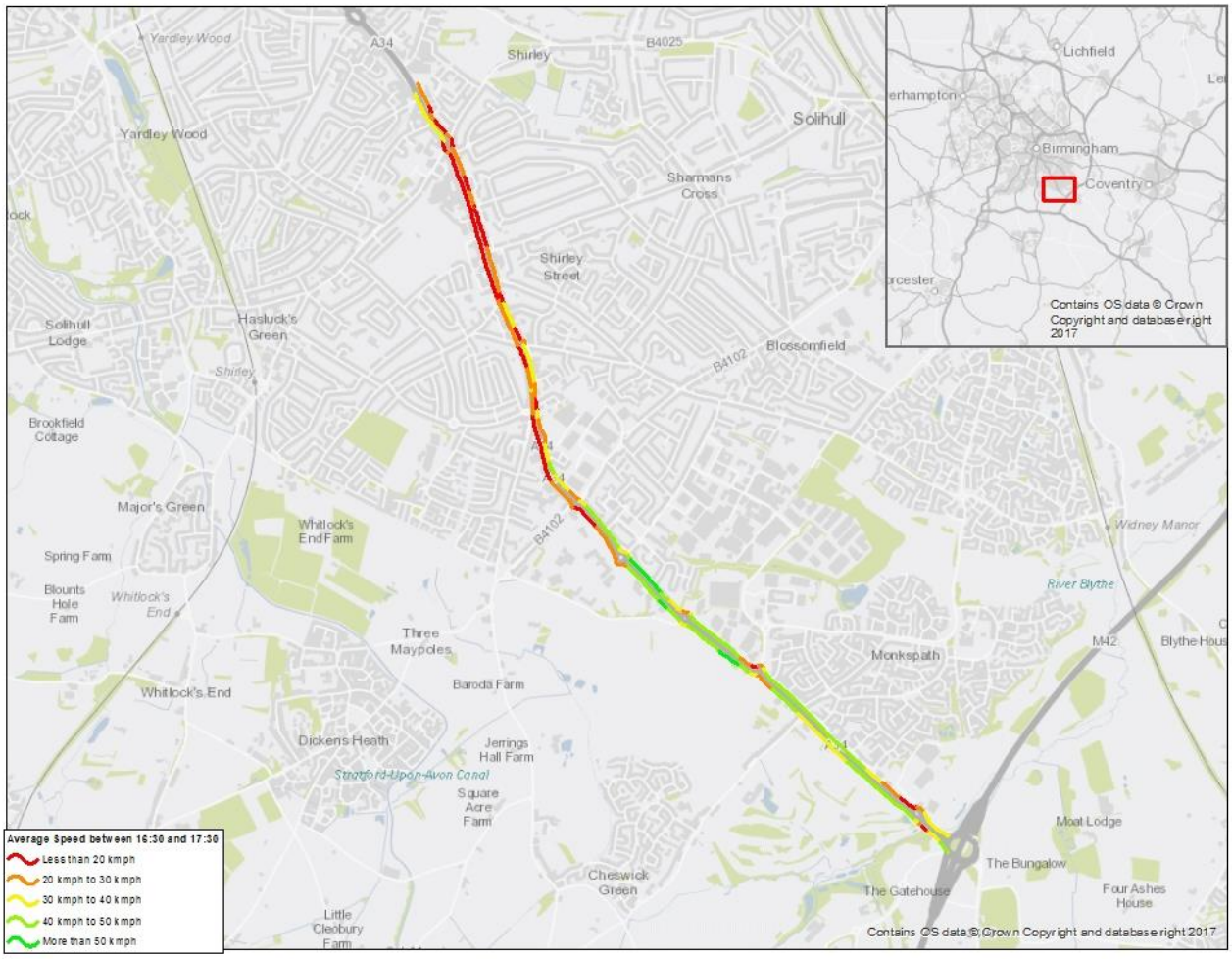


Figure 19 shows that the most congested links between 4.30pm and 5.30pm are around Shirley Park and Solihull Retail Park. The average PM peak speed on the links connecting to Parkgate shopping centre is as low as 7.5kph (4.6mph).

Figure 20 and Figure 21 illustrate the typical delay observed on the A34 corridor, in both the northbound and southbound directions respectively.

Figure 20 - Northbound Delay

Figure 20 demonstrates that in the northbound direction, users can experience excessive delay from Cranmore Boulevard throughout the corridor to the Solihull boundary. It is noted that this delay is experienced by both general traffic and buses, given the absence of bus priority along the corridor.

Figure 21 demonstrates that in the southbound direction, excessive delay may be experienced throughout the corridor north of Monkspath Hall Road, however the delay is less consistent than the northbound direction and there are sections of A34 which experience less delay.

Figure 21 - Southbound Delay

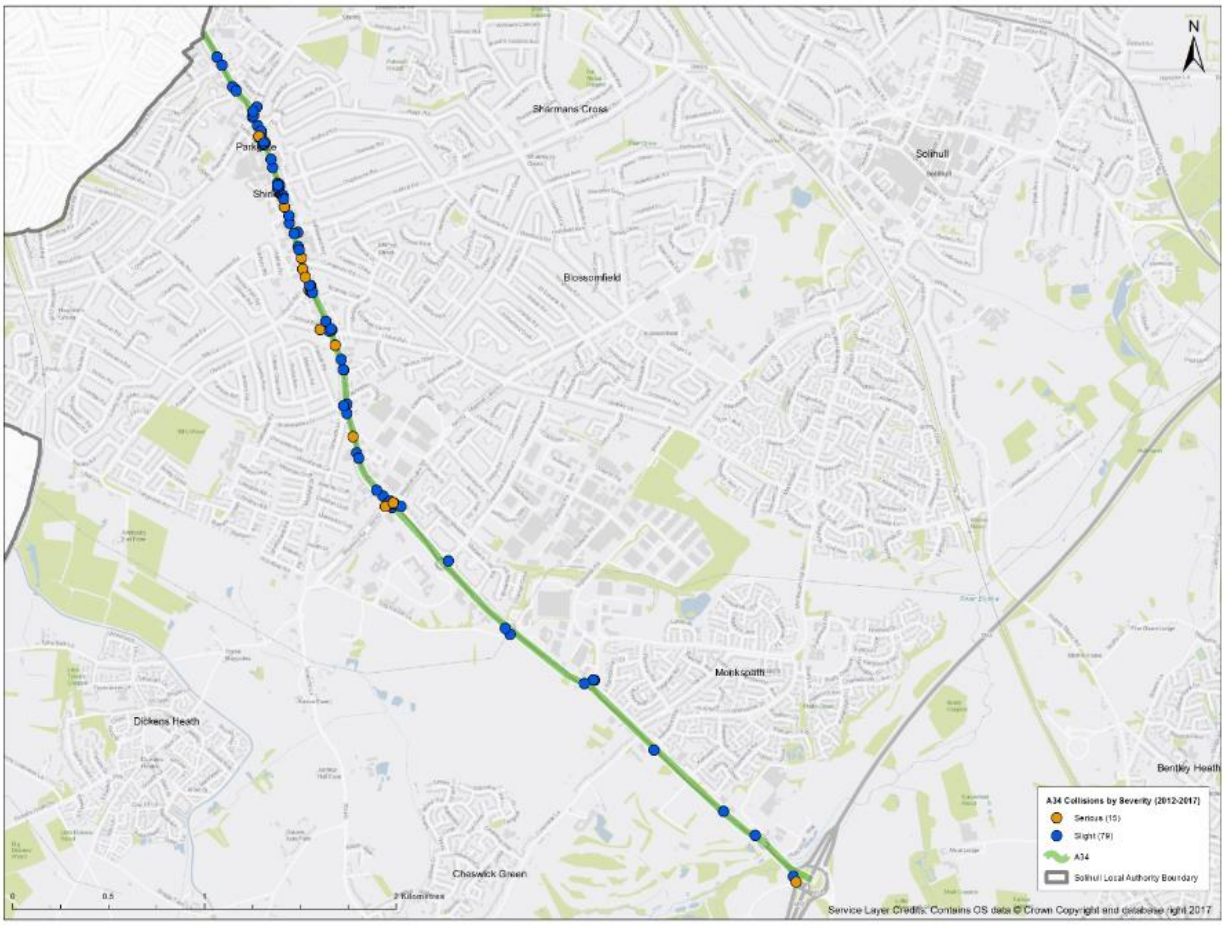
3.5.3.3. Accident Analysis

The most recent five years of collision data was extracted from Solihull's online traffic and accident data tool, SPECTRUM. The date range covers the period from November 2012 to October 2017. During this time, there were 94 reported collisions along the A34 corridor. A breakdown of the severity of these reported collisions is set out in Table 18 and their location is illustrated in Figure 22.

Table 18 - Summary of collisions by severity, 2012 to 2017

Year	Serious	Slight	Year Total
2012	1	5	6
2013	2	17	19
2014	1	17	18
2015	3	19	22
2016	6	10	16
2017	2	11	13
Grand Total	15	79	94

Figure 22 - Location of Collisions by severity



The data shows that most collisions were slight and there were no fatalities during the period. A peak of 22 collisions occurred 2015, and the proceeding years have seen a year on year decline in collisions. There were less than three serious accidents each year along the A34, except for in 2016 when six serious collisions occurred.

It is demonstrated that to the southeast, beyond Blackford Road, there were fewer incidences of collisions. This section is generally dual carriageway with two wide lanes in each direction. There are few junctions with side roads and few properties that front directly onto the footway.

The occurrence of collisions was higher towards the northwest. In particular, the A34 section between Longmore Road and School Road has clusters of slight and series collisions. This is a section of dual carriageway with two lanes in each direction, and is significantly more built-up, with many properties fronting onto the footway and frequent junctions with side streets. It is also a Red Route and stopping is prohibited.

Further analysis of the collision data shows that there are clusters of collisions involving pedestrians at the junction of A34/B4102 and A34/Church Road. There is also a cluster of cycle collisions at the junction of A34/School Road. The stretch of A34 between Olton Road and Solihull Road also has a high number of collisions, including collisions involving pedestrians and cyclists.

3.5.4. Transport Network Analysis Summary

A summary of the transport network analysis findings is presented in the below graphic:

- **The A34 benefits from some existing cycle infrastructure and there is clear propensity to cycle to/from the corridor, however the cycling network along and joining the A34 is** piecemeal.
- **High delays are experienced along the corridor in the AM and PM peak, particularly around the Shirley Town Centre/Haslucks Green Road area in the north of the corridor.**
- **94 accidents occurred on the corridor between 2012 and 2017. The majority of these accidents were slight in nature and occurred between Sections 1 and 3 of the corridor.**
- **There are frequent bus services along the A34 corridor between Birmingham and Solihull. However, the bus services do not benefit from bus priority resulting in quite significant bus journey time variability as a result of congestion.**

3.6. Air Quality

Figure 23 shows the air quality management areas (AQMAs) around the study area. The map shows that the study corridor are in very close proximity to the Birmingham AQMA at the north. Therefore, the encouragement of active travel in the study area is important to try and reduce the impacts of poor air quality.

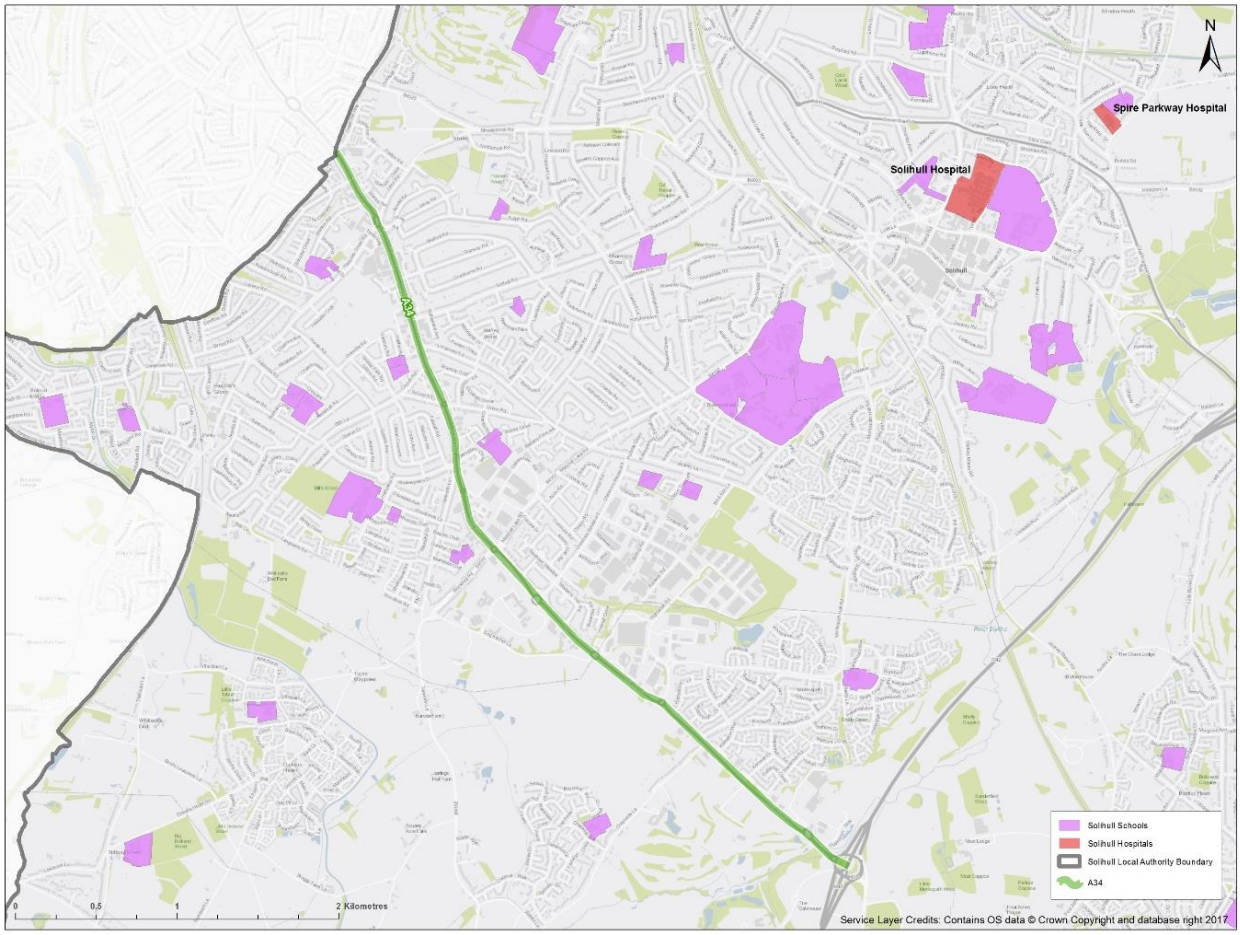
Figure 23 - Air Quality Management Areas

3.7. Location of Existing and Future Developments

3.7.1. Location of key existing developments

Figure 24 illustrates the location of main education and hospitals in the vicinity to the A34 corridor.

Figure 24 - Location of hospitals and schools

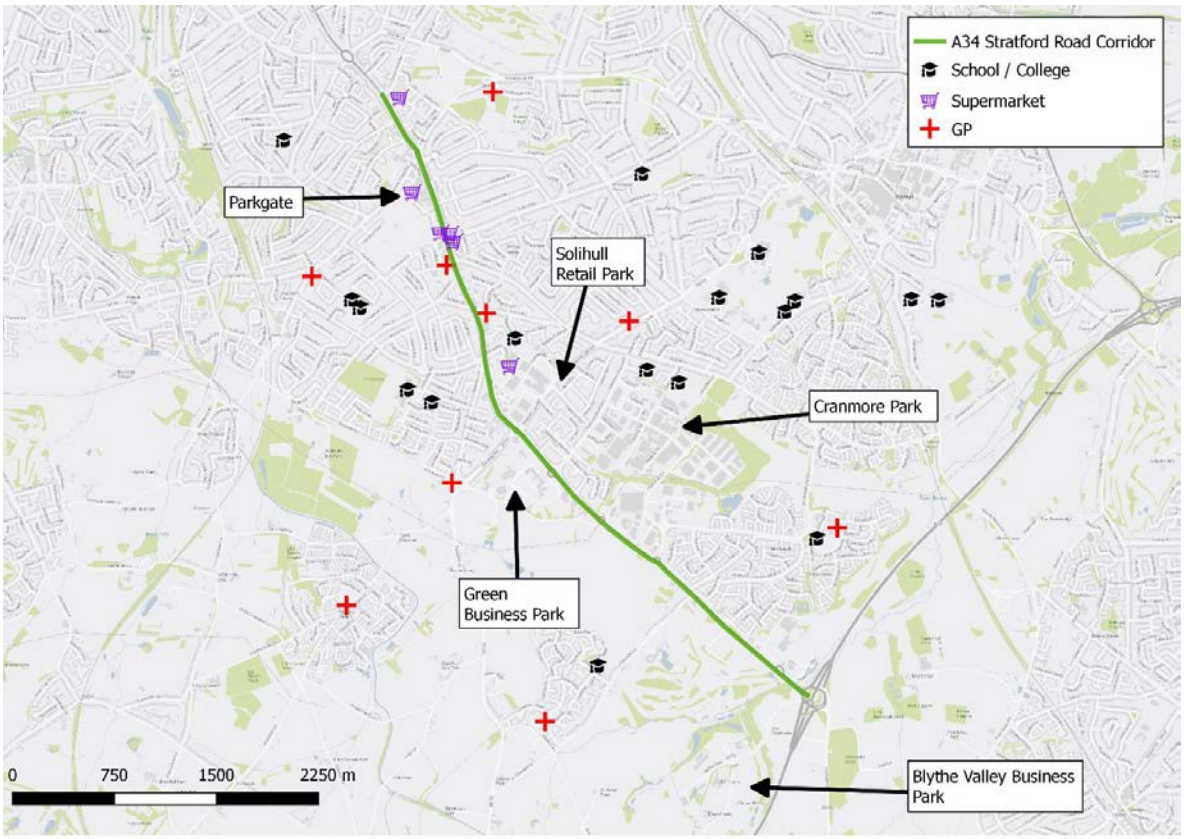


There are a number of educational establishments dispersed throughout the residential area, including schools and colleges. There are no hospitals immediately adjacent to the A34 corridor, but the NHS Solihull Hospital and private Spire Parkway Hospital are present, approximately 4km east of the A34 corridor.

Figure 25 presents the key business clusters within close proximity to the A34 as well as local schools/colleges, supermarkets and GP surgeries. The key business clusters close to the A34 corridor include:

- Parkgate
- Solihull Retail Park
- Blythe Valley Business Park
- Cranmore Park; and
- The Green Business Park

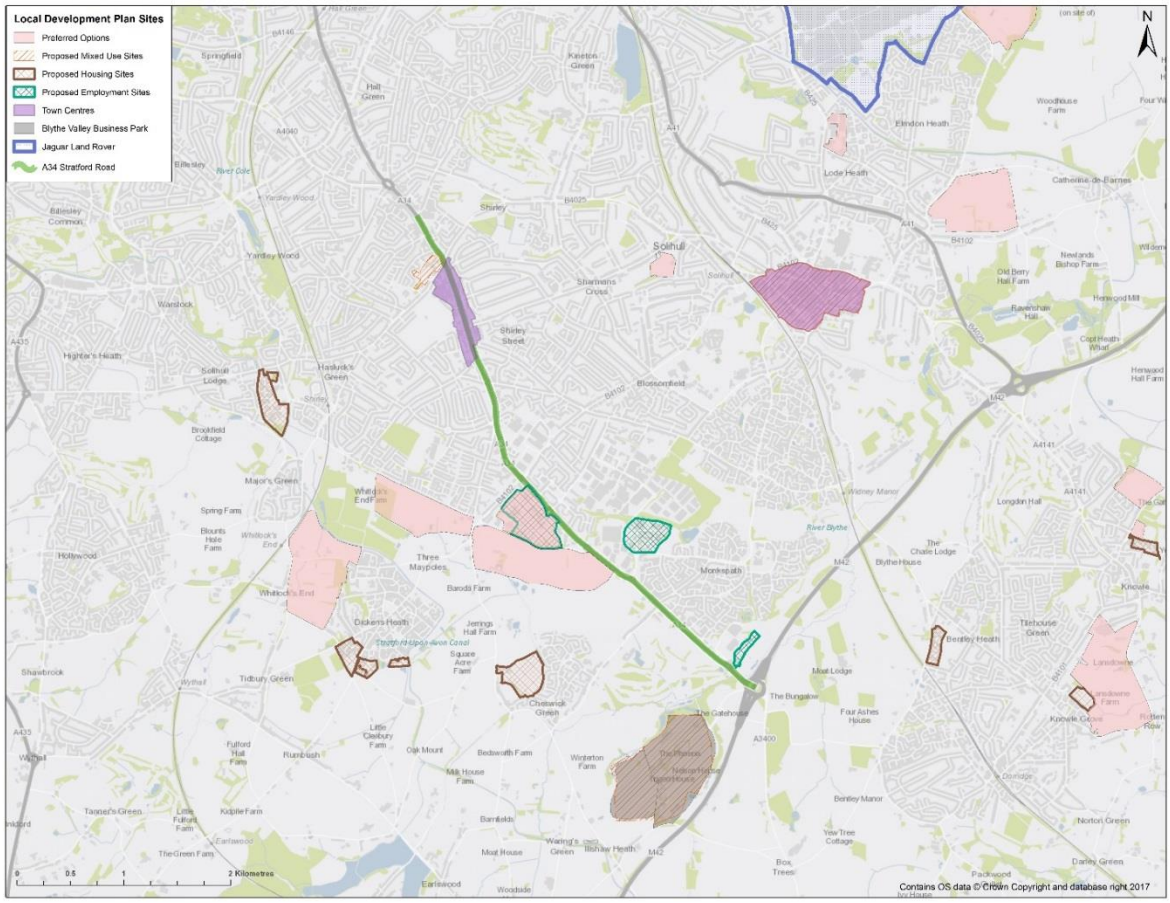
Figure 25 - A34 - Key Business Clusters



Beyond the services identified above, there are a number of business clusters. There are clusters of supermarkets in the more heavily populated areas towards Shirley which are located adjacent to the A34 corridor and offer car parking. There are several large business clusters and employment sites, including Green Business Park which is accessed directly off the A34.

Figure 26 shows SMBC's adopted and review site allocations. There are a number of planned development sites in close proximity to the A34 Corridor allocated for both business and housing use. The former Powergen site, close to Haslucks Green Road, is a 3.84-hectare site which has been earmarked for 130 new houses with supporting services. In addition, Blythe Valley Park, close to the M42, has a 7.25-hectare area which has been allocated for 250 houses. In terms of business growth, six hectares of land at Solihull Business Park has been identified for expansion of the site. Similarly, 18.5 hectares of land at the TRW site has been allocated for business use.

Figure 26 - Adopted and Local Plan Review Site Allocations



Located in Solihull but not in close proximity of the A34 corridor is the UK Central Hub which was proposed within Solihull Draft Local Plan 2016. The mixed-use site will comprise infrastructure, commercial and residential development. The UK Central Hub will offer business immediate access to strategic economic assets and a wide range of development opportunities, including the HS2 Interchange Station, the 140-hectare Arden Cross development site, Birmingham Airport, the National Exhibition Centre (NEC) and Jaguar Land Rover. The development will provide 750,000 square metres of floor space, of which two-thirds will be commercial. The remainder will provide 3,500 new homes. The current programme indicates that the first phase of development will be undertaken between 2017 and 2022 and include enabling works and approximately £295m infrastructure investment. Development will continue in with further growth planned in 5-year tranches.

3.8. Consideration of Key Locations

Considering the above analysis, it was decided that all sections of the A34 corridor required further consideration.

Figure 27 to Figure 31 provide a summary of each section of the corridors, considering their main issues, characteristics and initial thoughts on some of the potential solutions.

Figure 27 - Solihull Border to Hasluck's Green Road

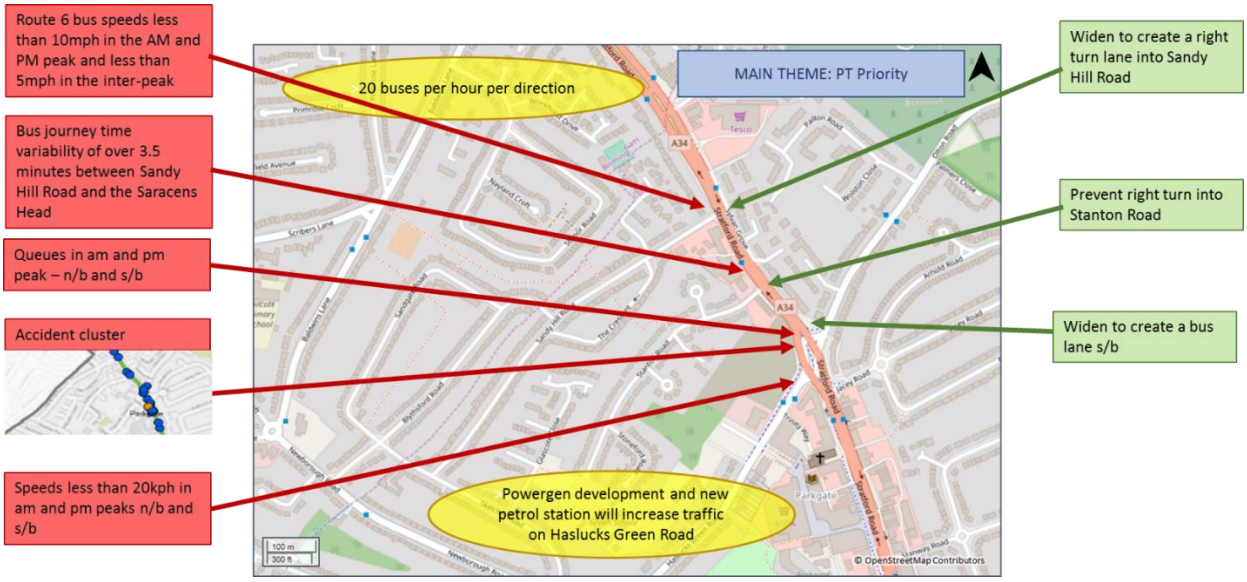


Figure 28 - Hasluck's Green Road to Union Road

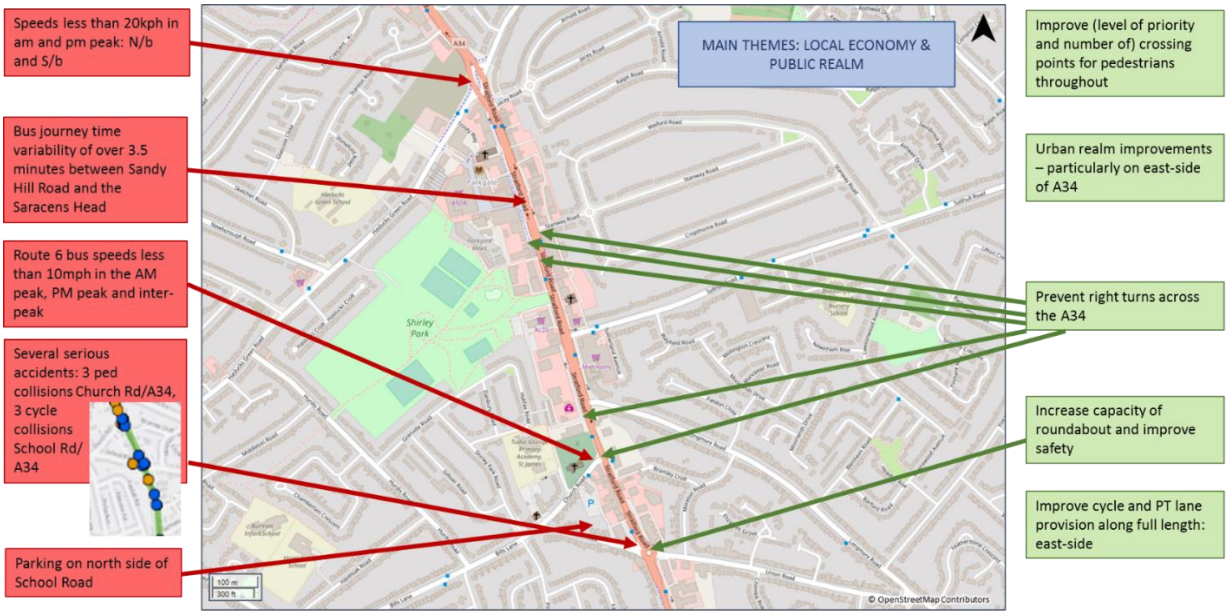


Figure 29 - Union Road to Marshall Lake Road

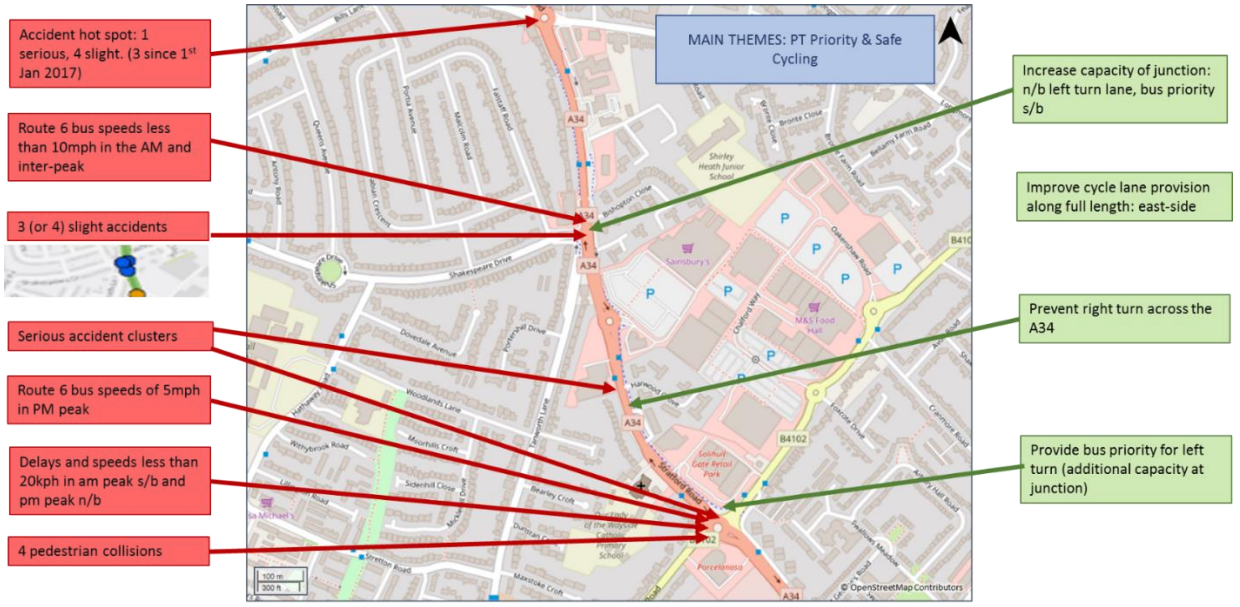


Figure 30 - Marshall Lake Road to Monkspath Hall Road

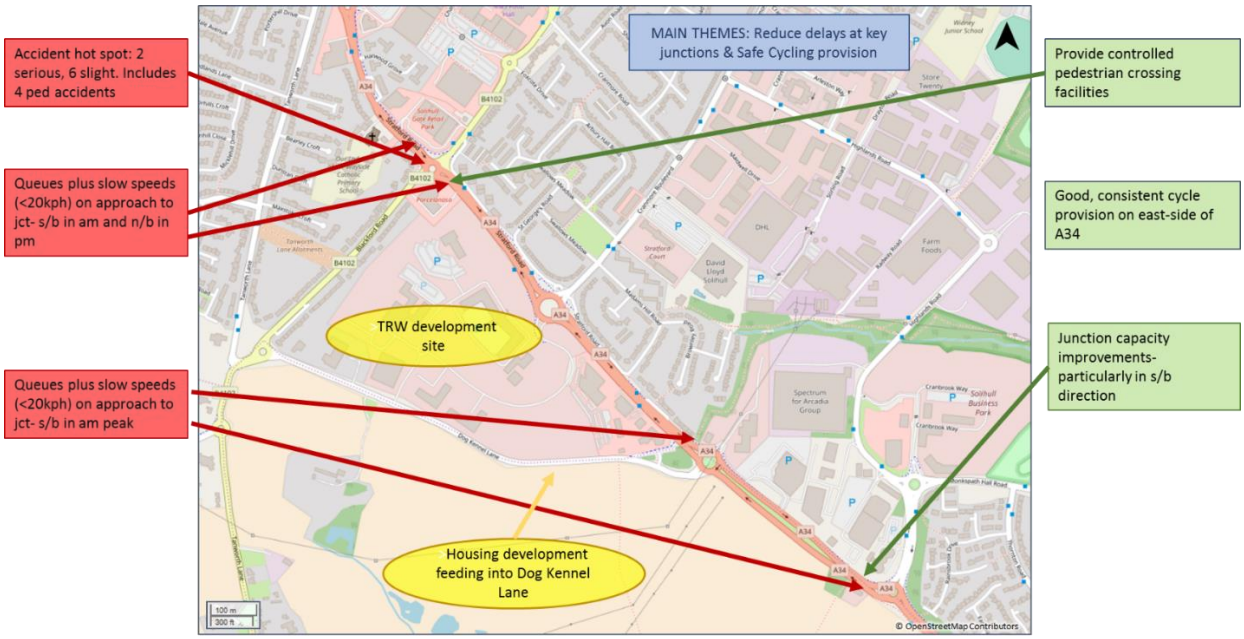
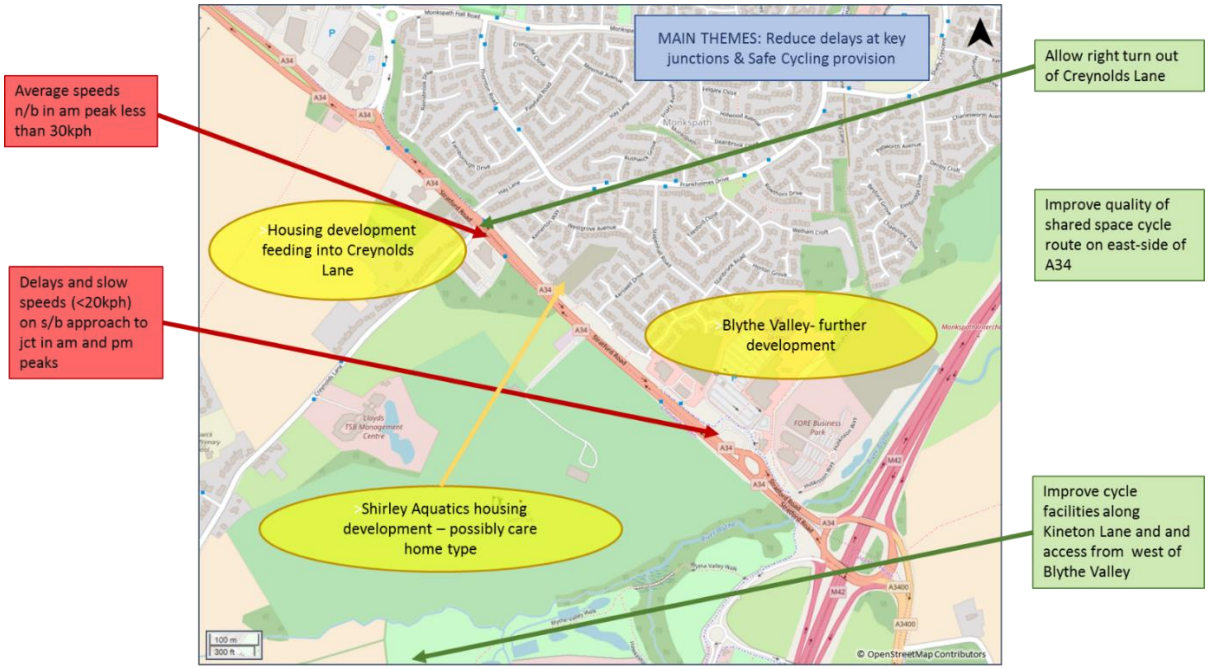


Figure 31 - Monkspath Hall Road to M42 Junction 4



3.9. Future transport improvements

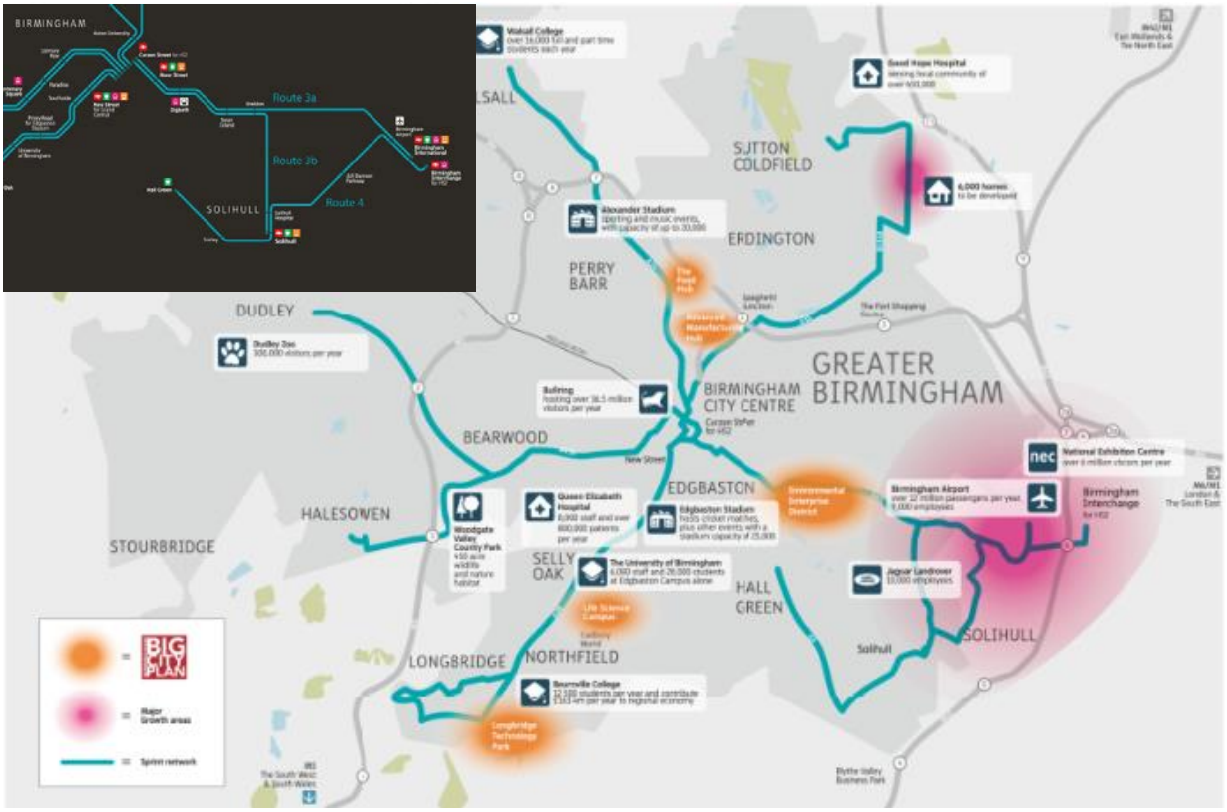
TfWM is a key partner in Midland Connect, an ambitious initiative to identify transport connectivity improvements to maximise long-term economic growth across the Midlands, to influence long-term investment in the strategic transport networks. Key transport priorities outlined in WMCA's policy and strategy direction include scheme development of planned Metro extensions and SPRINT routes, which are in line with 'Movement for Growth' and its key transport priorities.

3.9.1. Sprint Routes

Figure 32 illustrates the proposed SPRINT network, alongside the Birmingham Big City Plan and major growth areas. The planned routes have been identified for delivery by 2026, and form part of the HS2 connectivity package.

The route which impacts upon the A34 is the connection between Birmingham International (HS2 Station) and Hall Green, referred to as Route 4. Sprint Route 4 will start in Hall Green and enter the Solihull border at Section 1 of the A34 corridor. It will then travel through Shirley Town Centre (Section 2) and through Section 3 of the corridor. At the intersection between Sections 3 and 4, Route 4 will route towards Solihull Town Centre towards the UK Central Hub via the Jaguar Land Rover site at Damson Parkway.

Figure 32 - Proposed SPRINT Network in the West Midlands

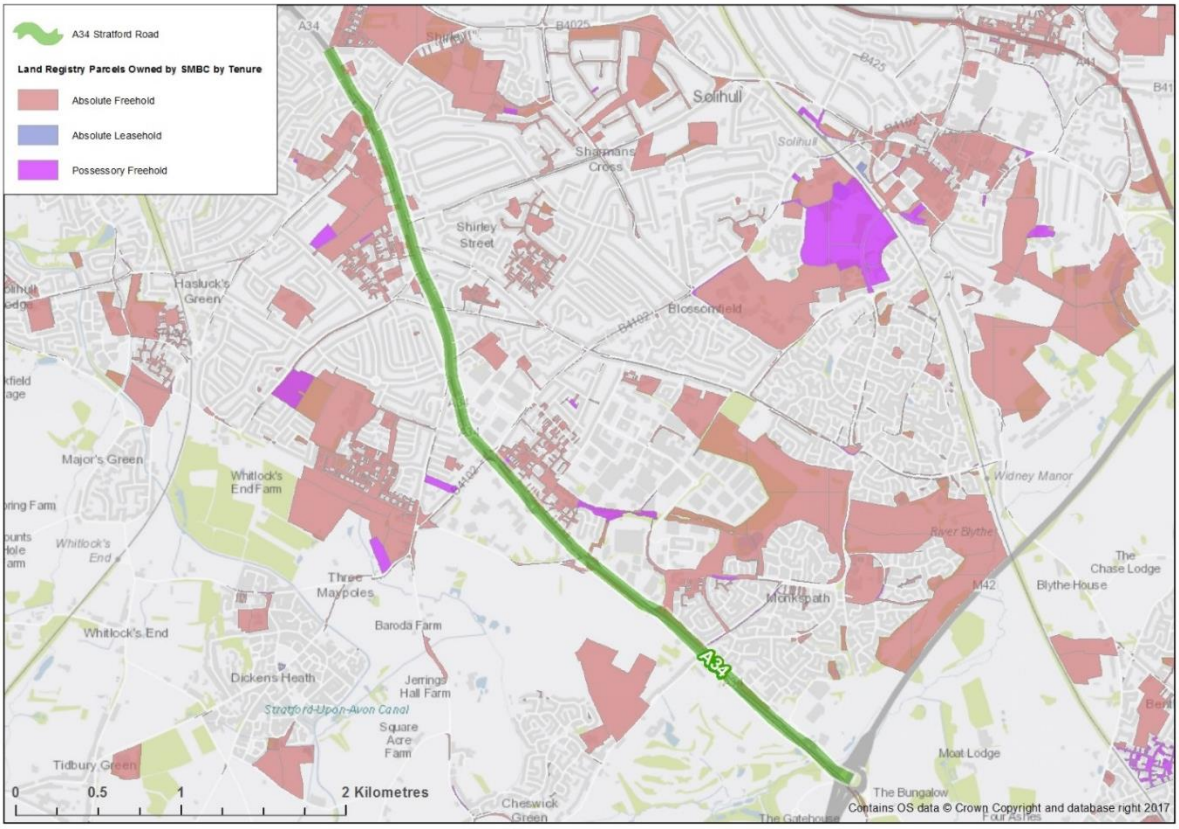


Source: https://www.tfwm.org.uk/development/sprint/

3.9.2. Land Ownership

SMBC owns a number of sites around the A34 corridor. Many of these sites may form part of future transport improvements in the borough.

Figure 33 - Land Registry Parcels Owned by SMBC



It is demonstrated that SMBC owns the absolute freehold on several large sites adjacent to the A34 corridor, including sites in the centre of Shirley. Therefore, there is potential for SMBC to release some of this land to aid transport improvements along the corridor. Transport improvements along the A34 corridor also raise potential opportunities to release surplus highway land for development purposes.

3.10. SWOT analysis by mode

An analysis of the Strengths, Weaknesses, Opportunities and Threats (SWOT) has been undertaken for each mode, using the evidence base. The SWOT analyses are summarised in Table 19 to Table 22 shows the air quality management areas (AQMAs) around the study area. The map shows that the study corridor is in very close proximity to the Birmingham AQMA at the north. Therefore, the encouragement of active travel in the study area is important to try and reduce the impacts of poor air quality.

Table 19 - Pedestrian SWOT Analysis

Strengths	A high proportion of junctions along the corridor provide signal controlled pedestrian crossings, particularly along Section 2 of the corridor which has high pedestrian flows. This allows for safe pedestrian movements along the corridor.
Weaknesses	The number of collisions in areas with high pedestrian flows are high, such as the A34/ School Road/ Church Road junction Section 2) which had multiple slight collisions between 2012 and 2015.
Opportunities	The corridor is well served by shops and local services including restaurants, a post office, and banks, providing nearby residents with the opportunity to make journey on foot to key services. This is particularly apparent in Sections 2,3, and 4 of the corridor.

Threats	Solihull has high levels of car ownership and therefore nearby residents are more likely to undertake short distance journeys by car (compared to areas of low car ownership)

Table 20 - Cycle SWOT Analysis

Strengths	The proportion of cycling trips along the corridor at present is up to 4%. The highest proportion of production and attraction cycle trips are in Sections 1 and 2 of the corridor.
Weaknesses	Current cycling infrastructure on the corridor is inconsistent and therefore does not encourage cycle journeys along the corridor.
Opportunities	The corridor is wide enough to accommodate segregated cycle lanes and other cycling provision.
Threats	The lack of cycle infrastructure and occurrence of collisions involving cyclists will deter some people from making cycle journeys.

Table 21 - Public Transport SWOT Analysis

Strengths	The A34 corridor serves highly populated areas and provides a high frequency of bus services including the 6/6A service which operates every five minutes during the weekday
Weaknesses	There is no bus priority on the corridor, resulting in buses being stuck in general traffic congestion.
Opportunities	Car ownership on the corridor is high which means that people are less likely to travel by bus. However, the introduction of bus priority measures in a car dominated area could make journeys by bus more attractive than by car.
Threats	Peak delay issues and poor peak speeds continue to be observed and disrupt bus journeys.

Table 22 – Highways SWOT Analysis

Strengths	The total number of collisions on the study corridors has reduced by 32% between 2013 and 2017, and there has been a year-on-year reduction in collisions during this period (apart from an increase in 2015)
Weaknesses	The corridor has a high car mode share with up to 63% of households with access to 2 or more cars.
Opportunities	The average traffic flows have been declining year on year, and if this is to continue it will allow for improved operational performance of the highway corridor.
Threats	Peak delay issues and poor peak speeds continue to be observed and disrupt car journeys.

3.11. Summary

The A34 corridor runs through a densely populated residential area with over 50 residents per hectare in some parts. The highest population density can be seen in the north of the study area located opposite Parkgate, within Shirley Town Centre. The central and southern part of the corridor has a lower population density but more retail and employment facilities.

The A34 corridor is home to a number of schools and colleges. Light Hall Secondary School and Hazel Oak School are located on the corridor in addition to a number of primary and junior schools. These sites attract a significant number of trips during peak periods. In addition, five educational establishments are located on Blososmfield Road including Solihull College and University Centre.

These sites attract many trips along the A34 corridor, due to their large catchment area, which are a range of car, bus, bicycle and walking trips.

Car ownership on the corridor is high with up to 67% of households with access to two or more cars. This has resulted in a car dominated area where residents are reliant on private vehicles rather than public transport, placing pressure on the local road network. Up to 40,000 vehicles use the corridor each week with the highest flows observed on the section closest to the M42. High-traffic flows have resulted in congestion along the corridor at peak times demonstrated through bus journey time reliability data which showed a 3.5-minute increase in journey times at the north end of the corridor in the PM peak period (16:30 – 17:30). Congestion and journey time delays along the corridor are expected to worsen with the delivery of new housing and employment developments which will attract more vehicle journeys.

A number of developments are planned for the area around the A34 corridor over the coming years which will create additional demand on the A34 corridor and surrounding transport network. As mentioned within Section 2.2.3.2, up to 3,500 dwellings are proposed within close vicinity to the A34 including 700 dwellings at West of Dickens Heath and 950 dwellings at Blyth Valley Park. Development at these sites will attract a significant number of trips and it is imperative that the A34 can facilitate the increased demand.

In order to serve these new developments, public transport provision in Birmingham and Solihull is set to expand. Sprint Route 4 is planned for the corridor between Hall Green and the UK Central Hub via Sections 1,2 and 3 of the A34 corridor. In addition, changes are planned for the core bus network to ensure that it meets the future needs of the area.

However, despite the planned public transport improvements along the A34 corridor, there are still a number of issues which need to be addressed in order to support sustainable growth in the area. Table 23 provides a summary of the A34 corridor wide issues in addition to a response which suggests how their issues can be resolved.

Table 23 – Corridor Wide Issues

Issue	Resolution
Car ownership along the corridor is high, resulting in low mode share for public transport and active travel. This is increasing the pressure on the corridor leading to journey unreliability and congestion.	Ensure that public transport provides an attractive and efficient alternative to journeys by car to encourage mode shift
Cycling provision along the route is inconsistent	Ensure that there is a cycleway along the entire length of the corridor
The propensity to cycle in the area is high compared to neighbouring areas, but there is considerable room to increase the number of cycling trips in the study area	Provide a good quality cycle network that connects to the right places and provides an attractive alternative mode of travel
Bus journey times are poor along the corridor and therefore less attractive than car travel	Provide dedicated bus lanes along the corridor and bus priority at junctions where feasible
The corridor experiences delays at peak times	Seek to maximise free-flowing conditions on the corridor by reducing the number of junctions on the corridor
94 accidents occurred on the A34 corridor between November 2012 and October 2017	Improve facilities for pedestrians and cyclists to reduce their conflict with vehicles
An AQMA is located close to the A34 corridor at the Solihull Border	Encourage the use of active modes over vehicles to try and improve air quality along the corridor

In addition to the corridor wide issues, there are a series of issues that are specific to certain sections of the corridor. Table 24 provides a breakdown of the corridor sections and outlines their characteristics, issues, and themes for addressing the issues.

Table 24 – Section Specific Issues

Section	Characteristics	Issues/problems	Themes
Section 1: Solihull Border to Hasluck's Green Road	• Residential area • Busy bus route • Powergen development and new petrol station planned in area	• Delays northbound and southbound by Hasluck's Green Road • Low speeds (<20kmph) by Hasluck's Green Road • Accident cluster by Hasluck's Green Road	• Public transport priority
Section 2: Hasluck's Green Road to Union Road	• Residential area • Busy retail area • Busy bus route	• Delays northbound and southbound • Several accidents along corridor during the past five years • Parking on north side of School Road	• Local economy • Public realm
Section 3: Union Road to Marshall Lake Road	• Residential area • Busy retail area • Busy bus route	• Delays northbound • Low speeds (<20kmph) at A34/ Marshall Lake Road junction • Several accidents along corridor during the past five years	• Public transport priority • Safe cycling provision
Section 4: Marshall Lake Road to Monkspath Hall Road	• Residential/ retail area • Close to the Green Business Park development site • Close to housing development on Dog Kennel Lane • Bus route	• Delays southbound • Low speeds (<20kmph) at A34/ Dog Kennel Lane • Several accidents along corridor during the past five years	• Reduction in delays at key junction • Safe cycling provision
Section 5: Monkspath Hall Road to M42 Junction 4	• Residential/ retail area • Bus route • Provides access to the M42 • Development at Blythe Valley Business Park • Shirley Aquatics housing development	• Delays northbound and low speeds (<20kmph) at Creynolds Lane junction • Delays northbound and low speeds (<20kmph) close to Notcutts Garden Centre	• Reduction in delays at key junction • Safe cycling provision

The issues and themes outlined above will be used to inform the objectives for the corridor, as outlined in the next chapter.

4. Corridor Objectives

4.1. Introduction

Corridor specific objectives have been identified to help address the current and future challenges on the A34, whilst supporting the growth aspirations of SMBC and the wider regional and national aspirations for growth. The approach used to help define the corridor objectives involved presenting the evidence base for the corridor in a schematic diagram at a 'Solihull Corridor Option Generation Workshop' and sharing information with key stakeholders to ensure that the emerging issues and objectives supported the future ambitions for Solihull.

4.2. A34 Corridor Objectives

Once the 'Option Generation Workshop' had been undertaken, the views of SMBC officers were gathered to further develop ideas raised. The review of local, regional and national policy documents (Chapter 2) has been used to help identify specific corridor objectives and to ensure that the corridor objectives align with key policy documents where consistent challenges have been identified. Through our understanding of the A34 corridor (Chapter 3) the objectives outlined below are based around the varying function, performance and future land use of specific sections of each corridor. We have therefore identified several objectives for the A34 corridor.

Figure 34 - A34 Corridor Objectives

Objective 1 – Improve journey reliability through improved public transport and active travel infrastructure and smarter choices engagement

Objective 2 - Addressing safety for all users including improved facilities for pedestrians and cyclists and addressing accident 'hotspots'

Objective 3 – Improve conditions for pedestrians including tackling severance and improving the public realm at key centres through community engagement

Objective 4 - Support sustainable economic growth through a range of interventions and technology improvements.

4.3. A34 Corridor Objectives – Alignment to Solihull Connected

It is imperative that the A34 corridor supports the overall vision and objectives of Solihull, the Solihull Connected Transport Strategy seeks to provide the borough with the opportunity to develop the best mix of infrastructure and policies which will help to achieve the growth strategy and still retain the character which makes Solihull unique.

The ambition behind 'Solihull Connected' has been to create balanced investment in transport infrastructure that recognises the need to cater for cars and places appropriate and increasing emphasis on alternatives; such as:

- Options for game-changing public transport schemes that will be competitive, fast, reliable and frequent on key corridors across the Borough. We need to serve important destinations including the Airport, Jaguar Land Rover and Birmingham and Coventry city centres;
- High-quality cycling networks to encourage our residents to cycle to work; and
- Community-focused initiatives to encourage healthier transport choices where possible.

Table 25 outlines how the A34 Corridor Objectives align to support alternatives to the car as above as well as the relevant Solihull Connected Objectives.

Table 25 - A34 Corridor Objectives – Aligning to Solihull Connected Aspirations

Solihull Connected Aspiration	Aligning to A34 Corridor Objectives			
	1	2	3	4
Options for game-changing public transport schemes that will be competitive, fast, reliable and frequent on key corridors across the Borough	x			
High-quality cycling networks to encourage our residents to cycle to work	x	x		
Community-focused initiatives to encourage healthier transport choices where possible.		x	x	
Solihull Connected Objectives				
Ensure that major transport investment enables and manages growth to achieve the Council priorities for homes and jobs.	x			x
Support and enable the integrated delivery of sustainable and efficient forms of transport like mass-transit, cycling and walking.	x			
Contribute to the council priorities to support people's everyday lives and improve health and wellbeing through the promotion of smarter choices programmes linked to major and local infrastructure investment.	x		x	

5. Option Generation

5.1. Methodology

Through the initial work undertaken as part of this study, an evidence base has been developed which identifies the current conditions along the A34 as well as future trends including planned development in close proximity to the corridor. Through a review of the evidence that has been collated, the project team have a strong understanding of the performance and function of the corridor and the potential impacts of various interventions applied across the A34 corridor.

The aim of option generation has been to develop a range of alternative interventions across all modes which have the potential to achieve the corridor objectives identified within Chapter 4. As part of the option generation process, we have considered options which promote the use of alternative modes of travel to car such as personalised travel planning (PTP) and travel plans (revenue measures) as well as capital cost options.

As part of the option generation process, we have undertaken the following activities:

- **Internal Option Generation Workshop: the** project team have undertaken an internal workshop to develop options. This has helped to identify individual and multi-modal options. The workshop will be undertaken to ensure that all modes are considered equally. The meeting was attended by Tim Colles (highway expert) Andy Clark (freight and public transport expert), Anthony Jones (active travel expert) and Martin Trevor (cycling specialist)
- **Best Practice Review:** a review was undertaken of previous commissions undertaken by Atkins within Solihull and wider route corridor studies to determine best practice and potential options to consider for the A34 corridor.
- **Option Generation Workshop:** The workshop was attended by the Atkins project team including Project Director Adrian Taylor and Project Manager Anthony Jones. The meeting was an opportunity for SMBC and wider stakeholders to present and discuss potential options across the A34 based on knowledge of the corridor and the evidence base presented by Atkins project team.

5.2. A34 Corridor Options

As mentioned within the summary of the evidence based found within Chapter 3, a number of different sections along the A34 corridor have been identified which have various functions and serve separate purposes. Due to the varying characteristics along the A34 corridor, options have been developed to address 'corridor wide' issues as well as options which seek to address impacts at different sections within the A34 corridor.

Table 26 presents the options which have been developed across the corridor (including corridor wide options as well as section specific options).

Table 26 - A34 Corridor Options

Section Ref	Section Name	Section Options
1	Solihull Border to Hasluck's Green Road	• Widen carriageway on the A34 to create a right turn lane into Sandy Hill Road. • Prevent Right turn into Stanton Road. • Improved public transport provision - bus lane to provide priority for buses. • Employment Travel Plans • Safety/Signal improvements on Hasluck's Green Road/A34/Olton Road Junction • Grade separated junction on Hasluck's Green Road/A34/Olton Road Junction (subway/tunnel movement for SB/NB traffic)

		• Subway/ tunnel for movement between Hasluck's Green Road and Olton Road • Improved cycling and walking infrastructure to access Tesco Superstore, including priority access
2	Hasluck's Green Road to Union Road	• Permeability to the wider area - reduce right turns across the corridor from access road - identify key access routes. • Improved public transport provision - bus lane to provide priority for buses. • Improve (level of priority and number of) pedestrian crossing points, reducing impact of severance. • Urban realm improvements - particularly on the east-side. Red Lion pub square public realm improvements. • Increase capacity of roundabout at A34 / Union Road and improve safety. • Employment and residential travel plans • Restrict HGV movements in peak periods • Parking management – remove car parking within Shirley High Street
3	Union Road to Marshall Lake Road	• Increase capacity of Shakespeare Drive junction: northbound left turn lane and bus priority southbound. • Marshall Lake Road/A34 Roundabout - provide bus priority for left turn (additional capacity at junction). Priority for SPRINT. • Improved public transport provision - bus lane to provide priority for buses. • Integrate parking area at Sainsburys with the Retail Park. Consider one way in, one way out. • Prevent right turn access into Harwood Grove. • Safety improvements along the B4102/A34 Junction • Signalised junction B4102/A34 • Employment travel plan • Quiet cycleway link along Tamworth Lane/Blackwood Road
4	Marshall Lake Road to Monkspath Hall Road	• Relief road to facilitate new housing development • Junction capacity improvements at Monkspath Hall Road/A34 Roundabout • Provide controlled pedestrian crossing facilities south of Blackford Road/A34 Roundabout. • Employment travel plans
5	Monkspath Hall Road to M42 Junction 4	• Enhanced workplace travel plans • Allow right turn out of Creynolds Lane onto A34. • Junction Improvement at Tesco/Notcutts Roundabout
6	Corridor Wide Options	• Improved quality of cycle lane provision along whole length of corridor (segregated, signed, safe etc) • Implement interventions to incentivise car sharing

6. Option Sifting

6.1. Purpose of Option Sifting

Through the development of an Option Appraisal Framework (OAF), options will be assessed to determine their suitability against strategic objectives at a regional and local level. The OAF will also assess options deliverability including an assessment of their infrastructure feasibility and complexity of deliverability.

Through the Option Generation stage, a wide range of interventions have been identified and it is possible that some options identified do not represent sensible solutions along the A34 corridor. The purpose of option sifting is to identify any 'showstoppers' which are likely to prevent an option progressing at a subsequent stage in the process.

At the conclusion of the option sifting process, discarded unpromising options will be identified and a sensible number of distinct and feasible (preferred) options for further development and assessment will be identified. The option sifting process allows for decisions made on discarded options to be recorded, and preferred options summarised to allow for future assessment to take place.

6.2. Methodology

An initial sifting process has taken place to discard options that clearly do not meet the following factors (before schemes have been assesses through the Option Appraisal Framework):

- Would clearly fail to meet the A34 corridor objectives identified for intervention;
- Do not fit with existing local, regional and national programmes and strategies, and do not fit with wider government priorities, and;
- Would be unlikely to pass key viability and acceptability criteria (or represent significant risk) including, they are unlikely to be deliverable in a particular economic, environmental, geographical or social context e.g. and acceptable to stakeholders and the public.

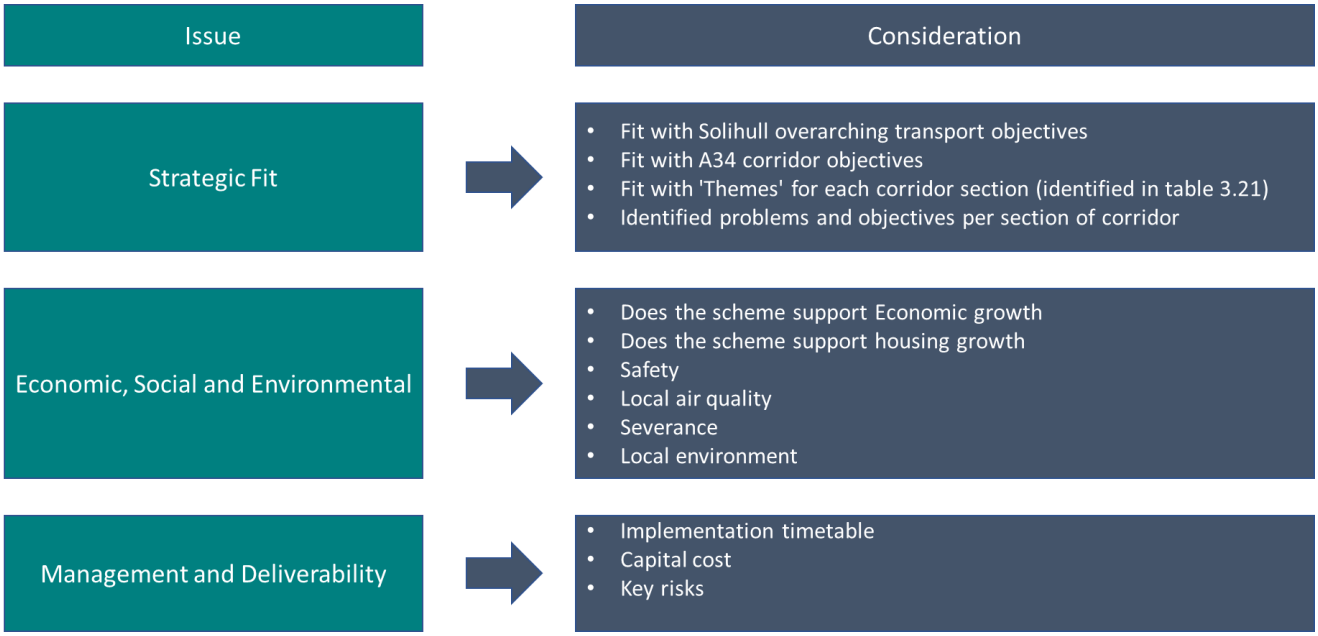
Following the initial sifting exercise, a high level Optional Appraisal Framework was developed (further information is presented within Section 6.3)

The Option Appraisal Framework allows for options to be assessed using a variety of factors, drawing on professional judgement of Technical Specialists Atkins Project Management Team and SMBC officers who have knowledge of the characteristics of the A34 corridor and the requirements associated with implementation of such options in practice. The Option Appraisal Framework has determined the preferred options to be the focus of further development and appraisal (resulted presented in Chapter 7).

6.3. Option Appraisal Framework

The OAF was developed through discussions with SMBC officers. The framework was used during an 'Option Assessment Workshop' attended by the Atkins project team and SMBC officers to assess options against a variety of factors. The OAF has three tiers as shown in Figure **35**, the considerations below were scored separately between -2 and +2 with options scoring up a total of 26 points.

Figure 35 - Option Appraisal Framework



As part of the 'Option Assessment Workshop' the following guidelines were implemented to assess options:

- If an option scored below zero for any consideration as part of the strategic fit, the option was not taken forward to the next stage.
- If an option scored below zero to support economic growth, the option was not taken forward to the next stage.
- Any option which had a negative impact on safety was not taken forward to the next stage
- Any option which scored +2 against 2 (or more) of the A34 corridor objectives and the section theme was taken forward as a preferred option
- To be considered as a 'preferred option' an option must score above 16 points (out of a total of 26) unless it meets the corridor objective criteria above.

7. Option Assessment

An 'Option Assessment Workshop' was held on the 11th April 2018 and was attended by the Atkins project team and SMBC officers. The OAF was used to score options developed across the A34 corridor and a detailed assessment of A34 options can be found within Appendix A. Table 27 presents the preferred options across the corridor including the rationale for why the option will be taken forward for further assessment and consideration.

7.1. A34 Preferred Options

Table 27 – A34 – Preferred Options

Section	Option	Rationale
Corridor Wide	High quality cycling infrastructure along the entire corridor (potential for full/light segregation)	• Strongly aligns to the Solihull Connected objectives of improving health and wellbeing and encouraging active travel • Aligns closely to the A34 objectives of supporting sustainable economic growth and addressing safety for all users. • Option encourages modal shift and therefore has the potential to reduce traffic flows on the A34 corridor thus improving journey reliability • Option will seek to improve air quality and tackle severance.
Section 1 - Solihull Border to Hasluck's Green Road	Safety/Signal improvements on Hasluck's Green Road/A34/Olton Road Junction	• Option will seek to improve safety issues along this section of the A34 therefore, aligns closely with A34 objectives. • Option will address a junction which is an 'accident hotspot' • Improvements will seek to provide improved conditions for cyclists and pedestrians therefore aligning closely to Solihull Connect objectives • Option will resolve any severance issues.

	Priority Bus Lane	• Option supports and enables the integrated delivery of sustainable and efficient forms of transport • The option is a major transport investment which helps enable and sustainable growth to achieve the council priorities for homes and jobs • Aligns closely to the A34 objectives of supporting sustainable economic growth and addressing safety for all users. • Option encourages multi modal journeys therefore reducing the dominance of single occupancy vehicles on the network.
Section 2 - Hasluck's Green Road to Union Road	Permeability to the wider area - reduce right turns across the corridor from access road - identify key access routes.	• Option meets the A34 objective of seeking to improve the efficiency of the highway network • Option has the potential to improve traffic flow and reduce queuing along Hasluck's Green Road. • Option has the potential to improve conditions for cyclists and pedestrians by reducing conflict with cyclists and road users • Option is likely to have a beneficial impact on addressing queuing in the am and pm peak
	Improve pedestrian crossing facilities	• Aligns closely to Solihull Connected objectives of improving active travel. • Aligns closely to A34 objectives by promoting active travel, providing priority for pedestrians and improving safety. • Encourages shorter journeys to be undertaken by foot by reducing severance issues along this section of the corridor.
	Increase capacity of roundabout at A34 / Union Road and improve safety.	• The option will seek to address queuing at the AM and PM peaks along the corridor therefore aligning with Solihull Connected objective of encouraging economic growth. • Reduces queuing at a key junction along the corridor • Option will likely have a slight beneficial impact for cyclists through reducing conflict with motorised vehicles. • Option will seek to provide safety improvements for pedestrians therefore reducing severance and aligning closely with A34 objectives.

	Parking Management Strategy - remove/reduce parking outside of Shirley High Street.	• Option enables the opportunity for public realm improvements on Shirley High Street • Remove car parking has the potential to allow for improved cycling and walking facilities, encouraging mode shift to active travel • Option has the potential to improve traffic flow due to reduced conflict of movement within the High Street. • Option has the potential to encourage economic growth along Shirley High Street. • Make better use of available space. Parking and the associated access road occupies between 20% and 40% of the available space between the shops on either side of the road
	Priority Bus Lane	• Option supports and enables the integrated delivery of sustainable and efficient forms of transport • The option is a major transport investment which helps enable and sustainable growth to achieve the council priorities for homes and jobs • Aligns closely to the A34 objectives of supporting sustainable economic growth and addressing safety for all users. • Option encourages multi modal journeys therefore reducing the dominance of single occupancy vehicles on the network.
Section 3 - Union Road to Marshall Lake Road	Increase capacity of Shakespeare Drive junction: northbound left turn lane and bus priority southbound.	• Option aligns closely to A34 objectives by encouraging sustainable economic growth through bus priority. • The option will seek to improve safety by reducing conflict and addressing an 'accident hot spot' • Option aligns closely to the A34 objective of improving highway efficiency. • Option will seek to improve bus journey time reliability and improve traffic flow along this section of the A34.
	Marshall Lake Road/A34 Roundabout - provide bus priority for left turn (additional capacity at junction).	• Option aligns closely to A34 objectives by encouraging sustainable economic growth through bus priority. • The option will seek to improve safety by reducing conflict and addressing an 'accident hot spot' where a number of serious collisions have taken place. • Option aligns closely to the A34 objective of improving highway efficiency. • Option will seek to improve bus journey time reliability and improve traffic flow along this section of the A34.

	Safety improvements along the B4102/A34 Junction	• Option aligns to Solihull Connected objective of encouraging sustainable transport by improving conditions for cyclists and pedestrians • Aligns to A34 objective of improving safety for all users • Option will have limited impact in addressing congestion
	Signalised junction B4102/A34	• Option aligns to Solihull Connected objective of encouraging economic growth. • Option will seek to improve the efficiency of the junction thus reducing congestion and improving journey reliability. • The option has the potential to improve facilities for cyclists and pedestrians.
	Priority Bus Lane	• Option supports and enables the integrated delivery of sustainable and efficient forms of transport • The option is a major transport investment which helps enable and sustainable growth to achieve the council priorities for homes and jobs • Aligns closely to the A34 objectives of supporting sustainable economic growth and addressing safety for all users. • Option encourages multi modal journeys therefore reducing the dominance of single occupancy vehicles on the network.
Section 4 - Marshall Lake Road to Monkspath Hall Road	Provide controlled pedestrian crossing facilities south of Blackford Road/A34 Roundabout.	• Strongly aligns to A34 objectives through addressing safety for all users and providing priority for pedestrians • Option has the potential to consider signal improvements to improve the free flow of traffic • The scheme will seek to address severance issues and promote journeys from local residential areas to employment zones. • Option is likely to have limited impact in reducing traffic flows and addressing journey reliability.
	Junction capacity improvements at Monkspath Hall Road/A34 Roundabout	• Aligns closely to Solihull Connected objectives by encouraging economic growth • Option will support proposed housing development • Option has the potential to improve access for pedestrians and cyclists.

Section 5 - Monkspath Hall Road to M42 Junction 4	Allow right turn out of Creynolds Lane onto A34, including cycle turn	• Option has the potential to improve access to a new housing development therefore, the option would encourage growth. • Whilst encouraging growth, the scheme is unlikely to have a positive impact on pedestrians and cyclists • Option has the potential to reduce the demand on the A34/Monkspath Hall Road junction as journeys generated at the development site heading onto the M42 will not require to access the junction. • Option would not address capacity issues or demand on the A34 carriageway.
	Junction Improvement at Tesco/Notcutts Roundabout	• Strongly aligns to A34 objectives through addressing safety for all users and improving highway efficiency • Supports economic growth through improving journey reliability and reducing congestion at a key economic site along the A34 corridor • Whilst encouraging growth, the scheme is unlikely to have a significant impact on encouraging more active travel journey. • Option will need to ensure active travel users are not impacted by improvements to the junction.

7.2. A34 Package of Interventions

The assessment of the A34 has identified one 'corridor wide option' and twelve 'section specific' options (split across the five sections of the A34) to be considered in more detail as 'preferred A34 options'. Whilst it will be important to assess the merit and impact of individual options, the assessment has identified clear themes based on transport mode or type of intervention.

Table 28 presents the packaged interventions including the overall 'theme' and individual options included.

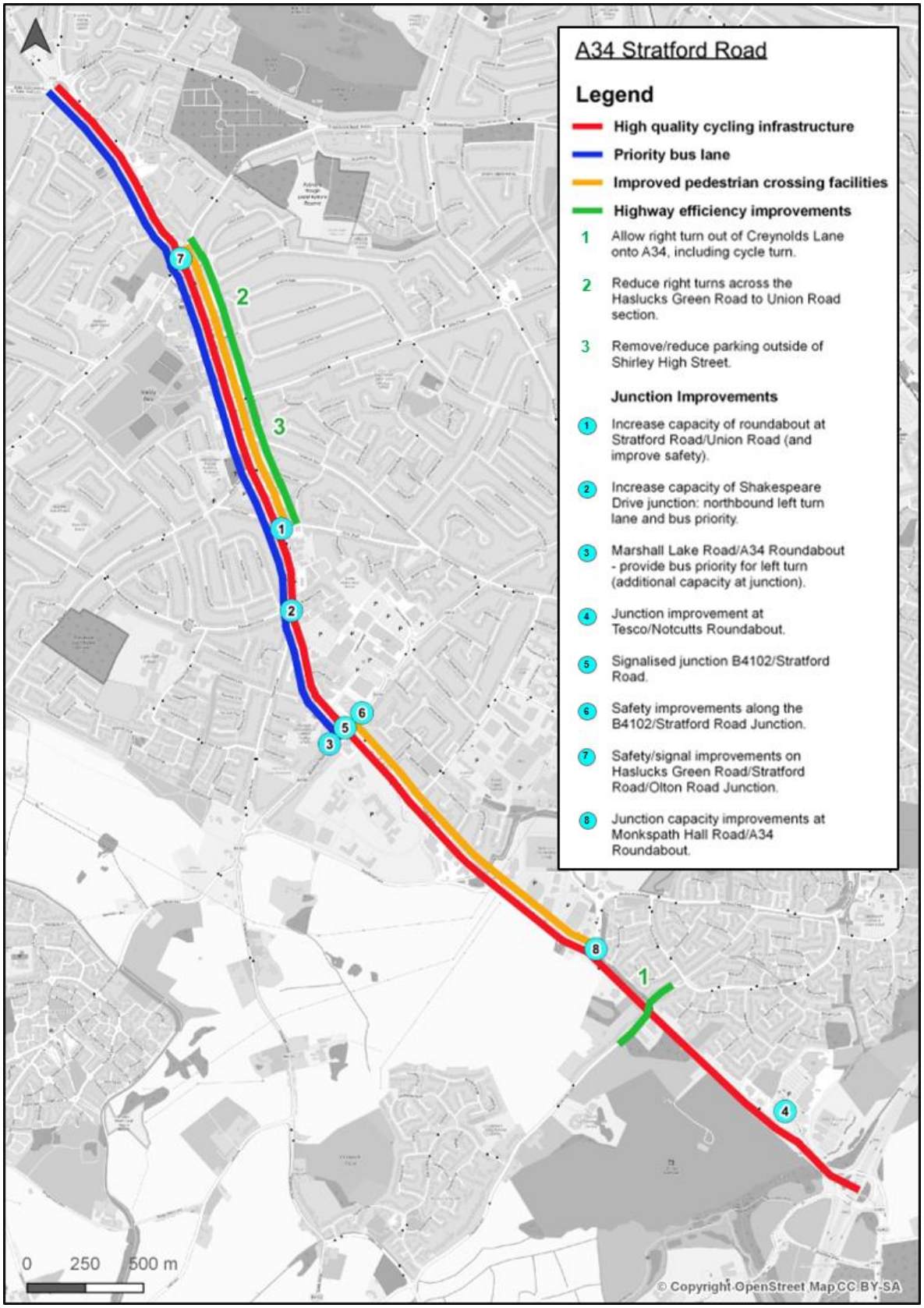
The packaged interventions are illustrated in Figure 36 - A34 Packaged Interventions.

Table 28 – A34 Packaged Interventions

Theme	Options	Section Impacted	A34 Objectives met
Cycling Infrastructure Improvement	• High quality cycling infrastructure along the entire corridor (potential for full/light segregation) •	Corridor wide	• Support sustainable economic growth. • Addressing safety for all users.
Public Transport Improvement	• Priority Bus Lane	1, 2, & 3	• Support sustainable economic growth. • Addressing safety for all users. • Support the characteristics of the corridor. • Improve the efficiency of the highway network
Pedestrian Facility Improvements	• Improve pedestrian crossing facilities, Hasluck's Green Road to Union Road section • Provide controlled pedestrian crossing facilities south of Blackford Road/A34 Roundabout – Marshall Lake Road to Monkspath Hall Road section.	2 & 4	• Addressing safety for all users • Providing priority for pedestrians.

Highway Efficiency Improvements	• Allow right turn out of Creynolds Lane onto A34, including cycle turn • Permeability to the wider area - reduce right turns across the Hasluck's Green Road to Union Road section. • Parking Management Strategy - remove/reduce parking outside of Shirley High Street. •	2 & 5	• Improve the efficiency of the highway network • Addressing safety for all users •
Junction Improvements	• Increase capacity of roundabout at A34 / Union Road (and improve safety) • Increase capacity of Shakespeare Drive junction: northbound left turn lane and bus priority southbound. • Marshall Lake Road/A34 Roundabout - provide bus priority for left turn (additional capacity at junction). • Junction Improvement at Tesco/Notcutts Roundabout • Signalised junction B4102/A34 • Safety improvements along the B4102/A34 Junction • Safety/Signal improvements on Hasluck's Green Road/A34/Olton Road Junction • Junction capacity improvements at Monkspath Hall Road/A34 Roundabout	1-5	• Support sustainable economic growth. • Support the characteristics of the corridor. • Improve the efficiency of the highway network • Support sustainable economic growth. • Addressing safety for all users. • Support the characteristics of the corridor. • Improve the efficiency of the highway network • Provide priority for pedestrians.

Figure 36 - A34 Packaged Interventions



7.3. Operational Assessment of Interventions

Table 29 presents a high-level assessment of the deliverability and capital costs assigned to each intervention. At the initial stage of option assessment, the aim of looking at costs is principally to identify options which will be unaffordable or which seem least likely to deliver good value for money. A more detailed cost analysis is expected to be undertaken during the more detailed appraisal of the interventions.

Table 29 – Operational Assessment

Scheme	Implementation	Capital Costs	Key Risks
Cycling Infrastructure Improvement	1-3 years	£3-5 Million	• Lack of support from key stakeholders • Difficulty in securing funding • Deliverability issues including lack of space on corridor • Lack of interest in cycling infrastructure from local community • Impact on traffic flow and congestion
Public Transport Investment	3-5 years	£10 Million +	• Lack of support from key stakeholders • Uncertainty around alignment of key committed schemes • Deliverability issues • Lack of funding • Impact on traffic flow and congestion
Pedestrian Facility Improvements	1-3 years	Less than £1 Million	• Option does not improve severance • Increases congestion and journey reliability worsens
Highway Efficiency Improvements	1-3 years	Less than £1 Million	• Public realm option does not have the support of local businesses • Access restrictions do not have the support of the local community
Junction Improvements	3-5 years	£10 Million +	• Lack of support from key stakeholders • Deliverability issues • Lack of funding • Impact on achieving mode shift to sustainable transport and active travel • Impact on improving traffic flow and journey reliability • Option has limited impact on traffic flow and journey reliability • Option does not improve safety • Option does not provide value for money due to limited impact of improvements to key junctions.

8. Stakeholder Engagement Plan

8.1. Stakeholder Engagement Purpose

As part of the development of Solihull Connected, SMBC consulted widely on the Solihull Connected Green Paper following Cabinet Member for Transport and Highways approval in early July 2015. Following further appraisal of the 'preferred options identified in Chapter 7, it will be important to undertake stakeholder management on options proposed for implementation.

The purpose of stakeholder engagement is to ensure:

- Ensure that all stakeholders (i.e. all those with an interest, including groups /organisations and the general public) are aware of and can easily contribute to the consultation.
- Engage with a wide spectrum of stakeholders; reaching further than groups who regularly contribute to consultation forums;
- Capture the interest and imagination of residents and regular commuters who travel along the A34 and begin to promote the benefits of more sustainable travel patterns; and
- Enable stakeholders to give timely feedback on the proposed options so that they can be refined and shaped accordingly.

8.2. Key Messages

Key messages to promote regarding the A34 will be dependent on the options taken forward for implementation however, it will be important that messages to promote sustainable economic growth are at the forefront of any promotional material or consultation events. The key messages for the A34 corridor are as follows:

- Supporting sustainable economic growth including Shirley High Street, the Retail Parks and key employment zones is essential to corridor.
- Improving facilities for pedestrians and cyclists will encourage active travel and improve the health and wellbeing of residents and can help improve journey reliability along the corridor by encouraging mode shift (away from car).
- Promote the benefits of travelling by cycling and walking for 'every day journeys'. The A34 Corridor is within close proximity to a range of key services and local residents should be encouraged to replace car journeys for sustainable modes of transport.
- Supporting access to employment opportunities for residents is imperative for the corridor however, economic growth must be sustainable and interventions which encourages sustainable transport will be prioritised.

8.3. Key Stakeholders

Table 30 identifies the relevant stakeholders and potential involvement in consultation. The table also identifies the stage in which stakeholders are expected to be informed and engaged in consultation. The stages are broken down into:

- Strategic Outline Case (SOC)
- Outline Business Case (OBC)
- Full Business Case (FBC)

Table 30 – Stakeholder Engagement Plan

Stakeholder	Engagement Topic	Engagement Level	Engagement Method	Stage of Engagement
TfWM & WMCA	• Potential involvement in all 'intervention packages' • Key stakeholder in cycling corridor due to TfWM Strategic Cycle Network and	Keep updated on a regular basis	Regular meetings	SOC

	Local Cycling and Walking Infrastructure Plan. • Key stakeholder in public transport priority, work with TfWM to identify the progression of SPRINT and opportunities to integrate other modes.			
LEP	• Key funding body therefore, will be key stakeholder for any interventions taken forward. • Any options taken forward will have potential to impact on the LEP Strategic Economic Plan, important to consult with LEP to discuss potential impacts	Keep updated on a regular basis	Regular meetings	OBC
Highways England	• Due to proximity of motorway network, Highways England will need to be consulted to assess potential impacts of interventions on the M42.	Communicate at key stages	Meeting at key stages	OBC
Birmingham City Council	• Engagement with Birmingham City Council will be required to ensure that any interventions implemented complement the existing networking within Birmingham.	Communicate at key stages	Meeting at key stages	OBC
Local Businesses	• Local businesses will need to be consulted regardless of the intervention (s) proposed. • Business engagement is key to strategic economic growth	Regular communication to provide update	Public consultation events	OBC
Local Residents	• It will important to engage with local residents throughout the appraisal of the interventions outlined in Chapter 7 •	Update at key points	Public consultation events/ social media/ promotional material.	OBC
Transport Operators	• Regular engagement with transport operators will be key to ensure that interventions proposed along the A34 integrate with existing services	Keep informed	Meetings at key decision points	OBC
Sustrans	• Sustrans will be important stakeholder when assessing the potential opportunities for cycling infrastructure	Keep informed	Meetings at key decision points	FBC
Living Streets	• Living streets will be important stakeholder when assessing the potential opportunities for public	Keep informed	Meetings at key decision points	FBC

	realm and walking infrastructure improvements.			
Cycling Groups	• Local cycling groups will be an important stakeholder when any potential cycling infrastructure improvements have been developed. • Cycling groups have the potential to provide local expertise on alignment opportunities.	Keep informed	Meetings at key decision points	FBC

8.4. Engagement Method

Table 31 presents potential engagement activities that could take place depending on the type of interventions proposed for implementation. The table outlines the potential benefits and limitations of each engagement method propose.

Table 31 – Engagement Activity

Engagement Activity	Benefits	Limitations
A34 public survey	• Provide a wealth of data on local community views on potential options • Data would be useful for strategic studies in the future and for funding opportunities	• Surveys can be quite costly depending on the type of analysis undertaken
Public consultation events	• An effective way to engage with the local community • Provides an opportunity for residents to discuss issues and concerns at an early stage	• Low participation rates are common at public consultation events. • Vociferous minority leading discussions.
Social media channels	• Cost effective way to engage with the local community • Potential to engage with a younger audience than most engagement channels	• Engagement will be restricted to those who have internet access • Unlikely to provide a wealth of information through social media (e.g. twitter, Facebook)
Cycling forums	• Cycle groups contain members who have significant experience of the local network • Informal environment to present and discuss ideas and options generated	• Only those who are interested in cycling are likely to attend • Vociferous minority leading discussions.
Business engagement – sessions at local businesses	• Easy way to identify business requirements • Potential to engage with significant number of employers and employees • Potential to gain a large amount of data including travel behaviour.	• Potential for limited participation • Senior buy in cannot always be guaranteed

Website	• Cost effective • Potential to reach many local residents • Opportunity to present a wealth of information in a clear and interactive format.	• Limited to those who have access to the internet. • Potential that many residents do not access the SMBC website.
Newsletters – electronic/postal drop to residents	• Effective way to engage with a significant proportion of the local community • Way to provide information in a clear and interactive format	• Cost impact – can be more costly than other methods • Potential that households do not read the newsletter.
Email hotline	• Opportunity for local residents to express their views without restriction. • Cost effective form of engagement	• Potential that views are not expressed in a clear and concise format
Local media	• Controlled and managed communication with the media/public • Help to reach a wider audience	• Limited audience if not promoted effectively • Little control over contents of articles

9. Recommendations – Future Work Requirements

9.1. Introduction

The analysis undertaken as part of Chapter 7 has identified five 'packages of interventions' (constituting one corridor wide option and 12 section specific options) which have the potential to address the issues identified across the A34 and achieve the A34 study objectives. The key next step is for the package of interventions to undergo further appraisal to enable decision makers to make a rationale and auditable decision on whether options should be taken forward for funding and implementation.

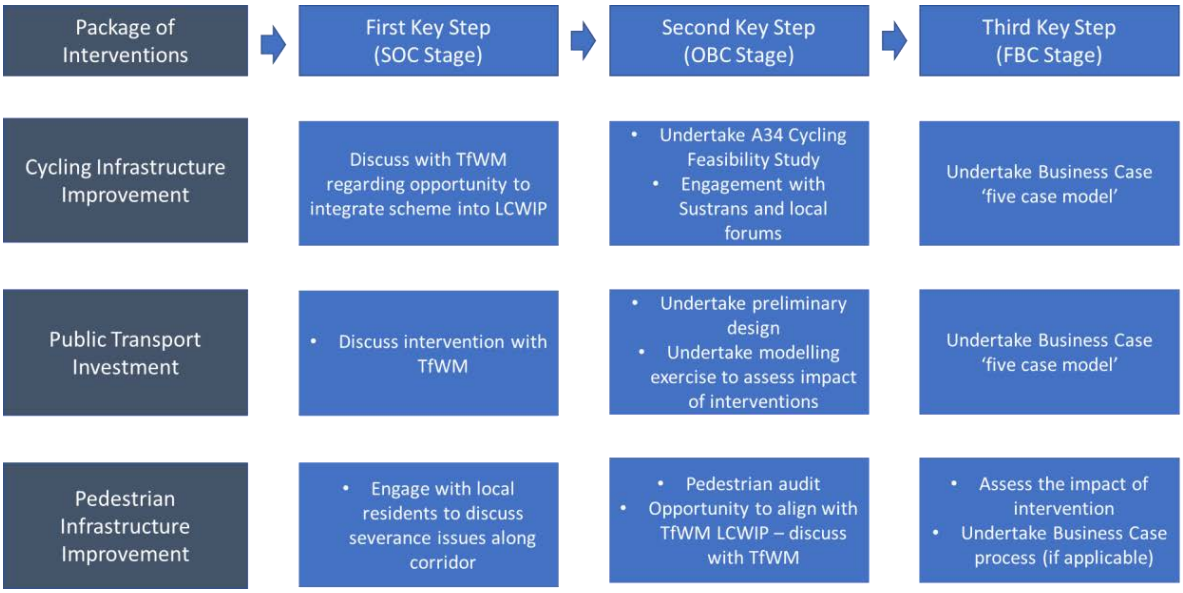
However, it is important to recognise that there are external factors that may influence the delivery of any transport interventions along the A34 corridor. In particular the development of the KRN in the West Midlands, which the A34 corridor is part of, could provide both opportunities and constraints in terms of what transport improvements can be delivered by SMBC. As an opportunity, the KRN will provide an invaluable investment opportunity for the A34 corridor which SMBC could use to secure transport improvements. However, SMBC may be constrained on what they can deliver on the corridor if it does not fit with the KRN priorities of road safety, bus lane contravention, permit schemes, and air quality.

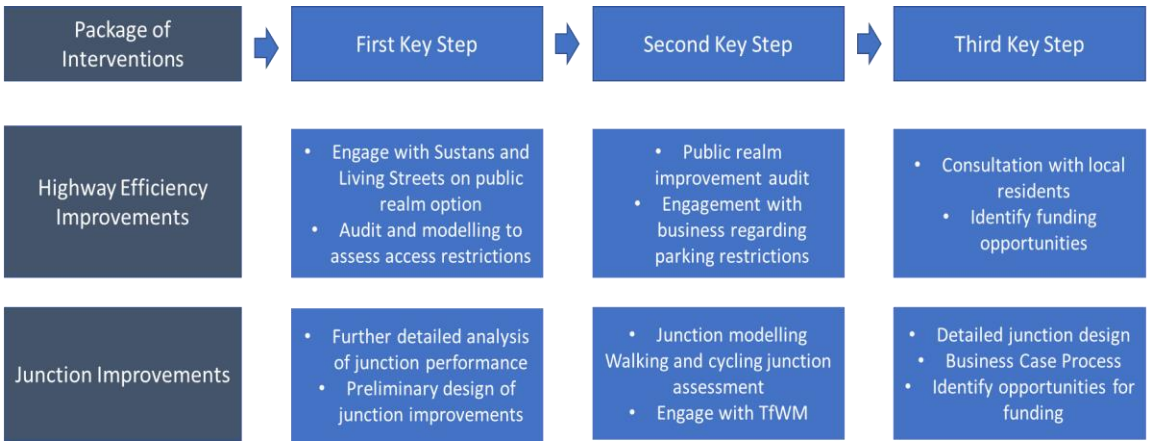
9.2. Next Steps

It is imperative that any interventions implemented across the study area are aligned closely to the objective set out within this study. It is suggested that an internal workshop takes place to determine a strategic approach which ensures that a piecemeal approach is avoided when funding opportunities arise. Interventions further appraised must ensure they address current and future issues identified through this corridor study and meet the aspirations of sustainable economic growth.

Figure 37 identifies the step by step process for each package of interventions which will enable SMBC to make an informed decision on interventions to be put forward for funding and implementation.

Figure 37 - Package of Interventions – Next Steps





The above outlines the key steps for each package of interventions, whilst it is anticipated that certain packages will not progress through all stages, those that do are likely to progress through the business case process. Business cases for different modes of transport or funding streams have their own particular set of circumstances and demands therefore, the requirements for each intervention will only be determine once further analysis has taken place.

Each intervention will require further assessment (regardless of the type of business case produced) which identifies that the intervention is:

- Supported by a robust case for change that fits with wider public policy objectives – the **'strategic case'**;
- Demonstrate value for money – the **'economic case'**;
- Commercially viable – the **'commercial case'**;
- Financially affordable – the **'financial case'**; and
- Achievable – the **'management case'**.

It will be important that the business case process is flexible to ensure that the time and resources invested in making an informed decision are proportionate to the size of investment and scale of intervention. The approach should be tailored to suit the individual project, reflecting the particular investment approach or the mode of intervention.

Appendices

Appendix A. Option Assessment Table

A.1. Corridor Wide Options

Option	Total Score	Rationale
High quality cycling infrastructure along the entire corridor (potential for full/light segregation)	**21**	• Aligns with Solihull Connected objectives of supporting active travel and health and wellbeing. • Option encourages modal shift and has the potential to reduce traffic flows along this section of the route. • Residential area with a high level of short distance journeys, high propensity for journeys to be undertaken by bike. • Option has the potential to significantly improve safety for cyclists.
Priority for car sharing – including car sharing lanes	**6**	• Potential to increase congestion if low uptake of car sharing • Does not promote mode shift to public transport or active travel • Potential to reduce capacity along the corridor.

A.2. Section 1 – Solihull Border to Haslucks Green Road

Option	Total Score	Rationale
Priority Bus Lane	**18**	• Aligns with Solihull Connected objectives of supporting sustainable transport interventions • Aligns with A34 objectives of supporting sustainable economic growth • Potential to improve traffic flows along the section. • Option has the potential to create modal shift from car to public transport
Widen carriageway on the A34 to create a right turn lane into Sandy Hill Road. Prevent Right turn into Stanton Road.	**4**	• Option provides limited benefits to traffic flows and unlikely to reduce congestion issues. • Option does not align closely to A34 objectives or Solihull Connected objectives. • Option does not seek to improve options for public transport or active travel users. • Widening carriageway has the potential to create a negative impact for cyclists. • Stanton Road is a small residential road and limiting access will not improve journey reliability on Stratford Road.
Widen carriageway to create a bus lane in the southbound direction. Priority for SPRINT.	**18**	• Option is closely aligned to Solihull Connected objectives by enabling and managing future growth • Option supports A34 objectives through encouraging sustainable economic growth and promoting multi-modal trips • Supports the key priority for this section by introducing high quality public transport priority. • Scheme is likely to have a moderate impact on air quality.
Employment Travel Plans	**5**	• Aligns closely to Solihull Connected objectives by promoting active travel and health and wellbeing. • Limited impact in addressing corridor issues. • Option provides no solution to addressing issues relating to infrastructure along this section of the A34 corridor. • Travel Plans have the potential to reduce the mode share of car use but their impact is generally limited without significant investment in high quality infrastructure.
Safety/Signal improvements on Haslucks Green Road/Stratford Road/Olton Road Junction	**16**	• Option will seek to improve safety issues along this section of the A34 therefore, aligns closely with A34 objectives. • Option will address a junction which is an ‘accident hotspot’ • Improvements will seek to provide improved conditions for cyclists and pedestrians therefore aligning closely to Solihull Connect objectives • Option will resolved any severance issues.

Grade separated junction on Haslucks Green Road/Stratford Road/Olton Road Junction (subway/tunnel movement for SB/NB traffic)	**N/A – Discarded at strategic level**	• Scheme does not align with strategic objectives including Solihull Connected and A34 objectives • Option would likely cause severance issues and deter pedestrian and cyclists • Scheme would have a significant negative impact on the local environment • Unlikely to be deliverable and highly likely to create a negative BCR
Subway/underground tunnel for movement between Haslucks Green Road and Olton Road	**N/A – Discarded at strategic level**	• Scheme does not align with strategic objectives including Solihull Connected and A34 objectives • Option would likely cause severance issues and deter pedestrian and cyclists • Scheme would have a significant negative impact on the local environment • Unlikely to be deliverable and highly likely to create a negative BCR
Improved cycling and walking infrastructure to access Tesco Superstore, including priority access	**7**	• Option would seek to address access difficulties for pedestrians and cyclists • Option aligns to Solihull Connected and A34 objectives but unlikely to address issues with high traffic flows leading to congestion. • Option would have limited impact in encouraging mode shift across the corridor

A.3. Section 2 – Haslucks Green Road to Union Road

Option	Total Score	Rationale
Permeability to the wider area - reduce right turns across the corridor from access road - identify key access routes.	**15**	• Option meets the A34 objective of seeking to improve the efficiency of the highway network • Option has the potential to improve traffic flow and reduce queuing along Haslucks Green Road. • Option has the potential to improve conditions for cyclists and pedestrians by reducing conflict with cyclists and road users • Option is likely to have a beneficial impact on addressing queuing in the am and pm peak
Improved public transport provision - potential bus lane. Priority for SPRINT.	**16**	• Promotes public transport therefore aligns closely with A34 and Solihull Connected objectives. • Option meets the strategic context of the A34 as well as encouraging economic growth through facilitating the additional demand on the corridor. • Option will seek to encourage modal shift from car journeys and therefore reduces demand on local highway network • Encourages multi-modal journeys and health and wellbeing
Improve (level of priority and number of) pedestrian crossing points. Reducing impact of severance.	**14**	• Aligns closely to Solihull Connected objectives of improving active travel. • Aligns closely to A34 objectives by promoting active travel, providing priority for pedestrians and improving safety. • Encourages shorter journeys to be undertaken by foot by reducing severance issues along this section of the corridor.
Urban realm improvements - particularly on the east-side. Red Lion pub square public realm improvements.	**8**	• Option aligns closely to A34 by providing priority for pedestrians and improve conditions for pedestrians and cyclists • The option will have limited impact on mode-shift as any improvements are likely to be small scale. • Option will have limited impact in addressing the key issue of congestion along this section of the corridor.
Increase capacity and safety improvements of roundabout at Stratford Road / Union Road	**12**	• The option will seek to address queuing at the AM and PM peaks along the corridor therefore aligning with Solihull Connected objective of encouraging economic growth. • Reduces queuing at a key junction along the corridor • Option will likely have a slight beneficial impact for cyclists through reducing conflict with motorised vehicles. • Option will seek to provide safety improvements for pedestrians therefore reducing severance and aligning closely with A34 objectives.

Employment and residential travel plans	**5**	• Option is likely to have limited impact in addressing congestion along the corridor • The option will provide no improvements to the infrastructure along the corridor. • Low engagement rate likely
Restrict HGV movements in peak periods	**8**	• Option does not align closely to A34 or Solihull Connected objectives • Option has the potential to discourage economic growth without having a significant impact on the key issues along the corridor. • Limited impact on addressing queuing in the AM and PM peak.
Parking Management Strategy - remove/reduce parking outside of Shirley High Street.	**16**	• Option enables the opportunity for public realm improvements on Shirley High Street • Remove car parking has the potential to allow for improved cycling and walking facilities, encouraging mode shift to active travel • Option has the potential to improve traffic flow due to reduced conflict of movement within the High Street. • Option has the potential to encourage economic growth along Shirley High Street.

A.4. Section 3 – Union Road to Marshall Lake Road

Option	Total Score	Rationale
Priority Bus Lane	**18**	• Aligns with Solihull Connected objectives of supporting sustainable transport interventions • Aligns with A34 objectives of supporting sustainable economic growth • Potential to improve traffic flows along the section. • Option has the potential to create modal shift from car to public transport
Increase capacity of Shakespeare Drive junction: northbound left turn lane and bus priority southbound.	**15**	• Option aligns closely to A34 objectives by encouraging sustainable economic growth through bus priority. • The option will seek to improve safety by reducing conflict and addressing an 'accident hot spot' • Option aligns closely to the A34 objective of improving highway efficiency. • Option will seek to improve bus journey time reliability and improve traffic flow along this section of the A34.
Marshall Lake Road/A34 Roundabout - provide bus priority for left turn (additional capacity at junction). Priority for SPRINT.	**18**	• Option aligns closely to A34 objectives by encouraging sustainable economic growth through bus priority. • The option will seek to improve safety by reducing conflict and addressing an 'accident hot spot' where a number of serious collisions have taken place. • Option aligns closely to the A34 objective of improving highway efficiency. • Option will seek to improve bus journey time reliability and improve traffic flow along this section of the A34.
Integrate parking area at Sainsburys with the Retail Park. Consider one way in, one way out approach.	**5**	• Option does not meet A34 or Solihull Connected objectives as the option does not encourage public transport or active travel • The option would likely encourage additional car trips to the site therefore, increasing pressure on the constrained A34 corridor.
Prevent right turn access into Harwood Grove	**11**	• Option is unlikely to have a significant impact on improving traffic flow and reduced queuing on the A34 corridor • By preventing the right hand turn movement, the option has the potential to provide a slight benefit in reducing conflict between cyclists, pedestrians and road users. • Harwood Grove will not create a significant number of right hand turn movements therefore, the option has little impact on the corridor. •

Safety improvements along the B4102/Stratford Road Junction	**19**	• Option aligns to Solihull Connected objective of encouraging sustainable transport by improving conditions for cyclists and pedestrians • Aligns to A34 objective of improving safety for all users • Option will have limited impact in addressing congestion
Signalised junction B4102/Stratford Road	**17**	• Option aligns to Solihull Connected objective of encouraging economic growth. • Option will seek to improve the efficiency of the junction thus reducing congestion and improving journey reliability. • The option has the potential to improve facilities for cyclists and pedestrians.
Employment travel plan	**5**	• Aligns closely to Solihull Connected objectives by promoting active travel and health and wellbeing. • Limited impact in addressing corridor issues. • Option provides no solution to addressing issues relating to infrastructure along this section of the A34 corridor. • Travel Plans have the potential to reduce the mode share of car use but their impact is generally limited without significant investment in high quality infrastructure.
Quiet cycleway link along Tamworth Lane/Blackwood Road	**4**	• Option does not provide priority for pedestrians or cyclists as the Quietway link would consist of a detour around the A34 corridor. • Option does not align with Solihull Connected objectives of encouraging sustainable transport. • Option does align with A34 objectives of facilitating sustainable economic growth or providing priority for cyclists/pedestrians.

A.5. Section 4 – Marshall Lake Road to Monkspath Hall Road

Option	Total Score	Rationale
Relief road to facilitate new housing development.	**Discarded at initial sifting stage**	• Option does not support sustainable growth • Option does not provide highway efficiency • Option has potential to create transport issues elsewhere on the network.
Provide controlled pedestrian crossing facilities south of Blackford Road/A34 Roundabout.	**16**	• Strongly aligns to A34 objectives through addressing safety for all users and providing priority for pedestrians • Option has the potential to consider signal improvements to improve the free flow of traffic • The scheme will seek to address severance issues and promote journeys from local residential areas to employment zones. • Option is likely to have limited impact in reducing traffic flows and addressing journey reliability.
Employment travel plans	**5**	• Aligns closely to Solihull Connected objectives by promoting active travel and health and wellbeing. • Limited impact in addressing corridor issues. • Option provides no solution to addressing issues relating to infrastructure along this section of the A34 corridor. • Travel Plans have the potential to reduce the mode share of car use but their impact is generally limited without significant investment in high quality infrastructure.
Junction capacity improvements at Monkspath Hall Road/A34 Roundabout	**18**	• Aligns closely to Solihull Connected objectives by encouraging economic growth • Option will support proposed housing development • Option has the potential to improve access for pedestrians and cyclists.

A.6. Section 5 – Monkspath Hall Road to M42 Junction 4

Option	Total Score	Rationale
Bus lane implementation - Priority for SPRINT.	**18**	Option is closely aligned to Solihull Connected objectives by enabling and managing future growth Option supports A34 objectives through encouraging sustainable economic growth and promoting multi-modal trips Supports the key priority for this section by introducing high quality public transport priority. Scheme is likely to have a moderate impact on air quality.
Allow right turn out of Creynolds Lane onto A34.	**11**	Option has the potential to improve access to a new housing development therefore, the option would encourage growth. Whilst encouraging growth, the scheme is unlikely to have a positive impact on pedestrians and cyclists Option has the potential to reduce the demand on the Stratford Road/Monkspath Hall Road junction as journeys generated at the development site heading onto the M42 will not require to access the junction. Option would not address capacity issues or demand on the Stratford Road carriageway.
Enhanced workplace travel plans	**5**	Aligns closely to Solihull Connected objectives by promoting active travel and health and wellbeing. Limited impact in addressing corridor issues. Option provides no solution to addressing issues relating to infrastructure along this section of the A34 corridor. Travel Plans have the potential to reduce the mode share of car use but their impact is generally limited without significant investment in high quality infrastructure.
Junction Improvement at Tesco/Notcutts Roundabout	**19**	Aligns closely to Solihull Connected objectives by supporting economic growth through transport investment Option will seek to address safety issues for all users Option has the potential to reduce traffic flow issues in close proximity to the junction

Adrian Taylor
Atkins Limited
The Axis
10 Holliday Street
Birmingham
B1 1TF

Tel: +44 (0)121 483 5000
Fax: +44 (0)121 483 5252
Direct: 0121 483 6198
adrian.taylor@atkinsglobal.com