North Northamptonshire
Urban Structure Study - Chapter 1
**Introduction**

1.0 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.

1.1 **Aim of the Study**

A number of previous studies to inform the Core Strategy have focused on the town centres, and on locations for growth. This study seeks to understand the urban structure of the towns in North Northamptonshire—the framework of existing streets and open spaces, and how they function and to use this to inform policy development for the revised Core Spatial Strategy.

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

1.3 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.

1.4 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.

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.

1.6 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 trucks. 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.

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.

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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.
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
- 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.

1.9 Scope

The 12 towns studied were:

Oundle, Corby, Thrapston, Kettering, Desborough, Rothwell, Burton Latimer, Raunds, Higham Ferrers, Rushden, Irthlingborough and 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.

1.10 Structure of the Study

Chapter One – Vision for successful towns

This chapter summarises the key themes emerging from the work across all settlements into key attributes which we are seeking to safeguard, or create, in all the towns. It then looks at the ways that the attributes can be realised through strategic planning and development principles.

Chapter Two – Spatial Principles by Place

This chapter summarises the key opportunities and constraints of each town.

Chapter Three – Development Principles

This section assesses potential development locations in each settlement and how well they integrate into the existing urban fabric. Development principles for allocated sites within these locations are identified alongside principles for potential strategic sites that are being assessed as part of the development of the Core Strategy.
Chapter One – Vision for Successful towns

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, to 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.
1. Well connected places – from centre to edge

Improve access to the centre

2.4 Easy, pleasant access from the outlying parts of the town, to their centres to access shops, services and public transport facilities there 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 to create a “deformed wheel” so that the towns show a similar pattern of spatial arrangement across the study area, in line with Professor Bill Hillier of UCL’s theory of Space Syntax.

2.5 Streets which easily connect to to the radials in a direct and legible way, support easy 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 or spokes 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.

2.7 Principles:

1) 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:

2) 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.

3) 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.

4) 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.

5) 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.
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.

Fig 1.8: Congress for New Urbanism shows the increase in distance to local facilities in a cul-de-sac and distributor model street versus a connected network.

2.9 While there are pedestrian links within these later developments, such as the one below 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.

Fig 1.9: Pedestrian route lacking surveillance and overlooking.

Fig 1.10: Duany Zyberg, Hatfield New Town indicating the lack of connecting local streets, and how they could all be linked up.

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. 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.
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.

Fig 1.11: 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

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:

Fig 1.12: Auckland’s beautified bridges programme

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, than closed off streets and serried rows of close board fences.

Fig 1.13: Stoke Albany - village is connected to the countryside with a series of lanes and footpaths

2.14 Principles:

1) **Infrastructure Barriers:**
   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.**
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.

![Figure 1.14: 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.](image)

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 in Seattle, could link open green spaces with additional street tree and shrub planting, slow speeds and a greater emphasis on pedestrian and cycle movement along them.

![Figure 1.15: Seattle Green Street](image)

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

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.
2. 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.

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.
3. 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 readress 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 effort 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 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 more lively.
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.