Chapter Two: Spatial Principles by Place

3. Introduction

This chapter considers the key issues and opportunities for each place; all the towns were assessed using the same methods, which are set out in the table below. Following the assessment, the key issues for the town in question were set out together with spatial principles for future development and enhancements.

		What?	How?	Why?
USS chapter 2 methodology – Town-wide assessment	1	Review historic maps of the town	Collect a series of historic maps for the town, from the 1800s to the present day.	To get an overall impression of how the town has grown and evolved over time.
	2	Identify historic routes	From the historic maps (step 1), identify the oldest routes around which the town has developed. Mark these in red on the maps.	Settlements traditionally grew out from the centre, which is usually arranged around the point at which key routes converge.
	3	Create a series of walking and cycling isochrones from the town centre	Decide on a central point from which to measure the isochrones. Produce a colour coded map of areas that fall within the following: • 400m – 5 minute walking distance • 800m – 10 minute walking distance • 2600m – 10 minute cycling distance • 4000m – 15 minute cycling distance	Isochrones give a general impression of the extent to which people could walk or cycle to and from the town centre (or any other given point). However, they do not give a more detailed analysis of actual routes and conditions like topography, provision of footways etc. The County Council has done some more detailed analysis, by land use type, in their Walking Development Plans. This is referred to in the document.
	4	Route Structure Analysis	Route Structure Analysis for the purpose of this study, uses a modified version of the system developed by Karl Kropf of the Urban Morphology Unit, University of Birmingham. On an up to date map of the town, colour code routes based on how they connect to centres or each other as follows:Green – Super-strategic routes: long distance, motor vehicle only routes connecting many centres tangentially (e.g. the A14). • Brown – Primary streets: the most important multi-functional streets within the town, these usually radiate out from the centre and are often the historic routes identified under step 2. • Red – Thoroughfares: routes connected on each end to different routes. • Pink – Loops: routes connected on each end to the same route • Blue – Cul de sacs: routes connected on one end only	The simple visual map created by this method allows straightforward analysis of: • Permeability – how easy it is to move through and around the town • Movement and activity – better connected streets tend to have more people using them, and therefore more opportunities for social and economic transactions to take place. The route structure analysis also enables identification of morphological character areas/urban tissues as set out in step 5 below.
	5	Identify areas of different urban tissue or morphological character	Using the 'route structure maps' created under step 4, identify broad morphological character areas based on the street patterns. Shade a map in different colours to highlight areas of different and similar characteristics.	Street pattern is a key determinant of character. The plans resulting from this step in the methodology are usually comparable with the historic maps collected in step 1.
	6	Create a movement map – axial line analysis	An axial line is 'in short' a walkable sight line, and an axial map is created by drawing "the least set of such straight lines which pass through each convex space and makes all axial links" (Hillier and Hanson, 1984). • Select the key structuring historic routes to act as transects out (as identified in steps 2 and 4) • Also select the identified sub areas of different urban character (step 5) • Calculate 'depth' for selected transects to establish relative accessibility of the centre i.e. the number of 'steps' or directional changes necessary to move along the transect.	Space Syntax uses colour coded maps which plot the most and least integrated places. This is too complex to generate without the associated computer programme, but we can use the concept to look at the relative walkability of different parts of settlements, using axial lines. Space Syntax's evidence suggests that spaces which are 3 or fewer axial lines are well integrated, despite their actual distance. This measure will show legibility of the town and its sub areas.
	7	Identify existing open spaces and green infrastructure	Use existing data held by each Local Authority to plot open spaces onto an Ordnance Survey map of the town.	All of the methodology above has focussed on street connections. Some pedestrian and cycle routes may exist (or could be incorporated) within the established open space network, which may in turn assist movement.
	8	Facilities	Use existing data held by each Local Authority and on Google Maps to plot the broad locations of schools, shops and services.	Combining this with the route structure analysis above, allowed an assessment of how connected the networks were around key services.

4. Wellingborough

4.1 Issues, opportunities and constraints

4.1.1 Wellingborough is a historic market town situated at the centre of 18 villages. The initial growth appears to have been the crossing of the Nene originating from the Saxon period. The settlement grew steadily through the 13-17th centuries, with significant growth in the mid-19th century associated with the coming of the railways. The town centre retains much of its original medieval street pattern around which, gradual residential expansion took place in the 19th century, particularly to the north and east, close to the railway station.

4.1.2 The Town is of a cyclable scale and its historic core is walkable. 13 out of the surrounding 17 outlying rural settlements are within 4km of Wellingborough Town Centre and vice versa, (or potentially within a 15min cycle) so there is scope to enhance connections to the surrounding places, particularly by improving the on road routes and expanding or improving the green infrastructure routes to surrounding settlements.

4.1.3 Within the town there are 6 key historic radial routes which form spokes. These are complemented by green routes which also create fingers of walkable space from the centre to the edge and in arterial patterns. These green fingers help to connect different neighbourhoods together. These radial routes are the most important and best connected streets in the town. The radial link out to the proposed extension to the east of Wellingborough (WEAST) has potential to be very strong and fit in with the existing town pattern, provided that excellent access across the railway lines can be achieved to promote walking and cycling access.

4.1.4 The A509 and A45 form significant barriers at the edge of the town to pedestrian and cycle permeability. These are roads designed to fulfil the movement needs of vehicles, rather than act as a multifunctional route for walking and cycling. Since they are so inhospitable to non-vehicular users, they form a barrier to non-vehicular movement – both in terms of accessing the wider countryside, or to future development sites. Development tends to abut these routes but generally turns its back to them. Development outside of these routes is generally industrial with the exception of Redhill Grange to the North of the town.

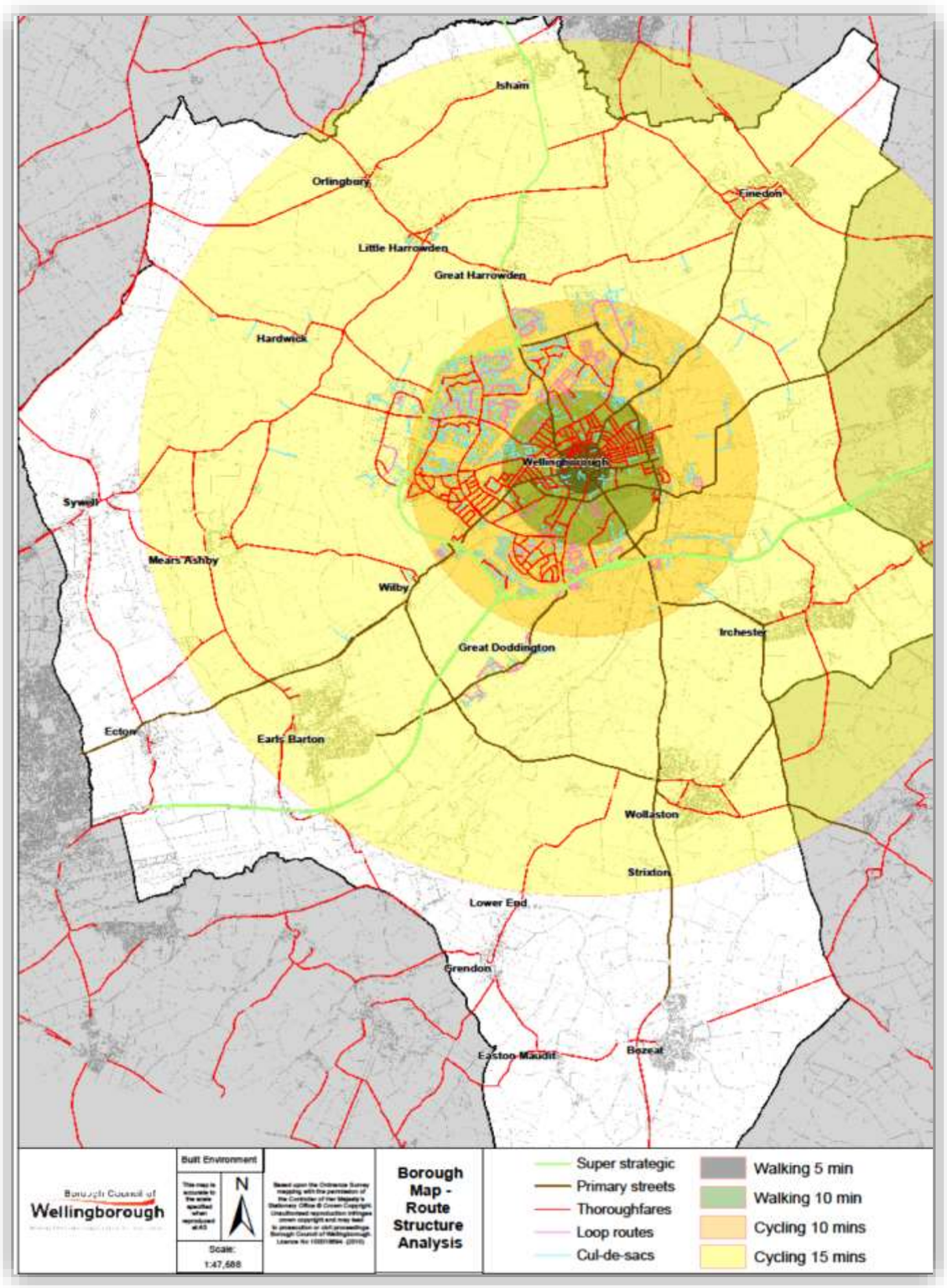


Figure 31 Walking and cycling isochrones

4.1.5 The route structure analysis below (Figure 36) indicates streets which link to another street in brown and red, while cul-de-sacs and loops are blue and purple and clearly shows the lack of connecting routes. The north western area of the town consists largely of loops and cul-de-sacs. There is therefore little choice of route to the town centre, and routes are not always direct. To the South of the town the lack of connecting streets is compounded by the A509, which forms a significant barrier. These areas are also difficult to move around, with complex routes to their own nearest centre. The north east is also where the tight grid breaks down within the industrial areas and cross connecting routes are much fewer and further between. Detailed analysis of the streets also reveals that the 20th century areas are less legible, with fewer straight streets and more complex street forms, which make walking around, seem further than it actually is. For instance, in the North West corner, routes to the nearest school, while of a similar length to elsewhere, comprise of twice as many changes of direction, with lots of short, and complex winding streets. The Northamptonshire County Council Walking Strategy for Wellingborough looked specifically at the post War estate around Queensway, which has a Radburn type layout. This identified that although there were a lot of footpaths, these were not along the streets amd were often in enclosed alleys under the buildings. They were less well used and felt unsafe. Since the streets had been designed more for car access, pavements were not universally provided, again reducing the quality of the area for pedestrians. This combined with the cul-de-sac and loop layout, makes this area much less connected for pedestrians.

4.1.6 Running east/west through the town centre are regular finely gridded street networks with multiple connections creating a very permeable network. To the south an irregular grid exists around Berrymoor Road. Built form continuously encloses the public spaces and streets.

4.1.7 There are 11 local centres in the town and they are generally well spread out, but not always on the most accessible streets. For instance, the centre off Barnwell Road in the north east is on a cul-de-sac, hidden behind the main road. Farm Road is not on a connected street network, although it does have footpath connections around it and the development around the Tesco in south east of the town is primarily aimed at motor vehicle connections, not pedestrians and cyclists.



Figure 32 Wellingborough's typical fine grid of streets, with built form enclosing public space. Image Wellingborough Conservation Area Appraisal

4.1.8 Large employment areas are clustered to the East and North-West of the Town, but these are not very accessible by foot or bike, although Park Farm is quite well connected to via cycleways. There is a need to improve access to these areas, and ensure more mixed uses and employment in the town centre, station area and potentially around local centres.

4.1.9 Wellingborough is well served by open space and linear parks run through the town which act as key connections between neighbourhoods and town centre. The formation of the linear parks has largely been influenced by the watercourses.

4.1.10 Scope for additional development is limited to the south due to flood plain, environmental constraints and severance created by the A45.



Figure 33 Character areas

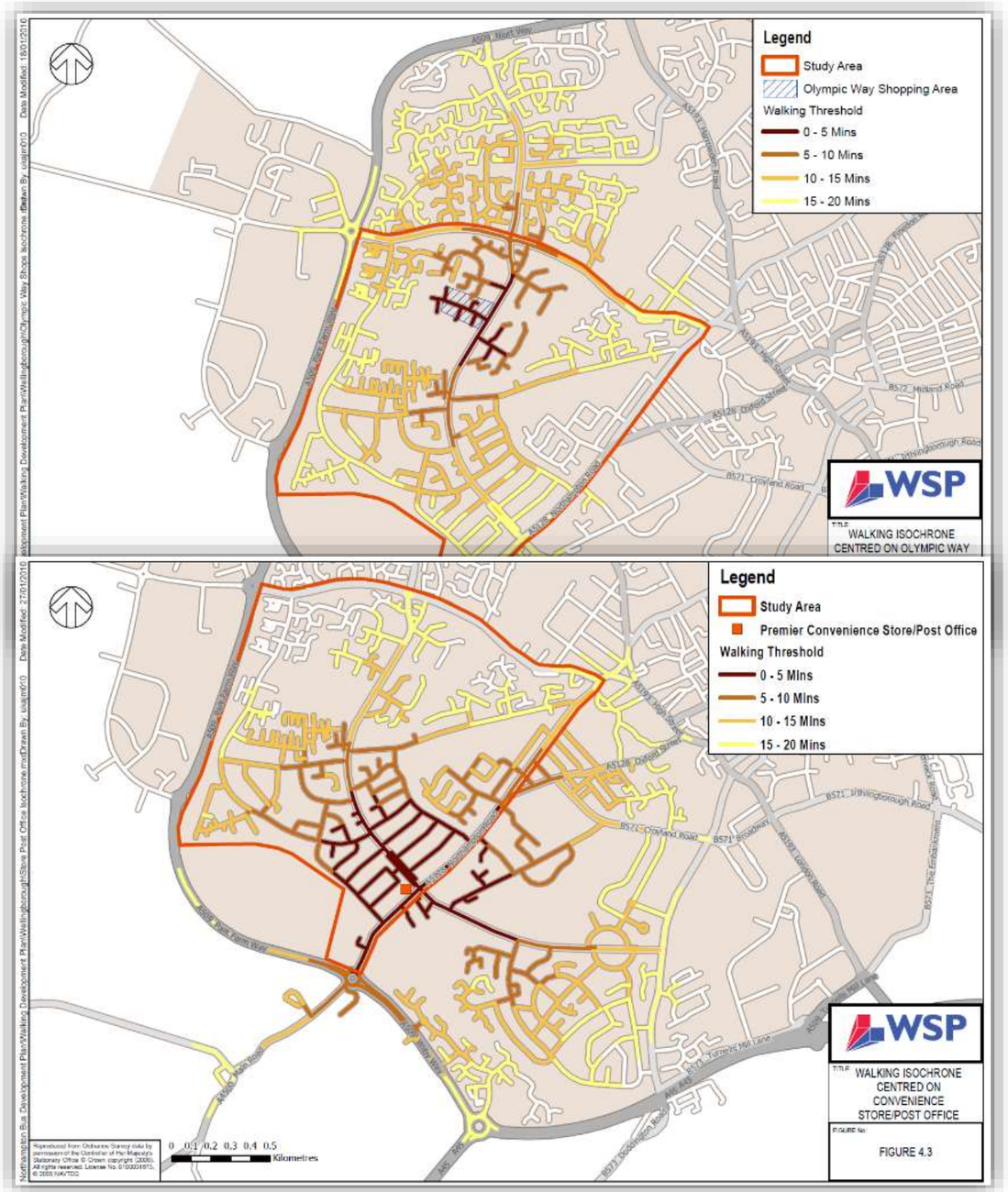


Figure 34 Complex street patttern and cul-de-sacs around the Olympic Way shops means that few areas are within a 10 minute walk, as opposed to the more conventional pattern elsewhere. Wellingborough Walking Development Plan, Northamptonshire County Council.

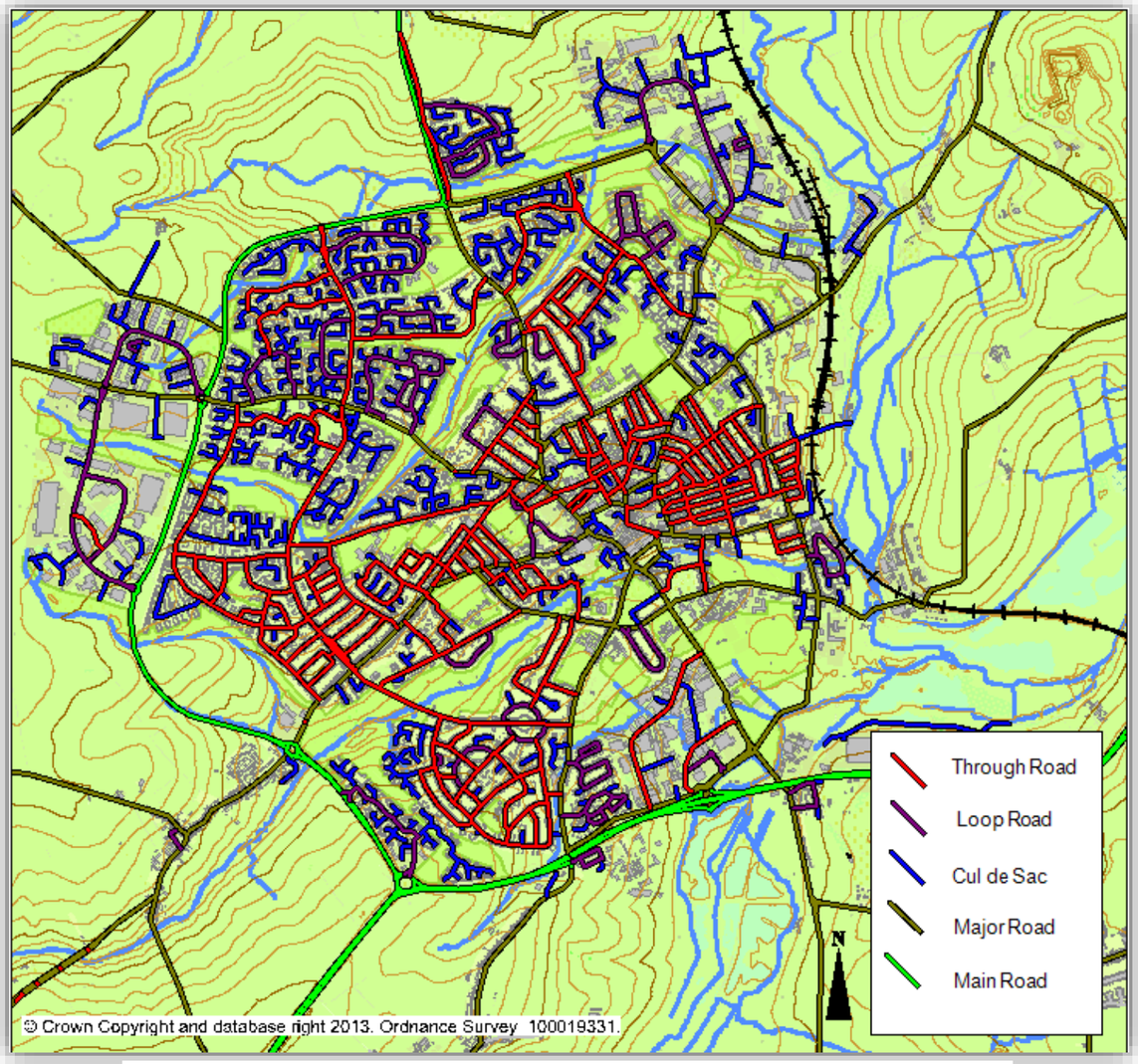


Figure 36 Route structure

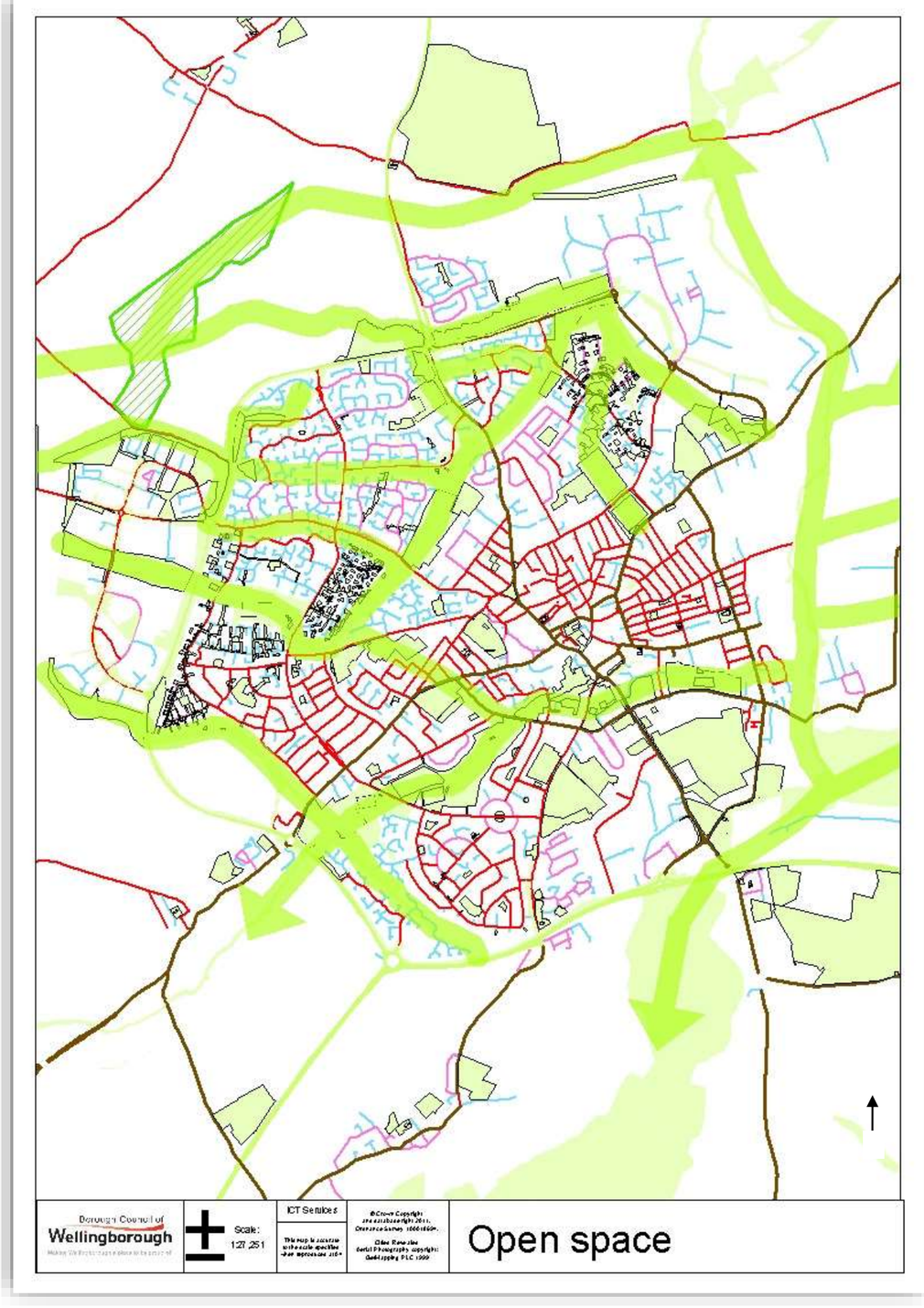


Figure 35 Open space and green connecting routes

4.2 Spatial principles

4.2.1 Focus on the most connected streets

Enhancing the quality of the radial corridors from the centre to the edge is key for all modes. It is suggested adopting a "radial strategy" to gradually improve the public realm along the radials and to re-prioritise pedestrians and cyclists, and to ensure good public transport connections. Improving the route between the town centre and the railway station/WEAST (as already planned) is also supported, along with improvements to the gateways at the edge of town with the outer ring roads. These existing and extended radials (in the new extensions) should be the focus for mixed uses. Within WEAST the employment and mixed use is appropriately on the radials, around the station and on the key north south orbital between radials.

4.2.2 Humanize the A45 and A509

For the A45 and A509 to not form such significant barriers, they need to be considered as urban streets and form part of the town, which could involve lower speeds, pedestrian and cycle crossing points, pavements alongside and frontage on to them**.** This is important not only for integrating development beyond them, but also for countryside access**.** Further investigation is needed to identify how better connectivity can be achieved to achieve an appropriate balance between through movement and the need to connect the town across the roads, aswell as the cost of infrastructure required.

The Isham-Wellingborough Improvement Scheme (IWIMP), a major new road within the northern SUE is currently designed as another ring road, and would be likely to be a further barrier to growth and non-vehicular integration if not designed with pedestrians and cyclists in mind.

4.2.3 Locally distinct

The study identifies different character types, based on how the street network is comprised, and the relationship between built form and the street. New development in Wellingborough should draw from its character in streets and forms to make development which is distinctive to this place**.**

4.2.4 Capitalise on the excellent Green Infrastructure and trees

Capitalise on the excellent GI links within the town to make more connections, and to make the connections of high quality and easy to the Nene Valley in particular. Continuing and linking up the green spaces to make the network as connected as possible should be continued. Street trees make a valuablecontribution to many of the character areas, particularly in Area 1 where large trees such as pollarded limes and London planes create excellent views and street enclosure and these characteristics should also inform the design of new streets.



Figure 38 Street trees create much of the sense of place. Photo Borough Council of Wellingborough

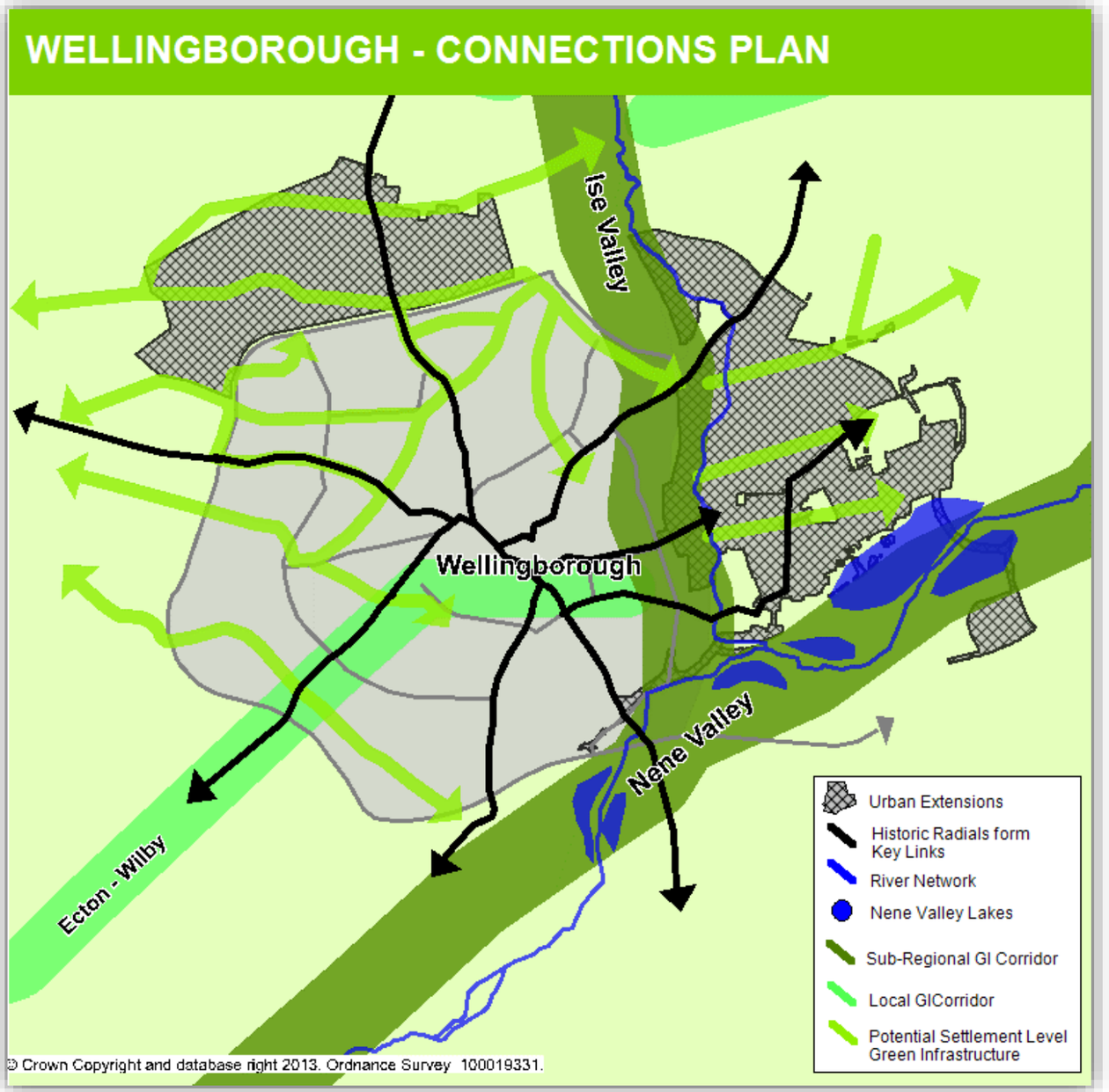


Figure 37 Potential and current GI connections

4.2.5 Mixed use

The zoned nature of some areas causes problems with movement. New developments need to provide more mixed use areas. Fostering the small local centres with additional mixed uses and employment should also take place. Also a more flexible mixed use approach to the (Sustainable Urban Extensions) SUEs could allow for more employment space, and smaller unit sizes within the SUEs.

4.2.6 Walkable neighbourhoods

Connecting up the cul-de-sac areas where possible and ensuring that existing shopping and service areas are developed to promote walking and cycling access, eg Victoria Park. Improvement to existing walking infrastructure as identified in Wellingborough Walking Strategy.



Figure 39 Multi lane, high traffic route with 4 main carriageway lanes, and 2 side streets, wide pavements, tree planting, central tree planted median – Royal Parade, Melbourne shows a major traffic flow road can still be easy to cross and pleasant for pedestrians. Image Copyright of Orderinchaos

4.2.7 Enhance connections to the surrounding villages

Promote links to the existing surrounding villages to support access to Wellingborough town centre both through public realm improvements for cycling along the existing roads and through the creation and enhancement of GI corridors. GI routes along the water courses offer scope for more level cycle routes, in particular, to local villages. For instance, an enhanced GI cycle route to Irchester, via the country park and across the A45, and public realm improvements to A4500 for cycling towards Wilby and Earls Barton. Improved cycling is identified in the Northamptonshire County Council Cycling Strategy.

4.2.8 First impressions

Ensuring the gateway entrance points to the town are more pleasant/visually-pleasing through the use of structural and environmental improvements at gateways to mitigate noise impacts and encourage access to the town and from it to the countryside.

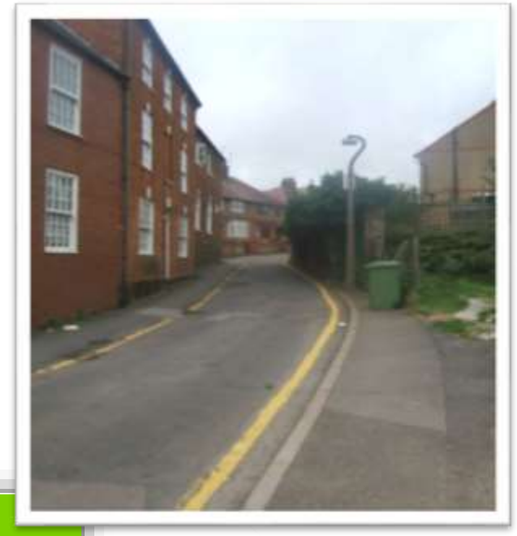


Figure 40 Historic streets vary in width and with gentle curves to create a low speed distinctive environment. Photo JPU

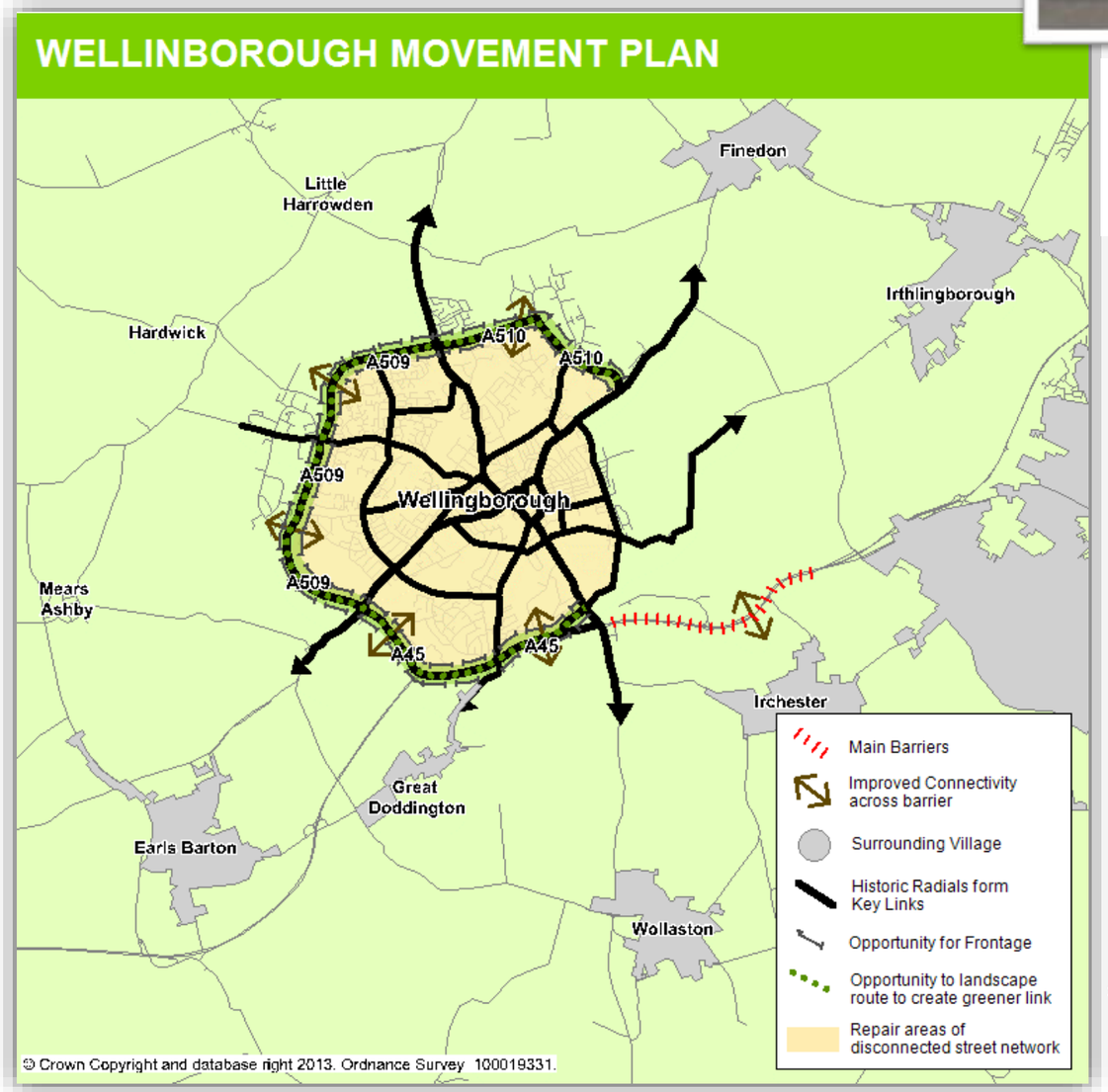


Figure 41 Summary plan (left) showing key radials and areas which would benefit from change to improve connectivity

Further Reading:

Town Centre Conservation Area Appraisal

5. Corby

5.1 Issues, opportunities and constraints

5.1.1 Corby has significant problems with internal linkages, both along streets and through green infrastructure. Intervention and improvement is needed but the opportunity to link in new development with existing development is also very constrained, therefore limiting improvements that can be made to existing areas. Major interventions to improve the existing fabric would be unlikely to be achievable without significant development to fund them. These issues are explained in greater detail below.

5.2 Accessibility to the town centre

5.2.1 Corby's history has affected the way the streets are laid out. From a small medieval manor, it grew significantly first with the coming of the railways, then in the 1930s with the steel plant, and finally in the 1950s and 1960s having been designated a New Town. The historic structuring routes, which generally form the skeleton of the town and converge at its centre lead to the old village centre. However, the centre of Corby shifted west to the new Town Centre, making some of the key historic routes much less important. Efforts to improve connectivity between the Old Village and the new town along the Corby Walk will help connectivity to the centre. This will help both to connect the railway station to the town, and to link where the historic streets focus on, to where the hub of activity now is. Therefore improvements for pedestrians and cyclists to the key roads between the two will still be essential, particularly if the town centre will provide a better offer. The presence of the large superstore on the main road between the two also provides the opportunity, and need, to extend the town's centre out and to change the nature of these roads from traffic dominated roads to streets for all.

5.2.2 The connections between the two major shopping areas; the town centre and Phoenix Parkway, are important so people can easily travel between them. Phoenix Parkway is not currently designed to promote walking and cycling access, both from its immediate environs, and from the town centre but it has the scope to serve as an important shopping destination and local centre for people living and working nearby (particularly given

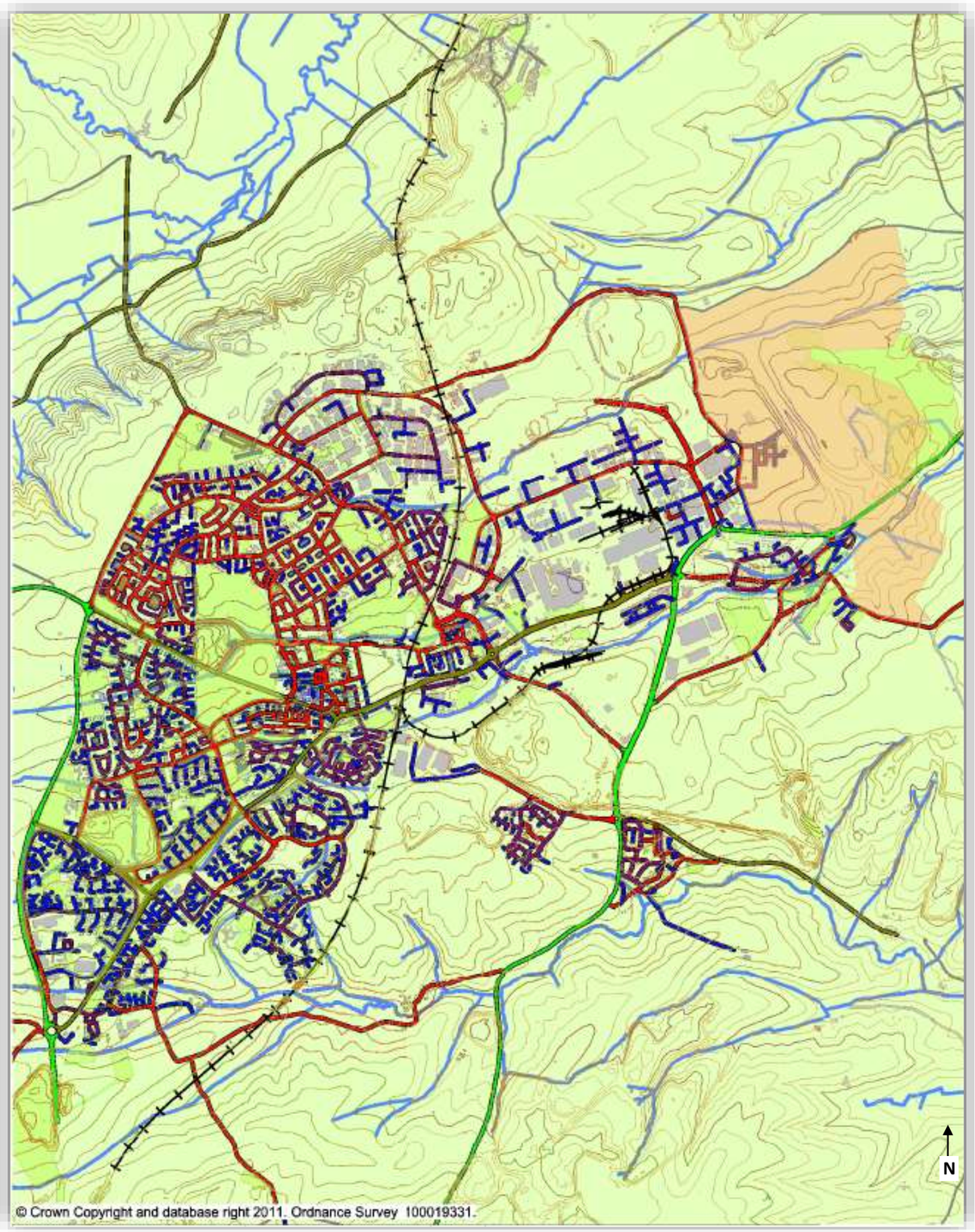


Figure 42 Route structure analysis

the new community at Priors Hall and future development around Rockingham Motor Racing Circuit).

5.2.3 Many of the key radial routes to the town centre have been designed to fulfil the movement needs of vehicles, rather than a multifunctional route for walking. As the roads are so inhospitable to non vehicular users, they form a barrier to pedestrian movement, and indeed development, with reduced routes on the other side of them and people having to go over or under roads in order to get where they want to go.

5.2.4 The density of routes around the town centre is relatively low, mainly because it is encircled by green spaces where there are no roads. This ring of green spaces is therefore critical in providing additional non vehicular routes to the town centre. However, the Corby GI study points out that "The absence of a linked and coordinated network from the heart of the town or from within residential zones makes pedestrian access to key destinations in the locality difficult". In addition, the green spaces are underutilised. The potential of these areas has already been recognised in the Green Infrastructure Study and in the Corby Regeneration Framework and work is already underway to improve routes through initiatives like the Corby Walk, improvements to Hazel and Thoroughsale Woods and improvements generally to the parks to increase their use.

5.2.5 Figure 44 is a key radial linking the town centre and old village. Relatively simple measures such as speed reduction, narrower vehicle lanes, cycle lanes, wider pavements and more tree planting would dramatically change the character of the road, which already benefits from a lot of frontage development. The Ashford Ring road project, (Figure 43), gives a clear indication of the changes brought about by introducing planting, reducing speeds and giving over more space to pedestrians and cyclists in a heavily trafficked road.



Figure 43 Ashford Ring Road, Kent. Image courtesy of Landscape Institute and shows the landscaping improvements made to this major ring road to slow traffic speeds and improve the environment for pedestrians and cyclists



Figure 44 Key radial in Corby linking old village to town centre. High speed, difficult to cross for pedestrians

5.3 Accessibility to the suburban areas

5.3.1 In Corby, the oldest areas are the most permeable both in terms of the Old Village and the 1930s Stewarts and Lloyds areas. There are cul-de-sacs in these areas, but they are generally short and contained within a connected grid.

5.3.2 To the south of the town, the more modern estates are designed on a cul-de-sac model, where permeability is low. The estates are effectively islands, with often only one or two entry points for a whole estate and all roads within are either loops back to the same road, or dead ends.

5.3.3 Figure 46 indicates traditional mixed use, connected streets where streets connect to one another and employment, retail and civic functions are in clustered, but are integrated into the local street network. Figure 45 is a stylised version of Great Oakley where the main street through has no active frontage, cul-de-sacs and loops predominate so choices of route are extremely limited and the other uses, such as shops, employment and green space are at the edge with limited connections to them.

5.3.4 Radburn layout estates also are found in Corby with one main route around the perimeter, few linking streets, but lots of interwoven public spaces, and the majority of streets do not lead to anywhere else. Supporting activity within these areas and shops and services is difficult due to the lack of passing trade but the new Kingswood Masterplan seeks to overcome this by creating additional main routes with the key services and shops clustered along it. The cul-de-sacs are long and there is no clear grid which also contributes to the lack of legibility in these areas.



Figure 46 Disconnected streets and non residential uses cut off.



Figure 45 Typical historic pattern of connected streets with mixed use (red) and open space (green) integrated into streets.



Figure 48 Main street with no active frontage. Photo JPU



Figure 47 Radburn estate. Photo JPU

5.3.4 Secondary schools are in inaccessible locations unless you live within the immediate area. They are not well positioned to serve a wider catchment area of pupils.

5.3.5 In terms of shops and facilities, there are few shops in Great Oakley area so it is critical to improve walking and cycling links to Morrisons, the Southern Gateway and Kingswood and Oakley Vale shops. In addition, this area has the most convoluted routes to its services, which are at some distance, given the population and insularity from other services. The convoluted street pattern contributes to this. North West Corby is well catered for by small local services, but the improved offer at Corby town centre may impact on the viability of these. Health care and services are focused in the northern part of the town and there is a need to improve links to the south of the town.

5.4 Accessibility to the employment areas

5.4.1 The heavily zoned nature of employment in Corby isolates these employment areas from the town centre and public transport hubs, as well as blocking access to the housing/countryside beyond. In the north east industrial area of the town, the grid is quite connected, but the roads are so sparse that there are few interconnections since the urban blocks are so large. It is clear that these blocks are not at a "human" scale and pedestrians and cyclists are unlikely to use this area because attractors are so far spread out and distances are perceived to be so great that they would not feel comfortable. In addition, it is unlikely that cyclists would feel safe cycling on street, with such fast roads and high levels of HGVs.

5.4.2 For instance, the Earltrees Industrial estate has a complex route to the town centre, by virtue of the street pattern, although the actual distance is not that great. Ways to increase permeability through this area, both by smaller blocks and more connected routes will be critical. This has also been identified as an objective in the Corby Green Infrastructure Study. The Northamptonshire County Council Walking Strategy for Corby examined this area in detail, to try and draw broader conclusions for all industrial areas, and found that whilst footways were provided throughout, there were not enough crossings or dropped kerbs, which reduced their ease of use for pedestrians.



Figure 50 Industrial areas. Photo JPU



Figure 49 Main street in Seville with segregated cycle route and separate pavement alongside. Image courtesy of London Cycling Campaign.

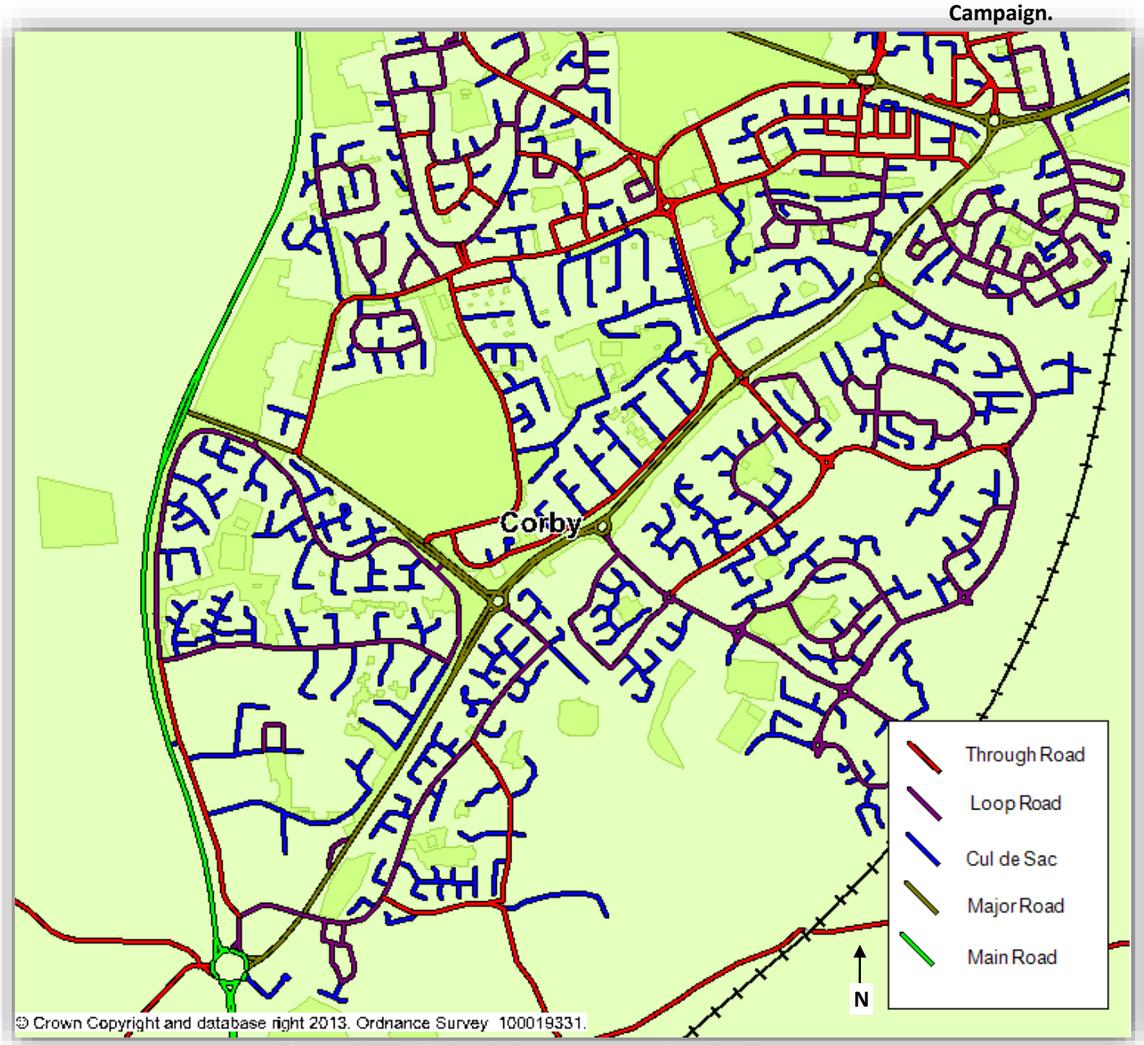


Figure 51 Typical cul-de-sac pattern in a Radburn estate

5.5 Accessibility to the countryside

5.5.1 Main roads cut off countryside/development areas at edges of the town. Whilst countryside might be close at hand, for example around the Earlstrees Industrial Estate, access to it is still poor.

5.5.2 There are lots of green spaces but not in any connecting network and they do not yet create connecting routes to the wider countryside/local attractions.

5.5.3 A relatively large population of Corby do not have access to a car (32% in the local authority area) compared to a regional average (24%) so Corby has the greatest opportunity to promote walking and cycling as well as public transport, as people have less alternative choices. The town is very cyclable given that the majority of the town boundary is within 15 minutes cycling distance of the town centre (Figure 52), however the cycle and pedestrian routes to facilitate this movement need significant improvement.

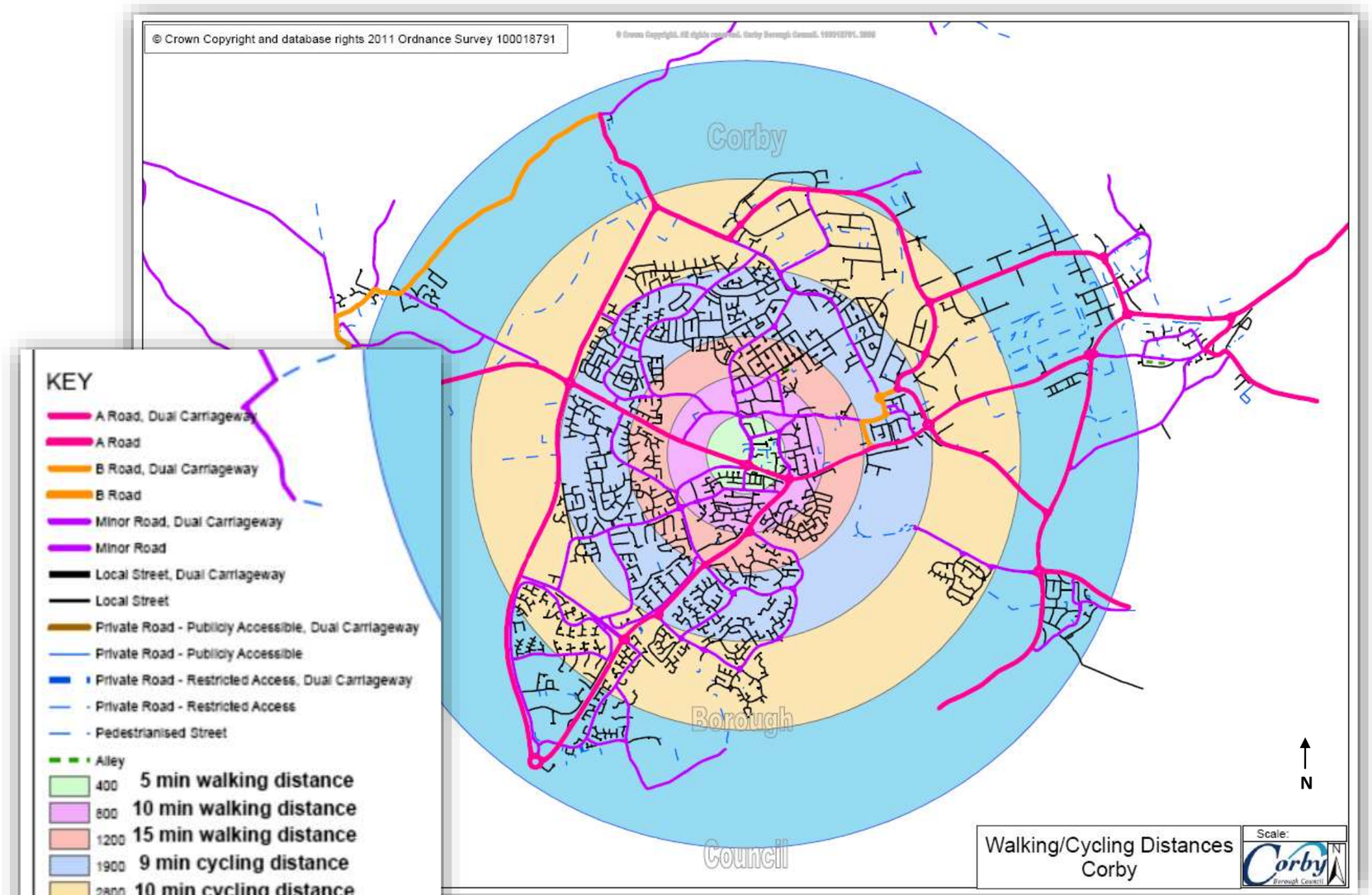


Figure 52 Walking and cycling isochrones



Figure 53 Crossing point of footpath on A6003. Photo JPU.

6. Spatial Principles

6.1 Humanize the main roads

6.1.1 It is recommended a change in emphasis on road strategy to prioritise pedestrians and cyclists. Increased use of home zones and low speed limits in residential areas, improved facilities for walking and cycling along the main roads and improvements for busses and encourage frontage access to and built form to line these streets would all support this.

6.1.2 Focus on key radial corridors as humanised streets should be made. This would help to connect outlying communities to the centre to benefit from the enhanced offer and public transport connections. This should also include lower speed limits, more side street accesses and junctions, pedestrian and cycle movement facilitated, improvements for public transport provision, frontage access for built form, built form lining the streets with front doors and windows onto the main street, and street trees.

6.1.3 In the future existing ring roads should be integrated into new development beyond them, so that they do not form a barrier between new development and existing areas – eg A6003, A43. Whilst at the same time ensuring the wider highway network is considered to ensure that traffic does not divert off to local residential street networks.

6.1.4 In the future ensure that Oakley Road and Cottingham Roads between Corby town centre and Corby Old Village are of particularly good quality, as the village is where the radials are centred. Oakley Road has scope for more active frontages along the road as sites get redeveloped, tree planting, reduction of speed, removal of guard rails and more direct pedestrian routes, better cycle routes. Cottingham Road is already a pleasant route, but could benefit from slower traffic speeds through careful highway design.

6.1.5 No more vehicle only routes - all new roads to be designed to allow for pedestrian and cycle movement, multiple access points and built frontage.

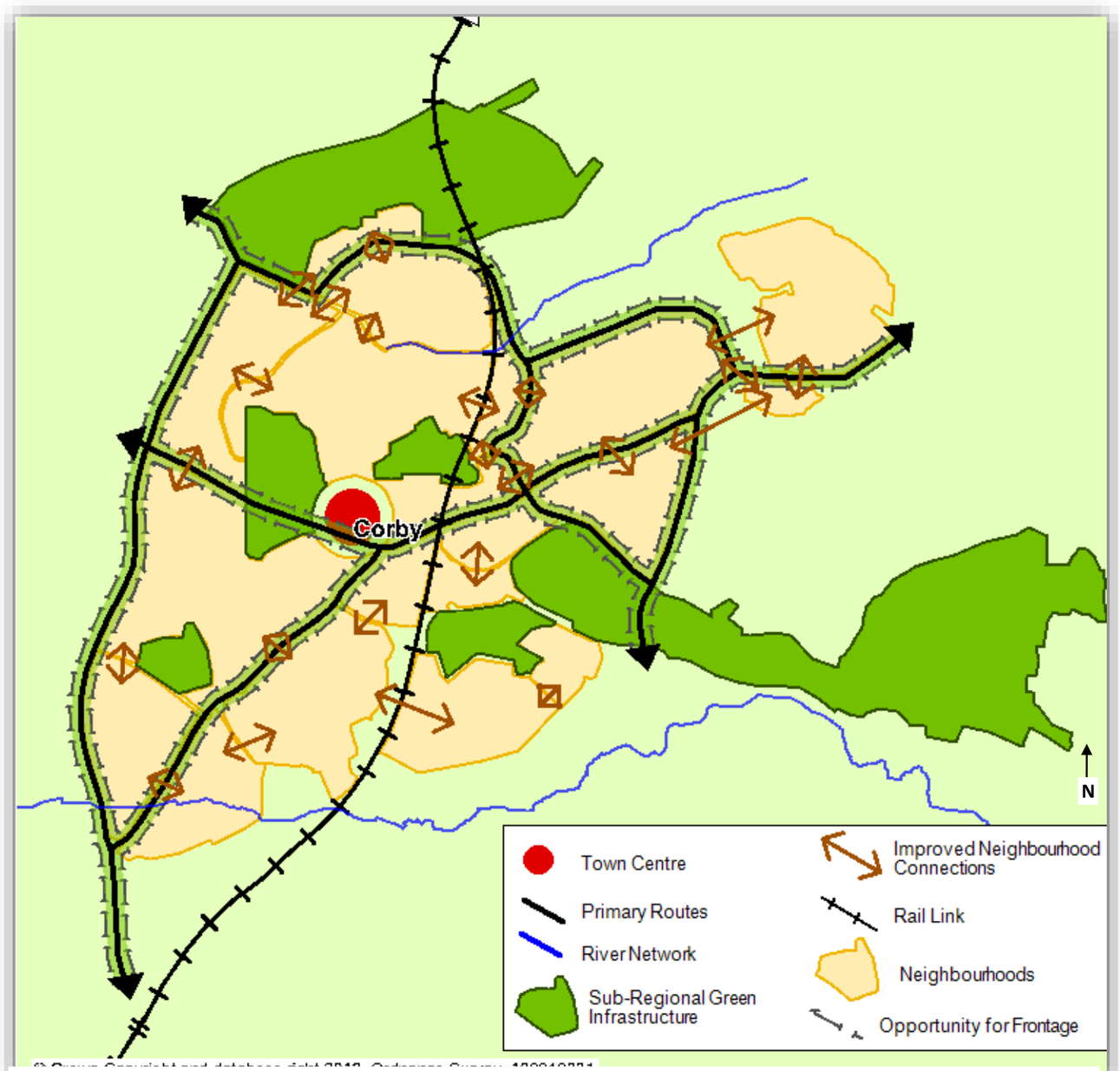


Figure 54 Corby connections plan showing the scope for improved connectivity between neighbourhoods and along the primary routes

6.2 Mix of land uses

6.2.1 New employment should be delivered in mixed use areas which should include a network of connected walkable streets, green spaces, a variety of unit sizes to ensure a mix of uses, and community and retail spaces so that they can serve the employees and nearby residents. Maximising variety can bring conflict and would need to be designed carefully. There is good guidance on this in the Urban Design Compendium (Homes and Communities Agency). This suggests the concept of transition zones which are the hotch-potch areas that bridge the commercial town centre and the residential hinterland. In Corby, the challenge is more about integrating new and existing employment zones, and this concept could equally well work here. These transition areas would be where the most dynamic mix occurs, with shops, workspaces, live work units, offices and houses existing side-by-side.

6.3 Connect up disconnected areas

6.3.1 There are few choices of routes in the employment areas to the North East, and so providing additional streets here, particularly to help connect Priors Hall to the Old Village and Phoenix Parkway would help people access the employment and services here more easily. For instance connecting up Pilot and Hunters Road (even if just as a cycling connection).

6.3.2 Ensure use of the Willowbrook to connect through town as a pleasant GI link.

6.3.3 More significant interventions are needed to link up cul-de-sacs and create more connections to adjoining communities, such as is planned at Kingswood. New schools should be in local centres along with other amenities.

6.4 Town and local centres

6.4.1 Corby has scope for major new facilities and floorspace in the town centre, located close to public transport links which could serve a wider catchment. Therefore, the opportunities identified in the Regeneration Framework to link the New Town and the Old Village together through the 'Corby Walk' are clearly very important to tie the town to its railway station. The town centre needs to be better connected to the old Village, Phoenix Parkway and the new out of town superstore. The A427 needs to be seen, not just as a road for traffic movement, but also a street for people, and measures such as those implemented in the Ashford Ring Road project could also be implemented here (ie reduced speeds, tree planting, reduction of barriers wider pavements and multiple direct pedestrian crossings). Green spaces could also be used as additional connections but these need to be clear, safe routes. Continued effort to intensify land use in the town centre including residential, employment and retail is supported. There is potential for a wayfinding/signage strategy so that people realise that the Old Village and Phoenix Parkway are not far away (ie distance in minutes) as used on the Northampton Orbital Cycle Route.

6.4.2 It is important to improve walking and cycling on the well connected lower speed direct routes which already exist as the secondary movement framework between the main radial routes (for example Gainsborough, Studfall, Willowbrook and Rockingham Roads).

6.4.3 The scope to accommodate small scale employment, and housing in existing local centres to support their viability and safeguard uses should be supported.

6.4.4 The Southern gateway could form a potential new village centre for the existing communities which lack facilities but would need to be in association with measures to improve pedestrian/cycle access to these facilities.

6.4.5 Longer term, the railway line, offers a great opportunity to link direct to the town centre, with a cycle/foot path alongside it.



Figure 56 Corby Walk clear linking route between town centre, Corby Cube, pool and beyond ancient woodland. Photo JPU.

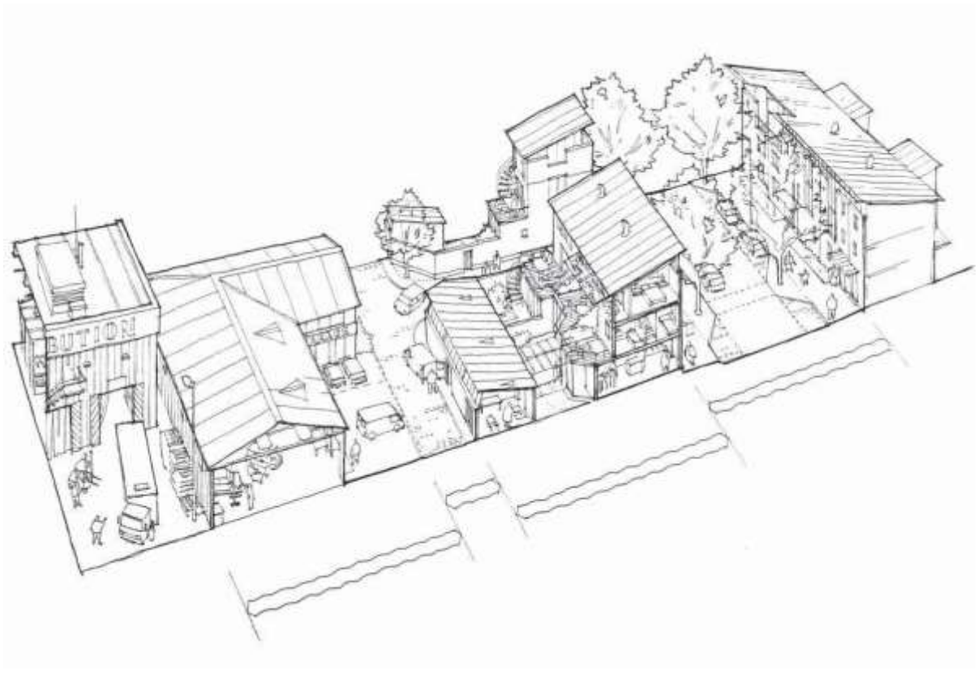


Figure 55 Image showing potential transition of uses and unit sizes from distribution to light industrial, workshop to live work and residential. From Wellingborough Council's Eastfield Urban Quarter Design Guidance, produced by Matrix Partnership

6.5 Link up green infrastructure

6.5.1 Keeping the focus on green infrastructure, not just as a destination, but also a connecting route, is important. Prioritising funds towards the creation of well connected safe routes through the open space will continue to be very important.

6.5.2 Key connecting corridors (roads, GI and rail) need significant investment for walking and cycling links. GI corridors identified in the Corby GI Study include Willowbrook and Harpers Brook. Developments should facilitate these corridors to be connected together, but efforts to create the corridors through Compulsory Purchase Order powers will also be required in order that the new communities' access to the town centre can be improved quickly.

6.5.3 Continuing the implementation of the GI Strategy through utilising funds from development, or ensuring that new development contributes to its delivery is also a significant opportunity. For instance, proposals at Tresham College were remodelled to ensure that the College related to the Corby Walk and so has the potential to animate this route, making it a more attractive and safer route through open space.

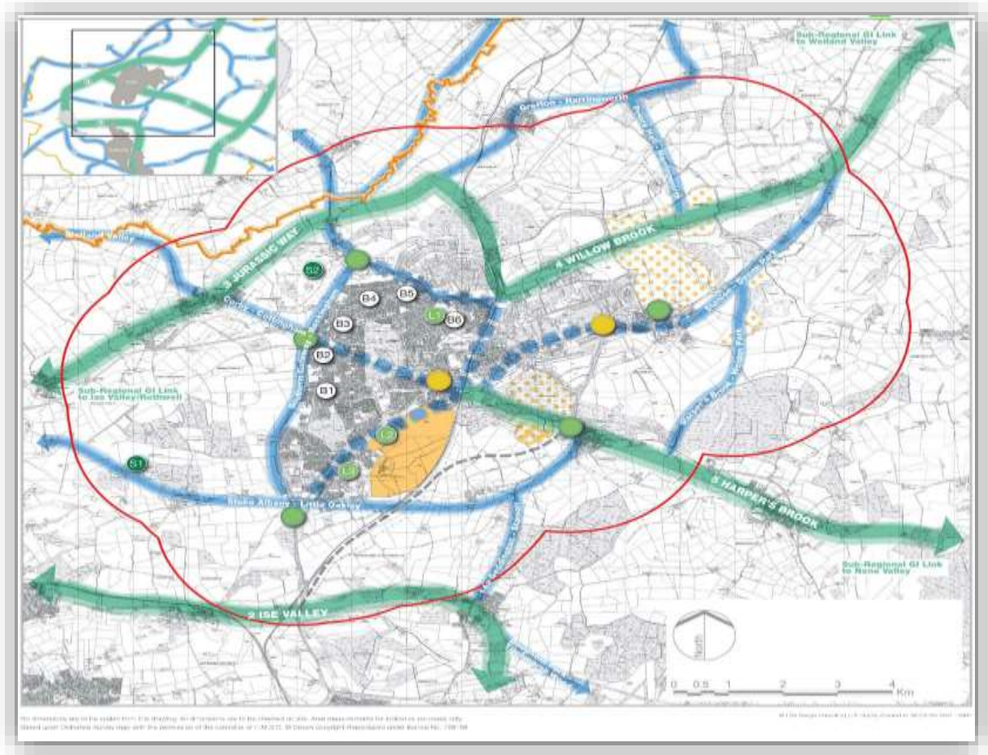


Figure 58 Corby Green Infrastructure Report: Green Routes

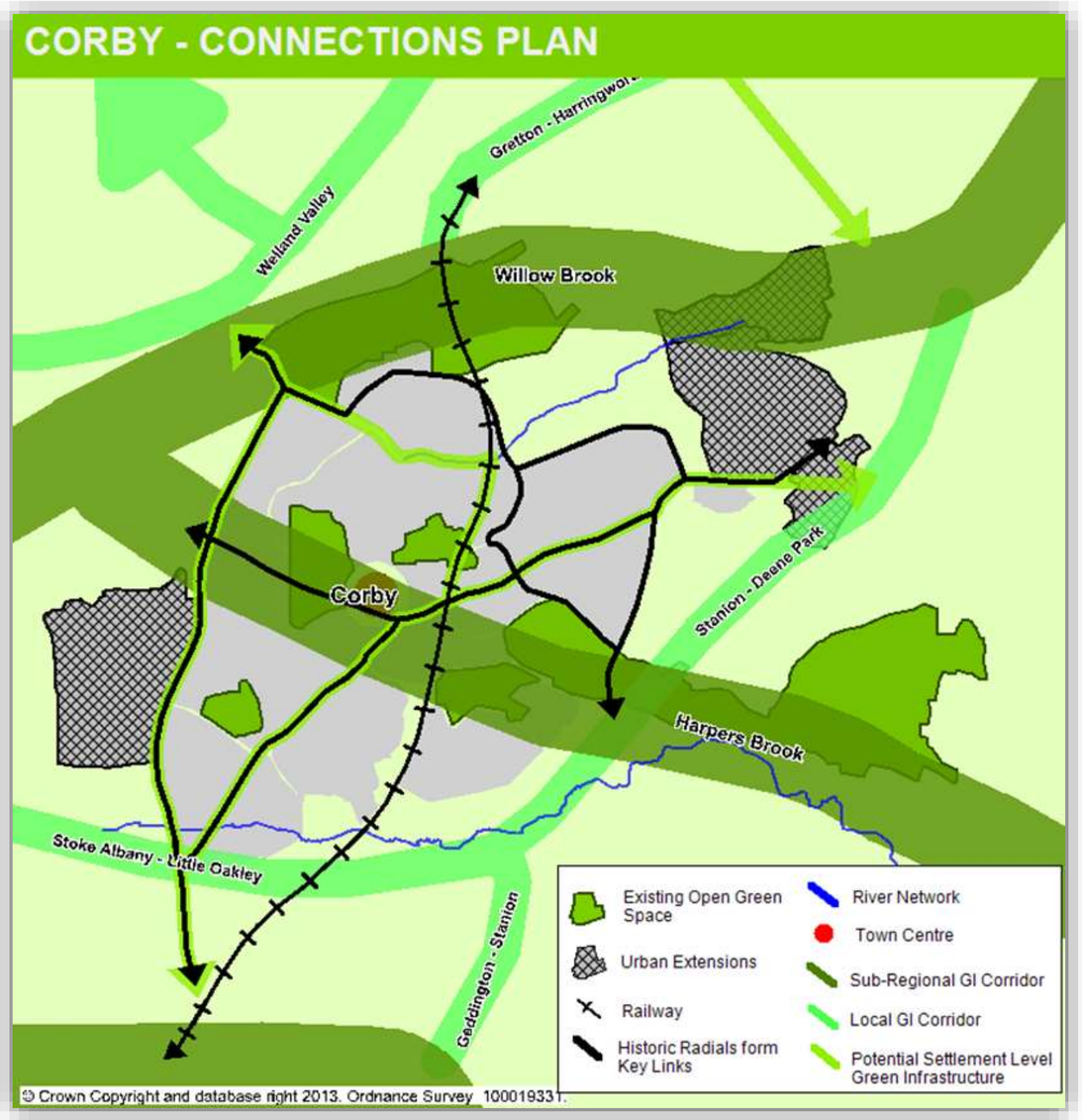


Figure 57 Corby GI connections – key GI routes to achieve through Corby

Further Reading:

Corby Borough Conservation Areas

Corby GI Strategy

7. Kettering

7.1 Issues, opportunities and constraints

7.1.1 Kettering's original centre was located on the higher ground between the valleys of the River Ise and the Slade Brook. Major expansion took place in the 19th century, largely with the development of the boot and shoe industry and the coming of the railway. The town expanded dramatically, and the population rose from 5,100 in 1851 to 30,000 in 1914 accompanied by a massive building campaign (Conservation Area Study). Kettering originally existed on a north-south axis following the line of the present High Street, expanding later into Northall Street, Silver Street, Bakehouse Hill and Wadcroft. The establishment of the Market Place to the north west of the church led to Kettering changing its shape with the focus around Market Place, Sheep Street and Market Street.

The town is of a cyclable scale and its historic core is walkable in size.



Figure 59 Historic radial routes overlaid on Brazier map of 1720

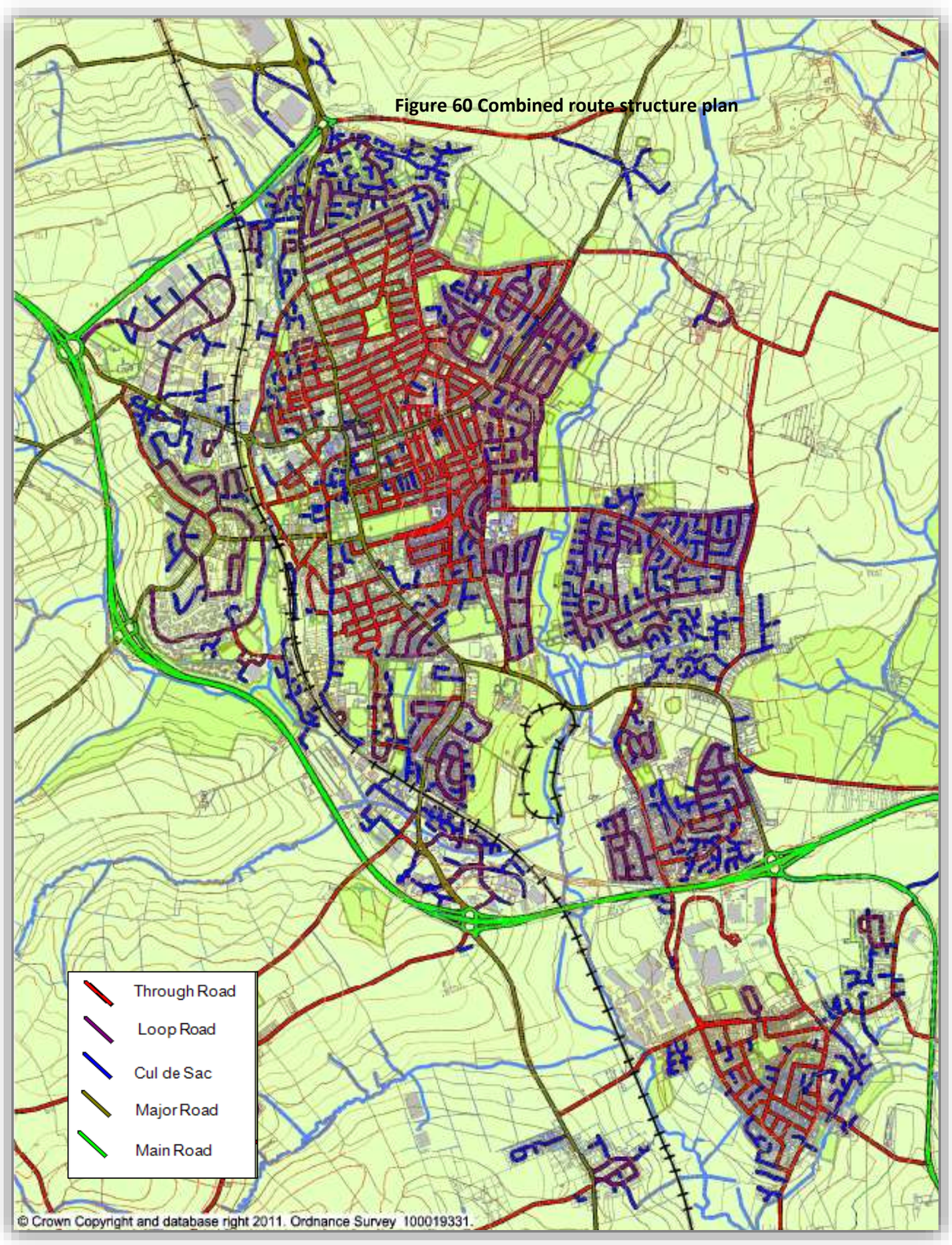


Figure 60 Combined route structure plan

7.2 Movement from centre to edge and vice versa

7.2.1 The historic radial routes (shown in Figure 59 on the Brazier Map of 1720) form the basic structure of the town. These radials are the most connected streets, and the most direct access from centre to edge. Ensuring that these most connected streets are high quality for all modes is therefore important with easy crossing points for pedestrians, safe cycle routes.

7.2.2 The A14 and the A43 provide major barriers to the countryside and to accessing other nearby villages, as well as limiting potential for growth beyond these areas to connect with the town. This is compounded by cul-de-sac development, particularly to the north, which turns its back on the A43 and so creates a double barrier to adding on. For example, the Kettering Park Hotel has countryside on 3 sides, but the most direct route involves using the main car junction of the A14 which is inhospitable to pedestrians, and other routes are 3 times as long. The areas where countryside access is easiest are from the residential estates lining the Ise Valley. The most convoluted route is from Henson Way, an industrial estate only 0.31 miles (as the crow flies) from countryside but the A43 blocks access. Locations in the town centre have about the same distance and numbers of changes of direction as those estates on the edge, which would appear to be closer to the countryside. There have been radical moves elsewhere to integrate across motorways, so this is possible, but not without considerable expense. The example below is in Hamburg where the sides of the motorway are being built up to take a deep canopy along a 3 mile stretch of the road, at an estimated cost of $1billion. The central space will become a landscaped park, connecting both sides of the road and reducing noise pollution to nearby properties.

7.2.3 1970s-2000s estates are disconnected from their locality using cul-de-sac models and are difficult to extend with additional development. These create an additional barrier between the town and the proposed urban extension at Kettering East. Securing better access to the services within these and looking at ways to connect up routes will be very difficult but could help the centres survive and benefit from the new population at Kettering East.

7.2.4 In some parts of the network, the routes fail to join up, creating dead ends and cul-de-sacs or loops which just go back to the original road (Figure 60). Within the more modern industrial, commercial and housing estates on the edges, there are fewer routes and this results in convoluted routes to and from the town centre, and within the estates themselves. The housing estates have limited linking routes, with the majority of the development being along cul-de–sacs. This is particularly evident at Ise Lodge and Barton Seagrave. Whilst there are pedestrian only links within these areas, these tend to be between houses and not well overlooked. They are therefore less likely to be used after dark, and with increasing population travelling through these areas, with the advent of Kettering East, are likely to be under strain. As well as these poorly connected residential estates, the railway line forms an obvious barrier to movement, but this is compounded by the industrial and commercial estates which run alongside it as they have few links through and connections to their surrounds.



Figure 61 London Road, Kettering (A key radial). Photo JPU.

7.2.5 The most permeable areas are the initial pre War Victorian and Edwardian expansion areas, which form fine grained rectilinear grids around the town's core. Despite being the closest in proximity to the main shopping area, they also support the greatest density of small local shops, presumably because there is a significant amount of passing trade, as most of the streets are on the way to somewhere, rather than incorporating many cul-de-sacs. The Kettering Town Centre Area Action Plan identifies different quarters including a new residential quarter which seeks to create smaller blocks in a more permeable network of routes.

7.2.6 The study identifies different characters areas within Kettering, but it is clear that many of the areas are monocultures with only one land use – retail, industrial or housing. There is significant scope to create more mixed neighbourhoods as areas are redeveloped, to introduce a more mixed balance of uses. Industrial areas like Telford Way, over time, may benefit from redevelopment to introduce more variety of retail, civic and residential uses.

7.2.7 Existing out of centre retail and commercial areas, such as the Kettering Business Park and Venture Park should be better linked to the surrounding residential areas and include a greater mix of residential uses within them if possible, so that they become local centres as well as a draw for the whole town. These areas would need to be re-planned however, to have more pedestrian and cycle orientated routes so that the built form creates the human scale and clear links you would expect in a more traditional centre.



Figure 62 Motorway topped by a new path, Hamburg. Photo montages courtesy of Hamburg Marketing

7.2.8 Efforts to achieve these aims are already being built into the plans for the town centre, such as the New Residential Quarter, but it will be important to retain a mix of uses across all areas, so that small businesses, workshops, shops and larger businesses can co-exist alongside residential uses.

7.2.9 In terms of green infrastructure through the town, the most significant area is along the River Ise, where access and other improvements are being carried out as part of the Revital-Ise project and identified in the Green Infrastructure in the Ise Valley study, as well as the Kettering Site Specifics draft DPD. Links East-west to this asset do not yet form a connected GI grid, but scope exists alongside other projects to ensure connections along the Slade Brook and connecting up routes to the countryside either via the Ise or direct. Efforts such as the Kettering Green Wheel and Revital-Ise seek to improve access around Kettering and routes out of the town, and this study shows that this is a problem which does need addressing.

7.2.10 In some areas, such as in the image below (Figure 64), green buffers act as additional barrier, not providing a green link. Connecting existing green spaces with "green streets" would help provide a connected GI network and enhance the street for pedestrians and cyclists. The City of Portland, Oregon is leading the US to implement green streets, primarily to deal with storm water run off problems, but shows that these can be integrated into fully built city streets. The Red Rose Forest Project in Manchester is similarly seeking to green urban streets with tree planting, planters etc to improve their appearance and residents' quality of life.



Figure 64 A14 and green buffer form a double barrier. Courtesy of Google Maps



Figure 63 Typical pedestrian connection, Barton Seagrave. Photo

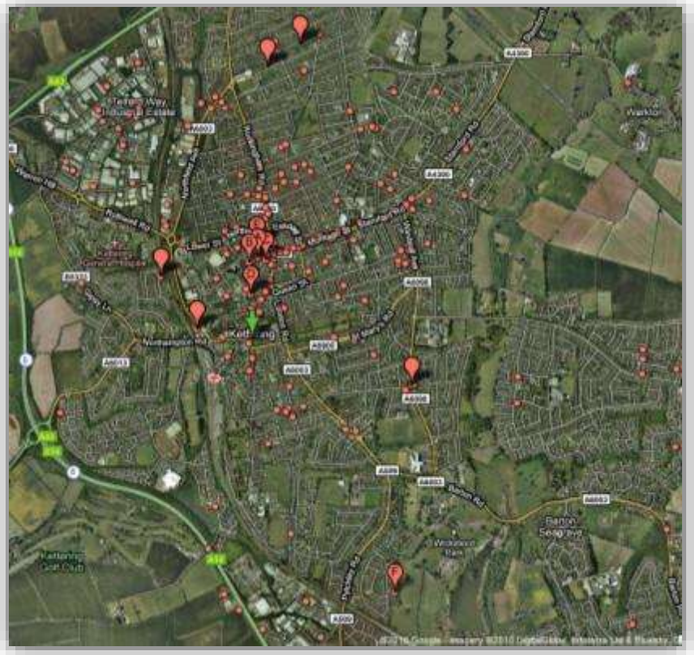


Figure 66 Broad distribution of shops, courtesy of Google Maps



Figure 65 Stream through Kettering town centre. Photo Kettering Town Centre Area Action Plan

8. Spatial Principles

8.1 Ring Roads

8.1.1 Create better direct, logical and safe pedestrian and cycle links across, particularly to link with wider footpath and cycling routes and main town routes, and routes to outlying villages.

8.1.2 Greening routes – Allow green links to continue without the ring roads causing severance – create an active green artery - that allows the countryside to cross over the roads.

8.1.3 A14 – Development already occurs on the south side so this needs to connect properly to the town with much better walking and cycling links.

8.1.4 A43 and A6003 – If the town is to develop beyond these ring road boundaries, then the character of the roads will need to change so that they become town streets, not bypasses. This will need more tree planting, wider footways, active frontage, pedestrian routes along and across and streets accessed off the roads.

8.2 Prioritise the radial routes

8.2.1 Prioritise these radial routes, which are the oldest and most direct, for investment in pedestrian and cyclist and bus movement to promote local connectivity. Ensure there are active frontages along these major spine routes and development does not turn its back on them, as they have in the past. Focus civic, social and community buildings on the key spine routes to improve access to them. This will create a civic feel and bring activity, rather than locating them in less busy areas which have more limited access by public transport, bike and on foot.

8.2.2 Ensure that radials are continued through into Kettering East and continue as the primary streets.

8.2.3 Ensure that links into the wider countryside from these routes are prioritised so that they are clear to see and are part of a legible network, using signage and maps.

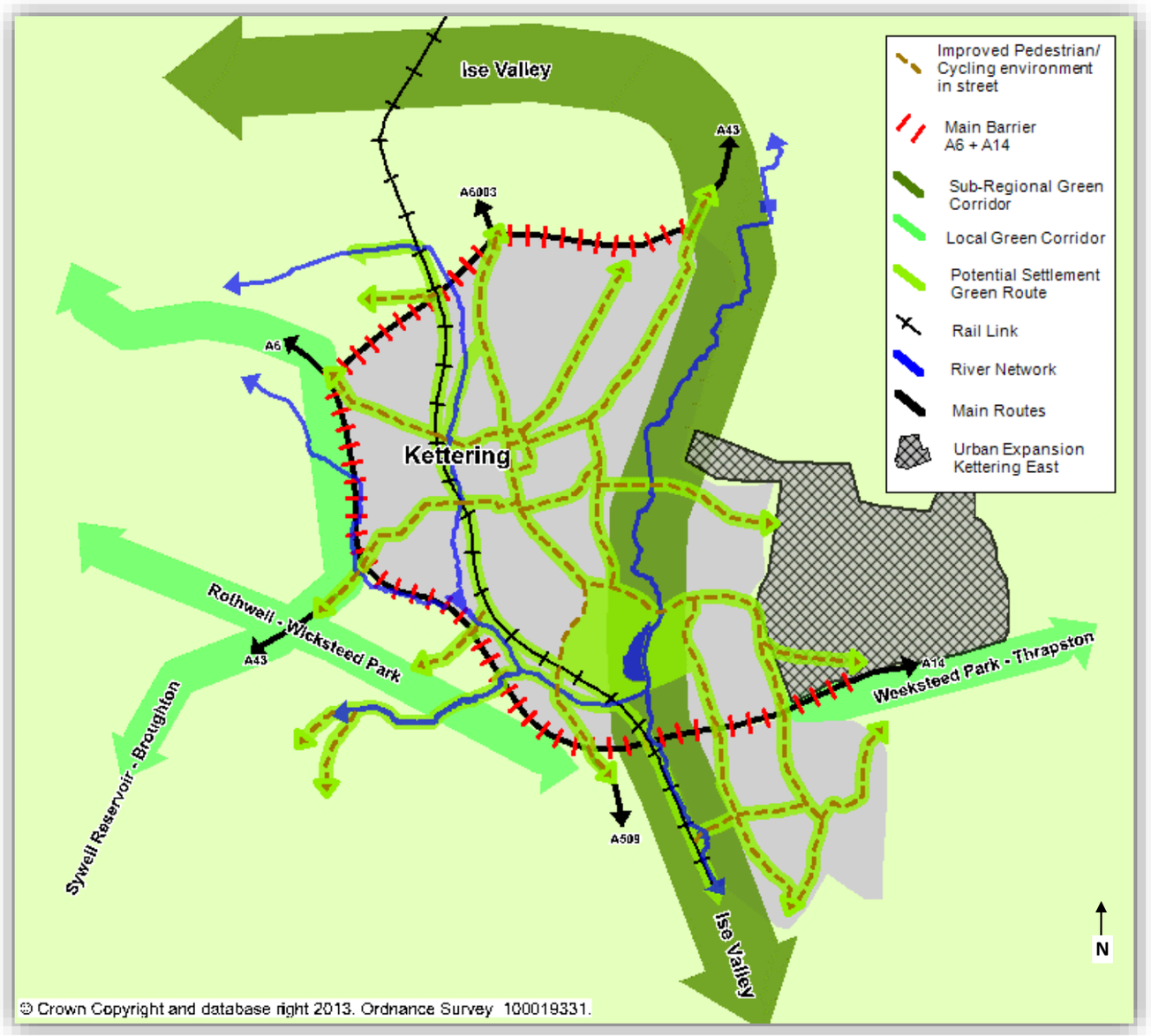


Figure 67 Kettering Connectivity Plan - existing and potential GI routes along with key barriers to overcome

8.3 Promote walkable and cyclable connected places

- Use the Victorian and 1930s connected streets as a model for development.
- Identify ways to reconnect the isolated suburbs to the centre and to each other by joining up routes, creating links. Such as the Kettering Green Wheel.
- Limit cul-de-sacs in new development.
- Prioritise cycling as a quick, easy and relative inexpensive solution to traffic related problems.
- The railway line is a direct route through the town, so exploring a cycle path alongside this would allow quick access through the town and to outlying areas, such as Burton Latimer. Connections into the route would also need to be created.

8.4 Ensure mixed neighbourhoods in Kettering.

- Better links to existing business and industrial parks.
- Out of centre retail areas need to develop role as local centres – with much better local access for walking and cycling to nearby residents and businesses.
- Kettering East – Opportunity to support mixed uses in a more traditional local centre approach as well as employment areas by the A14.

8.5 Connect the green spaces

- Reveal the rivers – rivers as a focus for quality routes. Implement ideas in Revital-Ise and Slade Brook. Ise route recognised as a key resource but this still needs to be linked into a wider walking and cycling network, and more scope to use the Slade Brook as a further connecting route (see Figure 67).
- Ensure new green spaces are well connected to the main movement networks.
- Street trees and green streets to connect the green spaces.
- Integrate parks into movement network – so that they become active places on the way to somewhere.



Figure 68 Cycle path alongside working railway line into Harrogate. Photo Copyright of Timbo from cyclestreets.net



Figure 69 Storm water planter and landscaping build out on 12th Avenue, Portland (Image courtesy of City of Portland)

Further Reading:

Kettering Conservation Area

9. Burton Latimer

9.1 Issues, opportunities and constraints

9.1.1 From agricultural origins, the settlement expanded in the 19th century. The village centre remains in its original location, as do all the key primary historic streets which are still the key routes today.

9.1.2 The town is currently generally well connected and permeable. The key radial routes are direct to the centre. Development to the north is generally close to the radials, and again therefore, access to the centre is relatively direct. To the west of the High Street, the area between the radials has been infilled with a highly connected grid. To the east of the High Street is the least connected area. The most problematic east-west movements are for those in Hollands Drive, who must exit the cul-de-sac to the south, before heading north for the town centre. It is a similar story for the residents of Poplar Road, which again has poor direct connectivity to the town centre.

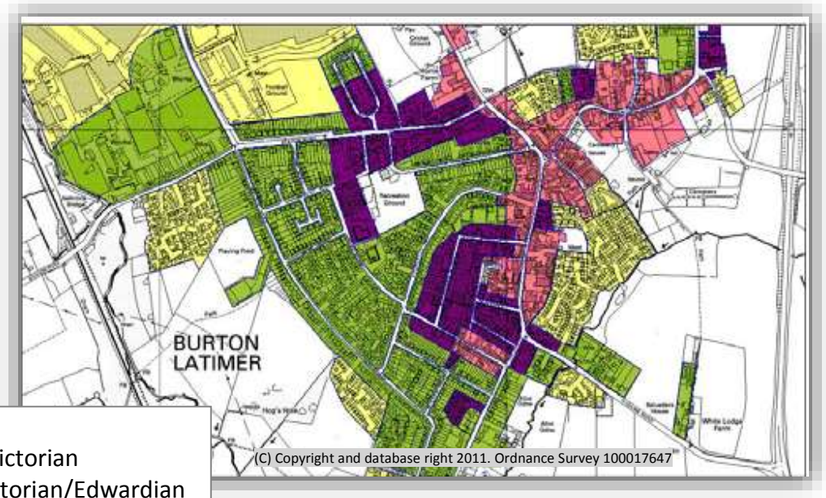
9.2.3 However, new permissions granted on the edge are likely to stifle further development by their layout in combination with backing up to major roads. These are all loop and cul-de-sac layouts and provide few links to the existing framework of streets.

9.2.4 There are clear character areas, generated by very specific morphology in Burton Latimer. The area in and around Church Street has a typically linear settlement form and could almost be separate rural village in its own right. Kettering Road and the High Street have a far denser and more complex linear form which references the redevelopment which has taken place in the centre of town over the last two centuries. To the immediate west of this and along Station Road are examples of Victorian grid-like development which have strong, rectangular street patterns.

9.2.5 Employment is sharply zoned and it would be good to ensure better links to the town centre and more small scale employment within the centre and on the key linking roads.

9.2.6 Whilst the town is reasonably well-connected the High Street remains traffic dominated and this does not create an attractive pedestrian environment. Therefore although it is possible to walk to the town centre it is not necessarily an attractive environment for pedestrians once there. Similar is true of cycle routes in that the size and connectivity of Burton Latimer makes for a cycle friendly town, but there is a complete lack of prioritisation and routes for bicycle users in the historic town. Most places are within 10 minutes walk from Burton Latimer's town centre, and Kettering is about 20 minutes bike ride away.

9.2.7 Access to the countryside is relatively easy and there are high quality open spaces running throughout the town. However, these are not as integrated into the network of routes as they could be.



KEY
Red – Pre-Victorian
Purple – Victorian/Edwardian
Green – Post-war
Yellow – Modern

Figure 71 Historic Development

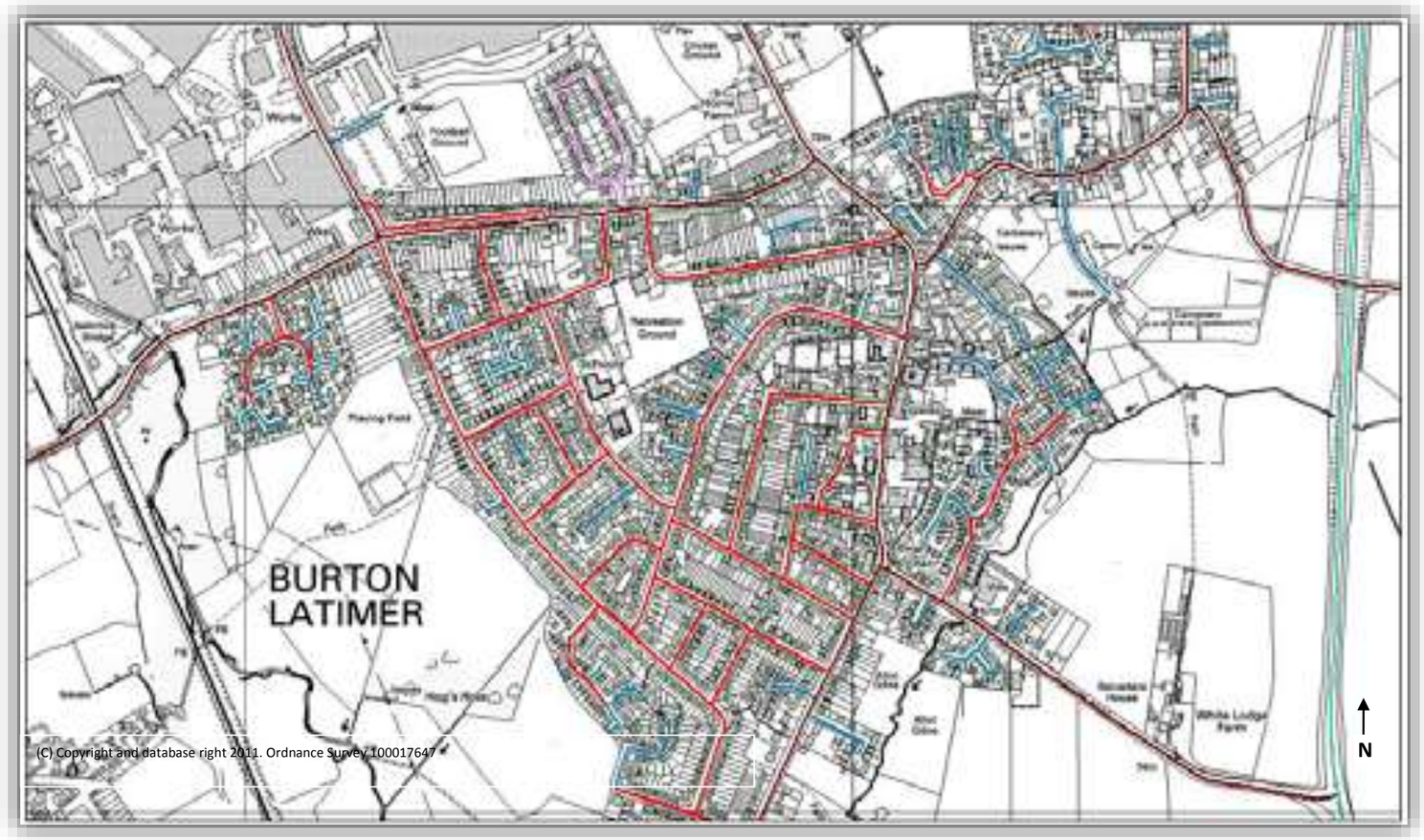


Figure 70 Route Structure Analysis

(C) Copyright and database right 2011. Ordnance Survey

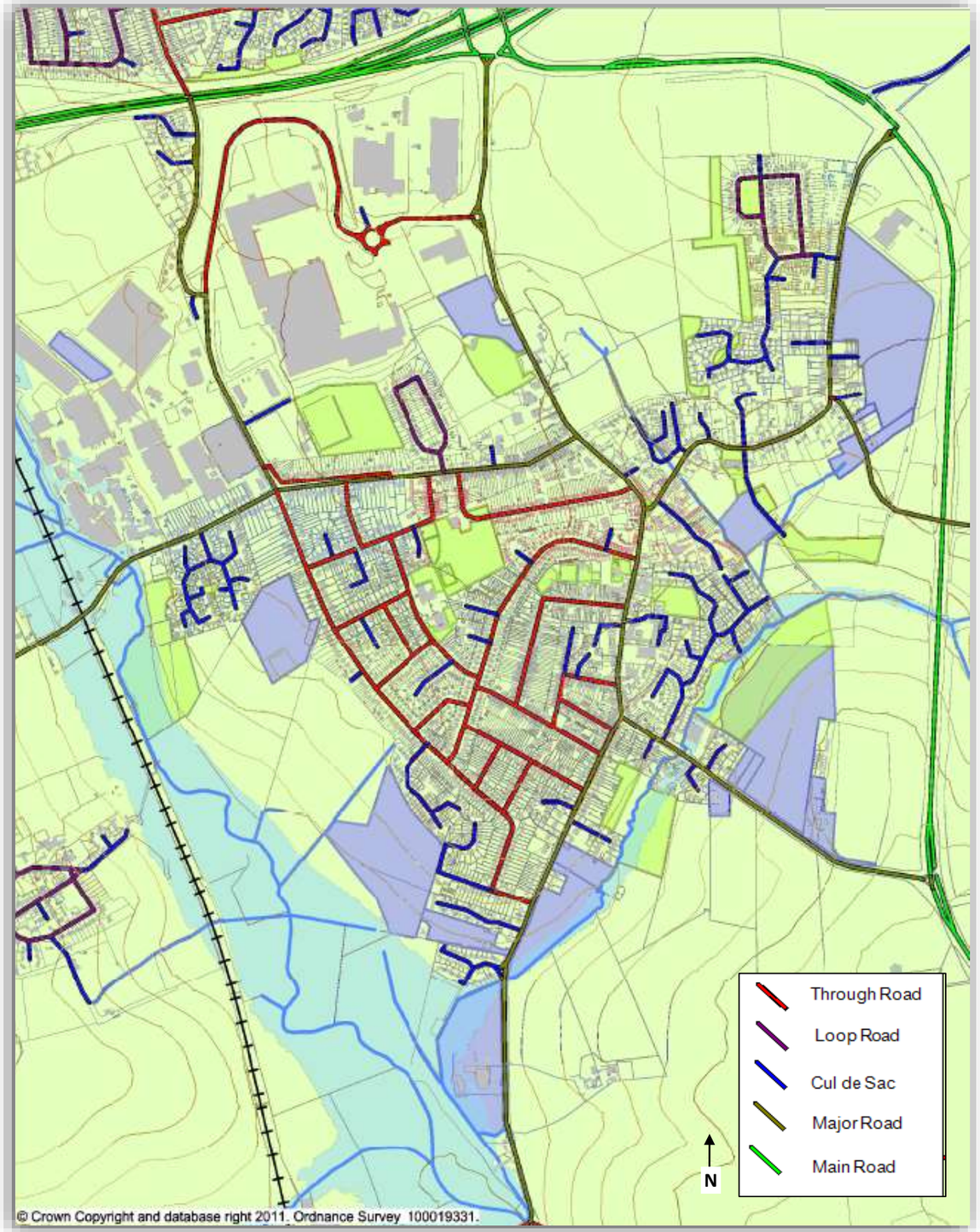


Figure 72 Combined Opportunities and constraints plan



Figure 73 Green Spaces

10. Spatial Principles

10.1 Improve radials for walking and cycling

10.1.1 The historic radials are the key structuring elements of the town, providing the most direct access to the centre. Ensuring that they are high quality routes for pedestrians and cyclists and buses, particularly given the new developments on the edge of the town, will be essential. Not all streets have pavements on both sides and the pavements are frequently narrow. Ensuring slow enough speeds so that people can cycle on the streets along these radials (ie 20mph) would also help to connect the new developments to the centre.

10.1.2 Queensway/Bridle Road is a direct north-south route and improvements to highlight its role, such as tree planting, cycle route, signage allowing traffic to percolate through this area, as well as the High Street, and relieve some of the pressure there.

10.1.3 Improve cycle links to Kettering with the need to explore the potential for links alongside railway line and Ise.

10.2 Town centre focus

10.2.1 Access to the new developments on the eastern side of the town from the town centre need improvement. If redevelopment sites come forward, the opportunity should be taken to facilitate links.

10.2.2 The focus on the existing High Street as a destination for the town is already highlighted in the Burton Latimer Urban Design Framework and the USS work supports this approach. Public realm and environmental improvements are required and measures such as pavement widening, improved street surfacing and appropriate street furniture, street trees and way finders are considered appropriate. On street parking on the High Street could be rationalised to reduce through speeds and allow pedestrians to cross the road easily, alongside bus priority measures to ensure they are not adversely affected.

10.2.3 The historic character of the High Street needs to be retained and new development should recreate the sense of enclosure and fine grain development that once typified the centre of the town. Whilst there are several high quality buildings remaining in the High Street there is scope to improve the area through sensitive redevelopment to reintroduce the sense of enclosure typical of the historic High Street. There is scope to introduce a greater mix of uses in smaller scale units within the town centre, to support more employment uses within the town.

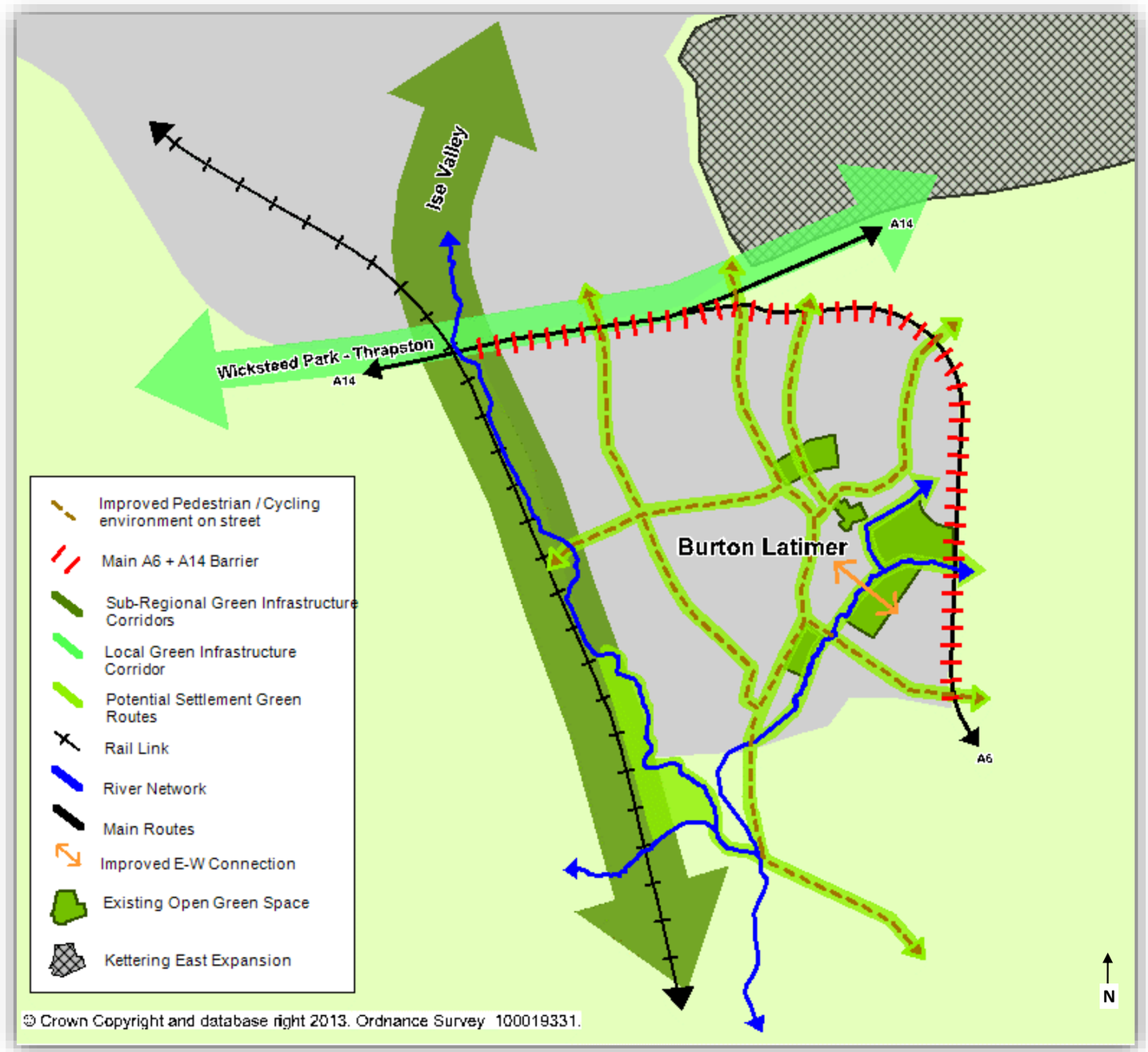


Figure 74 Image showing connected green infrastructure with improved road networks with green streets

10.3 Employment in mixed use areas with variety in unit/block size

10.3.1 There is a significant change in scale and urban grain to the north west of the town. There is likely to be pressure for continued large scale employment but this needs to be alongside a wider mix of uses, and smaller units, which can provide a more animated and human scale frontage. For instance, offices, workshops, nurseries, corner shops and live/work units etc, which can hide the larger blanker units within the urban blocks.

10.4 Use the historic layouts to guide new development

10.4.1 Unlike many of the surrounding towns Burton Latimer's expansion has not been constrained by peripheral cul-de-sac development which removes the possibility of creating new links and access points. The existing interconnectivity and grid layout which characterises the existing morphology of the town needs to continue with any new development.

10.5 Green Infrastructure

Connect greenspaces and routes along the streams to create a connected Green Infrastructure grid.



Figure 75Image showing possible public realm improvements, from the Urban design Framework for Burton Latimer



Figure 76 Image showing potential mixing of uses and unit sizes from distribution to light industrial, workshop to live work and residential. From Wellingborough Council's Eastfield Urban Quarter Design Guidance, produced by Matrix.

Further Reading:

Burton Latimer Conservation Areas

Burton Latimer Urban Design Framework

11. Desborough

11.1 Issues, opportunities and constraints

11.1.1 Until the Industrial Revolution, Desborough was a modest village that had evolved during the medieval period. The major phase of development occurred during late 19th and 20th Century; when the boot and shoe industry and iron ore extraction triggered Desborough's transformation into a town and created much of the character visible today.

11.1.2 The old A6 is the main vehicular route through Desborough, providing a north-south link. Braybrooke Road, Pipewell Road and Rushton Road provide links east to west. The historic routes of 1843-1912 (Figure 77) remain in place and are still the main routes. Additional streets have developed along with new built development (e.g. Dunkirk Avenue). There have however been some changes to the design of routes which have affected the character of the town. Nonetheless the historic routes create the basic skeleton of the town.

11.1.3 The town is separated north-south both by the old A6 and east-west by the railway line.

11.1.4 The town centre lacks vitality and this is in part due to the development of the town, where the main shopping area has moved east away from the original historic core, (centred on High Street, Lower Street and Buckwell Street). The highway improvements to the old A6 (during the 1970s) brought about demolition of much of this area, replacement by lower density development, straightening of the route and greater separation between Gold Street and High Street (east-west). This has resulted in a dilution of historic urban pattern and changed the dynamic of the historic centre. Station Road is now the most used route through the centre (a main east-west route) as it is the main shopping street. The access from Lower Street to the centre is now used relatively less. In addition, the town centre lacks appeal in the streetscape with few public open spaces and trees.

11.1.5 Most of the town is within 10 minutes walk of the centre, so it is of a walkable scale. However, there are few cycle routes to neighbouring areas and most fail to link up.

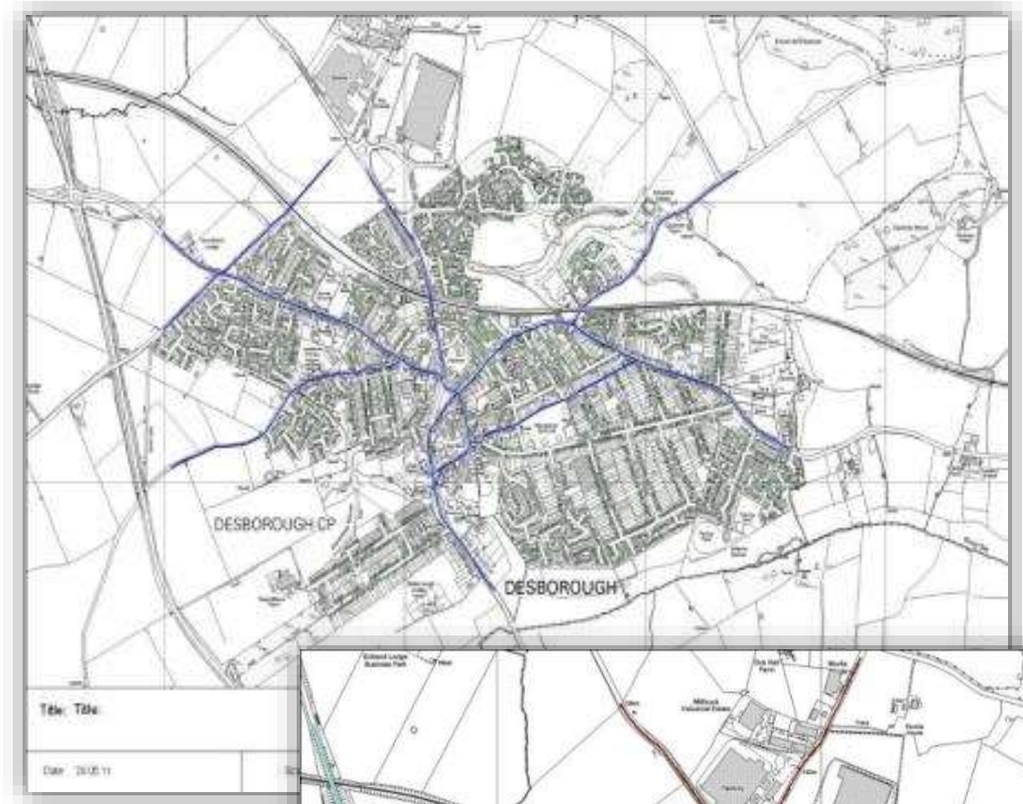


Figure 77 Historic routes

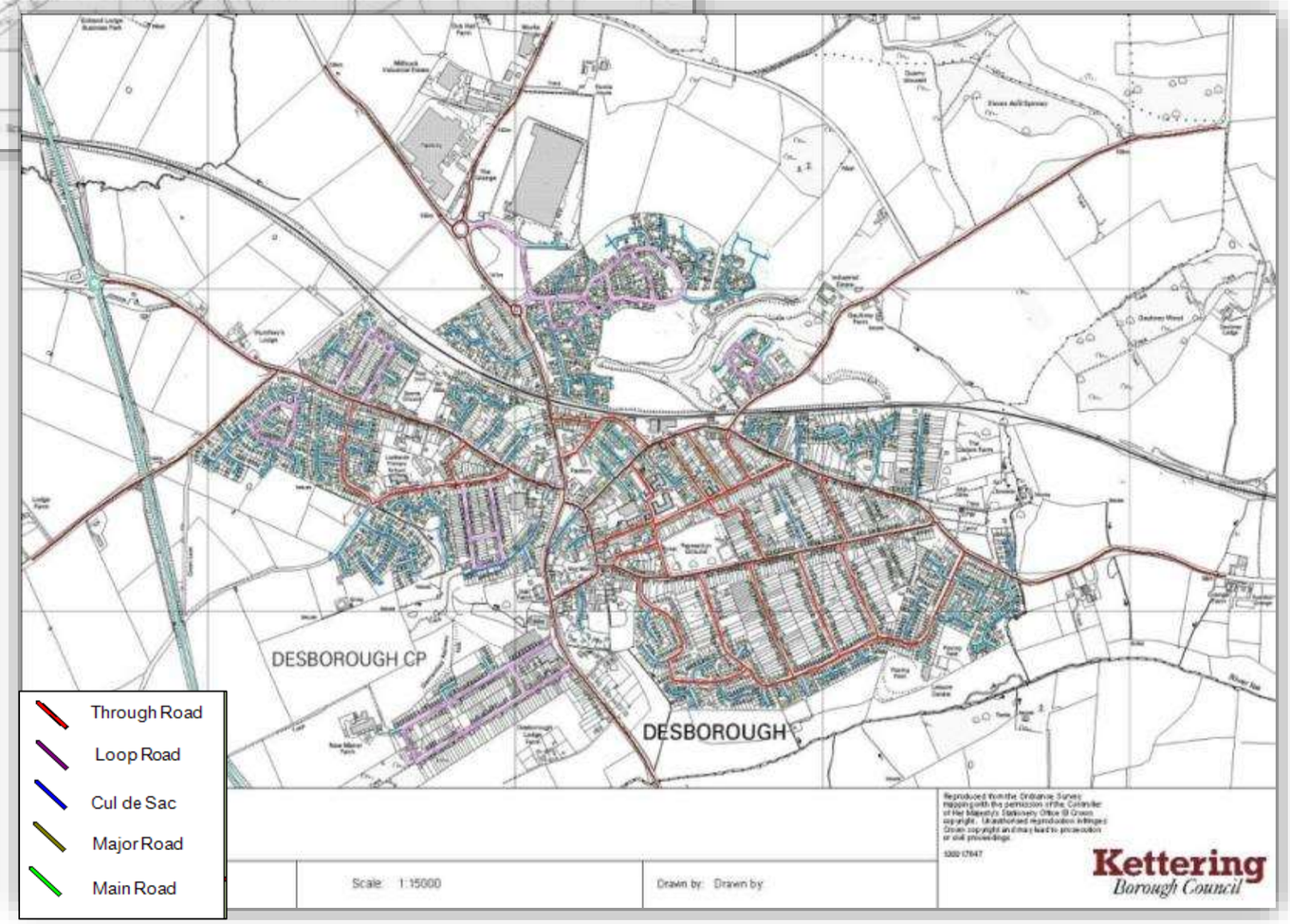


Figure 78 Route structure analysis

11.1.6 Over time development has become less permeable. The historic, gridded street patterns are still visible however later cul-de-sac layouts off long, single loops are now a major feature. The southern side of the town is relatively well connected. The northern side (post 1980s) however feels disconnected to the town centre and southern part of the town. Long loops and cul-de-sacs make up the majority of residential development in the north. There is a lack of pedestrian links north-south to the town centre from residential/industrial area in the north. Cul-de-sac development to the north east and the railway line also creates a barrier to any further development further north. Cul- de-sac areas to North West create disconnected areas combined with topography.

11.1.7 Presently development to the North of Desborough is poorly connected to the main town, separated by the railway line as the main barrier. Additional development to the north beyond the developed area would be even more physically separate and would need significant improvements to help link it, and the existing area, to the town centre. These should include the additional railway bridge which has been promoted and associated route through the Country Park alongside upgrading the quality of Harborough Road to make it pedestrian and cycle friendly.

11.1.8 The historic radials are direct, but the more convoluted the route to the radial is, the more complex and less accessible the location becomes.

11.1.9 There is a poor edge to the countryside in many places. These issues, and others, are already identified in the Urban Design Framework for Desborough.

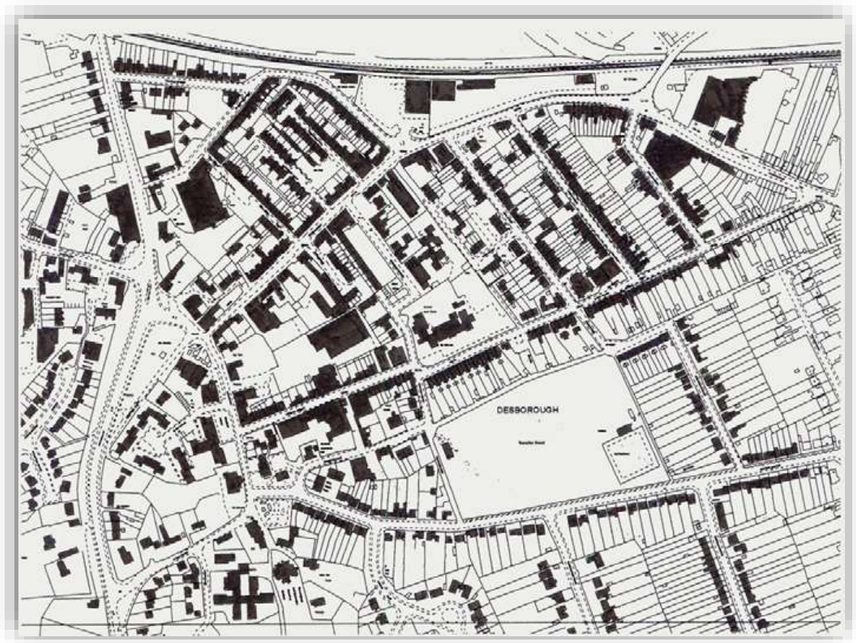


Figure 79 Typical rectilinear grid in Desborough with built form continuously enclosing the streets







Figure 80 High Street Desborough. All Images taken from Kettering Borough Council's Urban Design Framework for Desborough

12. Spatial Principles

12.1 Promote walkable and cyclable connected places

12.1.1 Better connected streets will have more people on them and more opportunity for social and economic transactions to take place. So ensuring the town centre is as accessible as possible will support better connected streets. Resolving the conflict between pedestrian and vehicles at Gold Street/High Street/old A6 junction is therefore a high priority. In addition, the confluence of all the most connected streets is no longer where the town centre is, so a clear signal or gateway is needed here to draw people to it.

12.1.2 Ensuring better connection between the urban extension at Desborough North and the town centre is very important, so it can support the centre's success. The main barrier is the railway line which separates the two so the additional bridge across the railway is essential to help this area integrate better. The only street link is Harborough Road, so upgrading the quality of this street to make it as pedestrian and cycle friendly as possible will be needed.

12.1.3 The area round Federation Avenue also needs better accessibility. There is potential to create a southern gateway into the town and to improve the entrance to Federation Avenue and Pioneer Avenue. This can be done by reducing the gap across which pedestrians have to cross the road, slowing road speed and defining parking areas.

12.1.4 Improvements to the old A6 through the town, including reducing speed of the road; through additional tree planting, clutter reduction and reintroduction of Victorian street features such as cobbled gulleys.

12.1.5 Further consideration should be given to the junction of Station Road/Rushton Road, taking an opportunity to direct people towards the town centre and show where activity is.

12.1.6 Cul-de-sacs should be limited in new developments and ensure that new development uses the traditional character of Desborough's Victorian grid streets or the more rural historic lanes to generate new places which connect to one another and respond to the local context.

12.1.7 Promote walking and cycling connection to Rothwell and better links south to the Ise Valley.

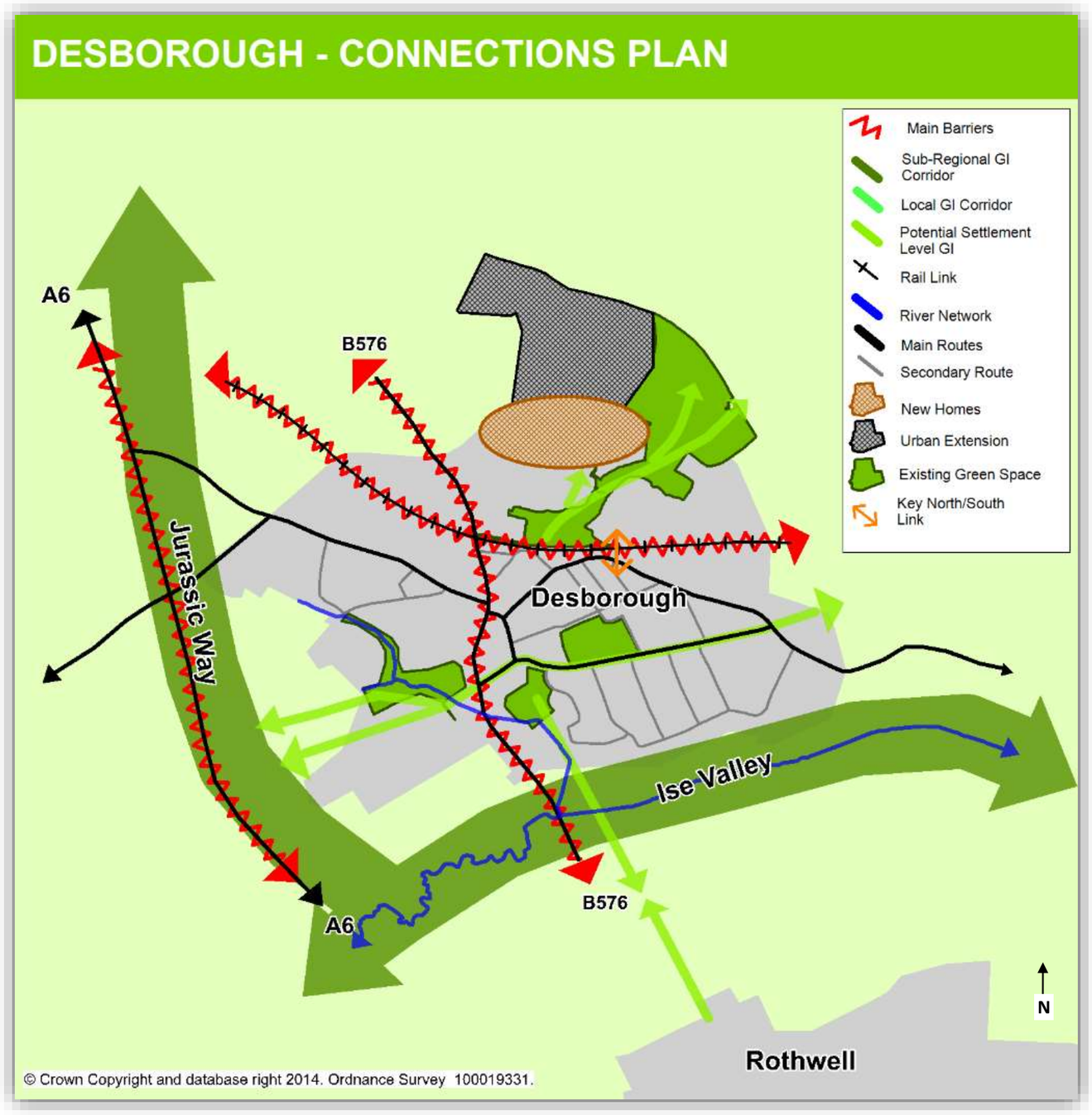


Figure 81 Connections plan of Desborough

12.2 Improve town centre public realm

12.2.1 Better quality public realm is required in the town centre to make it feel more pleasant. Public realm works to signal a sense of arrival and draw people into the centre from the old A6 would be beneficial.

12.2.2 There is potential to develop some high quality open spaces, particularly at the junction of High Street and the old A6. There is also scope for play space within the town centre to draw people to it – perhaps on the open space at top of Havelock Street, to act as a draw from the nearby primary school.

12.2.3 Other beneficial improvements could include: additional tree planting, new surface materials and improvements to the quality of frontages and buildings along Station Road. There is also scope to identify historic features that have been lost over time and that could be re-introduced. For example boundary walls and railings ran along sections of Station Road.

12.2.4 Potential exists for a wider mix of uses on the Harborough Road and within the town centre to allow for shopping, leisure and employment. Shops and services would be more likely to survive on roads with greatest passing trade such as the Harborough Road, but should front into the street, with any parking hidden at the rear of the plot.

12.3 Improve countryside access

12.3.1 There is poor access to countryside to the north, but potential to improve this via a new bridge link to Desborough Green Space.

12.3.2 Access to the south is restricted by building form. Any new development and infill on the edges should create a good countryside edge and provide new links to the open space, but would need very careful handling, due to landscape impact. Use of water sensitive urban design principles to link GI and water into any development.

12.4 Provide more green infrastructure in a linked up network

12.4.1 New open spaces should be seen as part of a wider framework and should be provided as part of new development.

12.4.2 New and existing GI assets should be linked with wider GI corridors identified by the River Nene Regional Park (RNRP), the Kettering Green Wheel project and the emerging Kettering Site Specifics DPD. Figure 81 'Desborough Connections Plan' sets out additional possible GI links at the settlement scale.

Further Reading:

- Desborough Conservation Areas
- Water Sensitive Urban Design in the UK, Ciria



Figure 82 Ahrensburg, Germany. A simple combination of robust natural materials allows for through traffic, parking and pedestrian movement (image from Hamilton Baillie Associates)



Figure 84 Removal of guard rails and installation of direct crossings allows people to cross where they want. Image courtesy of CABE.



Figure 83 Case Study of Hackbridge located on the river Wandle. Contains open space and naturalised river edge which could provide areas for outdoor play that double as flood storage during a storm. Image courtesy of baca architects.

13. Rothwell

13.1 Issues, opportunities and constraints

13.1.1 Rothwell has developed and grown over recent years and its economy has undergone a number of changes from its agricultural/market origins; to weaving and framework knitting in the eighteenth century and in the nineteenth century a changeover to the boot and shoe industry.

13.1.2 The backbone of Rothwell is the former A6 trunk road, which runs generally from north to south. The town centre lies to the east of the former A6, being channelled through Bridge Street and opening out into Market Hill, with the Church of the Holy Trinity and the Market House at its nucleus

13.1.3 There are four main connecting routes in Rothwell which provide access through, and in to and out of the town. These routes run directly north to south on the west of the town. Travel from east to west of the town is via one route which then connects to the north/south route previously outlined. There is limited connectivity from north to south to the east of the town. The road network throughout Rothwell has grown in complexity over time. The initial road pattern was largely based around 2/3 main connecting routes with a few smaller routes providing local connections. The main routes remain today, however, the local connections have significantly increased in number and become more complex.

13.1.4 Generally it is a well connected town with access to the town centre and countryside relatively simple from most locations. This is primarily because no development is very far from the two key connecting routes. The town has grown concentrically and is compact enough for walking and cycling.



Figure 86 Bridge Street, Rothwell. Photo JPU.

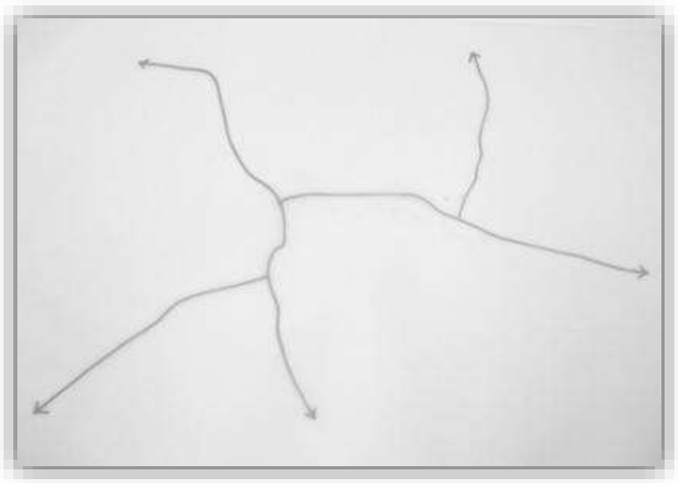


Figure 85 Key historic structuring routes

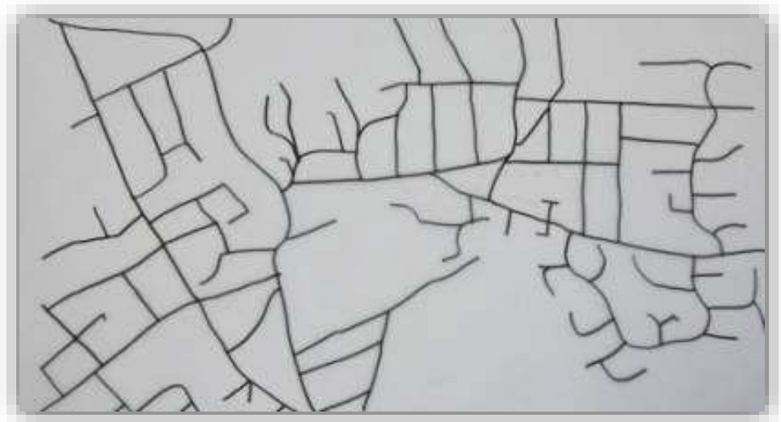


Figure 88 Complex pattern of streets



Figure 87 open space and footpath

13.1.5 There are only two multi-functional links for the whole of Rothwell. The north/south route is located to the west of the town with the east/west link connecting into it. Bottle-necks often occur in the town centre due to the main connecting routes meeting in the historic core of the town and the presence of on-street car parking prevents the free-flow of traffic. There is limited connectivity between east and west of town, so an additional eastern link to the north of the town, avoiding the historic core of the town centre would ease congestion in the town centre and could prove to be an opportunity to improve connectivity to the schools. A new route should not create a barrier to future development or act as a 'bypass' for Rothwell.

13.1.6 The car only routes (A14 and A6) are designed to fulfil the movement needs of vehicles, rather than as multifunctional routes for walking and cycling. Because they are so inhospitable to non-vehicular users, they form a barrier to pedestrian movement, and indeed development, with reduced routes on the other side of them and people having to go over or under them in order to get where they want to go.

13.1.7 The least well connected areas are to the south west of the town where housing has developed incrementally. This new development has failed to adequately link to the existing town, making it increasingly difficult to access areas such as the town centre.

13.1.8 Due to the location of the schools in Rothwell, largely on the outskirts of the town with complex street patterns around them, accessibility to the schools is reduced. Improved connectivity to these important facilities is essential to encourage parents and children to walk/cycle to school.

13.1.9 Valuable open space to the south exists, which is well connected to the town.

13.1.10 The street pattern and character areas largely relate to the morphological development of the town. The central areas have a combination of a rectilinear street grid which opens onto open space. On the edges of town, the streets are shorter and much more winding, with fewer connections, but many maintain a close relationship with the open spaces.

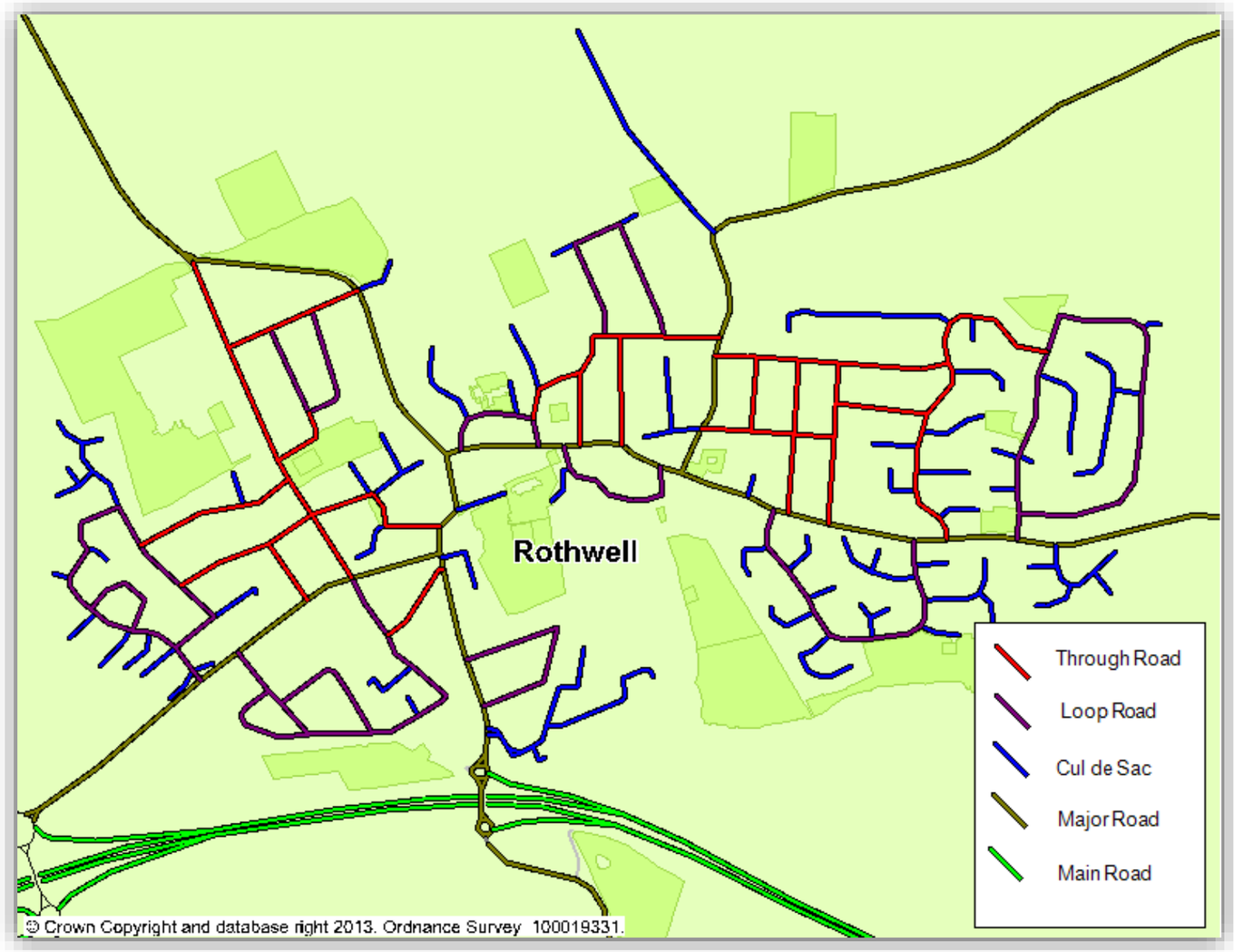


Figure 89 Route structure analysis

14. Spatial principles

14.1 Improve east –west links

14.1.1 There is limited connectivity between the east and west of town, so an additional eastern link to the north of the town, avoiding the historic core of the town centre would ease congestion in the town centre. This could also prove to be an opportunity to improve connectivity to the schools. This new route should not create a barrier to future development or act as a 'bypass' for Rothwell, acting instead as an additional town street.



Figure 90 Rothwell connectivity plan illustrating potential GI links and improved on street connections

14.2 Promote walkable connected places

- Removal of town centre on-street car parking, widening of pavements and improved pedestrian environment especially at the point of connection of Bridge Street/High Street and Desborough Road
- Investigate the potential to create an additional pedestrian link from the east to the town centre.
- Improvements for bus movement.
- Walking and cycling links to Desborough should be improved as access between the two towns by this is poor given their proximity.
- Additional cycle route to Kettering along the proposed GI link.
- Promote safe walking and cycling along existing routes and signage for walking and cycling times to key locations
- Existing residential cul-de-sacs and loop road layouts are difficult to add additional development onto and these should be avoided in any new development.
- Connectivity should be improved to the west of the town, as the road network is not well connected and difficult to navigate.

14.3 Green infrastructure

14.3.1 New development should continue the pattern of close links into the large open spaces.

14.3.2 New development should provide for through linkages to open countryside outside the site boundaries. Access to the Ise, and enhancements of footpaths to the North to reach this longer footpath network would benefit the wider GI network.

14.3.3 There is an opportunity to enhance the park to the south of the Church, which is already a good connecting route with more facilities to draw more use, such as a cafe.

14.4 Schools and new facilities

14.4.1 New community facilities should be located on the key radial routes or well-connected grid streets, not on cul-de-sacs or loops.

14.4.2 Routes to schools must be good quality, lit, have a hard surface, be wide so they are suitable for cyclist and walkers, and be more direct than driving. Schools may need to allow secondary access points into school, and not just the front entrance (this could be for limited periods of the day to limit security concerns) to facilitate walking to school.

14.4.3 Future development of land to the north of Rothwell should, link well into the existing road and footpath network, make cycling and walking easy and direct, provide improved and direction access to the schools, frame existing outdoor sports facilities and open spaces, provide surveillance through properties facing these areas not backing onto them, include walkways with direct access to existing spaces, overcome the barriers which they may create to access the rest of the town.

14.5 Employment

14.5.1 Alongside employment within the town centre, any future employment sites on the edge of the town (such as to the west and south near the A14 junctions and close to the A6) need to ensure excellent walking and cycling links along the radial roads into the town centre. There is scope for small scale mixed uses within the north of the town within the SUE to provide for passing trade and local need.

Further Reading:

Rothwell Conservation Area



Figure 91 Harrington Road radial route – improvements needed to encourage cycling and walking to the town centre. Photo Copyright David Purchase



Figure 92 Burton, Hampshire. Photographs of central crossroads in the Village. Before (left), the junction had wide carriageways, demarcated traffic lines and limited pavements, so that vehicles were prioritised. Following street changes, the carriageways were reduced in size, giving more room to create wider pavements and slowing traffic speeds and introducing more landscaping. Images and information from Living Streets. Also clip of street in action at http://www.livingstreets.org.uk/reinvigorating-a-village-in-buriton-east-hampshire

15. Raunds

15.1 Issues, opportunities and constraints

15.1.1 A combination of the topography of Raunds and the less permeable nature of mid-late 20th century development would appear to discourage non-vehicular access to the linear centre, and therefore impact on the opportunities for social and economic transactions.

15.1.2 Raunds town centre remains along the historic route which follows the Raunds Brook (or Hog Dyke) through the valley. East/west routes connect into this linear centre at two points, though the relatively steep nature of the valley can affect accessibility when travelling on foot or on cycle.

15.1.3 Historically the key roads have followed the watercourses and the ridges, running along the contours, with secondary streets at right angles, running across the contours.

15.1.4 Raunds has grown around and within a framework of historic routes which remain today. Development which occurred in the mid-late 20th century has filled in the space between these historic routes and is predominantly comprised of cul-de-sacs. There is therefore little choice of routes to the town centre and other areas of Raunds, routes are not always direct. The route structure analysis opposite indicates streets which link to another street in brown and red, while cul-de-sacs and loops are blue and purple. Figure 95 clearly shows the lack of connecting routes. Detailed analysis of the streets also reveals that the 20th century areas are less legible, with fewer straight streets and more complex street forms, which make walking around, seem further than it actually is. East-west routes within the town are currently limited. The north-western 'quadrant' is currently physically segregated by the cul-de-sac and loop street patterns.

15.1.5 Isochrones (Figure 96) demonstrate that Stanwick in particular is easily accessible by bicycle from Raunds and vice versa.

15.1.6 The scale of the town means that it is walkable, although the topography would mean this is more challenging for some, and in pure proximity terms, the town is close enough to its other neighbours for cycling to be a viable alternative to car travel (Figure 96)

15.1.7 The most distinctive central part of the town is characterised by straight streets, in a regular grid, with routes connecting to each other. There is continuous building frontage, regular rhythms and a strong sense of enclosure and the area contains a mix of uses.



Figure 93 Rotten Row, Raunds. Copyright Will Lovell

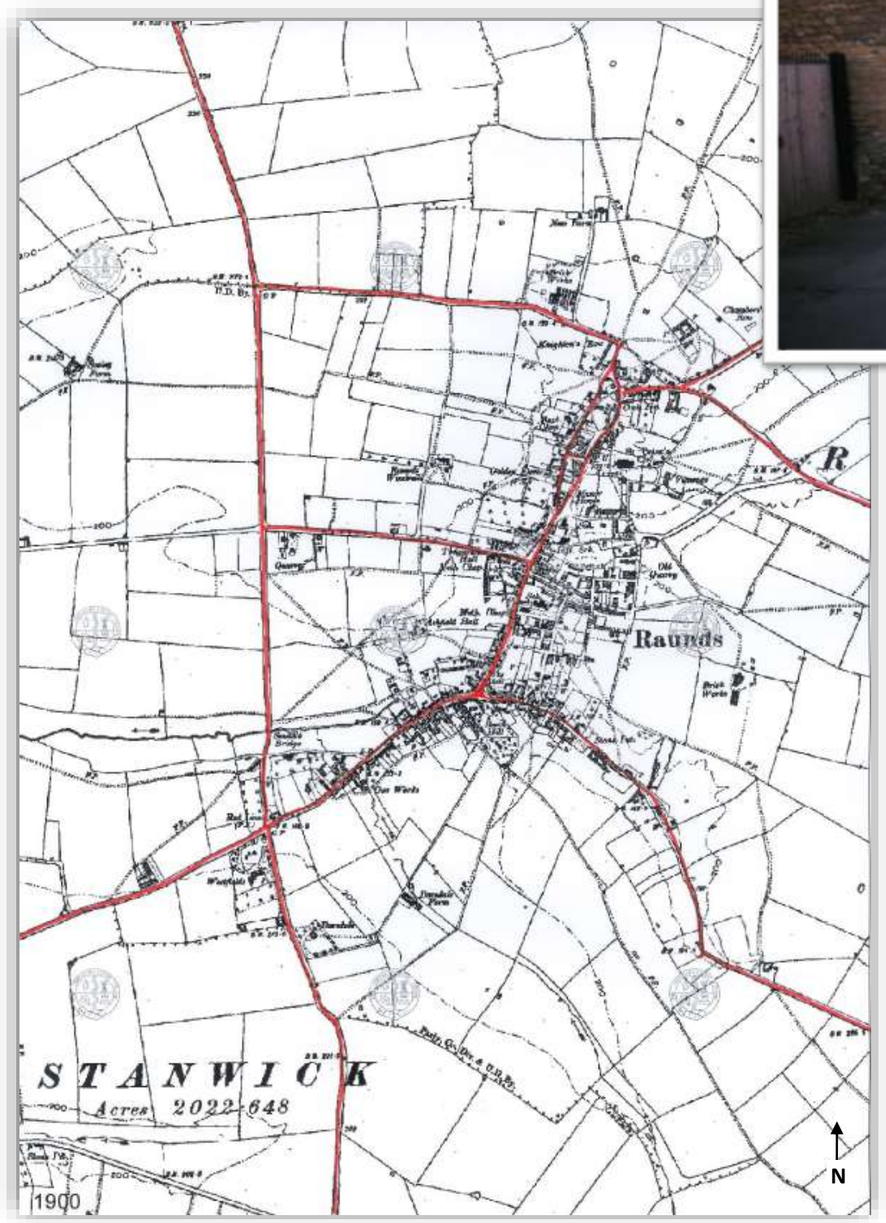


Figure 94 Historic map of Raunds

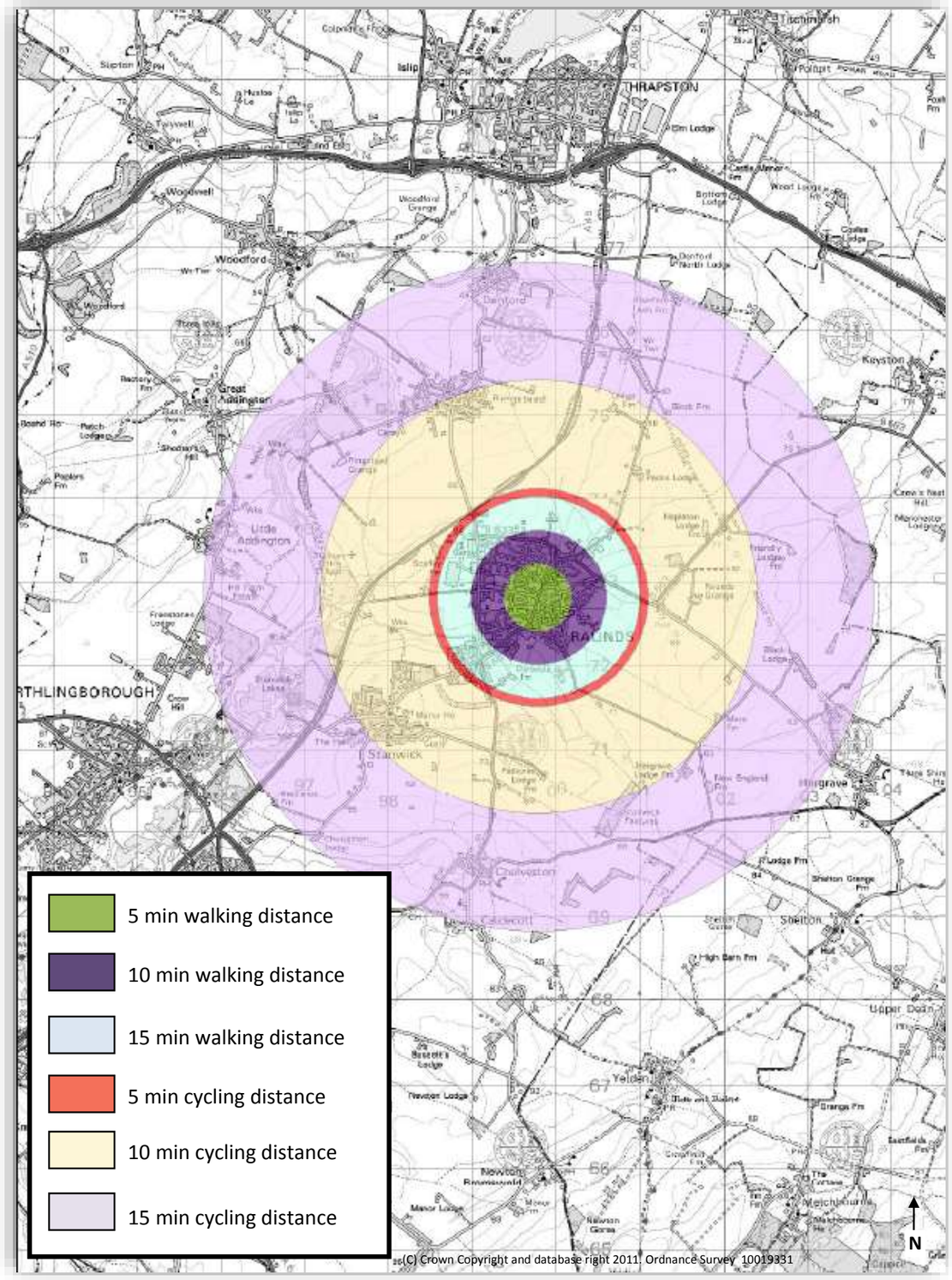


Figure 96 Walking and Cycling Isochrone plan

Figure 97 NW quadrant contains few connecting routes, so hard to navigate.

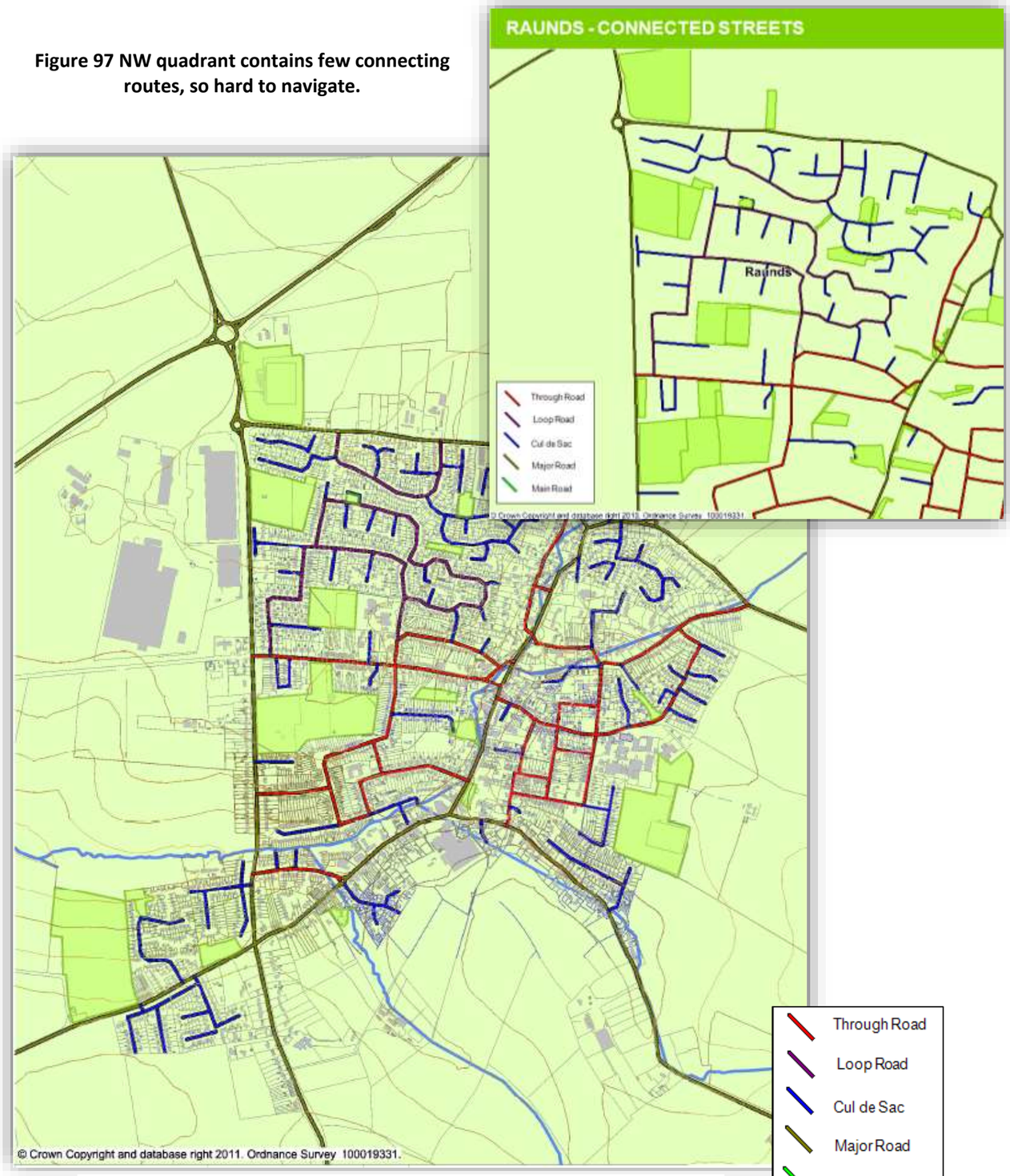


Figure 95 Route Structure Combined Plan

16. Spatial Principles

16.1 Enhance connections to the Nene Valley to the west

16.1.1 The isochrones show that Raunds is within cycling distance of the Nene Valley, and existing and future attractions within it, including Stanwick Lakes. Scope exists to make additional connections across the A45 into Stanwick Lakes (with suitable crossing facilities) and to make the Stanwick Road better for cyclists. The River Nene Valley Strategic Plan suggests developing mini town-river plans which wouldspecify site opportunities and proposals to improve linkages and orientation to the RiverNene and Nene Valley, including at Raunds.

16.2 Work with the natural topography of the town

16.2.1 Raunds' topography has clearly been a key determinant of how the town has developed to date. This should continue to shape any development within or around the town. The existing pattern created by the streets relationships to the contours should be continued.

16.2.2 Watercourses (many of which are currently culverted) have played a significant role in shaping the development of the town, and should be made more of a feature in the town. Opening up rivers (daylighting) can help regenerate towns both to help animate and improve the public realm and attract community and commerce, as well as offering scope for improving water quality, flood storage and reducing urban run-off.

16.3 Promote walkable connected places

16.3.1 East-west routes within the town are currently limited and further east–west connections should be created where possible

16.3.2 Any new development should be based around a grid pattern like that in the centre of Raunds, as this is better for the walkability of the area than cul-de-sacs.

16.3.3 The north-western 'quadrant' of the town is currently physically segregated by the cul-de-sac and loop street patterns. Opportunities to create further links (particularly east-west) within this quadrant should be sought. Until this area is better linked, further development north of this area of town would be difficult to connect to the town centre, as links to the town centre would be restricted.

16.3.4 Improve the key radical routes for pedestrians and cyclists, reinforce local character, smooth traffic flow and identify the best places for parking.

Further Reading:

- Raunds Masterplan

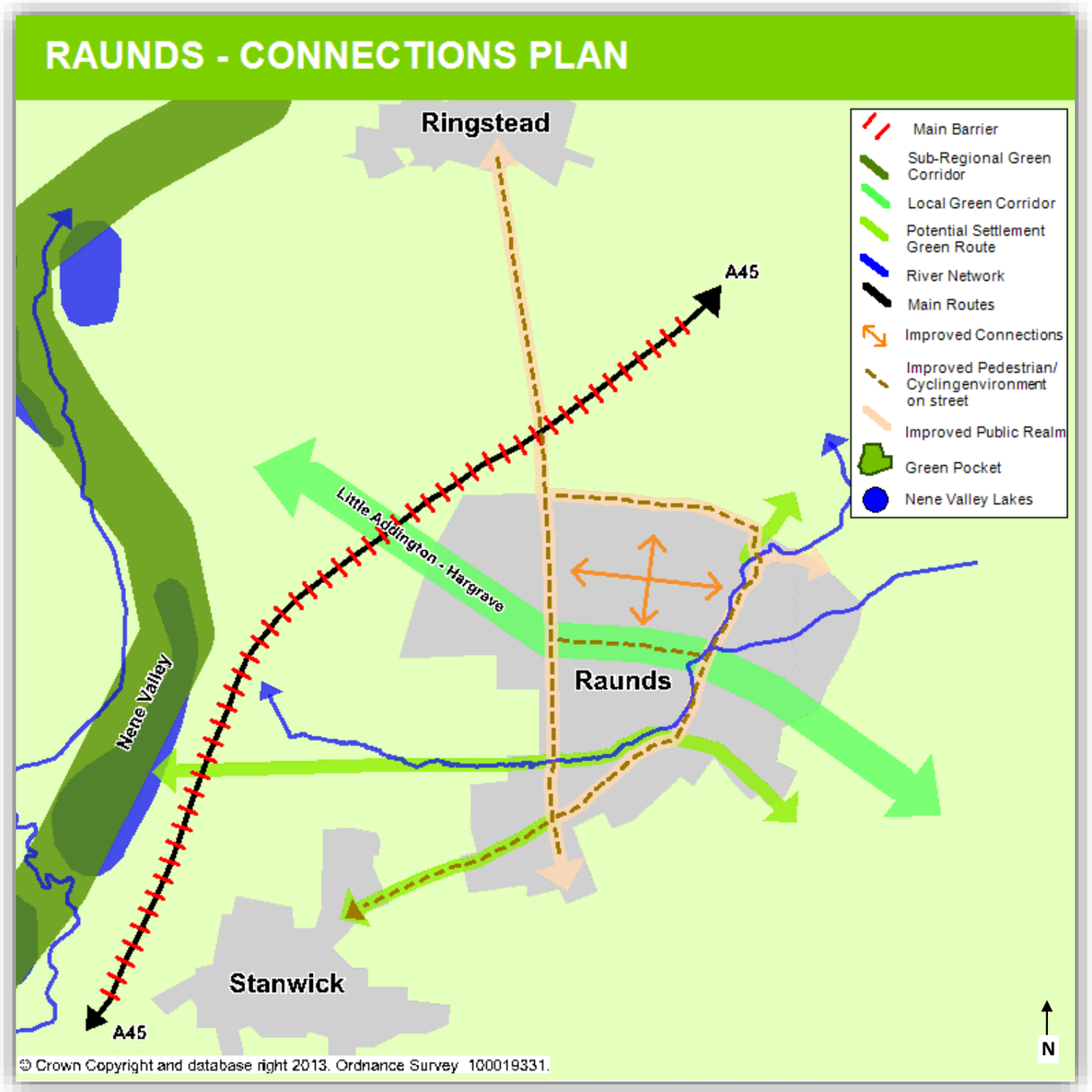


Figure 98 Connections Plan showing key existing and potential GI routes and areas for street improvements

16.4 Enhance connections to the surrounding rural settlements

16.4.1 Isochrones demonstrate that Stanwick in particular is easily accessible by bicycle from Raunds and vice versa. Various local authorities have used "Quiet Lanes" schemes to encourage walking and cycling on certain rural roads and these principles could be employed to improve local lanes around Raunds. In addition, look to create a better footpath route to Ringstead.

16.5 Historic Character

16.5.1 Utilise Raund's local character of continuously enclosed, mixed use connected streets



Figure 99 Quiet Lane,Image courtesy of Whiston Action Group



Figure 100 (top left) River Somer, Midsumer Norton on the high street (bottom left) image post-restoration in June 2012 shows how opening up rivers in the town could be achieved. Image courtesy of L.Kozak and D.Longley



Figure 101 Walkers attempting to cross the busy A45 at Stanwick roundabout – Image courtesy of Higham Ferrers footpath group

17. Irthlingborough

17.1 Issues, opportunities and constraints

17.1.1 The town is located on a historic route which follows a natural ridge to the west of the River Nene with Higham Ferrers on the corresponding ridge on the opposite side of the valley. This settlement can be traced back to the Medieval period. In the eighteenth century, agriculture was joined by the boot and shoe industry as the main economic drivers. As a result, terraced houses were built to the north of College Street to house workers from the factories. From the late 19th century a number of quarries were established and gravel extraction altered the landscape. A steelworks was also established to the south west of the town, although this has now been redeveloped for housing during the late 20th century (Ebbw Vale Road etc). The former quarries have now been transformed into a nature reserve. Twentieth century development surrounds the historic core of the town. 20th century development can be seen to the south of the town around Allen Road and Nicholas Road, and Crow Hill remains physically separated from the core of the town to the north.

17.1.2 The A6 encloses the core area of Irthlingborough to the north, and serves to increase the physical perception of the severance of Crow Hill. It also separates existing employment and leisure facilities which have been established to the north of the A6.

17.1.3 The route of the A6 directly connects Irthlingborough and Higham Ferrers on the opposite side of the Nene Valley, though the nature of this road and the intersection with the A45 make this route less attractive to pedestrians and cyclists.

17.1.4 The historic area of the town is centred on the principal north south route, which also connects the town to surrounding settlements. College Street forms a secondary street running parallel with that route. A number of alleyways and pedestrian connections link College Street and the High Street, although these are not shown on the route structure plan (which focuses on links open to multiple modes of movement only). This is a distinctive characteristic of the town, though in places it has been compromised by modern development.

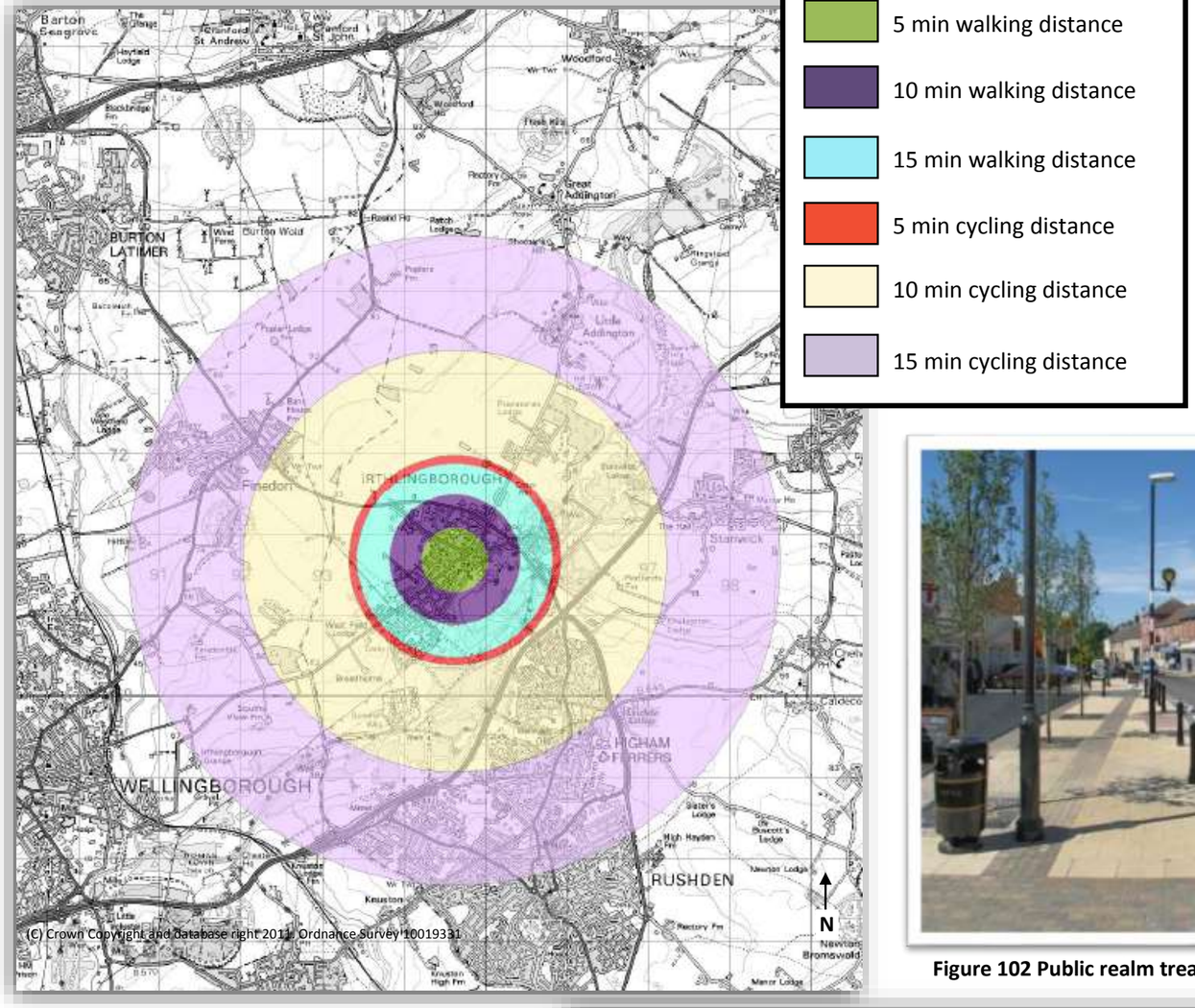


Figure 103 Walking and cycling isochrones



Figure 102 Public realm treatment in Irthlingborough. Photo NNDC

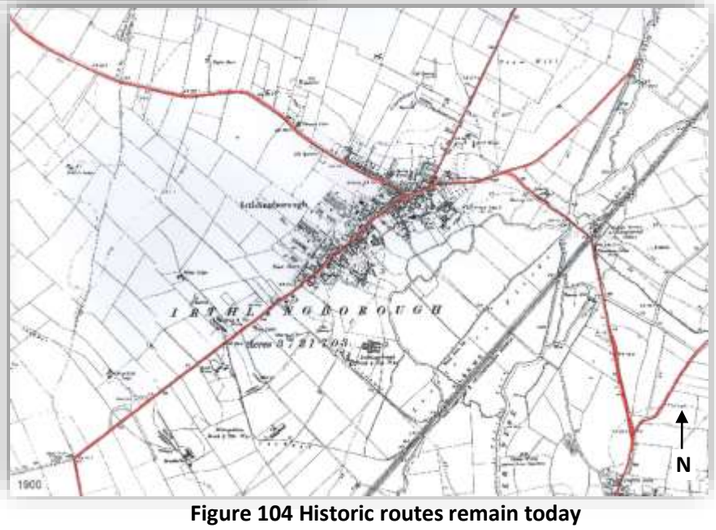


Figure 104 Historic routes remain today

17.1.5 Some of the historic street pattern to the east of the High Street has been compromised by twentieth century development, which has increased the number of dead ends in this more historic area of the town.

17.1.6 Victorian development to the north-west of College Street defines relatively straight streets. These have remained as cul-de-sacs, but the regularity of the street arrangement suggests potential for them to have been developed into a regular grid.

17.1.7 Areas of mid-late twentieth century development are evident in the form of looped streets and cul-de-sacs. These areas are discrete and poorly connected to other areas of the town – i.e. there is often only one way in and out. These areas are all accessed from one of the principal routes identified.

17.1.8 Crow Hill is physically separated from the rest of Irthlingborough, and twentieth century street patterns are in evidence here. Its role and status is currently being assessed through the separate settlement hierarchy and rural services studies being undertaken by East Northamptonshire Council.

17.1.9 The walking and cycling isochrones for Irthlingborough demonstrate that all areas of the town are inherently walkable and cyclable. They also demonstrate that a number of surrounding settlements are within cycling distance of the town 'as the crow flies' although this clearly does not take into account barriers to movement which are known to exist and deter cycling such as sharing routes with fast traffic, along the A6 for instance. These settlements include Rushden and Higham Ferrers (see also the Rushden and Higham Ferrers section of the USS), Stanwick, Little Addington, and Finedon. The town is also within relatively close proximity to Wellingborough, which has implications when planned development to the east of Wellingborough is implemented.

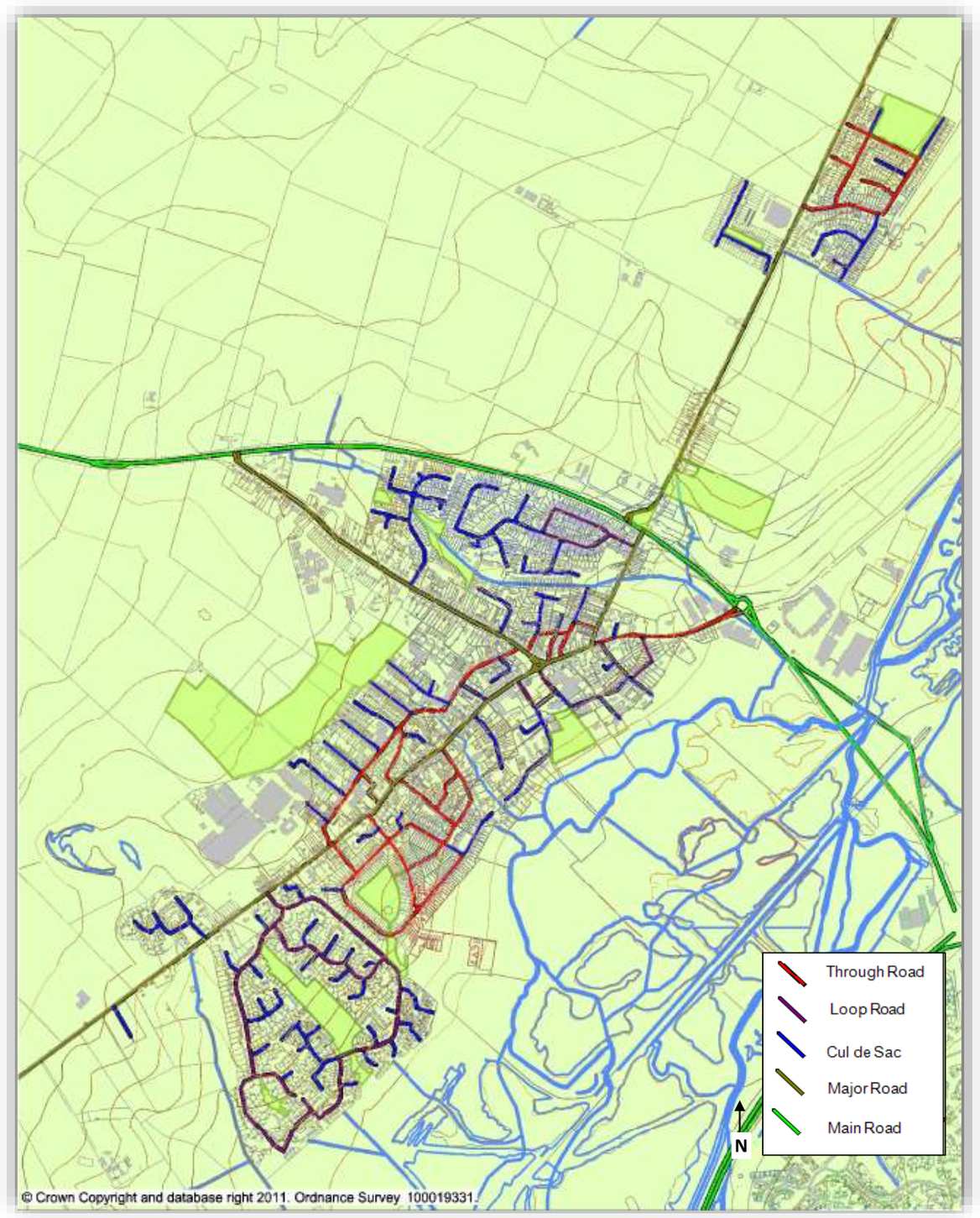


Figure 105 Route structure analysis in Irthlingborough

18. Spatial Principles

18.1 Humanise the A6

18.1.1 The A6 currently acts as a barrier to convenient, safe and attractive pedestrian and cycle access to facilities to the north of the town, including the NHS outpatients centre and the Football ground. It also increases the perception and reality of severance between Irthlingborough and Crow Hill. Existing development turns its back on A6, and no routes obviously lend themselves to forming a grid across the A6. This limits potential for growth to the north of the town to be well connected. The lack of frontage means there are connections into the existing fabric. However there maybe scope to link into the existing cul-de-sacs for improved pedestrian/cycle routes across the A6.

18.2 Crow Hill

18.1.2 Crow Hill is very disconnected from Irthlingborough. Scope exists to improve its linkages to the town centre through enhancements to the A6, as outlined above. In addition, scope exists to support Crow Hill as a separate but well linked settlement with additional services and development to achieve a greater level of self sufficiency.

18.3 Maintain and enhance physical links to Higham Ferrers (and Rushden) to increase connectivity

18.1.3 There is a need to maintain views across the Nene Valley and to maintain and enhance routes across the Nene Valley between the settlements, particularly improvements for local cycling. The East Northamptonshire Greenway Scheme is starting to develop these links.

18.4 Where possible, create links between existing discrete areas

- Utilise the existing partial Victorian grid pattern to link to future development at Irthlingborough West.
- Link the Pine Trees area (southern loop development) to adjacent grid.
- Connect cul-de-sacs where opportunities exist.

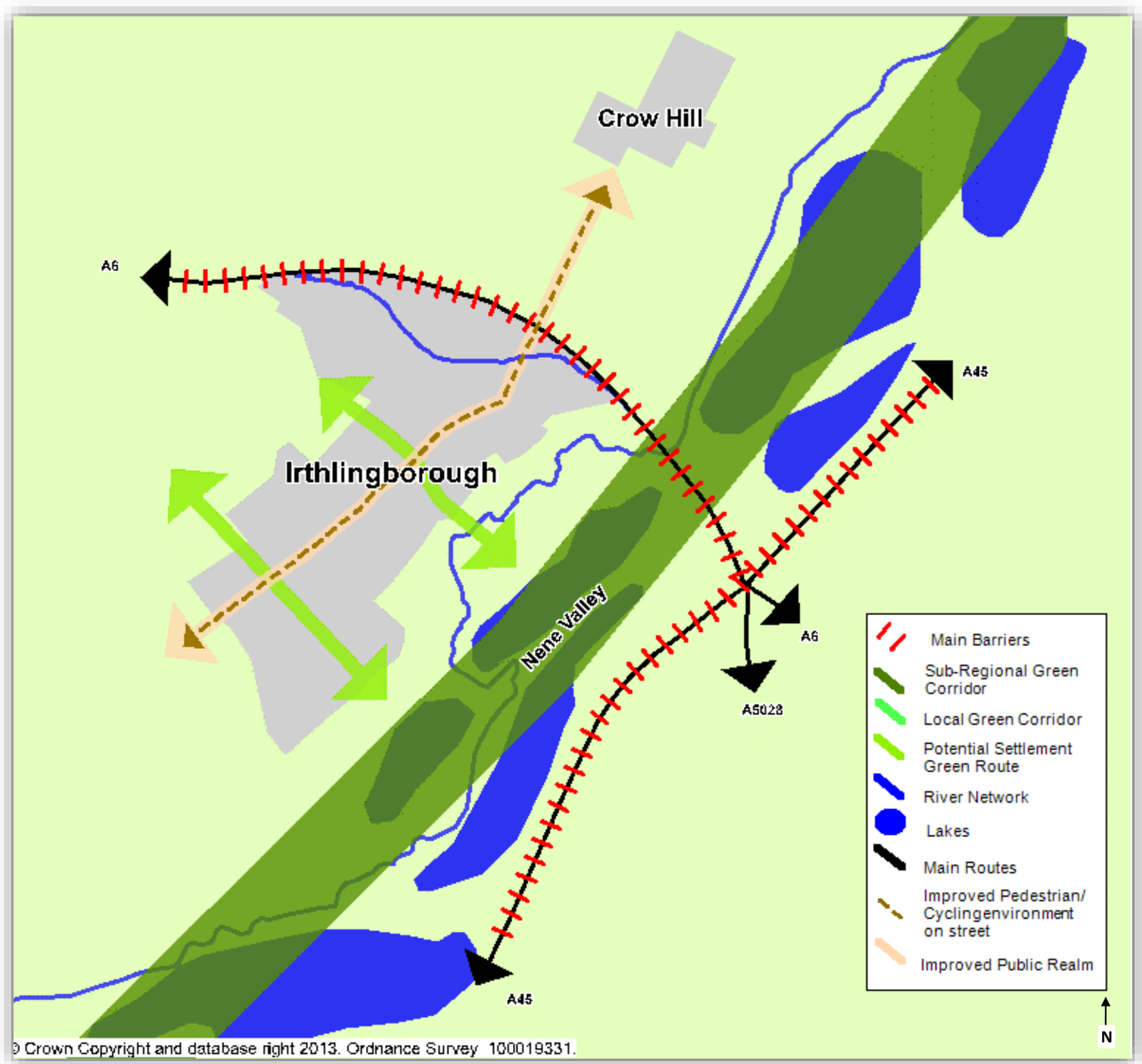


Figure 106 Plan showing improved connections through green spaces and along the streets

- Use the edges - Current development is inward facing (i.e. turns its back on the edges). There is opportunity to use the edges for limited development and create connections.

18.5 Integrate open spaces

18.5.1 Open spaces are currently predominantly on the edge of the settlement. Where possible integrate them within the settlement either through GI corridors to them or within new development. The Nene Valley Strategic Plan recommends creating a mini river plan to highlight specific opportunities to better link the town to the Valley with foot and cycle paths together with improved signage.



Figure 109 The A6 acts as barrier to pedestrian movement. Pedestrian guard rails mean that pedestrians are pushed off the most direct route across the road.

Further Reading:

Irthlingborough Conservation Area



Figure 107 St Peter's Church Irthlingborough. The Church is seen here from Back Brook, an overflow channel for the River Nene © Copyright Will Lovell. Maintaining and capitalising on the links to the Nene Valley is important.



Figure 108 Public realm works to Kensington High Street removed guard rails to better connect both sides of the street and allow pedestrians to cross.

19. Oundle

19.1 Issues, opportunities and constraints

19.1.1 Oundle is located on a narrow spur in the River Nene, and is enclosed by the river on three sides. Its development has been constrained by the floodplain. Access routes to and from the town were and are constrained by the river. The medieval crossing point at South Bridge remains the only entrance to the town from the south, and North Bridge remains the only access from the east.

19.1.2 The development of Oundle can be traced back to the 6th century AD. The plan of the town centre is a typical example of a medieval settlement pattern, with linear forms of development focussed on a market place and a church. On either side of the principle streets (West Street, Market Place and North Street) Burgage plots are still in evidence.

19.1.3 Oundle continued to grow as a market town throughout the 17th, 18th and 19th centuries. Unlike other local towns in Northamptonshire, Oundle never developed an industrial specialism (e.g. boot and shoe), and therefore never experienced the rapid growth of other towns in the industrial era. This is likely to be due at least in part to the fact that the town was bypassed by the main railway links in the mid 19th century. Instead, the public school was the main economic driver in Oundle, and remains as such in present times.

19.1.4 There was a relatively significant amount of development in the town in the 20th century, some of which served to obscure the historic Burgage plots. The school's land holdings have affected the distribution of routes, creating much larger urban blocks between the streets than seen in other towns. However, these are not typical urban blocks, having instead large buildings set in extensive landscape which together creates much of Oundle's unique character.

19.1.5 The town is of a walkable scale, with much of the settlement within a 15 minute walk of the centre, and nearby small villages are within a 15-20 minute cycle ride..

19.1.6 Access to the centre is by the historic routes. There are few alternative cross town connections through the residential areas.

All the principal routes converge at the centre adjacent to the old Courthouse (Town Council offices) and Church.

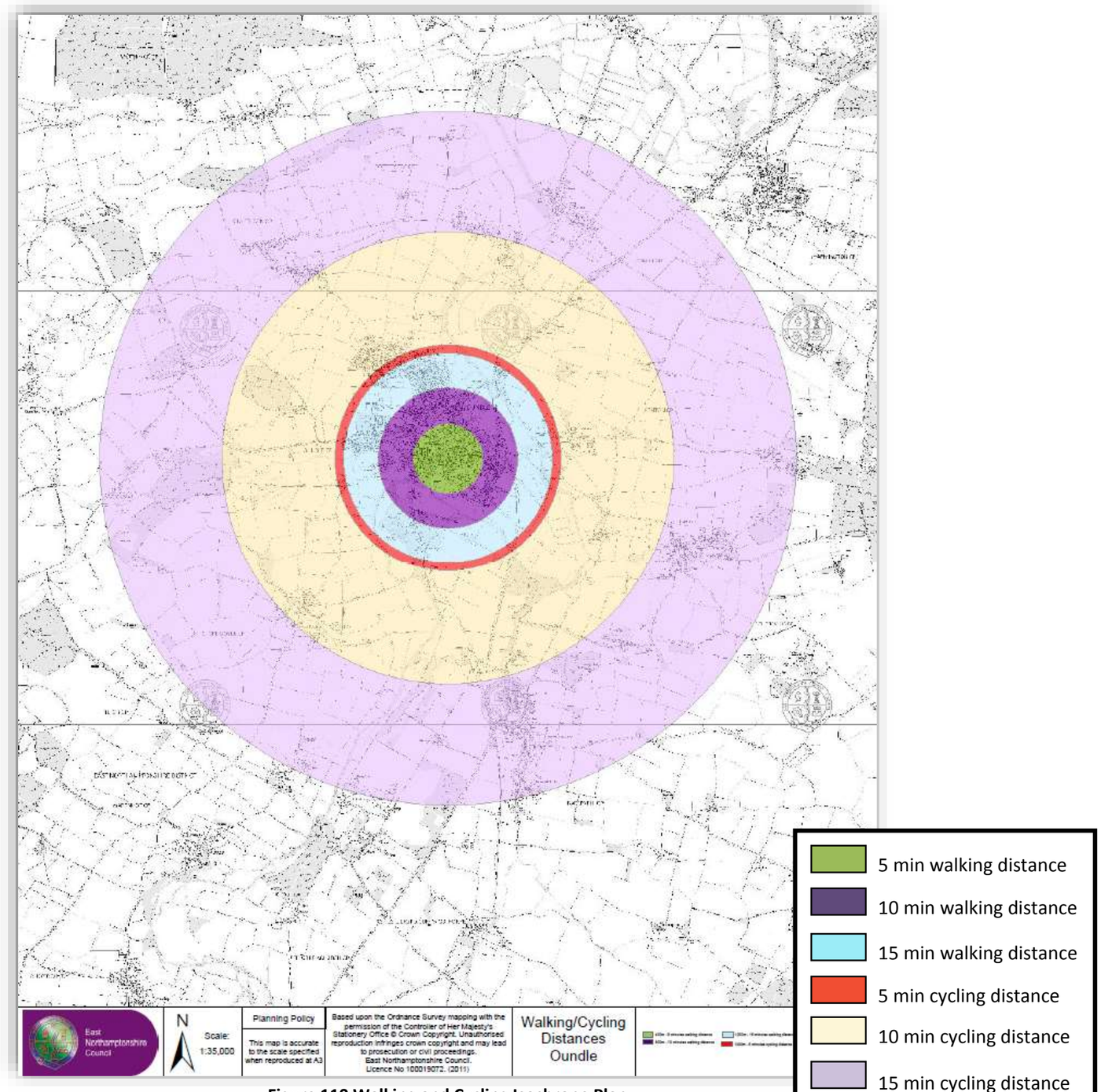


Figure 110 Walking and Cycling Isochrone Plan

19.1.7 To the east, the town's principal routes are supplemented by routes which provide an additional means of circulating through the town (New Road and South Road). However, to the west, the key principal routes have no additional linking connections between them, relying instead on the central converging point. There is a single access point to the A605 across the bridge from the town. An irregular grid street pattern exists in the North East of the town, providing additional permeability through to New and St Peters Roads.

19.1.8 In terms of local connectivity, there are discrete areas of late 20th century developments within and around the periphery of the town. These areas are characterised by looping roads and cul-de-sacs. These areas are generally accessed off one of the principal routes, and are unconnected from each other. This is particularly evident along the Benefield Road.

19.1.9 Prince William School is on a cul-de-sac leading to additional traffic movements. Providing a more connected grid in this area would be welcomed to encourage more walking and cycling to the school. Extending the route to connect to the A605 could also provide another route to take some pressure off North Street. School travel plans can also be used to reduce the number of car trips

19.1.10 Public open space within the town is limited, but the sense of openness and extensive mature tree planting is provided by the Oundle School's Estate, and by other large residences in the town, which still retain expansive gardens and by the areas of floodplain. Access to the network of footpaths is variable, and generally worse in the west, with most built form backing onto the countryside. Screening however is provided by extensive woodland and hedging. To the east of the town, there are more footpaths and the countryside seems to integrate better into the edges of the town. These have clear routes to the rights of way, and facilities such as the school and Rugby Club providing an access point to the open space. Walking and cycling through the town centre could be improved both through measures to reduce vehicular speeds and public realm enhancements.

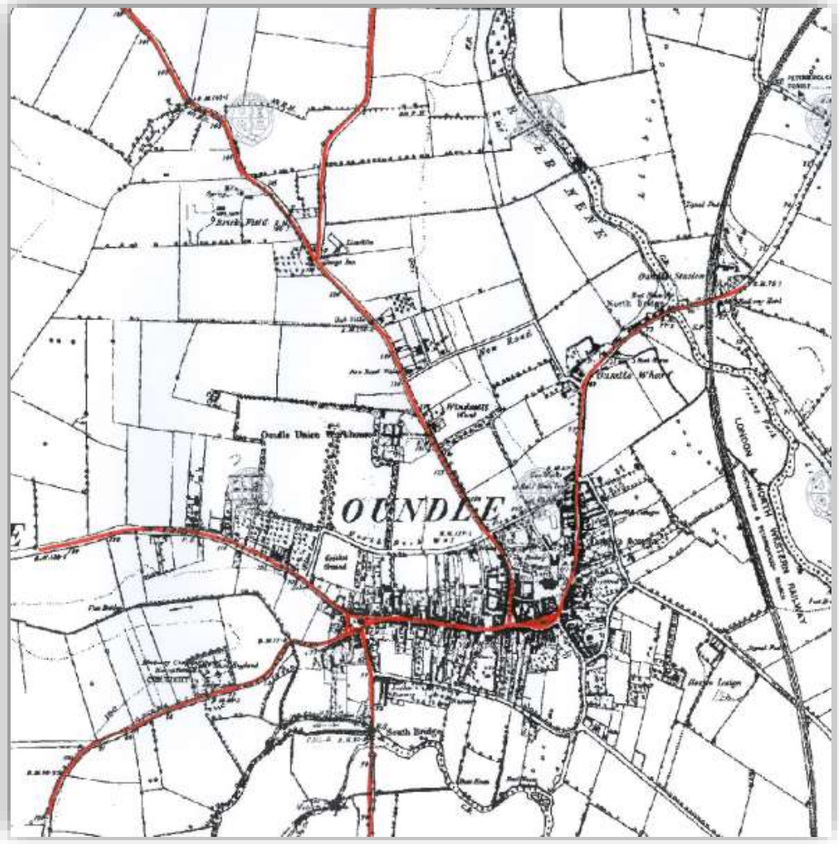


Figure 111 Historic plan showing historic routes, which still form the skeleton of the town.



Figure 112 Market Place, Oundle. Photo Copyright Chris Bamber

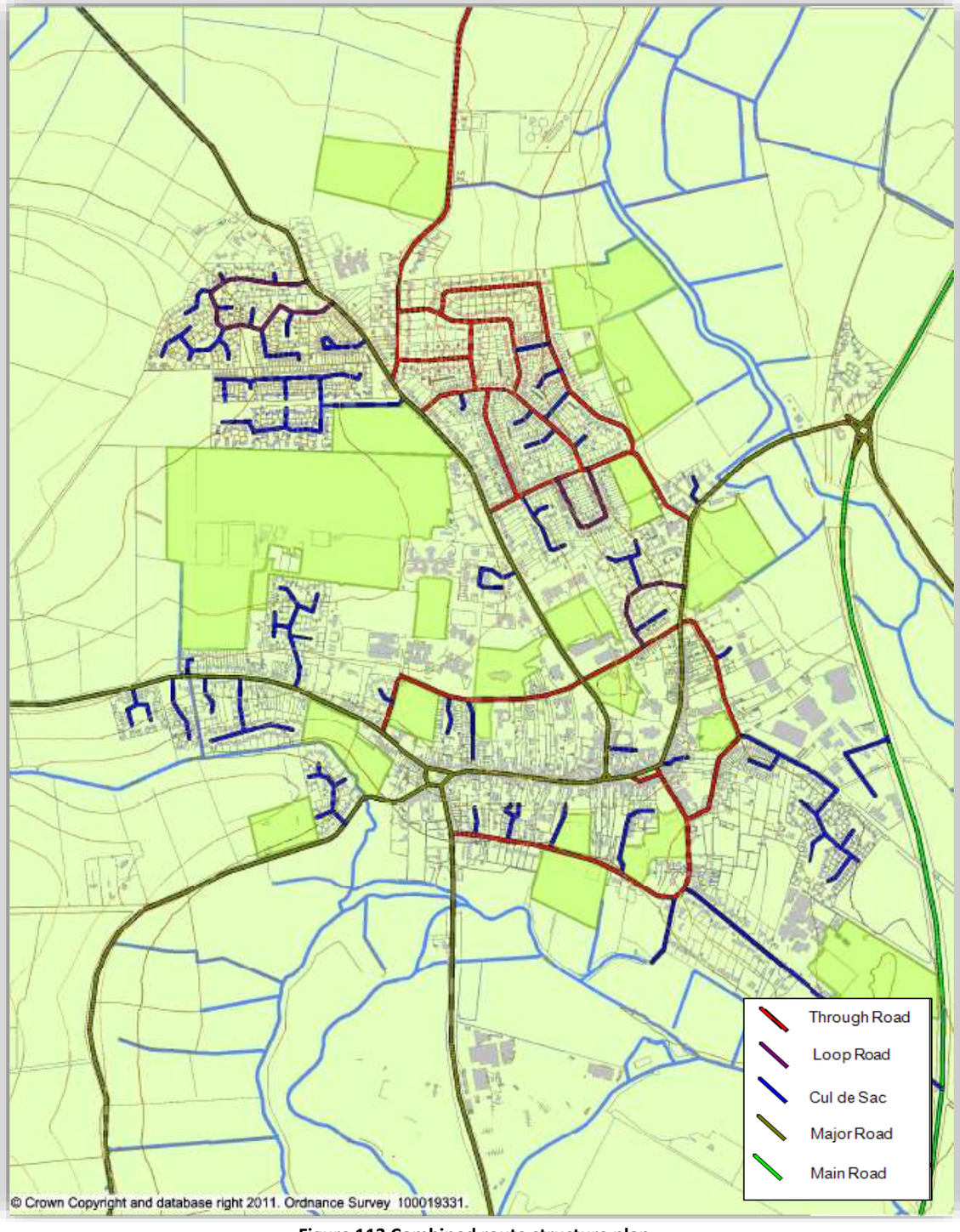


Figure 113 Combined route structure plan

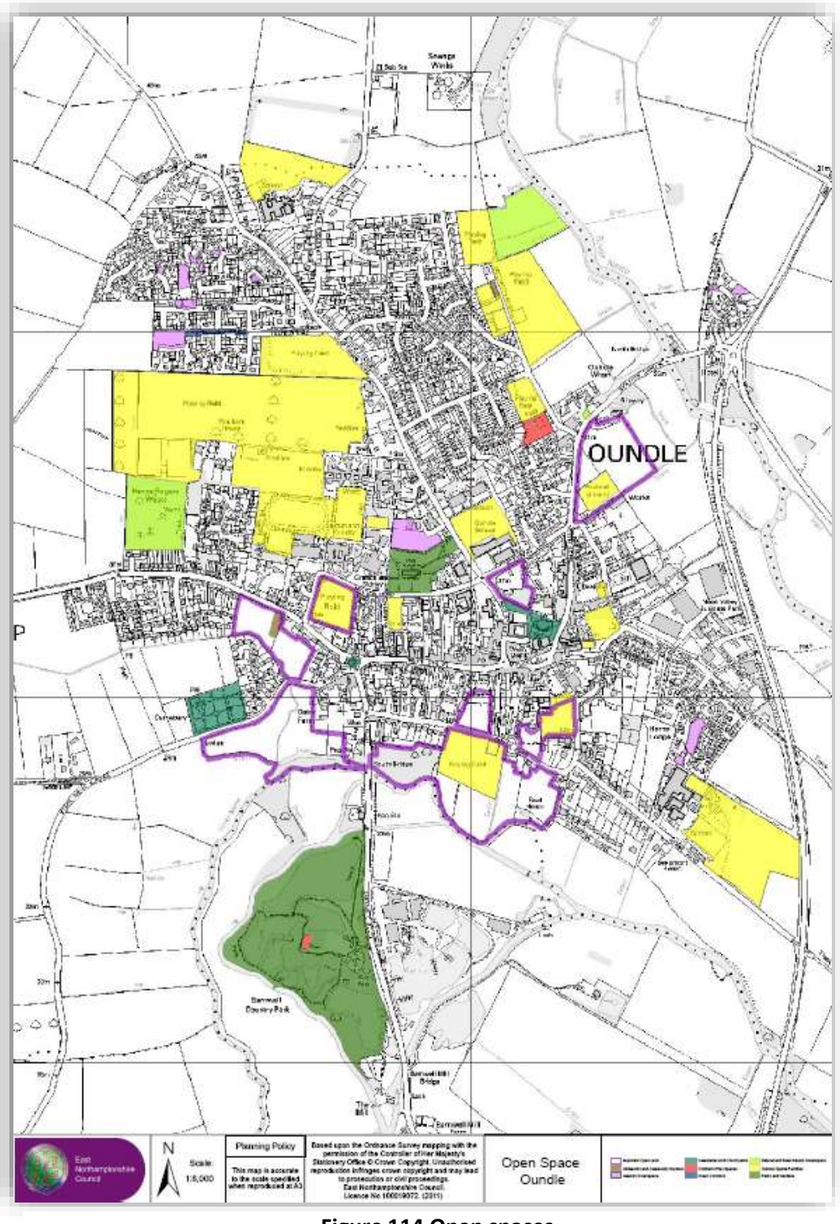


Figure 114 Open spaces

20. Spatial Principles

20.1 Make greater features of the surrounding waterways

20.1.1 Ensure more footpaths in a better connected network. The A605 is difficult to cross to gain access to surrounding settlements and to the river, so providing better pedestrian crossing facilities here would promote more use of the river and access to nearby places on foot.

20.2 Strengthen routes to surrounding rural settlements.

20.2.1 Create more crossings and linkages across the A605 to the east to allow access to settlements and routes beyond. This includes improvements for cycling to local settlements such as slower speed limits, additional signage and cycling signage and slowed routes on rural lanes to nearby settlements. Various local authorities have used "Quiet Lanes" schemes to encourage walking and cycling on certain rural roads and these principles could be employed to improve local lanes around Oundle.

20.3 Additional routes to link discrete areas

20.3.1 Explore whether the Oundle School would be prepared to allow more footpath access through their land holdings.

20.3.2 A linking route between Benefield and Glapthorn Roads would help people to circulate through the town without having to always go through the pinch points at the centre (performing a similar function as New Road already does in the North East of the town).

20.3.3 Limit cul-de-sacs in new development and instead use the model of the irregular grids which characterise Oundle's street pattern.

20.3.4 Improvements to create connected street pattern around the secondary school.

20.4 Improvements for walking through the town centre

- 20mph zone throughout town centre
- Reduction in signing and lining and street clutter to allow the excellent built form to take prominence.
- Deliver a clear sense of pedestrian priority with wider pavements, some shared space areas



Figure 115 Connections pla Connections Plan showing key existing and potential GI routes and areas for street improvements

- Unify the historic street network with a consistent use of high quality neutral paving materials.

20.5 Countryside edge

20.5.1 Ensure new development does not create a hard urban edge to the countryside and that treatment of the rural edge is carefully handled to allow buildings to front onto open space, or to screen rear garden boundaries.



Figure 116 Quiet Lane signage from Norfolk County Council pilot scheme







Figure 117 and 118 Bury St Edmunds – traffic still travels through but people dominate, and image before. Photo Lucy Tennyson, Rudi.net and BBC Suffolk

Further Reading:

Oundle Conservation Area

21. Rushden/Higham Ferrers

21.1 Issues, opportunities and constraints

21.1.1 Rushden and Higham Ferrers are separate settlements with distinctive characteristics. However, physically they have coalesced, and for the purposes of this study (i.e. understanding the structure of the towns in terms of function and movement), it is helpful to consider both towns together..

21.1.2 Rushden was originally a small agricultural village, which established itself along the main route to Higham Ferrers. It underwent rapid expansion in the late 19th century, with the growth of the boot and shoe industry, and developed into a small industrial town. Victorian street patterns were laid across and around the medieval core. Rushden expanded southward in 20th century, up to administrative boundary with the borough of Wellingborough and physically coalesced with Higham Ferrers in the mid/late 20th Century.

21.1.3 The historic map (circa 1880) shows that many of the primary routes in and around Rushden and Higham Ferrers were already established at that time. The principal route runs along a north south axis, and travels through the centres of Rushden and Higham Ferrers. All other primary routes connect into this north-south axis and radiate east and west.

21.1.4 Both Rushden and Higham Ferrers are enclosed by the A45 and A6 strategic roads. The nature of these roads is such that they have been designed to accommodate vehicular movements at the expense of pedestrians. A small number of pedestrian crossing points control movement beyond. These either take the form of bridges across (above) the street, or footpaths which are mainly routed around traffic roundabouts.

21.1.5 Overall, extra distance and changes of direction are caused by the need to access a 'crossing point' for the A6 and A45, which currently act as significant barriers to movement.

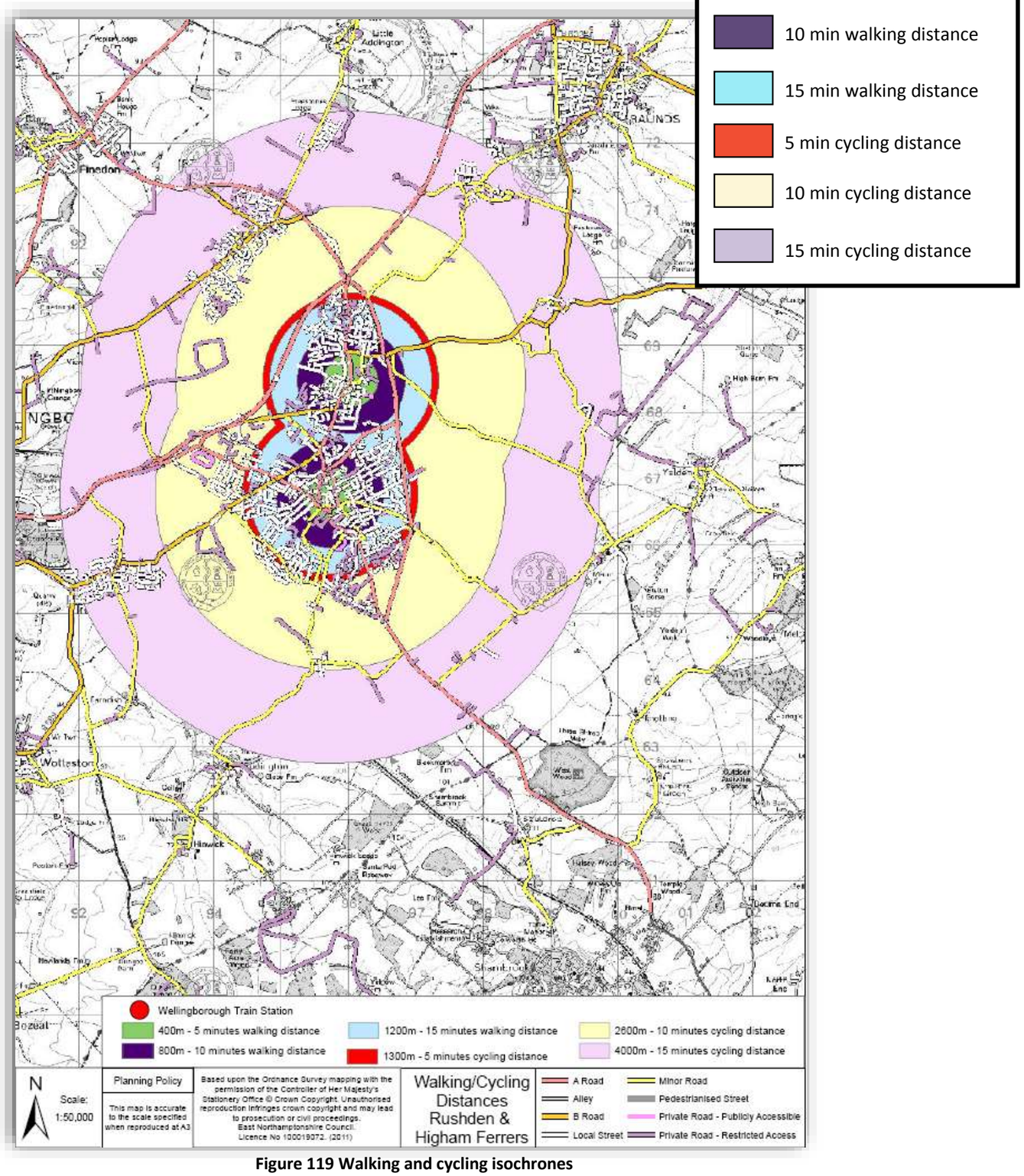


Figure 119 Walking and cycling isochrones

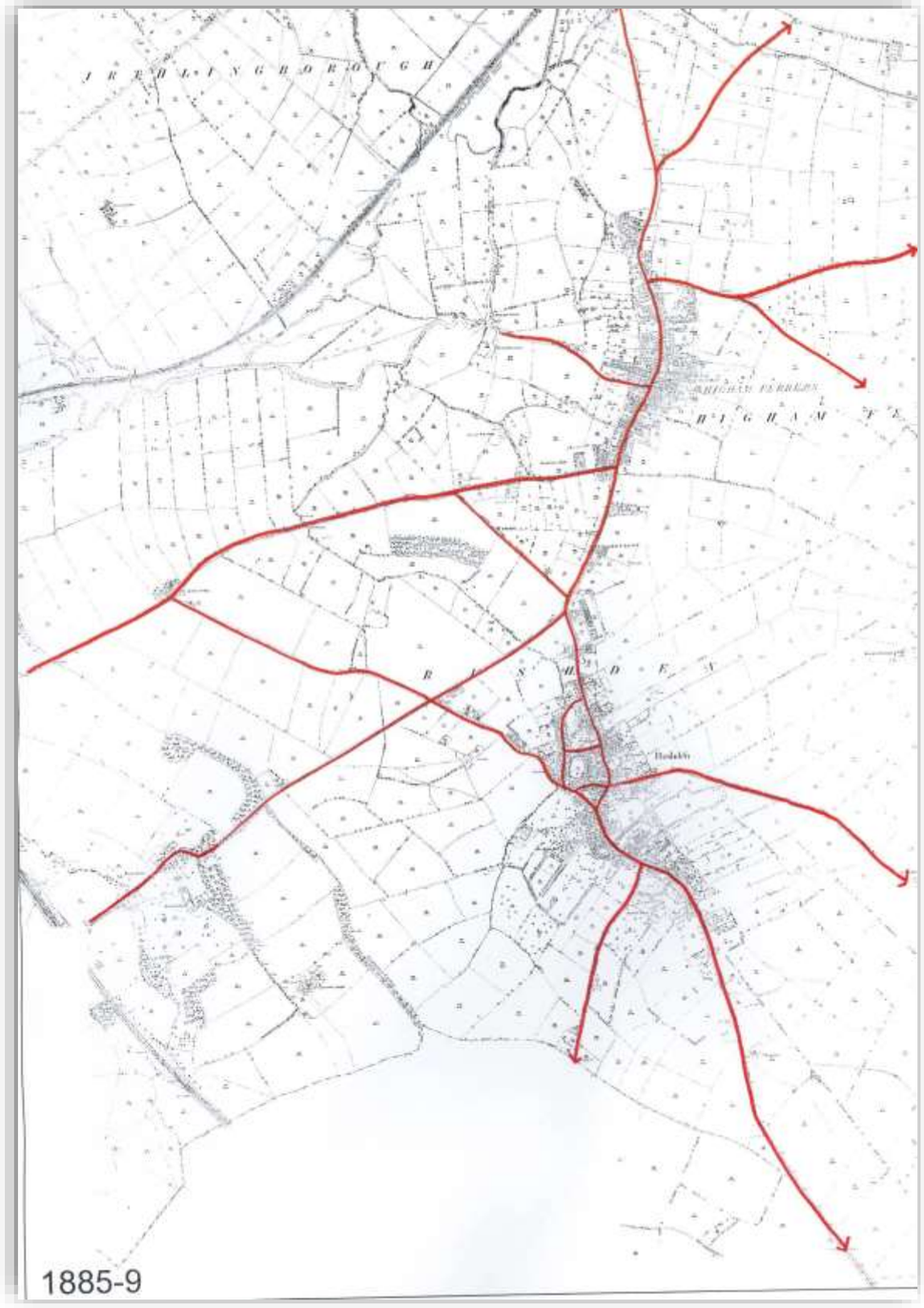


Figure 120 Historic routes remain the key structuring routes today

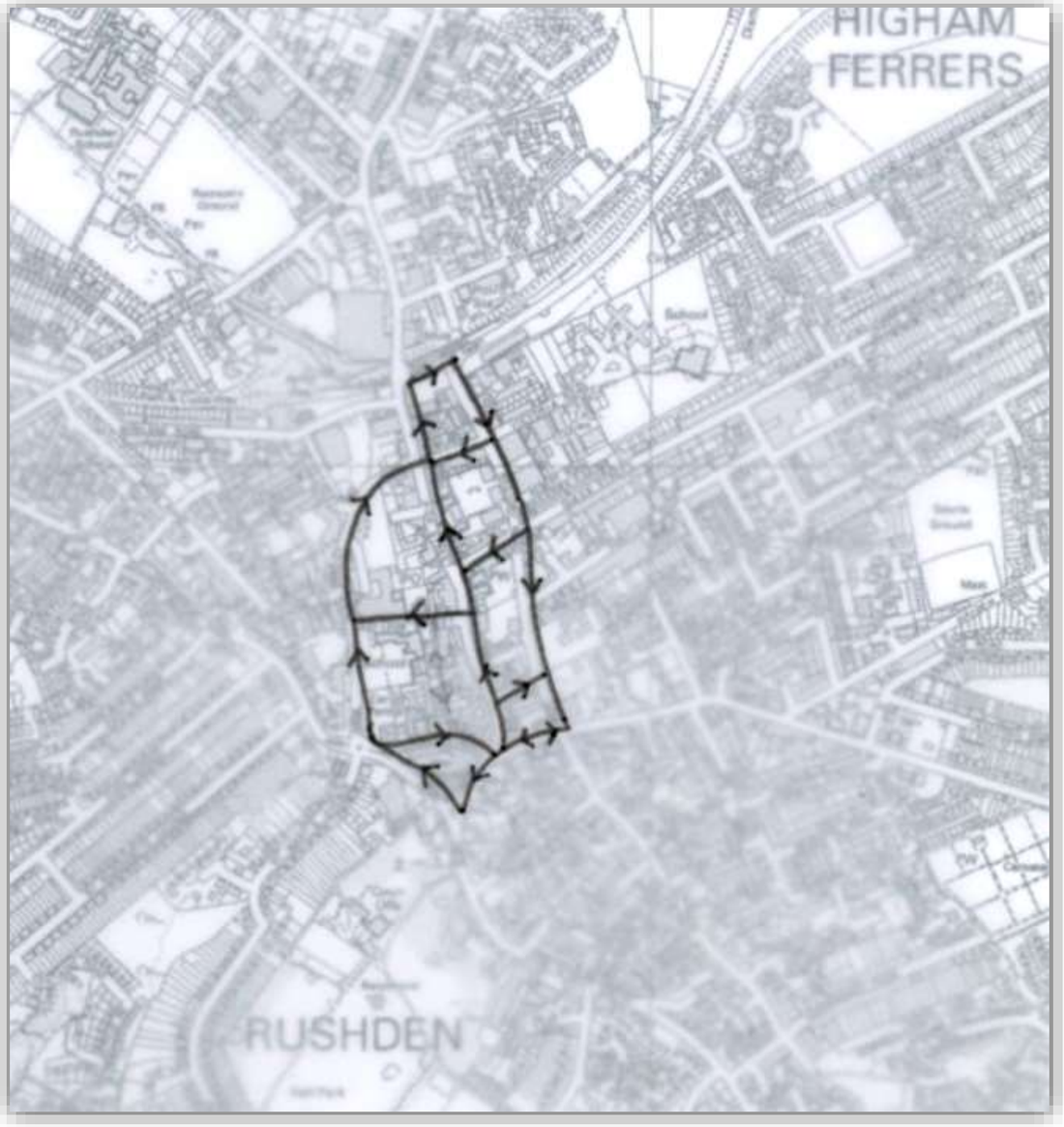


Figure 121 One way system

21.2 Rushden

21.2.1 A Victorian street pattern is laid across the medieval core (east-west) in the central area of Rushden. The streets form a regular grid, providing multiple route options to and from the town centre.

21.2.2 The regular grid to the south west of the town centre also offers route options back toward the town centre, though development blocks are notably longer. Later development south of Hall Park shows an irregular grid pattern. Some cul-de-sacs are accessed from this irregular grid, which is connected back into 3/4 of the historic routes identified (Washbrook Road, Wellingborough Road/Duck Street, and Wymington Road).

21.2.3 At the extremities of the town, residential development is predominantly arranged around cul-de-sacs which connect to a spine road. The 'spine' roads generally follow organic lines (i.e. they are not straight), and they often form a loop to connect at both ends with the same street. This street pattern offers very limited route options for all modes of transport to any destination.

212.4 On the most northern edge of Rushden, (to the east of Higham Road) the street pattern crosses the parish boundary into Higham Ferrers. There is no physical differentiation between the settlements in this area.

21.2.5 At the far western side of Rushden there is an area of concentrated commercial and industrial uses. These are well located to be able to access the A45, but are connected back into the town by a single direct route (Wellingborough Road). The commercial and industrial buildings are generally served by cul-de-sacs, which direct all traffic onto the main roads to the A45.

21.2.6 A one way system for vehicular movements currently operates around the town centre (see Figure 121). This adversely affects the legibility of this key area of Rushden when travelling by car or other type of vehicle, and in some places adversely affects the pedestrian environment due to traffic speeds. The adverse impact on the town centre of the current one way system has already been noted in a number of local studies, including the 2008 Rushden Conservation Area Appraisal, and the Enquiry by Design Report produced on Rushden Town Centre in 2010.

21.2.7 In some areas development around the periphery of the town in itself restricts access to the edge – e.g. properties back onto the edge in a continuous line, preventing potential permeation through, and/or noise bunding acts as a secondary barrier to movement between the built up area and anything beyond the bypass.

21.2.8 Green fingers' project into the 20th century development creating green routes. Street trees are characteristic of the principle north south route through the centre of Higham Ferrers. In Rushden Hall Park is the principle open space. Public open spaces tend to be located on or close to the historic structuring routes. Within areas of late 20th century development in the south of the town there tends to be a larger number of much smaller open spaces.

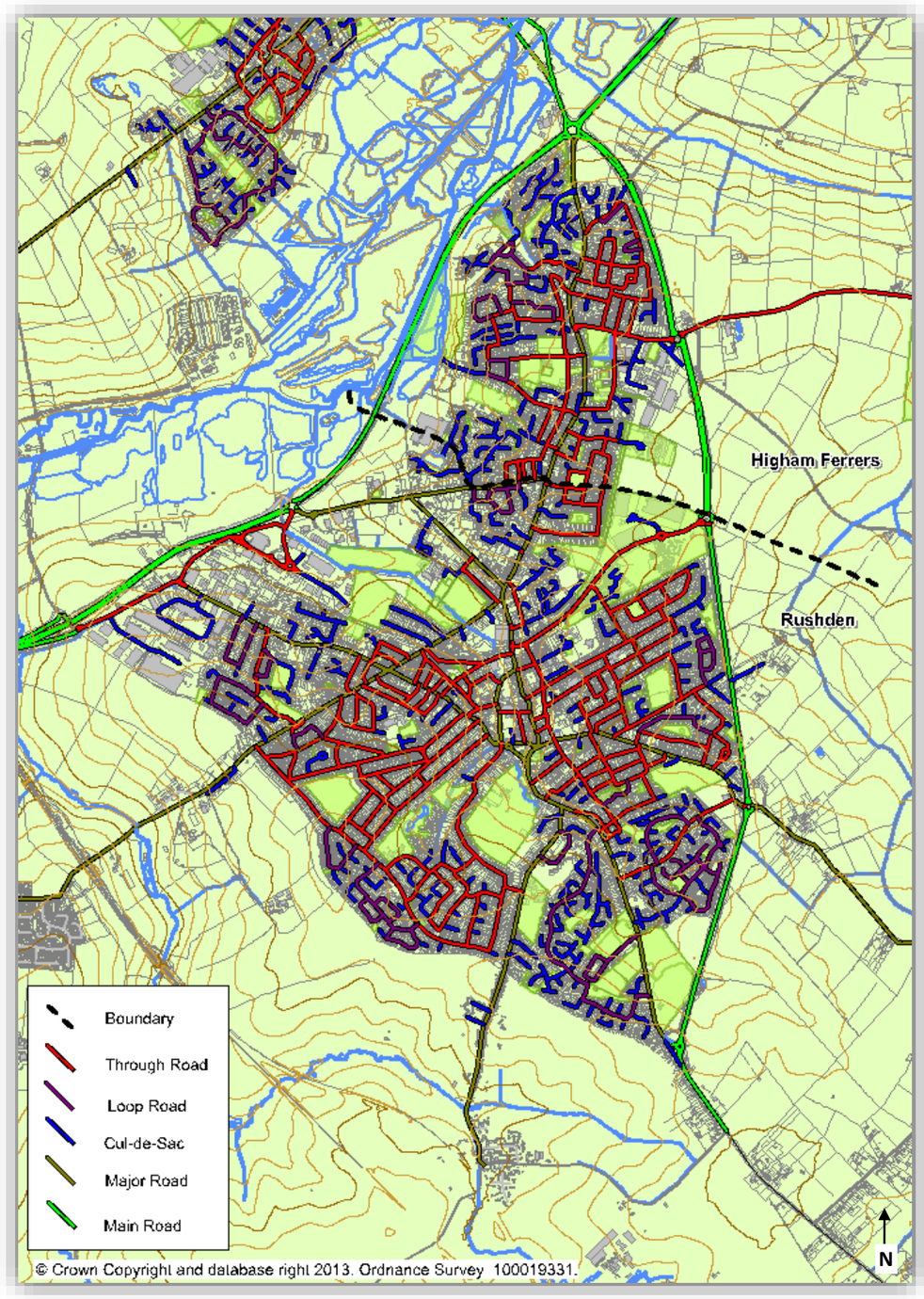


Figure 122 Combined route structure plan

21.3 Higham Ferrers

21.3.1 The north-south route through the centre of Higham Ferrers is the main structuring route. As can be seen from the coloured route structure plan (Figure 122), all other streets within the town link back to this. Only one other route (besides the north-south route) connects directly beyond the town – Kimbolton Road (red) links the town centre to the A6, and Kimbolton to the east. Besides the Kimbolton Road, opportunites to travel east/west require use of the historic radials tp access the A45 or A6. There are two principle routes which connect Rushden and Higham Ferrers – the principal north/south route and Northampton Road. Other residential streets transcend the parish boundary, but can only be accessed off principal north/south spine.

21.3.2 Late 20th century street patterns in the west of the town are predominantly cul-de-sacs, which limit route options.

21.3.3 A small area of employment uses is located to the east of the town, immediately south of Kimbolton Road. This is conveniently located for access onto the A6, and is physically segregated from the rest of the town as it is accessed via two cul-de-sacs.

21.3.4 The walking and cycling isochrones for Rushden and Higham Ferrers (Figure 119) demonstrate that they are inherently walkable and cyclable. Adjacent settlements including Irthlingborough are also within cycling distance of both towns.

21.3.5 Routes to and from the town centres of Rushden and Higham Ferrers to the edge of the settlements are predominantly easily legible, with options of directions and the majority of routes not exceeding three axial lines.

21.3.6 There is very little permeability to the footpaths to the south of Rushden, due to the arrangement of development along the administrative border with Wellingborough. Therefore, although some streets are close to the town's edge, they have convoluted routes to reach land beyond the current built up area.

21.3.7 In terms of green infrastructure and open space, Higham Ferrers's most significant area of public open space lies on the edge of the town to the west between the built up area and the A45.

21.3.8 Street trees are characteristic of many areas of Rushden and Higham Ferrers, most notably the historic structuring routes identified earlier in this study. The street trees are predominantly/consistently lime trees (pollarded).



Figure 123 Pedestrian bridge over A6 Image courtesy of Jo Miles

22. Spatial recommendations

22.1 Humanise the A45 and A6

22.1.1 The A45 and A6 currently act as barriers to convenient, safe and attractive pedestrian and cycle access to the Nene Valley, surrounding countryside, and facilities/attractions in surrounding settlements. This includes the Football Club, and the NHS outpatients clinic, both of which are sited on the edge of Irthlingborough, as well as the railway station at Wellingborough. Although some crossing points already exist, they do not always reflect pedestrian and cyclist desire lines (e.g. the bridge across to Irthlingborough which is underused and instead pedestrians regularly attempt to cross the A45 in the vicinity of the intersection with the A6 at grade).

22.1.2 Some crossing points are ill defined, for example the Right of Way in the vicinity of the Manor Park Rugby Club, and others are routed around vehicular roundabouts. In the short term, the priority should be to create additional safe crossing points on pedestrian and cycle desire lines (i.e. which follow a direct route to a key facility or destination). These should give the pedestrian and cyclist priority, to encourage greater use of these modes of travels (e.g. the Greenway). Creating wider footpaths, provide active frontage where possible, and consider additional tree planting to enhance the environment along the A45 and A6 in the vicinity of Rushden and Higham Ferrers is a long term aim. Traffic light-controlled cycle and pedestrian crossings across the roads, combined with lower speed limits would allow more options to cross the roads and would reflect the significant assets and opportunities which exist on the other side of the roads.

22.1.3 In the future, it will be important not to create any further vehicle only routes.

22.2 Address the edges

22.2.1 Analysis has shown that in addition to the bypasses, there are several other factors which create barriers to movement at the edges of both towns. These include the pattern of built form (I.e. general lack of permeability) and noise bunding. These matters could be addressed, especially in the south of Rushden, by providing better links to the existing footpaths.

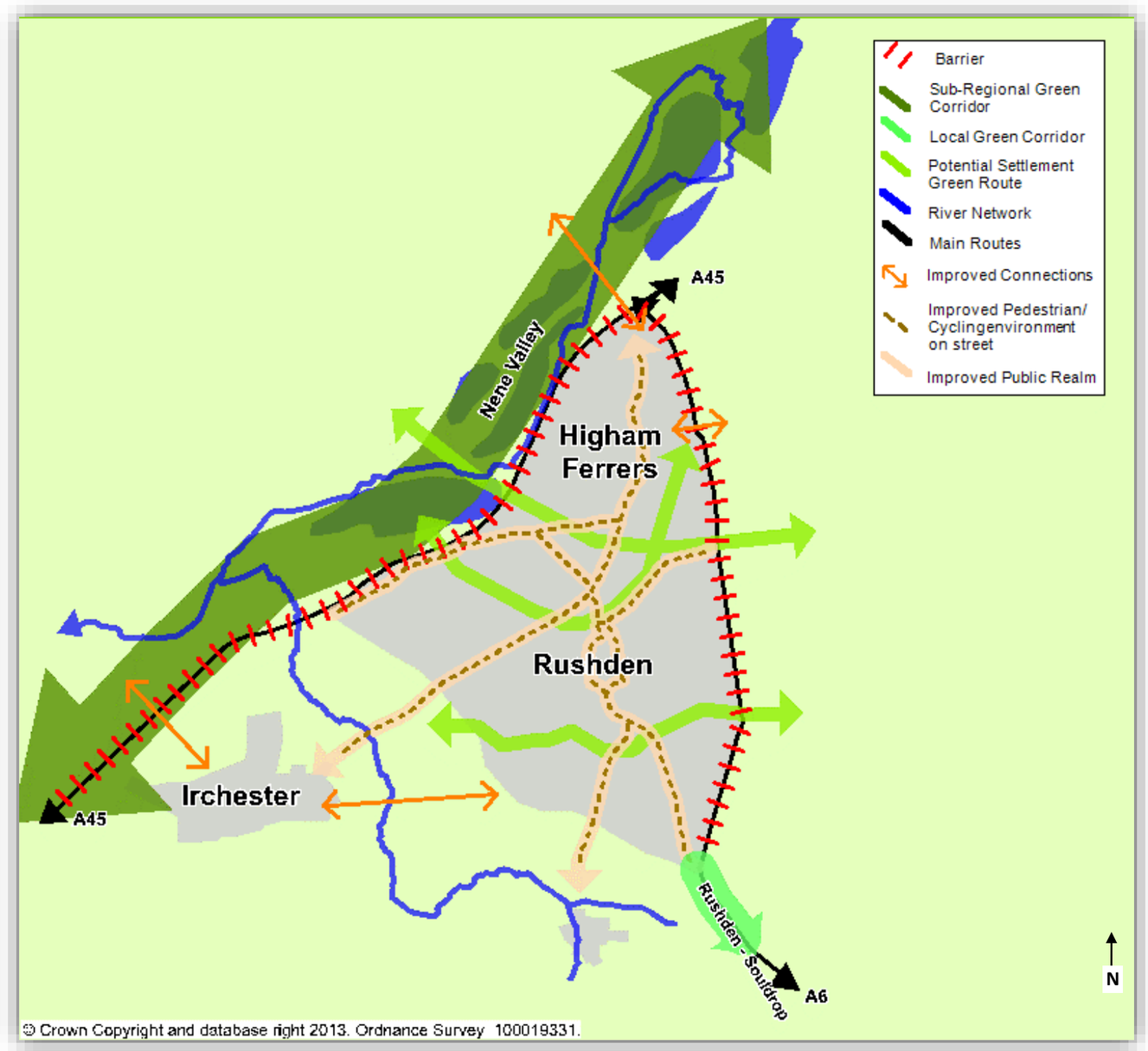


Figure 124 Map showing suggested improvements of green infrastructure and public realm to improve connectivity.

22.3 Focus on primary streets (in Rushden)

22.3.1 Whilst some of the primary streets are already well defined by built form, others currently benefit from less definition. For example, Duck Street currently has less than desirable built definition, which contributes to higher vehicle speeds. A combination of these matters makes the environment less attractive for pedestrians and cyclists, which in turn can affect perceptions of activity and safety.

22.3.2 The primary streets are usually the most connected, but their role as conduits for vehicular traffic has taken precedence over other modes, making them less hospitable. A key issue to resolve is ceasing to use the current one way vehicular system, and instead revert to two way traffic on all streets.

22.3.3 Where possible, widen footpaths on primary streets.

22.3.4 Encourage a mix of land uses along these routes, to ensure activity at different times of the day and night. This could include civic and community uses, as these are the best connected places.

22.3.5 Encourage the development and prioritise the redevelopment of sites along these routes to provide strong built enclosure and active frontages (i.e. consistent building lines, continuity of frontage, front doors onto the street, windows overlooking the street).

22.3.6 Built form along primary routes should be of the highest quality.

22.3.7 Car parking should be contained within the block, not open to the primary streets to ensure they have sufficient sense of enclosure

22.3.8 In London, the "Better Streets" document, issued by the Mayor, sets out key principles for improving streets which would be useful to apply in Rushden/Higham Ferrers (Images opposite).



Figure 126 Existing situation. All images from "Better Streets" Greater London Authority



Figure 125 Step 1 -Tidy up – Remove broken or unnecessary street clutter The illegal A-boards are gone and the street is cleared of any rubbish. Even after this initial stage is possible to notice the marked improvement in space available to pedestrians.



Figure 127 Step 2 is to de-clutter. Unnecessary or redundant street furniture and signage is removed



Figure 128 Step 3-Merging functions involves maximising the effectiveness of street furniture required. Bins are lifted from the ground and attached to existing lamp columns, which also accommodate new hanging flower baskets.



Figure 130 Step 4 - rethink of traffic management sees a higher capital investment, which starts to readdress the balance of the street...



Figure 129 Step 5 - Create a high quality street and rebalanced street environment.

22.4 Promote walkable connected places

22.4.1 The isochrones demonstrate that 'as the crow flies' Rushden and Higham are in themselves walkable and cyclable. They also demonstrate that neighbouring settlements are within reasonable cycling distance. Some aspects of the street network however make areas less permeable.

22.4.2 Use Rushden's Victorian grid street pattern in any new development, to ensure that places are well connected. Analysis has demonstrated that this grid pattern is the most legible, and supports the greatest number of convenience shops outside the town centre.

22.4.3 Limit cul-de-sacs in new development.

22.4.4 Identify ways to improve connections between the southern areas of the town (i.e. the late 20th century development – cul-de-sacs). Connect existing cul-de-sacs where possible.

22.4.5 Avoid locating key facilities (e.g. schools, doctors surgeries etc) in areas where connectivity is poor. Instead, these should be focused on primary streets, so that they are accessible by a range of transport modes.

22.4.6 Improve the opportunities for crossing the A6 and A45 which currently act as barriers to movement (Figure 124).

22.4.7 Prioritise cycling between centres, including between Rushden and Higham Ferrers, Rushden, Higham Ferrers and Irthlingborough, and Rushden Higham ferrers and Wellingborough. This would create a realistic alternative mode of travel between settlements, and reduce traffic movements onto the strategic network. Promote town centre access by completing pedestrian/cycle links to the centre from its surrounds. Better connect the Kings Meadow, Kimbolton Road and Windmill Banks to the town centre and green spaces, as identified in the Community Plan. Improve cycling and walking connections to local smaller settlements such as Irchester. Such as cycle plaths from Rushden to Irchester via Knuston and along the Nene Valley.

22.5 Promote the use of the Nene Valley for movement as well as recreation

22.5.1 Better access to the Nene Valley, and more connections to the existing footpath and bridleway network would allow this to be connecting green route, particularly for cyclists seeking to get to Wellingborough station and the surrounding towns and villages. The Nene Valley Strategic Plan suggests developing a mini river plan for the town to set out how foot and cycle path connections to the Nene Valley can be enhanced.

22.6 Promote street tree planting on principle routes

22.6.1 Analysis has shown that street trees are a unique characteristic of the more historic areas of Rushden and Higham Ferrers, most notably the principle north-south route which connects the centres of both towns. In most area, the street trees are consistently pollarded lime trees. As a unique characteristic, it is recommended that this feature is enhanced and continued where appropriate. The following recommendations could help to achieve this:

- Seek to retain existing street trees within the town;
- Where street trees appear to have been removed (for example around Rushden town centre and High Street South), these should be replaced so that principle routes are continuously lined with appropriate street trees (usually lime trees);
- Where any new principle streets are developed in future, they should be designed to accommodate street tree planting (usually lime trees) in line with the precedent set on existing key routes.

22.7 Retain and where possible enhance public open spaces

22.7.1 Analysis has shown that Rushden has numerous small areas of amenity space (primarily in the areas of late 20th century development), but very few large scale open spaces. Large formal spaces tend to be located adjacent to principal routes through the town where they are most accessible (e.g. Hall Park is accessed from High Street South).

22.7.2 The following recommendations are suggested for open space in Rushden:

- Amenity spaces might be linked together where possible (e.g. through enhanced street tree planting, or provision of new spaces or green links);
- Provision of new green spaces should be encouraged where possible and appropriately accessible, preferably as part of a wider network of connected spaces;
- Enhance links to the Nene Valley to the west, as a key recreational opportunity;
- Analysis has shown that In Higham Ferrers, public open spaces are principally focussed within the grid of routes around the town centre (the most accessible area of town). Higham Ferrers has a large swathe of green space around the edge to the west, between the built up area and the A45. Not all of this however appears to be publicly accessible. Like Rushden, in areas of late 20th century development there are a relatively large number of smaller amenity green spaces, some of which appear relatively discreet, and others appear link in a linear format to the western green space.
- Improve pedestrian/cycle link to Riverside Park and Stanwick Lakes.
- Link the Greenway to the northern and eastern access routes to the countryside in Higham Ferrers.

22.7.7 Alongside the Greenway, work to implement the GI routes identified in the Environmental Character Suite, shown in the suggested connections map Figure 124, page 68.

Further Reading:

Rushden and Higham Ferrers Conservation Areas

23. Thrapston

23.1 Issues, opportunities and constraints

23.1.1 Thrapston is one of a number of small towns which lie along the valley of the River Nene. Others include Raunds (approximately 6km south), Higham Ferrers (approximately 8 km south) and Irthlingborough (approximately 8km south west). The River Nene loops around the western and northern edges of the town, and served as a major transport route through the town having been made navigable between Peterborough and Thrapston in 1737, and between Thrapston and Northampton in 1760. The centre developed around a convergence of routes, most significantly the Huntingdon to Leicester route which runs east-west through the town (and forms the High Street), and the Peterborough to Wellingborough Road. In the late 19th and early 20th century, two railways ran through Thrapston, and the town had two railway stations. One was the Blisworth-Peterborough branch of the London and North Western Railway, the other was the Kettering – Huntingdon branch of the Midland Railway.

23.1.2 The town grew significantly in the second half of the 20th century. The 1970's map shows development filling the area between Highfield Road and the established built areas, and development north of this on the opposite side of Highfield Road. Between the 1970s and present, significant development occurred to both the south and the east of the town. Street patterns show that these areas of development are relatively discreet from the more established areas of the town, and are characterised by predominantly by cul-de-sacs, with some loops.

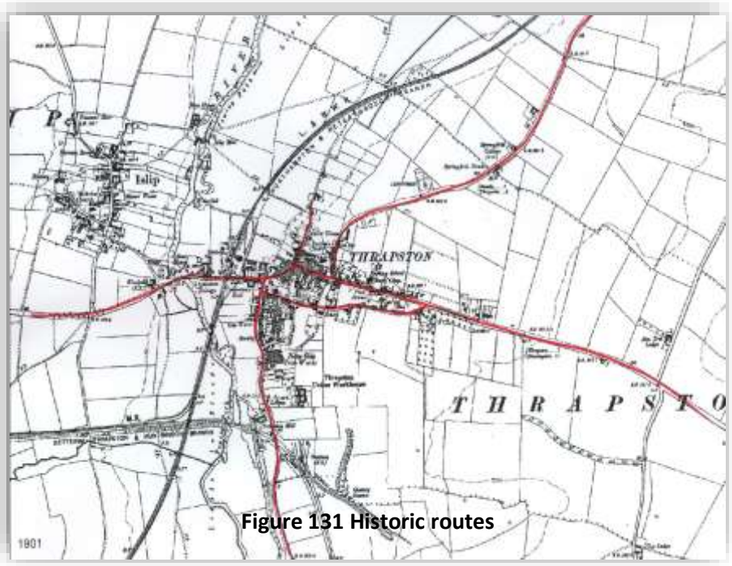


Figure 131 Historic routes

23.1.3 Historic routes remain the same today. As well as the main through routes, Thrapston has a secondary route running parallel to the main E-W route. This pattern is evident in other settlements like Oundle (South Road), Corby Village (also South Road) and Rushden (Rectory Road) and presumably is a result of the linear growth along the principal High Street with outbuildings and so on behind the frontage, and then as the town grew, these rear ranges became more important and were able to support their own secondary street.

23.1.4 The principle routes identified converge on the area of the town centre. The principle east-west route reflects the historic route between Huntingdon and Leicester. The north-south routes would have (and still do to a lesser degree) connected Oundle and Higham Ferrers.

23.1.5 Thrapston is enclosed by the A605 to the east, and the A14 to the south. Both of these

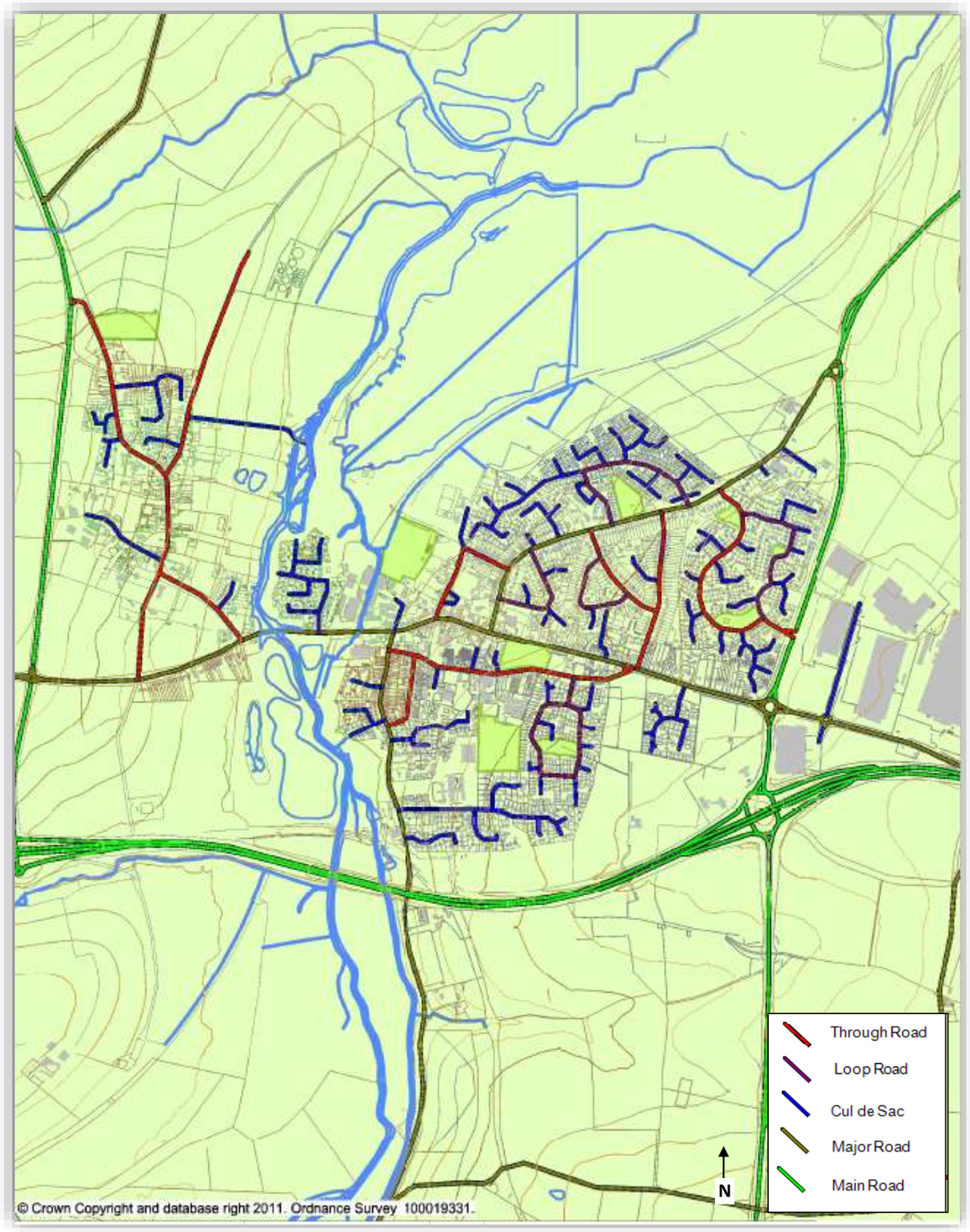


Figure 132 Combined route structure plan

major routes currently act as barriers to pedestrian/cycle movement. To the west, Islip is bordered by the A6116 linking to the A14, which also has a limiting effect on the ability of non motorised traffic to cross (plus there are limited destinations within reasonable walking/cycling distance

23.1.6 To the west, Thrapston is constrained by the River Nene, with only a singular historic crossing point, which currently serves all modes of transport. Beyond the River Nene, the village of Islip is a separate and distinct settlement, though sufficiently close to Thrapston, that residents could walk or cycle into the town, via the single historic river crossing point.

23.1.7 Other 'red routes' i.e. connecting routes were predominantly developed during the late 19th/early 20th centuries, with the exception of Windsor Drive, which visibly differs with its curving organic form.

23.1.8 Mid – late 20th century street patterns predominate, with large numbers of cul-de-sacs. These are usually accessed via streets which loop back onto one of the principle routes (earlier development), or via another cul-de-sac accessed off a principle route. The proliferation of cul-de-sacs serves to create discreet areas within the town, which are physically inward looking and poorly connected to the older forms of development. This offers limited route options, and directs vehicular modes of transport in particular onto a relatively small number of principle routes (see route structure analysis below).

23.1.9 The street patterns displayed in Thrapston divide into clear character areas. As is typical, these tend to have the oldest and most connected streets at the centre, with most recent and least connected housing estates at the edge. Thrapston also has a partial grid, shown as Area 2, where 'Y' shaped streets forms what appears to be the start of a grid system between two of the principle historic routes identified earlier. This pattern however was not continued in more recent development.

23.1.10 In terms of legibility, it is relatively straightforward to get from the centre of the town to its rural edge and vice versa. These routes predominantly require access onto one of the principle structuring routes demonstrating how key these radials and their quality for all modes are. Despite some housing areas being located at or near the edge of the settlement, there appear to be few opportunities to access adjacent countryside from within these areas. Instead, the development pattern appears to deliberately inhibit such movement in most places, e.g. Mason Close or Orchard Way.

23.1.11 The centre of Islip is a similar distance from Thrapston High Street as some development within the town. It is reasonable to assume therefore that residents in Islip have a realistic opportunity to walk or cycle into Thrapston town centre. The axial line analysis also demonstrated that the route from Islip is reasonably legible, which adds weight to this assumption.

23.1.12 The area of commercial development to the east of Thrapston is furthest away from the town centre. However, the straight nature of the routes which discharge movement onto the main east-west route through the town mean that the route to the town centre is particularly legible, with only two axial lines (one change of direction). This suggests that if in the long term there were any redevelopment of this commercial area, it could accommodate different uses with strong links to the town centre.

23.1.13 Alongside the town centre, there are a two convenience shops on the Oundle Road. One is just on the edge of the town centre, whilst the other is associated with a garage further north. The existence of these shops suggests that despite the bypassing of Thrapston by the A14 and the A605, there is still sufficient movement along the Oundle Road to support these businesses. The third shop is associated with the garage/services located off junction 13 of the A14, at the intersection with the A45. This convenience shop is primarily located to attract passing trade from the strategic highway intersection. However, the above analysis demonstrates that this shop is geographically closer to some residential development and the commercial area at Haldens Parkway than other shops or the town centre. Indeed, it is clear that pedestrians do walk to this shop, despite the hostile environment and lack of pavements etc.

24. Spatial Principles

24.1 Make more of a feature of the River Nene and the gravel pits

24.1.1 Both features have the potential for recreation, tourism and movement to be easily accessible from the town centre and to provide a draw to the town. This could be in a riverside park with additional play facilities, seating, cafe etc.

24.1.2 Join up use of the dismantled railway line as a public right of way.

24.1.3 Have water edge development which fronts out over the waterspace, rather than turning its back on this asset. Develop a waterfront strategy.

24.1.4 Create new pedestrian routes and rights of way to access the water to the north of the settlement and along the eastern side of the Nene.

24.2 Improve links to other settlements to the south

22.2.1 The A14 currently acts as a major barrier to pedestrian and cycle movement, with only one multi modal crossing under the A14 (Denford Road), and one right of way. Denford Road is quite well used by pedestrians and cyclists, but enhancements to make it easier to walk and cycle would be beneficial. Creating more obvious links to the Nene Way would also help to provide more scope for off road routes to the south.

24.3 Create connections between discrete areas of the town as created by predominance of cul-de-sac and loop development

24.3.1 Through the adopted Rural North, Oundle and Thrapston Plan, land is allocated at Thrapston South for a mixed-use development. This will effectively 'fill the gap' between the current built up area and the A14, but does not represent any expansion of the town beyond this physical limit. This site offers the opportunity to provide an additional east-west route to supplement the High Street and should link into as many as possible of the existing cul-de-sac routes to form route options to the town centre and the edge of the settlement.

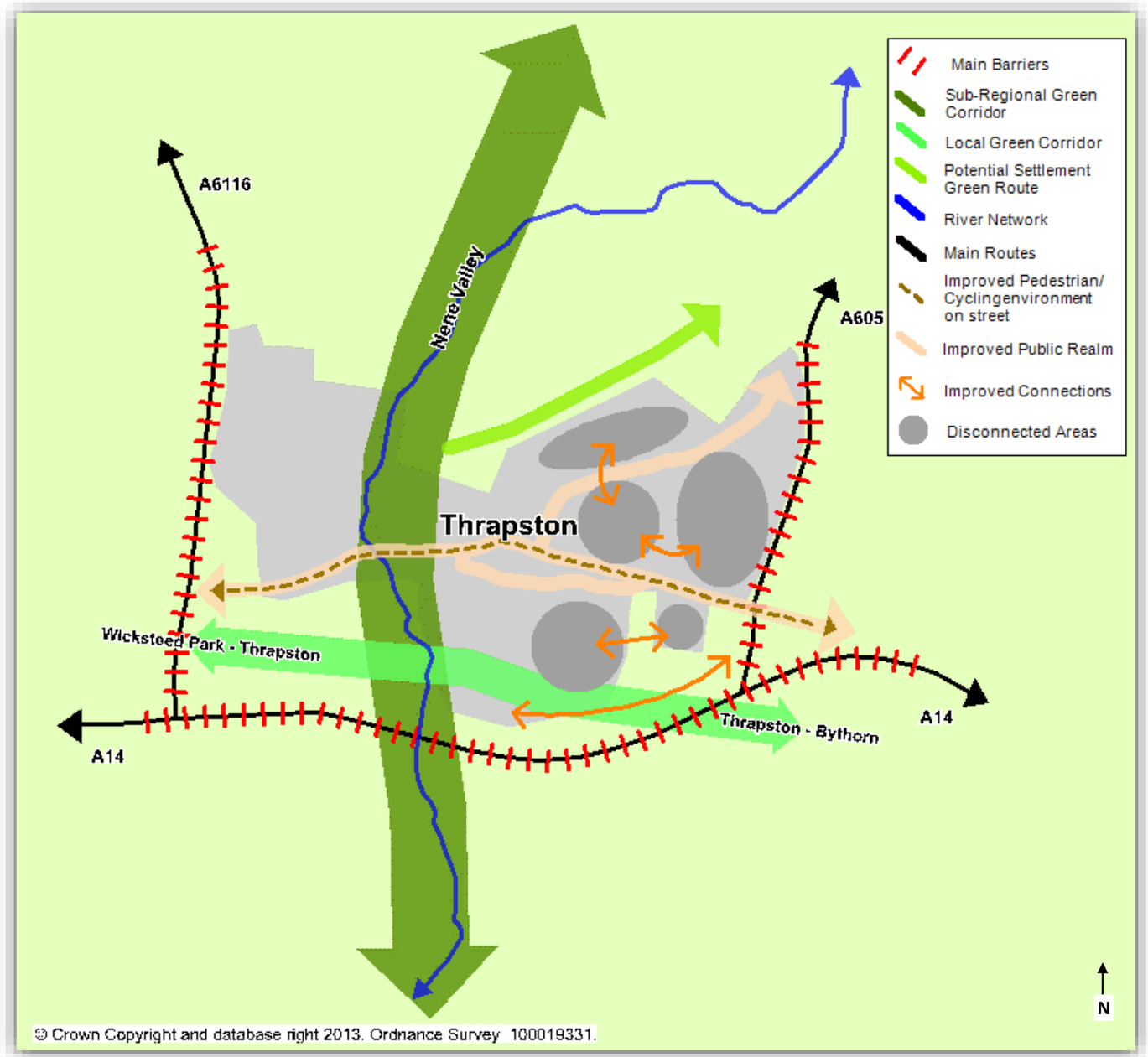


Figure 133 Thrapston map showing improved green connectivity and public realm improvements between neighbourhoods

24.4 Create routes and rights of way across the A605

24.4.1 Currently, no formal routes appear to exist, creating these links would be beneficial in accessing the nearby village of Titchmarsh and vice versa.

24.5 Focus on the principal streets

24.5.1 Those streets identified as principal streets should remain the focus of mixed use development.

24.5.2 Continuous built enclosure, and increased massing, especially where volumes of traffic have decreased due to the town being bypassed by the A14 and the A605.

24.5.3 Promote walking and cycling along these streets with wider pavements, 20mph limit in town, continue high quality surfaces and give clear steer of more rural surfaces towards the river, such as bound gravel.

24.6 Retain strong links between Thrapston and Islip

24.6.1 Wider footpaths, seating, and clear signage to riverside walks**.**

24.7 Better connect Nine Arches Way into the town centre if the area in between is redeveloped.

24.7.1 Improvements for walking to the town centre, such as wider pavements and avoiding diverting pedestrians from their "desire lines" along with scope to create better connections to Thrapston Lakes along the stream.



Figure 134 Lammas Riverside Park courtesy of Maxwell Hamilton

Further Reading:

Thrapston Conservation Area