



North Northamptonshire Joint Planning Unit

Urban Structure Study

Consultation Draft August 2013



Figure 5 (Top left) Bridge Street Rothwell. Photo JPU

Figure 4 (Top middle) Rotten Row, Raunds. Photo Copyright Will Lovell

Figure 1 (Top right) Townscape improvements Irthlingborough. Photo NNDC

Figure 3 (Bottom left) Willow Place, Corby. Photo NNDC

Figure 2 (Bottom right) Market Place, Kettering. Photo NNDC

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Introduction



Figure 6 High Street, Rothwell. Photo JPU

1.1 Aim of the Study

1.1.1 A number of previous studies to inform the Core Strategy have focused on the town centres, and on locations for growth. This study seeks a broader understanding of the urban structure of the towns in North Northamptonshire; the framework of existing streets and open spaces, and how they function together. This can be used to inform policy development including the Joint Core Strategy and site specific/ neighbourhood plans. It may also be a material consideration in designing individual developments.

1.1.2 English Partnership's; Urban Design Compendium describes the urban structure as:

"the elements which make up a place – blocks, streets, buildings, open space and landscape – and how they fit together. It applies equally to all places - to the centre and the suburb and everything in-between and to the city, town and the village.

Urban structure is important because it provides the foundations for the detailed design of individual developments enabling:

- Integration with surrounding area
- Individual elements to function efficiently together
- Environmental harmony
- A sense of place
- Commercial viability"

1.1.3 Connectivity and vibrant settlements are part of the existing Vision set out in the adopted Joint Core Strategy (CSS). This theme also emerged strongly in the place shaping workshops undertaken to inform the review of the CSS. A key theme in the place shaping workshops was the special mixed urban and rural character of North Northamptonshire, linking the towns to their greatest asset – the wider landscape, but also allowing the towns to function better both in a network with each other, and to support their immediate local populace.

1.1.4 The correlation between spatial framework, connectivity and land use in successful places had already been observed, but this study has sought to provide evidence, and put forward

spatial recommendations to improve the quality and success of the towns.

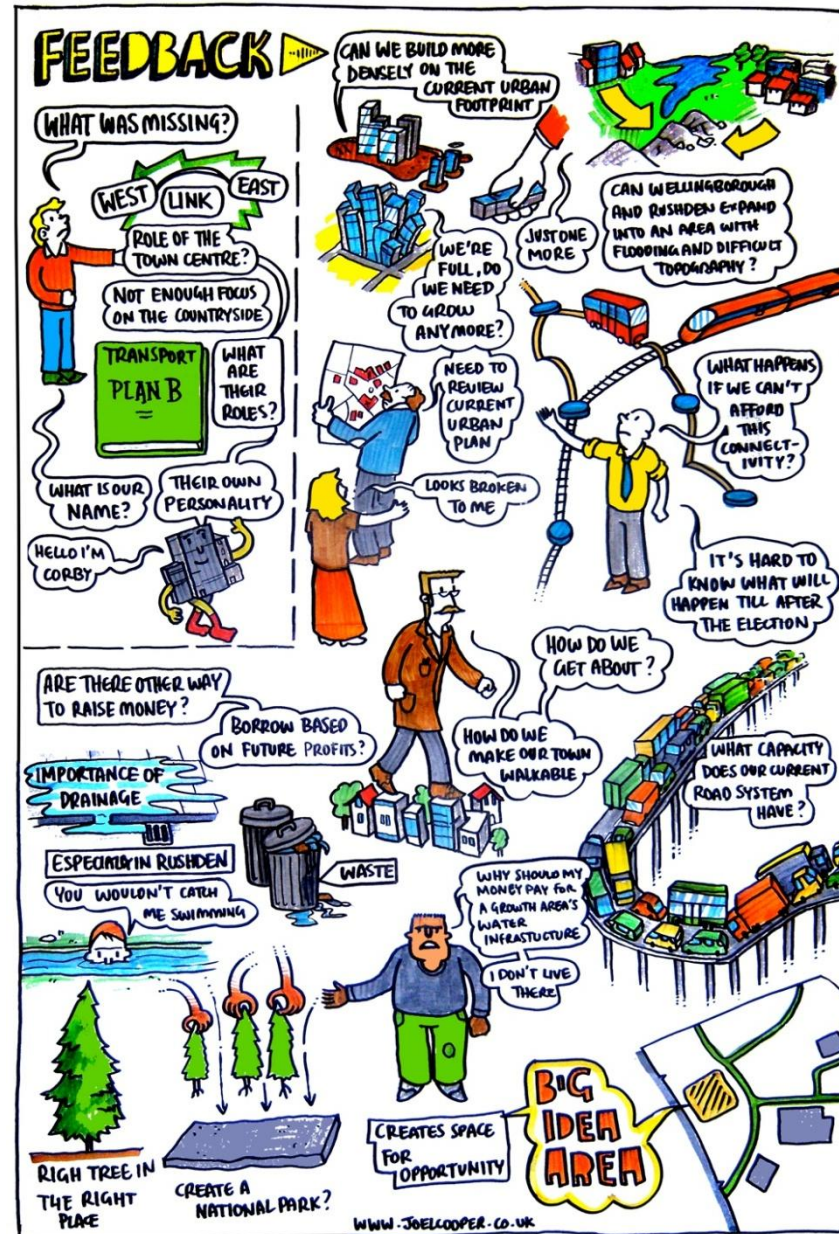


Figure 7 Cartoon from Place Shaping workshops by Joel Cooper

1.1.5 Movement, land use and character are woven together in each settlement. And therefore to achieve thriving towns that are economically and socially sustainable, we need to understand the role of the urban structure in promoting or inhibiting movement.

1.1.6 The Urban structure Study (USS) examines the scope for greater sustainable movement through the towns. The way our communities are designed and laid out has a dramatic effect on

our travel, and our travel affects our climate. The reason is simple: Transportation generates about a third of Northamptonshire's carbon dioxide (CO2) emissions, mostly through exhaust emissions from cars and trucks¹. Reducing the need to travel by car in the existing and new areas, putting shops and services in the most accessible places, and making the streets, squares and open spaces pleasant, safe and direct so that walking, cycling and public transport are an automatic choice would stem from well planned places.

- Well connected cities, towns and neighbourhoods can:*
- Enhance land values
 - Make local shops and facilities more viable
 - Enhance people's safety and security by encouraging surveillance
 - Encourage more walking and cycling, leading to health benefits
 - Reduce vehicle emissions through fewer cars being used for local and non-work trips.²

1.1.7 Changes to the urban structure, where the existing framework of the town is less connected and successful, are likely to be difficult to achieve, particularly given the current financial climate. However, the USS does not propose a timescale for the changes, indeed some of them are so fundamental they would be hard to achieve even within the timeframe of the revised Core Strategy. Nonetheless, they help to set out a vision and steps towards improving the quality of the towns and for their people.

1.1.8 Therefore to summarise the key aims of the study are:

- Identify key barriers to connectivity within the towns and put forward ways to resolve them to improve the towns' economic, social and environmental performance

¹ Northamptonshire Climate Change Strategy 2010-2014

² The Value of Urban Design", Ministry for the Environment, New Zealand – which synthesises international research on connectivity and other key urban design aspirations.

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- Explore how the towns can better be connected with their rural areas to capitalise on the special urban and rural mixed character
- Understand how the public spaces create the special character of the town and use that to inform the design of future public space.

The study identifies a range of potential approaches to tackling these issues, some of which may be seen as radical. These approaches need to be tested further through the careful design of measures tailored to specific developments and routes. In this way, the study will guide planning and investment decisions so that, over the next 20-plus years, individual developments and infrastructure projects contribute incrementally to creating better connected and vibrant towns.

1.2 Scope

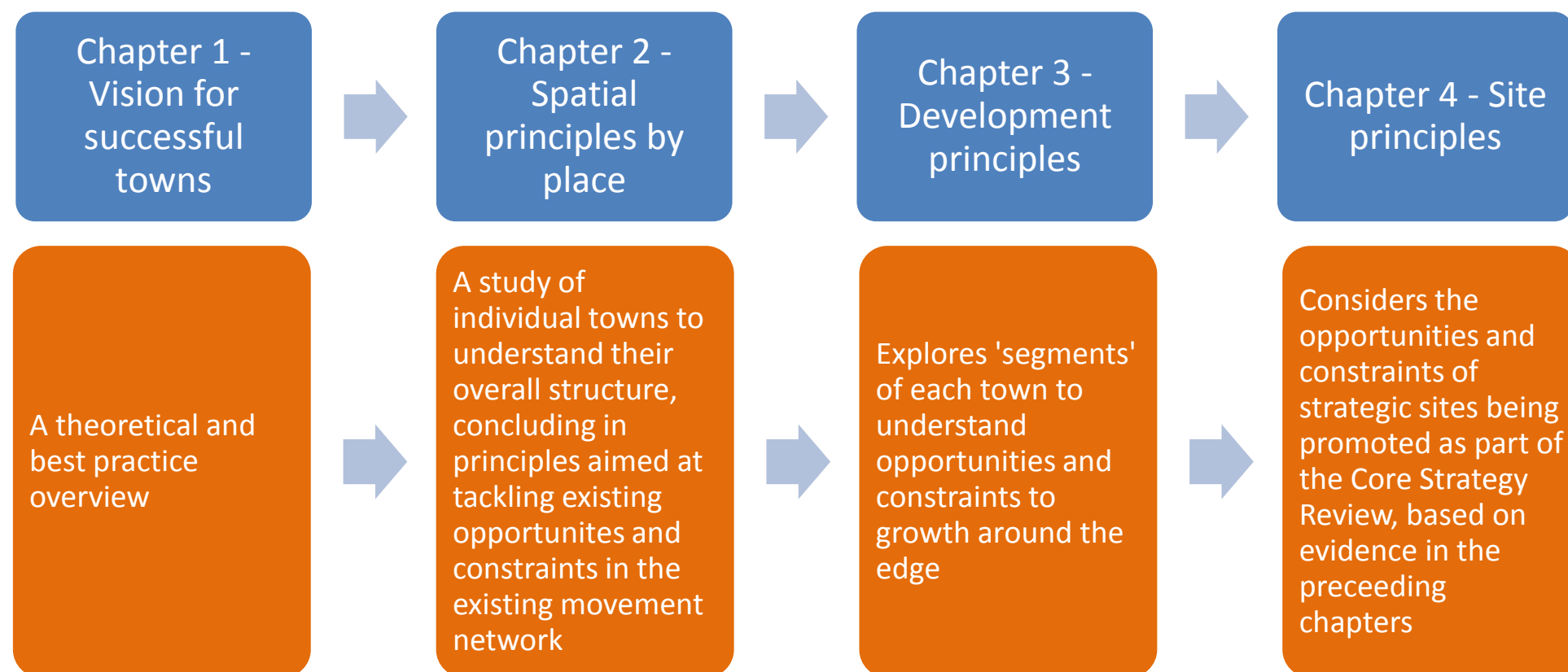
North Northamptonshire comprises 12 towns of varying sizes which are the subject of this study. This network of settlements, alongside the 100+ villages in the countryside around them, provides services and facilities to serve the population of over 300,000 people in North Northamptonshire.

The 12 towns studied were:

- Oundle
- Corby
- Thrapston
- Kettering
- Desborough
- Rothwell
- Burton Latimer
- Raunds
- Higham Ferrers
- Rushden
- Irthlingborough
- Wellingborough

A variety of methods were used to analyse the towns' urban structure, in particular, the network of streets and open spaces, the location of different land uses, the morphology of the towns and the character of the public spaces.

1.3 Structure of the Study



1.4 Consultation

The Joint Committee is inviting feedback on the draft Urban Structure Study before it is finalised as part of the evidence base for plan making and individual planning decisions.

The deadline for representations is **Friday 11th October 2013**. These should be sent by e-mail to consultation@nnjpu.org.uk or by post to:

North Northamptonshire Joint Planning Unit,
C/o East Northamptonshire Council, Cedar Drive,
Thrapston,
Northants NN14 4LZ

You can telephone us on 01832 742355. Responses will be analysed and reported back to the Joint Committee in November 2013.

Comments on any aspect of the draft Urban Structure Study will be taken into account before it finalised. However we are particularly interested in responses to the following questions:

- a) Are the vision and the guiding design principles set out in Chapter 1 appropriate for the towns in North Northamptonshire?
- b) Is the methodology of the study appropriate or are there other techniques that should be used?
- c) Is the study correct in its assessment of opportunities, constraints and spatial principles for each town?
- d) Do you agree with the grading of sectors for growth around each town (based purely on potential for integration)?
- e) Are the key issues identified for the potential strategic sites correct?

In responding, please set out any changes that you would like to see (with reference to specific paragraphs of the study)

Chapter One: Vision for Successful Towns

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2.0 The existing Core Spatial Strategy and subsequent area action plans identified issues with the economic performance of the towns, wider ambitions for modal shift and tackling climate change and opportunities for regeneration. A key theme emerging from the Place Shaping workshops which have informed the development of the revised core strategy was connectivity. Better connectivity to the town centres would support their economic performance, better connectivity through the towns' suburban areas would support more travel by foot, bike or public transport and better connectivity to the wider rural landscape would reinforce the urban and rural character that is considered so unique to North Northamptonshire.

2.1 Understanding the towns' framework of public spaces is critically linked both to their capacity for improving connectivity and to their sense of place. In assessing the towns, a vision for how we want the towns to be has been developed. This should help steer where opportunities to improve the towns lie.

North Northamptonshire's towns will be vibrant places where it is easy and pleasant to get around, where people can access what they need or where they work easily, where people choose to walk, cycle or take the bus rather than to drive and where each town retains its local distinctiveness and has a strong, positive sense of place.

2.2 To enable this vision to be realised, a number of attributes for the towns need to be established which relate to movement and place.

- Well connected places – to the centre, through the suburban periphery and to the countryside edge
- Mixing up land uses
- Streets for All – designed to be safe, pleasant, lively and character full

What these attributes mean is explored in detail in the following pages and summarised into “Urban Structure Principles” which are applicable across the towns, and indeed in smaller settlements.

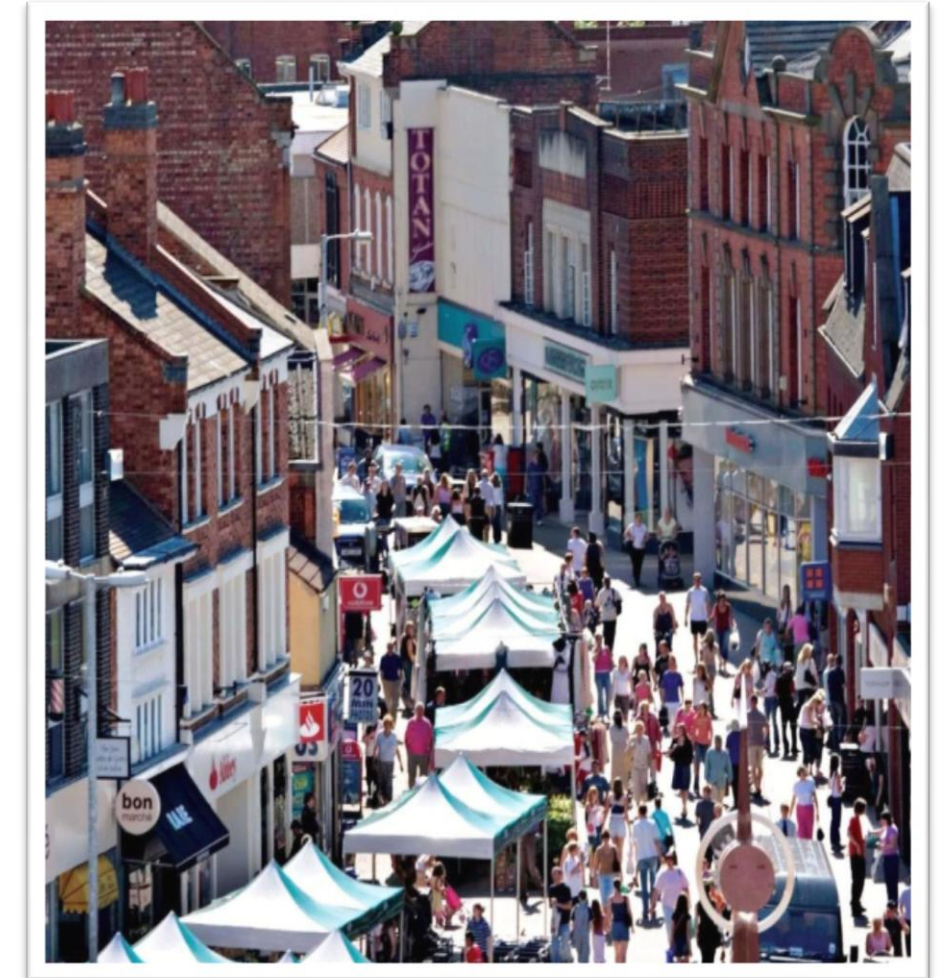


Figure 10 Kettering Town Centre. Photo JPU



Figure 9 Greenway. Photo NNDC



Figure 8 Street designed for vehicle movement, but little sense of place or character, Thrapston. Photo JPU

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First Principle: Well connected places – from centre to edge

This principle looks at creating connected towns through:

- Improved access to the towns' centres
- Improved access through the suburban areas
- Improved access at the towns' outer most edges
- Improved access along existing and new green networks

Improve access to the centre

2.4 Easy, pleasant access from the outlying parts of the towns, to their centres to access shops, services and public transport facilities is key. The research has shown that the primary streets, with the most direct access to the centre tend to be the oldest radial routes. The radials can be thought of as spokes emanating from the hub, or town centre, with built form and open spaces infilling these spokes. In this way, the towns show a similar pattern of spatial arrangement across the study area. This follows the pattern highlighted in Professor Bill Hillier of UCL's theory of Space Syntax.

2.5 Streets which easily connect to the radials, in a direct and legible way, support the easiest access to the town centre, whereas streets which have convoluted relationships with the radials are thereby much less well connected. Good connectivity within the grid between these radials allows better connectivity across the entire town network as it supports access to the most connected streets. This relationship applies even at some distance from the town centre.

2.6 However, the role of these radials as important streets for moving traffic has, in many instances, taken precedence, so that

walking and cycling along the streets is unpleasant, difficult or at worst unsafe. In addition, recent development has tended not to front onto these streets, partly because of their higher speed nature, but also because direct access onto busy roads was limited by old Highways Guidance. This has resulted in a lack of activity, apart from through traffic, along these most connected streets. Furthermore, concerns about rat running has led to closing off connections between the radials, or only having very limited access points, with consequent impact on connectivity across the whole of the towns' structure.

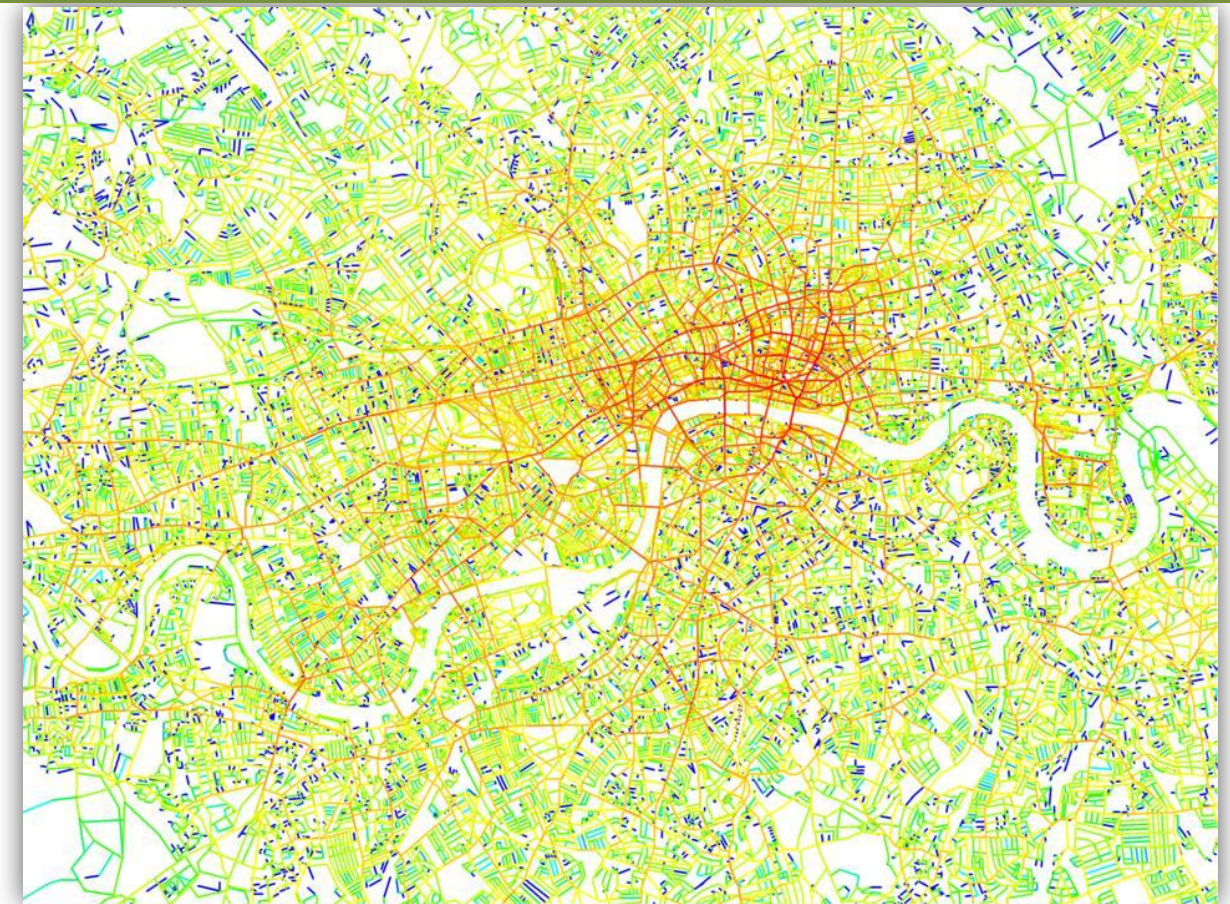


Figure 11 Space Syntax plan of London showing the most connected streets radiating from a central hub, with a grid between the "spokes". Image Space Syntax.



Figure 12 Corby- Local streets do not connect to the main radial route to form a straight forward grid. Image Google Maps.

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2.7 Principles:

The radials are key both for cross town connectivity and as the basic skeleton of the town. They should be the priority for investment and improvement by:

1) Improvements along the radials for people.

The radials have had too great a focus on movement for traffic, and their role as streets for walking and cycling needs to be brought to the fore. Reduction of speeds on radials to 30mph would improve safety for pedestrians and cyclists. Pedestrian and cycle movement needs to be facilitated with removal of barriers, provision of more footpaths alongside, and more opportunities to cross the streets.

2) Link the wider network of streets to the radials in the most direct and legible way possible so that they benefit from access to the most connected streets.

3) Activity

Intensify land use to allow built form to line the streets with front doors and windows onto the radial and main streets to create activity. Frontage access for built form onto the radials would support activity both on the street, and would allow those roads with the most footfall to have uses directly accessed from the street

4) Quality

The radials are the most connected streets, and the ones that represent the face of the town. Traditionally these streets were enhanced with street trees and high quality landscaping. This should be continued further out on the radials to create high quality streets from the edge to the centre. For instance, in Wellingborough pollarded lime trees line many of the radials creating a strong image and green route into the town centre.



Figure 13 Traditional radial route in Kettering – wide pavements, street enclosed by buildings and trees, overlooked, active with doors to the street. The street can be crossed anywhere. Photo JPU.

Figure 14 Modern radial route in Kettering which is hostile to cyclists and difficult for pedestrians to cross. No activity, limited surveillance and limited sense of enclosure. Photo JPU.



Improve access through the suburban areas

2.8 Most of the towns have well connected streets immediately around the town centres, usually coinciding with the expansion of the towns in the Victorian era. Local residential streets link to more heavily used routes and provide multiple ways for people to travel through the area. However, more recent development has tended to restrict movement, often to try and segregate people from high speed routes or to stop traffic moving through residential areas by having lots of cul-de-sac streets. It is recognised that such an approach may be popular, given that it is wholly focused upon private car ownership and enabling ease of access for motor vehicles to the main road network. However this has meant that everything is funnelled onto the main roads, and even nearby facilities are difficult to get to by foot, leading to more people using their cars. More routes allow people more choice about how to get around and in smaller blocks which are more walkable without as much reliance on the private car.

2.9 While there are pedestrian links within these later developments, such as shown in Figure 15 in Barton Seagrave, they are unlikely to be used after dark as they are narrow, not overlooked and the perception is they will be unsafe so are no substitute for a connected network of streets.



Figure 15 Pedestrian route lacking surveillance and overlooking. Barton Seagrave. Photo JPU.



Figure 16 Congress for New Urbanism images shows the increase in distance to local facilities in a cul-de-sac and distributor model

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2.10 Principles:

- 1) Street networks should, in general, be connected. Connected, or 'permeable', networks encourage walking and cycling, and make places easier to navigate through. They also lead to a more even spread of motor traffic throughout the area and so avoid the need for distributor roads with no frontage development
- 2) New development should be well connected with adjacent street networks and facilitate future development to do likewise, including avoiding situations where 'ransom' strips could preclude the creation of safe and convenient links. A development with poor links to the surrounding area creates an enclave which encourages movement to and from it by car rather than by other modes. Thinking about how the site connects to the surrounding network to form part of the wider grid of streets allows people to get to where they want to go in a direct and logical manner.
- 3) Cul-de-sacs should be used sparingly, and should be short. In general, the approach should be to provide connected streets or the scope to add on to connect streets up in the future so that wherever possible, opportunities for creating future linkages are maximised.
- 4) New development, and local investment should explore scope in existing neighbourhoods to link up cul-de-sacs and provide more connected streets through them, coupled with design improvements to ensure that low traffic speeds are maintained, to help connect outlying areas.
- 5) Streets divide the town into urban blocks. In the neighbourhoods and town centres these should be of a walkable scale, which means having more routes dividing up smaller blocks. The Urban Design Compendium provides useful advice on block sizes. Non residential areas should still act as part of the overall connected street network, even though the urban blocks may need to be larger.



Figure 17 Duany Zyberg, Hatfield New Town indicating the lack of connecting local streets (top image), and how they could all be linked up (bottom image).

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Improve access at the edge

- 2.11 The edge of towns, where they either meet open countryside, or where new development might take place; the “urban/rural fringe”, commonly has many barriers restricting movement. A significant issue in many of the towns is that they are ringed by high speed routes which limit access to the green infrastructure. For instance, access to major assets like the River Nene is impeded for many towns along it by difficulties crossing the A45. These are compounded by noise bunds, green buffers and cul-de-sac estates which turn their backs on the roads.
- 2.12 Opportunities exist to create more routes across these major barriers, and to improve the quality of the routes for walkers and cyclists, or even overdevelopment, but they are radical and expensive. For example in Auckland, New Zealand, they have a plan to enhance the motorway bridges to help break the barrier of the roads.
- 2.13 Planning in the treatment for the rural edge of the settlements would better allow the towns to access the countryside, or for future development to link onto existing streets. For example, Kettering’s work on rural settlements has shown at Stoke Albany, a combination of streets petering out into lanes and footpaths with buildings side on to the countryside, and some buildings fronting the open space allows a much softer edge to the development, allowing access and the scope to add to the settlement in an organic fashion, rather than closed off streets and serried rows of close board fences.



Figure 18 North of Kettering – cul-de-sacs, major road, green buffers make it difficult for land to the north to be connected to the existing framework of streets. Image Google Maps



Figure 19 Stoke Albany - village is connected to the countryside with a series of lanes and footpaths. Photo JPU.

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2.14 Principles:

Infrastructure Barriers:

- 1) Install central islands, pedestrian crossings, landscaping improvements and methods to alert road users that people could be crossing at footpaths. Development of landscape or built form “events” along the main roads, so that vehicles realise where connections across the routes may be made – for example through the use of landscaping, public art, visually narrowing the road etc.
- 2) New development adjacent to barriers should allow for access across the barrier, even if it cannot be achieved within the scope of the development itself so that future streets could link across it.
- 3) In future development, ensure new roads do not create these barriers. Allow for future routes to connect on, without limiting connections. Ensure a softer edge to the countryside to allow access to the countryside.
- 4) Ensure where new development is beyond existing ring roads that the road is redesigned to be a town street, to allow integration across it.

Rural Edge:

- 5) Ensure routes to the rural edge can link up with the other green infrastructure routes, footpaths and cycle ways within the wider settlement.



Figure 20 Auckland’s beautified bridges programme.

Improve access using connected green networks

Green Infrastructure - a definition

“Networks of multi-functional green space which sit within and contribute to, the type of high quality natural and built environment required to deliver sustainable communities. Delivering protecting and enhancing these networks requires the creation of new assets to link with river corridors, woodlands, nature reserves, urban green spaces, historic sites and other existing assets”.

Definition from River Nene Regional Park.

2.15 All the towns have open spaces – parks, river and rail corridors, allotments and nature reserves. Usually these are fragmented, but they offer the opportunity to provide pleasant routes through the towns, to access their centres and to access the countryside if they can be connected to. The Core Strategy, Policy 5, identifies sub regional and local green infrastructure corridors and recognises their value as means of creating connections and routes for people and wildlife. The Urban Structure Study assesses green spaces within the towns, or draws together previous evidence on this, and sets out where there is a need for more connected GI networks and additional scope to create additional green routes within the settlement.

2.16 The study identifies that there are many areas where there might be little scope for traditional open green space, but where local streets could be improved with public realm enhancements to make them much greener. These “green streets”, as in the above example (Figure 23) in Seattle, could link open green spaces with additional street tree and shrub planting along existing streets to slow speeds and a greater emphasis on pedestrian and cycle movement along with them.

2.17 Figure 21 is from the Corby GI Study which indicates links through the town, and how they could connect to the regional, local and other corridors.

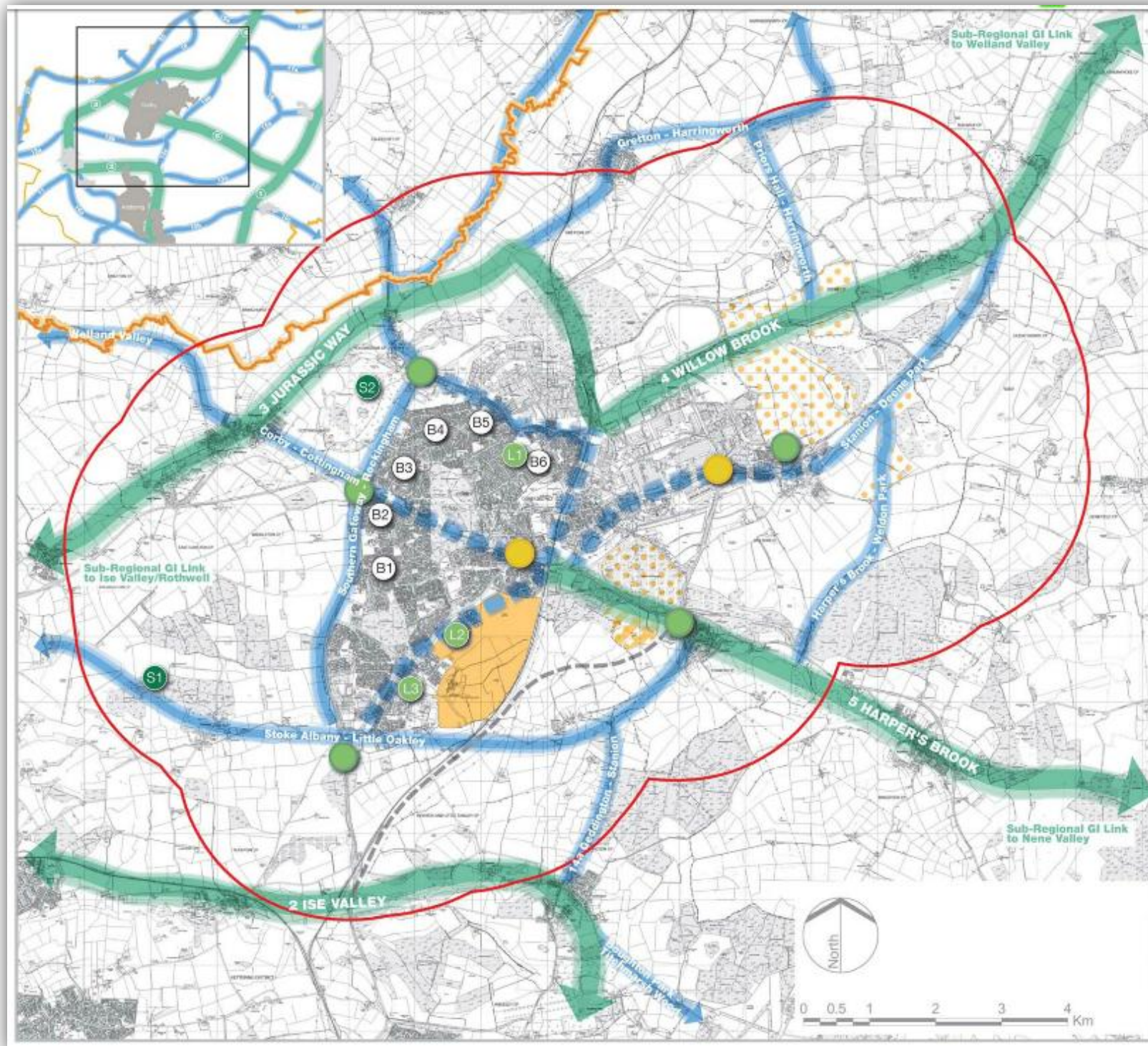


Figure 21 Corby GI Strategy Showing the network of potential GI routes which could create new pleasant routes through the town and out to the surrounding countryside

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2.18 Principles:

- 1) Use GI/river routes to create additional pleasant linkages through towns to the edges
- 2) Establish linking routes between existing green spaces, either through green streets or new open spaces
- 3) New developments should understand the wider network of green routes and seek to provide connections through their sites, or continue routes. This may be through the provision of "Green Streets" within or outside the development site itself.



Figure 22 The town centre in Wellingborough is at the hub of several green spaces which weave through the town to its edge, providing additional pleasant routes to access the town. Photo JPU.



Figure 23 Green Street, Portland, USA. Photo Land Perspectives.

Second principle: Mix up uses - Locate services and jobs where people can get to them

2.19 Getting access to the towns' centres, where the public transport hubs and greatest mix of shops and services are located has already been discussed, and is a priority in the CSS. This study shows that whilst there are barriers to accessing the town centres, they remain at the centre of the most accessible main roads, and with the most public transport on offer. Maximising the offer and the mix of uses within these locations, as already enshrined in local policy, is supported by the USS evidence.

2.20 The USS also reviewed where local centres and key facilities such as schools are located, in relation to the most accessible streets. A key issue lies with schools in many settlements, where local accessibility can be poor, resulting in more driving to school. In addition, local centres and facilities tend to have been built at the centre of new development sites, to ensure minimal walking times from new housing, but without regard to the existing wider communities which could access and support such facilities, or how they can be serviced by public transport. The location of parks and open spaces is also assessed. Using these as part of the movement network has already been identified, but the studies also examine the types of open spaces available and their locations. In recent years, the trend has been to develop multiple small open spaces and play areas, whereas in the more central areas of the towns, open spaces are much larger, but more infrequent.

2.21 The study also identifies that areas zoned for employment tend to form a barrier to movement. Very large development blocks, roads designed primarily for HGVs, and the lack of mixed uses, mean that there are few routes through, and usually they are not suitable for pedestrians and cyclists. When new development occurs beyond the employment zones, it is very difficult for new communities to connect to their town as the employment areas form a barrier to movement and integration. Whilst certain employment uses, such as warehousing/distribution rely on HGV access are unlikely to be compatible with residential uses, transition zones between these uses, with live work, offices, nurseries and shops can help

integrate the different uses. Providing walkable routes within these areas will still be important to allow access for staff and for the area not to form barriers to movement across the settlement.

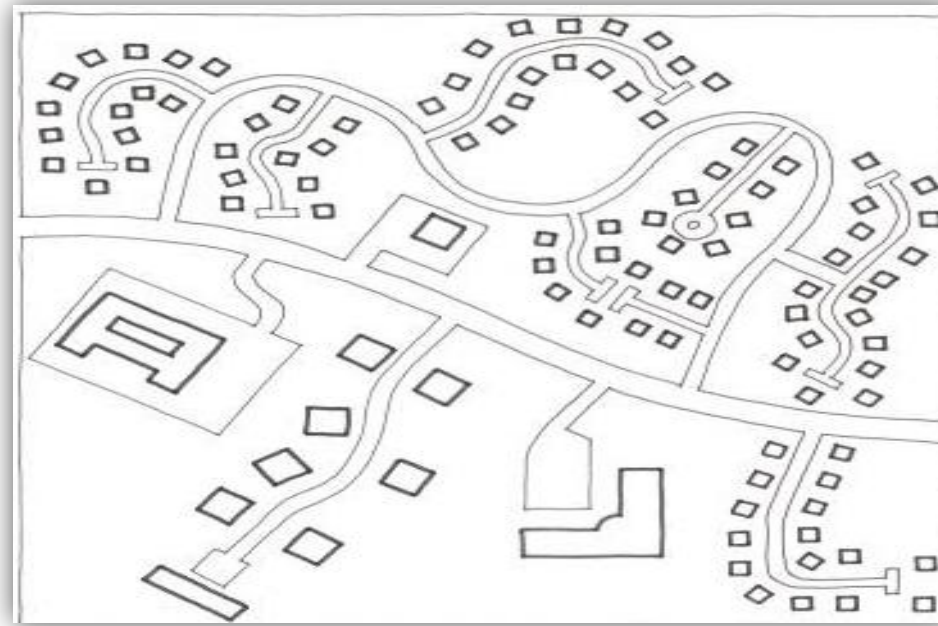


Figure 24 Suburban zoned development. Image Manual for Streets.

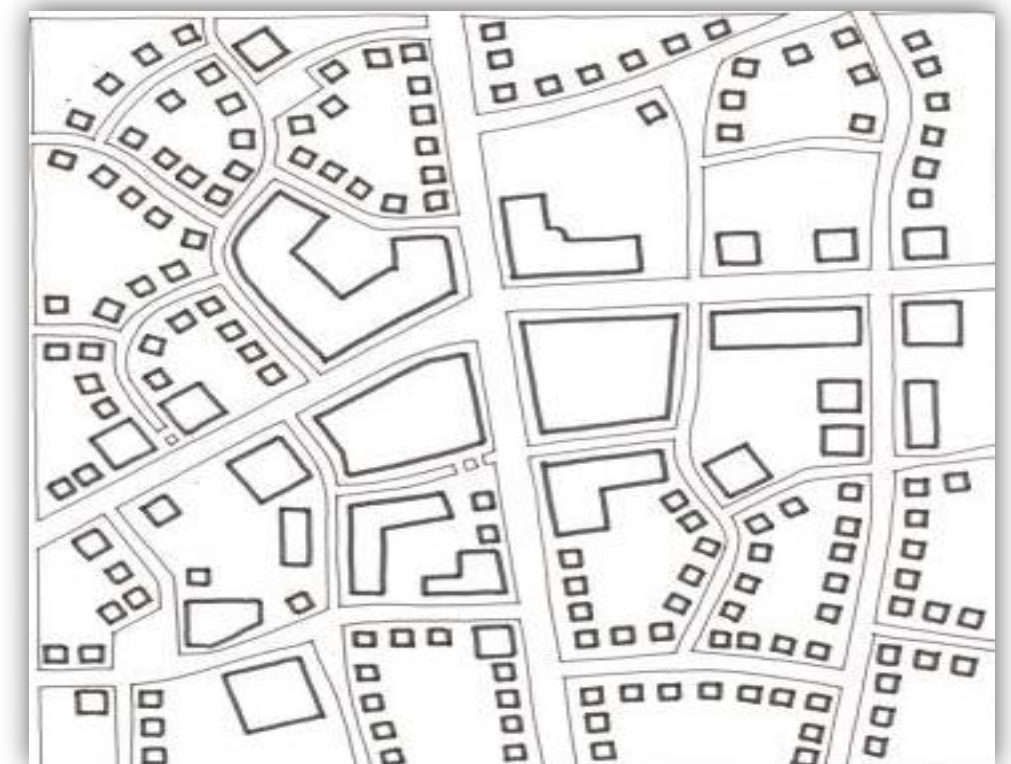


Figure 25 Traditional mixed use. Image Manual for Streets

2.22 Principles:

- 1) New or redeveloped local centres and schools should be located on the most accessible streets, and their location within the site should relate to the wider town. This may involve creating more than one entrance point (such as at Corby Business Academy).
- 2) Employment should be provided within mixed use areas to create a mix of uses including open space, and a variety of unit sizes to allow for more routes through and a human scale to development. Where possible, housing should be contained within the mix.
- 3) Civic uses should be on the most accessible streets, or closely related to them.
- 4) Some uses, particularly distribution warehouses, are particularly challenging to fit within the urban structure. However, accessibility by non car mode is still critical for staff and needs to be designed in. In addition, modifying the buildings to externalise their more active uses (such as offices, reception areas and staff canteens) and wrapping the facades with smaller units can help to break up the large units and create a more human and active streetscene (Good advice exists in the Urban Design Compendium on these issues).
- 5) The provision of new open space should relate both to accessibility through it, and the local characteristics of open spaces, with the potential for fewer larger spaces on some sites.
- 6) New development should consider the urban structure of the town to ensure maximum integration and to consider how existing residents/businesses will relate to the facilities within the site.

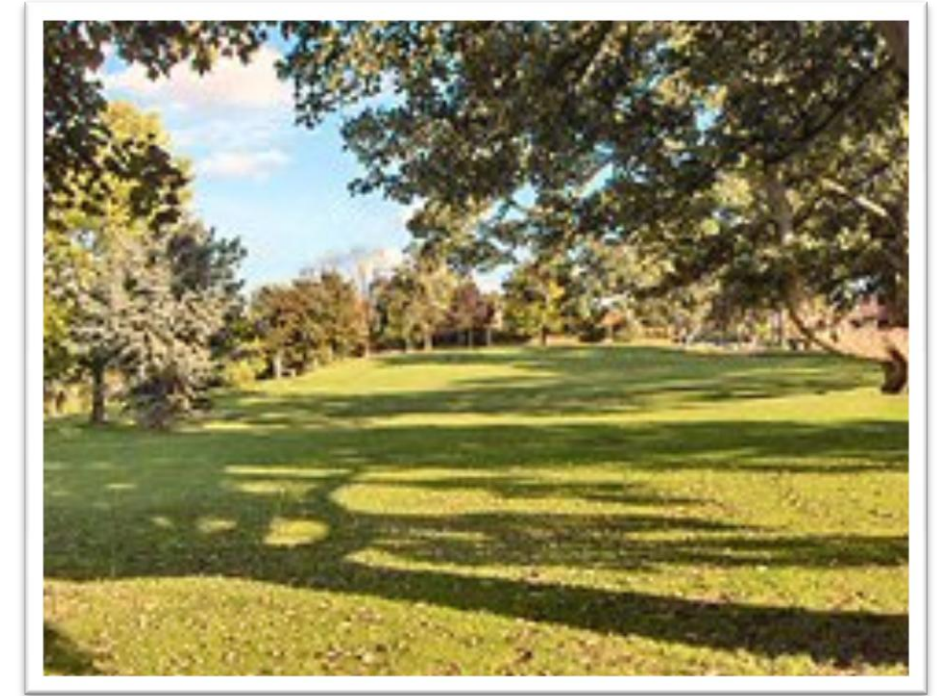


Figure 26 Peace Park, Thrapston - large open space accessible from the High Street and the primary school and is very well used.
Photo JPU.

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Third Principle: Streets for All – designed to be safe, pleasant, lively and character full

- 2.23 Meeting the modal shift targets in the existing Core Strategy (para 3.17) is a significant challenge. Whilst there will always be the need to use private cars in North Northamptonshire, actively promoting the needs of pedestrians, cyclists and public transport through development should help to make these choices more viable and shift the balance more towards these modes.
- 2.24 Manual for Streets identifies that streets have movement and place functions, and depending on the street, or section of the street in question, the balance between these functions will vary. The USS has identified that in many of our towns, the balance has been too heavily weighted towards motor vehicles, to the detriment of other road users.
- 2.25 Particular issues exist with ring roads and arterial routes. Their role is all about movement of motor vehicles, often with dual carriageways, speed limits of 40-60mph and very little frontage development. Many routes were built without footways or provision for cycling despite being within towns. As already shown, these routes create a barrier to movement themselves, but they also limit access for other modes along them. Scope exists where major development might take place along or beyond such roads to readdress the balance between place and movement, but this has significant costs associated with it. The USS also identifies that there needs to be a way of improving the key radial routes. As this would be likely to happen incrementally, as changes are required associated with development or local improvements, we suggest that local authorities develop street corridor plans so that these efforts can be integrated into a plan for the whole street improving pedestrian and cycling access and the overall quality and character of these particularly key streets.
- 2.26 The streets and public spaces are how people experience the towns, and so their quality, character and liveliness are the key component in our perception of our towns.

- 2.27 The USS assesses the existing streets and suggests character areas for each town, which indicate the broad types of street which can be found in each area. The USS identifies that character strongly relates to street form, based on the age of development. Understanding the characteristics of local streets and spaces provides the scope for new development to integrate in with existing character and to make new places that relate to what is local and distinctive about that particular town. For instance, understanding the way existing buildings relate to street form, local principles of frontage access and typical local street geometry would all help to mesh old and new streets together.
- 2.28 In addition, the USS has identified key areas for public realm intervention, such as tree planting, widening pavements and junction improvements. It further identifies the importance of active frontages to our streets, to make them feel safer and livelier.



Figure 28 Street includes parking, activity, place to sit and trees. Image courtesy of Sue McGlynn.



Figure 27 Store turns its back on the street Image from Peter Evans, WSP.

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2.29 Principles:

- 1) Consider pedestrian and cycle links as key infrastructure in development of the CSS
- 2) Local Authorities and the Highways Authority to develop corridor plans for existing key radial streets to humanise them and re-balance place and movement functions. These can be used to guide improvements from associated development.
- 3) Where new development is proposed beyond or along ring and arterial roads, this must be accompanied by a change in the speed and nature of the road to better balance all modes.
- 4) The design of new streets needs to place people first through the design of a network that supports local pedestrian and cyclist movement. New developments should connect to existing, well-used routes in obvious and direct ways, make it easy and convenient for people to walk, cycle or push a buggy to where they need to go, create routes which are as short as possible, obvious and direct, respect key site connections and desire lines to local amenities and facilities and ensure that all routes are through or along well overlooked public spaces and streets.
- 5) New streets should be designed with lower speeds in mind to allow for walking and cycling.
- 6) New streets should reflect the best of local character, incorporating variety within street types and within streets themselves based on the local characteristics, geometry, block sizes etc.
- 7) New streets should be safe and civilised – low speed, well overlooked, active.
- 8) Beautiful – places to enjoy, not just a route from -including tree planting, seating and an emphasis on pedestrian routes.
- 9) Active frontage to be provided on new routes as identified in USS guidance.

- 10) New development should provide front doors at the front. Commercial developments should front the street, with carparking behind, rather than having open car parking at the front.



Figure 29 Lack of doors, windows and access onto the street creates inactive frontage, combined with lack of landscaping and car dominated street. This could be anywhere. Photo JPU



Figure 30 Yppenburg, Holland – children playing in the street. Image CABE

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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.

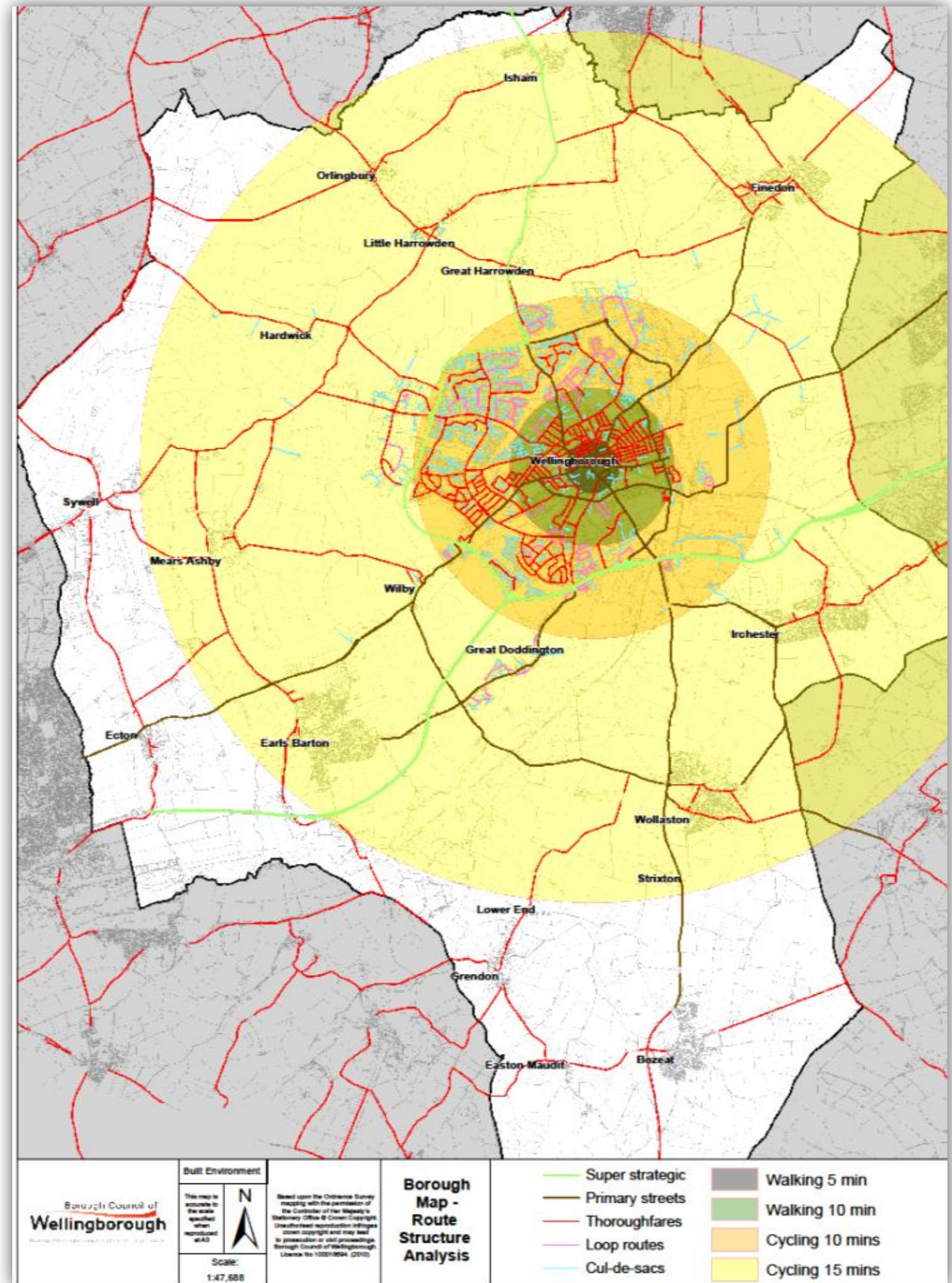
	What?	How?	Why?	
USS chapter 2 methodology – Town-wide assessment	1	Review historic maps of the town	Collect a series of historic maps for the town, from the 1800s to the present day.	To get an overall impression of how the town has grown and evolved over time.
	2	Identify historic routes	From the historic 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: <ul style="list-style-type: none"> • 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).
	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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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). <ul style="list-style-type: none"> • 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 (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 34) 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.

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 SE corner 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.

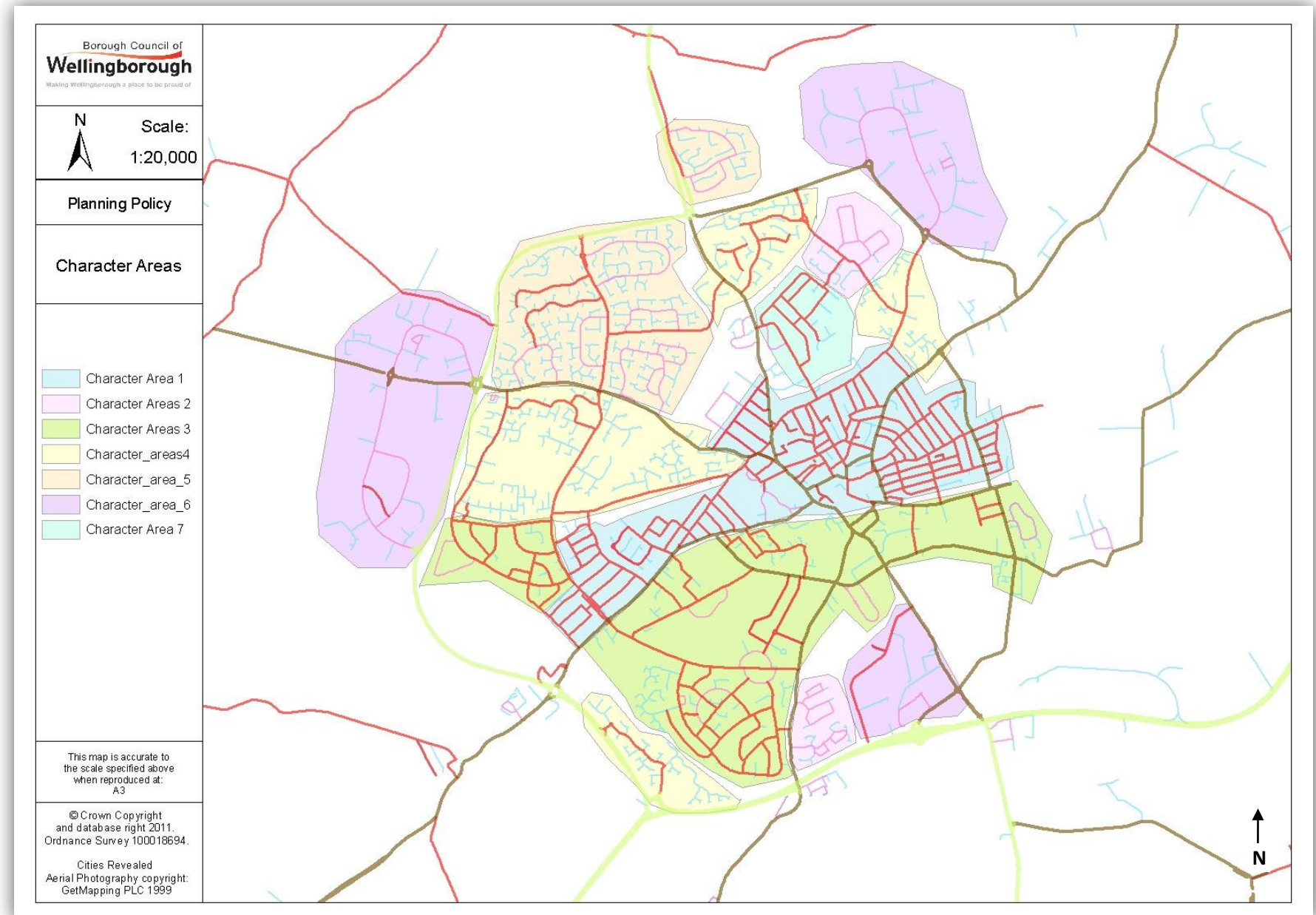


Figure 33 Character areas

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 means 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.

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 valuable



Figure 36 Street trees create much of the sense of place. Photo Borough Council of Wellingborough

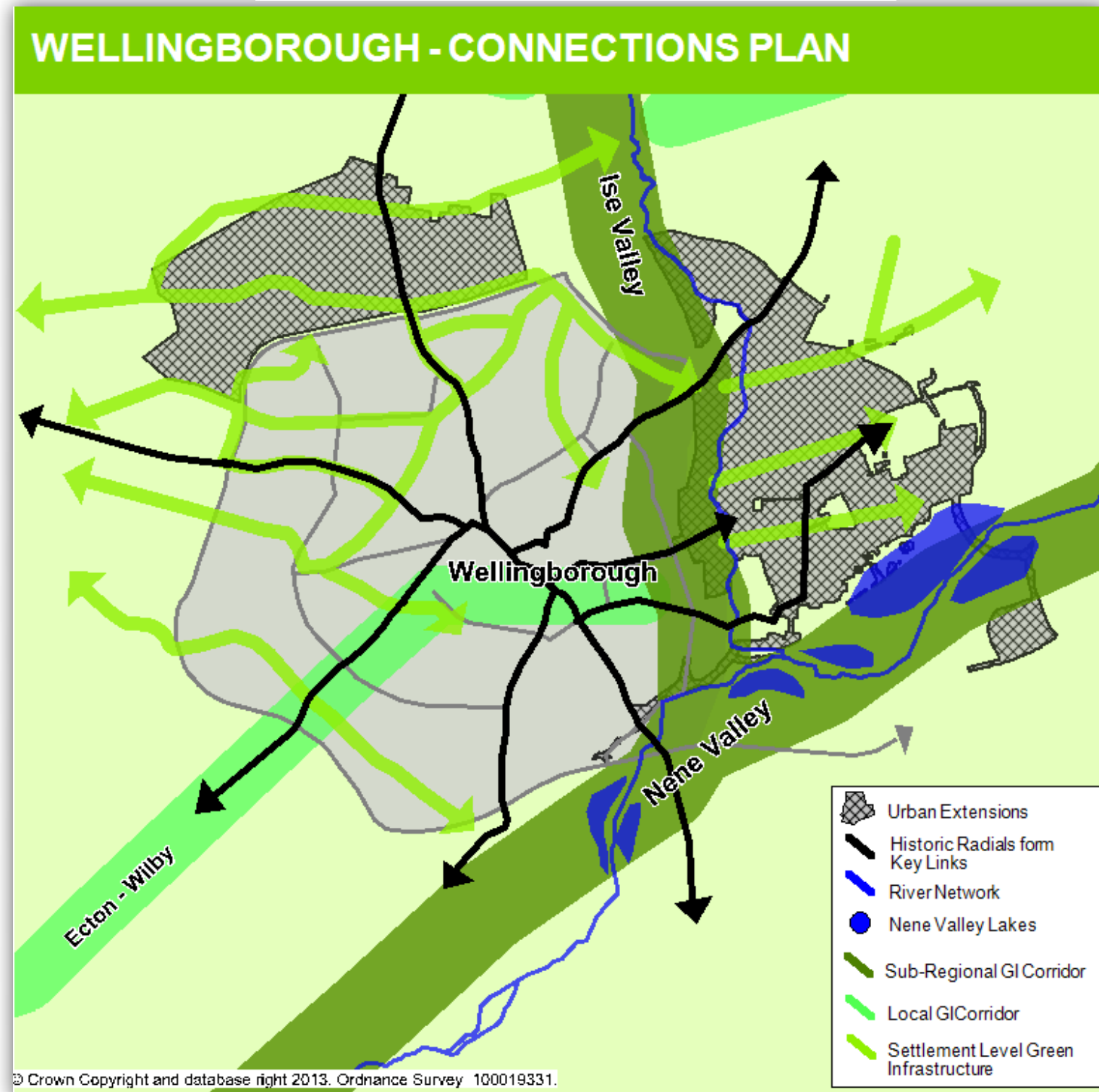


Figure 37 Potential and current GI connections

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contribution 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.

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.

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



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

through the creation and enhancement of GI corridors. For instance, an enhanced GI route alongside the railway line towards Irchester, and public realm improvements to A4500 for cycling towards Wilby and Earls Barton.

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.

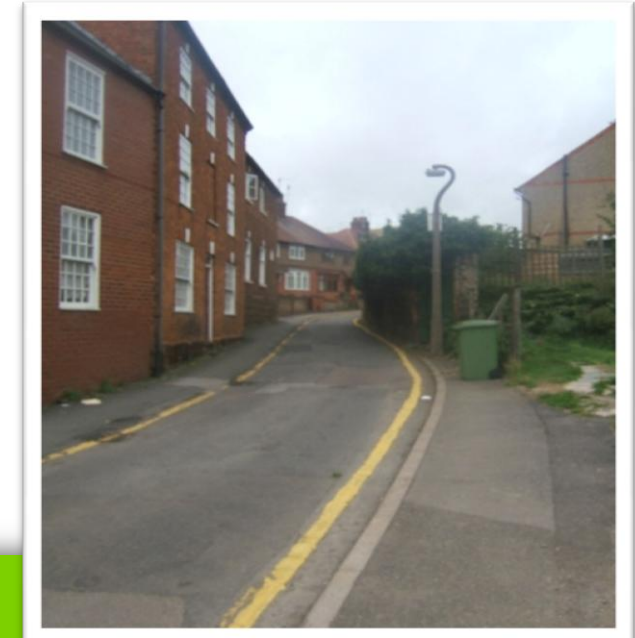


Figure 38 Historic streets vary in width and with gentle curves to create a low speed distinctive environment. Photo JPU

WELLINBOROUGH MOVEMENT PLAN

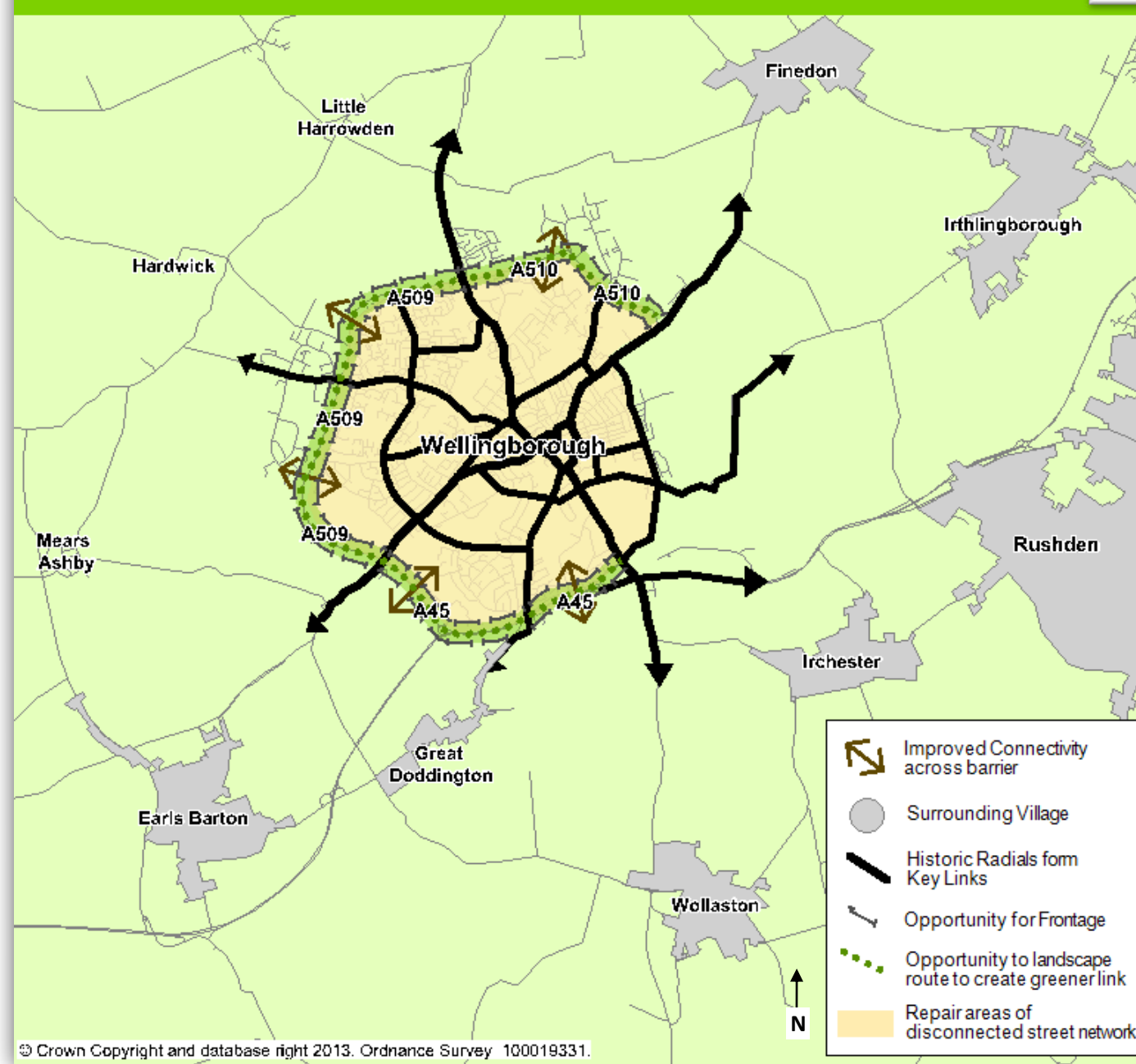


Figure 40 Summary plan (left) showing key radials and areas which would benefit from change to improve connectivity

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 trunk type roads to town streets.

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

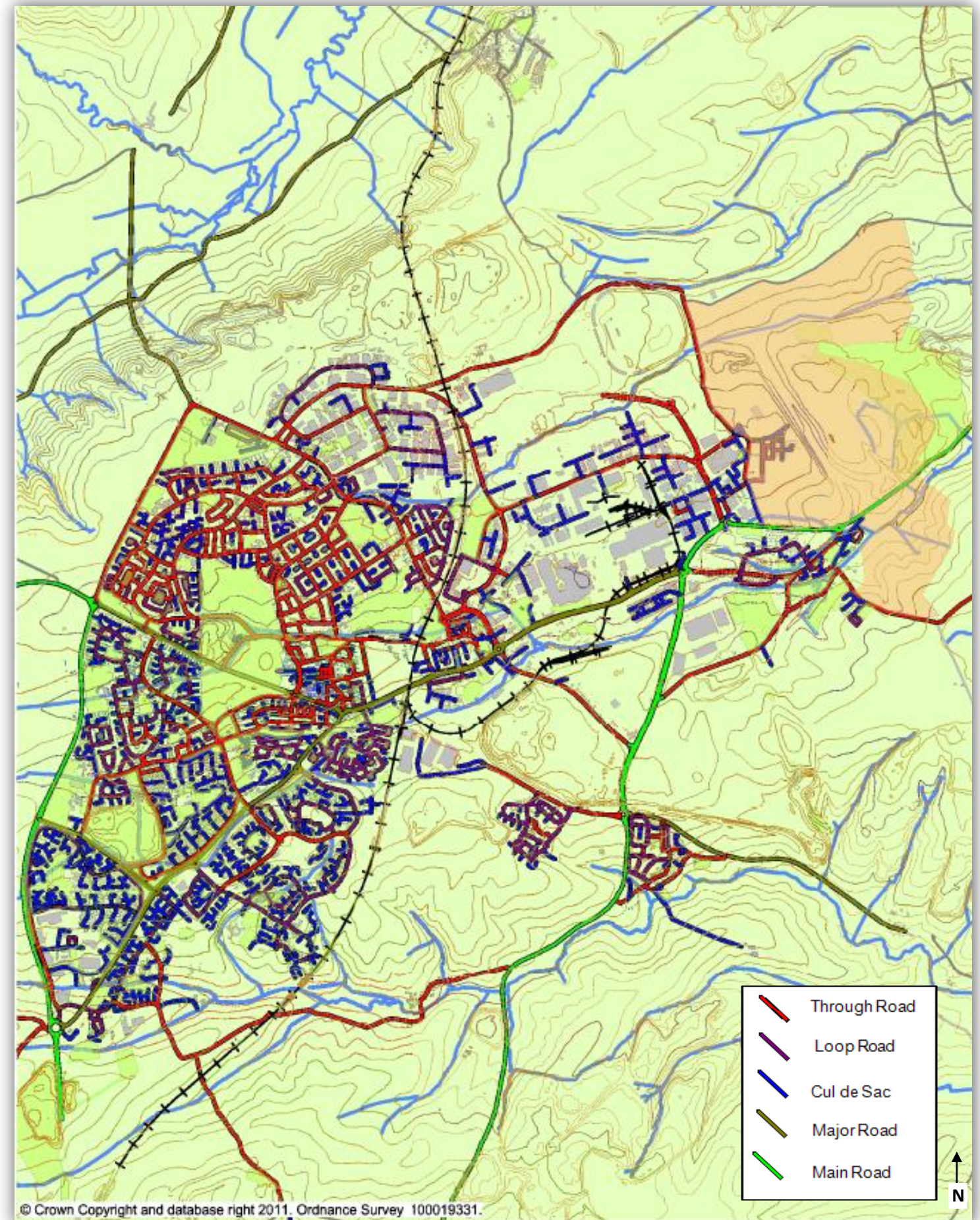


Figure 41 Route structure analysis

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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 43 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 42), 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 42 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 43 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 45 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 44 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 45 Disconnected streets and non residential uses cut off.



Figure 44 Typical historic pattern of connected streets with mixed use (red) and open space (green) integrated into streets.



Figure 47 Main street with no active frontage. Photo JPU



Figure 46 Radburn estate. Photo JPU

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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.



Figure 48 Industrial areas. Photo JPU

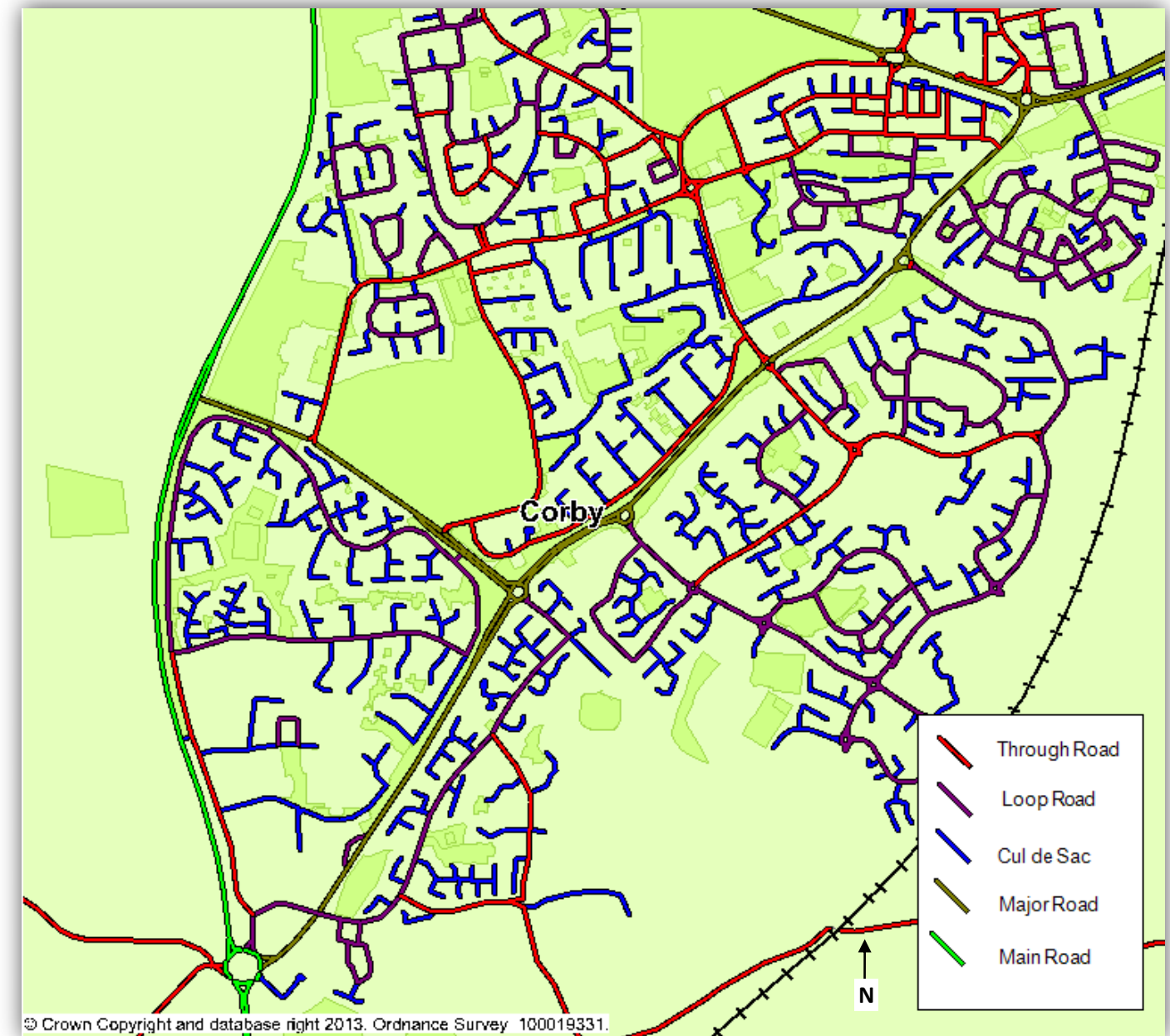


Figure 49 Typical cul-de-sac pattern in a Radburn estate

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 50), however the cycle and pedestrian routes to facilitate this movement need significant improvement.



Figure 51 Crossing point of footpath on A6003. Photo JPU.

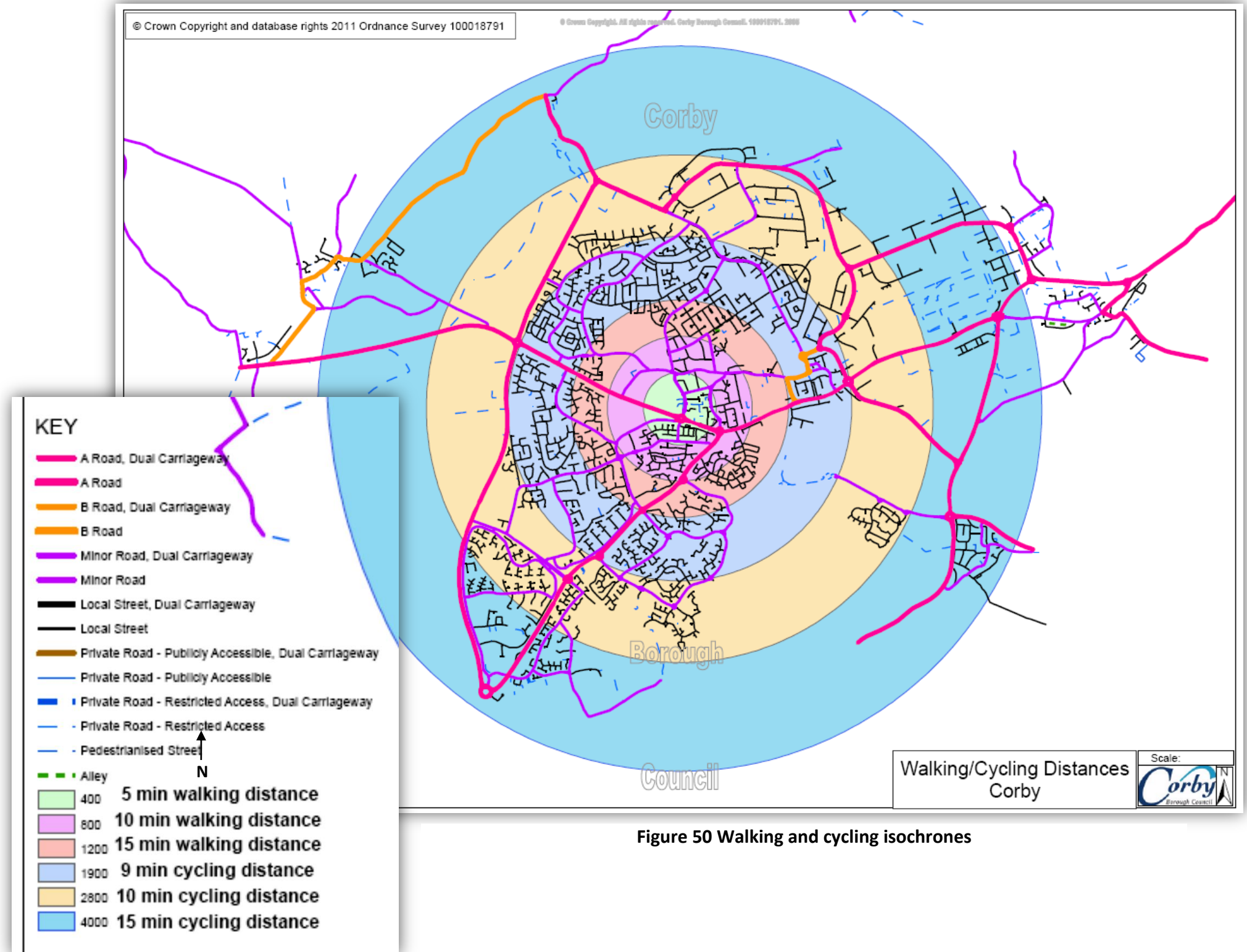


Figure 50 Walking and cycling isochrones

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, reduced speed limits on existing trunk roads within the town to allow for cycling, walking 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, 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.
- 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. 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.

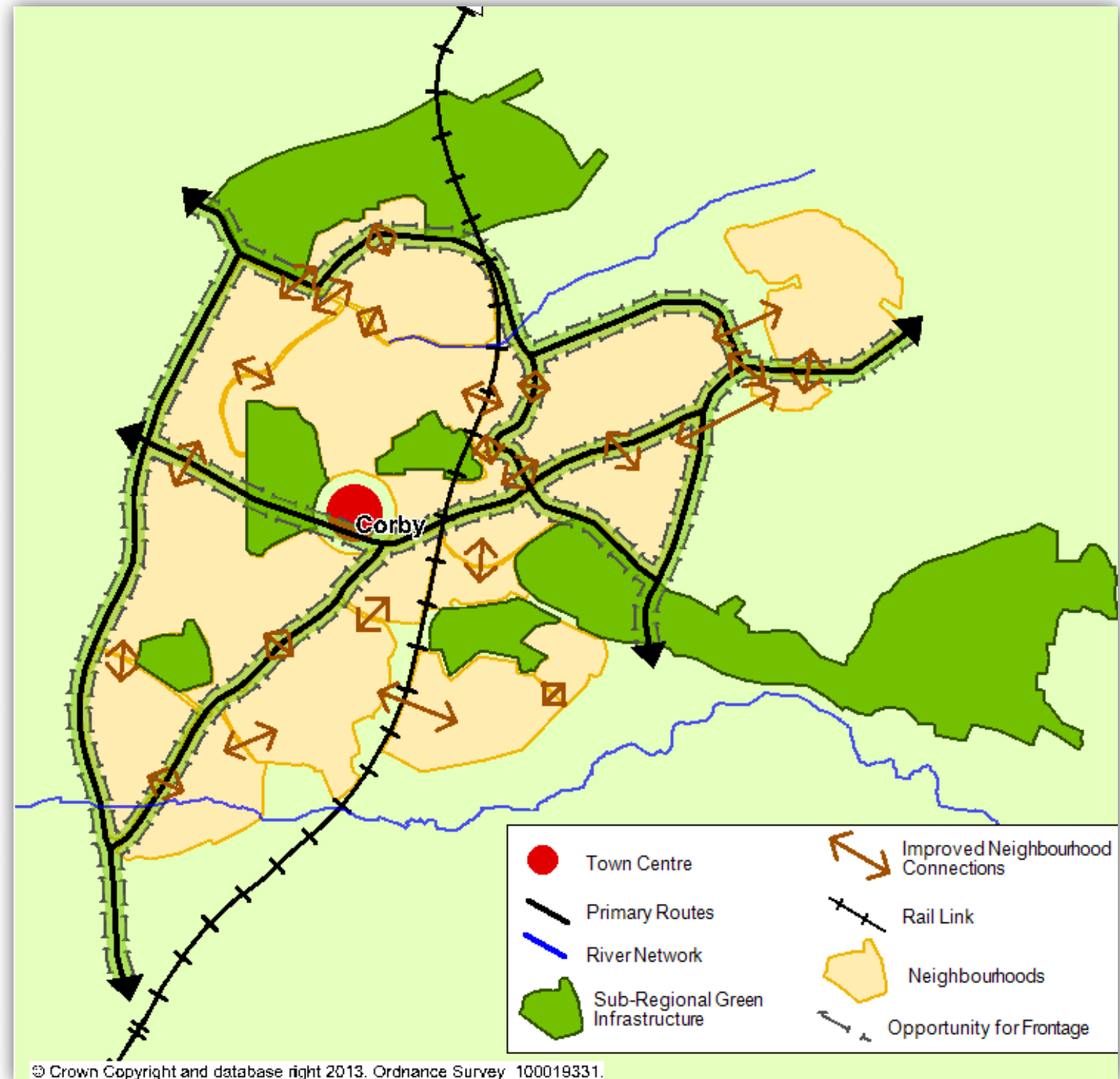


Figure 52 Corby connections plan showing the scope for improved connectivity between neighbourhoods and along the primary routes

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 as an urban street, not a trunk road,

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).

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 path alongside it.



Figure 54 Corby Walk clear linking route between town centre, Corby Cube, pool and beyond ancient woodland. Photo JPU.



Figure 53 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

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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.

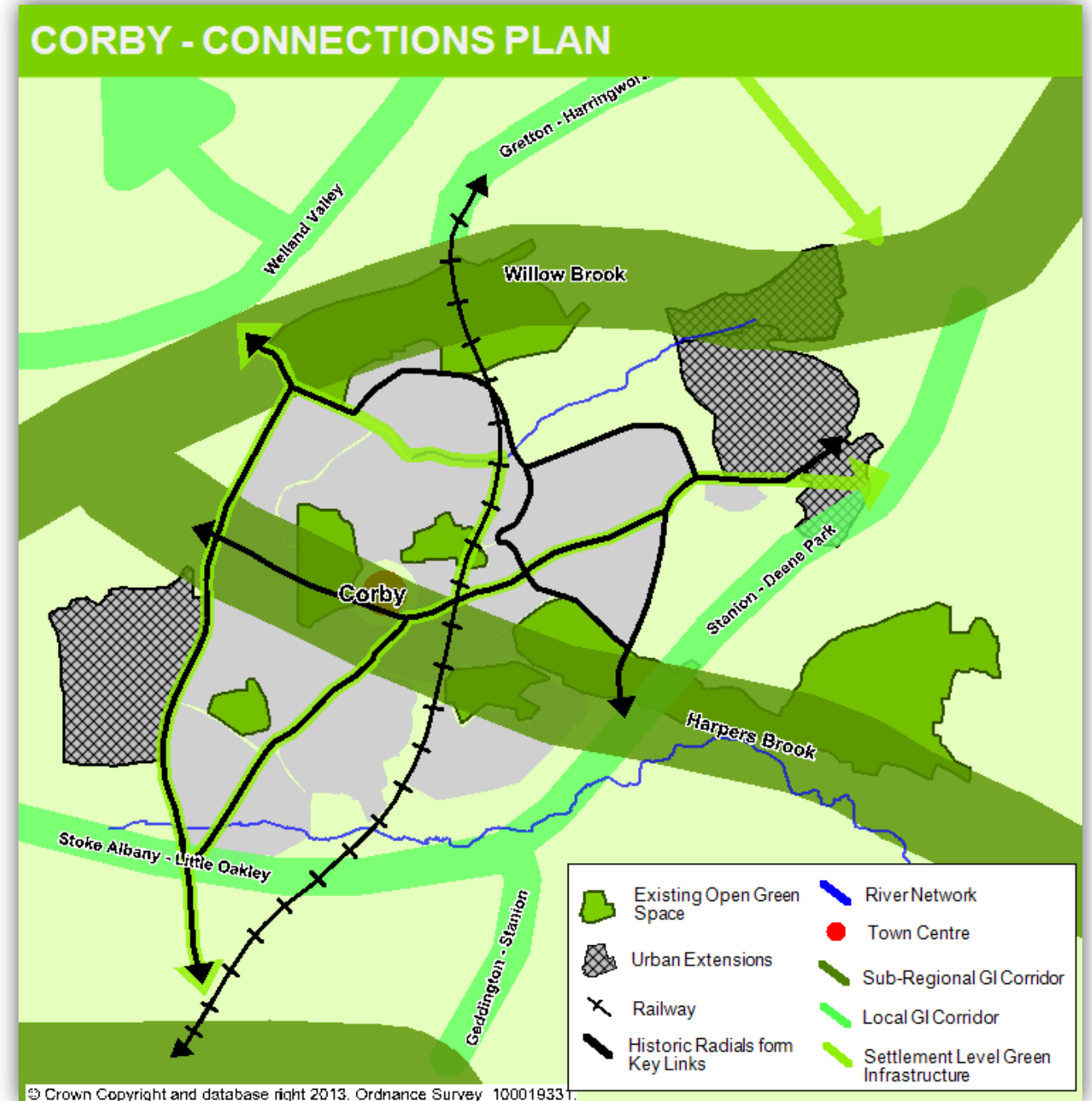


Figure 55 Corby GI connections – key GI routes to achieve through Corby

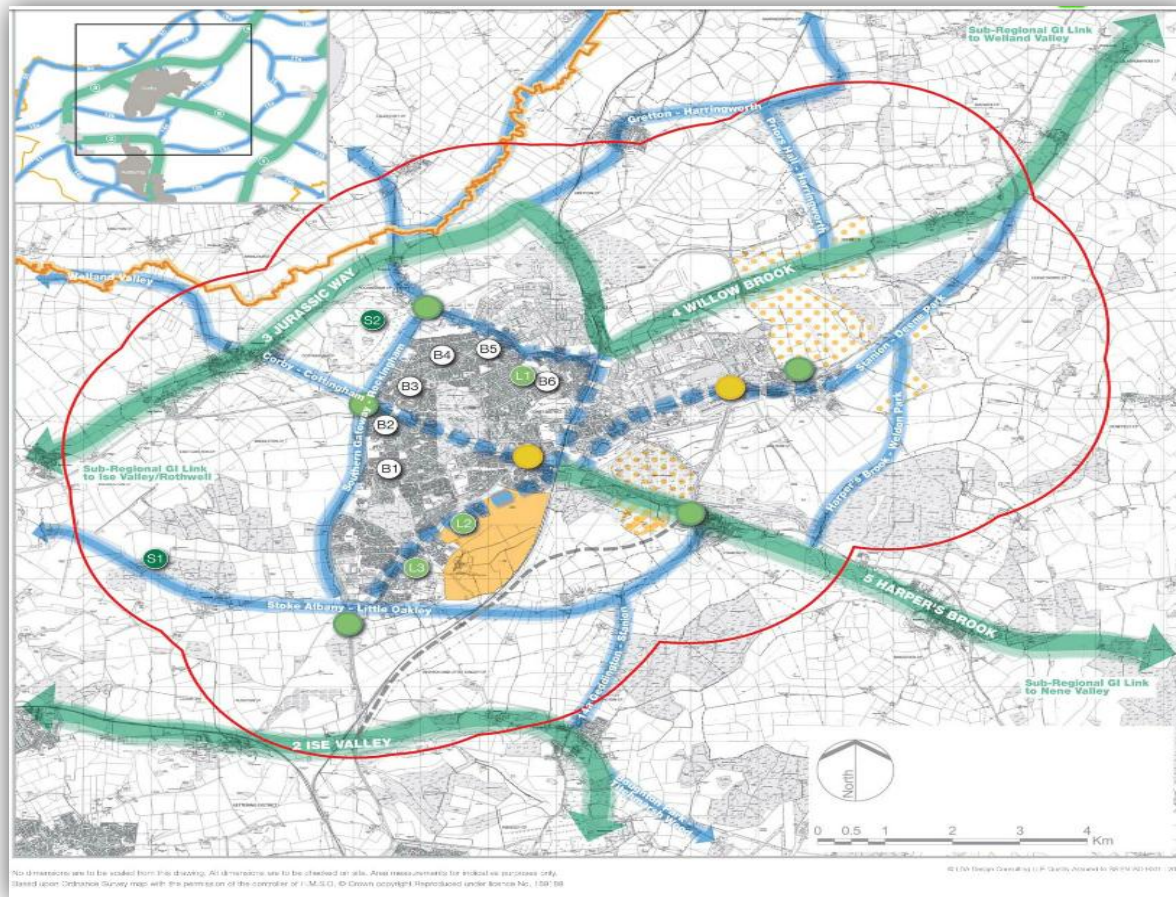


Figure 56 Corby Green Infrastructure Report: Green Routes

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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 57 Historic radial routes overlaid on Brazier map of 1720

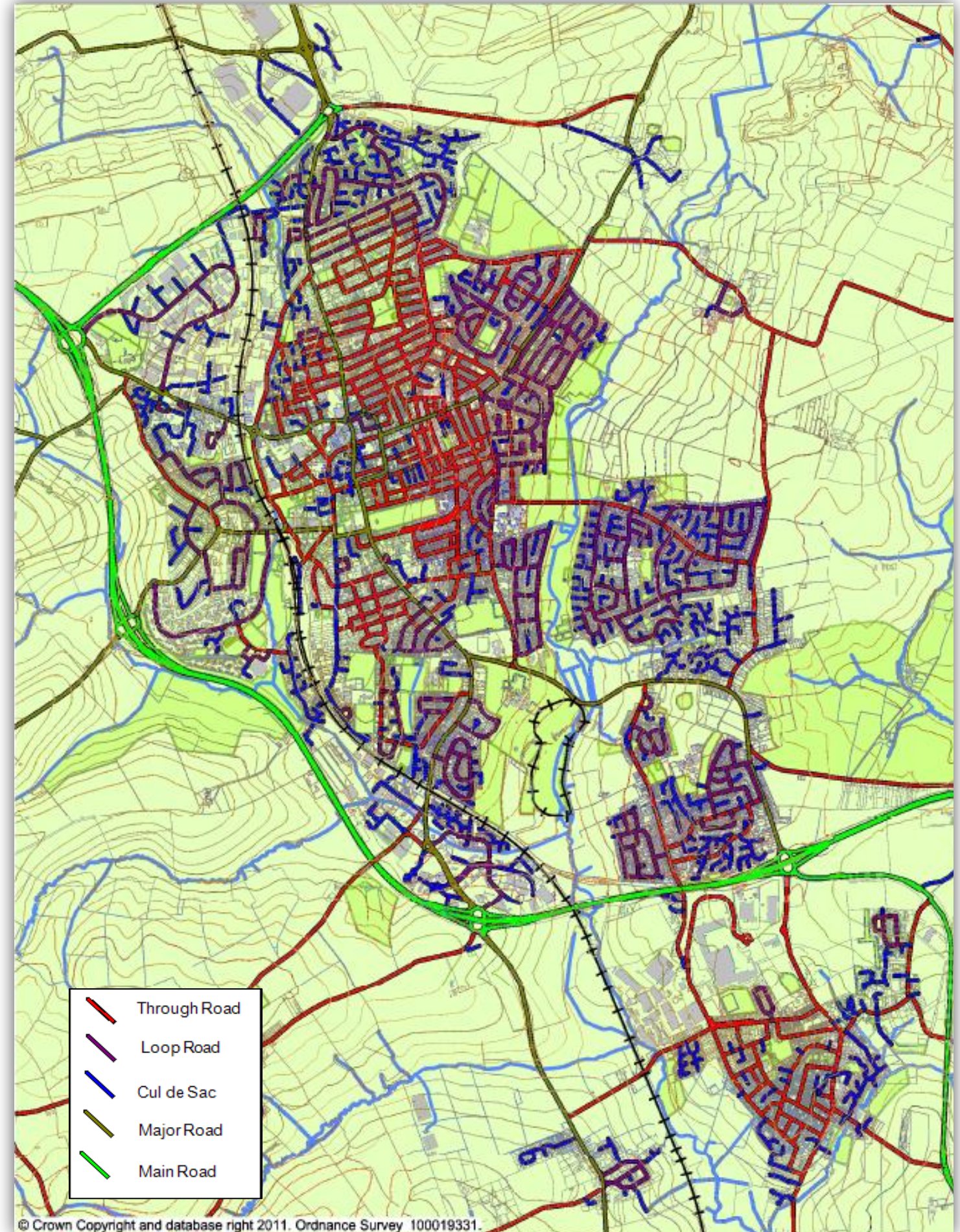


Figure 58 Combined route structure plan

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7.2 Movement from centre to edge and vice versa

7.2.1 The historic radial routes (shown in Figure 57 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 58). 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.

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



Figure 59 London Road, Kettering (A key radial). Photo JPU.



Figure 60 Motorway topped by a new path, Hamburg. Photo montages courtesy of Hamburg Marketing

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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.

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 62), 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 62 A14 and green buffer form a double barrier. Courtesy of Google Maps



Figure 61 Typical pedestrian connection, Barton Seagrave. Photo



Figure 63 Broad distribution of shops, courtesy of Google Maps



Figure 64 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 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.

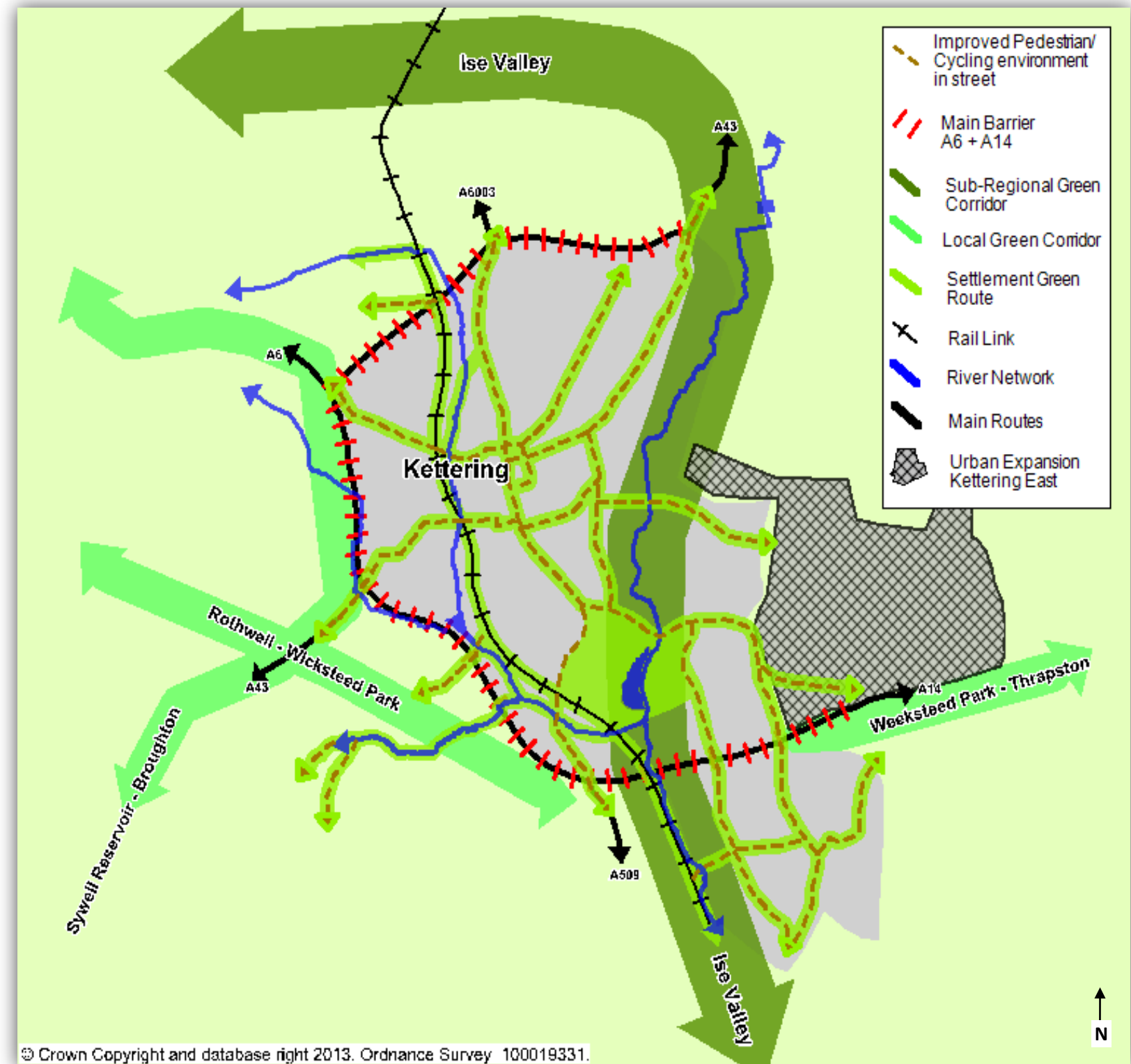


Figure 65 Kettering Connectivity Plan - existing and potential GI routes along with key barriers to overcome

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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.

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 65).
- 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 66 Cycle path alongside working railway line into Harrogate. Photo Copyright of Timbo from cyclestreets.net



Figure 67 Storm water planter and landscaping build out on 12th Avenue, Portland (Image courtesy of City of Portland)

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.

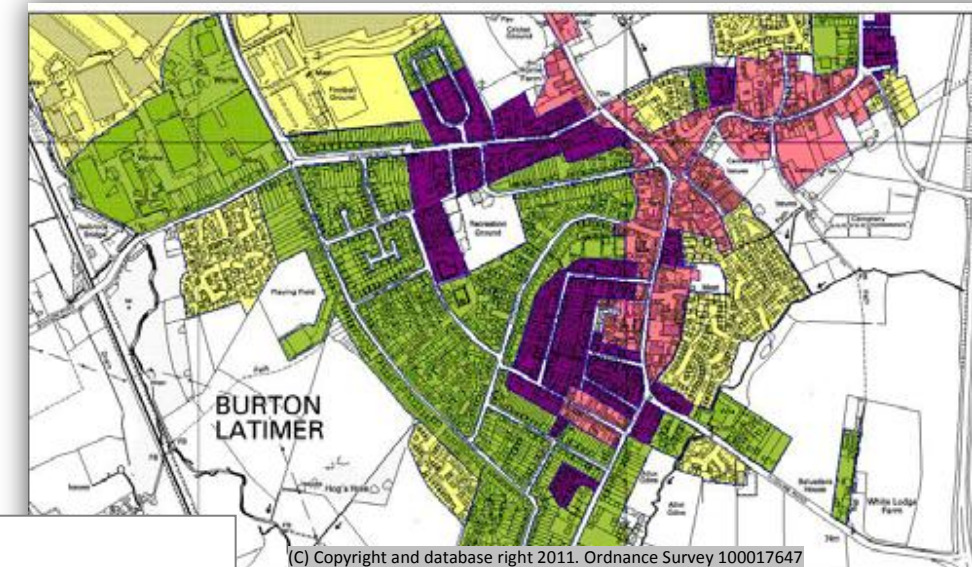


Figure 69 Historic Development

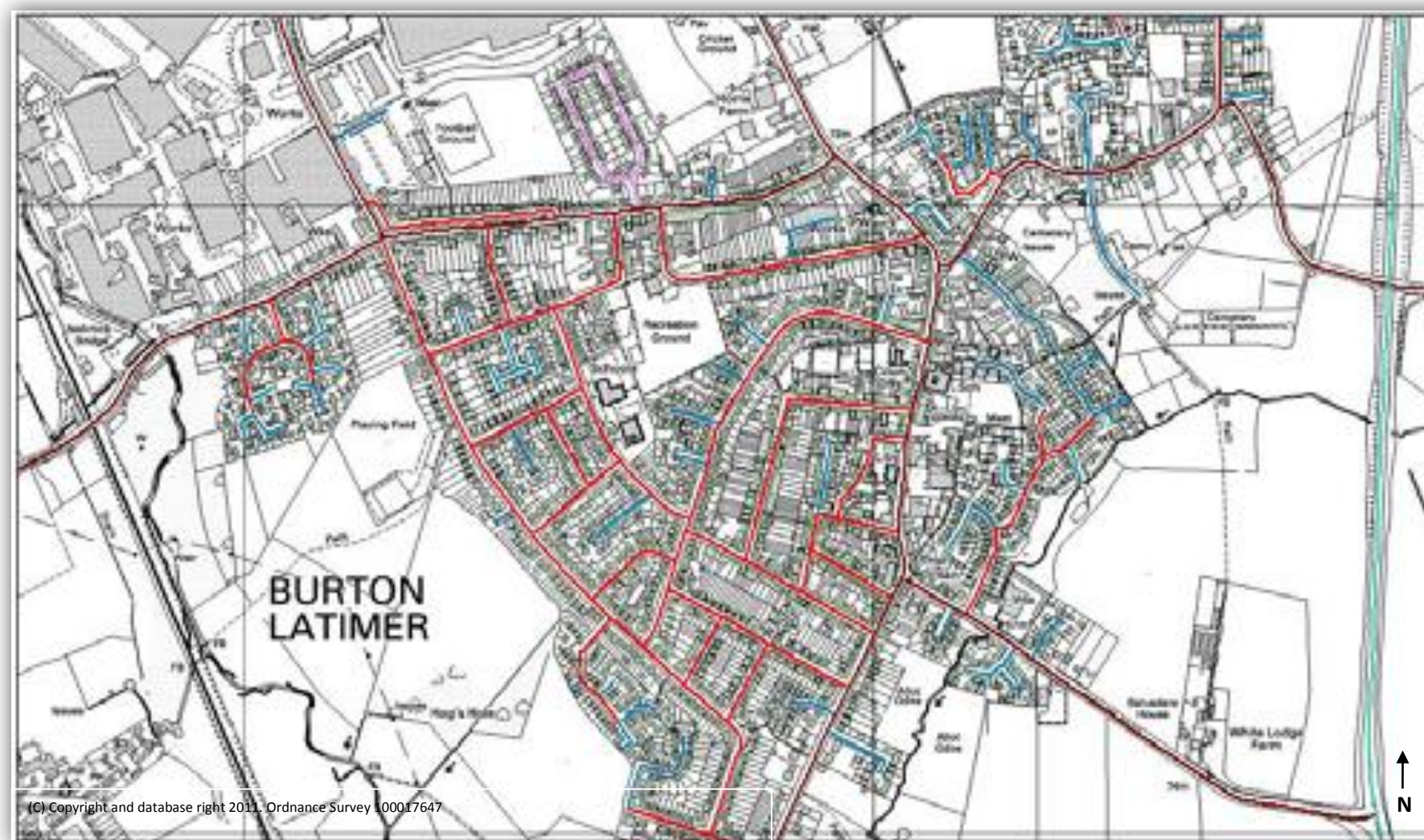
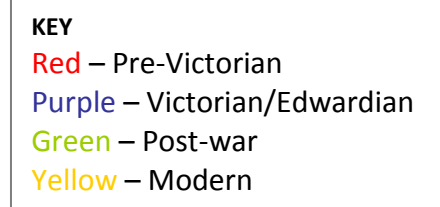


Figure 68 Route Structure Analysis

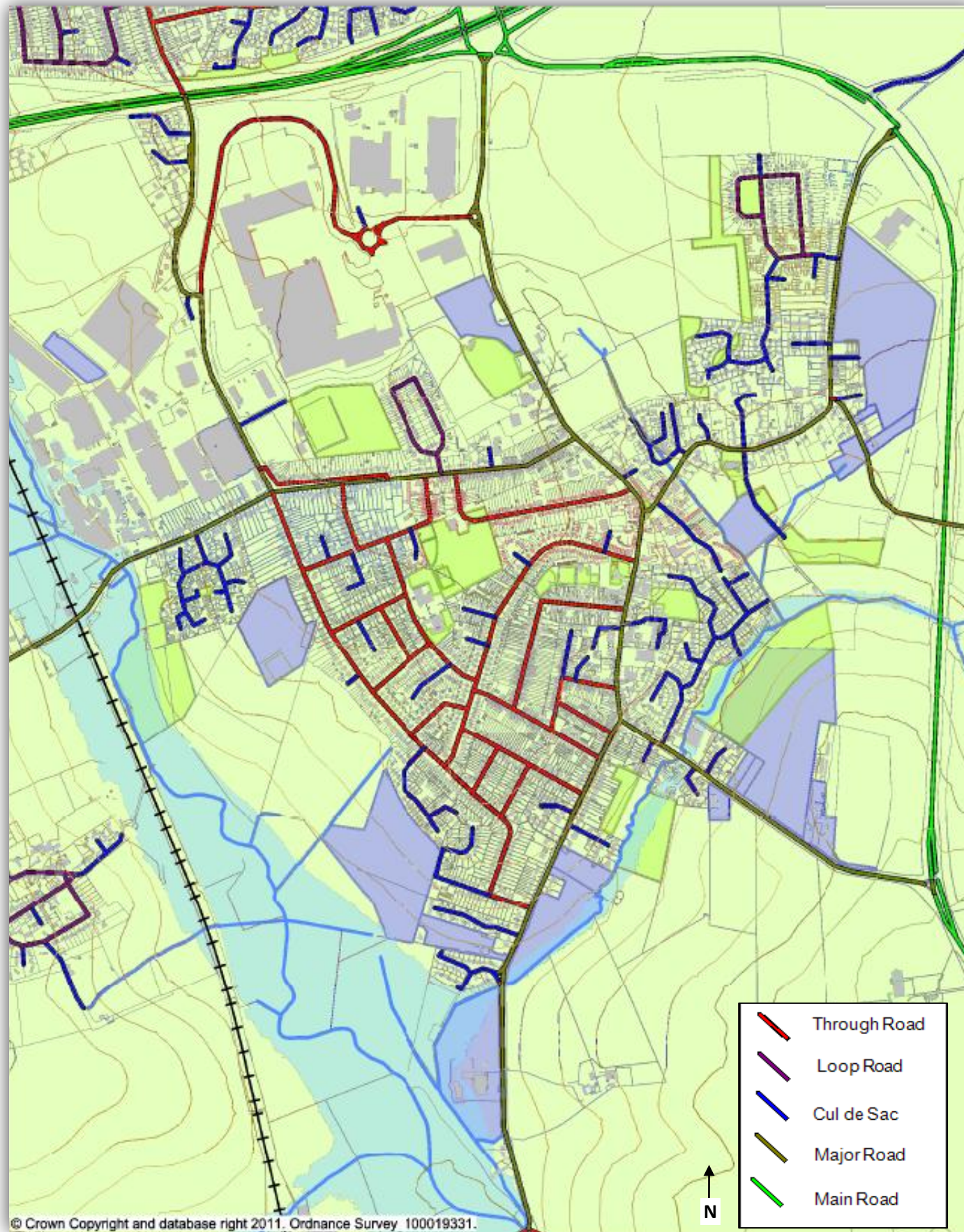


Figure 70 Combined Opportunities and constraints plan



Figure 71 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, 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.

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.

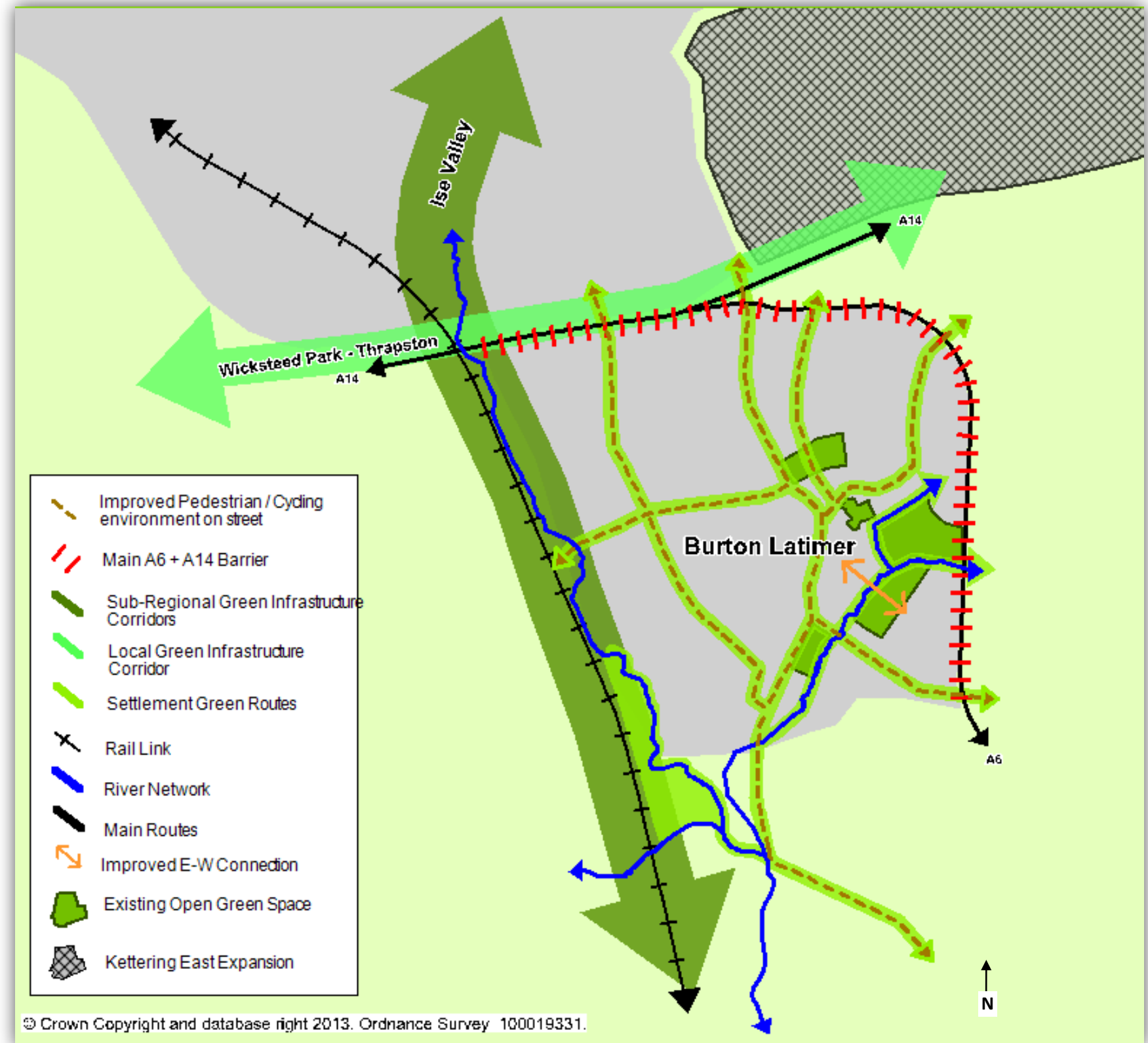


Figure 72 Image showing connected green infrastructure with improved road networks with green streets

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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 There is scope to better join up the green spaces, using the Ise and local streams as connecting routes through the town.

10.4.2 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.



Figure 74 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.



Figure 73 Image showing possible public realm improvements, from the Urban design Framework for Burton Latimer

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 75) 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 75 Historic routes

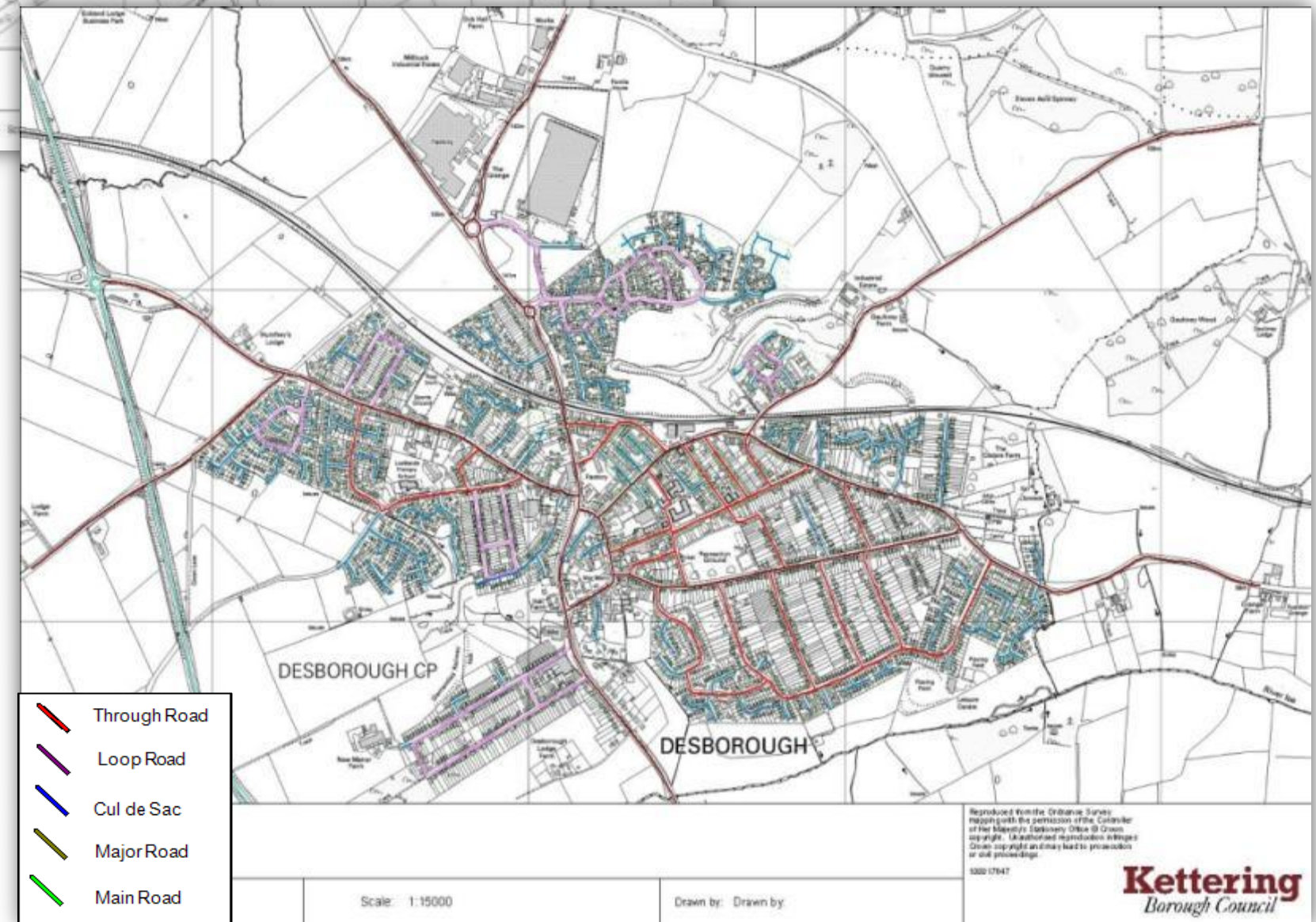


Figure 76 Route structure analysis

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.

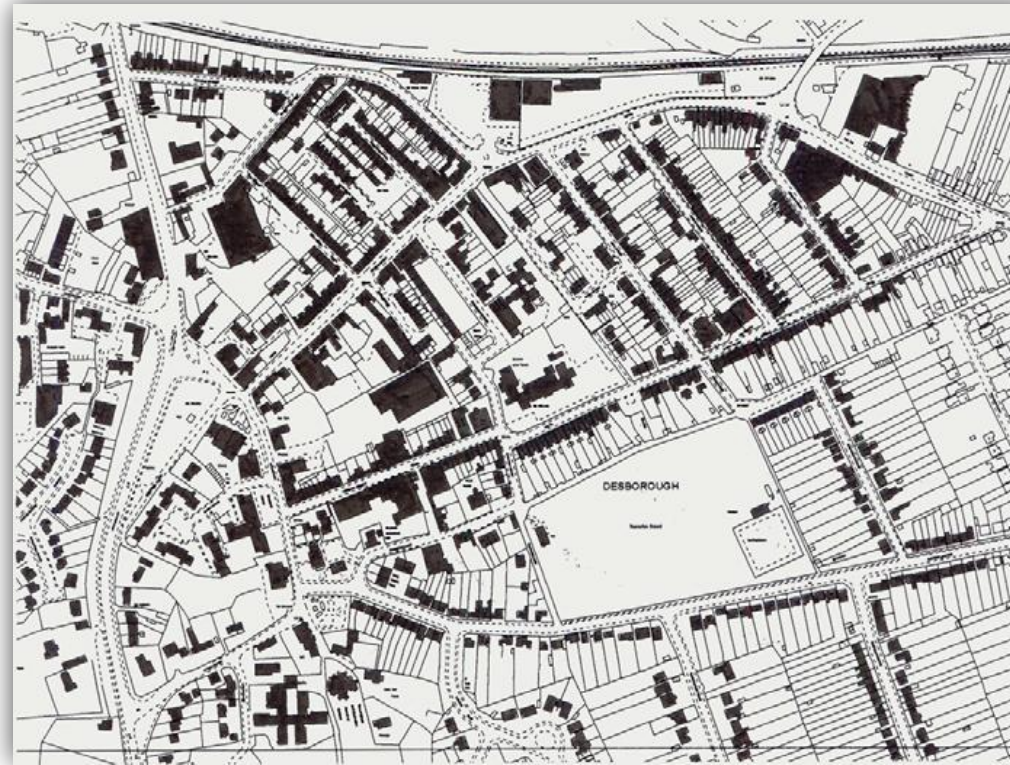


Figure 77 Typical rectilinear grid in Desborough with built form continuously enclosing the streets



High Street 1950s



High Street 2003



Figure 78 High Street Desborough. All Images taken from Kettering'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, removal or lining of red tarmac 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.

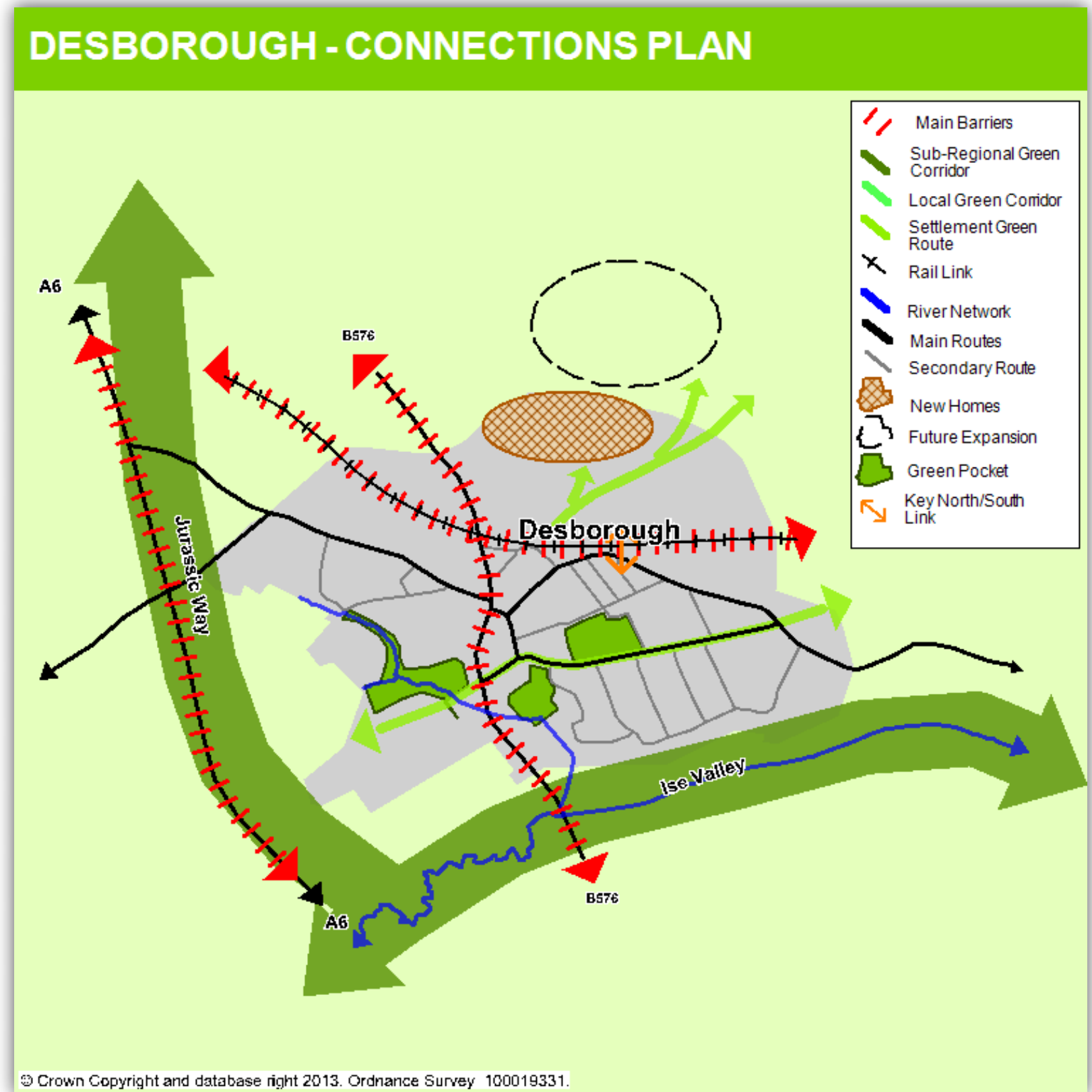


Figure 79 Connections plan of Desborough

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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, more on street parking along Station Road, improvements 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.

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 79 'Desborough Connections Plan' sets out additional possible GI links at the settlement scale.



Figure 80 Ahrensburg, Germany. A simple combination of robust natural materials allows for through traffic, parking and pedestrian movement (image from Hamilton Baillie Associates)



Figure 81 Removal of guard rails and installation of direct crossings allows people to cross where they want. Image courtesy of CABE.

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 83 Bridge Street, Rothwell. Photo JPU.

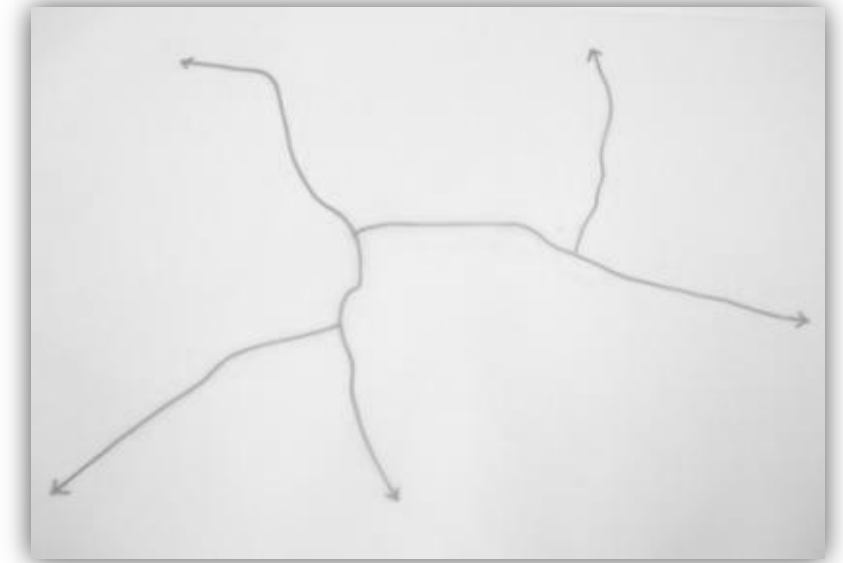


Figure 82 Key historic structuring routes

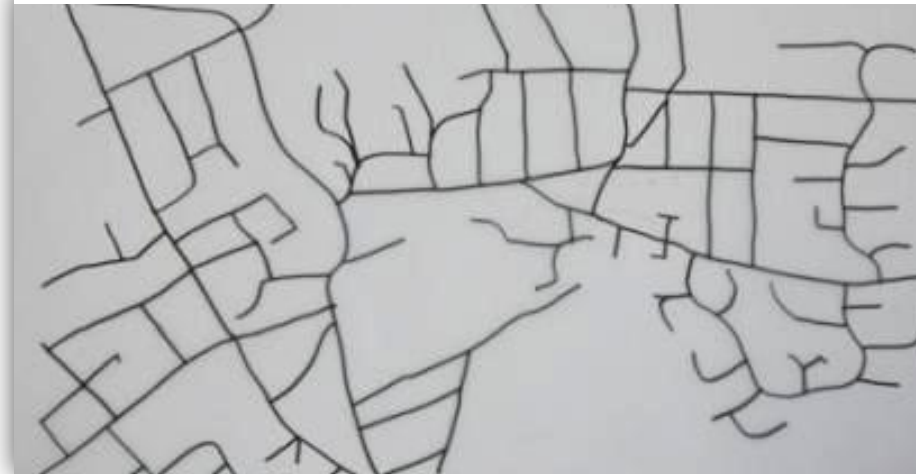


Figure 85 Complex pattern of streets



Figure 84 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.

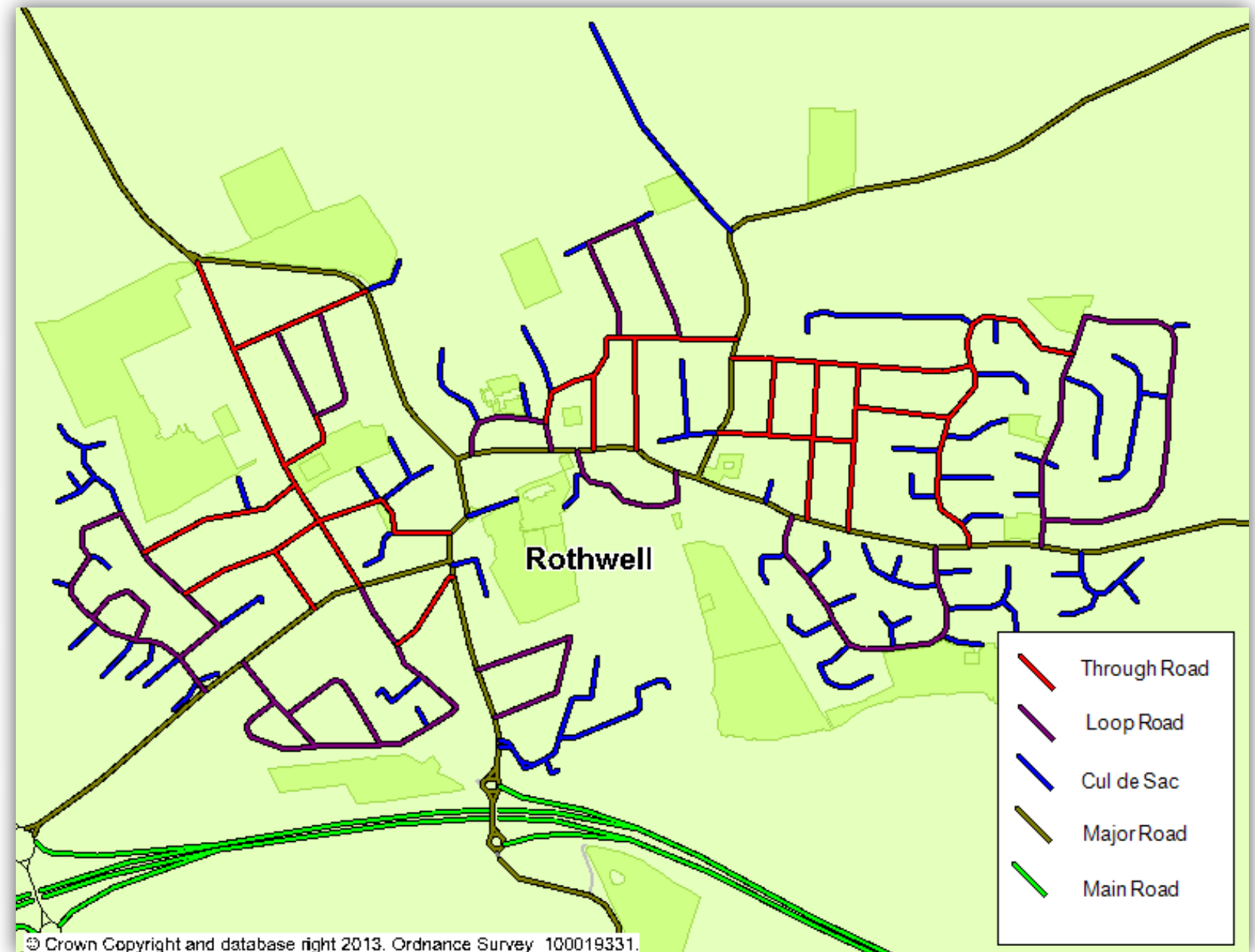


Figure 86 Route structure analysis

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.

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.
- Walking and cycling links to Desborough should be improved as access between the

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

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.

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



Figure 87 Rothwell connectivity plan illustrating potential GI links and improved on street connections

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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.



Figure 89 Harrington Road radial route – improvements needed to encourage cycling and walking to the town centre. Photo Copyright David Purchase

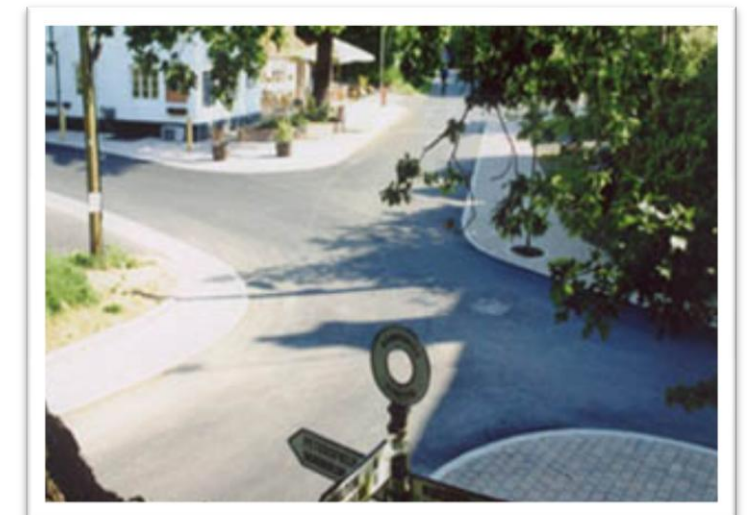


Figure 88 Burton, Hampshire. Photographs of central crossroads in the Village. Before (left), the junction had wide carriageways, demarcated traffic lines and limited pavements, so that vehicles were prioritised. Following street changes, the carriageways were reduced in size, giving more room to create 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-burton-east-hampshire>