

Dereham  
Network  
Improvement  
Strategy  
March 2019



Norfolk County Council

## Contents

Executive Summary .....	3
Chapter 1 Introduction .....	5
Dereham .....	5
Chapter 2: Strategy and Policy Context .....	7
National Policy .....	7
Norfolk and Suffolk Economic Strategy .....	7
Local Transport Plan 3.....	8
Breckland Local Plan Policy .....	8
Work complete, underway or planned.....	9
Chapter 3: Dereham Background .....	11
Chapter 4: Programme of activity.....	12
Chapter 5: Transport in Dereham today.....	13
Casualties .....	13
Parking .....	18
Congestion .....	18
Access.....	21
Cycling and Walking .....	25
Intelligent Transport Systems .....	26
Place Making.....	27
Chapter 6: The future.....	28
Chapter 7: Our findings.....	29
Future Scenario Testing (Post 2036) .....	30
Cycle Corridors .....	41
Signage Review .....	45
Chapter 8: Action Plan .....	52

## Executive Summary

The Dereham Network Improvement Strategy (DNIS) in collaboration with stakeholders has identified potential measures to help address existing transport network constraints and transport improvements to facilitate the growth identified in the emerging Local Plan, which is at an advanced stage and the Local Plan evidence did also identify transport measures. The emerging Local Plan runs to 2036 and the proposals in this strategy will help sustainably deliver the growth identified by Breckland District Council during this period. The DNIS has also been tasked with looking at the longer-term transport situation and this strategy has carried out a high-level assessment of potential scenarios that can inform future growth options in Dereham and be used as part of any future Local Plan review.

Various activities were undertaken to gather evidence/information to compile the DNIS: Internal meeting with officers across a range of departments, external stakeholder workshop and scoping of potential study work to identify priorities. This feedback generated a list of five objectives the DNIS would need to address:

- Review current operation of B1135 roundabout
- Identify key cycle corridors and improvements for routes
- Review signage so people are directed most efficiently
- Lobby Highways England for improvements to Draytonhall Lane
- High level assessment of future scenarios that can inform growth options and be part of a future Local Plan review.

Consultants were then commissioned to produce: A Cycle Corridor study, Town Centre Parking & Access study and Future scenario testing report.

This work produced some key findings:

- 40% of the Town's population work within 3 miles of their home.
- Only 3.7% of journeys to work were completed by bicycle which is below the county average of 4.8%
- It is estimated that traffic levels during the AM and PM peak periods will increase by 30-31% by 2037 and on Saturday the level is expected to increase by 34%
- There is a typical amount of motor vehicle collisions and whilst there is no single hotspot of collisions they are concentrated along the key routes in and out of the town and in the town centre.

Based on the feedback from stakeholders and findings from the study work the action plan recommends areas where consideration should be given in the form of short, medium and long term actions. NCC has funding committed to the delivery of short term schemes that can be delivered within the next two years. Given the nature of funding using NCC led proposals would allow for schemes to be delivered within the time allocation. In the medium and longer term it will be critical for NCC to work collaboratively with local partners to deliver on other opportunities.

Time period	Cycle Corridor	Future growth scenarios	Congestion	Signage	Safety
Short term	Norfolk County Council and partners to identify potential funding opportunities for feasibility work to progress section improvements set out in WSP Cycle Corridors study for cycle corridor option two.	The future scenario testing indicates the impact of a range of development options around the town and this can be used to inform future planning.	Monitor and analyse the outcomes of the planned improvements in Dereham and take a decision if further study work or schemes are required to alleviate congestion.	Highways Authority to provide costings and timeline of potential sign changes outlined in the signage study.	Continued lobbying through the A47 Alliance for complete dualling of the A47 and Norfolk County Council to understand from Highways England what the strategy is for improving Draytonhall Lane
Medium term	The cycle corridor option two section improvements are developed into schemes that can then be used as projects when seeking contributions from new development or external funding opportunities.	The County Council alongside partners can use this study to develop potential mitigation improvements further so the costs and work required are fully understood.	This network improvement strategy does not at this stage suggest any additional medium or long terms actions as future progress will be shaped by the outcomes of schemes already being implemented in the town as explained above.	Signage changes will be delivered as set out in the network improvement strategy which have the potential to improve road operating conditions for all users within the town.	Delivering the signage and cycle corridor improvements suggested by this study will create a better distribution of traffic throughout the town and NCC will continue to monitor collisions data and ensure suggested improvements are continuing to target "hot spot" locations.
Long term	Accessibility planning could be undertaken in regards to access to schools, health facilities and employment opportunities.	Growth beyond 2036 will need to be fully evaluated and options chosen with the least detrimental impact felt on the town.		Measures may be required such as new road markings and changes to the Theatre Street road layout.	

## Chapter 1 Introduction

Norfolk has a population of around 891,000 people. The majority live in Norwich and the 21 market towns both in land and along the coast. Market towns act as a service centre to their surrounding rural populations within the rural county. Norfolk's Market Towns are also employment centres, commuter towns, retirement centres and/ or shopping destinations many retain a historic core and are generally supported by seasonal tourism.

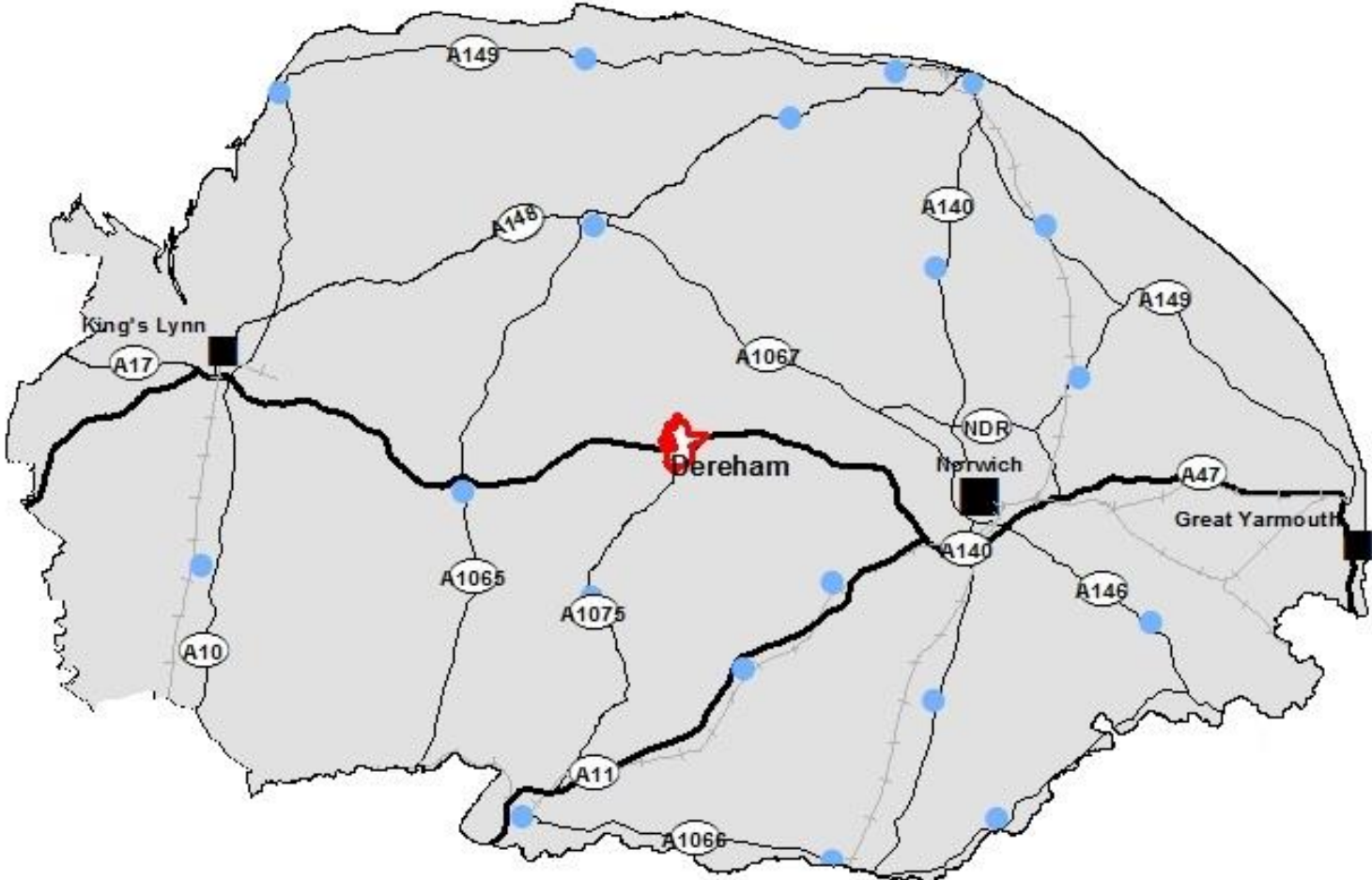
A number of market towns still hold regular markets however some have suffered in recent years due to online shopping and the decline of agriculture or other significant industries (e.g. fishing and textiles). The environment the town provides for people to live, work, shop and move about in, the very basis of modern human activity, is fundamental to how a town functions for those who use it.

Norfolk County Council is undertaking a series of transport network improvement strategies in the market towns to examine current and future issues within the town, 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.

### Dereham

Dereham is one of Norfolk's largest market towns, centrally located between Norwich and King's Lynn on the A47 trunk road. It has both the second highest market town workday population and numbers of people in employment. In total Dereham has a population of around 21,000 with around 11,000 of working age and has seen over 1,600 homes completed since 2001 showing it is an attractor for people to live but with a workday population of nearly 8,500 also for people to work. A large proportion of households have one or more car available to use (79%) but this does mean over 1,600 households do not have a car for travel. Of the 21,000 people living in Dereham 71.1% travel to work by Car and 3.7% cycle. In addition to housing and employment Dereham has the potential for a vibrant high street with a strong leisure offer and historic value meaning the transport network not only needs to connect people in and out of the town for work but also needs to move people within the town so they can easily access services and amenities. Norfolk County Council's Norfolk Market Town report 2018 identifies Dereham as having the largest market town centre and vacant units have consistently decreased in the last five years from 20 to 11 and is below the Norfolk vacancy rate average.

Map of Dereham and location in Norfolk



## 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) July 2018 sets out the purpose of the planning system is to contribute to the achievement of sustainable development, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Section 9 of the NPPF directly refers to promoting sustainable transport and Para 102. Sets out the various transport issues that should be considered as a part of plan making and development proposals, so that:

- The impact of development on transport networks being addressed
- Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised
- Opportunities to promote walking, cycling and public transport use are identified and pursued
- the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account

There is also 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 Dereham 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.
- In addition to this, each of the individual allocation policies include the need to provide contributions to the transport network to secure improvements in line with the requirements of the Dereham Local Plan Transport Study.

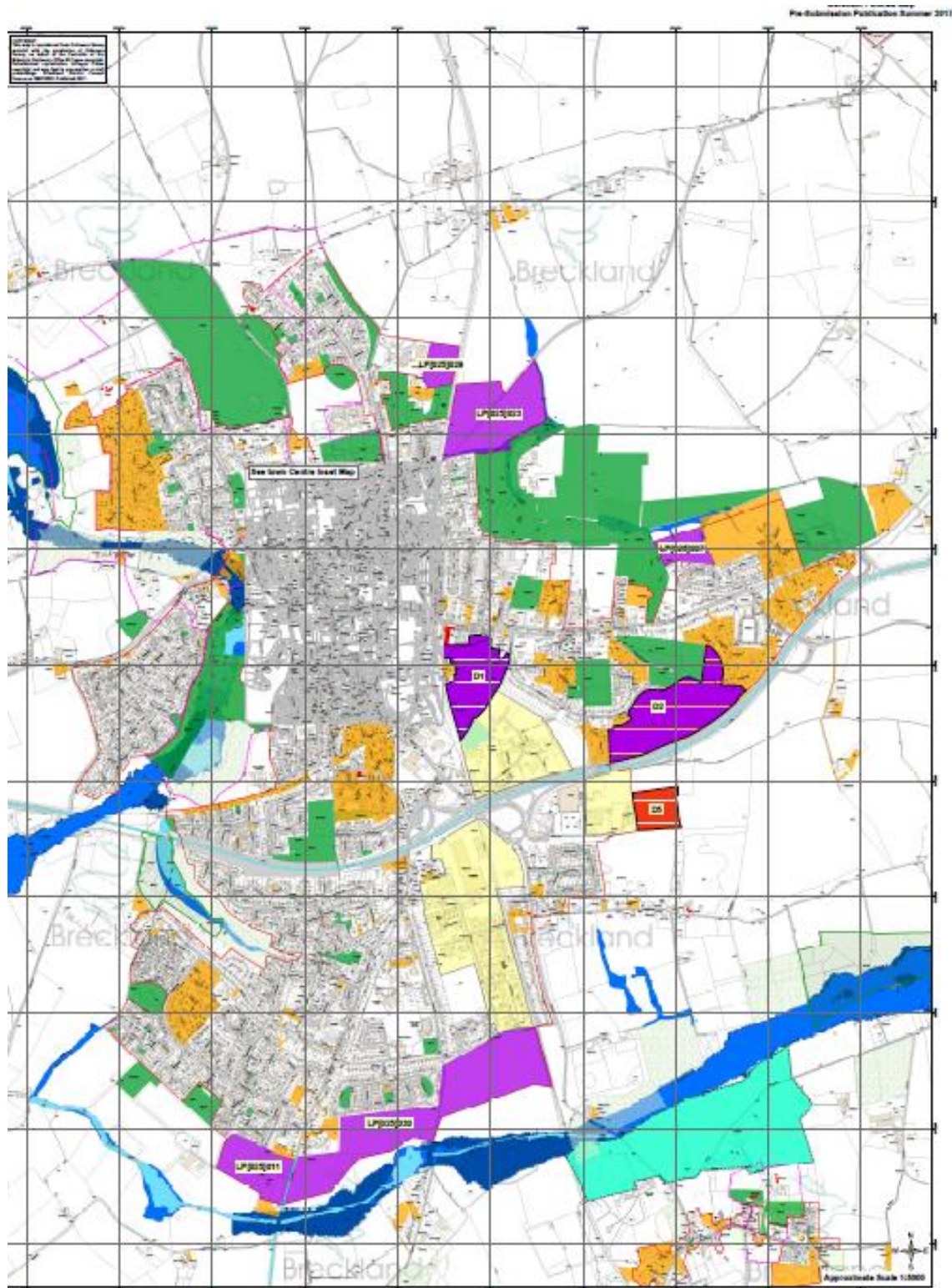


**The plan, allocates 750 dwellings and at least 3 hectares of employment land. These 750 dwellings are spread across 5 allocations marked in purple on Figure 621.**

Work complete, underway or planned

In addition to the Plans and Strategies, other work has been undertaken or is ongoing.

- Dereham Neighbourhood Plan
- Local Plan Transport Study (WYG) – Breckland District Council
- Dereham Transport Study (Create Consulting) – Dereham Town Council
- Dereham Town Centre Study (GVA) – Dereham Town Council
- Walking and Cycling Study (Smart Cycle Training) - Dereham Town Council
- Breckland Market Town Initiative - Breckland District Council
- Dereham Car Parks – Breckland District Council



**Figure 6.1: Breckland Local Plan allocations (Taken from Local Plan: Regulation 19 Pre-Submission publication)**

It should be noted all Local Plan maps/diagrams are subject to potential change as Breckland District Council finalise the Minor Modifications consultation.

## Chapter 3: Dereham Background

Dereham is situated in the heart of Norfolk within the Planning Authority of Breckland Council. Dereham is 15 miles west of Norwich and 25 miles to the east of King's Lynn. The town lies on the A47 trunk road providing good road links to Norwich, the Norfolk Coast, the Broads and the Midlands. In 1978 the town was bypassed to the south with an extension further eastward in 1992. The A47 is a major route connecting Norfolk, and its coast to the Midlands and has been subject to numerous improvements with an overall ambition for complete dualling. Road links in other directions are relatively poor, the A1075 provides a route to Watton and Thetford to south but links to the north are poor.

The town layout can be divided approximately into three areas. The historic town centre where most retail and leisure land uses are located, the industrial/commercial areas adjacent to the A47 (north and south) and the remaining residential areas which include various schools.

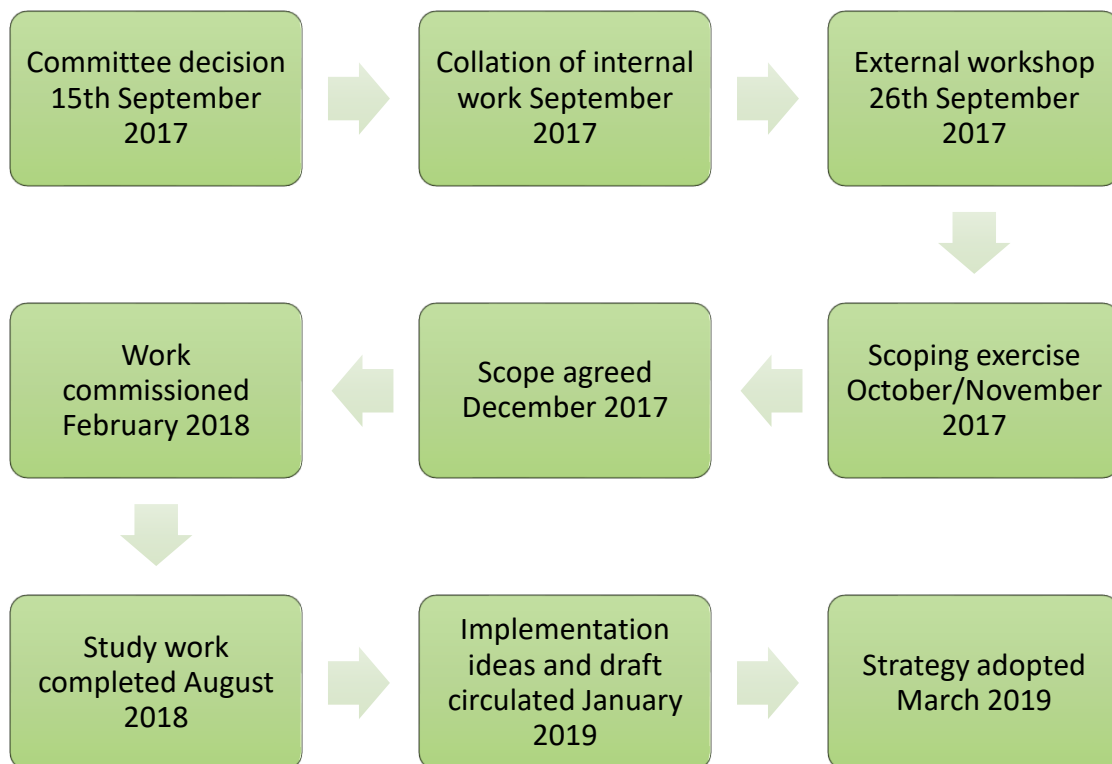
The 2011 census showed Dereham has a population of over 19,000 people with the majority (47.7%) falling into the 25-64 age category. The town has not seen increases in the over 65 age category as seen elsewhere in the county but still has over 23% of residents in this age group. The 2011 census showed that over 5,000 people do have access to at least one car or van, but this does mean over 21% of the population will be using other modes of transport for travel.

The 2011 census showed that the percentage of travel to work journeys carried out by foot in Dereham was in line with the average for Norfolk but only 3.7% of journeys to work were completed by bicycle which is below the county average of 4.8%. This data shows that there is currently a high reliance on private cars for travel to work. Distance of travel to work Census data shows that the average distance of travel to work is 11 miles and although this is beyond the usual cycling distance threshold, 40% of the town's population work within 3 miles of their home. There is potential for nearly all commuters to use sustainable travel modes for this distance and a large portion of these trips could be by cycle.

The primary traffic routes through the town are the A1075 Shipdham Road, B1135 Yaxham Road, London Road, High Street, Wellington Road, Matsell Way, Station Road, B1146 Dereham Road and B1146 Quebec Road. The A47 acts as a major barrier between the north and south of Dereham with limited crossing points. This layout funnels all north-south movements to a few locations such as the Tavern Lane/Yaxham Road signalised junction which also accommodates the majority of the A47 traffic entering and exiting the town.

## Chapter 4: Programme of activity

The purpose of the network improvement strategies is to identify issues built on a strong evidence base and help to bring forward solutions that support the delivery of future housing and jobs growth. To develop the understanding of the transport issues in Dereham, 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.



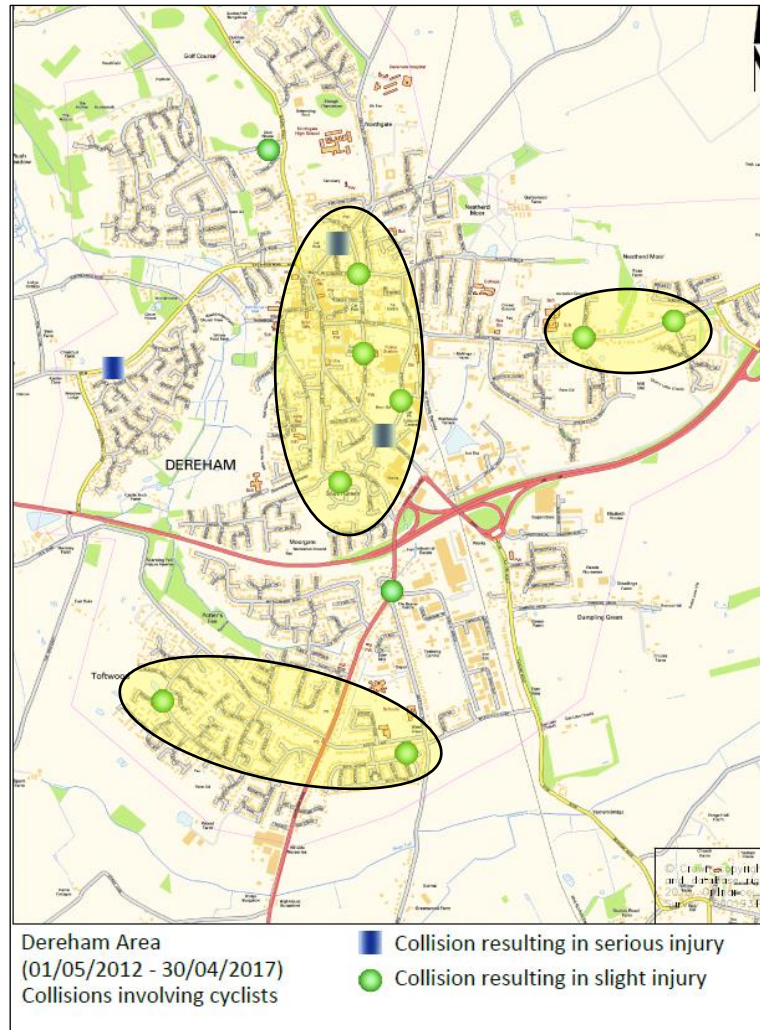
Chapter 4 summarises the scope items, what work is already underway and suggestions for potential further study work. These potential further study work options are based on the feedback received from the external workshop and the view from officers as to what would best benefit the town.

## Chapter 5: Transport in Dereham today

As set out in Chapter 3, Norfolk County Council's Environment, Development and Transport Committee agreed to the market town studies in 2017. Members agreed the reports would: understand current transport problems and issues; understand the future situation (principally growth proposals and their impacts on transport); and develop an implementation plan. 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 Dereham. 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 what work is already underway and the potential further work options.

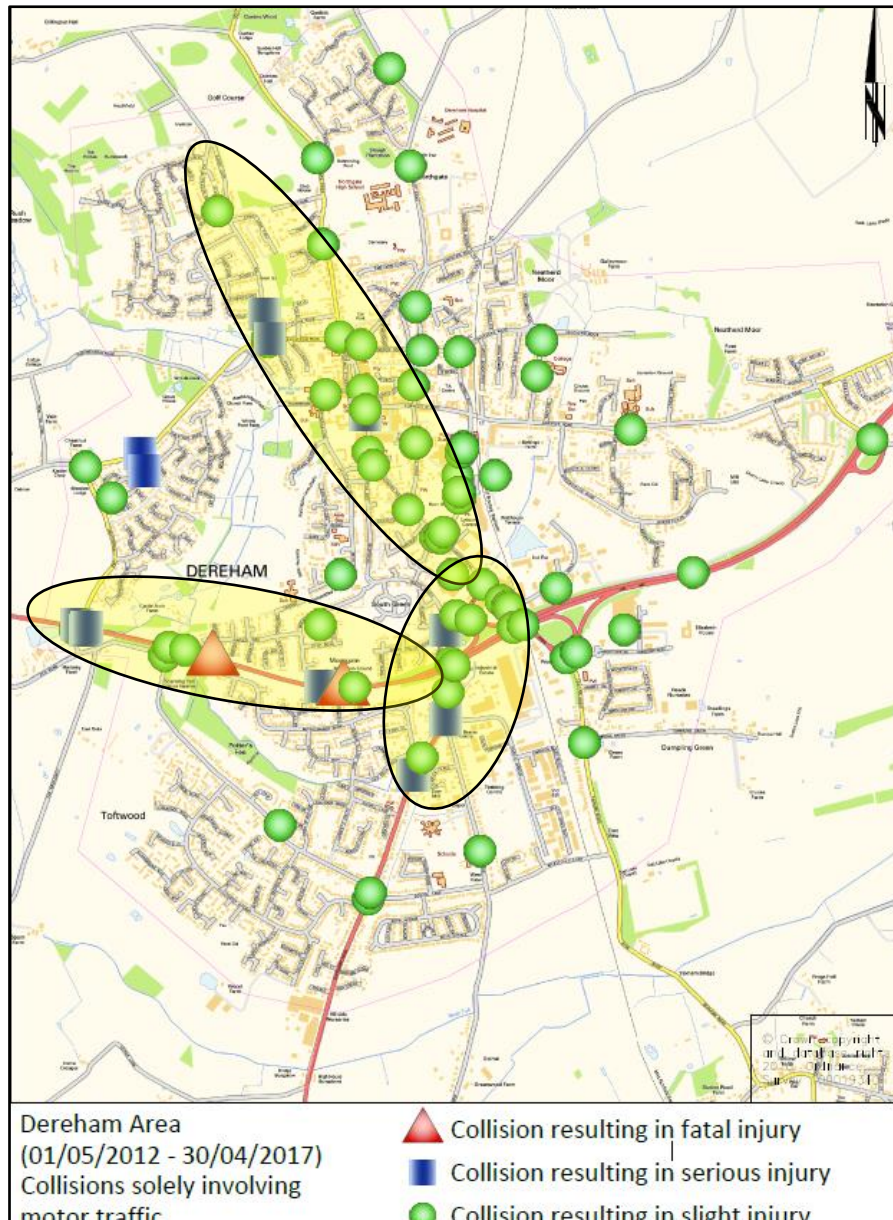
### Casualties

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 the maps below identify both slight and serious injuries.



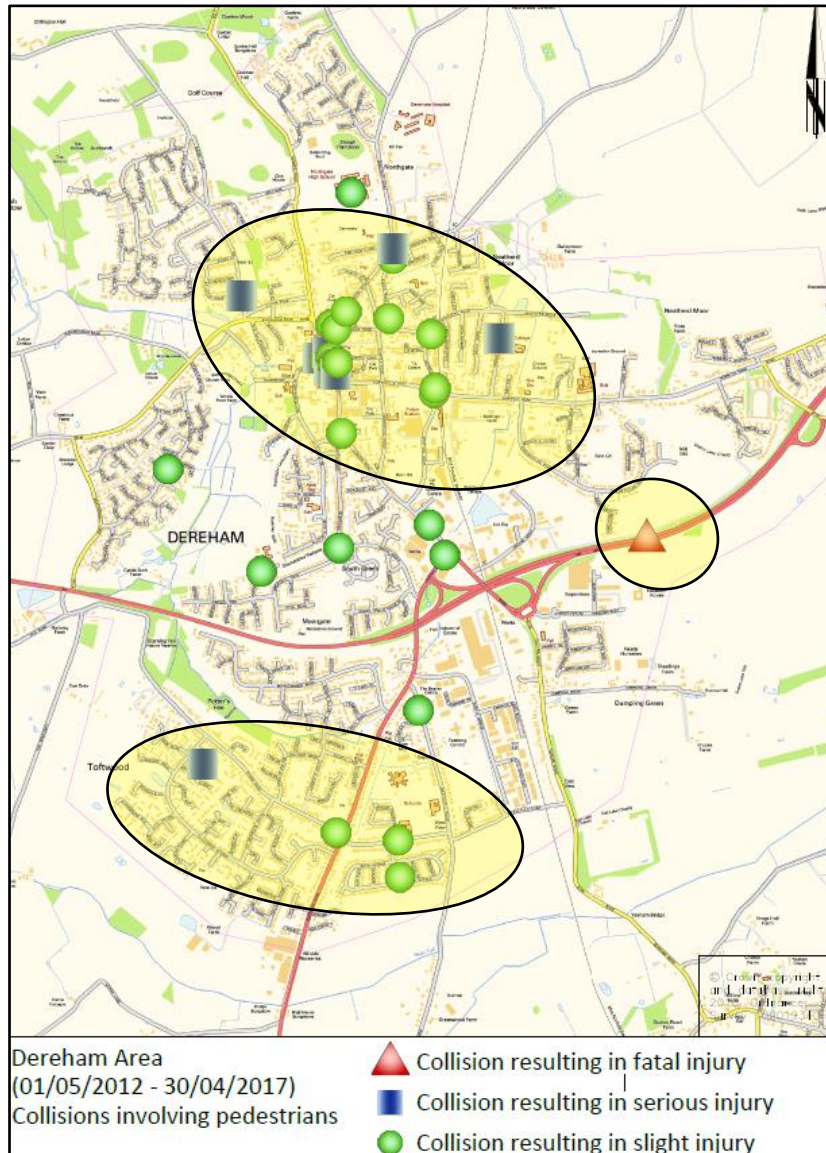
**Figure 5.1: Collisions involving cyclists**

Cyclist map – there has been 10 collisions over a five year period resulting in slight injury and three a serious injury. There is no particular hotspot of collisions but the key areas are the town centre, residential areas to the south and along Norwich Road. 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 chapter. In addition to the collision data the strategy is aware that perception of danger can also deter people from cycling.



**Figure 5.2: Collisions involving motor vehicles**

Motor traffic map – as expected there are more collisions involving motor vehicles but again, as explained above, this amount is typical of a market town for this period of time. Whilst there is no single hotspot of collisions they are concentrated along the key routes in and out of the town and in the town centre. The two fatal injuries occurred along the A47 to the west of the town and there is a concentration of serious injuries at the Drayton Hall Lane junction. This junction has already been identified as needing improvement to reduce collisions. However, the junction is on the A47 trunk road, which is maintained and managed by Highways England rather than Norfolk County Council who manage and maintain the rest of the network. The county council will continue to liaise with Highways England to check what strategy it has for Draytonhall Lane junction.



**Figure 5.3: Collisions involving pedestrians**

Pedestrian map – there have been more collisions involving pedestrians than cyclists but their locations follow a similar pattern, reflecting the areas where there is more pedestrian and cyclist activity. There is one collision resulting in a fatal injury on the A47 to the east of the town, a concentration in residential areas to the south and the largest proportion is at the top of the high street where you would expect the greatest number of people to be. The majority of collisions resulted in slight injury but there is an area of serious injuries at the top of the high street where there is a roundabout with three roads of traffic coming into the town.



In summary, the casualty data for Dereham is typical for a market town but has identified areas where collisions have occurred more frequently. These areas are the residential area to the south, Yaxham road leading up to the High Street and fatal collisions along the A47. The analysis has not identified any areas within the town where interventions should be considered to address casualty problems. The county council will continue to monitor the issue.

**Action: check what strategy Highways England has for Draytonhall Lane junction and explore whether further growth could help resolve issues.**

## Parking

Breckland District Council recently published car park data survey (2016), this work and the feedback from the external workshop indicated that there are enough car park spaces in Dereham at three main car parks – Commercial Road, Cowper Road and Theatre Street (Known locally as Cherry Tree). Theatre Street, caters for short-stay parking; the others can be used for long stay. All are free. The key issues with these car parks is ensuring they are signed and routed most effectively as traffic naturally funnels to a few pinch points, most notably the Yaxham Road/Tavern Lane junction. Additionally there are concerns about car park management with people using car parks designed for town centre use to park all day and travel by bus for example into Norwich for work, meaning car parks can become stagnant instead of having a flow of people. Car park management is a responsibility of the District Council who is trialling car park enforcement in two towns in the district, which if successful could be rolled out to the other towns.

Further work has been undertaken as part of this study to assess existing parking signage in Dereham to understand how visitors to the town are routed to the public car parks within the town, and whether this routeing is the most effective. The study recommendations are set out in Chapter 7.

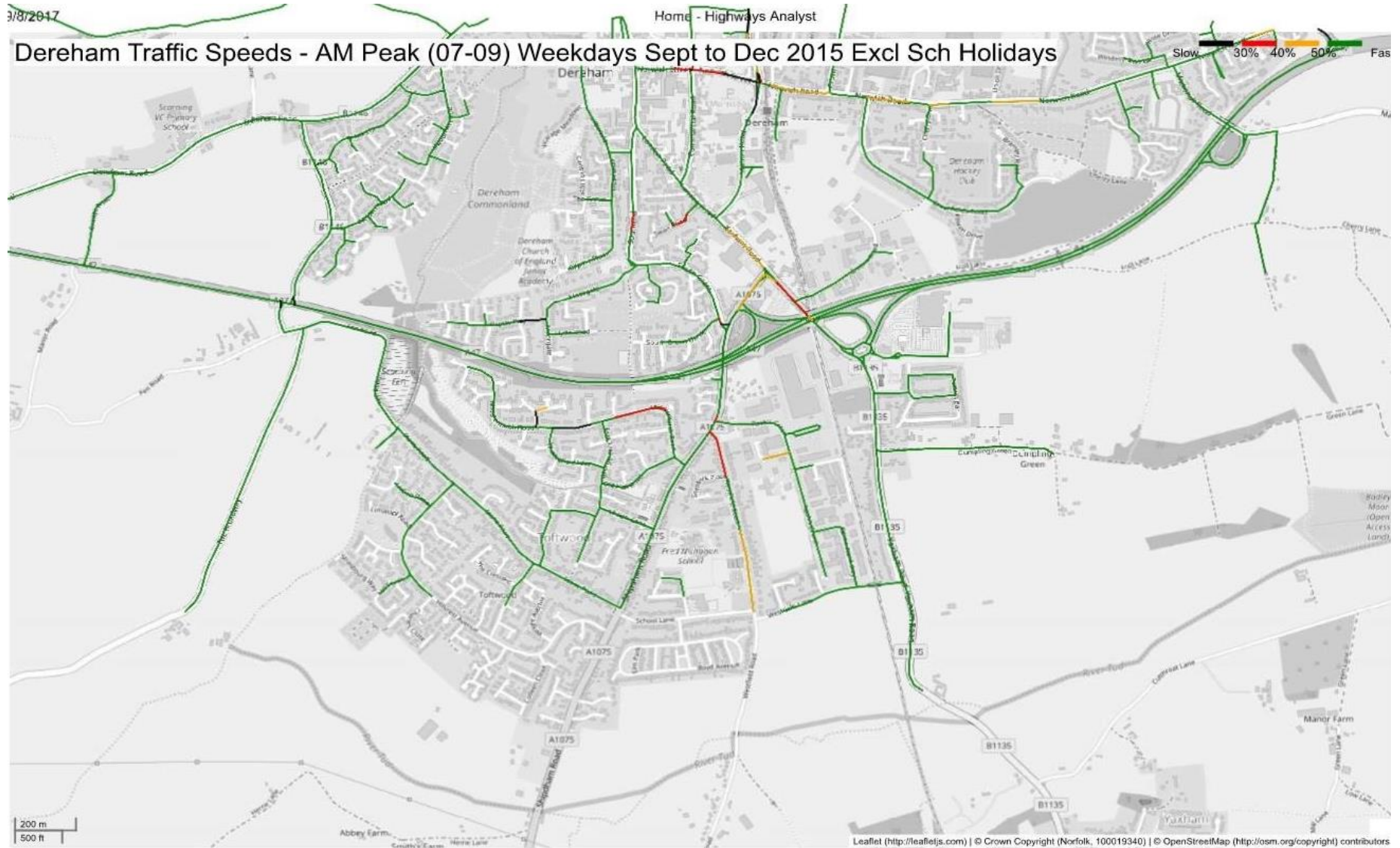
**Action: Commission signage audit, findings of this work are set out in Chapter 7.**

## Congestion

There is already existing study work providing evidence on congestion in Dereham. The Breckland District Council Dereham transport study identified key junction locations which will be impacted by growth, Tavern Lane was one of these with specific improvements suggested. A subsequent study was commissioned by the Town Council, which provided further details. In addition Norfolk County Council is looking to deliver a traffic signal improvement scheme at the junction of Yaxham Road/Tavern Lane and improve the traffic signal control strategy at the junction of Matsell Way/Norwich Road. Minor changes to operational parameters will be made at the junctions of Yaxham Road/Greens Road and Neatherd Road/Matsell Way.

The AM and PM peak traffic speed maps below show key areas of congestion in the morning along Norwich Road, Tavern Lane and Westfield Road. In the PM peak congestion eases on Norwich Road and Westfield Road but worsens from Tavern Lane up to the High Street and the neighbouring roads. This data indicates that routes are congested joining the A47 which may incorporate journeys to school or work. The PM data is more focussed on movements on the key retail/employment areas of Tavern Lane and the High Street.

**Action: understand if there are issues beyond the key junction locations already identified. Looking at potential improvements and solutions for the remaining key junction locations. It is suggested this work would begin once the impact of existing improvements can be measured.**



**Figure 5.4: Dereham Traffic Speeds AM peak**

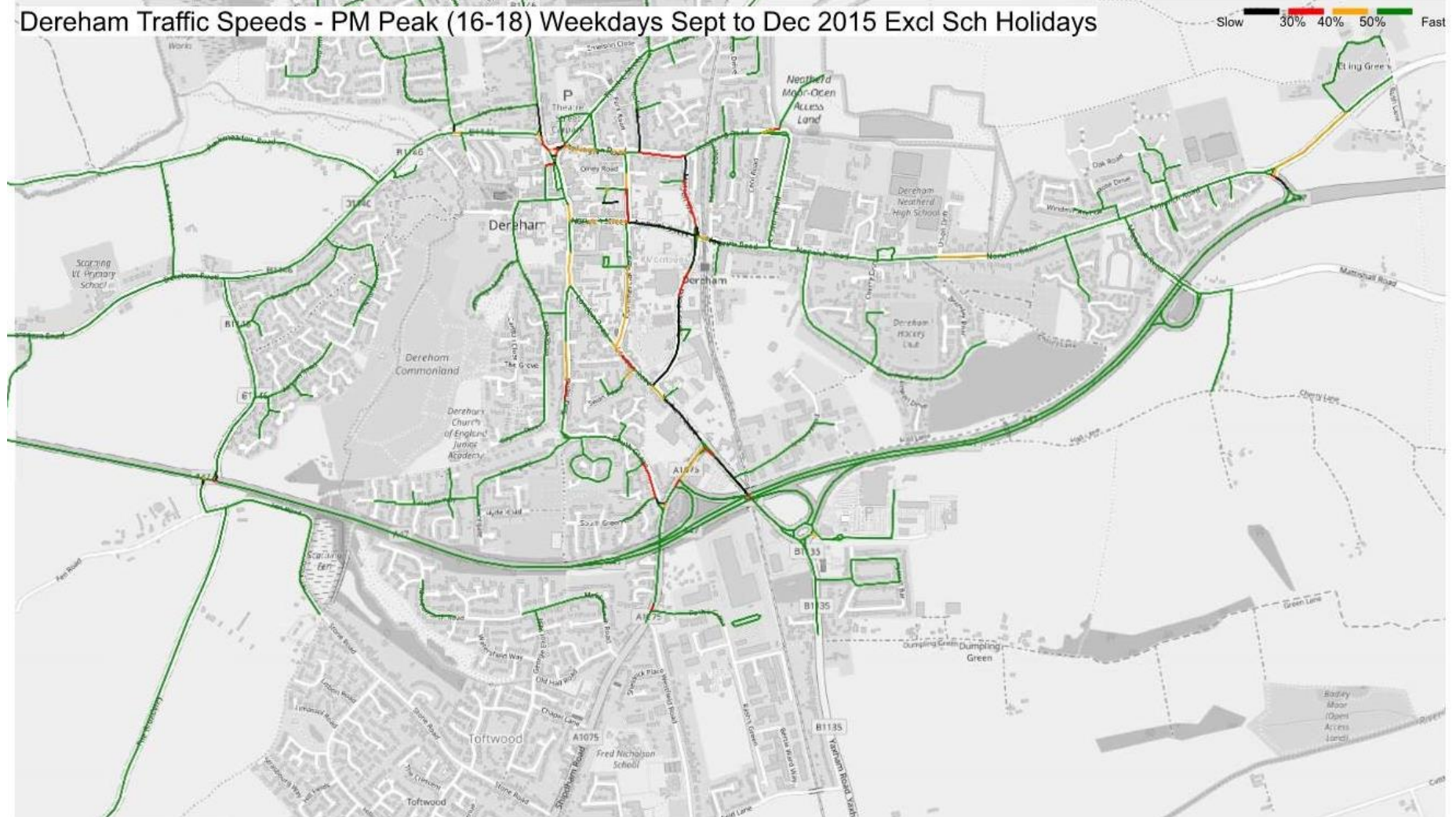


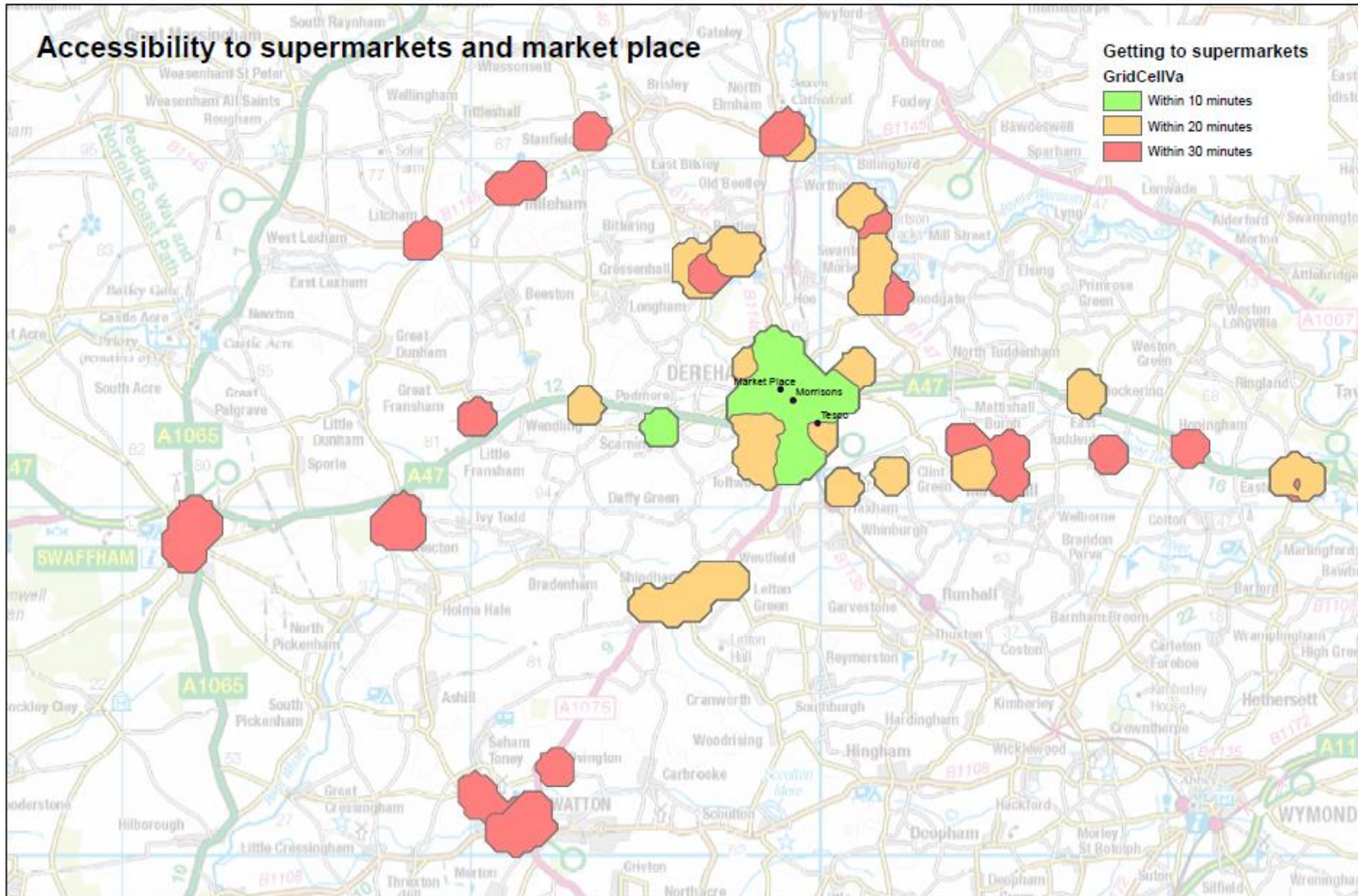
Figure 5.5: Dereham Traffic Speeds PM peak

## Access

The County Council used software analysing what areas can access the town via bus within 30 minutes. The Town Council's Town Centre Study also looked at transport and access to the town. The maps below 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 A1075 linking Dereham to the market towns of Watton and Swaffham and is reasonably accessible for a range of surrounding villages. In addition to these maps further data shows journeys can be made to Norwich in half an hour using the A47.

Comparing the maps there is greater accessibility for shopping points and higher education facilities which are located close to the town centre than the employment sites, which are to the south of the town. This may not be an issue with a large number of people driving to work but people may be discouraged to use buses to travel to work when the journey cannot be completed within 30 minutes.

Given the rural nature of Norfolk the levels of accessibility were not seen as an issue for this strategy but further work options included analysing the town centre study for public transport and public realm improvements including the Market Place.



**Figure 5.6: Public Transport Accessibility to supermarkets and the market place**

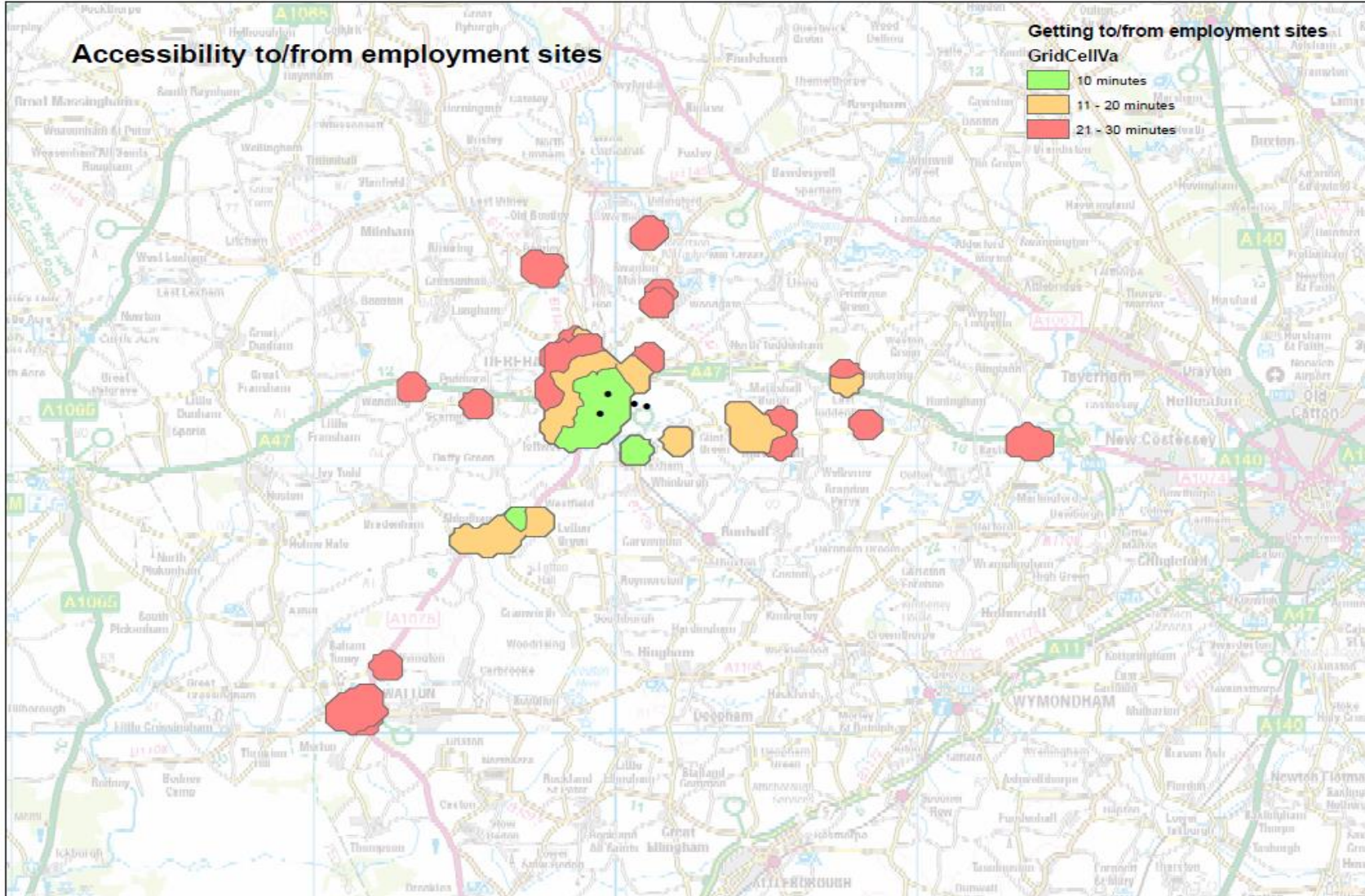


Figure 5.7: Public Transport Accessibility to employment sites

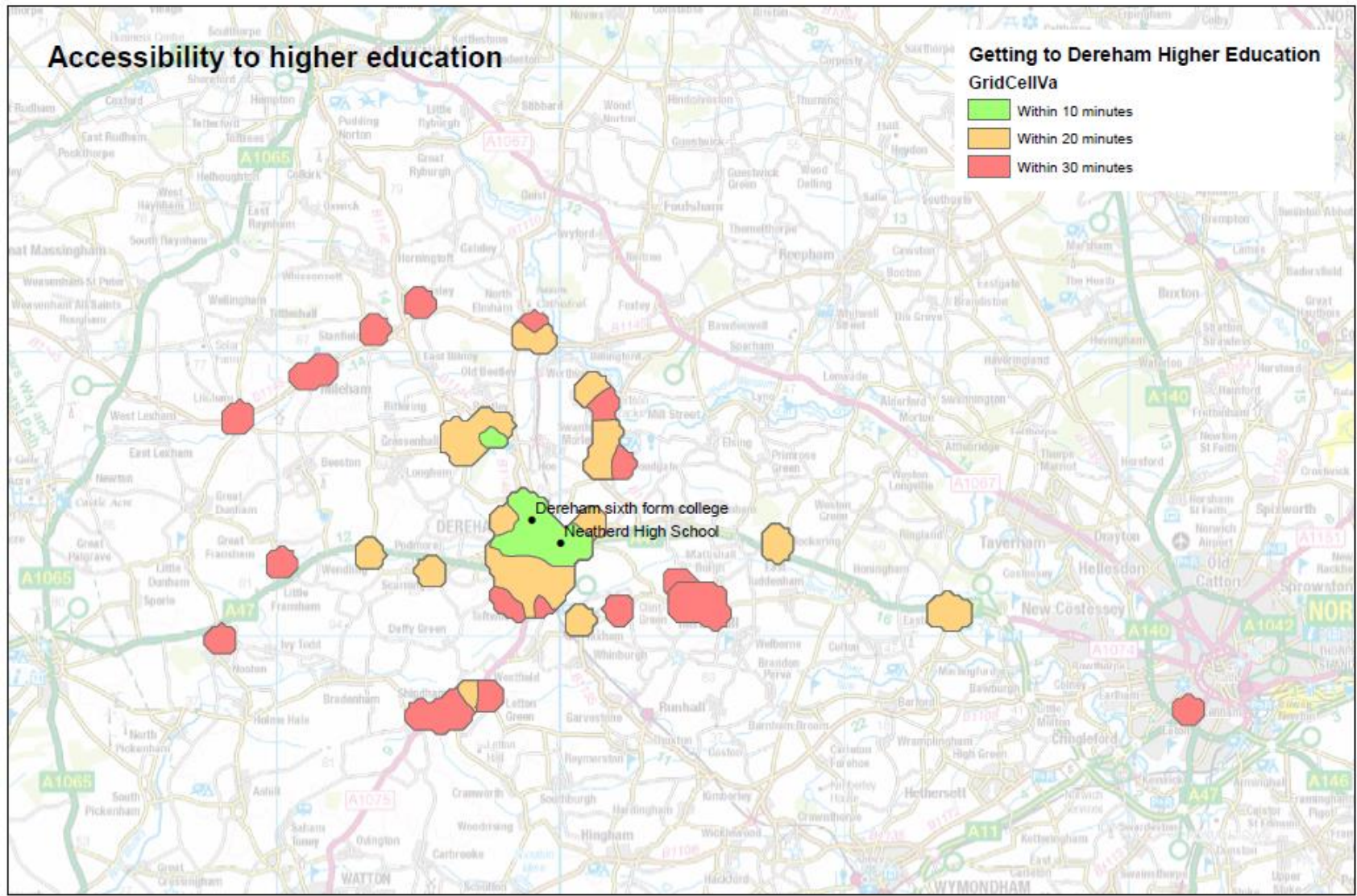


Figure 5.8: Public Transport Accessibility to higher education



## Cycling and Walking

Sustrans National Cycle Route 13 passes through Dereham and the majority of this route within Dereham is on road with sections under the A47 and through the Dereham Common land on segregated paths. National Cycle Route 13 is signposted throughout the majority of the town with the exception of a few missed junctions. Other cycle provision in Dereham is minimal at present but does include a segregated cycle path from Draytonhall Lane to Kemp Drive in the west of the town, a shared footway/cycleway on Norwich Road connecting the recent residential development off Hornbeam Drive and a shared footway/cycleway along a portion of Station Road.

Pedestrian permeability is high in Dereham. Nearly all roads have adjacent footways and a number of pedestrian only links are located through the town in both residential areas and in the town centre. This permeability is reflected in the higher percentage of people that walk in Dereham compared to those that cycle where provision is fairly limited.

There is a relatively low baseline level of cycling in Dereham where driving accounts for the majority of journeys, particularly for commuting. A large portion of commuting trips are under 3 miles (40%) and thus could be made by bicycle.

Dereham is compact and no point of the town falls outside of a 25 minute cycle from any other point. The town centre is constrained by narrow historic streets and there are many known pinch points in the existing road network which result in traffic conditions unfavourable for cycling. However, once in the town centre, slow traffic speeds make cycling more attractive. The town has a high level of pedestrian permeability with many pedestrian only links, but most of these are too narrow to also accommodate cyclists.

Given the potential opportunities to increase cycling which could also reduce congestion in the town further work is proposed looking at cycle corridors.

**Action: Commission a cycle corridor study, which identifies key locations people want to travel to within the town. Generate three routes and identify what improvements need to be made to make these routes suitable for cyclists. Findings from this study can be found in Chapter 7.**

## Intelligent Transport Systems

The Norfolk and Suffolk Integrated Transport Strategy 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 pinchpoints 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)

Whilst some of these transport improvements may seem way into the future we are already seeing cars with built in navigation and abilities to park so we need to be aware of the technological advancements ahead and ensuring any improvements suggested in this strategy will not only have an impact on the ability to move around Dereham today but are also helping future proof the town for the changes set out above. Intelligent transport systems are already being used in Dereham with traffic lights adjusted to move traffic more efficiently around the town. These changes will

be monitored and we can explore if traffic lights work together effectively to move traffic through the town.

### 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 funding recently allocated in Dereham for feasibility work on repurposing market place and redirecting traffic, particularly buses and Wayfinder Signage. In addition to this Dereham Town Council have their own Town Centre Study (December 2017) which has undertaken the following tasks:

- A review of the retailing and town centre evidence base documents informing the new Breckland Local Plan;
- A review of the health check indicators associated with Dereham town centre;
- The Consultants met with representatives of Dereham Town Council in order to discuss their views and attitudes towards the strengths and weaknesses of Dereham town centre and the opportunities that future growth in the town may bring for the future role of the town centre;
- Undertaken an assessment of the key attributes of the town centre, including potential threats and influences to its future performance and opportunities for the Neighbourhood Plan.

This work sufficiently covers place making and as this strategy is focused on transport it is not suggested that it does further work on place making but ensures that any transport improvements such as changes to signage or cycling improvements will promote the town centre and improve access.

## Chapter 6: The future

The Breckland Local Plan 2011-2036, which has recently been to examination identifies the strategic urban extensions at Thetford and Attleborough and locations within or adjacent to the market towns of Dereham, Swaffham and Watton as areas for development. Dereham now has additional target of 750 additional houses by 2036 with sites identified in Local Plan:

Site	Number of dwellings
Land to the west of Etling View	60
Land to the west of Shipdham Road	130
Land off Swanton Road	210
Land to the rear of Dereham Hospital	60
Land to the east of Shipdham Road	290
<b>Total</b>	<b>750</b>

Breckland Council commissioned a study to consider the transport impacts of the potential land use developments in Dereham and the surrounding area, including Yaxham and Mattishall. In relation to the current position, the study identifies that the existing highways network is already over capacity in the peak hours at the Tavern Lane/Yaxham Road signalised junction. In addition to current position, the WSP Future Scenario Testing has quantified the impacts of development options on various junctions.

The majority of commercial property market activity is focussed in Dereham and Thetford and the Local Plan allocates at least 3 additional hectares of employment land at Dereham Business Park, which is in close proximity to the A47 junction. The impact of the additional employment land on the existing town centre network are therefore likely to be minimised.

The scope of the network improvement strategy includes a consideration of the longer term transport issues for Dereham. As set out in in section 2, the consideration of future growth to 2036 has been looked at through the Breckland Local Plan. This section looks beyond that to what may be considered in the next Local Plan review.

A consideration of the strategic transport issues associated with longer term growth will provide transport evidence that can be used to inform the Local Plan review should it look at growth options for Dereham.

**Action: Commission a study testing the transport implications of future growth scenarios that will provide evidence that can inform a future Local Plan review in its consideration not the scale and distribution of growth for Dereham.**

## Chapter 7: Our findings

This summary of transport issues in Dereham, as set out in Chapter 5, was circulated to both the internal and external consultees for comment, asking given the resource and budget constraints what would be their top priorities for any transport improvements in Dereham. The feedback from this consultation generated a list of five key objectives the Dereham Network Improvement Strategy would need to address:

- Understanding the strategic transport implications of **growth scenarios** for the town **to inform the next round of plan making.**
- **Review** current operation of **B1135 roundabout** junction adjacent to Tesco, and **generate options for change/improvement** to address current (and future) congestion
- **Identify key cycle corridors** in Dereham and identify **potential improvements** for the route considered to offer the greatest opportunity to increase cycle use
- **Review signage** so people are **directed most efficiently** around the town and suggest **changes/improvements**
- **Lobby** Highways England for **improvements to Draytonhall Lane**, which is a casualty “hotspot”. Highways England have recently carried out improvements to the junction and time needs to be allowed

Of these five objectives study work has been externally commissioned for three:

- Future Scenario Testing – Technical Note
- Cycle Corridors Report
- Town Centre Parking and Access Report

Norfolk County Council will continue to lobby Highways England for improvements to the Draytonhall Lane roundabout and changes/improvements along Yaxham Road are currently being implemented and it has been recommended that the DNIS wait to see the results of these changes before commissioning any further work. The Local Plan evidence identified all three fatal motor vehicle incidents (2010-2015) were on the A47 and the collision data collected for this strategy (Figure 5.2) showed a continuing pattern of fatal incidents on the A47 with a cluster of serious injury incidents at the Draytonhall Lane junction showing the need to continue to lobby for improvements at this junction.

Works at Tavern Lane/Yaxham Road have recently been completed which the highway authority considers should bring some benefit in terms of increased capacity at the junction and therefore help to reduce congestion at this location. These works were identified not only as part of the Dereham Transport Study (White Young Green (WYG) Report) but also as part of the permitted residential development at Swanton

Road. The works included upgrading the signal system and moving stop lines/changing islands/signal phasing which should help the junction perform more efficiently.

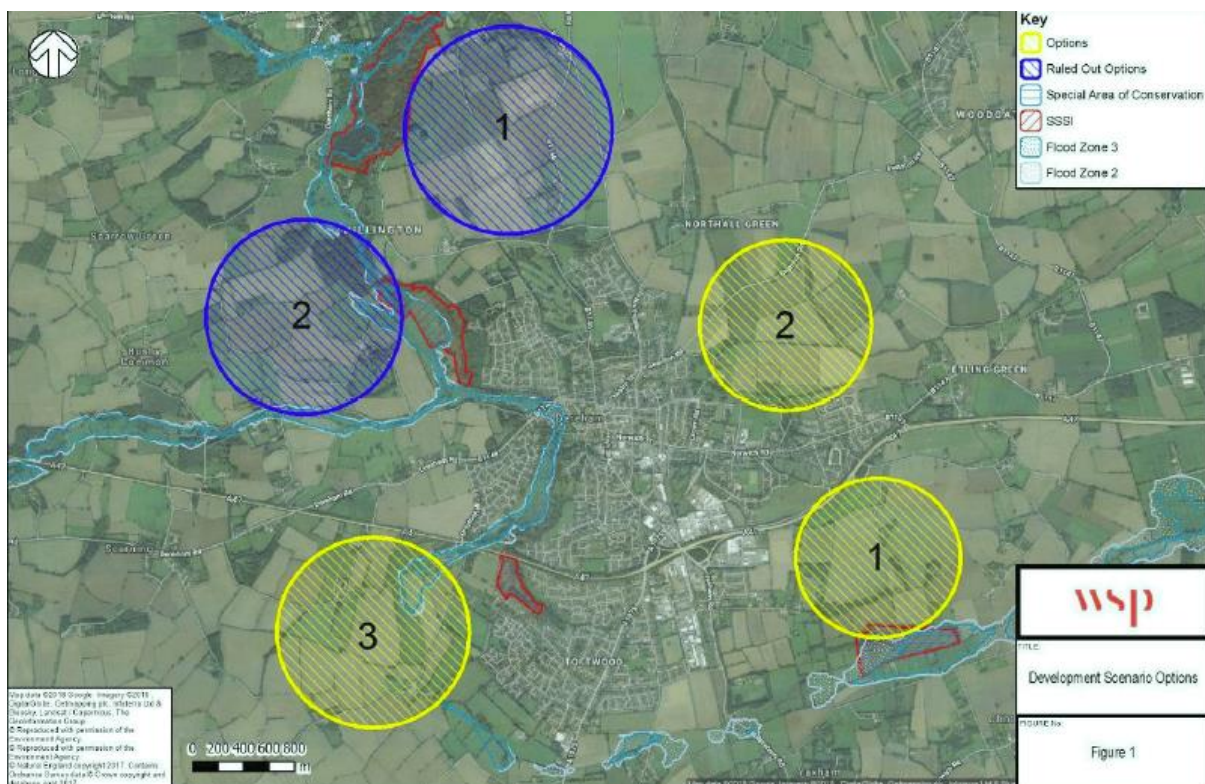
The WYG report also identified a roundabout scheme at this junction. However this scheme would involve significant third party land and so is not considered deliverable by the highway authority. The highway authority considers that the recent changes to Tavern Lane/Yaxham Road junction, other schemes identified in the NCC Network Improvement Strategy for Dereham and schemes that are being promoted/brought forward by other developments should bring significant benefits to the local highway network as well as improvements to walking and cycling.

### Future Scenario Testing

The strategic transport implications of six future growth scenarios have been tested. The scenarios are hypothetical to understand the transport issues associated with growth beyond the current emerging Local plan and can be used to inform any future Local Plan review.

Each scenario, has been developed based on a high-level desk top exercise exploring the deliverability of growth development in four quadrants around Dereham and within the existing town.

**Figure 7.1 Location of scenario locations**



Initially, three scenarios were considered, corresponding to 2,000 dwellings in one of the North East, South East and South West Quadrants of Dereham as shown in Figure 7.1 and subsequently, two further scenarios were added, with some development in the North West Quadrant of Dereham (broadly within the area covered by Ruled out Option 2 in Figure 7.1 above). These scenarios are above the amount of growth proposed in the Local Plan.

The following scenario options were tested as part of this study, each of these include a starting position of the growth levels allocated within the Breckland Local Plan:

- 2037 with no additional dwellings
- 2037 with 750 additional dwellings comprising 150 dwellings in each quadrant and 150 in existing town
- 2037 with 2,000 additional dwellings comprising 400 dwellings in each quadrant and 400 in existing town
- 2037 with 2,000 dwellings in south east quadrant only
- 2037 with 2,000 dwellings in north east quadrant only
- 2037 with 2,000 dwellings in south west quadrant only

The scenarios set out here are simply to understand the strategic transport issues of longer term growth. This study will provide evidence that will help inform the plan making process set out through Local Plans. Preparation of a Local Plan including setting strategic priorities and the scale and location of growth will remain the role of Breckland Council as the local planning authority for the area.

Norfolk County Council (NCC) provided WSP with recent traffic survey data to enable analysis of existing traffic levels. These comprised Manual Classified Turning Counts (MCCs) and Automatic Number Plate Recognition (ANPR) surveys, some of which were supplied through studies undertaken by Dereham Town Council. MCCs were carried out at 17 junctions within the town, undertaken on Tuesday 6th June 2017 during the typical AM and PM peak periods (07:00-10:00 and 16:00-19:00 respectively) and on Saturday 17th June 2017 during the typical peak period (11:00-14:00). The junctions surveyed included junctions in the town centre, near the A47/B1075 interchange and at junctions with key radial routes to/from Dereham. The 17 junctions surveyed are illustrated on Figure 7.2.

**Figure 7.2 Manual Classified Turning Count Locations**



The study summarises the existing traffic conditions and identified the following junctions as having the greatest capacity constraints:

- Junction 5 London Road/Station Road
- Junction 6 Yaxham Road/Tavern Lane
- Junction 7 Yaxham Road/Greens Road/Roys access
- Junction 9 Yaxham Road/A47 slip/Kingston Road
- Junction 10 Yaxham Road/A47 slip

For the purposes of the assessment within this report, a future year of 2037 was selected to test the implications of each growth scenario. Hence, the future year assessment will assume the complete build out and occupancy of new dwellings by 2037. The growth set out in the emerging Local Plan forms part of the baseline with the separate additional growth scenarios then tested. It should be noted however that the capacity constraints do not have regard to the improvements which are proposed to junctions to mitigate growth through the Breckland Local Plan.



## Background Traffic Growth

The TEMPro database predicts future traffic growth in areas of the United Kingdom, based upon local planning data and National Trip End Model (NTEM) origin-destination forecasts. TEMPro 7.0 growth rates are based on changes in the numbers of households and jobs in an area between current and future assessment years (they are also based on changes in car ownership). These changes are based on information provided in local authority annual monitoring reports on progress in delivering planned housing in Local Plans, and on government data on employment projections.

Using this database it is estimated that traffic levels during the AM and PM peak periods will increase by 30-31% by 2037 and on Saturday the level is expected to increase by 34%. Such an increase will apply additional stress to the already congested highway network in Dereham, in particular to the previously identified key junctions near the central A47 interchange. This traffic growth will exacerbate delays and queuing along Yaxham Road, increasing the likelihood of exit blocking at other nearby junctions. It is likely that background traffic growth between 2017 and 2037 will be such that intervention would be needed if the additional demand is to be accommodated.

The study has analysed how additional vehicle trips have been generated for any additional dwellings and analysis indicated that many Dereham residents work in locations that would require starting their journey to work before the AM peak hour for traffic conditions in Dereham itself, which this Technical Note has found to be 8.15AM – 9.15AM. Therefore, to approximate traffic conditions in Dereham itself in the AM and PM peak hours, work locations at Census MSOA level for Dereham residents that are beyond an hour's drive from Dereham have been excluded from the analysis of vehicular trips. To account for planned dualling of the A47 west of Norwich, and other proposals aimed at improving access to Norwich from the west, it was assumed that the entirety of west Norwich will be accessible by car within an hour from Dereham, in future. Figure 7.3 shows the broad percentage distribution for external routes north, east, south and west of Dereham.

Different assumptions have been used between this strategy and the Local Plan evidence, but such changes do not undermine the validity of that evidence as the data collected and models used are a snapshot in time and subject to change.

**Figure 7.3 Resultant trip assignment**

<b>Broad Direction</b>	<b>External Route</b>	<b>Percentage*</b>
North	Cemetery Road	1.7%
	Swanton Road	6.0%
	Quebec Road	8.4%
East	Neatherd Road	0.8%
	B1147	2.2%
	A47 East	29.6%
	Mattishall Road	0.5%
South	Yaxham Road	13.4%
	Westerfield Road	5.6%
	A1075 Shipdham Road	8.3%
	Fen Road	0.1%
West	Dereham Road	0.4%
	A47 West	7.7%
Dereham	Norwich Street	4.5%
	South Green	0.2%
	Park Road	0.7%
	Cowper Road	9.4%
	Baxter Row	0.6%
	<b>Total</b>	<b>100.0%</b>

### **Junction Impact Assessment**

The aim of this report is to provide a high level assessment of the likely impact of each scenario on the highway network, versus a 'Do Nothing' scenario. Since no specific junction modelling was to be undertaken, the method of quantifying impact was by a percentage impact analysis; hence, by what proportion would traffic flows at junctions in Dereham increase as result of delivering each scenario. Impact assessments were undertaken at the 17 junctions for which base year traffic data was collected. Therefore, in total, a percentage impact could be defined for 17 junctions across five scenarios in both the AM and PM peak periods.

### **750 additional dwellings spread equally across all quadrants and existing town**

A scenario where future development is distributed across all quadrants and within the existing town has a traffic impact on all junctions in this study. The junction where future development would have the greatest percentage impact is at the Westfield Road/Westfield Lane junction (Junction 16). However, since the 2037 forecast traffic flows increases would be relatively small, it is unlikely that this level of uplift would cause any significant impact on to junction operation. Elsewhere, the Matsell Way/Norwich Road/Station Road/Norwich Street (Junction 3) and Commercial Road/London Road/Churchill Court/London Road (Junction 4) junctions would experience an increase in traffic flows of 6%. These junctions currently experience delays, so with traffic growth up to 2037 in addition to development traffic associated with this scenario, they are likely to be operating close to or over capacity. In percentage terms, this scenario's impact upon the junctions along Yaxham Road is relatively small; however due to the sensitivity of these junctions to additional traffic, queuing and delays would be further exacerbated.

### **2,000 additional dwellings spread equally across all quadrants and existing town**

Similarly to the previous scenario, Table 10 demonstrates that a scenario where future development is distributed across all quadrants and within the existing town has a traffic impact on all junctions in this study. Since traffic has been distributed identically in this scenario to the previous one, the relative impact on each junction is the same. However the magnitude is significantly 2.7 (400/150 dwellings) times greater. Therefore, comparable conclusions can be made. However the greater number of development trips increases stress on junctions operating near capacity in the 750 dwelling scenario. It is also likely to introduce capacity concerns at junctions which are able to accommodate trips associated with a 750 dwelling scenario, but not a 2000 dwelling scenario.

The junction where future development would have the greatest percentage impact is at the Westfield Road/Westfield Lane junction (Junction 16). While this scenario is likely to increase traffic flows by 21-25% in the peak periods, the future baseline traffic flows are relatively small. However, safety and capacity should be carefully assessed for any increase in traffic flows on Westfield Lane due to the presence of the narrow weak bridge.

Elsewhere, the Matsell Way/Norwich Road/Station Road/Norwich Street (Junction 3) and Commercial Road/London Road/Churchill Court/London Road (Junction 4) junctions would experience an increase in traffic flows of 15-17%. These junctions would be likely to be operating close to or over capacity, to a greater extent than the in 750 dwelling scenario.

The scenario increases traffic demand on the Yaxham Road junctions in the order of 6-8%. Although relatively small, the sensitivity of these junctions to additional traffic is such that there would be significant additional queuing and delays. As noted previously, it is likely that these junctions will require intervention given the

forecasted background traffic growth, irrespective of whether or not any of the development scenarios within this report are progressed.

### **2,000 additional dwellings in south east quadrant only**

A development of 2,000 dwellings in the south-eastern quadrant of Dereham would have an impact on almost all junctions studied within this report. The scenario would have negligible impact on Tavern Lane/South Green (Junction 12) and A1075 Shipdham Road / Westfield Road (Junction 13).

The junctions where future development would have the greatest percentage impact are Yaxham Road/Walter Road (South) (Junction 11) and Westfield Road / Westfield Lane (Junction 16). 2037 traffic flow increases are forecast to be relatively small at these junctions, therefore it is unlikely that this level of uplift would cause any significant capacity problems. As noted previously, traffic flow increases on Westfield Lane should be carefully assessed on capacity and safety grounds due to the presence of the narrow weak railway bridge.

Since one of the two accesses to the south-eastern quadrant is assumed to be onto Yaxham Road, a high proportion of development trips are routed along the currently congested area around the A47 interchange. In particular, traffic to or from the eastbound A47 or Dereham town centre adds significant volumes of traffic to the congested Yaxham Road, routing through Junctions 6-9. It is important to reiterate that these junctions are likely to require intervention as result of background traffic growth up to 2037, regardless of whether this or any other development scenario is taken forward.

### **2,000 additional dwellings in north east quadrant only**

A development of 2,000 dwellings in the north-eastern quadrant of Dereham would have an impact on all junctions studied within this report. The junction where future development would have the greatest percentage impact is Matsell Way/Norwich Road/Station Road/Norwich Street (Junction 3) with a 22-27% increase in traffic volumes during the weekday peak periods. Forecast background growth is likely to mean that this junction will be operating at or over capacity by 2037, with queuing and lengthy delays. The addition of 418 and 366 vehicle movements in the AM and PM peak hours respectively would exacerbate this situation.

Strategic traffic to and from the north-eastern quadrant is likely to avoid the congested route to the central A47 junction, and instead opt to join the strategic network via the A47 interchange from Mattishall Road and B1147 Norwich Road. Notwithstanding the above, a significant proportion of traffic is routed along Yaxham Road. As noted previously, this area is particularly sensitive to additional traffic, hence queuing and delays will be lengthened in this scenario.

## 2,000 additional dwellings in south west quadrant only

A development of 2,000 dwellings in the south-western quadrant of Dereham would have an impact on some of the junctions studied within this report. This scenario would have negligible impact on Junctions 4-13, as very little traffic would route through the Yaxham Road area or the east of Dereham. This is primarily because the south-western quadrant is assumed to link with Fen Road, which has a direct link onto the A47; therefore strategic traffic is not required to route through Dereham. It is important to note that given the volume of additional traffic that would use the Fen Road junction with the A47, junction capacity and safety assessments would need to be undertaken.

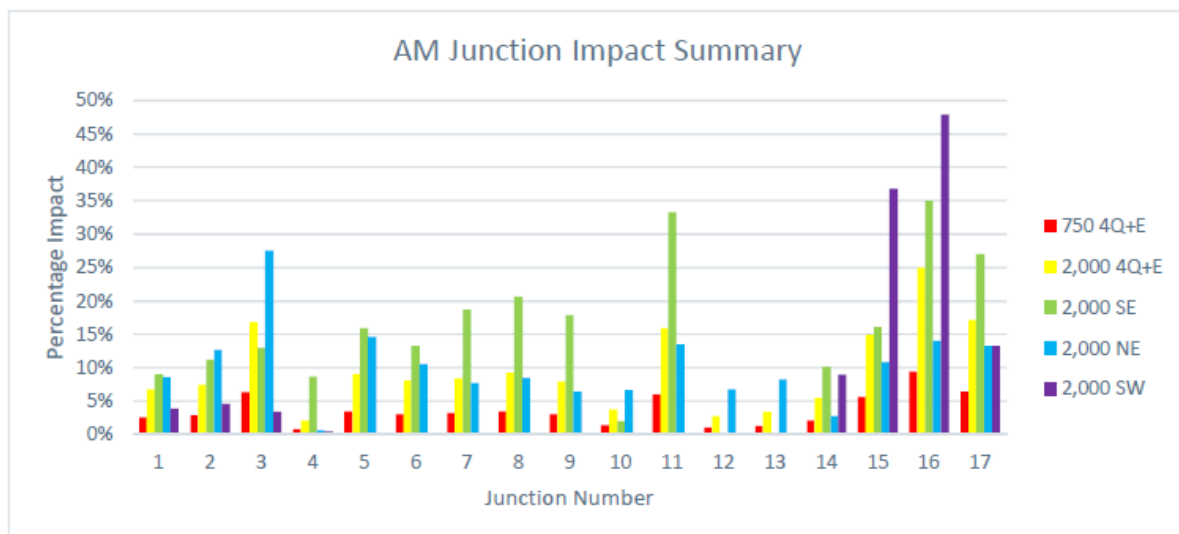
The junction where future development would have the greatest percentage impact is Westfield Road/Westfield Lane (Junction 16). Although it is predicted that development traffic would increase traffic at this junction by 41-48% in the peak periods, the relatively low current and forecast flows mean that it is unlikely that this level of uplift would cause any significant capacity problems. Once again, any increase in traffic flows on Westfield Lane should be carefully assessed for safety and capacity issues due to the presence of the narrow weak railway bridge. Similarly, Westfield Road / School Lane (Junction 15) traffic flows are anticipated to increase by 34-37%, but there are relatively low baseline traffic levels.

As noted above, strategic traffic to and from the south-western quadrant is likely to avoid the congested route to the central A47 junction, and instead opt to join the strategic network via the Fen Road with the A47.

## Scenario Comparisons

The relative impact of development flows on total 2037 future traffic flows in the AM and PM peak hourly periods is illustrated in

**Figure 7.4 AM junction impact summary**



**Figure 7.5 PM junction impact summary**

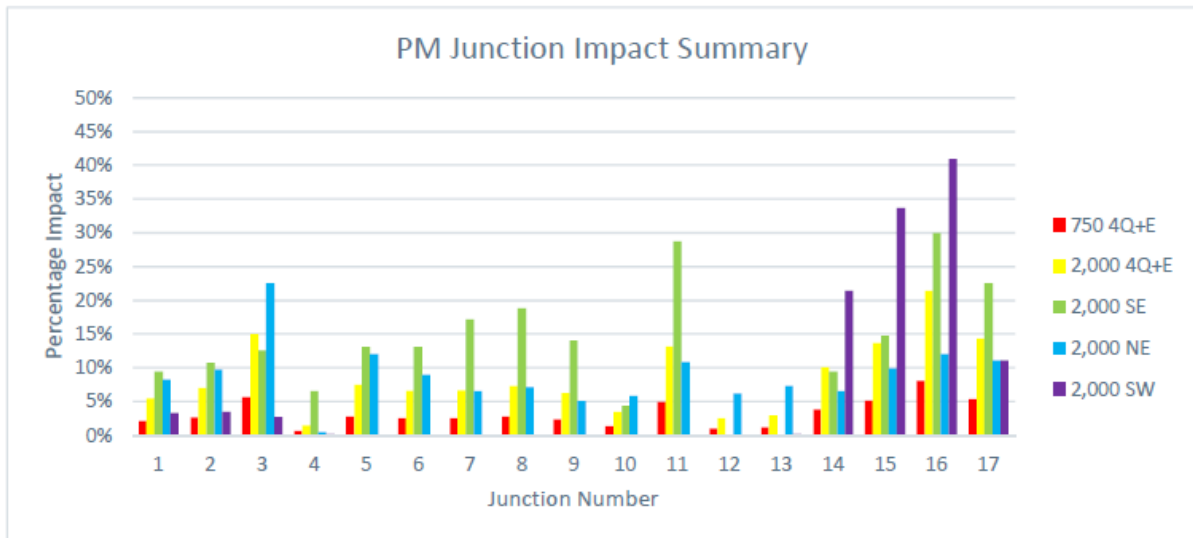


Figure 7.4 and 7.5 demonstrate that the impact on each junction is disparate across the scenarios. The scenario including the provision of 750 dwellings has the lowest impact on almost all junctions. Of the scenarios involving the provision of an additional 2,000 dwellings, the South East scenario tends to have the greatest impact, followed by North East, the distributed scenario and finally the South West with the lowest impact.

It should be noted however that the junctions impacted by the South West development scenario have the greatest percentage impact compared with other scenarios. This is particularly true at junction 15 (Westfield Road/School Lane) and junction 16 (Westfield Road/Westfield Lane). However, as described in the previous section, the impact of this scenario is limited to a small number of junctions studied in this report.

## Impact of Links Roads

Through the testing undertaken, it appears possible that a link road could be beneficial and delivered as part of the scenarios that are of 2,000 dwellings. Indicative alignments of the link roads considered are illustrated on Figure 8. It is important to note that these are purely illustrative to help inform a qualitative overview of their likely impact. The deliverability of these link roads would be dependent upon a technical assessment of the constraints, financial viability and stakeholder engagement between the local authority and statutory stakeholders.

**Figure 7.6 Indicative link road options**



**South east link road (red)** - This link road could be delivered as part of a development in the south-east quadrant of Dereham. The illustrative alignment in Figure 7.6 shows it connecting Yaxham Road with Mattishall Road. An alternative alignment that could be considered is providing a direct link onto the A47, though this would need further exploration with Highways England. This link road would provide a means of bypassing the congested Yaxham Road near the central A47 interchange for traffic to/from south and east Dereham. The level of reassignment to the new link road would depend upon potential journey time savings, largely driven by the character of the link road and number of new junctions.

Although providing a south-east link road would provide an alternative route for a number of journeys, the desire line from the south to or from the east is not a prominent one in Dereham. The link would provide benefits to staff and visitors of the

employment areas adjacent to Yaxham Road, and residents of the Toftwood area. However, the only east to west route, south of the A47, is Westfield Lane which comprises a narrow weak railway bridge. Traffic volumes can be expected to increase on this route following implementation of the link road, which could bring safety and capacity problems.

**North east link road (grey)** - This link road could be delivered as part of a development in the north-east quadrant of Dereham. The illustrative alignment in Figure 7.6 shows it connecting Swanton Road with the B1147. An alignment closer to Dereham such that it connects Swanton Road to Norwich Road could also be considered. A link road in this location provides a route to/from north Dereham and A47 east. The new route would provide an option to avoid Dereham town centre in order to access the A47, or approach Dereham from the east via Norwich Road. This is likely to alleviate congestion in the Yaxham Road and town centre areas. The capacity of junctions in the vicinity of the eastern A47 interchange will need to be assessed to determine the viability of providing this link.

**South west link road (blue)** - This link road could be delivered as part of a development in the south-west quadrant of Dereham. The illustrative alignment in Figure 7.6 shows it connecting Fen Road with the A1075 Shipdham Road. An alignment which connects directly onto the A47 could be considered and discussed with Highways England, which would bring with it the opportunity for improvements at the Fen Road/Draytonhall Lane A47 interchange to be made.

This link road could help ease congestion in the Yaxham Road and town centre areas by providing an alternative route, particularly for through traffic. Of the three link road options, this one is likely to have the least effect on existing traffic distribution throughout the town. Although the implementation of this link may provide a more attractive route, the existing route via Stone Road and Fen Road is along a similar desire line. At a local level there may be diversion from the Stone Road route to the new link road, but the wider scale benefits to junction capacity, particularly at junctions studied within this report, would be minimal.

To fully appreciate the impact of a new link road would require significantly more transport analysis work including SATURN modelling. This section gives a broad brush qualitative overview of the likely impact of link roads, in the context of the junctions studied within this report. Indicative alignments of the link roads considered are illustrated on Figure 7.6.



## Cycle Corridors

Three corridor options were developed with the aim of connecting residential, employment area, schools and the town centre while creating a joined up Dereham cycle network. The corridor options also take account of potential growth in Dereham, either from Local Plan allocations or other potential strategic development sites. These three corridors have been identified on the basis that they are the ones on which people are most likely to cycle. The corridors are (please see maps below):

- Corridor 1 – Upgrade and expansion of the existing National Cycle Route 13;
- Corridor 2 – East-West; and
- Corridor 3 – North-South.

A high level assessment of potential improvements to each corridor has been carried out. Where possible, segregation has been pursued on each route in order to cater for more vulnerable road users, e.g. school children. However, this is not always possible. Where necessary each segregated corridor section can be accompanied by on-street measures to enhance the experience for cyclists who choose to stay on-road, e.g. advance stop lines and traffic calming.

A comparative assessment was carried out of the three corridors where there were ranked against:

- Proportion of existing town served;
- Strategic site options and Local Plan allocations served;
- Level of cycle provision and priority;
- Leisure route potential;
- Flexibility of route;
- School connectivity;
- Employment / retail / leisure connectivity; and
- Impact on vehicular traffic.

The assessment has concluded that cycle corridor 2, East-West, should be taken forward for further assessment. However, this will depend to a degree on which strategic development site is taken forward and on land ownership constraints. The improvements suggested by this work can be found in Chapter 7.

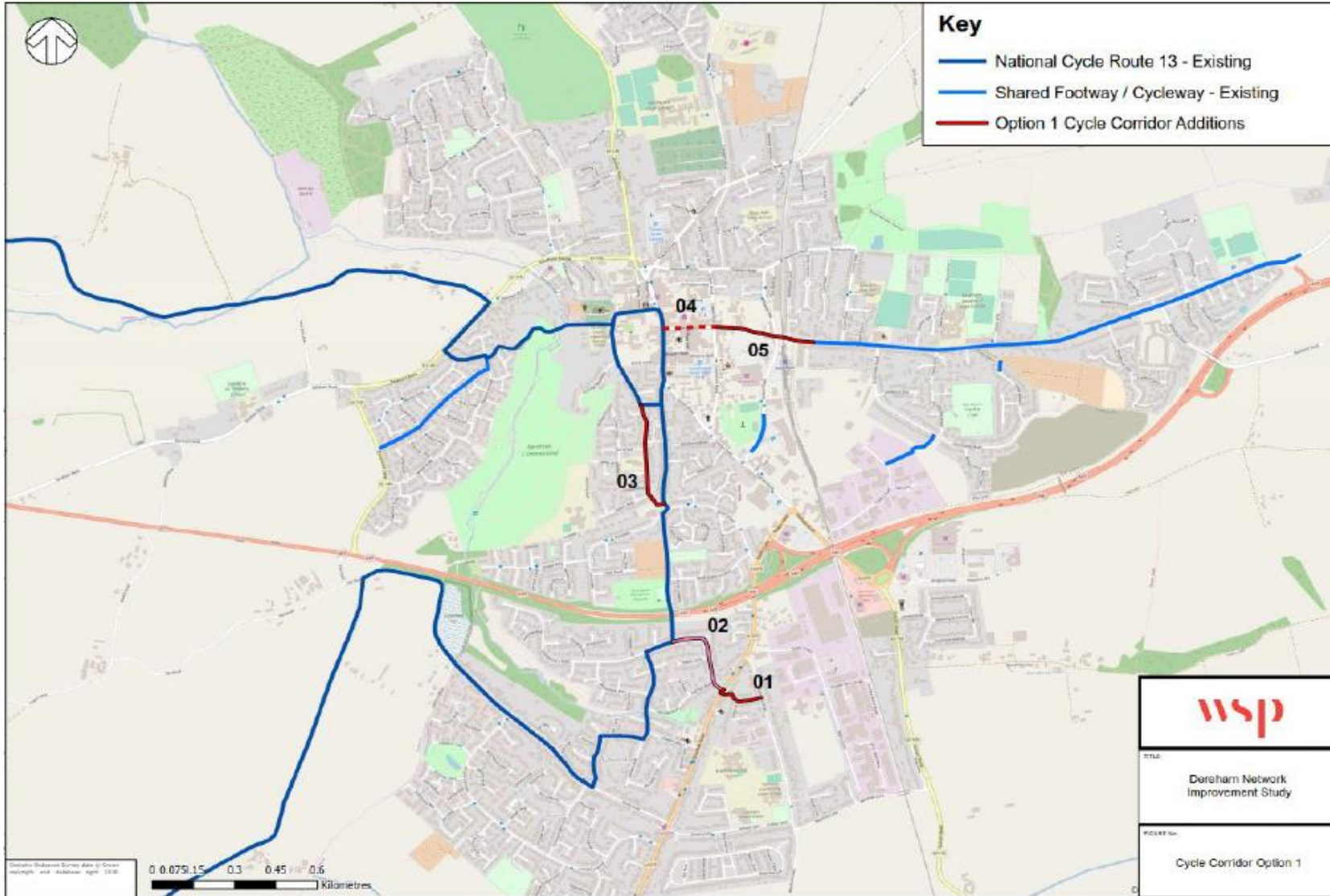


Figure 7.7: Cycle Corridor 1

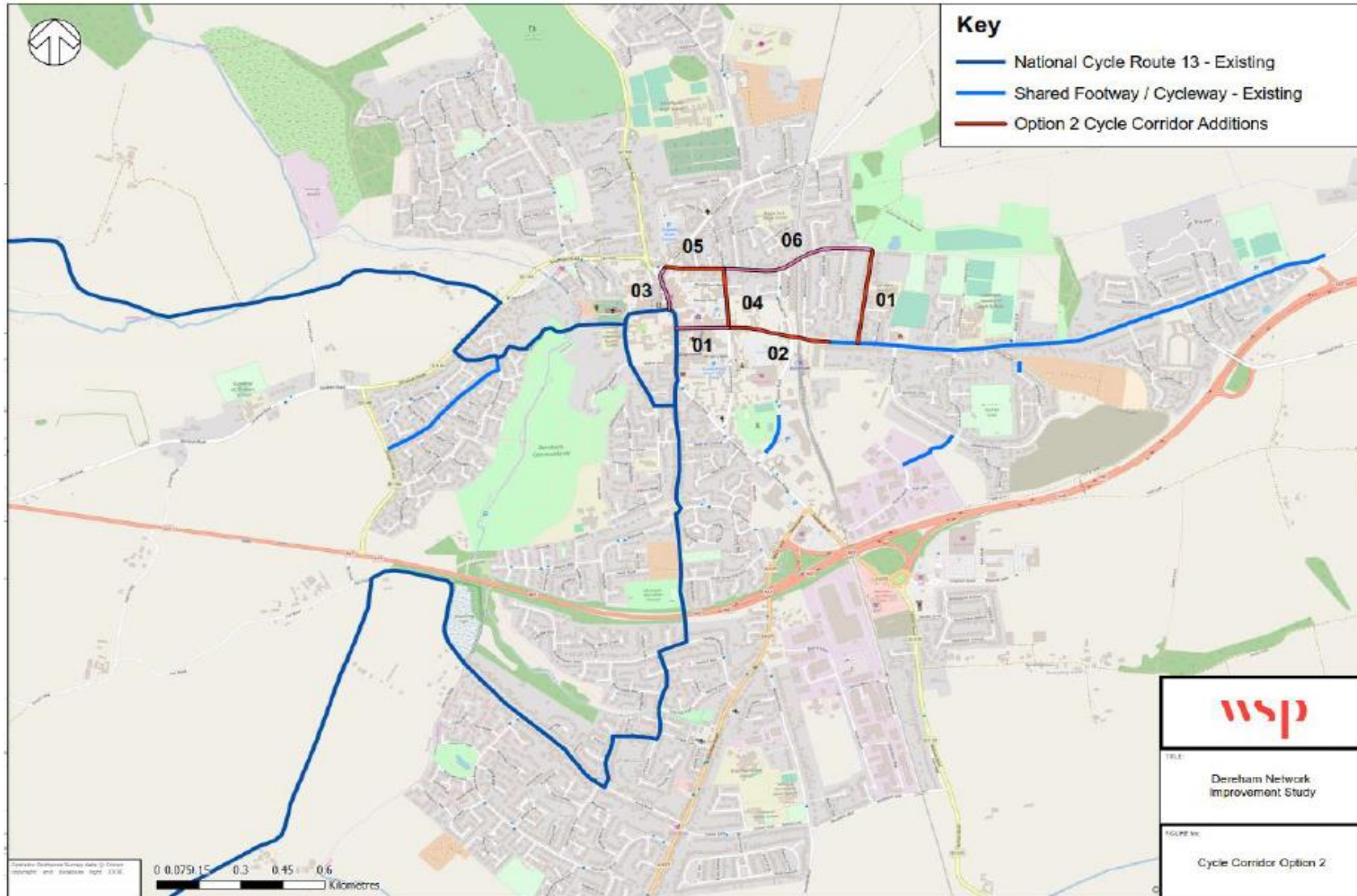


Figure 7.8: Cycle Corridor 2

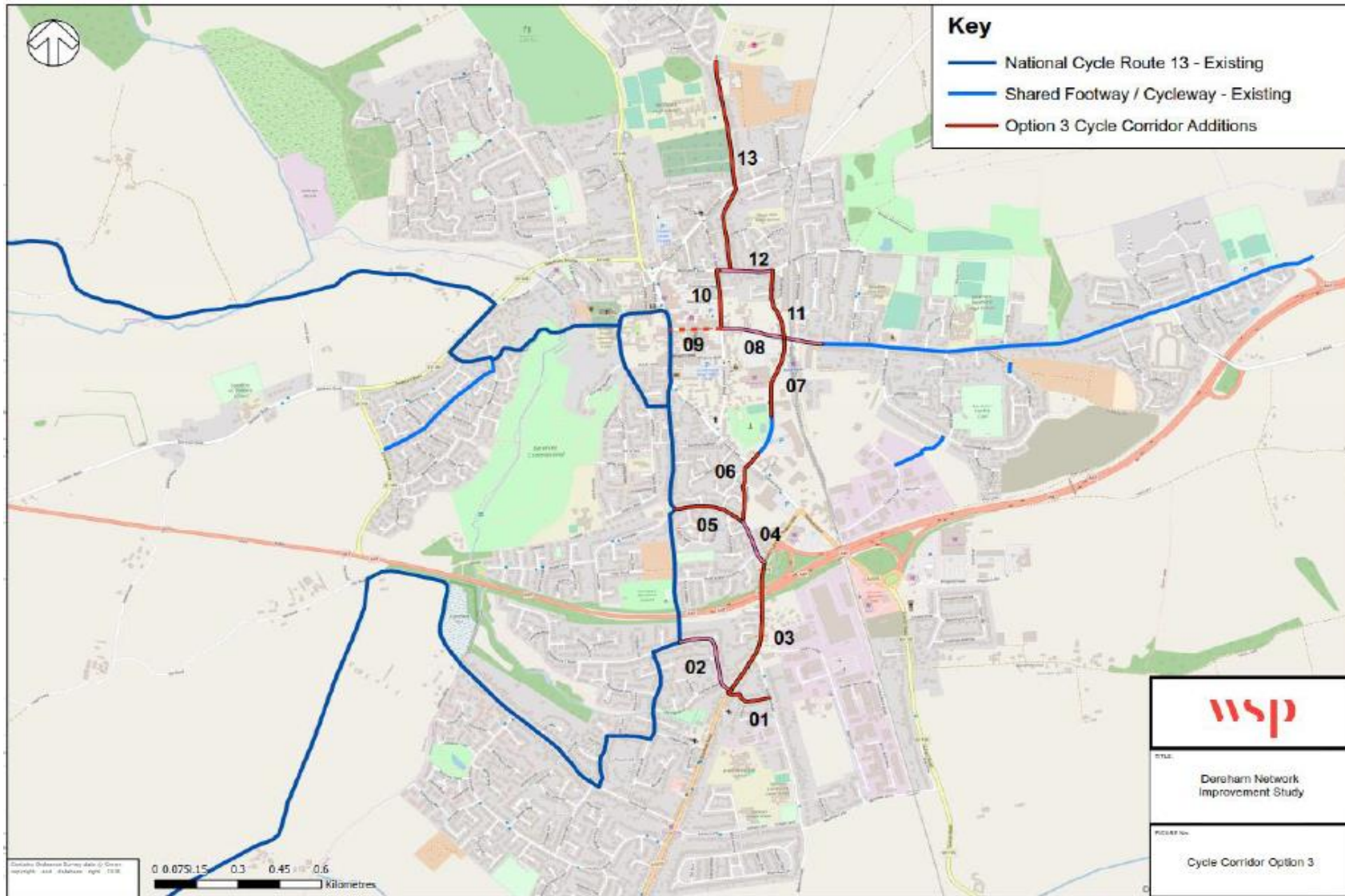


Figure 7.9: Cycle Corridor 3

## Signage Review

There is potential in Dereham to re-distribute how visiting vehicles route to one of the three main town centre car parks, Theatre Street, Cowper Road or Commercial Road. At present all arriving vehicles along the A47 are directed into the town via one junction and along Yaxham Road. This is despite the fact that Dereham is accessible by four A47 junctions. This has put a lot of pressure onto the Tavern Lane junction on Yaxham Road, leading to delay at this point.

### **Existing Access**

The locations of existing signage directs visitors to any of the three main town centre car parks is shown in the exiting parking signs map below. This shows that current signage is centred round the A47, Yaxham Road, and Station Road, Theatre Street / Market Place and the western end of Norwich Road.

Signage is particularly lacking for visitors arriving from the north with vague parking signage around Swaffham Road, Quebec Road, Theatre Street and Wellington Road. The signs which are in place are general in their nature and do not specify any specific car park. The implied access routes to these car parks are shown subsequently in the existing car park access routes map where green indicates the signed routes to the Theatres Street Car Park and purple indicates the signed routes to Commercial Road and Cowper Road Car Parks. There is no practical separation of routing to Commercial Road or Cowper Road Car Parks as they lie in close proximity to each other. Note that this figure does not show all possible routes to each car park, but merely the primary routes indicated by the signage. Note that some routing, particularly in the presence of non-specific signage, is subjective and that shown in the existing car park access routes map is intended to represent logical decision making by a driver with little knowledge of the local road network.

As can be seen by the existing car park access routes, most visitors arriving by car are directed to Cowper Road and Commercial Road Car Parks. All of these routes converge on Yaxham Road at the Tavern Lane Junction where they continue to the car parks via Station Road and Norwich Street. This routing condenses the impact of arriving visitors onto one route and a number of constrained junctions.

Theatre Street Car Park primarily serves traffic from the north and eastern edge of the town. It will also be the first car park of choice for those arriving from the west not travelling along the A47 e.g. from Scarning. Although there are multiple signed access routes converging on Theatre Street Car Park, these routes are smaller in magnitude than those directed towards either Cowper Road or Commercial Road.

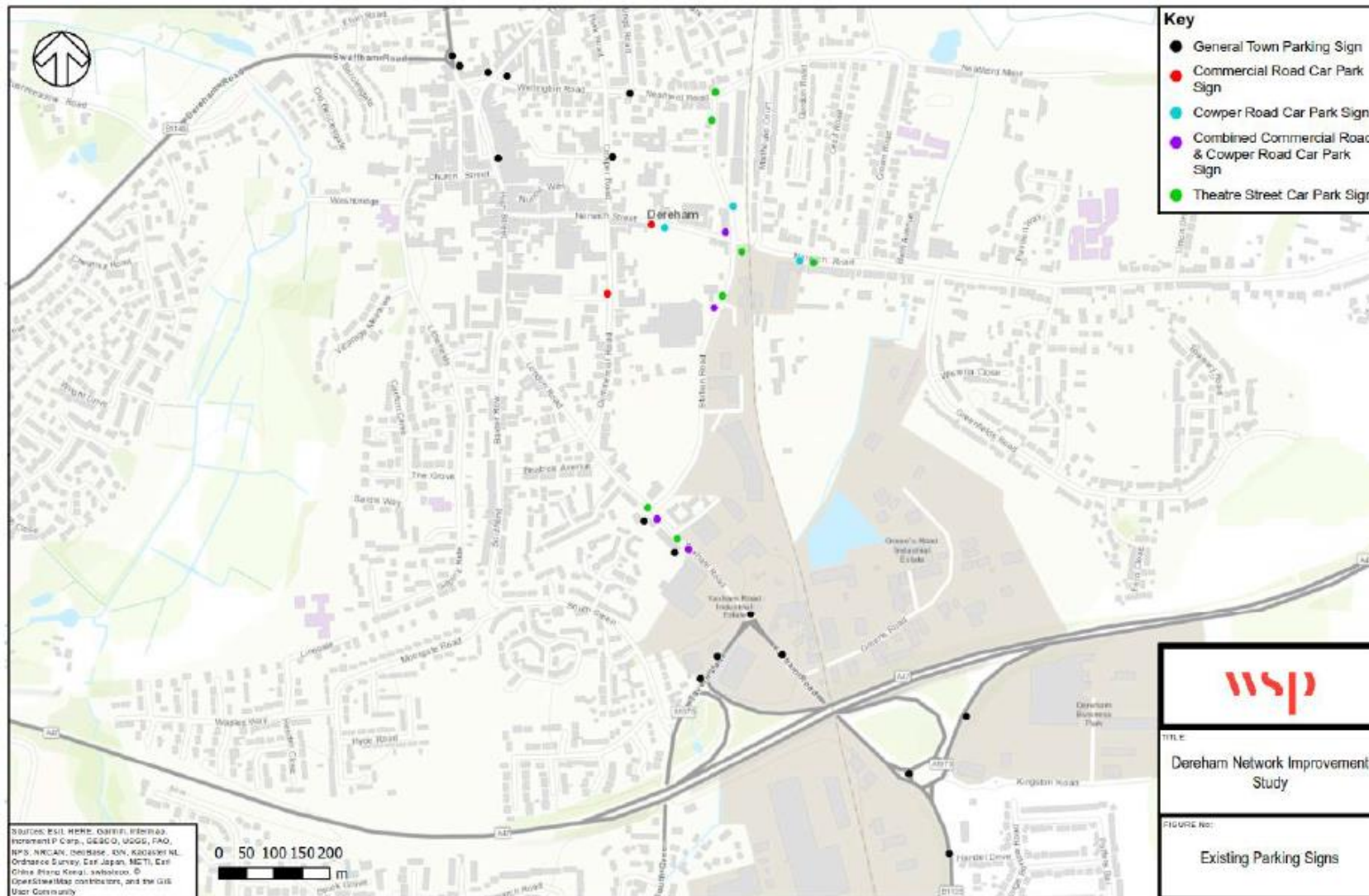


Figure 7.10: Existing Exit Signage

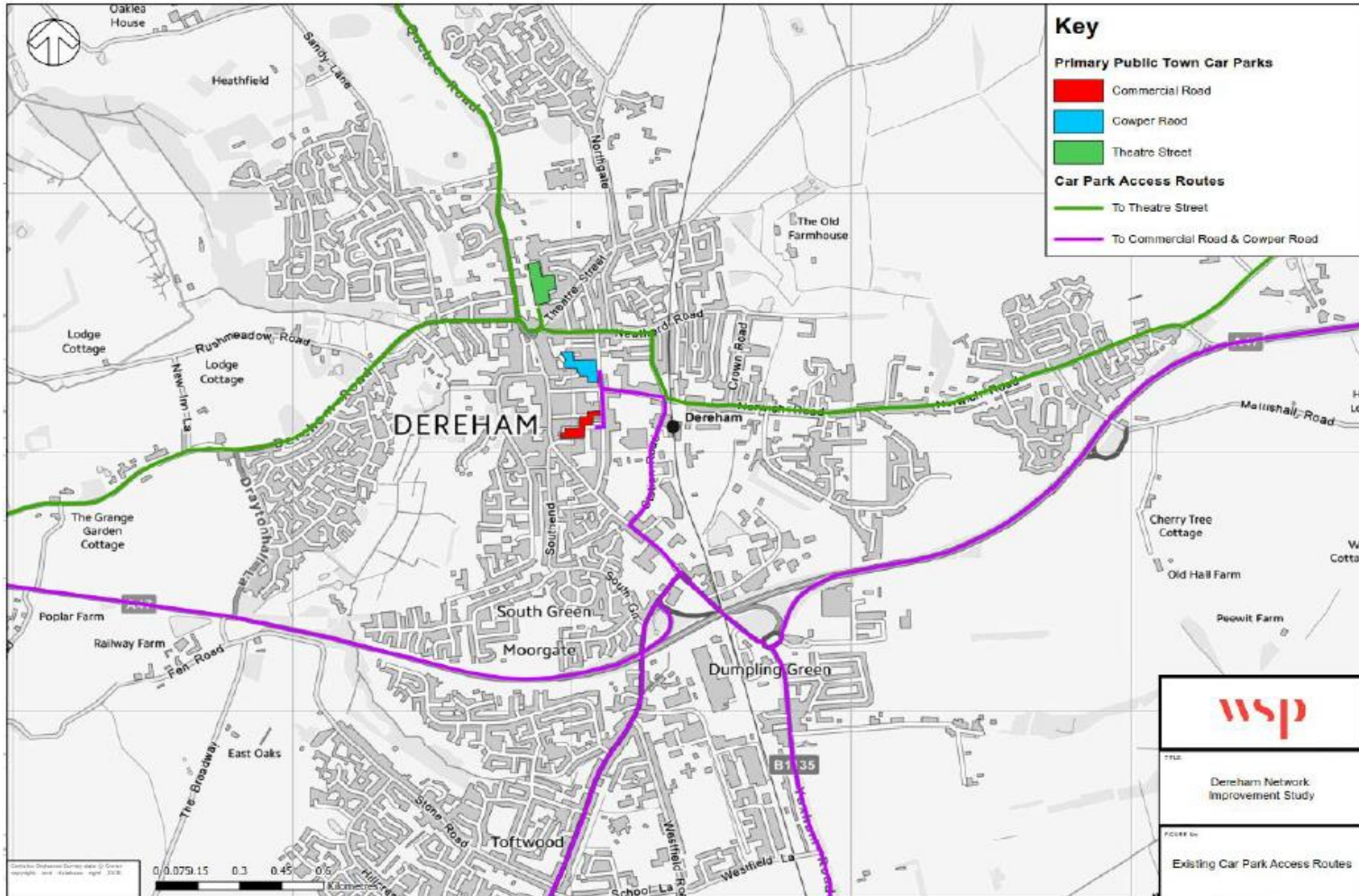
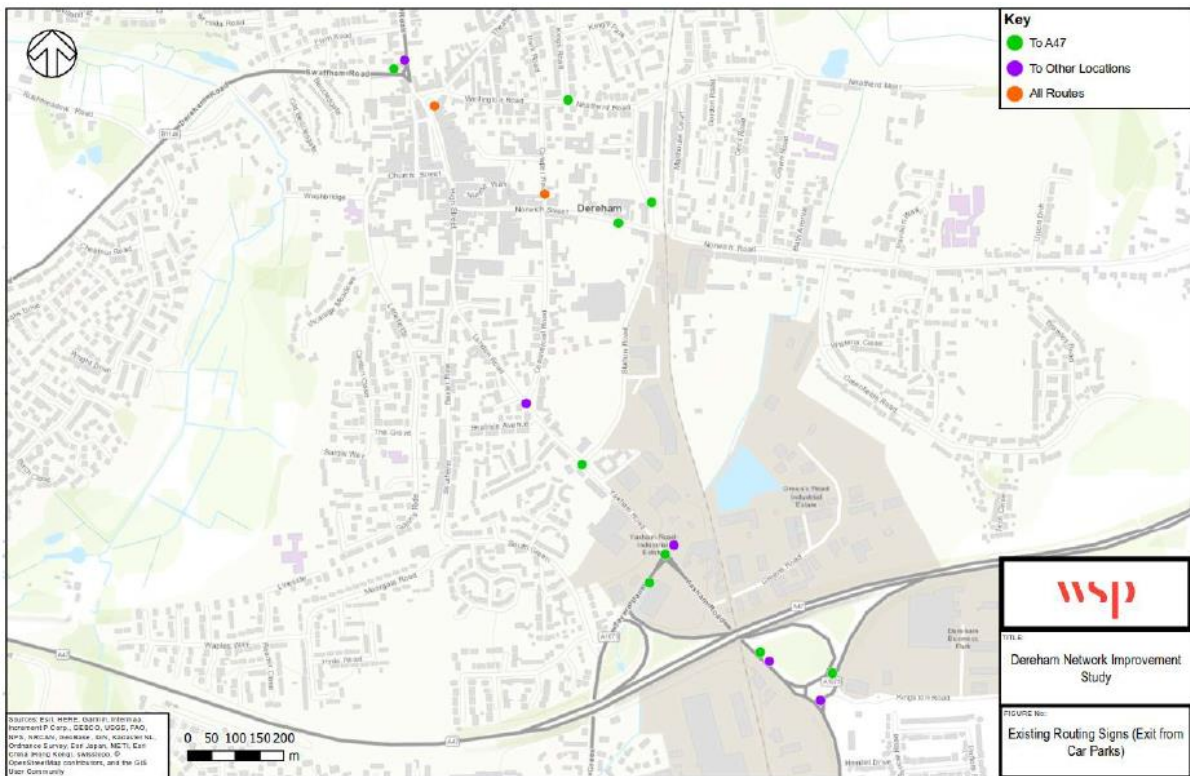


Figure 7.11: Existing Car Park Access Routes

## Exiting Dereham

When exiting the three main car parks, the signage directing visitors out of the town is minimal and visitors unfamiliar with Dereham will likely reverse their journey upon their departure. The existing signing directing vehicles out of the town from the three car parks is shown in existing exit signage. The routings which can be implied from the above signage and from access routes is shown in Figure 7.10. Note that the existing signage may direct some vehicles exiting Theatre Street Car Park down Station Road but as no vehicles were directed into Theatre Street by this route it is assumed that this directional signage is for the benefit of travellers other than those using said car park. This routing shows that, as with the access routes, there is a tendency to route most car park traffic through Yaxham Road and the Tavern Lane Junction which again adds additional flows to congested locations. There are four A47 junctions within Dereham yet all eastbound and westbound traffic is directed through one of these regardless of their origin or destination within the town.



**Figure 7.12: Existing Exit Signage**



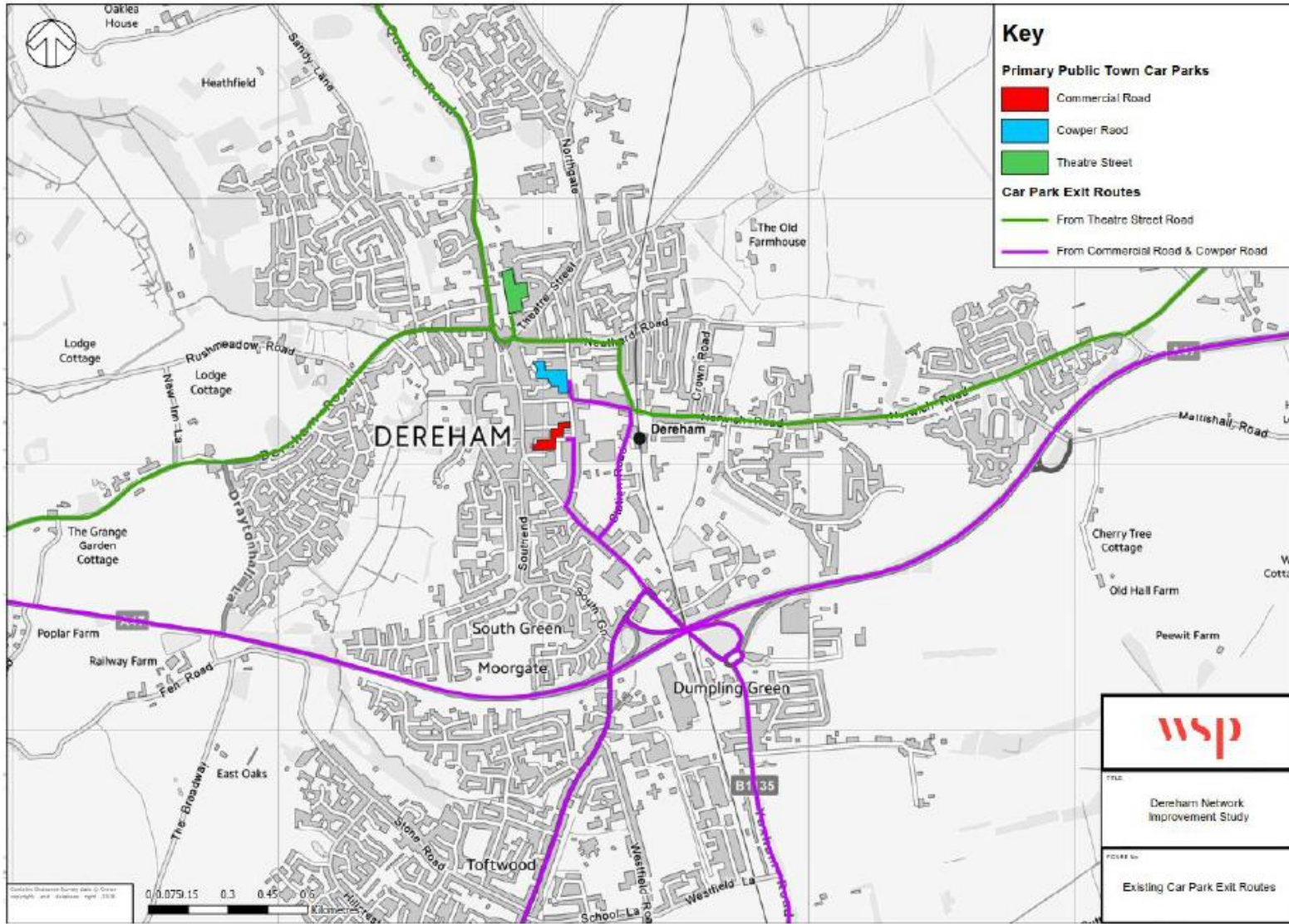
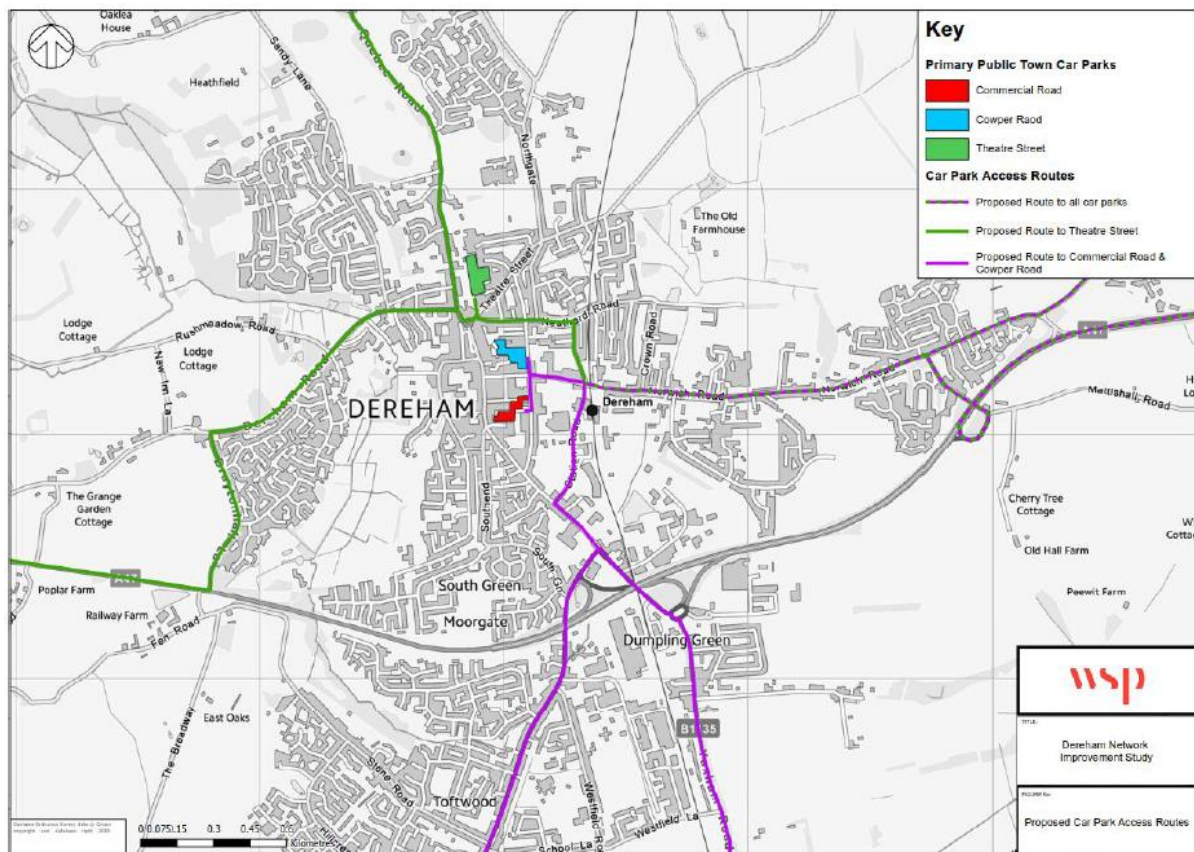


Figure 7.13: Existing Car Park Exit Routes

## Proposed alternative parking and town centre

In order to better disperse the flow of vehicles entering and exiting the car parks throughout the town, they should be routed in such a way as to avoid the need for all vehicles to travel along the same few links. With this in mind alternative routings to and from the town car parks have been developed. Note that routing proposals are subject to further study and detailed traffic assessment including key junction capacity modelling. The proposed routing change is shown below. New proposed exit routes from the three main town centre parks are effectively a reverse of the entry routes, these will reduce traffic which is directed through the Tavern Lane junction.



**Figure 7.14: Proposed Car Park Exit Routes**

When accessing Dereham town centre from the south there is little feasible alternative to the town centre other than routing through Yaxham Road and the Tavern Lane junction. Therefore signage is recommended that will continue to route vehicles from these locations along their current path. However, all other visiting traffic is to take an alternative route, including that on the A47. A47 traffic arriving from the west will be routed along Draytonhall Lane to B1146 Dereham Road where it can be directed to Theatre Street Car Park. This contrasts the existing situation whereby traffic arriving from the west on the A47 is directed to Cowper Road and Commercial Road car parks.

All traffic from the east, including that on the A47, is to be directed along Norwich Road to the Station Road/Norwich Street / Matsell Way junction where vehicles are

presented with an option of routing to all three car parks. There is no proposed change to traffic arriving from the north. This routing disperses visiting traffic throughout a wider network, minimising the amount which passes through the Tavern Lane junction. It also more evenly splits traffic across all town car parks.

The study has suggested parking signage changes to direct visiting vehicles to the appropriate town centre along the intended route for both entrance and exit as set out in Chapter 7. In addition to changing the locations of signs suggestions have been made to improve the Theatre Street road layout. The proposed routings are directing additional traffic through the Theatre Street war memorial junction. Further assessment is required to determine if the existing junction and car park access configurations are suitably designed to accommodate additional traffic flows. The existing access arrangements to this car park are unconventional (due to physical constraints) and a detailed analysis of the layout and road markings would complement any changes in vehicle routings.

Traffic approaching Dereham from the east along Norwich Road can be routed to any of the three main town centre car parks. There may be a benefit to the inclusion of a variable message sign at the Norwich Road/ Station Road/Matsell Way junction to inform drivers which car parks currently have the lowest occupancy. Such signage could be used to help ensure the three car parks fill up evenly or to help distribute traffic flows throughout the town. The benefits of such measures will need to be measured against the costs of implementation.

## Chapter 8: Action Plan

Based on the feedback from stakeholders and findings from the study work the action plan recommends areas where consideration should be given in the form of short, medium and long term actions. NCC has funding committed to the delivery of short term schemes that can be delivered within the next two years. Given the nature of funding using NCC led proposals would allow for schemes to be delivered within the time allocation. In the medium and longer term it will be critical for NCC to work collaboratively with local partners to deliver on other opportunities.

### Cycle Corridor Improvements

#### Short Term

There is a relatively low baseline level of cycling in Dereham where driving account for the majority of journeys, particularly for commuting. A large portion of commuting trips are under 3 miles (40%) and thus could be made by bicycle. Three corridor options were developed with the aim of connecting residential, employment area, schools and the town centre while creating a joined up Dereham cycle network. Of the three options, option two (East-West) was given the highest ranking with a high level costing of £1.5 million to complete all improvements and should be taken forward for further assessment.

**Action:** Norfolk County Council and partners to identify potential funding opportunities for feasibility work to progress section improvements set out in WSP Cycle Corridors study for cycle corridor option two.

#### Medium Term

The cycle corridor option two section improvements are developed into schemes that can then be used as projects when seeking contributions from new development or external funding opportunities.

The National Cycle Network link passes through the town and could be realigned with an improved East-West link. This new corridor will provide more direct cycling options. With an improved cycle link in place more focus could be given to pedestrian links through the town with an aim to encourage a shift for the journey to school for example away from private cars.

#### Long Term

The impact of growth will need to be understood beyond the current emerging Local Plan period beyond 2036. Accessibility planning could be undertaken in regards to access to schools, health facilities and employment opportunities.

## Future Growth Scenarios

### Short Term

The future scenario testing indicates the impact of a range of development options around the town on various junctions and what high level transport infrastructure would be required to mitigate this impact. This evidence can be used by Breckland Council and Dereham Town Council to inform future planning.

### Medium Term

The County Council alongside partners can use this study to develop potential mitigation improvements further so the costs and work required are fully understood. This would provide a better understanding of what improvements are feasible in the town.

### Long Term

The impact of growth beyond the emerging Local Plan needs to be fully understood. Any new housing allocation for the town beyond the emerging Local Plan period of 2036 will have a transport infrastructure impact. Any growth will need to be fully evaluated and options chosen with the least detrimental impact felt on the town.

## Congestion

### Short Term

As outlined through the strategy congestion particularly at the B1135 roundabout junction adjacent to Tesco is a priority issue for Dereham. The County Council is implementing schemes designed to improve congestion in the town and before commissioning further work the outcomes of these schemes need to be measured to inform whether additional intervention is needed.

**Action:** Monitor and analyse the outcomes of the planned improvements in Dereham and take a decision if further study work or schemes are required to alleviate congestion.

### Medium and Long Term

This network improvement strategy does not at this stage suggest any additional medium or long terms actions as future progress will be shaped by the outcomes of schemes already being implemented in the town as explained above.

## Signage Strategy

### Short Term

The signage study has identified sign changes that will redirect traffic leaving the A47 that are currently directed into the town via one junction and along Yaxham Road. This is despite the fact that Dereham is accessible by four A47 junctions. This has put a lot of pressure onto the Tavern Lane junction on Yaxham Road, leading to delay at this point.

**Action:** Highways Authority to provide costings and timeline of potential sign changes.

### Medium Term

Signage changes will be delivered as set out in the network improvement strategy which have the potential to improve road operating conditions for all users within the town, enhancing conditions for pedestrians and cyclists in the process. To complement the signage changes electronic signing could also be implemented which directs traffic to the main car parks and indicate which have the lowest occupancy. This would help ensure the car parks fill up evenly or to help distribute traffic flows throughout the town. The benefits of such measures will need to be measured against the costs of implementation.

### Long Term

In addition to new signage (and removal of old signage) some other measures may be required to implement the proposed routings, such as new road markings and changes to the Theatre Street road layout, which would have to be determined following a more detailed assessment.

## Safety

### Short Term

As identified in the Network Improvement Strategy the fatal collisions in Dereham have occurred on the A47 so dualling of the A47 including improvements to the Draytonhall Lane junction are key to reducing this risk.

**Action:** Continued lobbying through the A47 Alliance for complete dualling of the A47 and Norfolk County Council to understand from Highways England what the strategy is for improving Draytonhall Lane

**Medium Term**

Delivering the signage and cycle corridor improvements suggested by this study will create a better distribution of traffic throughout the town and there is potential to improve road operating conditions for all users within the town, enhancing conditions for pedestrians and cyclists in the process. This improved environment could improve safety and therefore encourage more people to walk or cycle into the town.

**Action:** Continue to monitor collisions data and ensure suggested improvements are continuing to target “hot spot” locations.

**Table 8.1 – List of potential improvements set out in study work**

Improvement/change	Detail	Time to complete	Cost
Cycle corridor route 2 Section 1	Traffic calming measures		High level costing of £1.2 million to carry out all improvements
Cycle corridor route 2 Section 2	No change to traffic operation is required along Section 05 but traffic calming would be beneficial in order to encourage a safe cycling environment.		
Cycle corridor route 2 Section 3	Southbound on-street cycle route is recommended along the High Street. A left turn from Wellington Road through the War Memorial junction will be needed to connect Section 03 to 05.		
Cycle corridor route 2 Section 4	A contra flow cycle lane is recommended on Cowper Road between Georges Road and Wellington Road. This will need to be accompanied by junction changes at either end of the Cowper Road contra flow cycle lane to ensure safe access and egress for cyclists.		
Cycle corridor route 2 Section 5	Little intervention is required along Section 05 except for traffic calming and signage to aid westbound cycling.		
Cycle corridor route 2 Section 6	Traffic calming measures, which could include advanced stop lines and early starts for right turning cyclists can be put in place at the Neatherd Road/ Matsell Way signalised junction. Between Matsell Way and Crown Road advisory road markings and signage can be put in place to raise awareness of cyclists.		
Cycle corridor route 2 Section 7	Will benefit from substantial traffic calming measures to encourage low vehicle speeds and to foster a cycle friendly environment.		



Proposed Parking Signs (see map below)	A47 traffic arriving from the west will be routed along Draytonhall Lane to B1146 Dereham Road where it can be directed to Theatre Street Car Park. All traffic from the east, including that on the A47, is to be directed along Norwich Road to the Station Road / Norwich Street / Matsell Way junction where vehicles are presented with an option of routing to all three car parks.		
Proposed Exit signs (see map below)	New proposed exit routes from the three main town centre parks are effectively a reverse of the entry routes and will reduce traffic which is directed through the Tavern Lane junction.		
Theatre Street road layout changes	The existing access arrangements to this car park are unconventional (due to physical constraints) and a detailed analysis of the layout and road markings would complement any changes in vehicle routings.		
Electronic Signage	There may be a benefit to the inclusion of a variable message sign at the Norwich Road/ Station Road/Matsell Way junction to inform drivers which car parks currently have the lowest occupancy. Such signage could be used to help ensure the three car parks fill up evenly or to help distribute traffic flows throughout the town.		

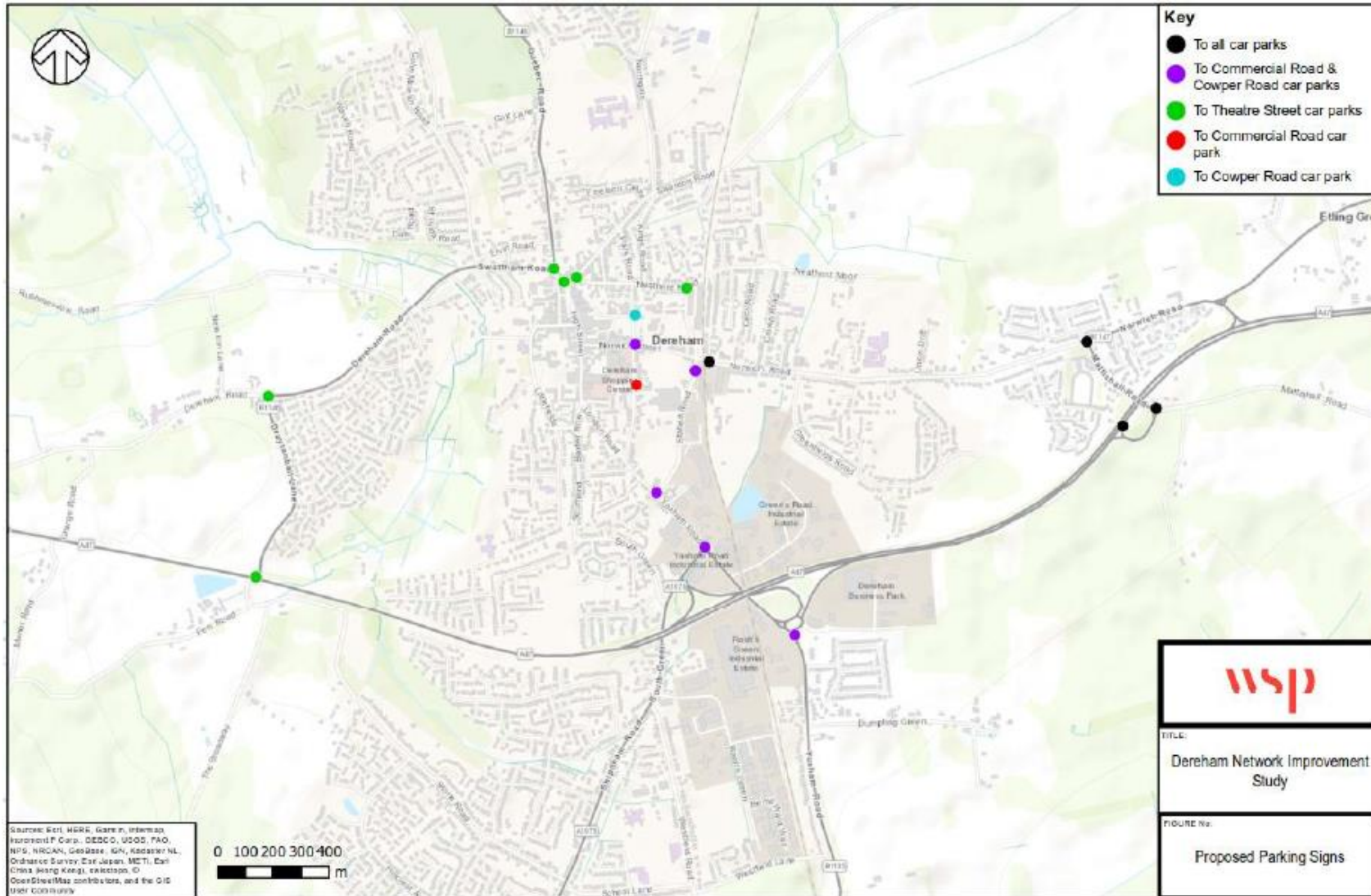
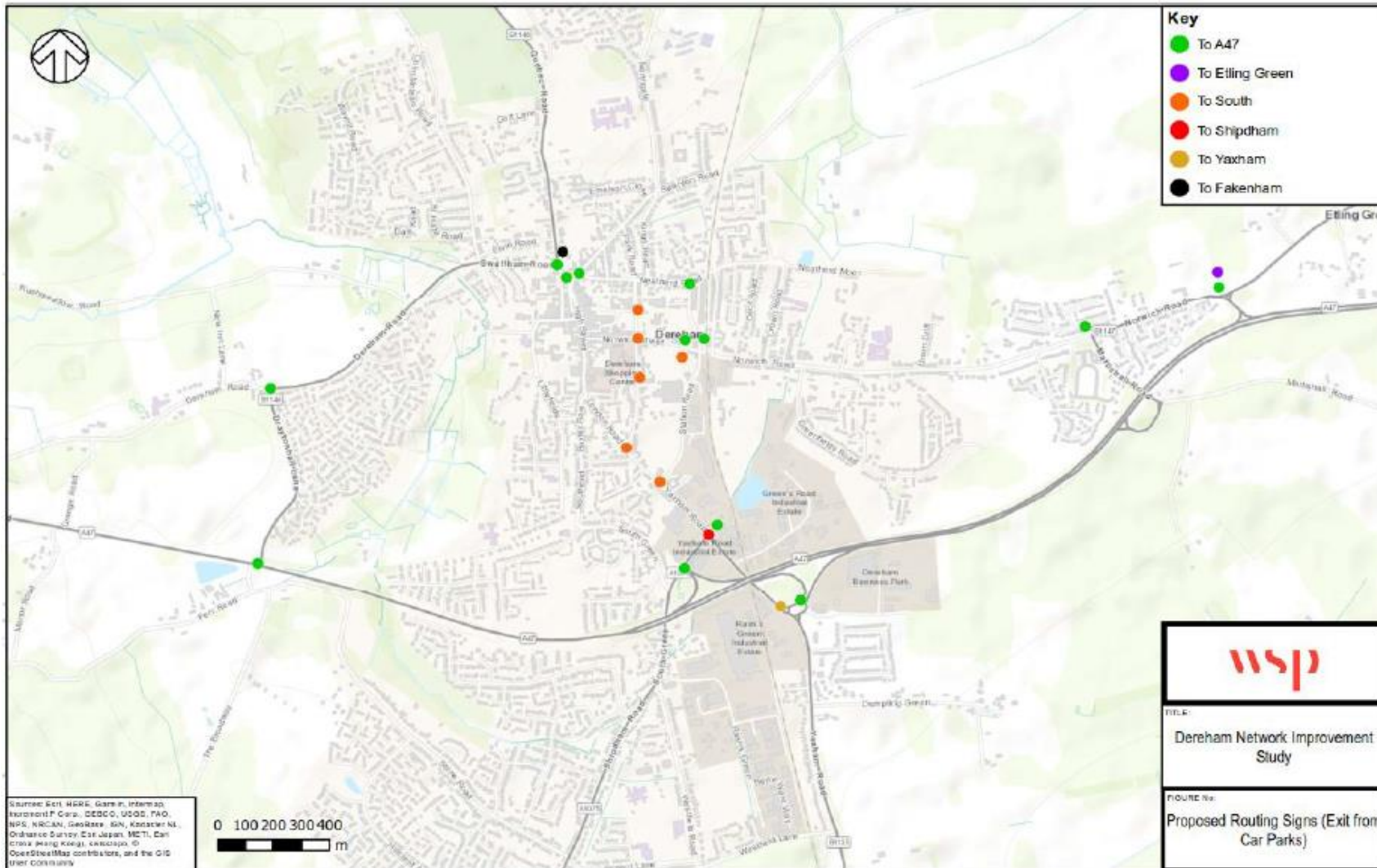


Figure 8.1: Proposed Parking Sign Locations



**Figure 8.2: Proposed Exit Sign location**

