Wroxham and Hoveton Network Improvement Strategy April 2020

Norfolk County Council

Contents

Executive Summary

The Wroxham and Hoveton Network Improvement Strategy (WHNIS), 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 Plans.

The Local Plans run to 2026 and the proposals in this strategy will help sustainably deliver the growth identified by the Joint Core Strategy for Broadland, Norwich and South Norfolk; Broadland District Council; and North Norfolk District Council during this period. This strategy aims to identify interventions which could support this growth and inform future growth.

Various activities were undertaken to gather information and data to inform the WHNIS. Consultation was held through an external stakeholder workshop to agree the scope of this Study. A traffic survey has been undertaken by WSP on behalf of the WHNIS to gather evidence and information on travel patterns through Wroxham and Hoveton.

WSP surveys included:

- Automatic number plate recognition (ANPR) survey to gain full understanding of traffic in the towns, including the volume of Heavy Goods Vehicles (HGVs)
- Automatic traffic counts (ATC) to monitor traffic flow
- Junction turning counts (JTC) to gain a picture of turning movements and junction capacity
- Manual Classified Count (MCC) surveys to reviewed road, cycling and walking patterns for the area
- Observations to gather a full picture of traffic patterns through the town centre

Using this data WSP identified transport improvements based on scales of growth and longer-term infrastructure choices.

Data obtained from road traffic surveys has been utilised to calculate peak periods of travel and the routes travelled, whilst providing a summary of vehicle volumes. The report has determined the proportion of through traffic at the morning and evening peak times.

This work produced some key findings:

- Through traffic is a significant proportion of the journeys.
- The highest quantities of traffic pass through Norwich Road / Stalham Road (A1151) with the majority travelling South towards Norwich.
- There is scope to encourage a greater use of sustainable transport.
- The A1151 Norwich Road / B1140 Salhouse Road mini-roundabout operates close to capacity with high delays in AM peak hour.

- The A1151 Norwich Road / Church Road / Station Road / A1151 Stalham Road junction is affected by high demand from the adjacent signal-controlled pedestrian crossing which creates queues.
- The A1151 Stalham Road / A1062 Horning Road / B1354 Horning Road West double mini-roundabout junction is close to capacity in both AM and PM peak hours and experiences congestion on all arms.

Based on the feedback received from the external stakeholder meeting held in September 2018 and Traffic Surveys the Action Plan recommends areas where consideration should be given in the form of short, medium and long-term actions. There has been interest in creating a bypass to remove through traffic from the villages, however, this has not been investigated further in this report as it is a complex and large-scale issue, beyond the scope of this study. A bypass, additional cycle crossing, or other interventions on the bridge would require additional feasibility studies before any proposals could be made.

Norfolk County Council (NCC) has funding committed to the delivery of some 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. There is not funding to deliver all projects and interventions proposed in the action plan. The purpose of this study is to identify interventions and provide evidence to secure funding for projects.

The study has also indicated where identified interventions would support future growth beyond the current local plan periods inform what highway improvements future development should deliver. In the medium and longer- term it will be critical for NCC to work collaboratively with local partners to deliver on other opportunities.

Action Plan

Scheme Type	Location	Work proposed	Short, Medium or long Term
Walking and cycling	Station Road	Parking restriction to help pedestrian access to the train station – a charge for parking has recently been introduced so there is no evidence as yet whether this has made a difference to parking over pedestrian access	Short
	Station Road	Turn Right for cyclists leaving Station Road	Short
	Hoveton	Pedestrian wayfinding - new signage to increase cyclist and pedestrian wayfinding from the Train Station to Hoveton Town centre	Short
	Hoveton	General footway improvements to widen the footways where the carriageway is wider than needed – This will facilitate the large numbers of pedestrians in the town centre and groups of school children closer to the High School	Short
	Tunstead Road (south)	Barrier to stop motorised traffic but allow a safer cycle route for school children	Medium
	Horning Road West / Tunstead Road	Junction improvement	Medium
	Town Centre	Off-Street cycling routes or cycling facilities to link up key areas in Hoveton	Medium
	Stalham Road	Upgrade Puffin Crossing to Toucan Crossing	Medium
	Horning Road West	Station approach addition of pedestrian crossing & bus stop	Medium
	Hoveton	Uncontrolled crossing points	Medium
	Norwich Road	Widen footway to alleviate pedestrian pinch point	Medium
	Hoveton	Three Rivers cycle path extension	Long

	Bure River	Change Wroxham Bridge to accommodate cyclists	Long
	Hoveton	Add cycle lanes to A1151 connecting the Bure Valley path, 3 Rivers Way with the Broadland Way cycle path	Long
Congestion	Stalham Road, Horning Road and Horning Road West	Feasibility Study to replace double mini-roundabout with signalled junction	Short
	Norwich Road, Salhouse Road	Feasibility Study to replace mini-roundabout with signalled junction	Medium
	Stalham Road, Horning Road and Horning Road West	Replace double mini-roundabout with signalled junction which will increase junction capacity, connect the cycle path to the train station and increase pedestrian safety £500k	Long
	Horning Road West rail overbridge	Allow a new route to alleviate traffic elsewhere	Long
Junction Capacity	Station Road / Stalham Road	New bellmouth layout	Long

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 also 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.

Wroxham and Hoveton

The villages of Wroxham and Hoveton are separated by the River Bure and are considered a gateway to the Broads National Park, Britain's largest protected wetland. The two villages have their own distinct character but are considered together as one market town for the purposes of this study, with an economic centre in Hoveton. The town is accessed by the A1151 and is served by the Bittern Line Railway connecting the town with Norwich and North Norfolk.

Norfolk County Council's Norfolk Market Town Report 2018 identifies that the largest proportion of units in Wroxham and Hoveton is equally comparison retailers (for example, clothing shops, department stores and charity shops) and leisure services at 35%, which is reflective of the area being a tourist attraction. There is evidence of seasonal variation in peak traffic flows which supports the consultation feedback that summer months are more congested due to the tourist nature of the area.

The proximity to several large tourist attractions, being the main access to the Broads and coast, and boating tourism in the town centre make Wroxham and Hoveton unique among the Norfolk market towns.

Wroxham and Hoveton are also unique in that they are often considered together as one settlement when looking at through traffic movements but fall in the area of three planning authorities. Wroxham is within Broadland District Council, Hoveton is within North Norfolk District Council and the designated Broads Authority Executive Area covers areas in both settlements. Therefore, the priorities and housing allocations of these three authorities need to be considered.

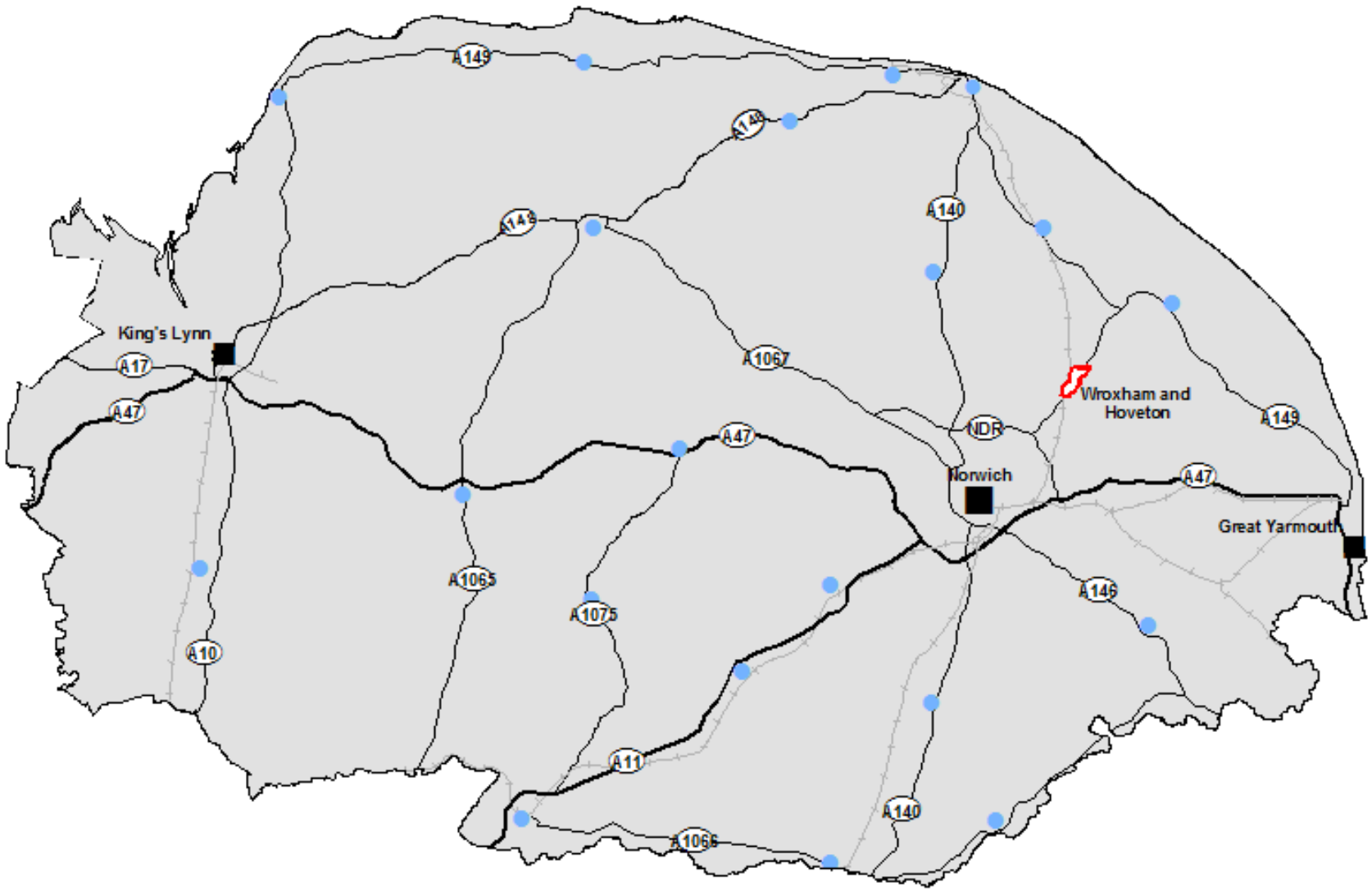


Figure 1: Map of Wroxham and Hoveton, and their location in Norfolk

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. This plan is currently under review.

Greater Norwich Joint Core Strategy

The Greater Norwich Joint Core Strategy provides the planning strategy and sites for growth across the districts of Norwich, Broadland and South Norfolk. The area is one of the fastest growing parts of the country, which requires strategic planning policies to guide future development and plan for new infrastructure, jobs and houses but also protect and enhance our environmental assets. As Hoveton is located within North Norfolk it is not included in the Strategy but is considered alongside Wroxham.

Wroxham is one of the ten Key Service Centres that will;

- Remain attractive places with a range of enhanced shops, Services, community facilities and job opportunities.
- Form limited but strong employment and tourism links with the Norfolk Broads.
- Have enhanced transport links to Norwich and the main towns.

North Norfolk Core Strategy, 2008-2021

This document provides a detailed framework for the control of development and use of land that guides most day-to-day planning decisions in North Norfolk. Within this strategy Hoveton is designated as a secondary settlement with a small town centre. This plan is currently under review.

North Norfolk Site Allocations (Hoveton), 2011, has been prepared to accord with the vision, objectives and strategic policies of the adopted North Norfolk Core Strategy. The objective of this document is to ensure that sites are identified and made available to meet the development needs of the District.

The Joint Core Strategy allocated 100-200 houses in Wroxham and North Norfolk Core Strategy has allocated a further 130-200 houses in Hoveton.

Broads Local Plan, 17 May 2019

The Broads Authority Local Plan is the baseline for making decisions on planning applications and other development matters in the Broads area. This document is used to make sure any new development is of high quality and appropriately located in the unique Broads landscape.

The Broads Local Plan allocated 6 houses on Brownfield land off Station Road, Hoveton

Wroxham Neighbourhood Plan, 2019

This is a community-led document for guiding the future development of the parish, focusing on the use and development of land over a 20-year period, 2019-2039.

Work complete, underway or planned

In addition to the plans and strategies, other work has been undertaken or is ongoing:

- Broadland Place shaping guide, 2012 – Broadland District Council
- Community Action Projects
    - Work with landowners, NCC and neighbouring parishes to create a green loop away from the A1151.
    - Work with NCC to consider further crossing points and identifying possible links between Public Rights of Way and Cycleways.
- Wroxham Conservation Area Appraisal, 2010 – Broadland District Council & Broads Authority
- Greater Norwich Local Plan – Reg 18 consultation Jan 2020
- North Norfolk Local Plan – Reg 18 consultation May/June 2019

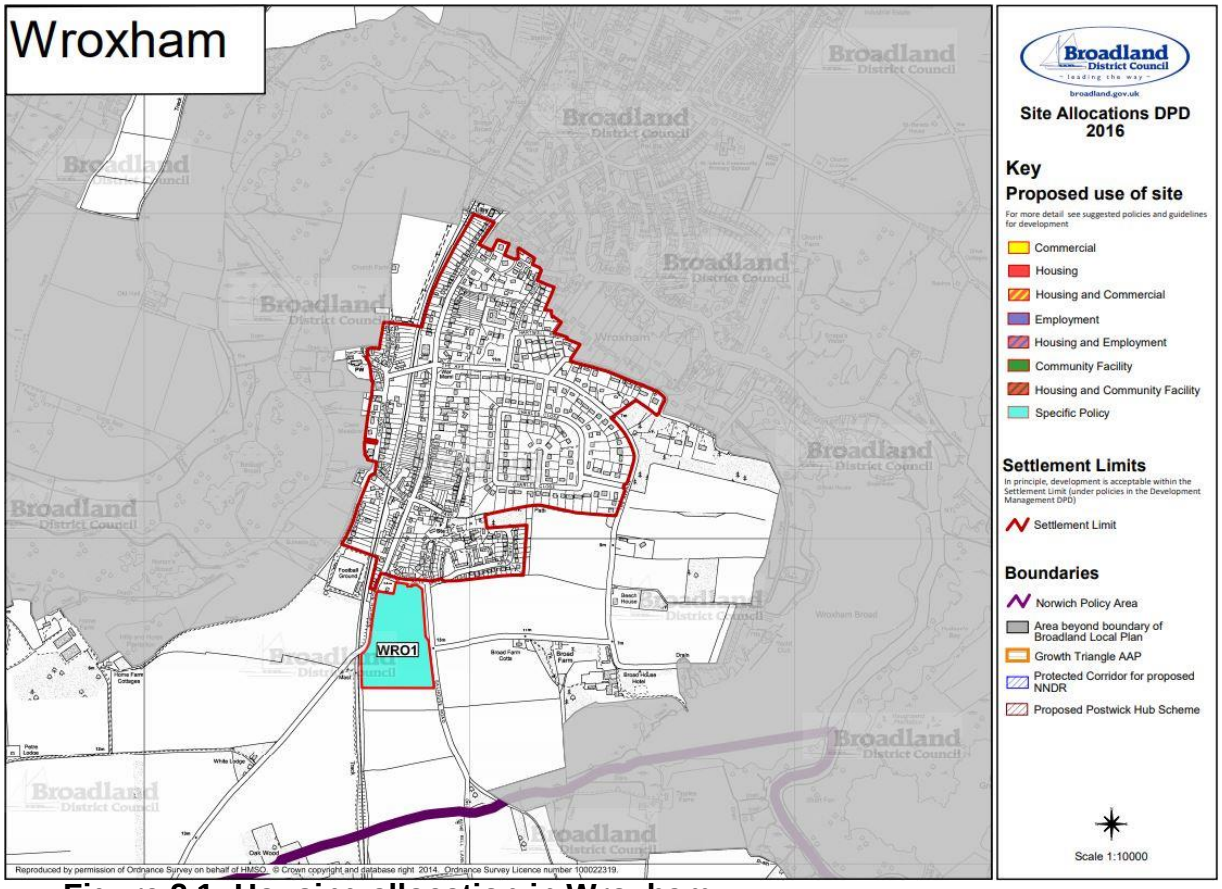


Figure 2.1: Housing allocation in Wroxham

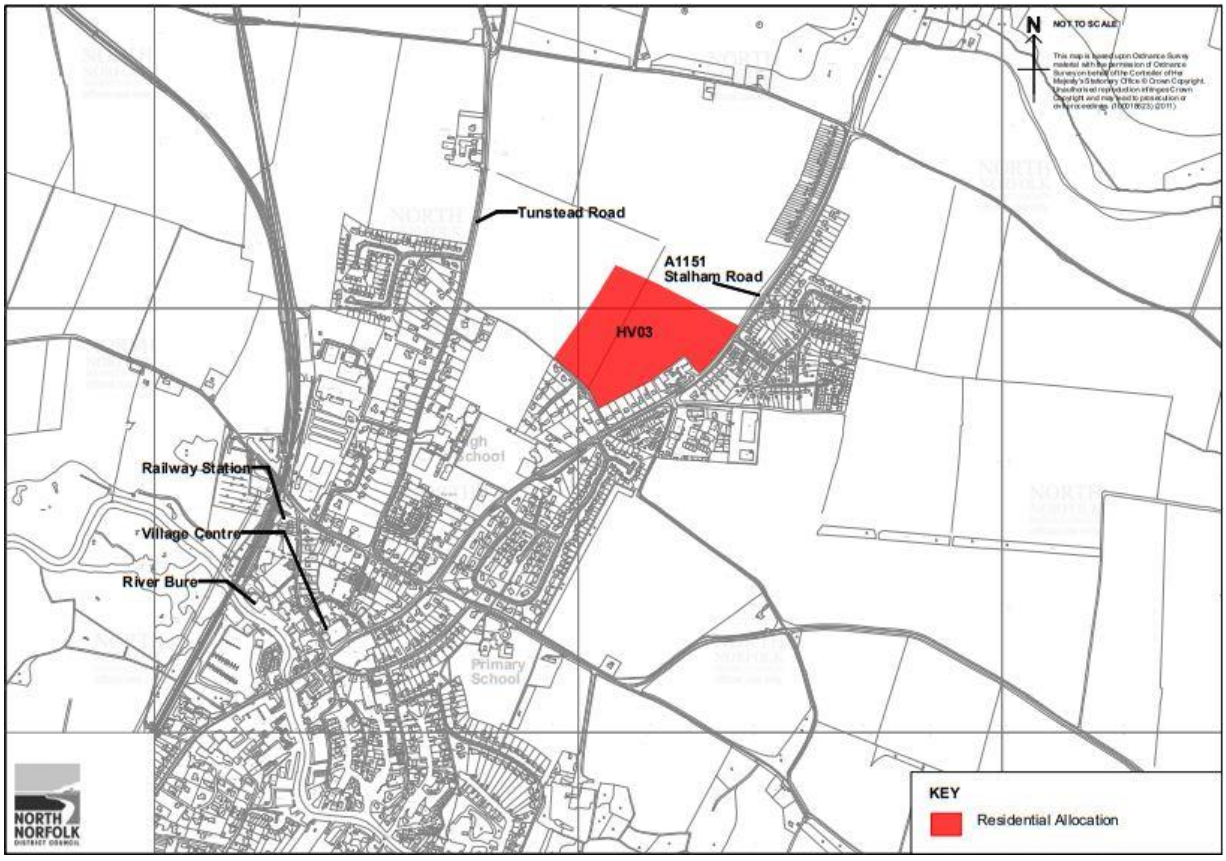


Figure 2.2: Housing allocation in Hoveton

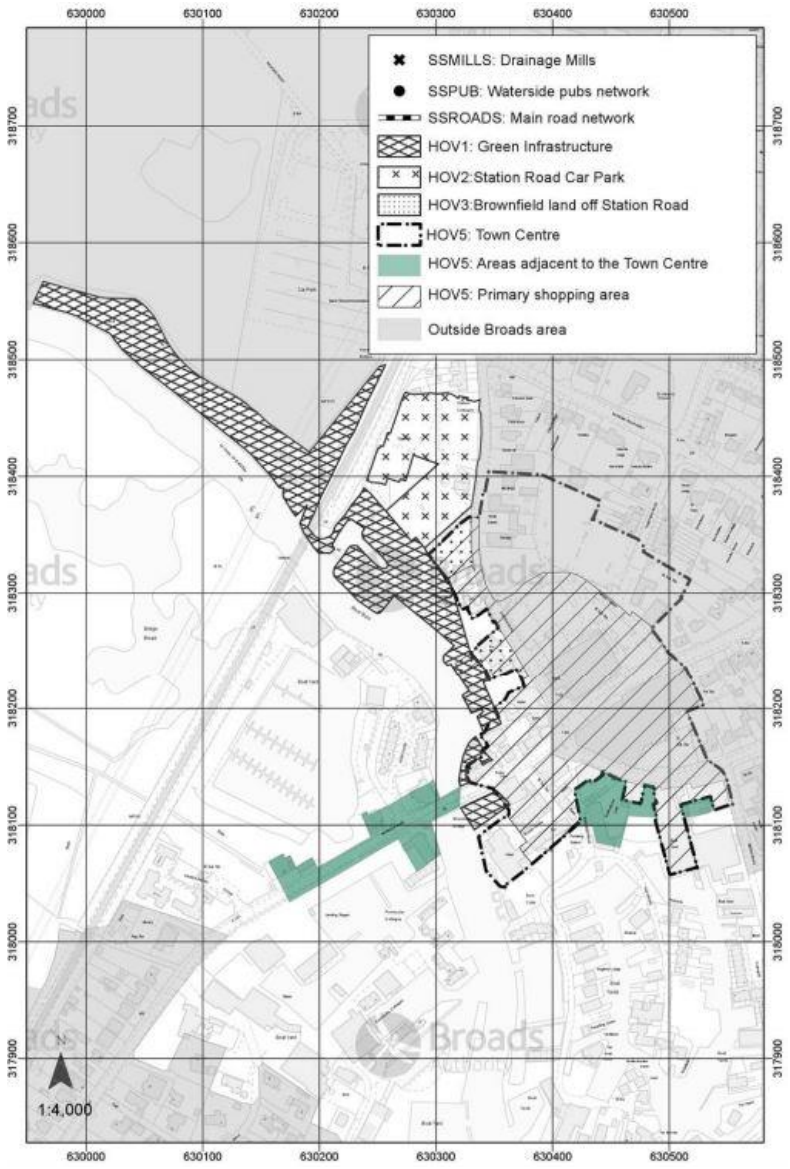


Figure 2.3: Broads Local Plan housing allocation

Chapter 3: Wroxham and Hoveton Background

Wroxham and Hoveton are approx. 8 miles from Norwich and are considered the gateway to the Broads, as well as being close to local tourist attractions and the coast. The town is also on the main traffic route between Norwich and the North East coastal areas. Being so close to the Broads, coast and tourist attractions, such as BeWILDerwood and Wroxham Barns, Wroxham and Hoveton is a vital location for tourism.

Wroxham and Hoveton are rarely seen in isolation as the economic centre for both towns is in Hoveton, where the large department store, Roys, is located. This is therefore where the most pedestrian footfall is. In the centre the river is crossed by Wroxham Bridge, which is a pinch point in the village on the A1151, as it is not suitable for the level of traffic passing over it. However, the bridge is a scheduled monument, so any improvement work is very difficult and must be considered within the constraints of its scheduled status. For this reason, the bridge is outside the scope of this study but has been listed as a long-term action to investigate further.

Hoveton has two designated employment areas, which provide a range of employment opportunities, as well as retailing and the boat hire industry. The town is served by a railway station situated on the north west edge of Hoveton.

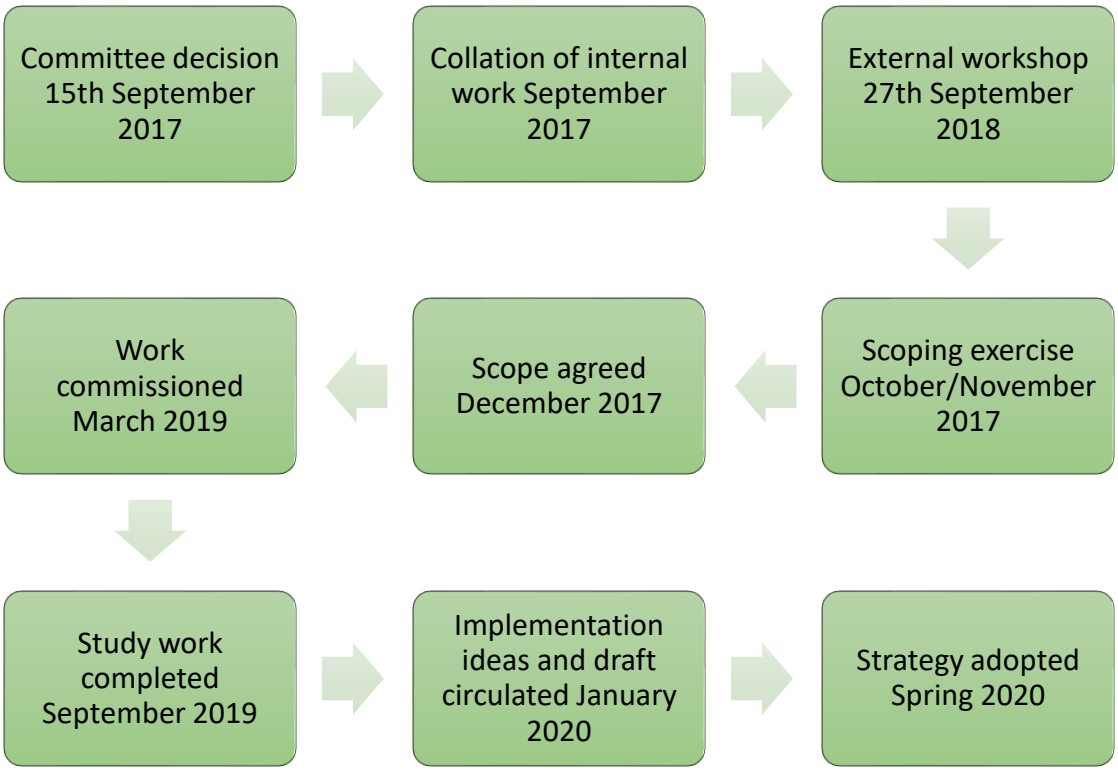
The 2011 Census showed that the population in employment in Wroxham travel to work 69.2% in a car and only 1.25% by bicycle, 1.25% by train and 6.83% walk. This shows that there is currently a high reliance on cars, which is a pattern seen in many rural areas. In the 2011 Census 28% of residents travel less than 10km to work so there is scope to encourage sustainable transport modes, such as cycling.

The selected area has a population of around 7,000. Compared to the English average it has an older population with a quarter aged 65-84 and 5.4% aged 85 and over. There are relatively few residents aged under 24. The Hoveton ward is generally older than that of the Wroxham ward and is less than half the population size. The proportion of over 85s is 5.4% in Hoveton and Wroxham, higher than Norfolk overall (3.2%), and England as a whole (2.4%). Therefore, any plans for access to the town centre would need to consider the older, and possibly less mobile, population.

The main roads that intersect are the Norwich Road and Stalham Road (A1151) running north – south and Horning Road West (B1354) and Horning Road (A1062) which run west – east.

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 transport solutions that support the delivery of future housing and jobs growth. To develop the understanding of the transport issues in Wroxham and Hoveton, Norfolk County Council held stakeholder workshops, commissioned traffic surveys and 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 5 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 Stakeholder consultation, the results from commissioned traffic surveys, and the view from officers as to what would best benefit the town.

Chapter 5: Transport in Wroxham and Hoveton 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 Wroxham and Hoveton. 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.

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.)

Accidents in Wroxham and Hoveton are centred around the Norwich / Stalham Road (A1151), Horning Road West (B1354) and Horning Road (A1062). These roads were all identified as the main routes through Wroxham and Hoveton so would expect a higher rate of accidents. The number of the collisions across the three modes of transport in the period 2013-2018 is exceptionally low and the maps below identify the slight and serious injuries.

Despite there being a large number of vehicles and pedestrians navigating the towns these maps show that very few accidents resulted in serious injury. As there were few incidences the analysis of casualties has not identified any areas where intervention should be made. Therefore, safety is not considered to be a significant area of focus for future work.

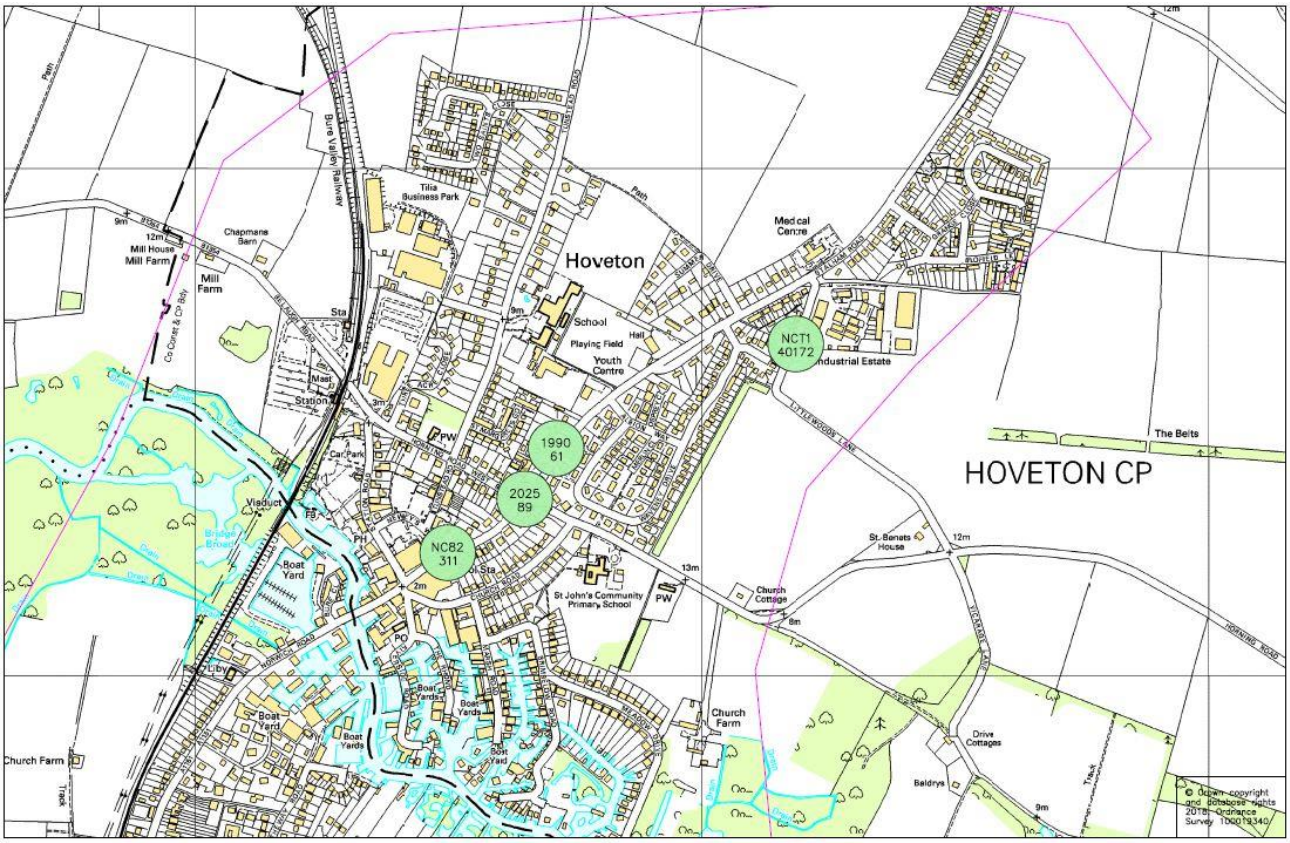
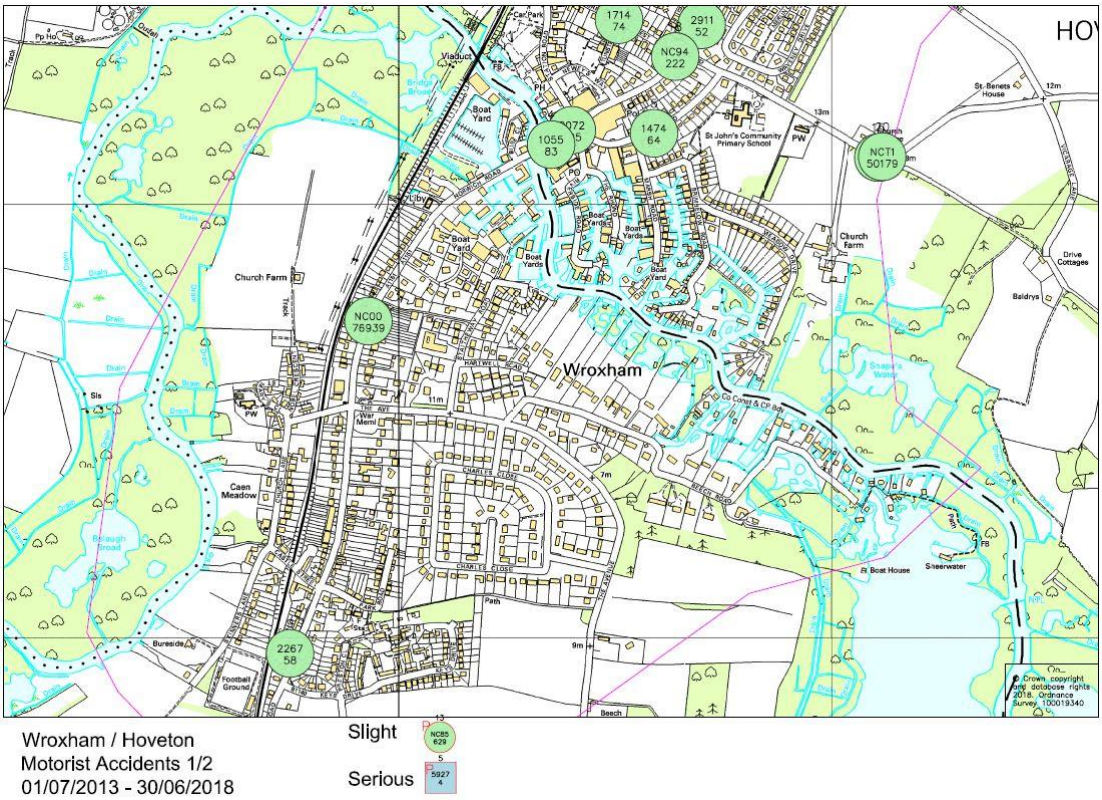


Figure 5.1: Collisions involving cyclists

Cyclist Map – There have been 4 collisions involving cyclists between 2013 and 2018 which resulted in slight injury. There were no serious injuries. Although there is not a hot spot of accidents three of these were located on Stalham Road (A1151) in Hoveton, on, or close to, the double roundabout. The roundabout has been highlighted for improvements for pedestrians and cyclists in chapter 7



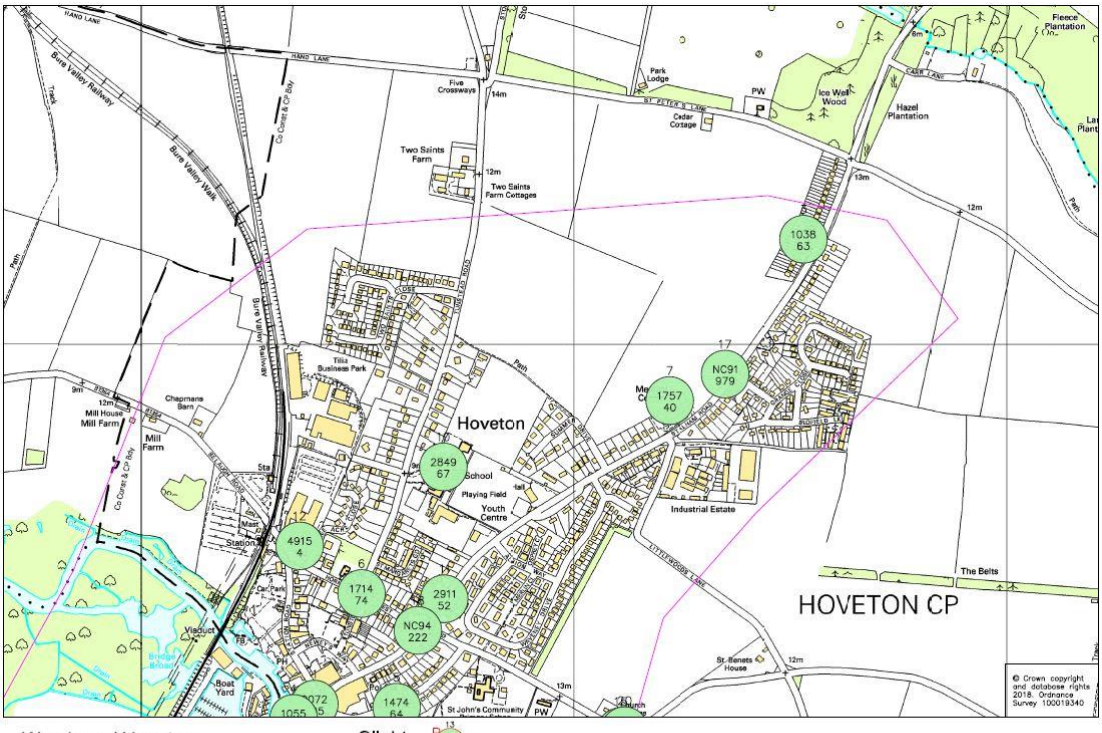


Figure 5.2: Collisions involving motor vehicles

Motor traffic map – 15 collisions involving motorists, all considered slight and no serious accidents. Predominantly, but not all, on the A1151 Norwich Road and Stalham Road.

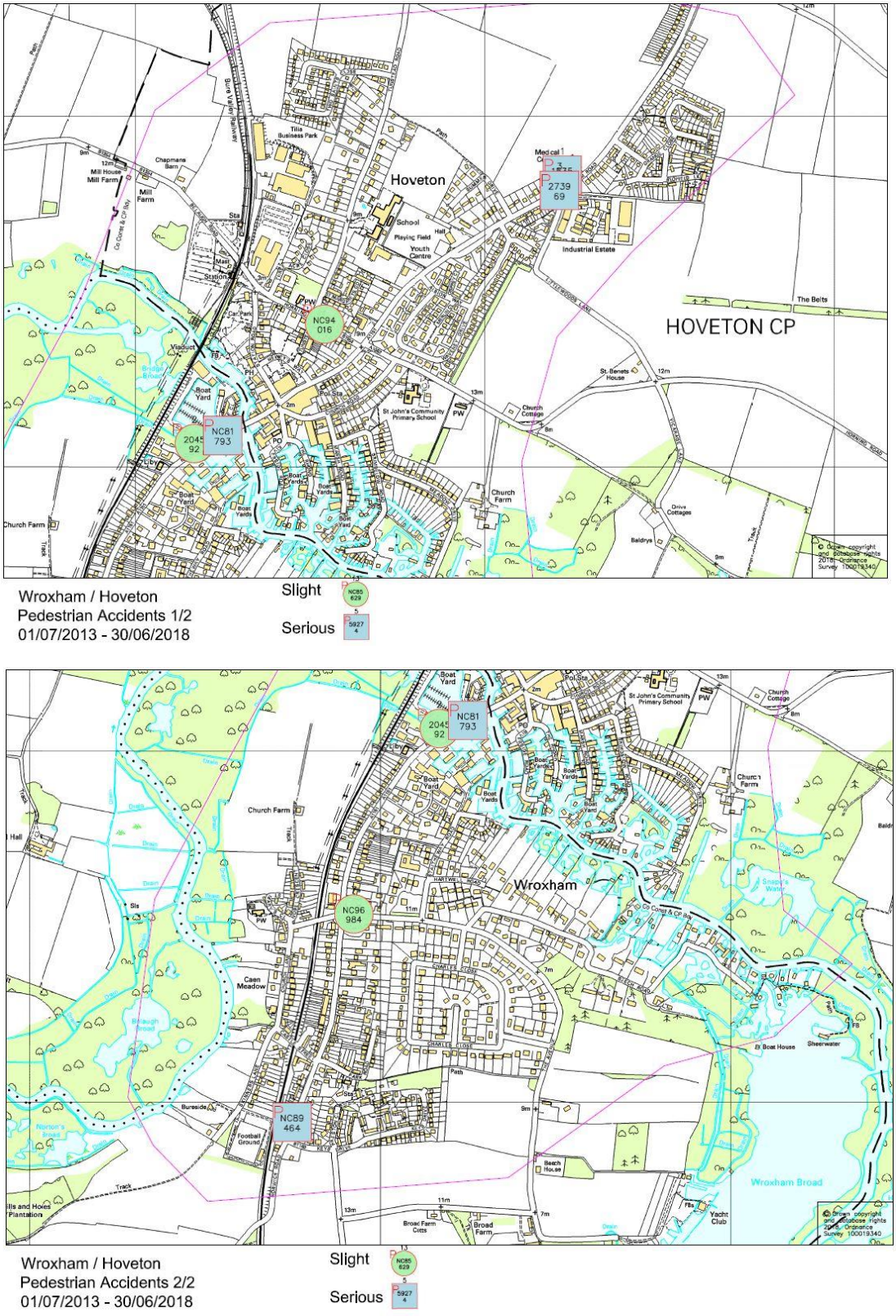


Figure 5.3: Collisions involving pedestrians

Pedestrian traffic map – There have been 3 slight and 4 serious accidents. The serious accidents have all been on the A1151, with one close to Wroxham Bridge, another adjacent to the A1151/B1140 roundabout in Wroxham and two at the junction with Littlewood Lane in Hoveton. These are all areas which have been highlighted as requiring improvements for pedestrian access.

Parking

Feedback from the external stakeholders workshop revealed that parking is not seen as a major issue in Hoveton and Wroxham. The largest capacity car park in Hoveton and Wroxham is owned by the department store Roys. There are over 1000 free parking spaces spread over 3 large car parks: short stay, closest to the main store; mid stay on Station Road; and long stay/coach parking on Belaugh Road.

There are also a small number of private pay and display car parks and some boatyards have car parks which are pay and display or free to patrons of the company. Parking at Railway station has capacity for 12 vehicles and is owned by Greater Anglia and looked after by NCP. Although parking is not seen as an issue in Wroxham and Hoveton the traffic survey suggested that parking at the Railway Station should be formalised to ensure pedestrian routes are not blocked.

Cycle parking facilities are concentrated in the town centre and the railway station next to the main points of interest in the town ie. supermarket, boat hire locations, car park adjacent to Neweys Way and the junction to Station Road. Overall there is a large capacity for parking in Wroxham and Hoveton so it has not been a focus for this study and no further action is being taken to monitor parking.

Access

The County Council used software analysing what areas can access the town via bus within 30 minutes, and the map below shows these accessibility levels to the town centre. The towns are also served by a train station on Belaugh Road (B1354), known as the Bittern Line which links Norwich to Sheringham. The Bure Valley Railway also connects the town to Aylsham.

Wroxham and Hoveton are served by 16 bus stops, distributed on the main routes through the towns. These connect the towns to Horning, Aldborough and Acle, and to the Norfolk & Norwich Hospital. They also have a service which connects the town to Wroxham Barns, the closest tourist attraction to the area.

There are currently two school busses which operate one each way, per day. These busses are to Broadland High Ormiston Academy in Hoveton, from the surrounding areas, and another bus which runs to East Norfolk Six Form in Gorleston. There is one bus in each direction per day to Sprowston and Harford Park & Ride, linking the towns with Norwich. A community car scheme also operates in Wroxham, Hoveton and Belaugh to match people needing lifts to medical appointments.

Overall, accessibility via public transport to town facilities is very good, and given the rural nature of Norfolk, the levels of accessibility were not seen as an issue for this strategy. Therefore, no further actions have been proposed.

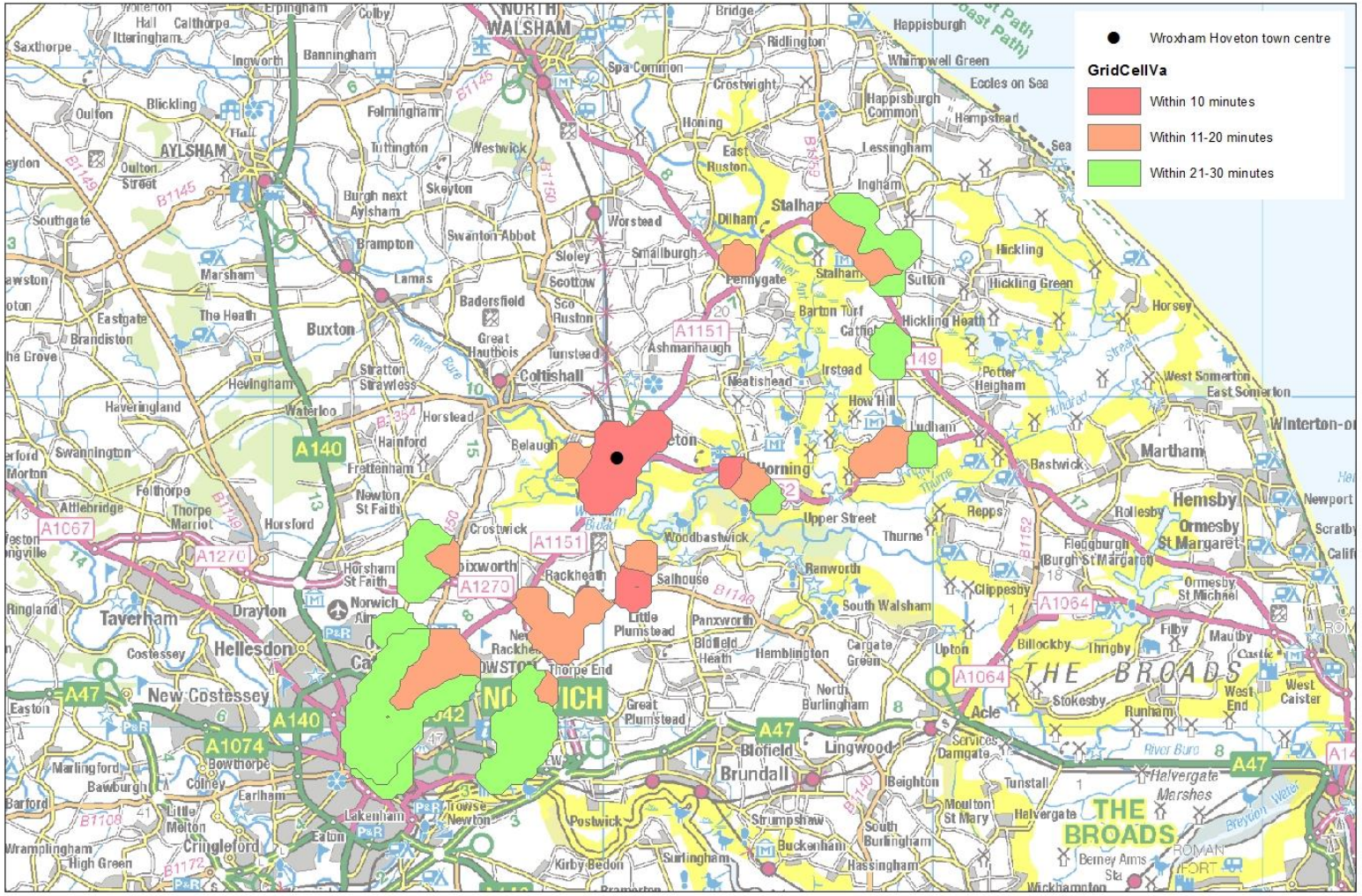


Figure 5.4: Map showing travel distances on public transport from the town centre

Congestion

According to the Wroxham Neighbourhood plan traffic volume and congestion is the single biggest issue of concern for Wroxham residents. The primary concern for residents is access to the main corridor A1151 from residential side streets and the speed in which emergency vehicles can pass through. Consultation shows that the pinch point at Wroxham bridge over the River Bure is also of concern to residents, regarding slow movement and lack of provision for cyclists. However, changes to the bridge will not be discussed as improvements are limited by it being a scheduled monument.

A bypass has been suggested to alleviate congestion issues on the historic bridge. However, this study is not looking into the feasibility of this as it would be a very extensive operation that is beyond the scope of this study.

In order to gain a better understanding of volume and nature of the traffic flow, Norfolk County Council commissioned an Automatic Number Plate Recognition (ANPR) traffic survey in the town centre to carry out assessment of the existing traffic conditions. This identified the main routes through Wroxham and Hoveton as the Stalham / Norwich Road (A1151) running north – south, and Belaugh Road (B1354) and Horning Road (A1062), which run east – west.

The AM and PM peak hour times were identified as well as the key areas of congestion across the two towns. The study of peak times also looked at a collection of junctions in the town, the worst effected by congestion being the A1151 Stalham Road / A1062 Horning Road / B1354 Horning Road W Junction.

Action: Conduct feasibility studies into improvements to pinch points in the town and identify opportunities to improve traffic conditions in the town.

Cycling and Walking

According to the 2011 Census 9.2% residents walk to work and 3.9% cycle, with the majority still driving. Consequently, there is scope for increasing the use of sustainable transport.

The existing walking infrastructure within Hoveton and Wroxham is of a good standard with few localised issues. Pedestrian permeability is generally good in Wroxham and Hoveton as adjacent footways, and a number of crossing points, mean pedestrians have good access across the towns.

Improvements have been made to cycling provision, with a 3.64km shared cycle/footway having been implemented along the A1062 Horning Road from the Hoveton double mini-roundabout to the junction with Lower Road in Horning. However, the cycling infrastructure is still limited and there is plenty of opportunity for improvements.

The Bure Valley Path is approx. 14km long off-road shared cycle/footway that follows the route of the Bure Valley heritage railway to Aylsham. There are plans to link the Bure Valley Path and Marriot’s Way to form a cyclic route with the Broadland Way

route between Wroxham and Norwich. There are also aspirations to create the Three Rivers Way Cycle Path, creating a cycle route from Hoveton to Potter Heigham.

In 2017/18 a permanent cycle count was made of the Three Rivers Way Cycle path, collecting data on its use. The results showed that the path is used more in summer and on Saturdays, with an average of 47 cyclists per day Oct 2016 – Sept 2018.

Action: To identify key walking and cycling routes and examine potential improvements to the routes, including the Wroxham Green Loop. Also, in the longer term, to further investigate options to improve walking and cycling provision on Wroxham Bridge. **The bridge itself is too narrow to add a cycle only path so there are no short-term interventions that could improve the current situation, therefore an additional cycle crossing would need to be investigated further if and when funding becomes available.**

Chapter 6: The Future

The traffic survey work carried out by WSP focussed on looking at what could be done in the town to make improvements and then seeing if those interventions could facilitate growth in the towns.

The surveys work collected the necessary traffic data, analysed it and developed an implementation plan, on which decisions on short-term and longer-term transport priorities can be made.

A better understanding of the current walking and cycling facilities was investigated, along with the barriers to cycling and walking. The study then identified improvements and opportunities to encourage increased uptake of sustainable transport.

Action: Identify which possible interventions in Wroxham and Hoveton could best support growth.

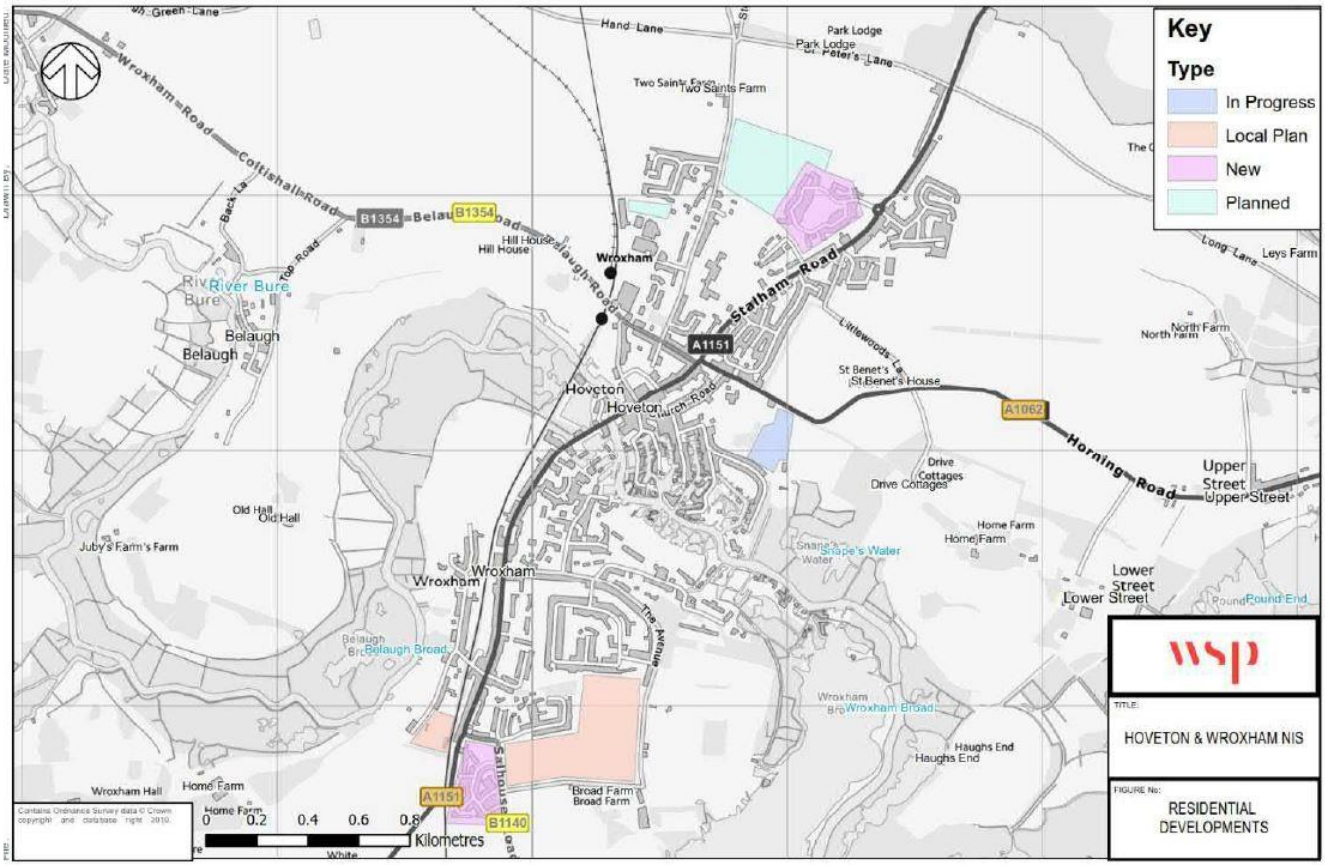


Figure 6.1: Greater Norwich Site Proposals

The Greater Norwich Local Plan Site Proposals Document covers sites and development boundaries for the Emerging Greater Norwich Local Plan (GNLP). Hoveton is not included in this plan but there are already sites in development within Hoveton as well as Brook Park, a development recently built with 120 dwellings. Wherry Gardens, west of Salhouse Road in Wroxham, is a recent development with 100 new homes. The Broads Local Plan also allocated development land in the brownfield site on Station Road, Hoveton.

Chapter 7: Our findings

Work was commissioned by NCC and undertaken by WSP to carry out a full traffic survey and use existing data to carry out an analysis; investigate the opportunities to improve walking and cycling.

To determine the existing traffic conditions through Wroxham and Hoveton, a series of traffic surveys were undertaken by WSP between the 12th to the 18th May 2019. Automatic Traffic Count (ATC) total traffic data was taken over the whole week, while Automatic Number Plate Recognition (ANPR) and Junction Turning Count (JTC) data was taken on the 14th May 2019. The surveys also included pedestrian and cyclist number surveys.

The work has not looked at longer term growth scenarios. This study will look at the growth opportunities presented by the transport interventions identified.

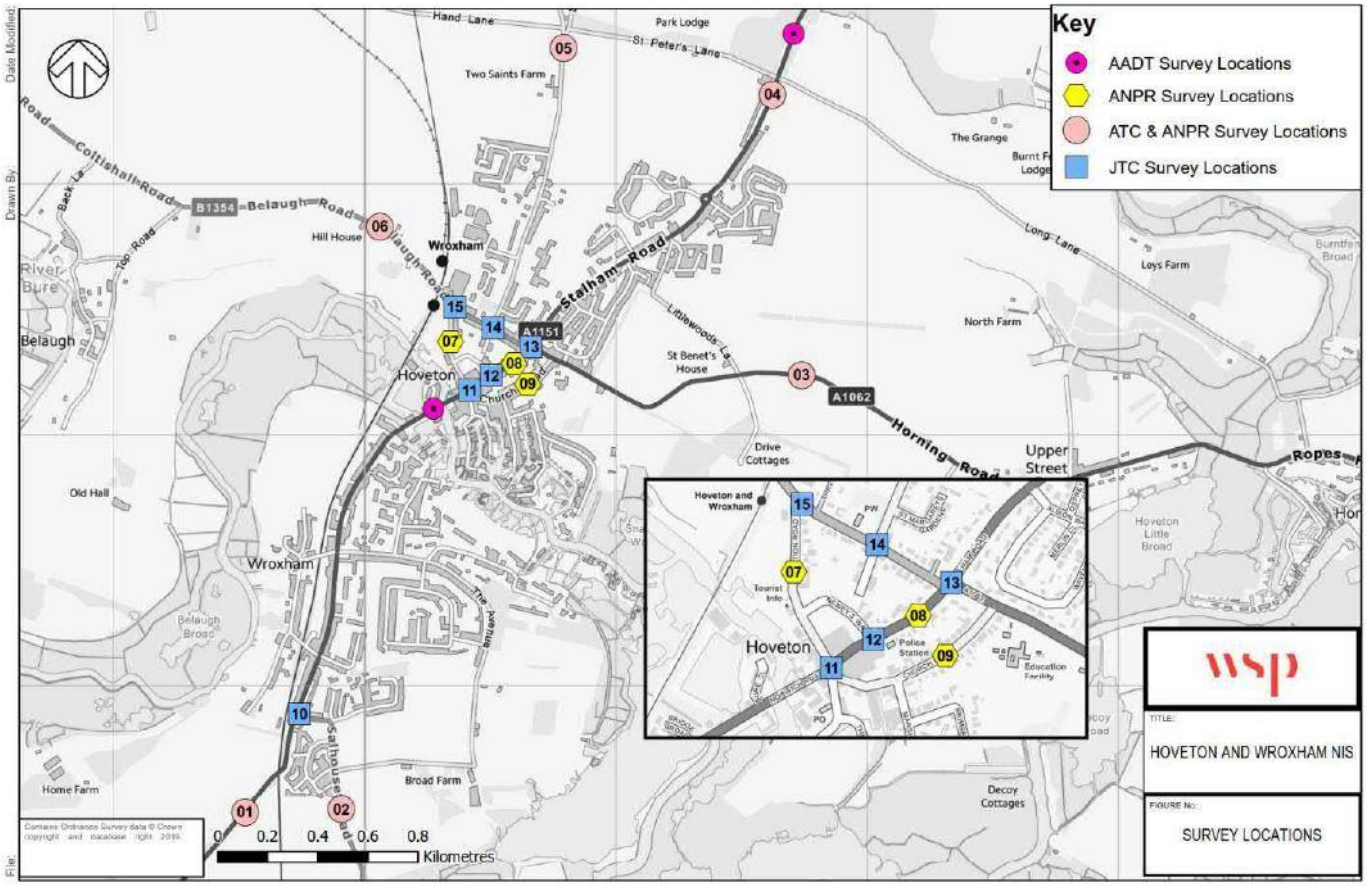


Figure 7.1: Survey Locations

7.1 Through Traffic Assessment

A through traffic assessment of Wroxham and Hoveton was conducted to discover if through traffic is a contributor to the congestion in the towns. This information has been used to identify possible traffic management schemes and where they would be most useful. Automatic Number Plate Recognition (ANPR) cameras were installed to record vehicle movements over a 12 hour period (07:00-19:00), in order to identify the level of through traffic routing through Wroxham and Hoveton. ANPR cameras were placed at all the main exit and entrance highways to the town and in the centre at the locations shown in figure 7.2.

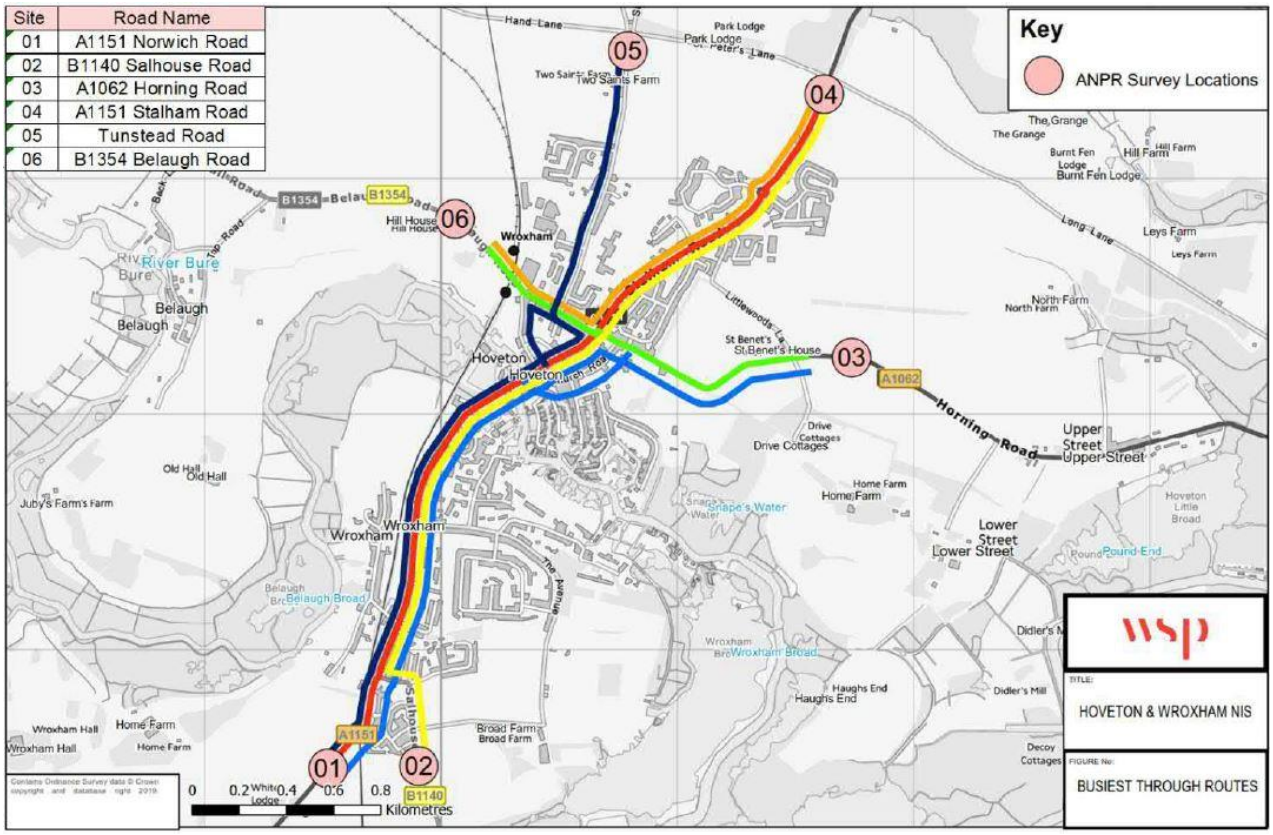


Figure 7.2: Through Traffic Routes

Findings

- The data illustrates that 53.5% of 'inbound' trips (1,912 vehicles) are through traffic.
- The average percentage of traffic that passed through Wroxham within 15 minutes (through traffic) is 54% between 07:00 and 19:00 with the highest quantities of traffic pass through Norwich Road and Stalham Road. Site 01 has the largest volumes because it is the main route to Norwich.
- The weekday flow profiles of the A1151 show a tidal profile with the greater proportion of traffic heading south in the AM peak and returning during the PM peak in the northbound direction.
- The roads leading from the east and west of Wroxham and Hoveton, Horning Road (A1062) and Belaugh Road (B1354), have lower volumes of traffic and less pronounced tidal profiles then the A1151 north-south route.

On weekdays Tunstead Road has a peak of traffic in the morning heading southbound. This is most likely due to the school being on this road. A significant proportion of traffic travelling between Horning Road (Site 03) and Norwich Road (Site 01), uses Church Road as an alternate route. Seasonal variation also plays a part in congestion issues.

Along the B1354 Belaugh Road there are more HGVs heading eastbound than westbound. For all vehicle types, there are more vehicles heading towards the Stalham Road / Horning Road/ Horning Road West double mini-roundabout where the two key routes meet.

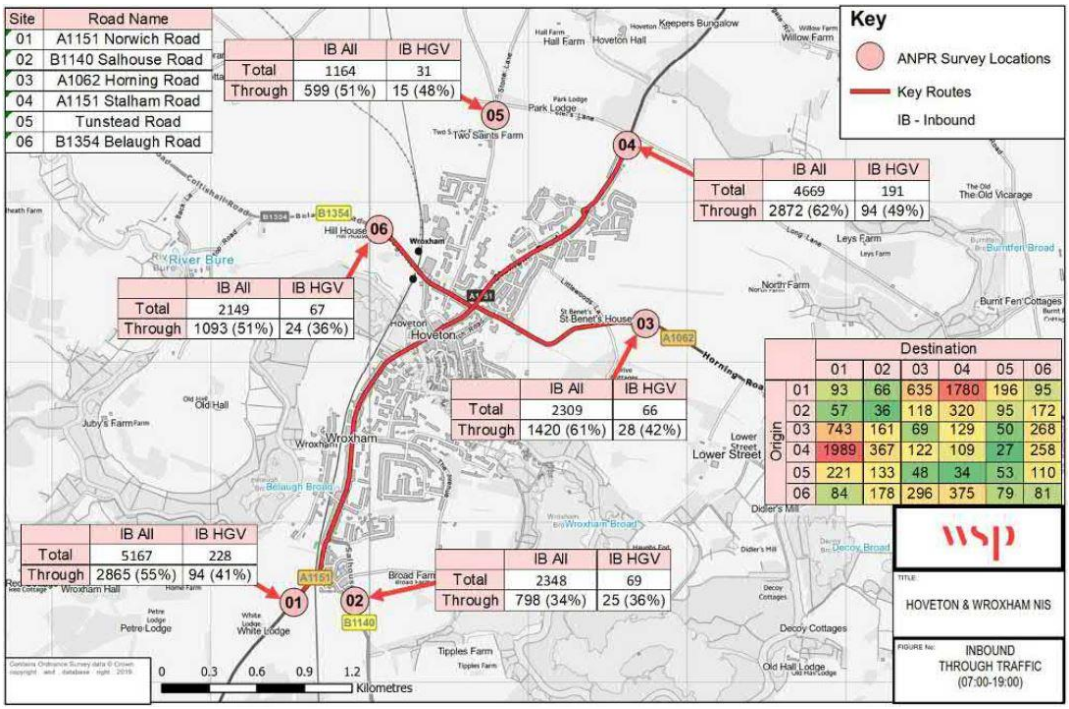


Figure 7.3: The total percentage of 'inbound' through traffic

Figure 7.3 shows the total and percentage of 'inbound' through traffic diagrammatically for all vehicles and HGVs. It also contains an Origin-Destination matrix describing the journey through traffic takes through the towns. The data illustrates that 54.0% (9,647 vehicles) of the total observed 'inbound' trips (17,806 vehicles) are through traffic.

Summary

The through traffic assessment shows that a high proportion of traffic in Wroxham and Hoveton is travelling through the towns with the greatest movement between the A1151 Norwich Road and the A1151 Stalham Road sites. This result is expected as it is the only north-south arterial route that crosses the river and leads to Norwich. Other key movements are between the A1062 Horning Road and the A1151 Norwich Road, which is understandable as the next river crossing east of Wroxham and Hoveton is approx. 12 km away.

Of vehicles through the towns, a proportion of vehicles use local roads, such as Church Road, to avoid congestion and delays along the A1151 through the centre of

Hoveton and Wroxham. These alternate routes are less accessible for HGVs due to the smaller roads and sharper bends and therefore a minimal volume of HGVs use these alternate routes.

The through traffic assessment shows that growth could be better facilitated in the south as the majority of traffic is travelling south towards Norwich in the AM peak hour and returning north in the PM peak period. Therefore, residents won't have to travel through the town centre (Hoveton) and over the already congested historic bridge.

7.2 Junction Capacity Assessment

Junction capacity assessments were carried out at Sites 10 to 15 on Tuesday 14 May 2019. This survey was done to better understand how well particular key junctions are operating and inform possible interventions to improve it.

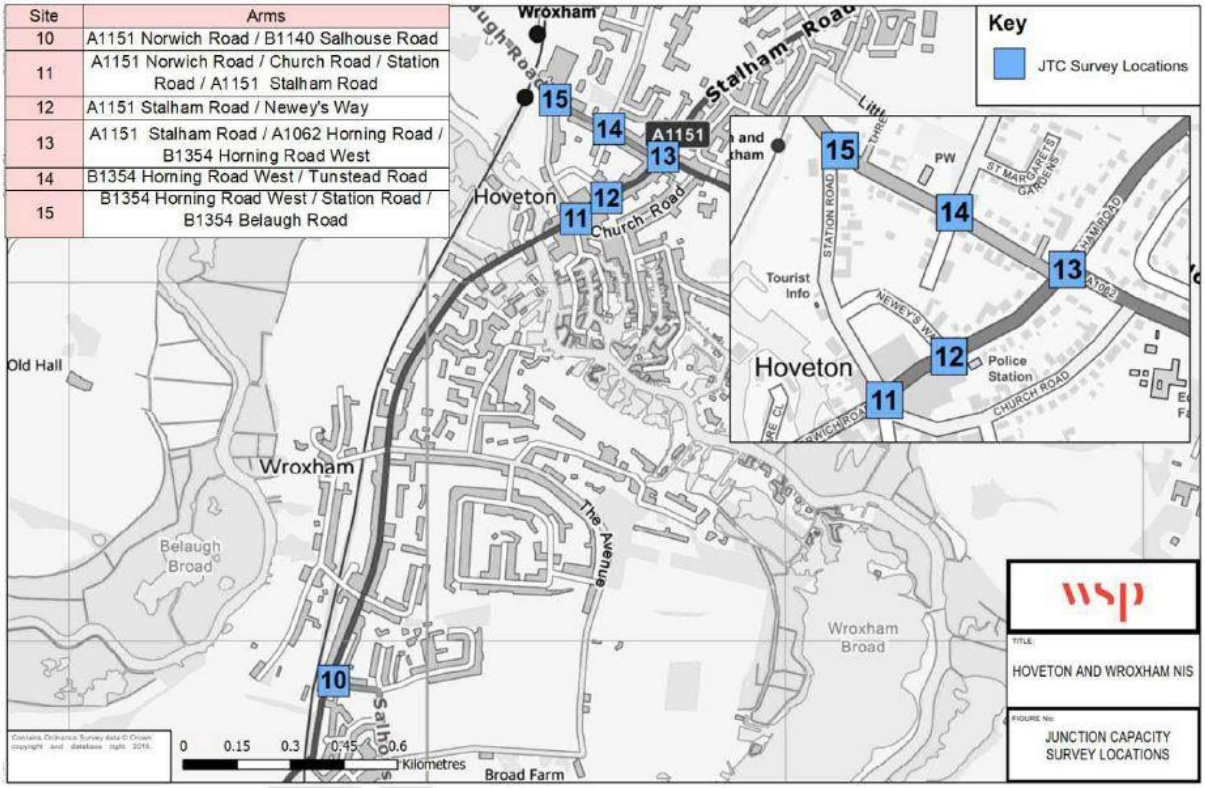


Figure 7.4: The locations of the six junctions assessed as part of the report

A1151 NORWICH ROAD / B1140 SALHOUSE ROAD MINI-ROUNDABOUT

The A1151 is the main north-south arterial route through Hoveton and Wroxham and links many of the towns north of the Broads to Norwich. All approaches to the mini-roundabout are single carriageway so traffic wanting to access Salhouse Road is restricted by the dominant flow of traffic continuing onto Norwich Road.

This mini-roundabout is close to capacity in the morning peak hour and is therefore unlikely to be able to accommodate future traffic growth. One solution to congestion at this junction is to introduce traffic signals, allowing vehicles to exit the B1140 Salhouse Road without having to pull out of the junction against strong opposing traffic flow.

Despite the delays which come with signalised junctions, these will be minimal, with vehicles clearing the lights every cycle. This intervention will make journeys more standardised and keep traffic flow moving and is predicted to better accommodate future growth in the towns.

A1151 NORWICH ROAD / CHURCH ROAD / STATION ROAD / A1151 STALHAM ROAD

All approaches to the junction are single carriageway. Station Road does not allow right turns into or out of the road, but vehicles from Church Road can still cross the A1151 into Station Road. The study shows that the junction struggles with capacity in both peak hours. The evidence suggests that changing to a signalised junction could reduce queues and help accommodate future growth, which the junction is currently unlikely to manage.

A1151 STALHAM ROAD / NEWEY'S WAY

Newey's Way is one way approaching the junction and vehicles are unable to turn into Newey's Way off the A1151. The uncontrolled pedestrian crossing on Newey's way works well and has dropped kerbs and a centre island which make it easier to cross. Therefore, the existing junction is likely to accommodate a certain level of future traffic growth and no changes were recommended.

A1151 STALHAM ROAD / A1062 HORNING ROAD / B1354 HORNING ROAD WEST

This double mini-roundabout is the busiest junction in the assessment because it is situated where the main entry and exit routes in the towns converge. All approaches are single carriageway and have uncontrolled pedestrian crossings.

The survey shows that the junction experiences congestion problems at all times. It is therefore believed that this junction could not accommodate future increase in traffic flows without intervention.

The existing traffic problems could be resolved with the implementation of traffic signals which would allow queues to clear. There may be some increase in queuing with a signalised junction but with this forecast the queues will clear every cycle, thus making the junction queuing times more predictable and allow for the junction to accommodate a higher level of future traffic growth.

The research also shows that the capacity of the junction could be increased by widening the A1151 Stalham Road [N] arm. This option also brings benefits to other road users, such as cyclists and pedestrians, as it simplifies the junction. It is also proposed that advanced stop lines for cyclists are introduced and that it incorporates two controlled pedestrian crossings.

B1354 HORNING ROAD WEST / TUNSTEAD ROAD

The B1354 Horning Road W connects the A1151 with the railway station.

The research shows that the existing junction is likely to accommodate future traffic growth so it was not deemed necessary to test the option of signalising the junction.

B1354 HORNING ROAD WEST / STATION ROAD / B1354 BELAUGH ROAD / CAR PARK

The railway bridge to the east is 13 feet (4 metres) high, which limits the access for some HGVs.

The research shows that currently the junction operates well at both peak hours. Minimum queues and delays are experienced, and the existing junction is likely to accommodate a certain level of future traffic growth. Given the junctions performance it was not deemed necessary to test the operation under traffic signal operation.

Summary

The junction which causes the highest level of congestion in the towns is the A1151 Stalham Road / A1062 Horning Road / B1354 Horning Road West double mini-roundabout. Therefore, it is proposed that a feasibility study be done on this roundabout to test the usefulness of changing this to a signalled controlled junction.

The A1151 Norwich Road / B1140 Salhouse mini-roundabout and A1151 Norwich Road / Church Road / Station Road / A1151 Stalham Road junction were both found to be unlikely to accommodate future growth.

7.3 Walking and Cycling

As well as traffic analysis WSP were commissioned to investigate the opportunities to improve walking and cycling in the towns and to build upon the existing work carried out by the Wroxham Parish Council on the Wroxham Green Loop. The loop aims to establish an alternative route for pedestrians and cyclists to crossing Wroxham Bridge as there is no existing separate route for cyclists.

The study undertook a propensity to cycle assessment to determine the potential to increase journeys made by foot or cycle and examined potential improvements. Current cycling infrastructure is limited and there is consequently scope for improvement.

The walking and cycling proportions are slightly lower than the average across Norfolk, with 9.2% of residents walking to work and 3.9% cycling. Local residents feel concerned about the safety of walking and cycling, particularly on Norwich Road and Salhouse Road, and this could be one factor in the lower numbers. The report has identified several changes that could be made to encourage residents to use active travel modes.

In the study it was observed that cycle flows in Wroxham are mainly in the direction of Hoveton, to access the economic centre, rather than Norwich, which is approx. 40 minute cycle ride. Within Hoveton cycle flows are spread across the road network with the Broadland High Ormiston Academy being a key destination. The segregated cycle path on Horning Road (Three Rivers Way) is a significant piece of cycling infrastructure linking to the major tourist attraction of BeWilderwood. However, its benefit is limited as the path does not continue to main routes.

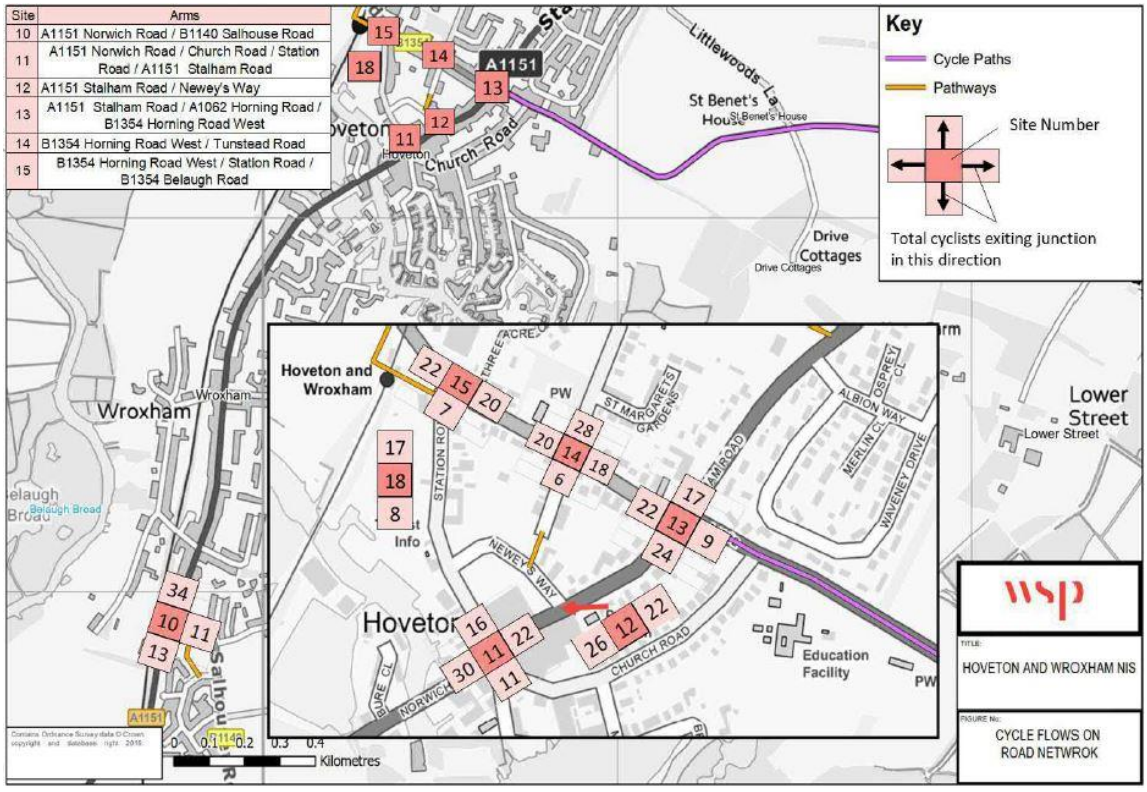


Figure 7.5: Cyclist count at junctions within Wroxham and Hoveton

Pedestrian flows were analysed to find out how people are moving across the towns and the current barriers to free movement on foot. The centre of Hoveton sees the largest footfall so was the main focus for figure 7.6. Observation of crossing points revealed a higher level of informal crossing away from the formal crossing points and a survey was undertaken to capture the number of crossings. The historic road bridge over the River Bure does not have footways and pedestrians use a dedicated pedestrian bridge on the east side of the road bridge.

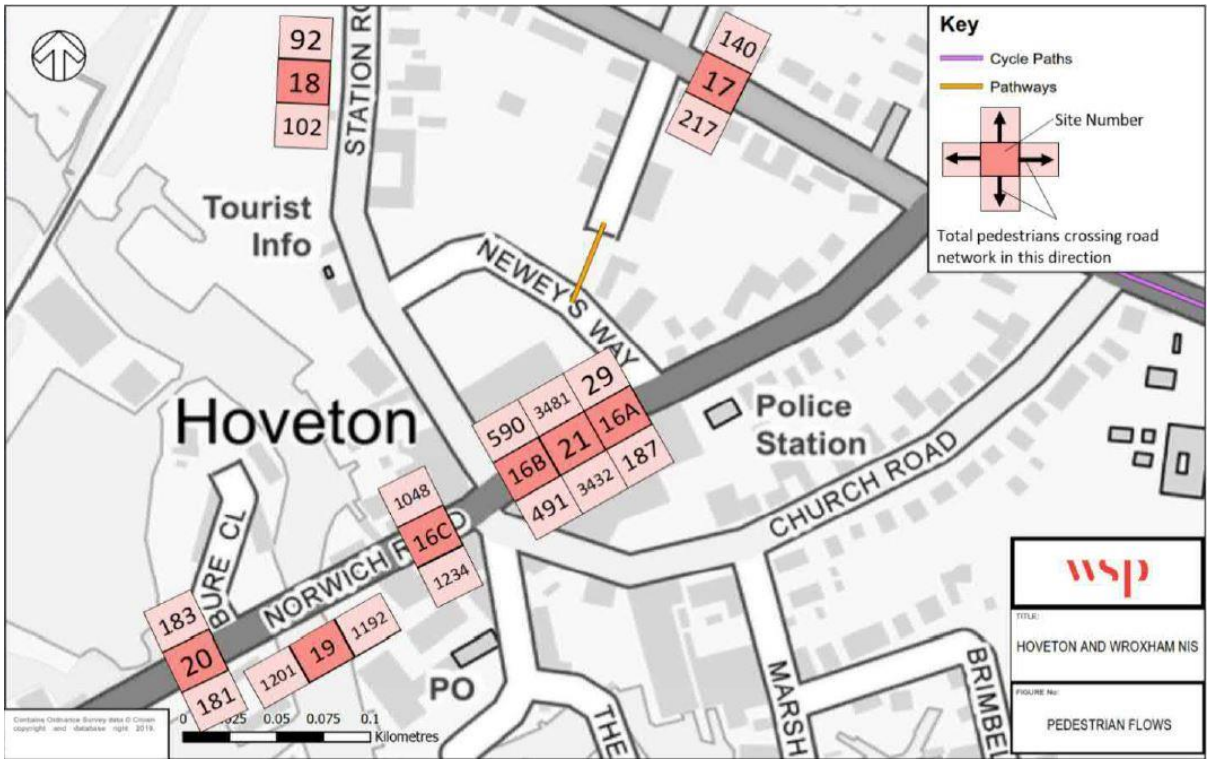


Figure 7.6: Total directional pedestrian crossing counts between 7am & 7pm

Summary

The population of Wroxham and Hoveton is expected to increase due to planned residential development in both towns, either side of the river. Therefore, encouragement for more active modes of transport is likely to reduce the effect these developments have on the road network. There needs to be short term intervention for cycling infrastructure to facilitate future growth.

Cyclists are recorded using the signalled pedestrian crossing on the A1151 Stalham Road and the pedestrian bridge over the River Bure instead of cycling on the road bridge. This might indicate that cyclists do not feel safe enough to use the carriageway at this location. However, the nature of the scheduled listing on the bridge means alternatives have not been explored as part of this study. It has been proposed that there could be a new pedestrian footbridge, or an additional crossing for cyclists to bypass the historic bridge. However, these options are not being taken forward as they are large scale operations outside the scope of this study.

The double mini-roundabout of Stalham Road, Horning Road and Horning Road West is a significant barrier to pedestrians and cyclists due to the speed of vehicles and the number of conflicting directions vehicles are travelling in. While able bodied

pedestrians and confident cyclists can negotiate the junction those with mobility issues or with children would find it difficult to navigate. The Three Rivers Way cycle path ends at this junction and there is an aspiration that it will link across the junction to the railway station and the Bure Valley Railway cycle path.

There are some improvements suggested to increase space and safety for pedestrians, although walking provision is not seen as being as limited as the cycling infrastructure. The width of the footways on parts of Tunstead Road are below the recommend minimum width so many groups such as those with push chairs, or in wheelchairs will have difficulty. With planned future development on Tunstead Road and large groups of children accessing the school pedestrian use will likely increase. However, the existing layout does not specifically provide for growth. The results of this work offers evidence for the need to put in place this kind of improvement alongside growth.

Pedestrians are also forced into the road by the narrow footway from the railway station to the towns surface car parks. There are almost as many individual pedestrian movements as there are car movements in the centre of Hoveton and therefore pedestrians should have greater representation than they currently do when looking at the highway network in the future.

Future growth

A range of possible interventions have been identified through this work. These interventions have been examined to understand their potential for releasing growth. Improvements to widen footways, expand cycle links and transform junctions could all support future growth by making the towns more accessible to navigate for pedestrians and cyclists and ease congestion on major routes. Many of the schemes identified have the potential to help support growth, and these should be considered as requirements for development proposals. The requirements of any particular development will depend on its nature, scale and location but there is an expectation that growth will be required to deliver a number of the interventions identified to mitigate transport impacts.

The interventions identified as supporting growth are:

- Station Road Turn Right for cyclists
- General footway improvements to widen the footways
- Tunstead Road (south) barrier
- Horning Road West / Tunstead Road junction improvement
- Town Centre off-street cycling route
- Stalham Road upgrade Puffin crossing to toucan crossing
- Horning Road West Station pedestrian crossing & bus stop
- Uncontrolled crossing points in Hoveton
- Three Rivers cycle path extension
- Change Wroxham bridge to accommodate cyclists
- Add cycle lanes to A1151
- Improvement to the Stalham Road, Horning Road, Horning Road West double mini-roundabout
- Horning Road West rail overbridge

- Station Road / Stalham Road new bellmouth layout
- Widen the footway on Norwich Road

Chapter 8: Action Plan

The report conducted by WSP has collected evidence to gain a better understanding of the existing traffic situation and the pedestrian and cycle environment in Wroxham and Hoveton. They have identified several constraints and opportunities for improvements to encourage a modal shift to more sustainable transport and to aid development and growth. Possible interventions were looked at in terms of how they will enable future growth, and therefore support the increase in number of people using the network. Recommendations were given in terms of short, medium- and long-term actions.

There is not funding to deliver all projects and interventions proposed in the action plan. The purpose of this study is to identify interventions and provide evidence to secure funding for projects so that when funding become available projects can be completed in a way that provides the greatest benefit. It is important that, especially with larger actions such Wroxham bridge improvements and larger cycling infrastructure, NCC would have to work collaboratively with other organisations.

The evidence supports the views of stakeholders that through traffic is a significant proportion of the journeys on the road network, around 50%. A bypass to divert traffic from the A1151 has been mooted by residents and has support from the local community. However, the relatively low number of vehicles and low number of accidents, along with the potential impact it would have on the Norfolk Broads National Park means that a bypass is not economically viable.

Action Plan Table

Scheme Type	Location	Work proposed	Short, Medium or long Term
	Station Road	Parking restriction to help pedestrian access to the train station – a charge for parking has recently been introduced so there is no evidence as yet whether this has made a difference to parking over pedestrian access	Short
	Station Road	Turn Right for cyclists leaving Station Road	Short
	Hoveton	Pedestrian wayfinding - new signage to increase cyclist and pedestrian wayfinding from the Train Station to Hoveton Town centre	Short
	Hoveton	General footway improvements to widen the footways where the carriageway is wider than needed – This will facilitate the large numbers of pedestrians in the town	Short

Walking and cycling		centre and groups of school children closer to the High School	
	Tunstead Road (south)	Barrier to stop motorised traffic but allow a safer cycle route for school children	Medium
	Horning Road West / Tunstead Road	Junction improvement	Medium
	Town Centre	Off-Street cycling route through the centre of Hoveton	Medium
	Stalham Road	Upgrade Puffin Crossing to Toucan Crossing	Medium
	Horning Road West	Station approach addition of pedestrian crossing & bus stop	Medium
	Hoveton	Uncontrolled crossing points	Medium
	Norwich Road	Widen footway to alleviate pedestrian pinch point	Medium
	Hoveton	Three Rivers cycle path extension	Long
	Bure River	Change Wroxham Bridge to accommodate cyclists	Long
	Hoveton	Add cycle lanes to A1151 connecting the Bure Valley path, 3 Rivers Way with the Broadland Way cycle path	Long
Congestion	Stalham Road, Horning Road and Horning Road West	Feasibility Study to replace double mini-roundabout with signalled junction	Short
	Norwich Road, Salhouse Road	Feasibility Study to replace mini-roundabout with signalled junction	Medium
	Stalham Road, Horning Road and Horning Road West	Replace double mini-roundabout with signalled junction which will increase junction capacity, connect the cycle path to the train station and increase pedestrian safety £500k	Long
	Horning Road West rail overbridge	Allow a new route to alleviate traffic elsewhere	Long
Junction Capacity	Station Road / Stalham Road	New bellmouth layout	Long