

Swaffham Network Improvement Strategy

April 2020



Norfolk County Council

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Executive Summary

The Swaffham Network Improvement Strategy (SNIS) has been produced by Norfolk County Council (NCC) in collaboration with stakeholders. It has identified potential measures to help address existing problems on the transport network and address local air quality issues that have triggered Breckland District Council to adopt an Air Quality Action Plan (AQAP). It also has a view to the future and what may be required to mitigate the impacts of housing growth identified in the emerging Local Plan.

Various activities were undertaken to gather evidence/information to compile the SNIS. This comprised an internal meeting with officers across a range of Norfolk County Council departments, external stakeholder workshop and scoping of potential study work to identify priorities. This feedback generated a list of objectives the SNIS would need to address.

Based on the strength of the feedback from the January external stakeholder meeting as well as subsequent engagement with Swaffham Town Council on Air Quality and Neighbourhood Plan matters, it was decided that more information was required about traffic in and passing through the town. In view of this an automatic number plate recognition (ANPR) survey was commissioned to understand routeings through the town including identifying the volume of heavy goods vehicles (HGVs). This survey work has provided the evidence required to understand the potential for a North-South relief road which has been a long-standing aspiration of some members of the local community. As well as examining this aspect, the study's other main focus has been to consider traffic-management solutions to help vehicular access into the town and address the air quality issues.

This work produced some key findings:

- There is merit in progressing a scheme to improve access to the Theatre Street free long stay car park including revised signing
- The Air Quality Action Plan (AQAP) measure to alter parking restrictions on Station Road is unlikely to have a significant impact and should not be pursued
- The Air Quality Action Plan (AQAP) measure to reconfigure the Station Road /Mangate Street junction could have benefits to expedite traffic flow on the A1065 and reduce vehicle emissions. However, whilst the recorded air quality measurements are below the assessment threshold, pursuing a scheme should be put on hold
- 45% of the traffic is passing through Swaffham with the remainder having a destination within the town
- A bypass link from the A1065 in the south to the A47 in the west could carry some 4,000 vehicles a day but only assuming it was also used by all north-south and all south-east movements. However, this may not happen as it may be more attractive to continue through the town for these movements
- Based on current traffic flows it would be very difficult to make a case for any form of bypass link from the A1065 in the south to the A47 in the west; or to continue to the A1065 in the north.

Based on the findings from the study work and feedback from stakeholders an implementation plan has been devised that recommends areas where consideration should be given in the form of short, medium and long-term actions. NCC has some funding committed to the delivery of short-term schemes that can be implemented within the next two years if suitable schemes are identified. In the short, medium and longer term it will be critical for NCC to work collaboratively with local stakeholders and partners to progress the actions in the plan.

Table 1 Implementation Plan

Time period	Parking	Air Quality	Relief road or bypass for the town
Short term	Monitor the implementation of the Breckland District Council trial of limited waiting parking in and around the Market Place with an initial free parking period before charging for longer stays	Continue to work with Breckland District Council on the development and implementation of the adopted Air Quality Action Plan (AQAP)	Engage with the Swaffham Town Council newly formed Transport Access and Environment Committee and advise on making the case for a relief road or bypass
Medium term	Develop a scheme to provide a southern access to the Theatre Street car park with associated signing. Funding will need to be identified for both detailed design and implementation.		Work with Breckland District Council on their Local Plan and its updates to determine the scope for a new road in association with new Local Plan allocations
Long term			Seek potential funding sources for a relief road or bypass including preparing business cases where necessary

Chapter 1: Introduction

Norfolk

Norfolk has a population of around 891,000 people. The majority live in Norwich and the market towns both inland and along the coast. Market towns act as a service centre to their surrounding rural populations and are also employment centres, commuter towns, retirement centres and shopping destinations. Many retain a historic core and are generally supported by seasonal tourism.

A number of market towns still hold regular markets however some have suffered in recent years due to online shopping and the decline of agriculture or other significant industries (e.g. fishing and textiles). The way the town is laid out is fundamental to how it functions as place for people to live, work, shop and enjoy recreational activities.

NCC is undertaking a series of transport network improvement strategies in the market towns to examine current and future issues within the towns and understand the role that transport infrastructure can have in ensuring that towns continue to thrive. These network improvement strategies will look at short, medium and long-term interventions and provide evidence to inform longer-term planning policy making.

Swaffham

The market town of Swaffham is situated in the district of Breckland, 12 miles east of King's Lynn and 31 miles west of Norwich, see figure 1. It is along A47, which runs east west north of town; and the A1065 running through the town centre in a north south direction.

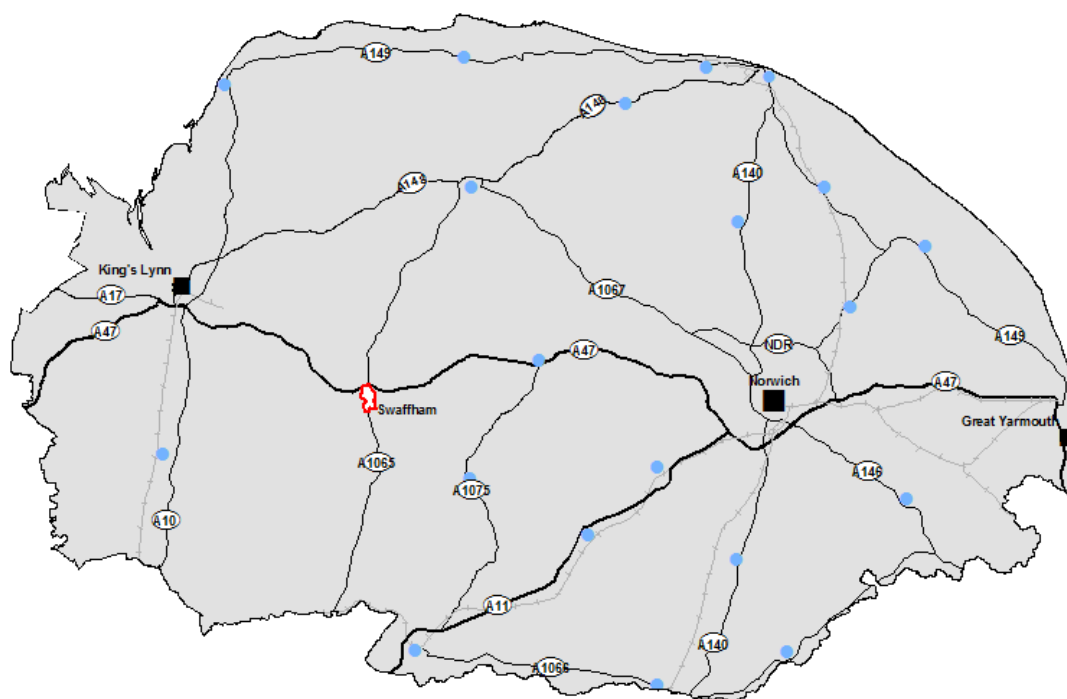


Figure 1: Location Map of Swaffham

Chapter 2: Strategy and Policy Context

The following policies and strategies have been identified as setting the context and baseline for this Network Improvement Strategy.

National Policy

The new National Planning Policy Framework (NPPF) has a chapter dedicated to ensuring town centre vitality stating that “Planning policies and decisions should support the role that town centres play at the heart of local communities, by taking a positive approach to their growth, management and adaptation”. A range of considerations are set out in paragraph 85 with some being of particular relevance to this strategy:

- promote their long-term vitality and viability
- centres can grow and diversify in a way that can respond to rapid changes
- town centres are accessible and well connected.

National policy recognises the importance of towns acting as service centres particularly in rural areas serving both the local and tourist population.

Norfolk and Suffolk Economic Strategy

The Norfolk and Suffolk Economic Strategy identifies the following sectors as being key to the Norfolk economy: energy, life sciences and biotech, ICT, tech and digital creative, advanced agriculture, food and drink, financial services and insurance, visitor economy- tourism, heritage and culture, transport, freight and logistics, construction and development and advanced manufacturing and engineering.

Local Transport Plan 3

Norfolk’s 3rd Local Transport Plan, Connecting Norfolk, sets out the strategy and policy framework for transport up to 2026. This will be used as a guide for transport investment in Norfolk as well as considered by other agencies when determining planning or delivery decisions. The strategy is accompanied by an implementation plan, setting out the measures to be delivered over the short term. Connecting Norfolk is driven by the views of local people and stakeholders and addresses the challenges we face in Norfolk. Our transport vision is:

“A transport system that allows residents and visitors a range of low carbon options to meet their transport needs and attracts and retains business investment in the county”.

Six strategic aims underpin the vision, they are: maintaining and managing the highway network; delivering sustainable growth; enhancing strategic connections; reducing emissions; improving road safety; and improving accessibility.

Breckland Local Plan Policy

The Breckland Local Plan, which is currently subject to Examination in Public sets out the strategy and policies that will deliver sustainable development up until the year 2036. The plan sets out a strategic vision for Breckland which includes the following:

- By 2036 Breckland's settlements and its wider rural area will have developed in a sustainable manner appropriate for the rural nature of the District;
- The economy will be diversified and well connected, with a growing number of skilled workforce and population;
- New development will be directed to locations that are co-ordinated with transport provision, have good access to support existing services, community facilities and open space;
- New employment will not only be located to take advantage of the improved transport links offered by the A11 and A47 corridors and partnership work with adjacent local authorities but be directed to the most sustainable locations.

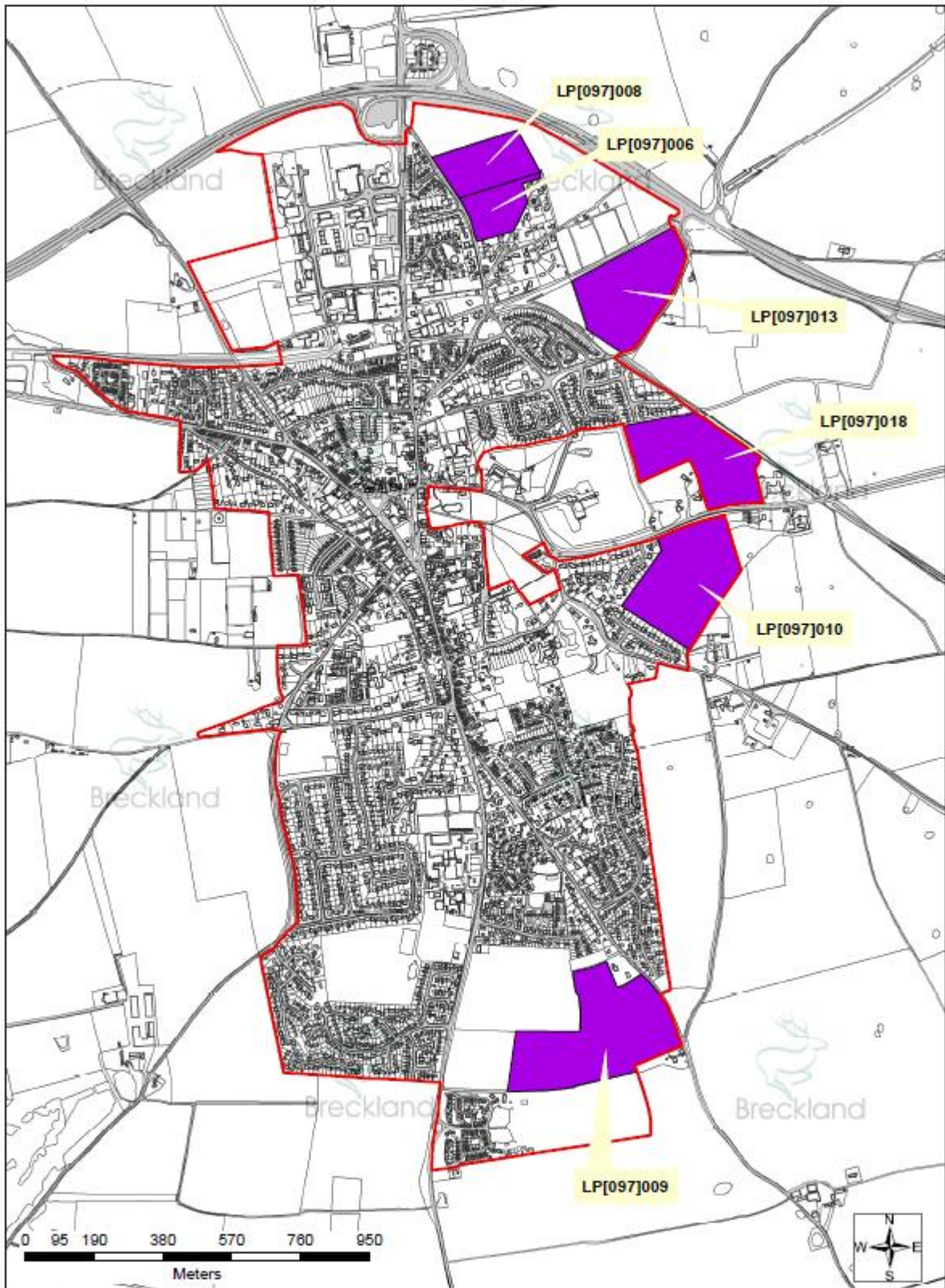
The following policies have the most relevance to the Swaffham Network Improvement Strategy:

- Policy TR 01 Sustainable Transport Network - The Council will work in partnership to promote a safe, efficient and convenient sustainable transport system and;
- Policy TR 02 Transport Requirements - Developments should be of high quality, sustainable in design, construction and layout as well as offering maximum flexibility in the choice of travel modes for all potential users.

Swaffham is identified as market town. The Local Plan allocates an additional 1612 new dwellings over the plan period. It states that, of these 1612 dwellings, 1007 have either already been completed or are committed, leaving 605 dwellings. It proposes to allocate 600 additional dwellings, of which there are 525 dwellings proposed through planning applications with decision to grant subject to s106 agreements.

These 605 dwellings are spread across six allocations marked in purple on Figure 2.1, below.

The town's employment areas are concentrated to the north of the town, with the main location being the Green Britain employment area. There are two saved employment allocations from the local plan site specific policies, one of which is located to the north of the Green Britain employment area, and the other is to the west. The local plan intends to save these areas for future employment use.



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Figure 2 Breckland Local Plan allocations

Intelligent Transport Systems

The Norfolk and Suffolk Integrated Transport Strategy commissioned by the New Anglia LEP has developed a long-term vision considering economic and technological changes including digital connectivity, autonomous vehicles and new forms of public and shared transport. Dereham is located on one of the regional corridors, the A47 between Lowestoft, Great Yarmouth and King's Lynn and the strategy will focus on these corridors to ensure the ongoing growth ambitions of the region. The strategy sets out what transport could look like by 2030, 2040 and beyond:

2030:

- Digitally connected transport networks underway and digital connectivity improved across the region allowing people to access opportunities from home including reliable home and remote working
- Key pinch points addressed, network capacity improved and better operational regimes will boost network capacity and make journeys more reliable and resilient
- Agile transport solutions in our Priority Places and better access to information will lead to 'peak' travel spread and allow people to make informed and personal travel choices with more certainty

2040:

- Connected and autonomous cars, trucks and buses will be the norm, improving safety and contributing to the smooth running of the network
- Traditional bus service provision will have reduced but will be supplemented by on demand, responsive services that offer efficiencies
- The move away from fossil fuels will be largely complete supported by alternative generation and storage solutions with communities benefitting from associated air quality improvements

Beyond:

- Digital access to services (including health and social care) and opportunities (including education and training) will help people be more productive on the move
- Direct rail access between key centres with faster journey times and higher capacity, and local lines will have benefitted from more reliable rolling stock and improved customer experience
- New service models will reduce costs and provide new services for hard to reach communities and on-account, seamless, barrier-less payment technologies will facilitate Mobility as a Service (MaaS)

Chapter 3: Swaffham Background

Swaffham is a large, historic market town in Breckland, Norfolk, with a Conservation Area and a notable number of listed buildings in its centre. The town is surrounded by three landscape character areas as identified in the Breckland Landscape Character Assessment: Plateau, Brecks Landscape Character and Settled Tributary Farmland. It is situated 12 miles east of King's Lynn and 31 miles west of Norwich, and benefits from good transport links via A47 and A1065.

The town houses a variety of independent and chain retail outlets. It has a population of 7,258 in 3,258 households. Compared to the English average it is an older population with 27% aged 65-84 and 6% aged 85 and over.

In comparison to English average this population fares significantly worse with overall income deprivation, child poverty and long-term unemployment.

In terms of adult health, a quarter of adults are obese, which is on a par with the national average and hospital admissions data are significantly worse than the England average. While it is not possible to say how much of these episodes can be tracked back to e.g. obesity, air quality or physical activity, links between these behaviours and health outcomes can generally be traced. This suggests benefits would be found by encouraging behavioural change to an active lifestyle through transport, planning and development decisions.

The Breckland Local Plan allocates 600 new homes for the town, and 3 hectares of employment land to the north of the Eco tech centre and 5.8 hectares of employment land to the west of Eco tech Employment Area.

It has an estimated 3,134 jobs and 147 town centre businesses. Businesses in Swaffham are predominately comparison retailers, with Local Plan policy stating the town has no further need for convenience shops (day to day shops) but there is some need for comparison shops (such as white goods and clothes) and food and beverage shops (such as cafés).

Chapter 4: Programme of activity

The purpose of the network improvement strategies is to identify issues from a strong evidence base and to help bring forward transport solutions that support the delivery of future housing and jobs growth. To develop the understanding of the transport issues in Swaffham, Norfolk County Council held stakeholder workshops, carried out site visits and liaised with Highways colleagues to gather a range of views/feedback on which to base the strategy. The programme of activity and timeline of events is set out below.

Swaffham's NIS programme of activity

This chapter summarises the scope of work already underway and suggestions for potential further study work. These potential further study work options are based on the feedback received from the external workshop and the view from officers as to what would best benefit the town. We have engaged with a wide variety of stakeholders during this process including:

- Breckland District Council
- Norfolk County Council Members
- Norfolk County Council Highways representative
- Norfolk County Council Green Infrastructure
- Swaffham Town Council
- Bus Companies
- Norfolk County Council Children's Services
- Police
- Neighbouring Parishes
- Fire Service
- Public Health
- Walking/Cycling Groups

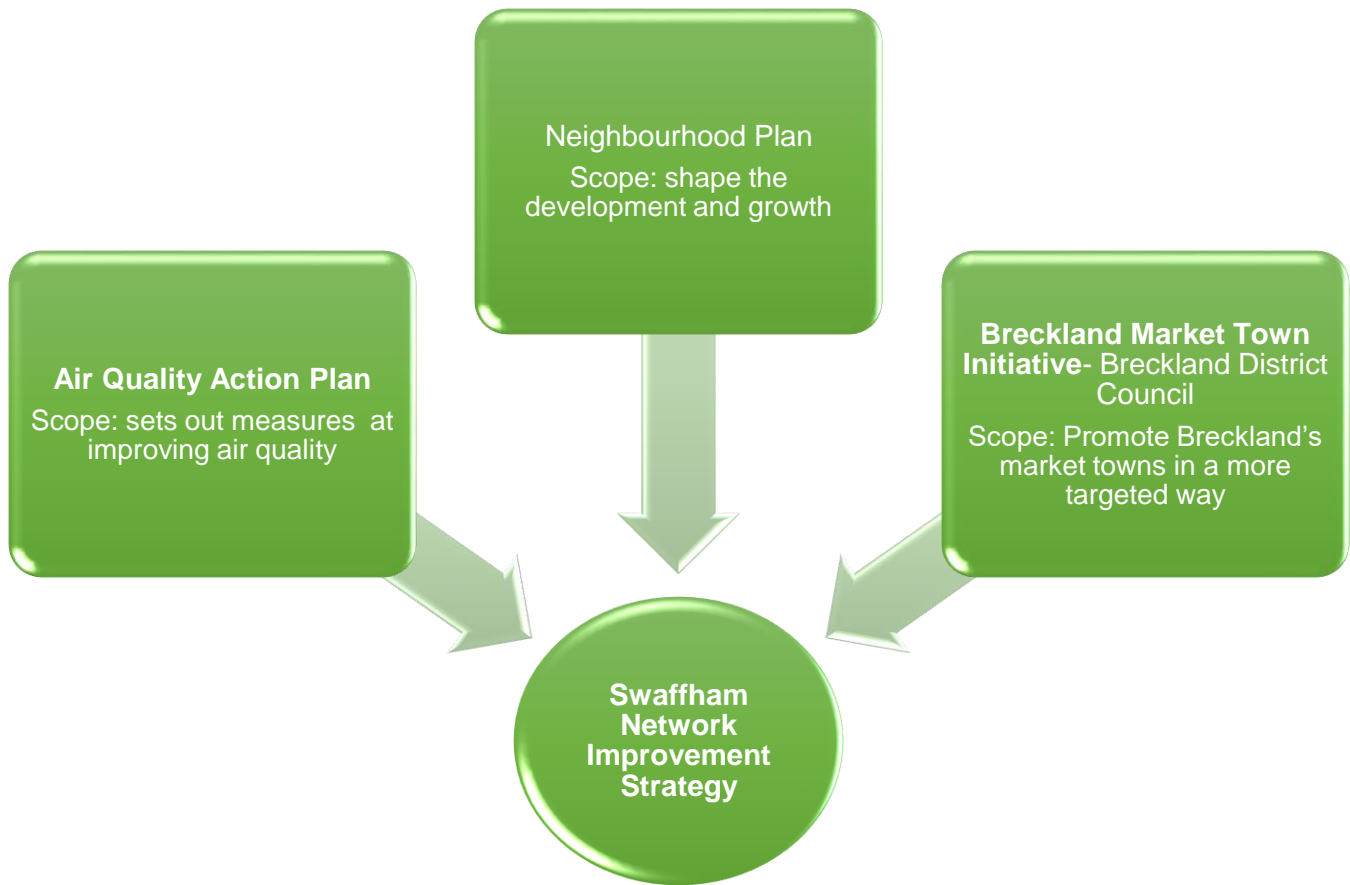
Objective

The overarching objectives of the Network Improvement Strategies are to:

1. Understand current transport problems and issues
2. Understand the future situation
3. Develop implementation plan

Using the scope agreed by Norfolk County Council members, officers have collated evidence both internally and with external stakeholders to identify what work has already been undertaken or is underway and what additional issues need addressing. From this evidence gathering it was clear that a number of strategies and studies were already underway in Swaffham and this strategy needs to complement these and ensure work is not duplicated.

The diagram below outlines the commissioned studies which will inform the SNIS and in addition to this we have collated information/evidence on public transport accessibility, road casualties, cycle networks, road traffic, future growth proposals, future economic changes and we have also considered the emerging Breckland Local Plan and Swaffham Neighbourhood Plan.



Chapter 5: Transport in Swaffham

As set out in Chapter 1, Norfolk County Council's Environment, Development and Transport Committee agreed to the market town studies in 2017. Members agreed the studies should: understand current transport problems and issues; understand the future situation (principally growth proposals and their impacts on transport); and develop an implementation plan. The committee agreed the scope of issues that would be looked at in the studies. This chapter provides a summary of each item set out in the scope and what the relevant issues and concerns are in Swaffham. This also includes areas where there isn't a transport issue or where further work is not proposed. It sets out the scope item ranging from casualties, parking, congestion, cycling and public transport. For each of these it summarises what work is already underway and the potential further work options.

5.1 Casualties

Norfolk County Council Highways team provided information on cyclist, motor traffic and pedestrian collisions where these resulted in an injury. (The police only compile records of injury collisions since there is a requirement that these are reported in law. No record is maintained for collisions where no injury resulted, e.g. minor bumps.) The number of the collisions across the three modes of transport are typical for a market town and therefore no further action was done in this study. The maps below identify both slight and serious injuries, there being no fatal injuries recorded in the last five years.

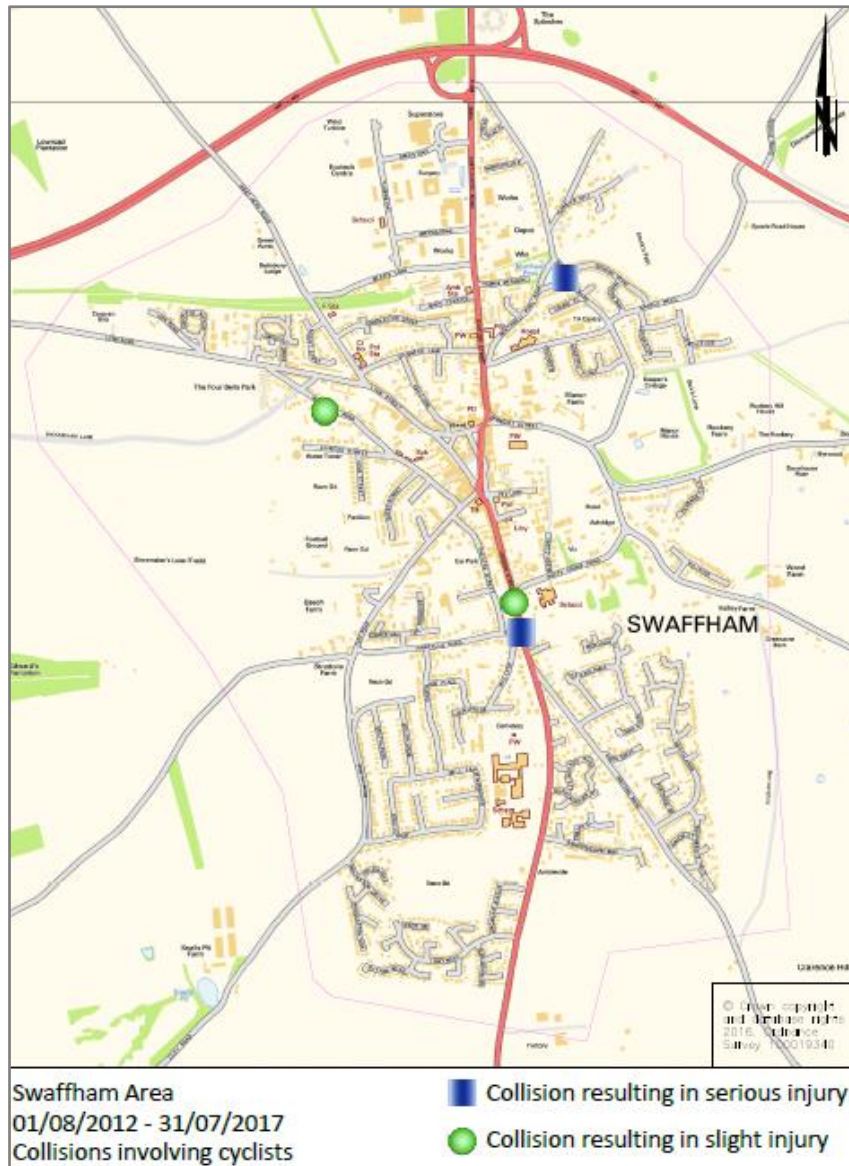


Figure 5.1: Collisions involving cyclists

Figure 5.1 displays incidences of collision involving cyclists for the last 5 years (2012 -2017). There are 2 incidences that resulted in serious injury, and 2 incidences resulting in slight injury. Main incidences are concentrated on London Street, which runs through North to South of the town centre. Given the amount of collisions and their location no further work is proposed for cyclist collisions but cycle corridor improvements are suggested later in this report.

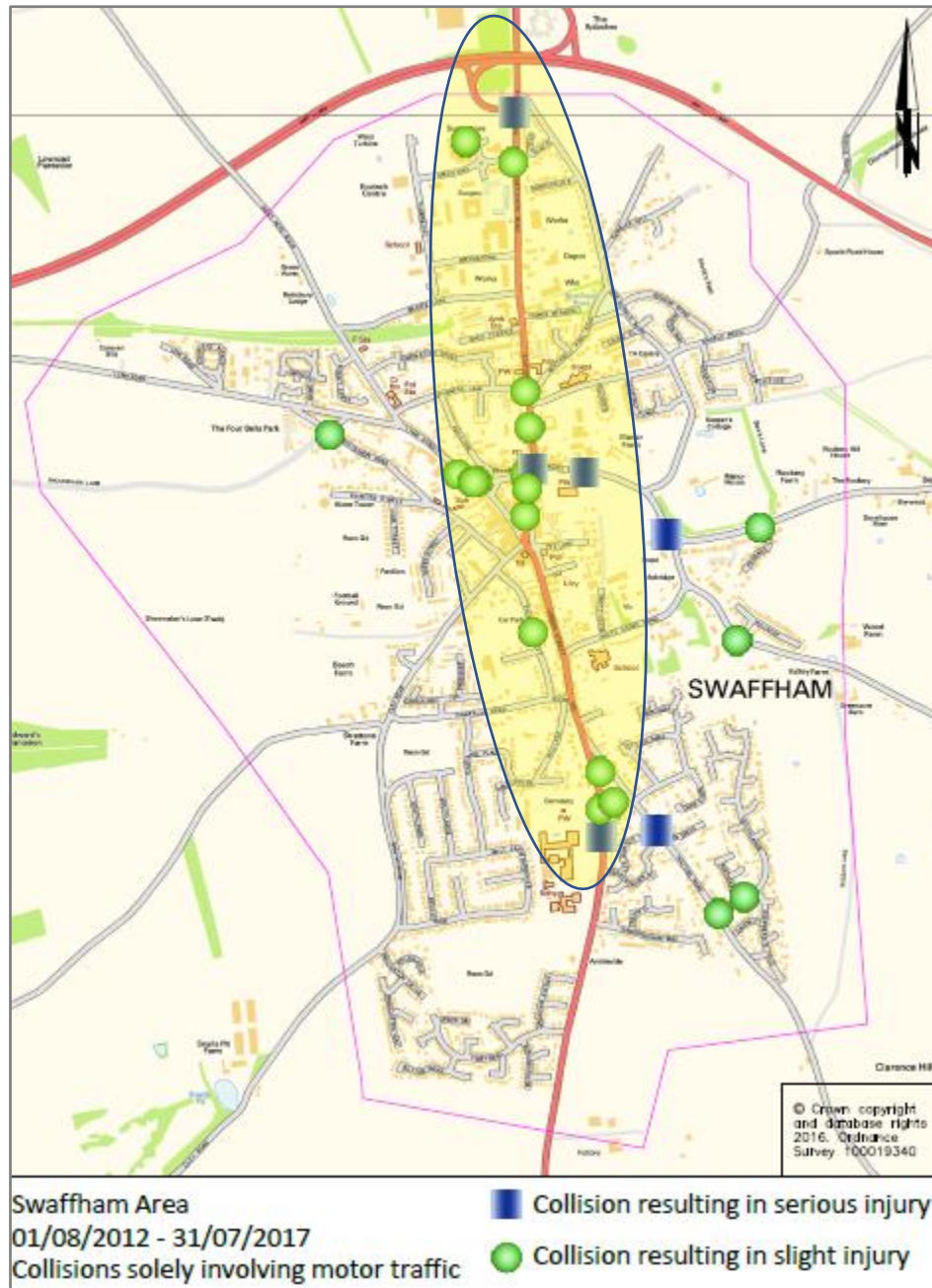


Figure 5.2: Collisions involving motor vehicles

Figure 5.2 displays that there are more collisions involving motor vehicles. Most of these collisions are concentrated along on London Street and Station Road. The concentration of motor accidents around London Street and Station Road is expected, given the observed large amount of traffic flowing north south through the town. A better understanding of the volume and direction of travel in the town centre has been identified as a priority in the scope for the study as part of the Network Improvement Strategy.

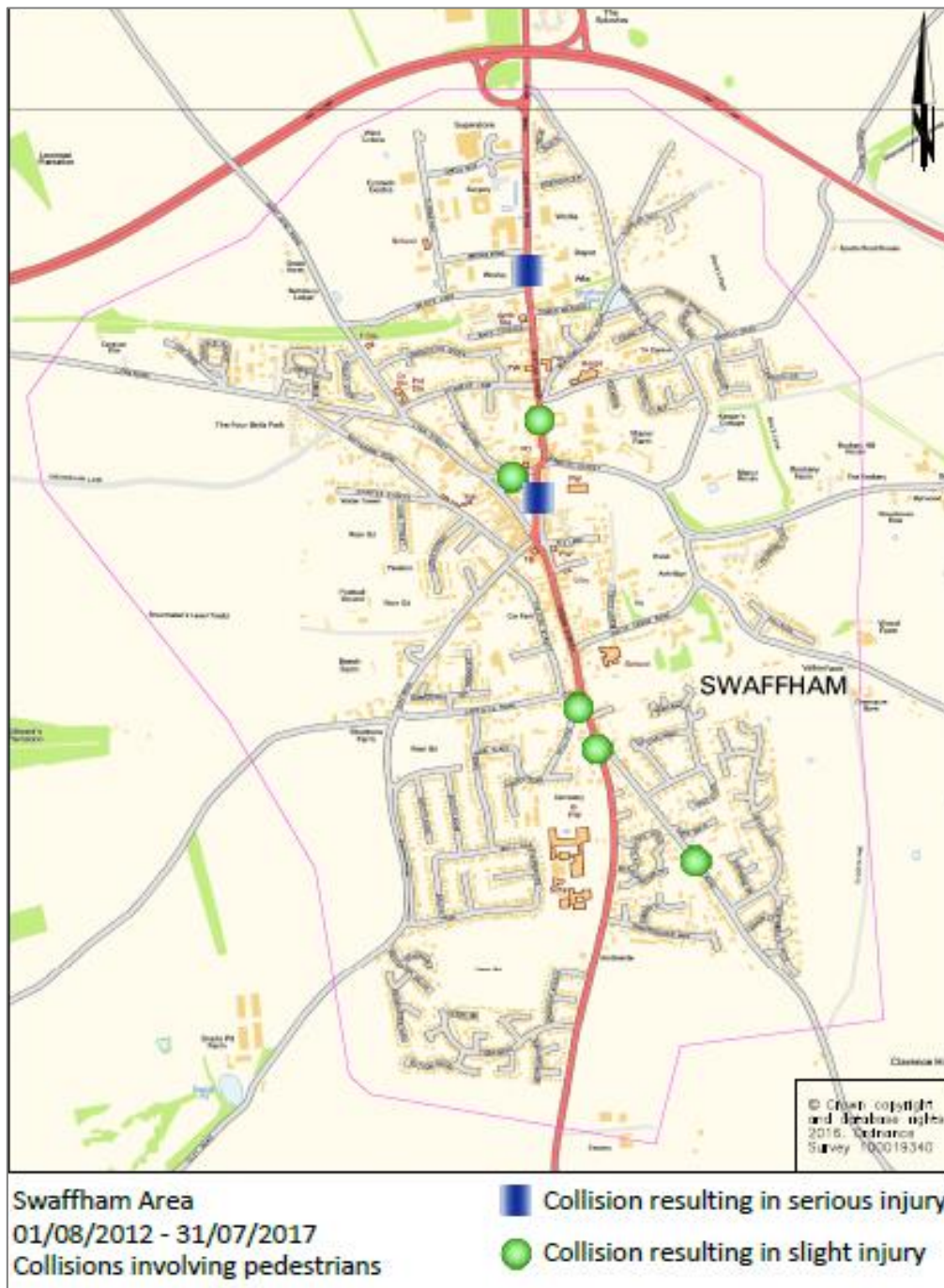


Figure 5.3: Collisions involving pedestrians

Figure 5.3 displays collisions involving pedestrians for the last 5 years. There are more incidences involving pedestrians than cyclists, and as expected fewer incidences than cars. Most incidences are minor and mirrors the general pattern of traffic collisions for cars and pedestrians, where the majority of incidences have concentrated on A1065 route (i.e. Station Street and London Street) The two serious collisions occurred on the town market area and further up north along A1065 route.

Conclusions from casualty data

The casualty data for Swaffham is typical for a market town and has identified areas where collisions have occurred more frequently. The analysis has not identified any areas within the town where specific interventions should be considered to address casualty problems. The county council will continue to monitor the issue.

5.2 Parking

Breckland District Council recently published car park data survey (2016). There are six car parks and 429 spaces. This work and the feedback from the external stakeholder workshop indicated while there are enough car parking spaces in Swaffham, the main issue is that short stay car parking spaces in and around the Market Place are often taken up by workers/all day parking and prevents shoppers from parking in spaces closest to the retail amenities. Stakeholders believe this to have a negative impact on the economic vitality of town centre and that Long stay parking should be at the Theatre Street car park which is free. To assist this, Breckland District Council are implementing limited waiting parking in and around the Market Place with an initial free parking period before charging for longer stays.

Stakeholders also believe that the one-way routings to and from the Theatre Street car park is a disincentive for using this free facility. They also reported that signage to car parks close to the town centre is not always clear and fit for purpose and needs to be improved to help to resolve the current car parking situation in the market place. Improved access to the Theatre Street car park including better signage would help this issue.

Action: Assess the access arrangements to the Theatre Street long stay free car park and recommend potential changes with appropriate signing, see chapter 6.

5.3 Congestion

Congestion on the main A1065 route running north south through the town centre has been identified as a key issue. There is a perception that a significant proportion of the traffic on the A1065 is through traffic. In addition, there is also great concern over the perceived volume of HGVs. The Town Council has carried out their own traffic survey and identified the volumes of traffic and the percentages of HGVs through the town centre.

The feedback from the external stakeholder group is that they are overwhelmingly in favour of building a North-South bypass as an effective solution to alleviate the volume of through traffic into the town centre.

In order to gain a better understanding of volume and nature of the traffic flow, it was recommended that an Automatic Number Plate Recognition (ANPR) traffic survey was carried out to assess existing traffic patterns in and through the town. The findings of the assessment will form the fundamental evidence base to devise mitigation measures and determine whether there is a need for a relief road. Results from this survey are set out in Chapter 6.

The AM and PM peak traffic speed maps are shown in figures 5.4 and 5.5. In the AM peak, key areas of congestion are concentrated in the town centre, with the A1065 section being worst affected. There is also heavy delay along Lynn Street and Market Place. Again, the PM peak map shows the congestion level is highest in the town centre, especially along Lynn Street, Mangate Street and the A1065. There are some congestion hotspots on the junctions, particularly on Station Street/Mangate Street junction.

Action: Carry out traffic counts and Automatic Number Plate Recognition (ANPR) traffic survey to assess the nature of the through traffic in the town and investigate the potential for the provision of a relief road or bypass for the town, see chapter 6.

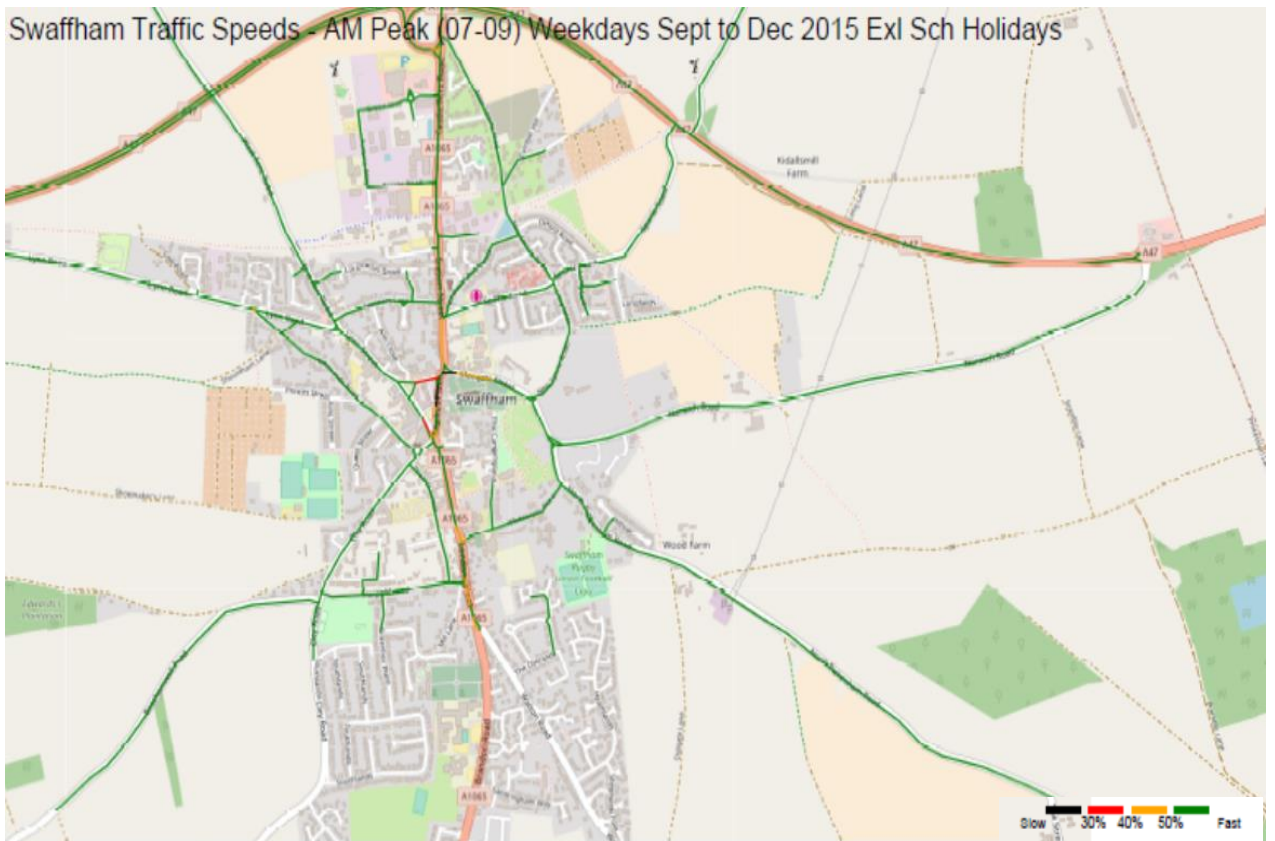


Figure 5.4: Swaffham Traffic Speeds AM peak

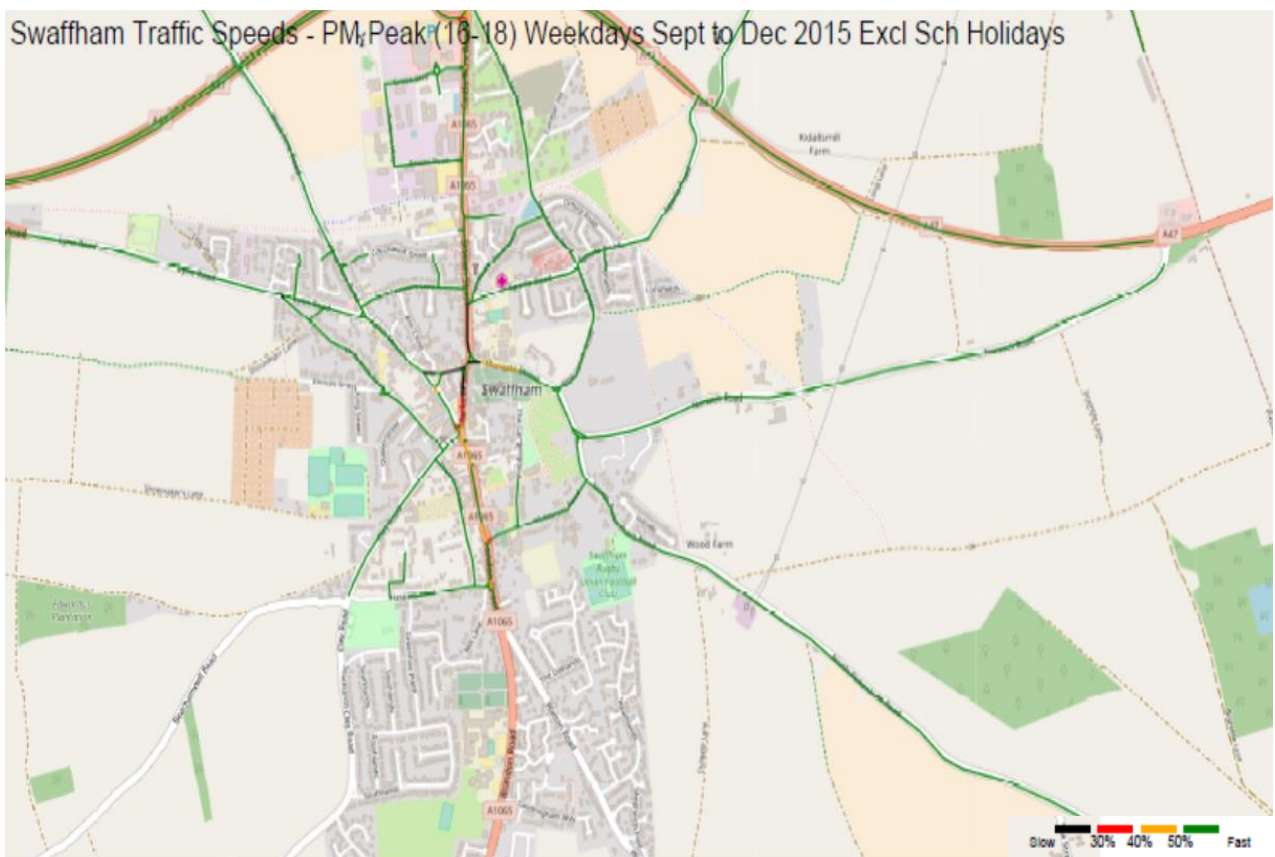


Figure 5.5: Swaffham Traffic Speeds PM peak

5.4 Access

A computer software package has been used to analyse what areas can access the town via bus within 30 minutes. The maps show accessibility levels to key shopping points, employment areas and higher education facilities. Bus accessibility as expected is concentrated along key routes such as the A47 and the A1065 linking Swaffham to the market towns of Dereham and Watton. The centre of Swaffham is reasonably accessible from a range of surrounding villages. Journeys can be made to Norwich via public transport in just over an hour's time using the A47.

The accessibility maps show that there is greater accessibility for residents in surrounding areas to the main employment areas in the town, than compared to the main secondary school. In regard to accessing key locations such as a library, medical centre and community centre, there seems to be a wider accessibility, however, this is mainly due to there being more destination points in this category which will give you increased accessibility.

Overall, accessibility via public transport to Swaffham and the facilities it offers is rather limited due to the rural setting of the town. Given the rural nature of Norfolk the levels of accessibility were not seen as a particular issue for this strategy but potential for improvements could be addressed through parallel Market Town work being carried out by Breckland District Council and the work on the Swaffham Neighbourhood Plan.

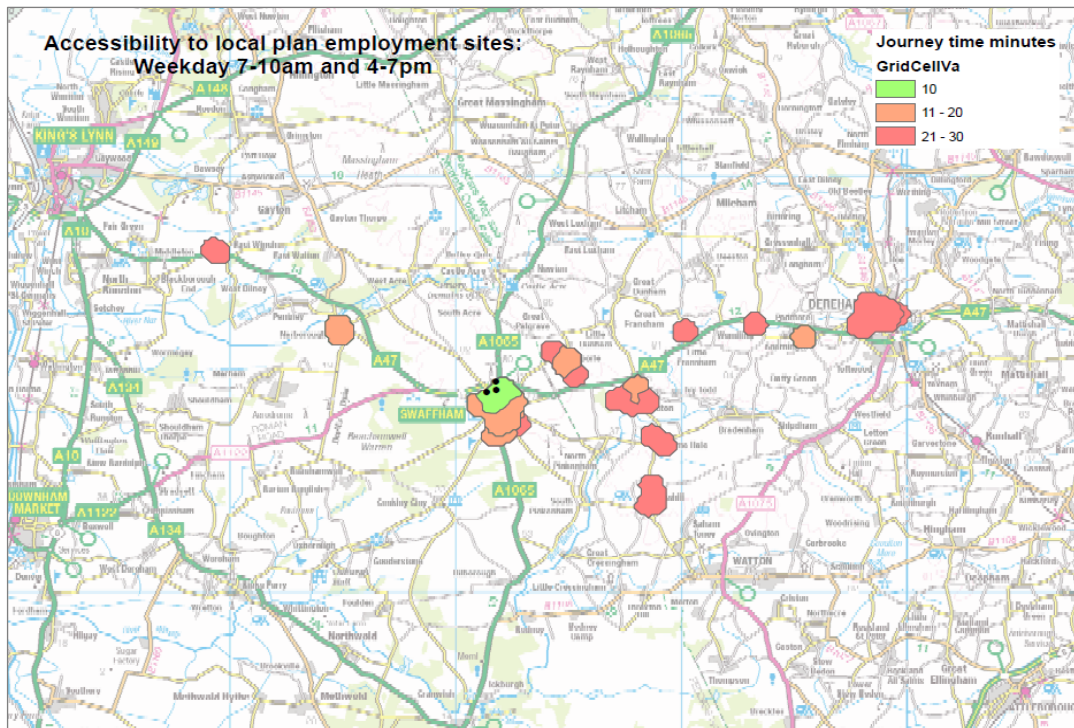


Figure 5.6: Public Transport Accessibility to employment sites

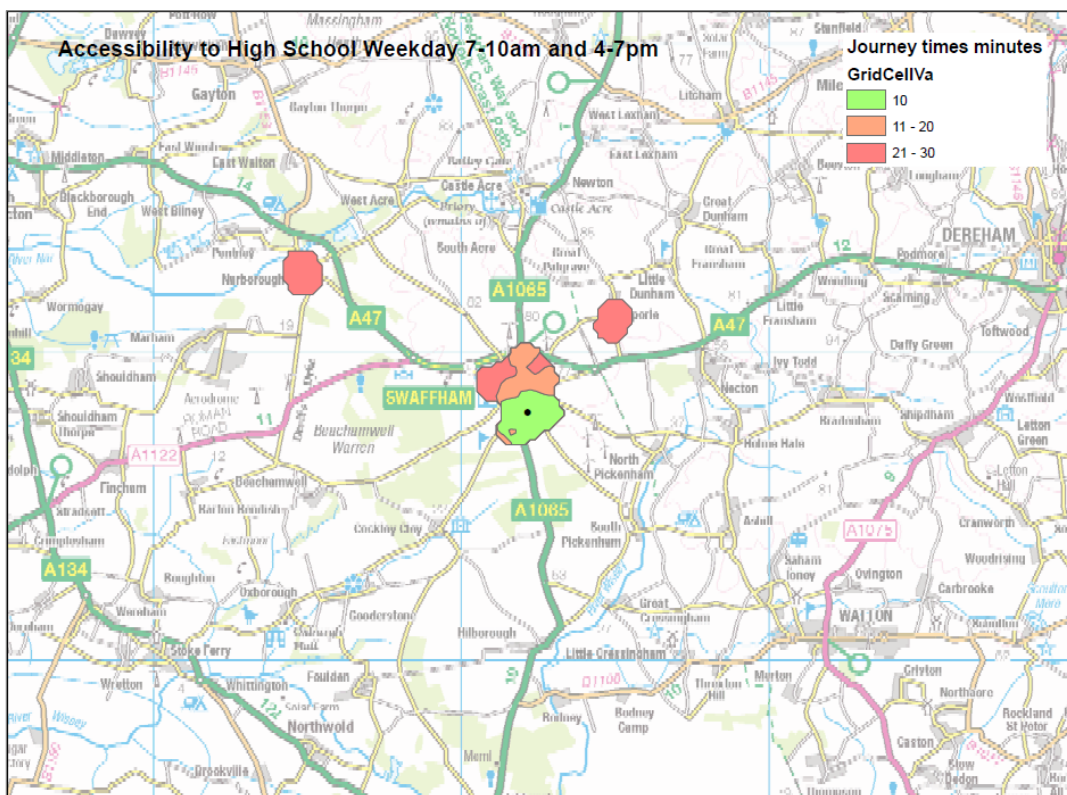


Figure 5.7: Public Transport Accessibility to higher education

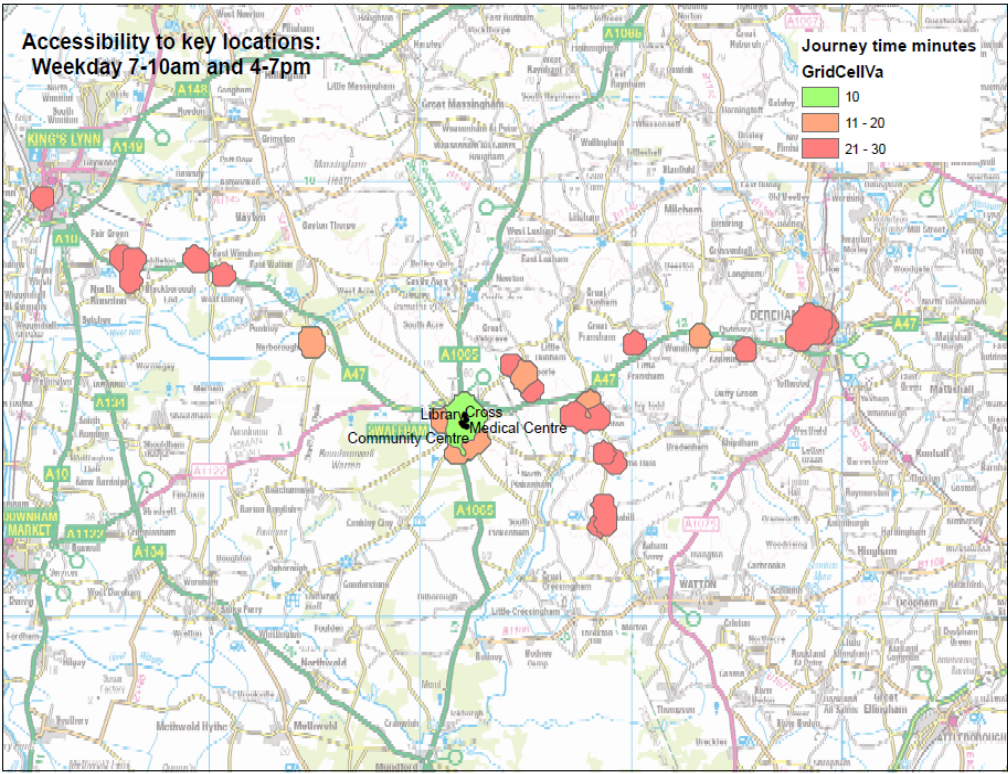


Figure 5.8: Public Transport Accessibility to key locations

5.5 Intelligent Transport Systems

No major issues relating to intelligent transport systems were noted as part of this study, but the potential for such systems will be kept under review.

5.6 Place Making

The quality of the public realm is an important element of a town's identity and selling points, with national policy stating that competitive town centres need to provide customer choice, a diverse retail offer and reflect the individuality of town centres. Breckland District Council has a market town initiative (July 2017) with action plans for each town covering marketing strategy and publicity campaign for market and promoting businesses.

The work proposed in the Breckland District Council should sufficiently cover place making as the strategy is focused on transport it is not suggested it does further work on place making but ensures that any transport improvements such as improving air quality and reducing congestion will promote the town centre and improve access.

5.7 Air Quality

In 2017 an Air Quality Management Area (AQMA) was declared around Station Street and London Road as the annual mean NO₂ level reached 42.9 microgrammes/m³, which exceeds the maximum permitted level under UK and EU regulations. The cause of this could be volume of traffic going through the town as well as some "canyoning" effect due to high buildings and narrow roads. Norfolk County Council is working closely with Breckland Council and Swaffham Town Council to devise and deliver an Air Quality Action Plan (AQAP) to address air pollution issues.

A range of potential measures have been put forward to reduce the level of air pollution. These include policy actions on including air quality considerations with the scoping and determination of planning applications, reviewing car parking policy arrangements and considering the implementation of control measures, enforcement and likely benefits; Transport measures on improvements to the Station Street/Mangate Street junction, undertake preliminary investigations into an A1065 bypass and improving walking and cycling facilities around the town; Emissions actions such as investigate the provision of electric vehicle charging points to encourage greater use of electric vehicle.

Although AQMA represents a separate strand of work for the town, air quality, traffic level and transport provisions clearly go hand in hand. Outputs and measures from traffic study from the Network Improvement Strategy should play a vital role in gaining a better understanding the traffic situation through the town centre and help to implement measures to alleviate congestion and in turn reduce air pollution level.

Action: Carry out transport related feasibility work as set out in the Swaffham Air Quality Action Plan (AQAP) prepared by Breckland District Council.

The Air Quality Action Plan (AQAP) has been devised and includes a number of traffic management measures aimed at alleviating air pollution level. The four measures listed below were included as part of the NIS:

1. Improving access to the Theatre Street car park including signing
2. Reconfiguring the traffic signal junction to reduce queuing and emissions on Station Street
3. Addressing parking issues on Station Street that are causing queuing
4. Diverting northbound HGVs away from Station Street.

Chapter 6: Our findings

The actions identified in chapter 5 have been investigated further in a study carried out by consultants WSP with regards to a potential relief road, and a series of feasibility studies related to air quality and parking by the NCC Network Safety and Sustainability Team. The findings are set out below.

6.1 Parking/Air Quality Action Plan

Theatre Street Car Park

Investigations have been carried into improving the access arrangements to Theatre Street car park with a view to providing access from the south to encourage people to park there rather than continuing on and parking in the Market Place. The rationale for this is to reserve the Market Place spaces for short stay shoppers and visitors which could help the local economy. This strategy is now supported by the Breckland District Council initiative to have controlled parking on the Market Place with a free initial period for very short durations.

The feasibility work concluded that an option to provide a two-way access from the south to the car park appeared feasible. However, the engineers carrying out the work commented that the existing Theatre Street car park access arrangements were assessed to be safe and well understood. This would appear to be at odds with the desire from the Town Council and Breckland to favour long term parking at Theatre Street.

In association with this it has been recommended that car parking signage within the town could be revisited with the removal of lorry parking pictograms and replacement with named car parks a measure to improve the visibility of the current car parking signage.

It is recommended that a scheme to provide a southern access to the Theatre Street car park with associated signing is progressed. Funding will need to be identified for both detailed design and implementation.

6.2 Air Quality Action Plan (AQAP)

Reconfiguring the Station Street/Mangate Street traffic signal junction

Earlier work carried out on behalf of Breckland District Council demonstrated that removing the traffic lights in favour of two priority junctions, one for Mangate Street and the other for Lynn Street, would reduce the emissions from vehicles traversing the junction. However, it cannot be proven that reducing the emissions at this location would result in improved air quality at the receptor where exceedances were observed over the 40 microgramme/m³ limit. This is because closer receptors to the junction do not show exceedances of the limit so other factors are clearly involved.

More recently work has been carried out to re-examine the priority junction scheme and incorporate pedestrian crossing facilities. This built on the proposals to remove the traffic signals at the Mangate Street and the A1065. Although technically feasible

the removal of the traffic signals was likely to result in difficulties for buses accessing the main bus stops in the Market place. In view of this, an option was considered that retained the traffic signals and removed right-turning traffic into Mangate street. This was felt to be an alternative which would have similar benefits to the removal traffic signals and could be implemented as part of a trial arrangement. The impact on congestion at the junction from both arrangements is likely to be of most benefit to the air quality.

However, recent air quality measurements have shown that the NO₂ levels on Station Street are now under 40micrograms/m³. In view of this it may be had to justify developing a scheme at this time.

It is recommended that no further work is carried out on this measure whilst measured NO₂ levels are beneath the threshold.

Parking issues on Station Street

There was a belief that parking issues on Station Street were causing queuing that in turn meant there were higher levels of emissions from vehicles that were contributing to the poor air quality.

Survey work was carried out using video techniques to examine the situation. It was concluded that the stop/start behaviour and queuing to negotiate a parked vehicle partially obstructing the road was not a particularly long-lived phenomenon. In view of this it was felt that these very sporadic incidences could not really be making a significant contribution to the annual mean figure of observed NO₂.

In addition to this, any changes made to the current restrictions and yellow lines would have a detrimental impact on residents parking.

It is recommended that no changes are made to the current parking restrictions and that this measure not considered any further.

Diverting northbound HGVs away from Station Street

It has been proposed that an HGV ban is implemented at the Market Place to make these vehicles travelling northbound to find an alternative route to using the Station Street (A1065). This has been investigated and the conclusion is that this would be a very long diversion and difficult to enforce and signing for HGVs would only be advisory. Also, bearing in mind drivers are likely to be using satellite navigation systems they are more likely to continue on the A1065 than follow an advisory diversion.

Prohibiting HGV from an A road is very unusual and would require making these vehicles take 4-mile diversion which they are unlikely to do due to the extra fuel and time costs.

It is recommended that this proposal is not progressed any further.

6.3 Through Traffic Assessment and the potential for the provision of a relief road or bypass for the town

Consultants WSP were engaged to carry out this work and their full feasibility report is shown in Appendix A.

To determine the existing traffic conditions through Swaffham a series of traffic surveys were undertaken between Thursday 12 July 2018 and Thursday 19 July 2018.

Traffic Survey locations

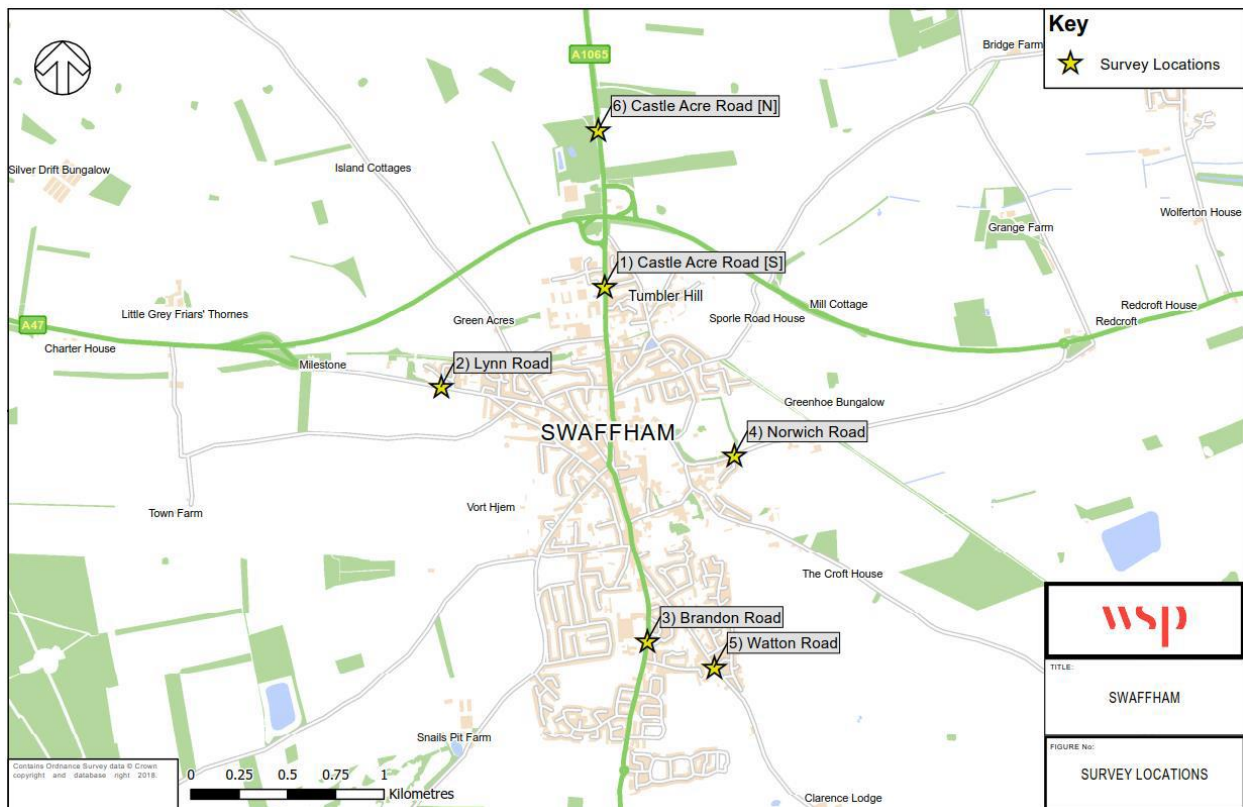


Figure 6.1: Traffic Survey Locations

Automatic Traffic Count (ATC) data was collected continuously over the week-long period, see figure 6.1. This recorded bi-directional vehicle volume, speed and vehicle class at each of the survey locations in 15-minute time intervals.

To identify the level of through traffic routing through the town, Automatic Number Plate Recognition (ANPR) cameras were installed at the survey locations, establishing a cordon around the town to capture the majority of vehicular movements through the network. The ANPR survey was undertaken over a 12-hour period.

Peak Hour Traffic Flows

Following the identification of the peak hours, the directional traffic flows were analysed, and the percentage component of heavy vehicles calculated. Figures show the peak hour traffic flow by direction and the percentage of heavy vehicles (in brackets), for the morning and evening peak hours respectively.



Figure 6.2 - Peak hour traffic flow and percentage heavy vehicles (morning peak hour)

During the morning peak hour, see figure 6.2, the vehicular flow along the A1065 is 260-360 northbound vehicles and 310-430 southbound vehicles. The largest hourly vehicle flow is recorded on the A1065 Brandon Road, with 421 southbound vehicles and over 350 vehicles continuing northbound towards the town centre. There is a higher proportion of Heavy Goods Vehicles (HGVs) heading northbound in the morning peak hour (10% - 15% compared with 7%-9% southbound).



Figure 6.3 Peak Hour Traffic flow and percentage heavy vehicles (evening peak hour)

During the evening peak hour, see figure 6.3, the vehicular flow along the A1065 is marginally higher than the morning peak hour with flows of 350-450 northbound vehicles and 390-460 southbound vehicles. The largest vehicle flow is again recorded on the A1065 Brandon Road, with 456 southbound vehicles and nearly 430 vehicles continuing northbound towards Swaffham. In the evening peak hour there is a similar proportion of HGVs heading northbound and southbound (4%-8%).

On Lynn Road, during the evening peak hour, more vehicles were observed travelling towards Swaffham than towards the A47 (312 eastbound vehicles compared with 243 westbound vehicles). Between 5% - 10%, dependent upon direction, are noted to be HGVs. To the east, on Norwich Road, there is a similar magnitude of flow, however there are more eastbound vehicles heading away from Swaffham (256) compared with the number of westbound vehicles (203). Less than 5% of vehicles on Norwich Road are recorded to be HGVs.

Vehicle Origin – Destinations

Morning Peak Hour

The data collected for the morning peak hour illustrates that 43% of the total observed “inbound” trips are through traffic. Figure 6.4 presents the percentage of “inbound” through traffic diagrammatically.

The data indicates that prominent traffic movements represent trips between north and south of Swaffham. A total of 66% of ‘inbound’ vehicles from the A1065 Brandon Road are through traffic, of which, the majority (23%) route through Swaffham to leave the

cordon via the A1065 Castle Acre Road [N] site. An additional 35% of through traffic from the A1065 Brandon Road have a destination of the A47 via either Lynn Road (22%) or Norwich Road (13%). Vehicles travelling from Watton Road share a similar south-to-west desire line

The number of vehicles carrying out the opposite movement (from the north of Swaffham to the south), also represents a large proportion of through traffic.

The number of HGVs, that represent through traffic, that travel through the study area in the morning peak hour is relatively low (4% of all vehicles). The main HGV movements are from the A1065 Brandon Road to Lynn Road and travelling north-south through the town on the A1065.



Figure 6.4 – Absolute (and percentage) of “inbound” through traffic (morning peak hour)

Interpeak Period

The data collected during the interpeak period illustrates that 45% of the total observed “inbound” trips are through traffic. Figure 6.5 presents the percentage of “inbound” trips are through traffic.

As with the morning peak hour, the interpeak period demonstrates similar key through traffic movements between the north and south of Swaffham. A total of 59% of ‘inbound’ vehicles from the A1065 Brandon Road are through traffic, of which, the majority (30%) route through Swaffham to leave the cordon via the A1065 Castle Acre Road [N] site. An additional 23% of through traffic from the A1065 Brandon Road have a destination of the A47 via either Lynn Road (13%) or Norwich Road (10%). Vehicles travelling from Watton Road share a similar south-to-west desire line,

The number of vehicles carrying out the opposite movement (from the north of Swaffham to the south), also represents a large proportion of through traffic. Of 'inbound' vehicles at the A1065 Castle Acre Road, a total of 39% are through traffic.

The number of HGVs, that represent through traffic, in the interpeak period is relatively low (3% of all vehicles). The main HGV through traffic movements follow the same pattern as described in the paragraphs above.



Figure 6.5 – Absolute (and percentage) “inbound” through traffic (interpeak period)

Evening Peak Hour

The data illustrates that 44% of the total observed “inbound” trips are through traffic. Figure 6.6 presents the percentage of “inbound” through traffic diagrammatically.

The evening peak hour demonstrates similar key through traffic movements, as the morning peak hour and interpeak period, with the key routes being between the north and south of Swaffham.

The number of vehicles carrying out the opposite movement (from the north of Swaffham to the south), also represents a large proportion of through traffic.

The number of HGVs, that represent through traffic, in the evening peak hour is low (1% of all vehicles). The main HGV through traffic movements are between the A1065 Brandon Road and A1065 Castle Acre Road and between the A1065 Brandon Road and Lynn Road.



Figure 6.6 Percentage “inbound” and outbound” through traffic (evening peak hour)

Alternative Routeing

The ANPR trip chain data has been analysed to distinguish between those that travel between the A1065 Castle Acre Road (N) site and the other external sites passing through the internal A1065 Castle Acre Road (S) site (direct), and those that do not pass through the internal site (indirect). This is done to identify the level of vehicles that use local roads, such as New Sporle Road, to avoid congestion through the centre of Swaffham. Figure 6.7 diagrammatically presents the volume of “direct” and “indirect” trips for the daytime hours.

The data indicates that only a small number of vehicles take an “indirect” route to avoid Swaffham town centre. A total of 15% of vehicles travelling between the A1065 Castle Acre Road (N) and the other external sites utilises alternative routes to bypass town centre.



Figure 6.7 – A1065 ANPR trip chain routing (all vehicles and HGVs): all day totals

Annual Average Daily Flow

The 12-hour ANPR “inbound” data was factored up to provide an annual average daily flow (AADF), to illustrate the daily volume of through traffic travelling through the study area. The data illustrates that 45% of the AADF trips are through traffic.

A total of 60% of “inbound” vehicles from the A1065 Brandon Road are calculated to be through traffic, of which, the majority (27%) route through Swaffham to leave cordon via the A1065 Castle Acre Road (N) site. An additional 27% of through traffic from the A1065 Brandon Road have a destination of the A47 via either Lynn Road (16%) or Norwich Road (11%).

The potential number of vehicles that would utilise a new north east, south east, south west, or north west link around Swaffham were calculated. A link to the south west of Swaffham would attract the highest number of through traffic and could potentially re-route a large volume of traffic away from Swaffham town centre, allowing greater connectivity to A47 westbound, and onward travel along the A1065.

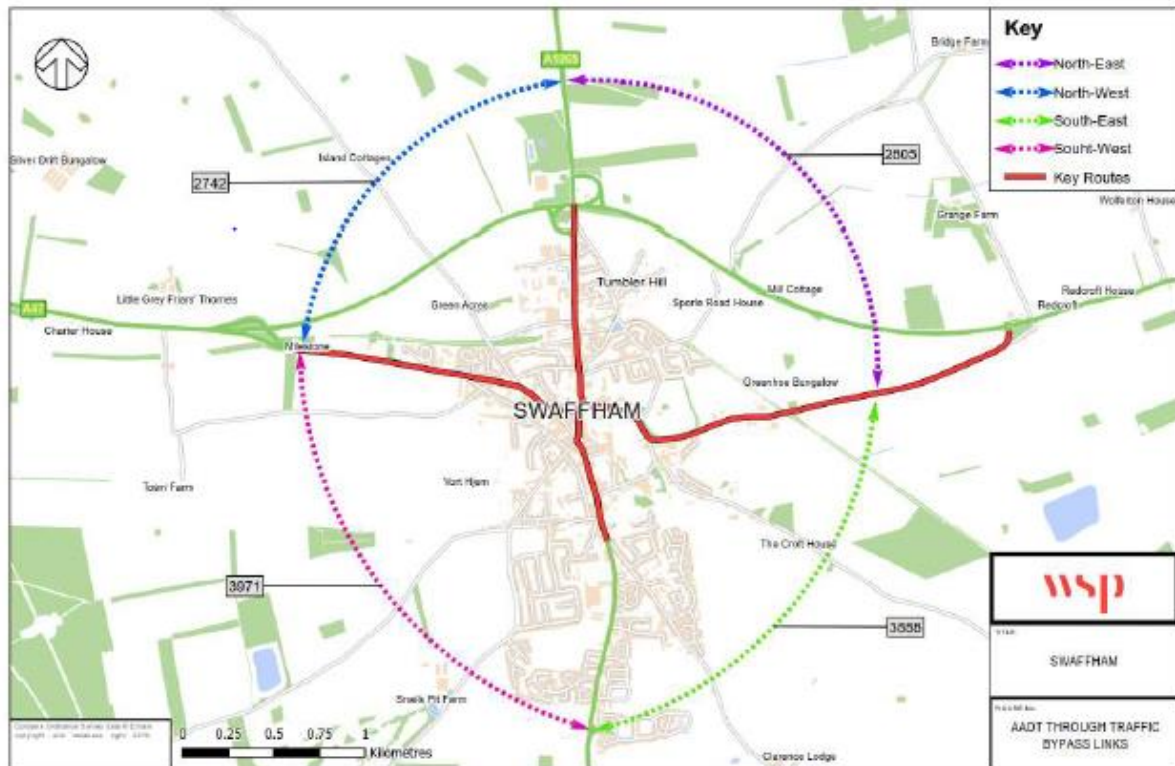


Figure 6.8 – A1065 ANPR trip chain routing

The Design Manual for Roads and Bridges (DMRB) indicates the recommended carriageway standard to be provided dependent upon opening year AADF values. Using the values presented, if a new link were to be developed, a single carriageway would be the recommended standard using existing flow data.

Summary of WSP study

The origin-destination data presented in this section has demonstrated that, throughout each of the time periods analysed, between 43% and 45% of the total “inbound” vehicles are through traffic. Of which, between 1% and 4% are HGV trips. The key movements for through traffic within Swaffham are between the A1065 Castle Acre Road (N) and A1065 Brandon Road sites. Other key movements are between the A1065 Brandon Road and Lynn Road/Norwich Road.

The AADF origin destination matrix data illustrates that 45% of the total “inbound” (16,005) trips are through traffic, with key movements following the pattern described above. Using the AADF data, the potential users of new links around Swaffham illustrated that a south west link would attract the highest number of through traffic trips (4,553).

Traffic flow trends

Over the 5-year period from 2013 to 2017, the A1065 outside of Swaffham has experienced an increase in annual average daily flow of 10% up to the magnitude of 7,000 vehicles, whereas within the town centre, growth is restrained to 1%. Analysis of the peak hour vehicle flows on the A1065 indicates that evening peak hour flows are marginally higher than those of the morning peak hour.

The maximum percentage of HGVs on the network is 15% which is observed on the A1065 Castle Acre (N) heading north bound, which is likely to have originated from the A47.

Vehicle Speeds

The vehicle speed data demonstrates that vehicles passing through the A1065 Castle Acre Road site travel 20% below the enforced speed limit. On the A1065 Brandon Road, vehicle speeds are slightly reduced during the morning peak hour but are largely at the speed limit. The other roads operate with speeds at, or slightly above the speed limit, suggesting any congestion issues are confined to Swaffham town centre.

Origin – Destination

The origin-destination data presented, demonstrated that, throughout each of the time periods analysed, between 43% and 45% of the total 'inbound' vehicles are through traffic. Of which, between 1% and 4% of these are HGV trips. The key movements for through traffic within Swaffham are between the A1065 Castle Acre Road [N] and A1065 Brandon Road sites, which is a logical conclusion as the A1065 the only north-south arterial within close proximity of the town. Other key movements are between the A1065 Brandon Road and Lynn Road / Norwich Road (providing access to the A47), which is understandable as the A47 provides a strategic east-west link to Kings Lynn, Dereham and Norwich.

Of vehicles undertaking a trip between the external survey locations, a proportion of vehicles are deemed to use local roads, such as New Sporle Road, to avoid congestion and delays on the A1065 through the centre of Swaffham (15%). A higher proportion of vehicles and HGVs use alternative routes through Swaffham when travelling northbound to avoid potential town centre congestion.

The AADF origin-destination matrix data illustrates that 45% of the total 'inbound' trips (16,005) are through traffic, with key movements following the pattern described above. Using the AADF data, the potential users of new links around Swaffham illustrated that a south-west link would attract the highest number of through traffic trips (4,553). A single carriageway standard road would be sufficient for this volume of traffic, however, background and planned growth, increase the justification for a wide single carriageway standard link.

General Conclusions from the study

The A1065 is experiencing long-term growth in traffic volumes, and with new housing developments to the south of the town, the A1065 is likely to continue experiencing increased traffic levels. Between 43% and 45% of vehicles entering the network are considered to be undertaking through traffic movements, of which between 1% and 4% are HGVs. The majority of these through traffic movements are undertaken as part of a longer-distance north-south journey on the A1065, or vehicles interchanging between the A47 and A1065.

Strategic through traffic on the A1065 has to negotiate Swaffham town centre where vehicle speeds are significantly reduced due to the nature of the route and the pedestrian and vehicular activity. Within the town centre there is a 30mph speed limit, however, the average speeds are lower reflecting the pinch points. It is likely that this slow-moving traffic and subsequent congestion this has exacerbated air quality issues and led to the designation of an Air Quality Management Area (AQMA) within the town centre.

The through traffic analysis indicates that approximately 4,000 and 4,500 vehicles are through traffic in the east-south and south-west directions respectively. Measures to divert this traffic away from Swaffham town centre, would help to alleviate congestion within Swaffham town.

However, less than half of traffic accessing the town is through traffic, the remainder has a destination within Swaffham.

Of the through traffic, around a quarter of the traffic from the south heads towards King's Lynn and a quarter towards the north. Therefore, if a link road / bypass were to be considered, the evidence would suggest it should serve the south to west movement as much as south to north. As such, any bypass should be to the west of the town. However, given the relatively low traffic flows that would be carried by any new road and the costs of any new road, the evidence suggests that it would be very difficult to make a case for a bypass link from the A1065 in the south to the A47 in the west; or to continue to the A1065 in the north.

Chapter 7: Implementation Plan

Table 7.1 Implementation Plan

Time period	Parking	Air Quality	Relief road or bypass for the town
Short term	Monitor the implementation of the Breckland District Council trial of limited waiting parking in and around the Market Place with an initial free parking period before charging for longer stays	Continue to work with Breckland District Council on the development and implementation of the adopted Air Quality Action Plan (AQAP)	Engage with the Swaffham Town Council newly formed Transport Access and Environment Committee and advise on making the case for a relief road or bypass
Medium term	Develop a scheme to provide a southern access to the Theatre Street car park with associated signing. Funding will need to be identified for both detailed design and implementation.		Work with Breckland District Council on their Local Plan and its updates to determine the scope for a new road in association with new Local Plan allocations
Long term			Seek potential funding sources for a relief road or bypass including preparing business cases where necessary

Based on the findings from the study work and feedback from stakeholders an implementation plan has been devised that recommends areas where consideration should be given in the form of short, medium and long-term actions. NCC has some funding committed to the delivery of short-term schemes that can be implemented within the next two years if suitable schemes are identified. In the short, medium and longer term it will be critical for NCC to work collaboratively with local stakeholders and partners to progress the actions in the plan.

