

GRANTHAM URBAN DESIGN FRAMEWORK

Grantham Movement Study

Part 1: The Strategy



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01 SUMMARY

INTRODUCTION

Urban Initiatives were commissioned by South Kesteven District Council to prepare a Movement Strategy for the market town of Grantham as an integral component of the Grantham Urban Design Framework (GUDF). The commission builds on the Grantham Transport Strategy produced by Lincolnshire County Council in 2007. It does so by focusing on the specific design interventions required to meet, influence or manage the additional movement demands to be generated by the planned growth of the town.

The Movement Strategy recognises the importance of improved mobility and accessibility to economic growth and inward investment. It also responds to climate change imperatives to avoid or minimise adverse environmental impacts of motorised travel on the environment and communities. These issues are discussed in the context of planned growth and regeneration in the town in chapter two.

The Movement Strategy takes a more holistic view of transport challenges than is conventionally considered in typical transport strategies. It begins by examining the manner in which land use change itself comes forward as the prime determinant of the nature and volume of movement demands that will be generated.

Recent research funded by the Commission for Integrated Transport (2009) has shown a clear relationship between land use mix, density and settlement size with travel distance and mode share, with shorter trip distances and a higher proportion of travel by more sustainable modes found as population size and density increase. Delivering smarter and more efficient forms of urbanism is clearly the starting point for delivering more sustainable transport outcomes, followed by the identification of movement infrastructure investment and initiatives to support it. Chapter three documents our approach to land use and movement through a series of design principles.

For the Strategy to be successful, it will need to move beyond the identification of a collection of reactive proposals that mitigate the transport effects of development. It must encompass a series of integrated projects that better link development sites, co-ordinate delivery between them, and lock in movement benefits for the town as a whole. Chapter four sets out a comprehensive suite of sub strategies for each mode of transport across the town as a whole.

The Strategy promotes infrastructure investment and movement initiatives that work hard for the town as a whole, not just transport. This particularly relates to the design and management of streets. Historically, streets have been the lines of communication and movement upon which local and regional economies developed; the space in which people engage in socio-economic exchange; and hence a core structuring factor in the evolution of settlement. In modern times this relationship has been overtaken by a focus on the safe and efficient movement of motorised traffic. This is now being revisited due to an increasing realisation of the need to provide better balanced streets that serve the

needs of the town and its people rather than just traffic.

Chapter five of the Strategy therefore considers area specific improvements for the north and south of Grantham and the town centre. It considers multi-modal improvements necessary to resolve key movement issues and support development.

The manner in which street space and function is allocated to 'link' and 'place' interests will have a marked impact upon the street's performance for the town and its people. The Strategy therefore concludes in chapter six with a street planning and design framework, the purpose of which is to lock in the wider benefits of investment in streets and public realm. It considers the design of streets in relation to 'place' issues – land use and activity, townscape and public realm quality – alongside 'link' issues relating to the allocation of street space and function to different modes of transport. Finally, It offers clear priorities and design principles of street design across Grantham's street network.

The project has been delivered through a multi disciplinary client-consultant and stakeholder project 'Design Team' covering a diverse range of specialisms across transport, planning and design related professions, and also the input of selected District and County Members. It has also utilised the skills and outputs of the team preparing a 'Townscape and Character Appraisal' component of the GUDF that has run in parallel to this commission.

Overleaf is a summary of the contents of the Strategy report.

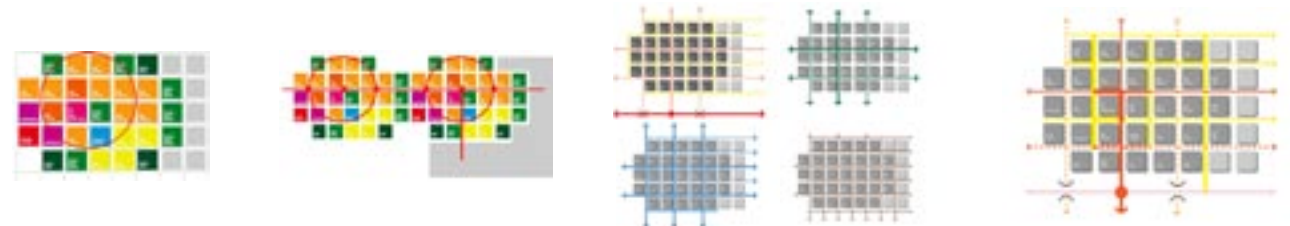
**CHAPTER 2:
UNDERSTAND CONTEXT AND CHALLENGES**

URBAN DESIGN ANALYSIS
GROWTH PRESSURES
TRANSPORT SUPPLY AND DEMAND



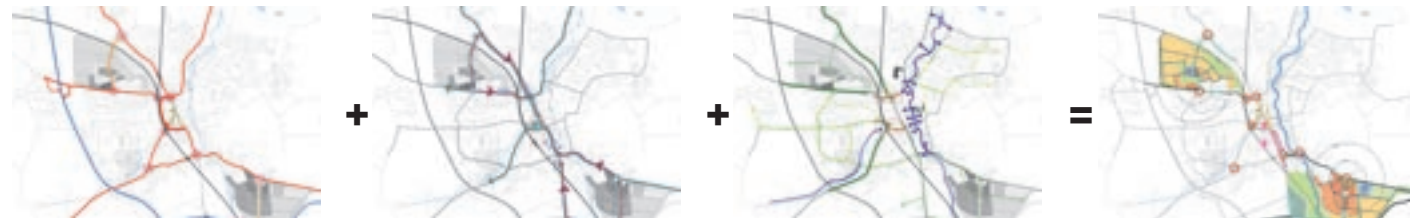
**CHAPTER 3:
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LOCATION AND LAND USE DIVERSITY
COMPACTNESS
URBAN MOVEMENT GRID and NETWORKS
LINK AND PLACE



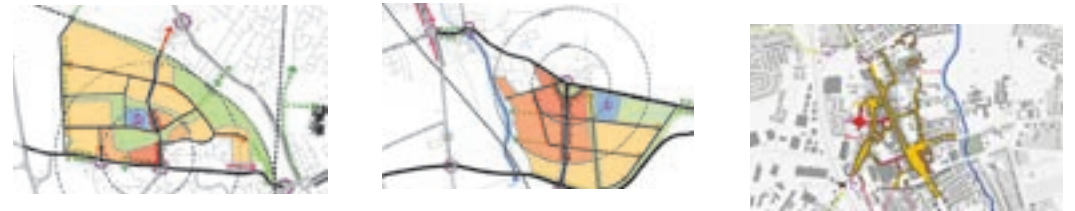
**CHAPTER 4:
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CYCLE NETWORK
OVERALL TOWN STRATEGY



**CHAPTER 5:
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NORTHERN AREA
SOUTHERN AREA
TOWN CENTRE and SURROUNDS
PROJECTS, PROGRAM and DELIVERY



**CHAPTER 6:
STREET PLANNING FRAMEWORK**

UNDERSTANDING STREETS
STREETS STRATEGY
STREET SEGMENT DESIGN RESPONSES
DESIGN DELIVERY & DEVELOPMENT



PROCESS AND METHOD

The Movement Strategy has been underpinned by a number of processes to assist in collaborative working and in gaining consensus, recognising that the delivery of the projects and initiatives identified are the responsibility of the local authorities and other Government agencies. The study began by identifying four high level propositions for the town aimed at getting stakeholders thinking progressively about the future of Grantham from the outset. These propositions are presented below.

EVIDENCE BASE

The Strategy has been developed through an analysis of regional and local movement pressures impacting upon the town for all modes of transport. This 'Evidence Base' includes a comprehensive and systematic review of policy and growth pressures, and the current provision of traffic, freight, public transport, cycling and walking networks in Grantham. Each mode of transport is researched in terms of baseline transport conditions, current transport proposals, and documents any specific analysis undertaken as part of this study.

Also included in this report is a detailed assessment of existing and future travel demands generated by planned growth across the town. A spreadsheet model has been used as the tool for this assessment, based upon data outputs and assumptions underpinning the Lincolnshire County Council SATURN model

This analysis is presented in Part 2 of the Movement Study, titled the 'Evidence Base'.

DESIGN-LED PROCESS

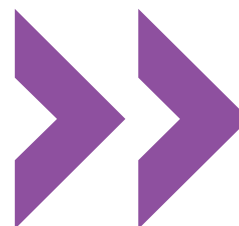
The Movement Strategy has been delivered through an 'enquiry by design' process where the bulk of the baseline, options and strategy thinking was undertaken by and with the direct participation of a range of stakeholders and interested parties throughout the course of the project. A 'hands on' Grantham Design Team - an array of planning, transport, and design interests - met at critical study stages of baseline, options and strategy. Workshops included briefing presentations, break out design sessions and interactive, cross-discipline discussions.

The four propositions were an important starting point in this regard. These were presented to the Design Team who subsequently undertook a Placecheck of the existing town to help stimulate debate on key issues, to understand information sources, and to begin the process of identifying ideas.



Expand

Influencing development proposals to improve connectivity and access by all modes, and to make trip patterns to, from and within the town genuinely sustainable....



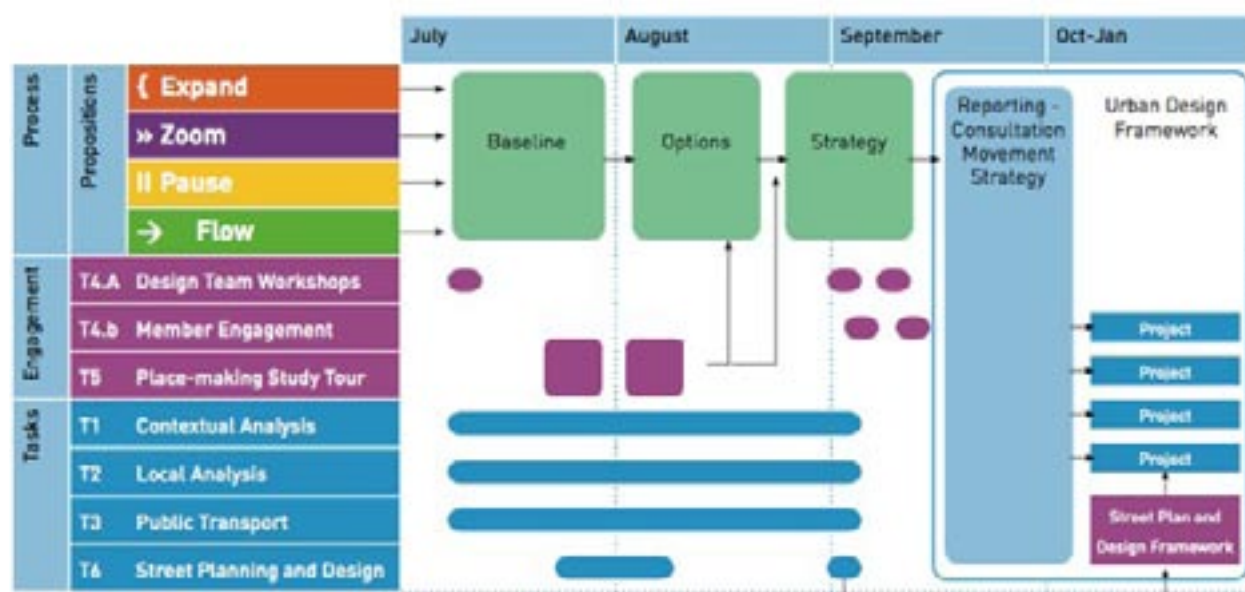
Zoom

Maximising the generation of public transport demand, and driving a step change in the level of service and quality offered....

Following the Placecheck two 'enquiry by design' events were held: an options workshop and a strategy workshop. The options workshop focused on the three parts of Grantham, the Northern area, the town centre and surrounds, and the southern area. Network and infrastructure options (including proposed new relief and link roads) were identified, discussed and assessed through an intensive design enquiry process.

The strategy workshop then focused on issues that required a further level of design testing. These were focused largely on the town centre given that unlocking wider development across the town will be largely dependent upon resolving pressure here.

A wider stakeholder team was also set up as a public sounding board for options and design solutions as they emerged throughout the process. This team met at the Options and Strategy stages of the study.



Pause

Making walking – and cycling – modes of choice for many more, striking the best balance of movement and place to deliver GREAT STREETS and spaces where people will love to be....



Flow

Using the River Witham, the Canal, parks and other open spaces to add a new, attractive and sustainable dimension to Grantham's street network

THE PLACE MAKING STUDY TOUR

The Design Team participated in a 'Place-Making Study Tour' of best practice UK examples of regeneration schemes, urban extensions, transport initiatives, and public realm improvements. The purpose of the Tour was to equip the Design Team with the sense of the possible and to build capacities to make more informed decisions on the future of Grantham.

The Tour took place on two separate days and included visits to:

- Darlington's town centre regeneration project including the 'Pedestrian Heart'
- An example of an urban extension in Upton, Northampton
- Accordia, Cambridge - a residential led regeneration scheme with exemplary street network and public realm design;
- Public realm improvements in the historic market town of Bury St Edmunds that respected and contributed to historic form and townscape.



Darlington Pedestrian Heart improvements have transformed the quality and image of the town, provided world class spaces for promenading and civic activity, as well as greatly reduced retail leakage to neighbouring towns.



A new street based bus hub was delivered for local bus services as part of the Pedestrian Heart Scheme.



Upton, Northampton is renowned for the integration of sustainable urban drainage into the layout and design of streets.



High quality architecture and the integration of a natural water course throughout Accordia gives it its own sense of place and identity.



Street improvements have transformed the quality of the historic urban streets in Bury-St-Edmunds



Upton, Northampton has delivered high quality public realm improvements and new open spaces as part of its medium density housing offer



Accordia, Cambridge has an excellent network of well designed streets and spaces.



More 'shared surface' public realm improvements and the use of materials that reflect the town's built character has greatly improved the quality and connectivity of key town centre spaces in Bury-St-Edmunds.

OVERALL STRATEGY

The Strategy for the town supports the location, mix and form of development proposed in Grantham. It concentrates on using development to deliver improvements to the towns movement network by all modes.

The town-wide Movement Strategy aims to:

- Deliver an appropriate mix of uses within developments to maximise peoples' propensity to walk and cycle when accessing local goods and services.
- Pursue more compact forms of development (with densities ranging from 35 - 60 dwelling units per hectare gross) to support more viable public transport.
- Place local centres on strategic movement corridors to provide high levels of access by all modes and to enable retail premises to capture pass-by trade.
- Integrate the River Witham and other green features/corridors into new development where possible, to act as high quality walking, cycling and recreational corridors, as well as to deliver upon other environmental imperatives.
- Ensure that the street network is designed to hardwire in public transport services on appropriately located and designed spine streets with highly legible and walkable bus hubs located in town centres and other areas of activity, such as schools or community facilities.
- Provide a connected network of streets that disperse movement loads and promote walking and cycling.
- Invest in junction improvements for all modes of transport to enable growth to occur, at the same time as resolving local movement and place related issues.
- Reduce the severance effect of the town centre collar for slow modes of walking and cycling in balance with the need to retain its critical traffic function.

A table and annotated plan is provided overleaf that summarises the proposals identified throughout this strategy document. Projects have been identified by area - Northern Grantham, Southern Grantham and Town Centre - and in relation to planned developments. A broad delivery timetable is also provided over five year time periods.



Town wide Movement Strategy

TRANSPORT STRATEGY SUMMARY PROPOSALS

IMPROVEMENT	DESCRIPTION
NORTHERN AREA	
① NQ Internal street network	Includes Pennine Way and junctions with Barrowby and Gonerby Road
② Great Gonerby environmental enhancements	Traffic management, walking and cycling improvements to mitigate impacts of additional traffic
③ Street improvements to Gonerby Road and Barrowby Road	Includes bus stop facility and priority improvements
④ Walking improvements on Manthorpe Road	Improve/provide walking and cycling connections to Academy and missing facilities at junctions and Hospital
⑤ ASDA Roundabout capacity improvements	Includes possible widening of roundabout approach providing walking and cycling facilities into the town centre
SOUTHERN AREA	
⑥ Southern Relief Road (Includes bridge and link to A52)	Includes bridge and full link through to High Road Drive Roundabout
⑦ SQ Internal street network	Includes the main street and junctions with the A52
⑧ River Witham walking and cycling link	Includes links from SQ residential and employment sites to Gainsborough Corner
⑨ Gainsborough Corner and London Road improvements	Includes streetscape and bus priority improvements
⑩ Street improvements to A52 Somerby Hill and Spittlegate Level	Includes streetscape and bus priority improvements
TOWN CENTRE	
⑪ Town centre traffic collar north	Multi modal improvements to ASDA Roundabout and Premier Court Gyratory
⑫ Town centre traffic collar south	Multi modal improvements to Wharf Road and Harlaxton Road junction
⑬ Market Place Stage 2 improvements (Square and Vine Street)	Streetscape enhancements and traffic management
⑭ Wide Westgate improvements	Streetscape and market stall improvements
⑮ Bus station improvements	Station rationalisation and walking/cycling improvements across Wharf Road.
⑯ High Street and St Peters Hill	Create new local bus hub, streetscape enhancements and traffic management
⑰ Watergate	Streetscape enhancements, traffic management and junction improvements with traffic collar

FUNDING AND DELIVERY

DEVELOPER CONTRIBUTION		PRIORITY	DELIVERY TIMEFRAME			
Level	Developer		1 - 5 years	6 - 10 years	11 - 15 years	16 - 20 years
Full	NQ	High				
Full	NQ	Medium				
Partial	NQ	Medium				
Full	Academy	Low				
Partial	NQ	High				
Full/Partial	SQ	High				
Full	SQ	High				
Full	SQ	Medium				
Partial	SQ	Medium				
Partial	SQ	Medium				
Full	NQ, Greyfriars	Medium				
Full	SQ, Wharf Road, Station Approach	High				
Partial	Greyfriars	Low				
Partial	Greyfriars, Wharf Road	Medium				
Full	Wharf Road	Medium				
Partial	Wharf Road (bus facilities only)	Medium				
Full	Watergate car park redevelopment	Low				

02 CONTEXT AND CHALLENGES

GRANTHAM HISTORICAL DEVELOPMENT

Grantham came into being as a small Saxon village and subsequently grew to a small yet prosperous market town during the middle ages. This was largely due to its position along the ancient communication route between northern and southern England - the Great North Road - and its position on high ground adjacent to the River Witham.

St Wulfram's Church and its 281-foot spire has dominated the town's skyline and served as a hub of cultural and religious activity since the 13th century. The town market used to operate in front of the Church, then later was moved to the town's Market Place, with the medieval building layout and form emerging around it. The town also grew around the wide section of Westgate that also used to provide a market, as evidenced by the layout of burgage plots running along it.

The arrival of the railways and station to the south of the town in the late 19th century fuelled both a significant population growth and the expansion of engineering industries in the town - including armaments and the revolutionary caterpillar track system for vehicles developed by Richard Hornsby & Sons.

Like most market towns, Grantham was and is characterised by its position on strategic communication routes and by its strong radial road network linking it with adjacent villages of Harlaxton, Barrowby, Great Gonerby and Manthorpe, as well as other larger settlements further afield.

In 1962, the function of this radial road network changed considerably with the completion of the A1 Trunk Road skirting the western edge of the town. This helped remove much of the north-south



Grantham 1856



Grantham 1903

strategic through traffic from the High Street, but did not directly deal with the demand for east-west through movement on what is now the A52.

More recently, Sankt Augustin Way was constructed to provide a very localised relief route for the High Street. Its route was planned to extend to London Road via Station Road, but this has yet to be delivered. Although urban relief roads commonly create an environment that's detrimental to other aspects of a town's life, and although it has very little active frontage and is very much a road rather than a street, Sankt Augustin Way's location hard up against the East Coast Main Line means that it creates no more severance in that part of town than previously existed.



Grantham 1885-1903

The suburban expansion of Grantham has occurred to date as a series of relatively distinct pockets of development with limited links to the rest of the town and often with cul-de-sac layouts.

This form of development works against making public transport, walking and cycling attractive as modes of choice, even for local movements, and it is essential that the GUDF, including this Movement Strategy, helps ensure that the mistakes of the past are not repeated with the development of the future.



Grantham 2010

Although demand for residential housing is still high, a variety of studies have noted how Grantham is suffering from economic competition from other centres due to deficiencies in its retail offer, office space, and night time economy (Grantham Town Centre Master Plan, Gillespies (2007). As a Growth Point, the South Kesteven District Council (SKDC) and its partners are in a position to combat these problems, and are set to benefit from national funding for new social, community and physical infrastructure to support new retailing and leisure opportunities, new office accommodation and a planned 47% growth in resident population to approximately 60,000 by 2026. Various studies have been or are being undertaken to determine the shape and form of development in or adjoining the town centre, and two 'mixed use urban extensions' are in various stages of the planning process on the northern and southern extremities of the town.

The challenge for Grantham is to provide an Urban Design Framework – underpinned by a Movement Strategy – within which development proposals can come forward in an integrated and mutually supportive manner over time, leading to the achievement of a more compact and connected town form and, consequently, more sustainable patterns of trip making.

Encouraging a higher share of trip making by non-car modes and greater levels of trip containment within the town will, in conjunction with provision of improved transport networks and other demand management measures, be best achieved by dealing with the root cause of the historic problem: the poor relationship of land use and transport.

Accordingly, the Movement Strategy begins by promoting and enabling optimal spatial arrangements of the proposed urban extensions so as to maximise the delivery of truly sustainable patterns of movement. In this context, all transport

and highway infrastructure needed by the town in the future should be required to work much harder than just for example providing congestion relief. It should, by its location, design and juxtaposition, be specifically encouraging of walking, cycling and public transport, as well as of active land uses and 'place-making'.

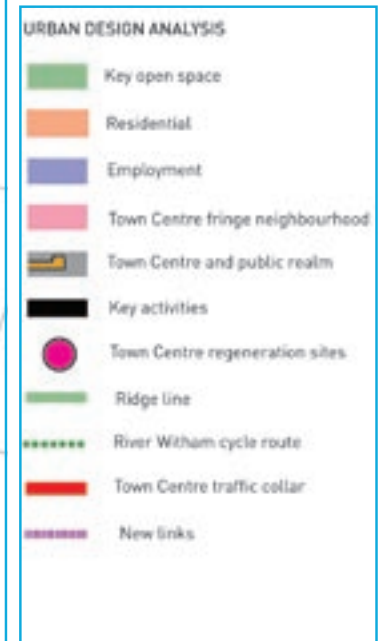
The Strategy will therefore contribute to wider benefits than those related just to transport including:

- Fostering improved social and economic interaction in Grantham's streets and spaces;
- Retaining and attracting talent and skilled employees through improved access and quality of life opportunities locally;
- Encouraging more active and healthier lifestyles; and
- Supporting the sustainable growth of the town generally.

Some of key contextual aspects of Grantham are shown on the plan opposite.



- Annotations:
1. The town centre core and key public realm
 2. Historic Victorian and Edwardian neighbourhoods
 3. Severence created by the town centre 'traffic collar'
 4. Key town centre regeneration sites and the potential to improve connectivity and linkages
 5. New [and existing] areas of employment
 6. Proposed residential led urban extensions to the town
 7. The River Witham and the green corridor linking Belton Park through to the south
 8. The East Coast Main Line and the rail line to Nottingham



Context

TOWN CENTRE REGENERATION AND URBAN EXTENSION PROPOSALS

The plan to the right shows the sites identified for regeneration and new growth across the built up area of Grantham. These sites have been identified prior to this study through a series of studies, a visioning workshop and in close consultation with a variety of public and private stakeholders. Understanding the Movement related implications of development of the type proposed in each location is integral to this Strategy. The table below summarises the development proposals for each area.

The Core Strategy focuses on maintaining Grantham's role as the primary retail and service centre for South Kesteven and as a sub-regional centre. Regeneration of key areas in the town centre is to be the focus of council activity and investment to reinforce and enhance the viability of the town including an expanded retail offer, office provision, more housing, and improved transport facilities and services.

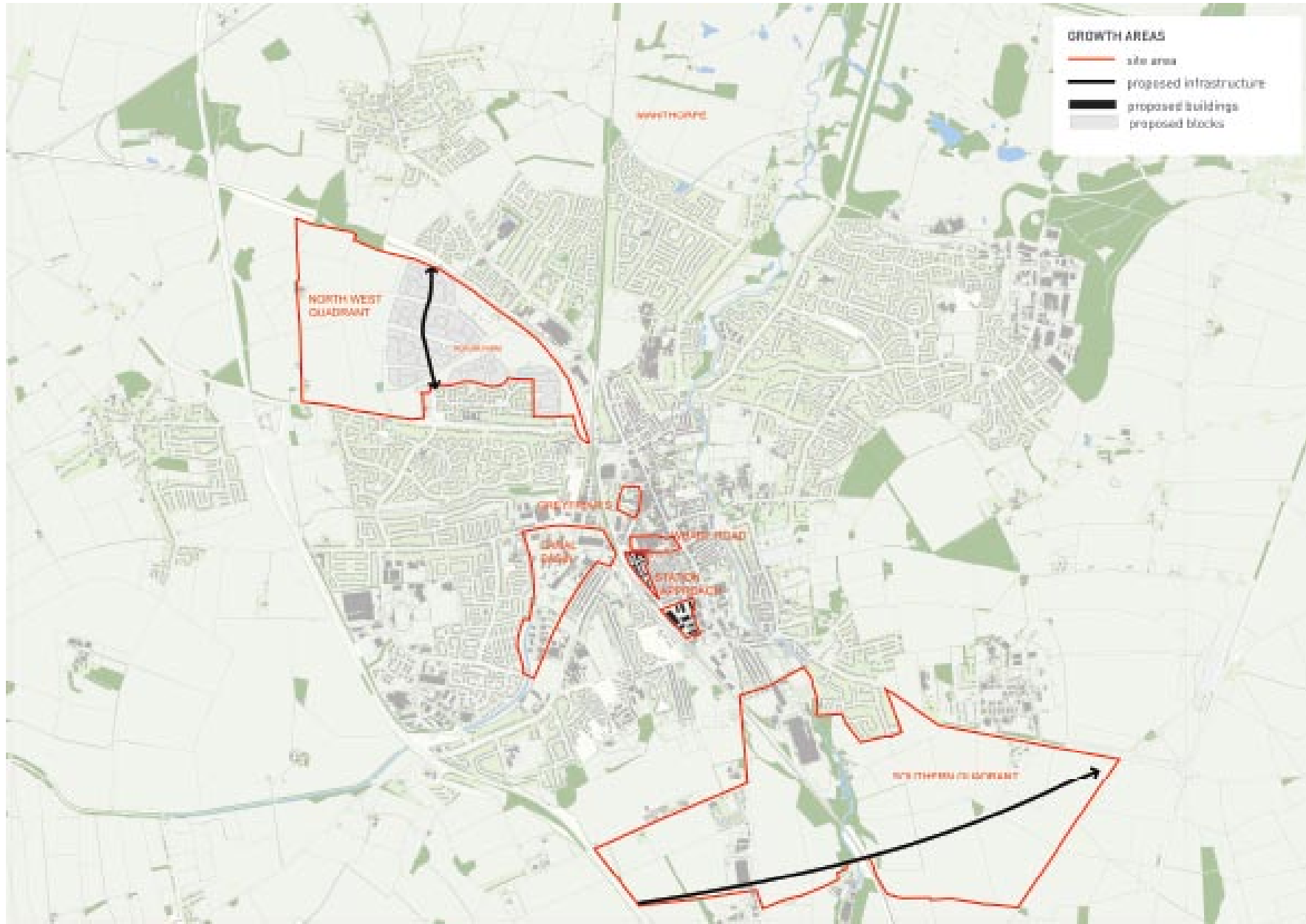
Importantly the Core Strategy aims to deliver a total of 13,600 new homes in South Kesteven between 2006 and 2026, and Grantham is expected to deliver 7680 new homes within this period. As all the allocation cannot be met within the existing built up area, two strategic locations have identified to meet this growth in the form of Sustainable Urban Extensions.

The Northwest Quadrant is proposed accommodate up to 3500 new dwellings, whilst the Southern Quadrant is to accommodate up to 4000. A masterplan will be developed for each Urban Extension and is to be progressed as a Supplementary Planning Document.

Each urban extension is expected to deliver new community infrastructure, including local retail and service facilities. The Core Strategy identifies the need for a new primary school on the Poplar Farm site, and two new primary schools and a new secondary school in the Southern Quadrant. The PCT have also identified the need for a 2 GP practice to serve the Northwest Quadrant and a 4-6 GP practice to serve the Southern Quadrant. Further requirements for sewage treatment and water resources are highlighted.

	Employment (m2)		Entertainment		Schools	Residential		Hotel	Public parking
	B1	B2	Retail	Cinema		50dw/hect	30dw/hect		
Northwest quadrant			Local centre		1 primary	875	2625		
Greyfriars (option 2)			2970	2430			53		
Wharf Road (option 1)			5500						
Station Approach North	12800		1200			62		117	
Station Approach South	2900	5200				46			760
Canal Basin			4000			126	882		
Southern Quadrant			Local centre		2 primary 1 secondary	1000	3000		
	15700	5200	-	2430		2109	6560	117	760

Summary of growth point development proposals by site.



Growth areas

TRANSPORT CHALLENGES

TRAFFIC AND PARKING

Whereas traffic congestion in other market towns is often more perception than reality, due to delays experienced in short commuter peaks, Grantham does experience significant congestion over the course of the day. Nowhere is this issue more prevalent than on the town centre traffic collar of Wharf Road, Sankt Augustin Way, Barrowby Road/ Broad Street. This is the main pinch point on the network resulting from the convergence of radial roads and closely spaced junctions caused by physical constraints of the River Witham and the ECML.

This issue is compounded by the fact that Grantham is located on the main freight route between the A1 Trunk Road and distribution centres and rural areas to the east. Due to a lack of alternative routes, heavy goods vehicles (HGVs) are forced to use town centre streets, particularly Wharf Road and the High Street. In addition, the ECML is constructed on a Victorian brick embankment with insufficient clearances for HGVs forcing them to use the centre of the carriageway to negotiate the arches.

As a growth point, new homes, employment and local facilities in Grantham will exacerbate

congestion unless issues with the street network and freight routing are addressed.

Parking is also a key issue for the town to deal with. On-street parking is saturated throughout the town on both weekdays and weekends. Private off-street car parks such as those associated with the Morrisons and Asda supermarkets are also well utilised. Public off-street car parking sites, such as those in Watergate, are prime development sites. The Welham Street multi-story car park is not well used due to either a perception that it is too far from the heart of the town, or that people are unaware that the facility exists. While this facility needs to be better utilised it is clear that new development will generate the need for new town centre car parking, as well as needing to be self sufficient in terms of private parking.



Grantham Railway Station

PUBLIC TRANSPORT

Grantham enjoys excellent rail access to an array of national destinations via the ECML, as well as regional services. The station is well established with a small ticket hall, step free access and good station facilities and retailing. High utilisation of the car park adjacent the station is a clear indication of the fact that people do commute by rail to other destinations outside of Lincolnshire, notwithstanding the fact that the new rail station car park located on Station Road East current stands largely empty.

A new network of local bus services has recently been delivered along with new bus shelter facilities, markedly improving access by bus for local journeys. The new Interconnect 1 service to Lincoln has also raised the profile of this important route.

Despite this, bus services still struggle to meet timetables due to town centre congestion, and consequentially fail to capture a greater market share. Although the bus station is located in the most accessible location in the town, it is currently an eyesore and an unwelcoming gateway to Grantham.

New growth and development across the town can – if designed correctly – provide the catchment, connections and funding necessary to deliver a step change in the service offered by the local and inter-urban bus network. Improving quality will be critical in encouraging people to use bus services.

CYCLING

Approximately 30% of people who live in Grantham travel less than two kilometres to work. Yet cycling is an under-performing mode only, accounting for 5% of all journeys to work. Despite this, Grantham has a well established cycle network. Facilities along heavily trafficked radial routes are generally of good quality with some shared or segregated cycleway/footways running along one side of streets, like Gonerby Road and North Parade, Barrowby Road, Harlaxton Road and Belton Road.

A possible reason for a low cycling mode share is that facilities on radial routes do not have priority across side streets, and a lack of continuation of facilities through the town centre collar junctions into the town centre proper.

It is critical that new, high quality linkages are provided to the extension areas, as these are generally located in more hilly locations. The River Witham corridor, in particular, could provide an excellent walking and cycling link between the town centre and the Southern Quadrant.



A cycleway footway on North Parade

WALKING AND PUBLIC REALM

Walking is generally provided for by way of Grantham's footpath network, and off road paths through open spaces and along the River. Traffic congestion is however, a deterrent to walking the closer you are to the town centre. Critical entry points from the west are constrained due to the low bridges and lack of appropriate crossing facilities. Some of the towns most important streets, like the High Street, Westgate and Market Place are due for improvement addressing footway capacity issues, ailing public realm, and the need for improved crossing facilities; and Lincolnshire County Council is in the process of rolling out improvements in the short term to address some of the more pressing issues here.



Walking facilities through open spaces

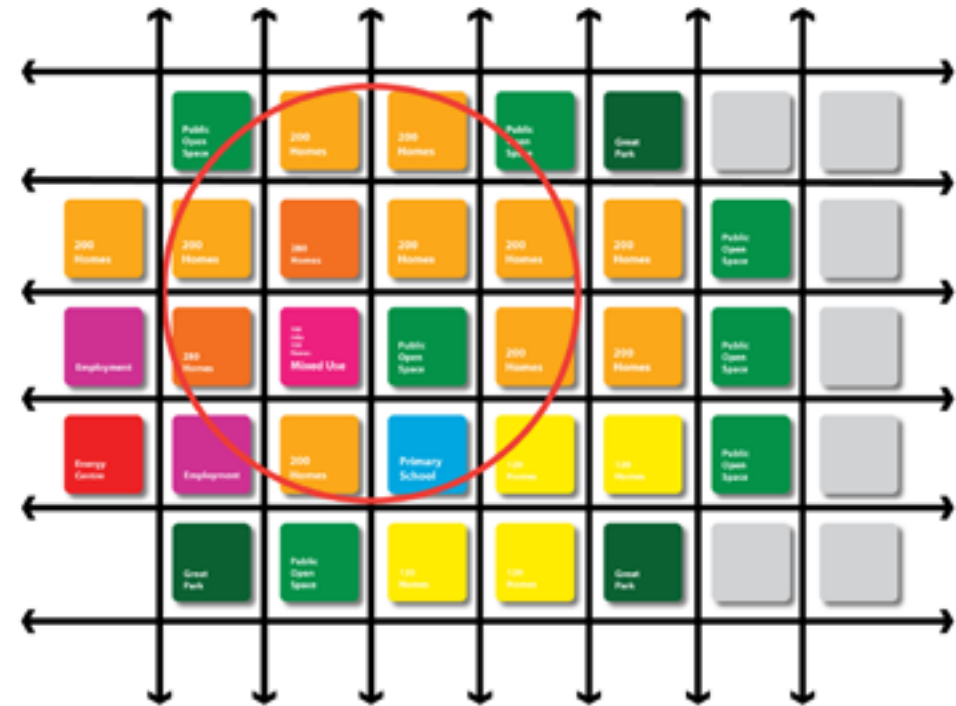
03 DESIGN APPROACH

DESIGN PRINCIPLES

LOCATION AND LAND USE DIVERSITY

A diverse mix of land uses is vital to a successful neighbourhood. At the highest level, matching population and employment levels can generate patterns of local living and working. In addition, matching growth with local amenities, retail goods, community facilities and recreational/leisure facilities all within a 10 minute walk will increase people's propensity to use these facilities, and maximise opportunities for social and economic exchange. As well as improving mode share and reducing travel distance, a diverse mix of well-positioned land uses can ultimately create a sense of community cohesion and civic pride. The more compact the area is, the greater the opportunity to support other uses such as new schools, healthcare and leisure activities with further benefits of travel containment ensuing.

Shaping Neighbourhoods: A Guide for Health, Sustainability and Vitality (UWE, 2002) provides us with guidance on the diversity of land use possible with differing levels of population growth. From this resource, a community of 3000 households or 6500 persons will generate the demand for a local centre and demonstrates how a compact neighbourhood can be created if average densities of 50 dw/hectare (gross) are delivered.



An illustrative tile-based representation of density and mix of a new compact neighbourhood

HARD WIRING PUBLIC TRANSPORT – COMPACTNESS

The relationship between density and public transport mode share in practice is clear. The greater the population within a walkable catchment of public transport services, the greater the uptake of movement by this mode. It is therefore critical that bus routes and facilities are able to penetrate new development areas and that these areas are as compact as possible. This will offer the best opportunity for increasing demand, and therefore both increasing viability and quality of the service provided.

The image opposite illustrates the principles of hardwiring better public transport accessibility. It is not just about the delivery of one centre, which can only do so much in terms of generating public transport demand, but it is about enabling a series of centres - either existing or new - to deliver a more efficient and higher quality public transport system. Two compact centres of 3000 dwellings can start to generate an uplift in service provision, over and above that possible with standard lower density 'volume house builder' development models. New and improved public transport services will also greatly benefit existing communities and centres.



An illustrative representation of how a linked series of compact neighbourhoods can deliver high quality bus services

URBAN MOVEMENT GRID - CONNECTIVITY

Traditional hierarchical networks have been proven to create problems for movement by all modes: cars all converge on busy collector and distributor roads; buses are unable to take direct routes; and cycling and walking is generally circuitous and illegible. Towns and cities should be served by well-considered hierarchies of streets, each of which serves multiple functions of movement and place. Urban Initiatives experience from a raft of masterplanning projects has led to the development of a number of principles for structuring urban grids to maximise transport outcomes:

- Route directness – making an efficient network for all modes, created through connected and permeable grids of appropriate size to suit each mode.
- Modal continuity – allowing travel by any mode, on a continuous network for fast and slow modes, allowing varying degrees of prioritisation
- Sharing space – bringing movement and place functions together in an inclusive and balanced approach to contemporary street design.

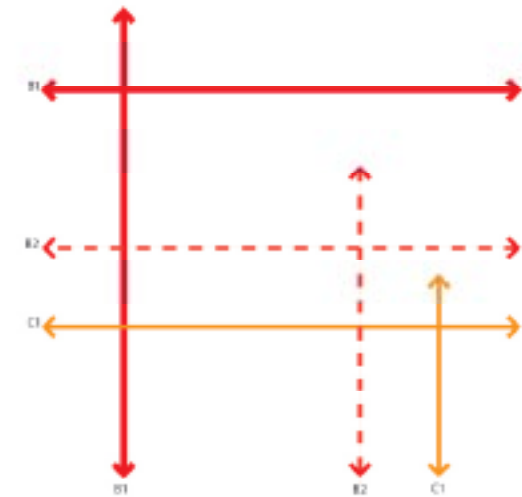
The graphic opposite shows how the urban movement grid layers are considered in a multi-layered manner in terms of the land use they are intended to service.

Public transport spines need to penetrate through the heart of the area where there is the highest level of compactness to maximise service viability. Nodal bus hubs anchor main streets and link directly and efficiently back into the existing town. The primary cycle network is spaced on a 400m grid. A secondary network of feeder routes may also be added if

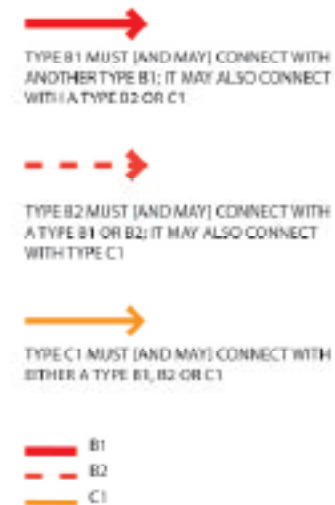
necessary. The primary pedestrian network should extend to and include every street in the growth area.

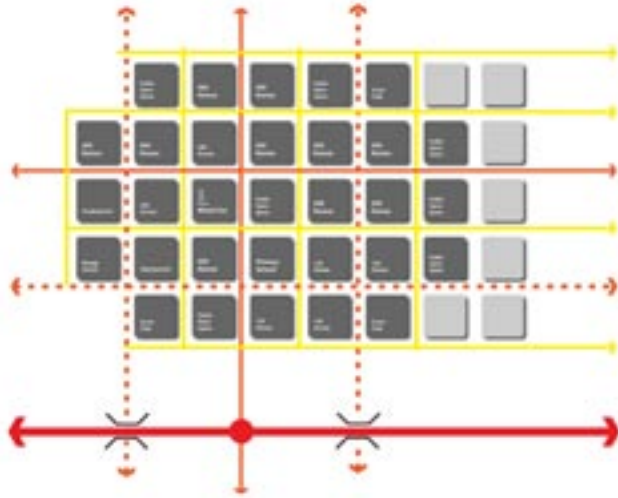
A key principle of the multi layered approach is to ensure modal continuity where each modal network continues through the network. Intersections and crossing of larger streets become a key issue and this has helped determine grid spacing.

The street network illustrates the 'C' routes in yellow that are typically designed to provide for walking, cycle feeder routes and slow moving traffic. Orange B 'routes' are generally of moderate volume and speed and balance all movement types including a main public transport function and traffic spine. Where traffic function dominates, such as busy 'A' routes' with a high HGV volume, then largely single purpose links may be preferable. Where context determines that moderate trafficked A 'routes' act as main streets, then 'Sharing Space' principles (outlined opposite) need to be employed to create an equitable arrangement of road space, land use and environmental protection.

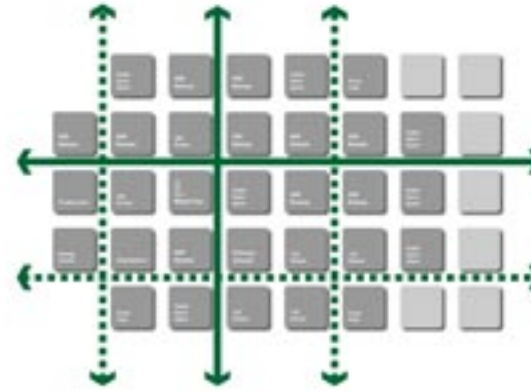


The principle of modal continuity

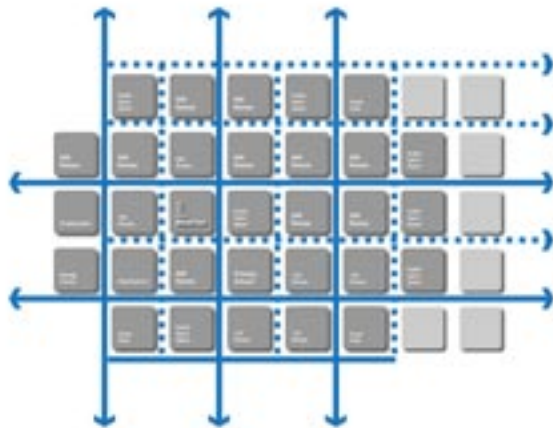




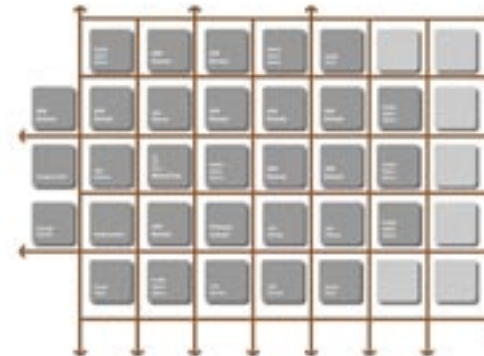
Street network layout principles



Public transport network layout principles



Cycling network layout principles



Pedestrian network layout principles

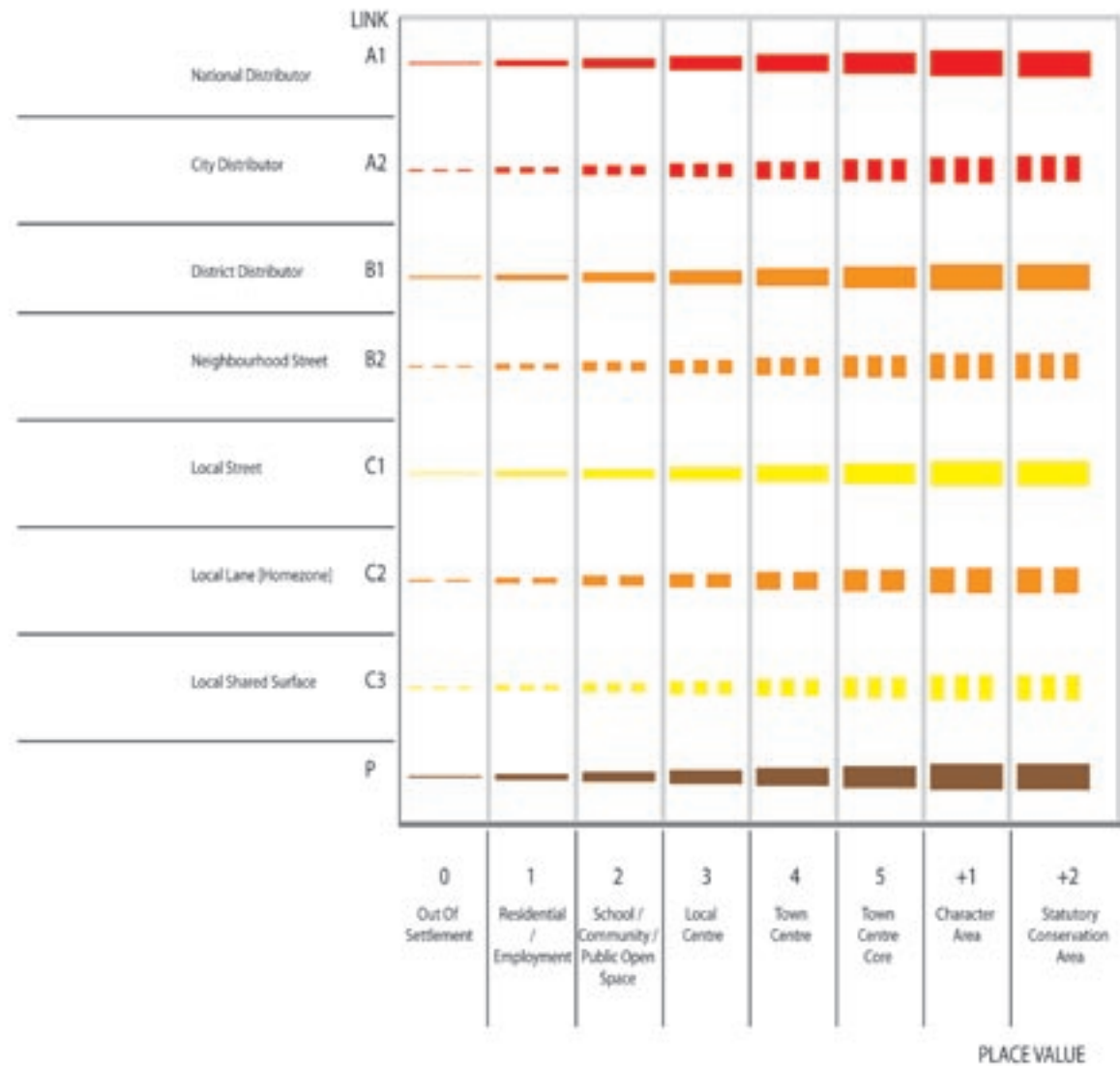
BALANCING LINK AND PLACE

We believe that street planning should bring together link (movement) and place (land use context) functions. This way the competing, complex demands for all types of movement, land use and context are considered and given due regard. The resulting street design is ultimately more fit for purpose and serves a multiplicity of movement needs as opposed to just traffic.

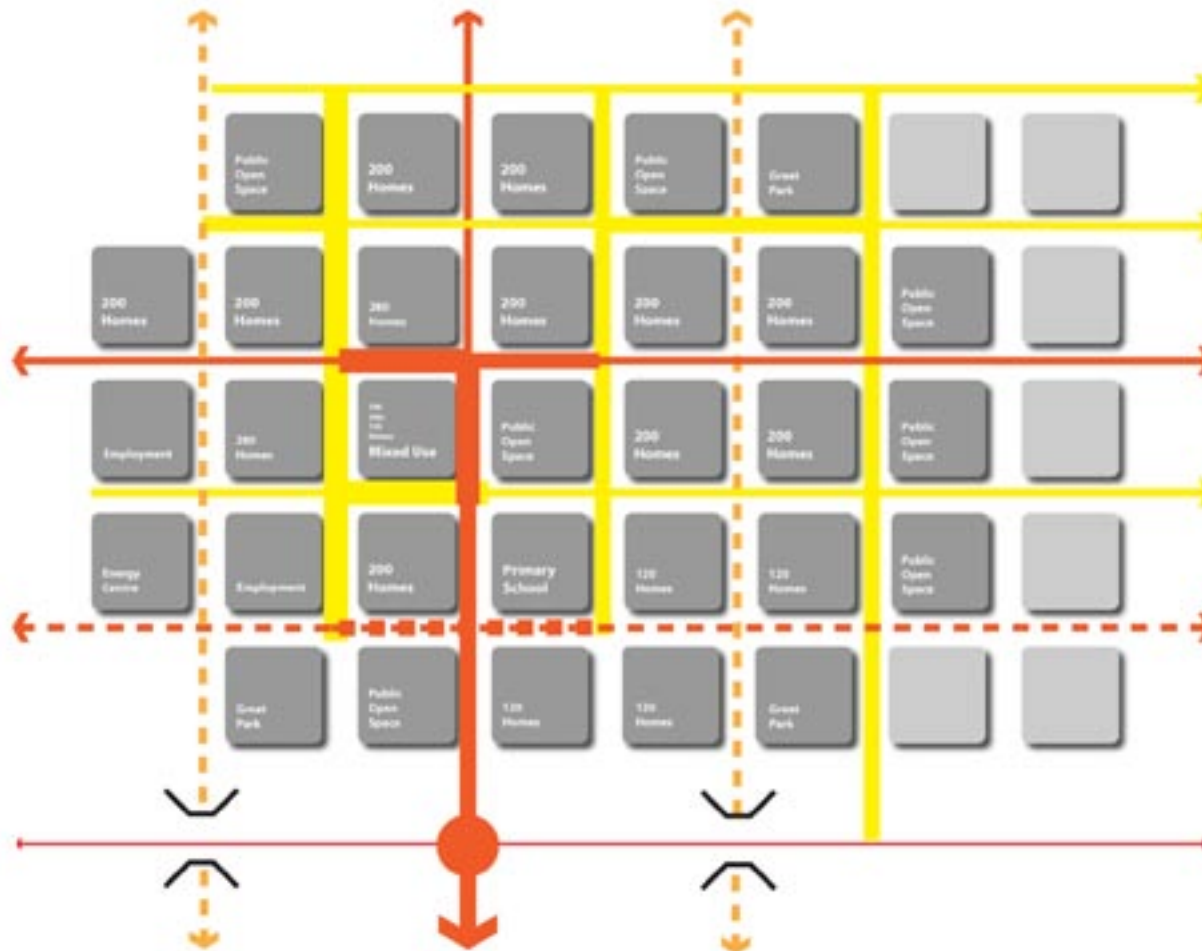
For each street segment there will be a range of differing movement demands, as well as an array of place demands. These different demands are illustrated in the Link and Place Matrix and the illustrative representation of how streets can be categorised in terms of their link and place status.

These demands may be reconciled with sufficient width, or design decisions will need to be made so as to balance these interests. It is critical that the process of movement and place demand resolution is one fundamentally grounded in 'enquiry by design' rather than multi-criteria analysis. A circular process of design and testing, coupled with active engagement from a range of design professionals and stakeholders, can ensure that design decisions are transparent, accountable, and represent the best possible balance between movement and place.

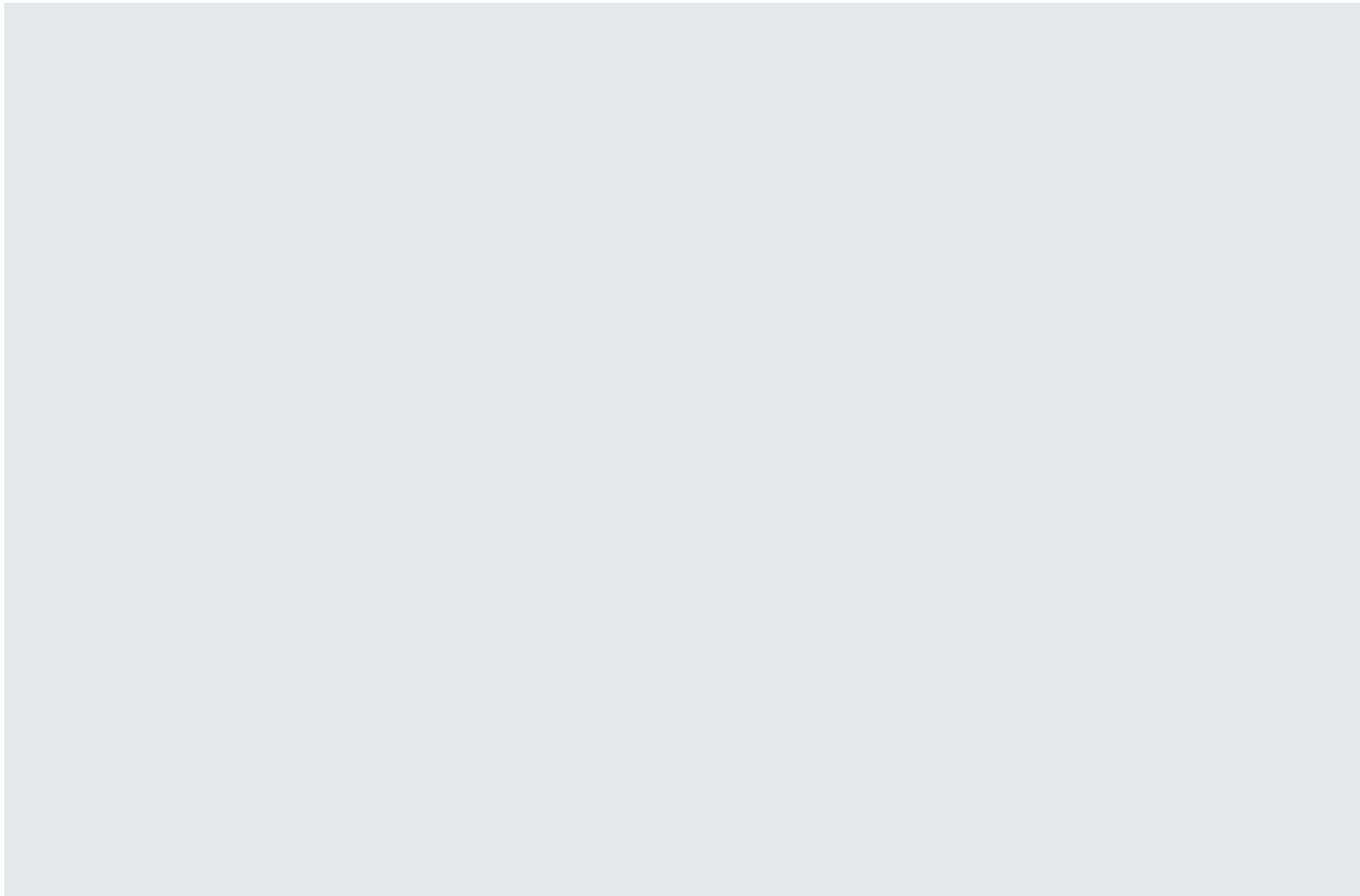
This principle is critical to this project in that it forms the basis of our approach to developing the area sub-strategies presented in section five of this report.



The Link and Place Matrix



An illustrative representation how for every street and street segment it is important to consider the existing and future place context, as at the same time as considered the varied needs of the four modes of car, bus, walking and cycling.



04 TOWNWIDE MOVEMENT STRATEGIES

OVERALL STRATEGY

Based on the design principles outlined above, the town wide Movement Strategy first focuses on getting the location, mix and form of development right before determining the best transport solutions for the town. Sub-strategies are then proposed for each mode of transport that flesh out details of the overall strategy.

The town-wide Movement Strategy aims to:

- Deliver an appropriate mix of uses within developments to maximise people's propensity to walk and cycle when accessing local goods and services.
- Pursue more compact forms of development (with densities ranging from 35 - 60 dwelling units per hectare gross) to support more viable public transport.
- Place local centres on strategic movement corridors to provide high levels of access by all modes and to enable retail premises to capture pass-by trade.
- Integrate the River Witham and other green features/corridors into new development where possible, to act as high quality walking, cycling and recreational corridors, as well as to deliver upon other environmental imperatives.
- Ensure that the street network is designed to hardwire in public transport services on appropriately located and designed spine streets with highly legible and walkable bus hubs located in town centres and other areas of activity, such as schools or community facilities.
- Provide a connected network of streets that disperse movement loads and promote walking and cycling.
- Invest in junction improvements for all modes of transport to enable growth to occur, at the same time as resolving local movement and place related issues.
- Reduce the severance effect of the town centre collar for slow modes of walking and cycling in balance with the need to retain its critical traffic function.



Town wide Movement Strategy

GENERAL TRAFFIC

The strategy for the traffic network is to provide missing links in the street network through new development, with the joint purpose of providing a measure of congestion relief to town centre streets, providing for the needs of development, and encouraging multi-functional environments.

Key components of the general traffic strategy are:

- The A1 will continue to function as the primary traffic and freight route by-passing the town;
- The proposed southern relief road will provide congestion relief for town centre streets by removing unnecessary through traffic from streets like Wharf Road and the A52.
- The southern relief road should be pursued in its entirety linking the A1 Trunk Road with the A52. This will deliver a measure of relief to town centre streets, and critically remove the need for freight to use town centre streets when moving east. It is likely that this will require financial assistance if it is to be delivered in advance of development in the southern quadrant.
- In the event that the full southern relief road is not able to be forward funded, then it should be delivered as a series of phases offering town centre relief as development comes forward over time, with the first phase including a bridge over the Witham and a new north-south link to the A52. The second phase will extend the relief road from the new bridge to the High Dyke Roundabout.
- Town centre streets will be reprioritised around the needs of destination and local traffic rather than through traffic, with the latter encouraged by traffic management measures to make more use of the town centre collar.
- Radial routes will continue to perform an important traffic function.
- Junction improvements for all modes of transport will be required at key network pinch points to enable town wide growth to occur, in particular the Gainsborough Corner Junction and the ASDA Roundabout.



The Victorian rail embankment limits east west connections in Grantham



Congestion seems ever present at the ASDA roundabout to the north of the town centre



Traffic network strategy

FREIGHT NETWORK

Grantham's position in the region is a major contributor to the fact that its town centre streets are suffering under the burden of high volumes of heavy goods vehicles throughout the day. Removing as much freight as possible from town centre streets is critical. This can be achieved through the provision of the southern relief road, and through management measures such as freight bans, and will improve the quality of town centre streets and spaces, as well as providing settings more conducive to higher quality development. Grantham will, however, always have a requirement to provide for freight traffic given the quantum of warehousing and distribution uses around the town.

The plans opposite give an illustrative picture of freight routes across the town. By 'freight intensity' the plan refers to the number of freight route options that use a particular street to and from the A1 trunk road.

Without recourse to actual data on freight movements, the plans try and give an illustrative representation of the impact of the southern relief road on town centre streets.

The key components of the freight strategy are as follows:

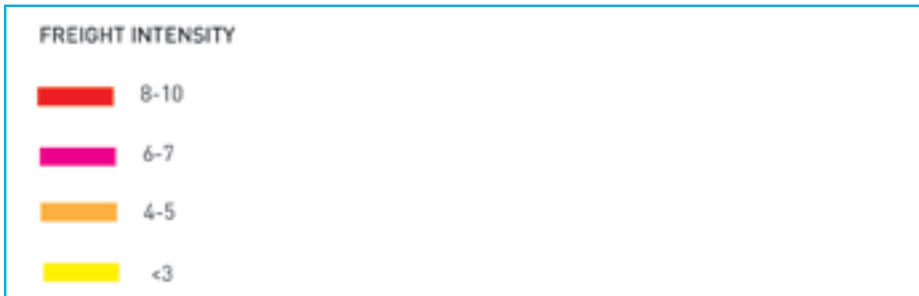
- Freight traffic is currently forced to make use of the town centre traffic collar for most journeys to and through the town as shown on the first plan opposite.
- The southern relief road offers the opportunity to remove freight traffic not destined for Grantham from town centre streets
- Post completion of a relief road (either in full or in part) there is the potential to ban freight vehicles from certain town centre core streets such as the High Street, in favour of use of the town centre traffic collar.
- Freight network planning for the wider South Kesteven District could also reroute freight from Lincoln to the A52 via Honnington and Ancaster through HGV restrictions and signage, in preference to travelling through Grantham. This will reduce future freight use of Manthorpe Road.
- Data on freight movement needs to be obtained to further assess the actual percentage town centre relief likely to be afforded by the southern relief road.



High levels of freight currently use Wharf Road



Low bridges mean that freight has to use the centre of the carriageway to get under them.



Illustrative representation of the number of freight routes from the A1 using existing streets.



Illustrative representation of the impact of the Southern Relief Road on freight movement

BUS TRANSPORT NETWORK

New growth across the town will be required to deliver a step change in public transport options to, from and within the town. These will include improved service frequency, reliability and efficiency, as well as higher quality facilities, information and amenities for bus users.

The key components of the bus strategy are:

- Continue to deliver existing programme to improve bus stop facilities on radial routes over time
- Deliver 'prime' bus stops in key locations of significant activity such as town centres, community facilities schools, and employment sites. These will include higher order bus shelters, signage, information and public realm.
- New development in the urban extensions needs to hardwire in public transport routes and facilities from the outset through appropriately located and designed streets with prime bus stops.
- All major development should contribute monies to pump prime new bus services in the town.
- A new, high-frequency bus service should run in a two way cross town loop between the Northwest and Southern Quadrants via the town centre, as illustrated on the plan opposite.
- As an alternative, new bus services can run in two parts – a southern loop and a northern loop – so as to avoid cross town congestion (This is discussed in more detail in section five).
- In order to continue to improve bus mode share and raise the profile of the town's bus system, improvements are required to the bus station.

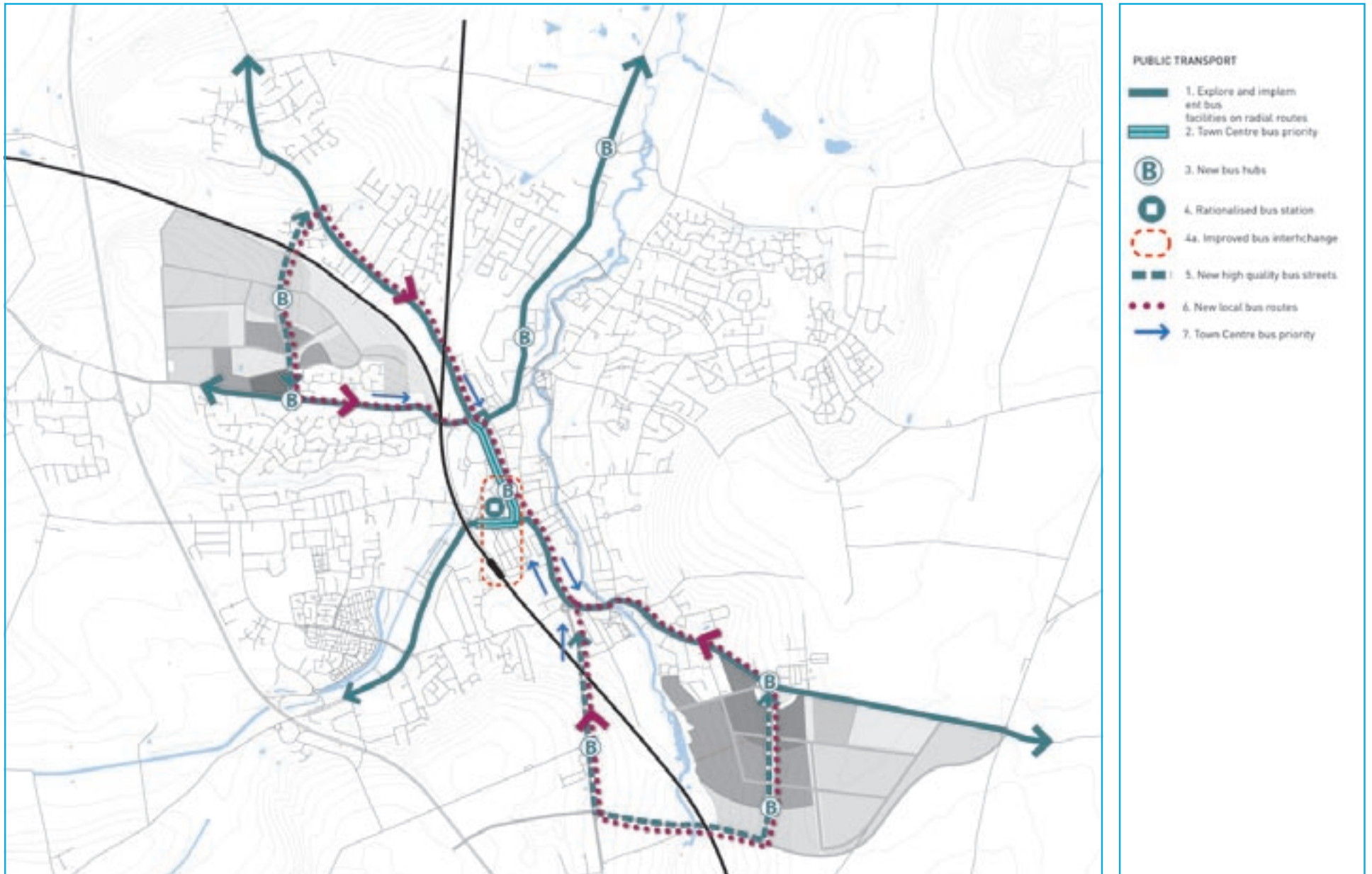
- The current number of stands and layover spaces in the bus station is excessive. The Wharf Road site within which the bus station sits is also a prime development site and there is an opportunity to tie in and fund improvements with wider redevelopment.
- An analysis of inter-urban and local bus services has indicated that 10 bus bays are required in a DIRO (Drive In Reverse Out) bus station arrangement, with stops for all local bus services shifted to the High Street where layover space is not critical (Design options for the station and Wharf Road site are presented in section five).
- The local bus service 'hub' on St Peters Hill to include two bus boarder stops in each direction, connected together by a pedestrian crossing facility. This could either be a signalised crossing facility that can operate in the shadow of the all red pedestrian phase at the High Street and Wharf Road junction, or an informal crossing refuge in the case that the above cannot be made to work in terms of capacity (The design solution is presented in section five).
- A bus hub is also proposed at the railway station in conjunction with the Station Approach redevelopment proposals. Buses will be able to divert from London Road along Station Road East to access the station, then route to the town centre bus station via Wharf Road.



Further improvements to local services can be pump primed by new developments



The bus station can be rationalised into a high quality facility for users



Bus network strategy

CYCLING NETWORK

Given that 60% of journeys to work into the town are 2km or under, there is a huge potential for Grantham to become a 'Cycling Town'. The River Witham is an excellent north-south cycling corridor that can be expanded to include the canal to the west of the town as redevelopment of the Canal Basin comes forward. A strong segregated cycleway network on a number of important radial routes can also be extended to improve links into the town centre through improved crossings of the traffic collar, and also into the new urban extensions to the north and south. All cycle improvements proposed will include improvements to the towns walking facilities. Improvements to the towns walking network are covered in chapter five.

The key components for the cycling strategy, which builds on the work undertaken previously by Lincolnshire County and Jacobs are:

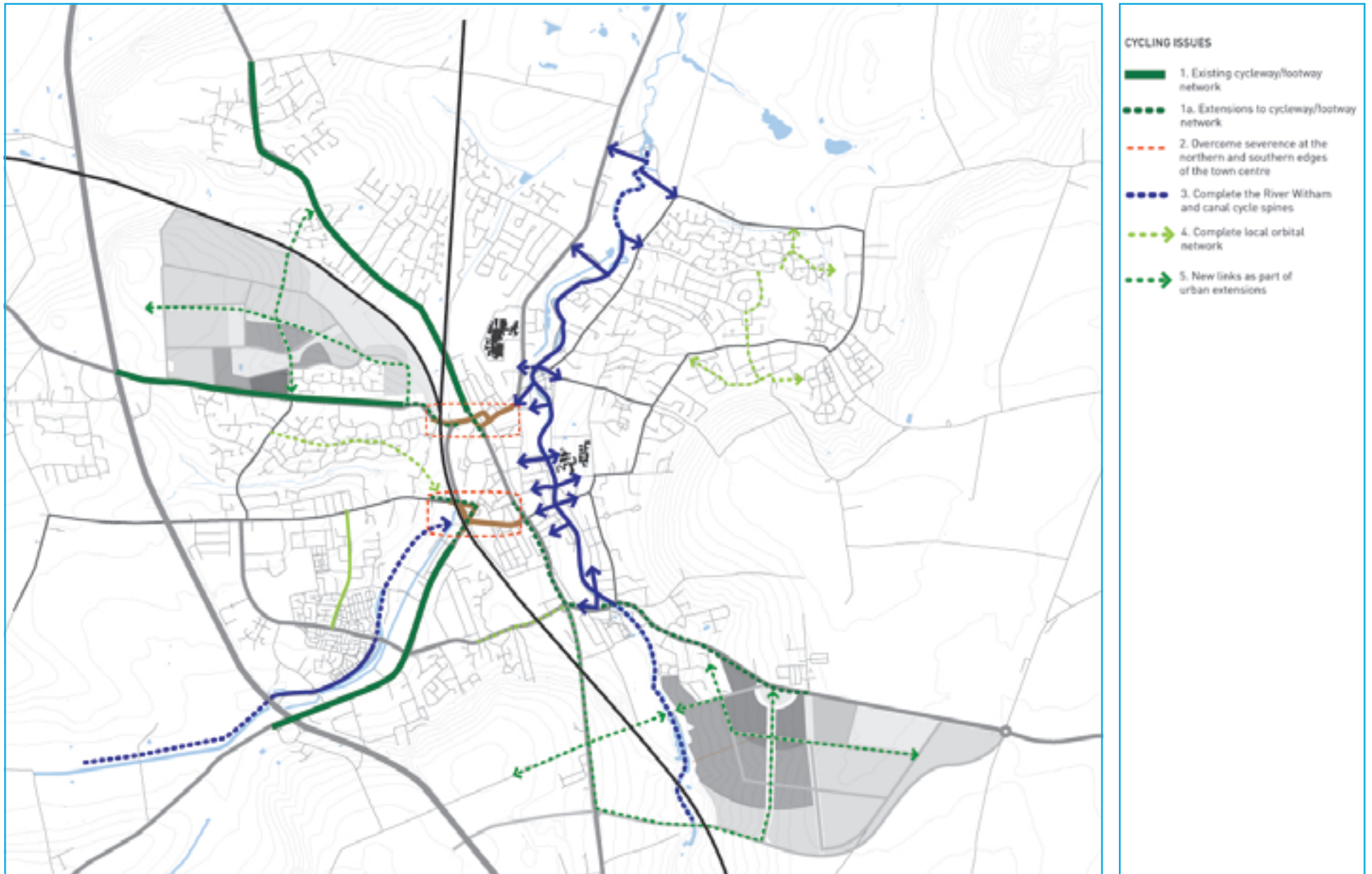
- A focus on north south cycle movement via the River Witham, with extensions to this high quality facility into the Southern Quadrant and in the long term to the canal network running parallel to Harlaxton Road via town centre streets.
- Granthams good cycleway/footway network on radial routes should be improved by providing a higher level of priority across side streets and property accesses, as well as expanded across the town centre traffic collar and under the rail bridges.
- Improvements can and should encompass raised tables and/or cycle lanes across side streets; extended cycleway/footway facilities and toucan crossings; cycle lanes in the carriageway and advance stop lines.
- The local orbital network should also be extended by less segregated means such as signage, cycle symbols and traffic calming to manage the speed and behaviour of vehicles
- New high quality cycle facilities and routes need to be hardwired into new urban extensions. Busy new streets such as Pennine Way and the southern relief road should have formal segregated facilities provided, as well as a slower, quieter network of local connections, (to be determined through the master planning process).
- It is of vital importance that segregated cycle and pedestrian facilities are provided on the southern relief road bridge structure across the River Witham and the ECML to connect proposed employment and residential areas in the Southern Quadrant.



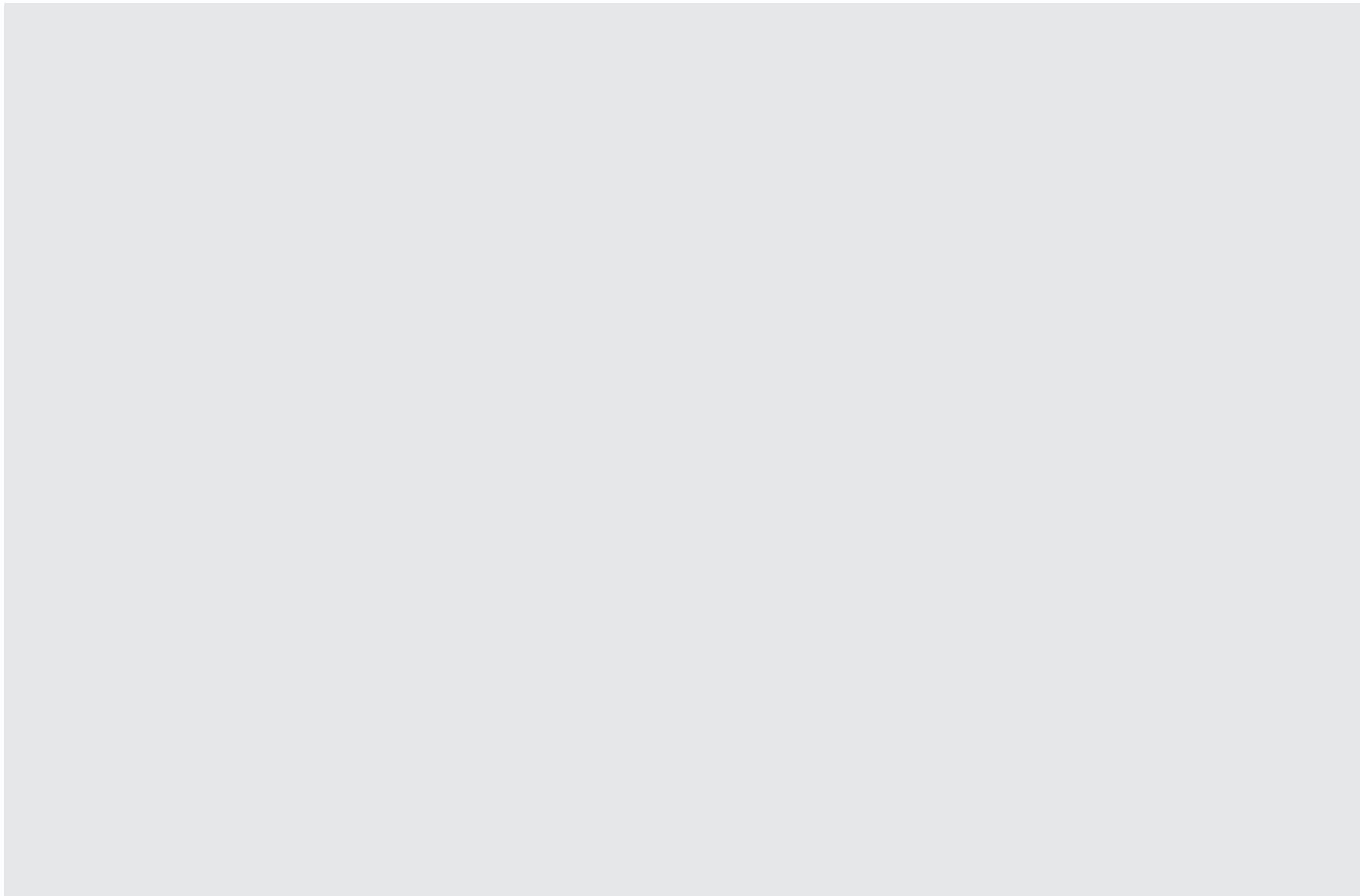
Continued expansion of the towns radial network is needed



The River Witham cycle path should form the backbone for the towns cycle network



Cycling network strategy



05 AREA STRATEGIES

NORTHERN IMPROVEMENTS

The key improvements for the northern area are as follows:

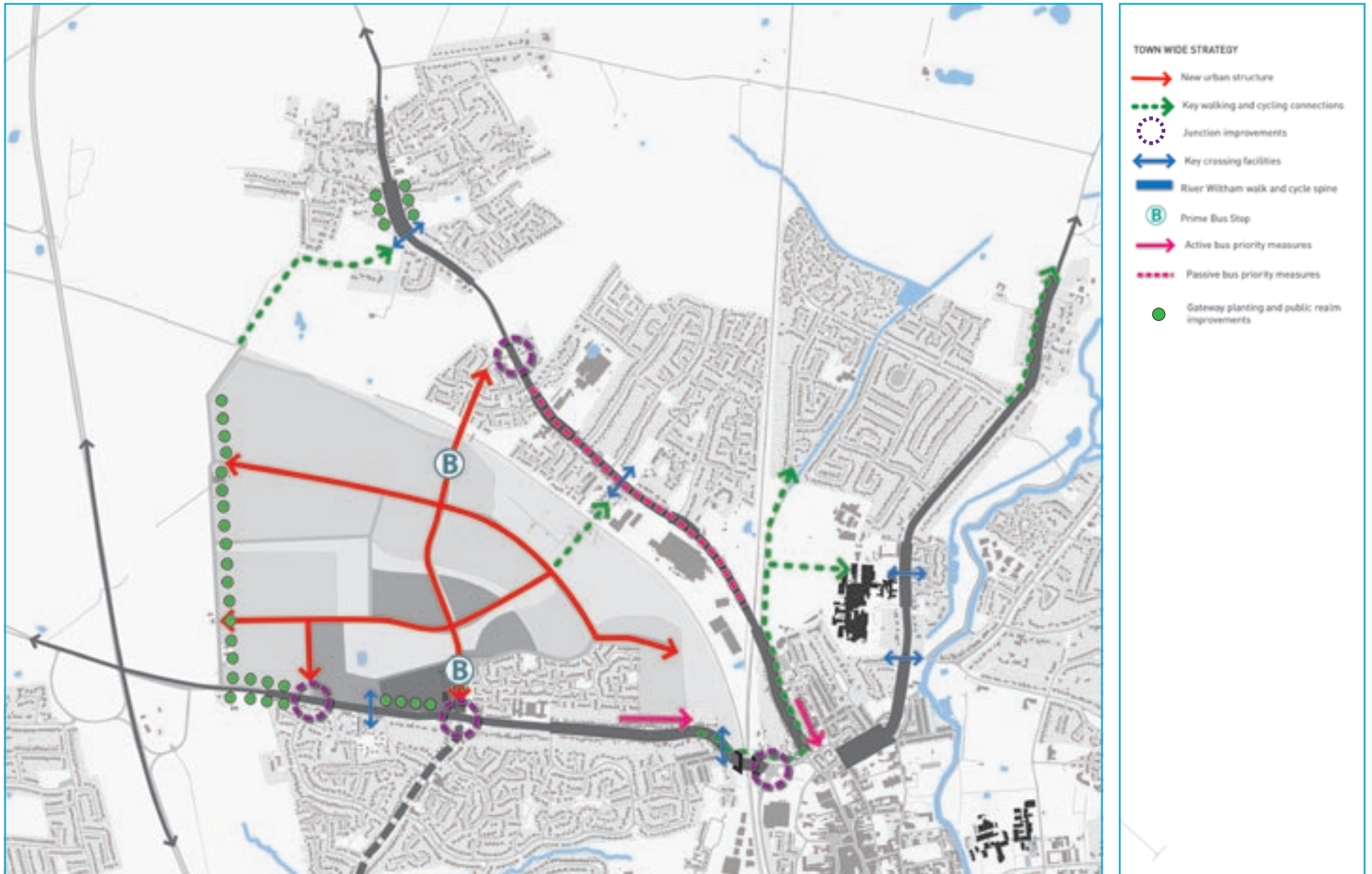
- Deliver Pennine Way as a new spine road through the urban extension with new/improved junctions at either end.
- Deliver a new network of connected and permeable streets throughout the urban extension.
- Provide new 'prime' bus stops on Pennine Way in the heart of the local centre and to the north.
- Provide new walking connections from the urban extension to Great Gonerby and to Gonerby Road.
- At the eastern end of Barrowby Road deliver improvements to pedestrian crossing facilities, extend the cycleway footway network closer to the ECML rail bridge, and investigate the possibility of delivering a bus gate should width and capacity permit.
- To mitigate the impact of the urban extension improvements will be required to the Asda Roundabout for all modes of transport.
- Deliver gateway public realm improvements along the new urban edge of the extension, and on Barrowby Road, in particular as it passes by the new local centre.
- Deliver village centre public realm improvements in Great Gonerby
- Investigate bus priority improvements on Gonerby Road as it approaches the ECML bridge.



An example of a mews street in Greenwich Millennium Village London.



Upton, Northampton illustrates how a SUDS network can be integrated into the street pattern, as is proposed for the Poplar Farm development.



Summary of transport improvements for northern area

SOUTHERN IMPROVEMENTS

The key improvements for the southern area are as follows:

- Prioritise and forward fund the delivery of the southern relief road in its entirety so as to deliver town centre traffic and freight relief, as well as unlock development in the southern quadrant.
- Positive development frontage and 'green' urban edge should be provided along at grade sections of the relief road.
- Ensure that a development mainstreet links the southern relief road and the A52. In the event that forward funding is not possible then this could become the first phase of the southern relief road.
- Provide 'prime' bus stops along the new mainstreet at key points of activity such the new local centre or near schools.
- Deliver new walking and cycling connections to the River Witham and across the southern relief road bridge to proposed new employment areas.
- Investigate improvements to the Gainsborough Corner junction including the addition of new approach lanes for traffic and/or buses, improved walking and cycling facilities, and public realm treatments.
- Deliver public realm improvements on Bridge End Road.



High quality public spaces in Accordia, Cambridge.



Summary of transport improvements for southern area

TOWN CENTRE TRAFFIC NETWORK

The key strategies for the town centre traffic are to:

- Maintain traffic carrying capacity of the town centre traffic collar through junction improvements, most notably the ASDA Roundabout.
- Downgrade the High Street in favour of redirecting traffic around the town centre traffic collar and reprioritise the street around the needs of walking, cycling and public transport.
- To assist in this, remove the link from Westgate to the High Street through the Market Place and redirect traffic onto Union Street in the longer term.
- Implement a town centre core freight ban to all streets bar the town centre collar
- Deliver new local street connections from Wharf Road to London Road via Station Approach
- Deliver a new local street connection through Canal Basin in the longer term.



London Road, Southampton shows how the local street connection past the station can be designed as a vital mainstreet and pedestrian friendly environment despite providing for traffic.



An example from London Road, Southampton where traffic speeds have been reduced significantly through the use of raised tables.



Town centre traffic and parking strategy strategy

TOWN CENTRE PARKING

PUBLIC ON AND OFF STREET PARKING

The strategy for public off street parking in the town centre is to promote a number of consolidated car parks in peripheral locations that are easily accessible from the town centre traffic collar, and hence remove the need for vehicles to unnecessarily circulate through core streets. The focus will therefore be on the gradual phasing out of existing car parks in the town centre in favour of the town centre car parks, so as to ensure that they are well used. Walking connections between the peripheral car parking locations will be improved, facilitating a 'park and walk to shop' pattern of access to town centre activities.

The amount of overall public off street parking will need to increase to provide for demand generated by proposed retail, entertainment and residential development, at the same time as consider the need to manage travel demand to the town centre by car in favour of walking, cycling and public transport.

Smaller parking areas will gradually be phased out over time as new development occurs or public realm improvements are delivered. For example the Market Place improvements will involve the removal of 30 on street parking spaces, and the potential re development of the Watergate public car park will also remove 100 parking spaces from public use when this comes forward. Others may come forward over time. The town centre car parks will provide highly accessible and well signed alternatives to displaced parking areas. Town centre car parks will be priced so as to encourage short stay rather than long stay commuter parking.

The parking strategy for Grantham is presented in the plan opposite. The key strategies are to:

- Deliver a new 760 space multistory station car park to the south of the station to provide for park and ride access to the station and to meet parking demands generated by new development.

- Deliver an additional 200 town centre car parking spaces as part of the Wharf Road developments to meet parking demands generated by new retailing.
- Deliver an additional 150 town centre parking spaces as part of the Greyfriars developments to meet parking demands generated by new retailing and the proposed cinema.
- Explore the opportunity for private car parking areas such as ASDA, Homebase, and Sainsburys to be used as overspill parking areas either during the day or in the evenings.
- Allow for the gradual phasing out of smaller parking areas to reinforce the use of the proposed four town centre car parks.
- Differing land use proposals and/or more detailed transport assessments may identify a need for different parking arrangements.

ON STREET PARKING

On street parking spaces in the town centre should be prioritised for loading, servicing and short term drop off parking needs. Long stay parking should be gradually phased out in favour of off street parking locations. Decisions on parking allocation will need to be made on a street by street basis.

Existing taxi ranks will be rationalised outside the Guildhall and new taxi ranks will be re-provided across the town centre as development occurs. Overall taxi rank provision will increase with new ranks potentially located at Greyfriars, Wide Westgate and the railway station.

Parking enforcement decriminalisation will enable more specific management regimes can be delivered in response to particular issues such as prioritised town on street spaces. For example, on street parking in the town centre should be prioritised for loading, deliveries and necessary short term parking. It is likely that the residential areas around the railway station will need some form of time

control to discourage people parking for free to access the railway station.

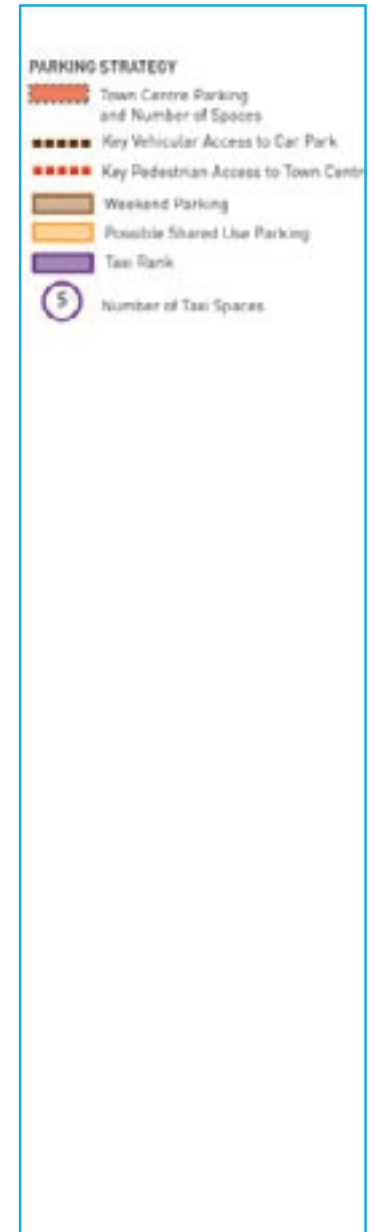
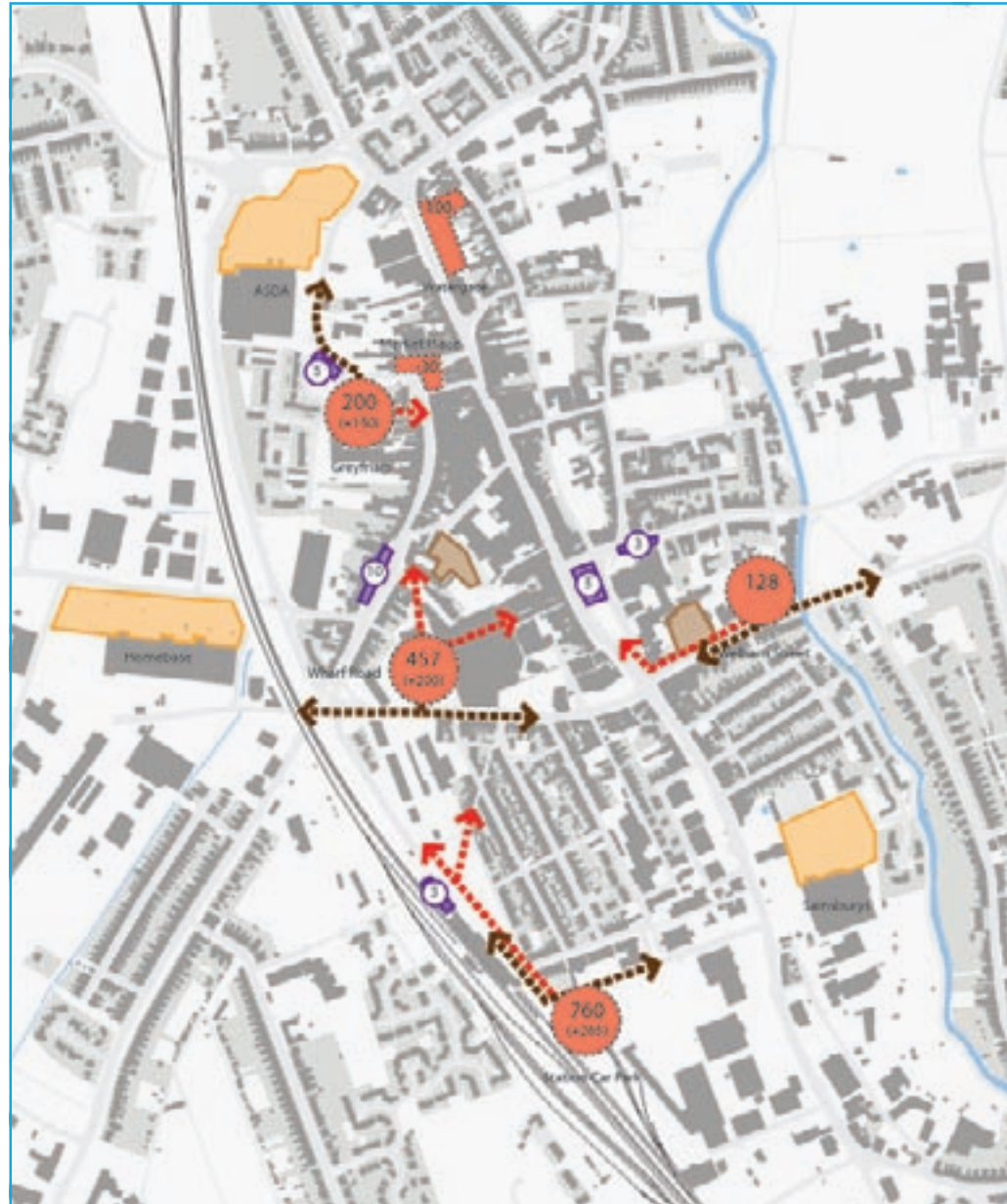
RESIDENTIAL PARKING

It is well established that restricting parking provision at the point of origin or residence does not have a significant impact on vehicular commuting patterns (Essex Parking Standards: Design and Good Practice Guide 2009), and often results in overspill parking on surrounding streets. This is because people often own a car to use out of peak times for entertainment or social reasons.

It is therefore proposed that standards for residential parking should generally be based on parking minimums. Providing adequate and well managed parking commensurate with Grantham's market town context will avoid illegal parking activity and/or overspill effects on surrounding streets. Key aspects of the residential parking standards are as follows:

- In the town centre 1 parking space shall be provided per dwelling. Reductions from this minimum will need to be justified on the basis of high accessibility to public transport, such as locations within 200-400m walk of the rail or bus station.
- In areas outside of the town centre and overall parking minimum of 1.5 spaces per dwelling should be provided in line with PPG 13: Transport.
- The actual provision of residential parking should be determined on the basis of dwelling type, size and tenure. In calculating parking requirements and designing parking areas, the analysis should draw upon English Partnerships guidance (Car Parking: What Works Where, EP 2007) guidance on layout and allocation.

	Existing	Proposed
PUBLIC OFF-STREET PARKING		
Conservatives car park	71	71
Watergate	97	0
Conduit Lane	52	200
Elm Street	7	7
Wharf Road	257	457
Greenwoods Row	89	89
Welham Street	128	128
St Catherines	56	56
TOTAL	757	1008
PRIVATE OFF-STREET PARKING		
ASDA	476	476
LIDL	88	88
St Augustine Retail Park	118	118
Homebase	no data	No data
Station Car Park	494	760
Morrisons	275	275
London Road	400	400
Sainsburys	420	420
TOTAL	2271	2537



Town centre traffic strategy

TOWN CENTRE PUBLIC TRANSPORT NETWORK

The key public transport strategies for the town centre are as follows:

- Investigate the provision of bus priority at key approaches to town centre.
- Explore the opportunity to provide a new high frequency bus service linking the two urban extensions with the town centre.
- This new service should run down the High Street and access the new bus hub at St Peters Hill. Initially it could operate in one direction only in a 'figure of eight' service pattern. As demand builds, it could also operate in both directions.
- As an alternative to a cross town service, a separate bus route could provide a service between each extension and the town centre in a 'loop' service pattern.
- The bus station is to be rationalised to 6 bus stands and 4 layover spaces. Local bus services are to be located on the High Street adjacent to St Peters Hill. A design solution is proposed overleaf.
- A bus hub should also be provided adjacent to the railway station, with the potential for bus services to reroute from London Road through to Wharf Road via the Station forecourt.



An example of bus station shelter facility - Wood Green, London



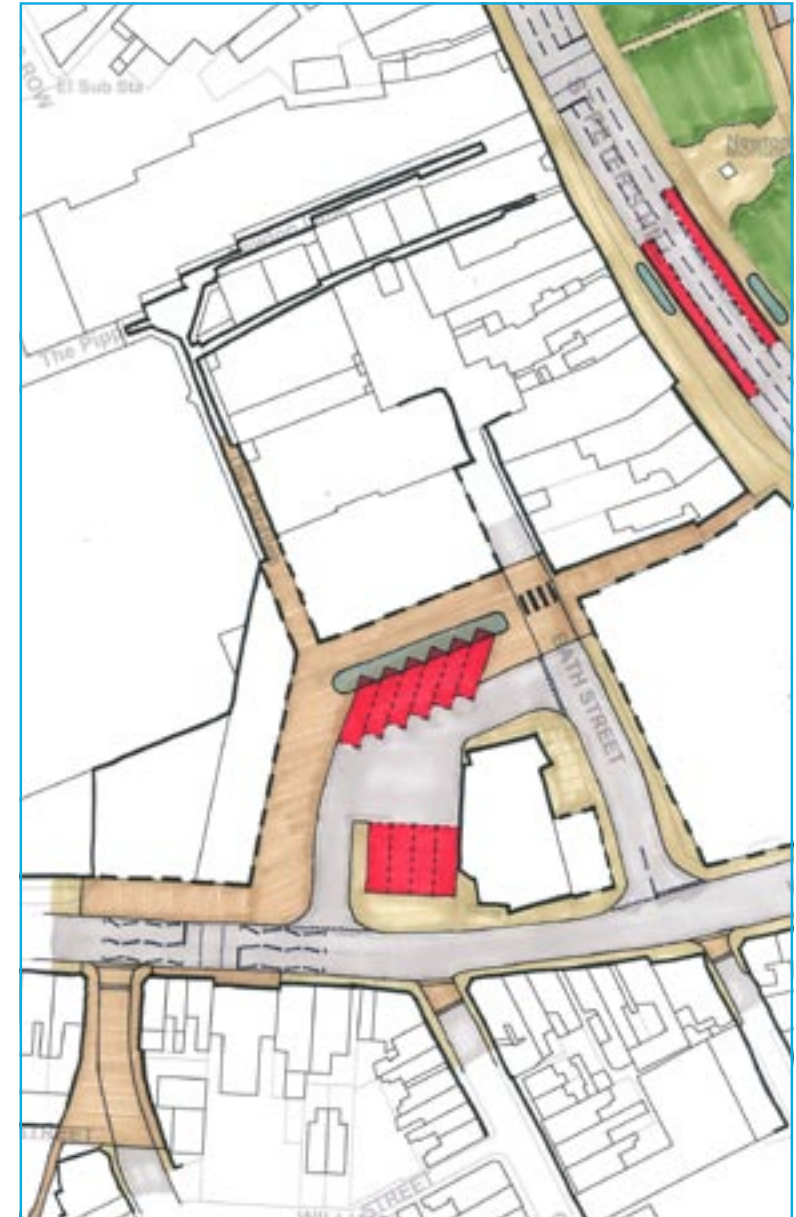
An example of a prime bus stop shelter - Wood Green, London



Public transport network strategy

THE BUS STATION

- It is proposed that the bus station be downsized from 12 stands and 10 layover spaces to 6 stands and 4 layover spaces.
- The Drive In Reverse Out (DIRO) bus station arrangement is retained as the most space efficient option as well as being the most viable operational arrangement given the requirement for low frequency interurban services to layover.
- For the rationalisation of the bus station to be achievable, local bus services that do not require town centre layover are to be shifted to a new local hub facility on the High Street adjacent St Peters Hill.
- High quality shelter facilities are proposed for the bus station and local hub to make them legible features in the towns streetscape.
- Alternative bus station locations can be explored as part of wider development proposals, although on the basis of the analysis undertaken during the course of this study it is likely that the 6 bus stands and 4 layover spaces will be the minimum standard.
- Critically, the redevelopment of the bus station should give emphasis to the ancient pathway running from the station through to St Wulframs Church via the Victorian railway terrace, the bus station and the Isaac Newton Centre. As indicated on the plan opposite, a new shared surface public realm treatment will lead into a repositioned toucan crossing, and onwards along widened footways into the Isaac Newton Centre.
- The redevelopment of Morrison's may offer the opportunity to redevelop the service yard to deliver small retail units fronting onto and activating this route.



Design vision for the bus station



Design vision for St Peters Hill

ST PETERS HILL

- St Peter's Hill is to be retained as one of the town's most prominent civic spaces. A new walking connection is provided from the redeveloped bus station to the bus hub and into St Peter's Hill.
- This signalised crossing facility can run in the shadow of the all red phase at the High Street and Wharf Road junction to the south or if capacity is a problem then a refuge island should be provided.
- The St Peter's Hill service lane will retain its current function.
- It is proposed that parking is removed outside the Guildhall and a small area of shared surface is provided, linking this building to the open space. This will reduce the dominance of car parking on the quality of this space and reconnect buildings better with the green. All other parking is to be retained.
- On the plan opposite parking is indicated with a dashed line on the footway, denoting that parking will be raised to footway level so that when it is not parked upon, pedestrians can use this space for walking.
- Accordingly parking will need to be prioritised for taxis, loading and deliveries, with appropriate provision for blue badge holders. Drop-off parking and generally visitor parking will be actively discouraged.
- The junction at the northern end will be improved for pedestrians by using raised tables. Kerb heights and construction detailing can allow for heavy vehicle overrun should they need this space to access the service lane to the north.

TOWN CENTRE

WALKING, CYCLING AND PUBLIC REALM

Critical to the success of Grantham as a place is the efficiency, directness, quality and interest afforded slow modes of walking and cycling. These modes interface directly with high activity land uses such as retail and entertainment, and improved provision will provide opportunities to improve local economic development and attract investment. The plan opposite documents detailed proposals for walking and cycling in the town centre.

- Radial cycleway/footway facilities - both shared and segregated - should be extended across the town centre traffic collar as indicated on the plan opposite.
- A number of key walking and cycling conflicts with traffic are indicated where specific improvements will be required on balance with the need to ensure that capacity is retained for traffic.
- The strategy also focuses on public realm investment on core town centre streets.

- Following on from Lincolnshire County Councils investment in 'phase 1' improvements to the Market Place, 'phase 2' could include the pedestrianisation of the link from Westgate to the High Street via Market Place. This will require traffic to be redirected around Union Street to the traffic collar. A design vision is proposed overleaf.
- Public realm improvements should also be pursued for Watergate and Vine Street. Watergate may have its footpaths widening and trees planted, and Vine Street could be transformed into a more landmark street linking the Square to St Wulfrum's Church.
- A new connection could also be explored from the Church to the River Witham as development occurs over time.
- The three development sites of Station Approach, Wharf Road and Greyfriars should deliver new and improved walking and cycling linkages to, from and within the town centre.
- Existing walking and cycling links from the railway station should be improved including: widening of the subway to residences to the west; and improving the quality of the Ancient Path that cuts through the Victorian Railway terraces leading to the Bus Station and the Isaac Newton Centre.
- The Ancient Path should be treated as a landmark public realm project and link through to the bus station improvements proposals discussed above.
- To unlock development in the Canal Basin in the long term, improved walking and cycling connections to the town centre will be required in addition to improved access by other modes.



The St Peters Hill service lane will be designed as an extension to the park



Connections into the town centre should be improved



Public realm strategy

MARKET PLACE

Opposite is a high level design vision for how the phase 2 improvements to the Market Place could come forward. The Square will be designed as a holistic space with a greater focus on civic activities. Parking will be further rationalised and new public spaces created providing settings for seating and other civic activities. The existing connection from Westgate to the High Street is proposed to be severed (subject to capacity tests), and a new pedestrian link created mirroring Butchers Row to the south.

- This design solution provides a vastly increased area of pedestrian space that can be used for outdoor seating and alfresco dining.
- This option can also provide for the relocation of the market from Wide Westgate this location.
- Junction improvements will be required where Union Street meets the town centre traffic collar.
- Parking will be prioritised for loading, deliveries and for blue badge holders.



The link to the High Street shown will be transformed into a pedestrianised link



Parking will be rationalised and the space transformed into a true Market Place



Market Place design proposals

WIDE WESTGATE

Wide Westgate will be given a new lease of life with public realm improvements that give emphasis to its historic townscape importance and its current and future position as part of the town's retail circuit. Two options are proposed. Both seek to prioritise walking across the street at three key junctions, and provide a more flexible arrangement that can accommodate on-street parking, bus routes and stops, and the market in various ways. Each of the options are described below.

OPTION 1

- This option keeps the existing footway, echelon parking and carriageway arrangement in place along the street.
- Footways are widened considerably while retaining a 7m wide carriageway. Echelon 'footway' parking is provided along the length of the street.

- The parking bays will be designed as an extension to the footway (in cobbles or sets) with a minimal kerb up stand to the carriageway. This will allow the parking zone to be flexibly used by pedestrians when not parked upon, or to be used to provide for market stalls should they be retained in this location.
- Three new raised tables are proposed at the junctions with Dysart Road, Welby Street and Guildhall Street. These facilities will greatly improve conditions for pedestrians and also serve to manage the speed and behaviour of vehicles. A small number of parking spaces will be lost.
- Bus stops are also allowed for in the design should buses be routed down here, or alternatively this space could be retained as parking.

OPTION 2

- Option 2 largely conforms to option 1 with the exception of relocating all echelon parking from the footway to the centre of the street.
- This option involves loss of parking, but gives this space over to footways.
- The parking area can be designed as footway parking as above that can be used by pedestrians as a median to assist in crossing when not parked upon.
- This parking arrangement will also allow for the market stalls to use the central parking zone. Stalls can face back to back and provide two fronts to the street, with the added benefit of facing existing retail units, not turning their backs on them as currently occurs.



Before: Excess carriageway space can be given over to wider footways



After: Footway parking can be used by pedestrians when not parked upon.



Wide Westgate option 1



Wide Westgate option 2

06 STREET DESIGN FRAMEWORK

INTRODUCTION

Traditional approaches to the design and management of streets has focused primarily on issues relating to 'links': to the safe and efficient movement of general motor traffic and freight, the allocation of road space and function to public transport, and the provision for other slower modes of walking and cycling. Yet, it is increasingly recognised that this emphasis has often come at the expense of issues relating to 'place': the form and function of buildings, the movement demands they generate and the qualities of public space. The street design framework aims to balance movement and place into a coherent framework for the creation of world class spaces.

DOCUMENT PURPOSE

South Kesteven District Council has recognised that the overall form and function of streets requires a balance to be struck between movement and place demands, and that the achievement of this balance in any given context will support ambitious plans to regenerate and reinvigorate the town.

The 'street planning framework' covers the key streets of significance within the built up area of Grantham. It deals with the 'public realm', or the space between property boundaries. Improvements to the public realm have been shown to deliver benefits to surrounding land uses in terms of increased property value, improved economic performance through enhanced footfall, and environments where people are attracted and encouraged to walk and cycle and bus rather than use the private car.

The street planning framework will set out a process and tools for successfully delivering street improvement schemes so as to enhance their offer to the social and economic well-being of residents, workers and visitors.

OUTCOMES SOUGHT

The street planning framework seeks to deliver upon a range of different policy and planning outcomes across the town. The design and management of streets effects how movement by all modes is provided for. Accordingly the street planning framework is to be the primary vehicle for the delivery of the policy outcomes expressed in the LCC Transport Strategy, and the Grantham Movement Strategy outcomes expressed previously. The planning framework also aspires to provide street design guidance to new development occurring in the town centre and for the urban extensions.



The successful delivery of high quality public realm improvements that enhance townscape in Bury St Edmonds.



The integration of high quality bus facilities into the fabric of the historic market town of Darlington.



The delivery of more shared street layouts that encourage use of space for a variety of vehicular and non-vehicular modes in Ashford.

FRAMEWORK STRUCTURE

This section of the movement strategy is structured into four sections as follows:

- **Understanding streets** - a description of the key elements of street to be considered in planning, design and management;
- **The townwide street strategy** - including a description of the strategy development process and the actual allocation of street segment types to Grantham's street network;
- **Street design guidance** - providing principled design guidance on the design of specific street segments; and
- **Street design and delivery** - outlining how this framework should be used and the process to be followed in street design projects.

FURTHER GUIDANCE

Further technical guidance can be found in:

- Manual for Streets for guidance on residential street design (DfT, 2007)
- Manual for Streets 2 for guidance on other street types (IHT, 2010)
- Link and Place: a guide to street planning and design (Jones et al, 2008)
- Townscape Character Assessment (Forum Heritage Services et al, 2010)
- Car Parking: What Works Where? (English Partnerships, 2007)
- Parking Standards: Design and Good Practice (Essex County Council, 2010)
- The Design Manual for Roads and Bridges [DfT]

UNDERSTANDING STREETS

The street is a variety of things to a variety of people. It is a place of movement both regionally and locally, it is a place of meeting and social activity, and they are also places of economic exchange and of cultural expression. Accordingly the design and management of streets needs to consider all of these aspects to understand how best to design them, and this section describes these in more detail so as to enable this to occur.

DIFFERING CONSIDERATIONS

Transport is and always will be derived demand, not demand in itself. It follows that understanding how streets work is just as much about understanding how the wider city or town works as it is about understanding the array of movement demands placed upon them. The process of designing, delivering and managing streets therefore needs to begin with a thorough understanding of its wider movement and place context including:

- Land use activity and diversity,
- Townscape character,
- Public realm function and form,
- Landscape and planting features,
- Access, servicing and parking,
- Carriageway opportunities and constraints,
- Current and future movement demands both regionally and locally.

Understanding streets in terms of their wider roles is critical to establishing the tensions between them, and provides a solid basis for making transparent and accountable decisions on who or what has priority in any given context. Getting the balance right can have a marked impact on people's quality of life, the viability of commercial enterprise and people's appreciation or otherwise of the place, and it is vital that street design efforts begin with a thorough review of movement and place conditions.

CHALLENGES OF STREET DESIGN, DELIVERY AND MANAGEMENT

No street is designed in isolation. A vast array of political, institutional and private interests are involved in the inception, design and maintenance of the public realm and streets, with each interest seeking to maximise the delivery of their own particular outcomes. To add to the complexity, these outcomes are often established by policy and or legislative requirements, for example a policy directive to deliver journey time savings for buses, or a legislative requirement for facilities for the mobility or visually impaired (as required Disability Discrimination Act).

Successfully designing streets is therefore not just a matter of resolving the physical complexities found on the street, but resolving the myriads of different public and private stakeholder interests into a holistic, coherent and deliverable solution for the street. We 'want what we want' proposals for one interest may be in tension with or have a negative impact on another interest. The design process itself must be geared to that stakeholders are engaged in the process for achieving a shared design vision for the whole, not promoting as a series of individual fixes added together.



Residential land uses



Larger format 'edge of centre' retailing



The Guildhall



Important townscape features



High Street retailing



Shopping malls



Wayfinding features



Modern interpretations of townscape (not completed) in Grantham

LAND USE INTENSITY

Different types and forms of land uses generate different level of activity. A low density residential area has a markedly different range of movement and place related activities than a town centre, as with an open space, community facility or church. It is important to understand the type and form of land uses and the kind and intensity of activities they attract, as land use is the primary generator by movement by all modes, and consequentially drives the design and management of street networks and the public realm.

TOWNSCAPE

Townscape is crucial to achieving a sense of place that is desirable. A clear townscape allows people to read places and find their way through uncharted areas. This can dramatically add to the attractiveness and 'charm' of a place and assist in peoples understanding and ability to navigate through towns or cities through different building scales, landmarks, gateways and wayfinding signage.

Successful townscape is the key to the creation of world-class towns and we can provide them through high quality urban finishing as well as intelligent and playful design. Developments must respect the existing townscape as so not to confuse the area or risk creating a disjointed environment that can leave visitors confused and dissatisfied. The key to creating world class towns and spaces is to tie new developments to existing, not as mirrors of old, but with reference to identifiable themes that respect the historic and present day town.



Low quality public realm through Great Gonerby



Poor footway facilities on Gonerby Road



More formal landscaped areas at St Peters Hill



Use of trees and verges on radials



High quality public realm in Bury St Edmonds



Excellent use of materials at the Grassmarket, Edinburgh



Excellent use of planting in Accordia, Cambridge



An example of the use of SUDS in development

PUBLIC REALM QUALITY

The quality of our public realm can be influenced by a number of factors and agents. It is because of this that the utmost care and attention to detail must be taken when thinking about improving public spaces and streets. It is not best practice to simply use the most expensive materials, as this does not guarantee a similar quality of place. This being said careful consideration of material quality must be taken and matched, which is the key to good design and to a quality urban design scheme. When choosing a solution, the price of materials is not the critical issue as the best choice is one that is fit-for-purpose and is comfortable in the surroundings. As well as material quality, the quality of workmanship is essential to a high-class space. Poor workmanship can destroy whatever materials are used, 'cheapening' the feel of places and removing people's respect of it.

PLANTING AND SUDS

In appropriate locations, planting and landscape features should be integrated into development and public realm projects. SUDS can be adopted for most new and redeveloped sites to give a reduced environmental impact from surface water drainage. Widespread adoption of these techniques will see a long-term improvement in the quality of our urban rivers, contributing to a more varied and attractive urban environment. Any proposed new surface water drainage systems at a site should be designed to not only deal with the problem of surface water run off, but it should also enhance the site considerably for children and nearby residents.

In addition to this appropriate planting can bring with it substantial benefits to an area such as increased property prices, a higher sense of 'place' satisfaction, reduce flash flooding and reduce localised extremes in temperatures – cooling in the summer and warming in the winter.



Intensive access and servicing at the station



Residential driveways fronting onto busy radials



Dominance of carriageway and guardrail



Good demarcation of footway space



Access pressures in the town centre



Residential mews with internalised garages



Example of a well designed raised table on London Road, Northampton



Well defined cycling infrastructure in Holland

ACCESS, PARKING AND SERVICING

Appropriate provision for access, parking and servicing must be considered from the outset of a project as this allows the provision to be an integral part of the changes to the public realm and associated development. There is a real dilemma here between a person's desire to own and park a car and the collective desire to enjoy a safe and desirable street. The places where we live affect our quality of life and parking has a real impact, both positive and negative, on the way they look and work. An equilibrium must be found between the two dimensions which is only really likely when parking is integrated as a key component of urban design and not simply as a numerical or functional component of housing layout. As well as providing an appropriate level of car parking, it is important that new or extended developments incorporate good design for the layout, landscaping and lighting of parking. This should be user friendly, and not interfere with the public highway or access adjacent to the parking area. Further advice can be sought from the British Parking Association.

CARRIAGEWAY AND MOVEMENT SPACE

Public space is a valuable commodity in urban areas and because of this every bit of carriageway must earn its place to avoid streets that are littered with 'baggy' or 'dead' highway space that serves no purpose except to take away space and function from other street interests, for example the walker, the cyclists or the adjoining land use. Carriageway widths can serve to constrain or encourage traffic speeds, and it is important that appropriate widths are determined on the basis of the surrounding context. A balance needs to be struck between the allocation of carriageway space to regional and local movement demands, and between fast moving traffic, and the slower modes of walking and cycling. When considering optimal carriageway widths and allocation of space to differing modes consideration should be given to the movement strategies presented throughout this report.

STREETS STRATEGY

It is important that street design is considered within the framework of wider growth and regeneration and the movement network required to support it. This section sets out the street strategy for the town and its use in corridor based design strategies and/or individual street design initiatives.

LINK + PLACE METHOD

Towns and cities should be served by well-connected networks of streets and spaces which serve both 'movement' and 'place' user demands in a variety of ways according to the context in question.

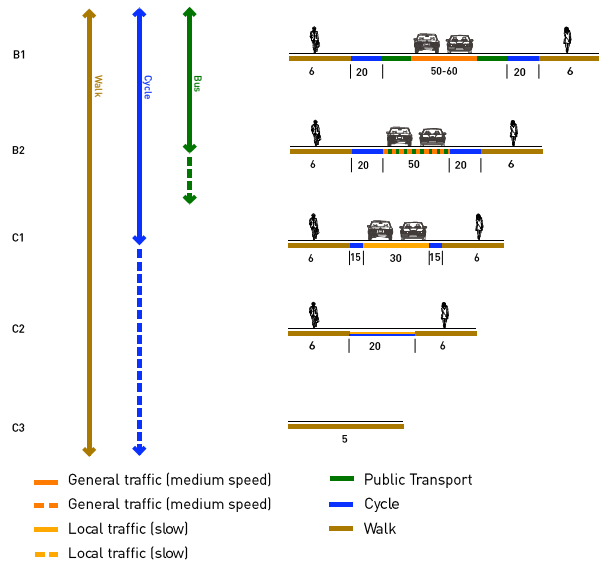
The Urban Movement Grid methodology is our documented approach to understanding the functional and space requirements of transport network 'links'. At the same time, an understanding of link requirements should be balanced by an understanding of the functional, space and form requirements of the 'Place'. Our approach to designing networks is to firstly classify 'Link and Place' characteristics across a street network. It is then possible to assess how the link and place characteristics should change, for example in response to a particular growth proposal or to resolve a specific transport issue.

We have assessed all of Grantham's streets using our Link and Place method and importantly have used this language to present our area based strategies for the town. The link and place classification assumptions are presented opposite.

LINK CLASSIFICATION CRITERIA

The table below outlines some of the principle link types which has been used to classify Grantham Streets. In general, higher order links carry more traffic, at high speed and higher number of HGV movements. Within each link type there is a recommend minimum and maximum specification to allow some reduction in increases in 'level of service' to deal with local context [Place].

	C3	C2	C1	B*	B2	B1	A2	A1
	Local Shared Surface	Local Lane (Homezone)	Local Street	Restricted Main Street	Neighbourhood Street	District Distributor	City Distributor	National Distributor
Reference	MfS	MfS	MfS	L+P (Modal Priority Boost)	DMRB UAP4 L+P L4 Neighbourhood	DMRB UAP3 L+P L3 District	DMBR UAP2 L+P L2 City	DMRB UAP1 L+P L1 National
General Description	Very minor residential shared space with priority towards pedestrian and slow speed cycling, and very slow car movement for local access only.	Quiet residential lane with low traffic / pedestrian flows. No access from B streets. Very slow traffic speed and priority for pedestrians and cycling.	Residential street with some traffic movement for neighbourhood and local access. Pedestrians on footways. Cycling on street.	Special-purpose street with traffic control for general traffic. [i.e. the street may only permit through traffic for certain modes, such as bus, cycle and pedestrian and not for others].	Busy street carrying predominantly local traffic, with frontage activity including loading and unloading.	Variable-standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Good standard single / dual carriageway road mixed with frontage access and more than two side roads per km.	High standard single / dual carriageway road carrying predominately through traffic with limited access.



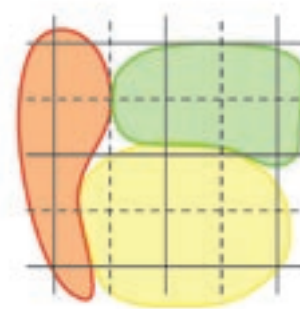
PLACE CLASSIFICATION CRITERIA

A 'place' classification system has been developed for Grantham based on principles set out in Link + Place (Jones et al, 2008), in Manual for Streets (DfT, 2007) and the recently released MfS2. It provides a framework for assessing the existing and future place status of any particular street segment. The classification is driven largely by land use activity, townscape significance and urban realm quality. The 8-point categorisation system used in Grantham set out below;

- 0 – Out of settlement / Other
- 1 – Residential / Employment Area
- 2 – School / Community / Public Open Space
- 3 – Local Centre / Town Centre Fringe
- 4 – Town Centre
- 5 – Town Centre Core

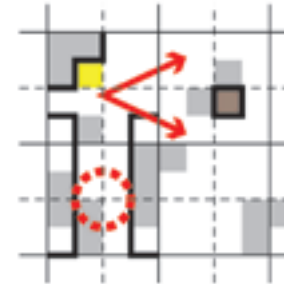
- Bonus points awarded or subtracted for:
- Minus 1 – Street of very poor character
 - Plus 1 – Street of character
 - Plus 2 – Street of very special character

TYPE and INTENSITY OF LAND USE



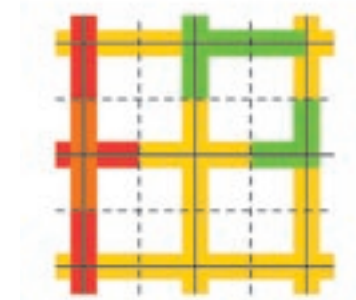
Takes into consideration the functional and form related requirements of different intensities of land use

TOWNSCAPE and CHARACTER



Understanding built form and the socio-economic, cultural and physical identity of place

PUBLIC REALM QUALITY



Considers the width of footways, the provision of facilities for disabled users and the quality of public realm elements.

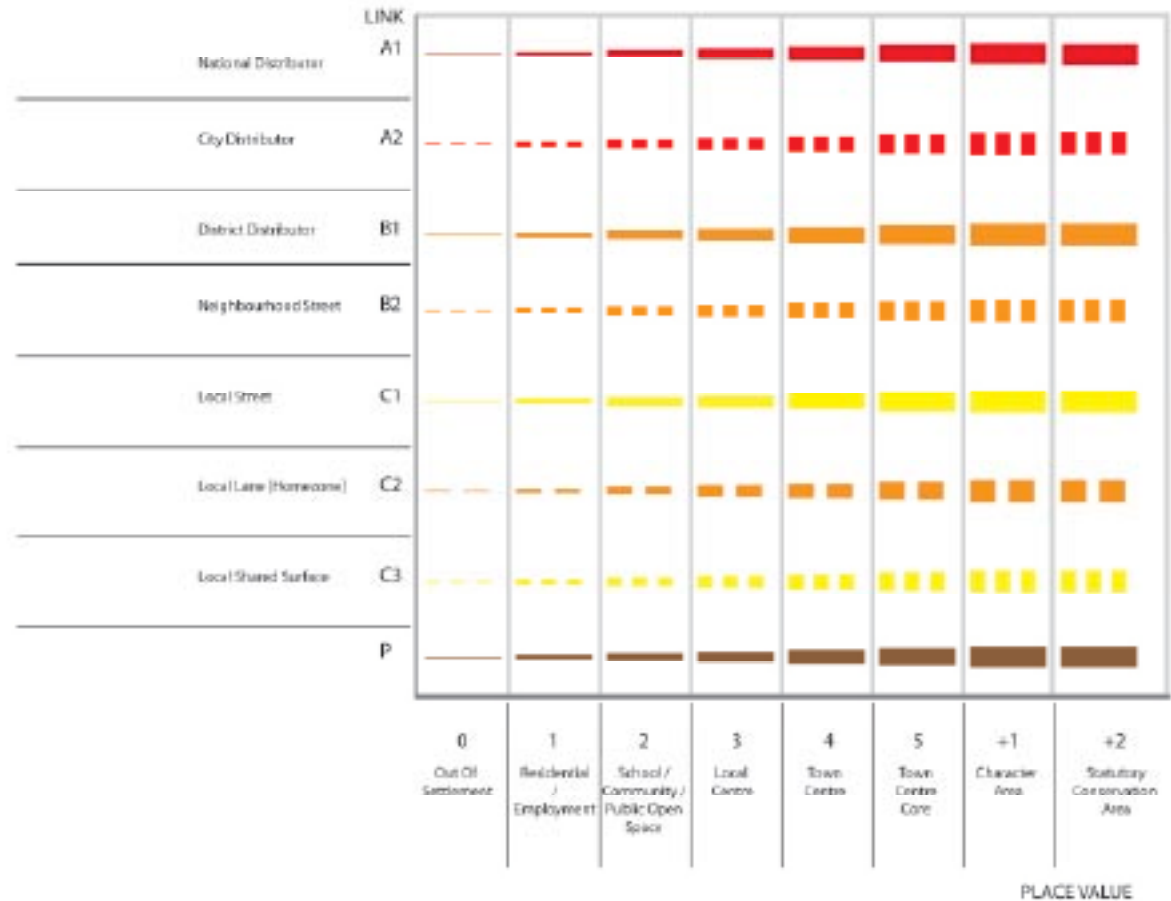
LINK + PLACE MATRIX

All Grantham's existing A and B and C roads have been assessed in terms of their Link and Place characteristics. The process allows the current position of each street (or street segment) to be reclassified based on changes to movement influences, for example the de-trafficking of routes through wider traffic management proposals. Or conversely, it allows the segment to be reclassified based on development or urban realm proposals, for example the delivery of a new active frontage condition may trigger the need for a public realm upgrade to improve its status.

It is important that street design is set to deliver upon the wider growth and regeneration agenda for the town, and the supporting wider movement network. This section illustrates the how the street strategy for the town was developed, and outlines how it should be used in corridor based design strategies and/or individual street design initiatives.

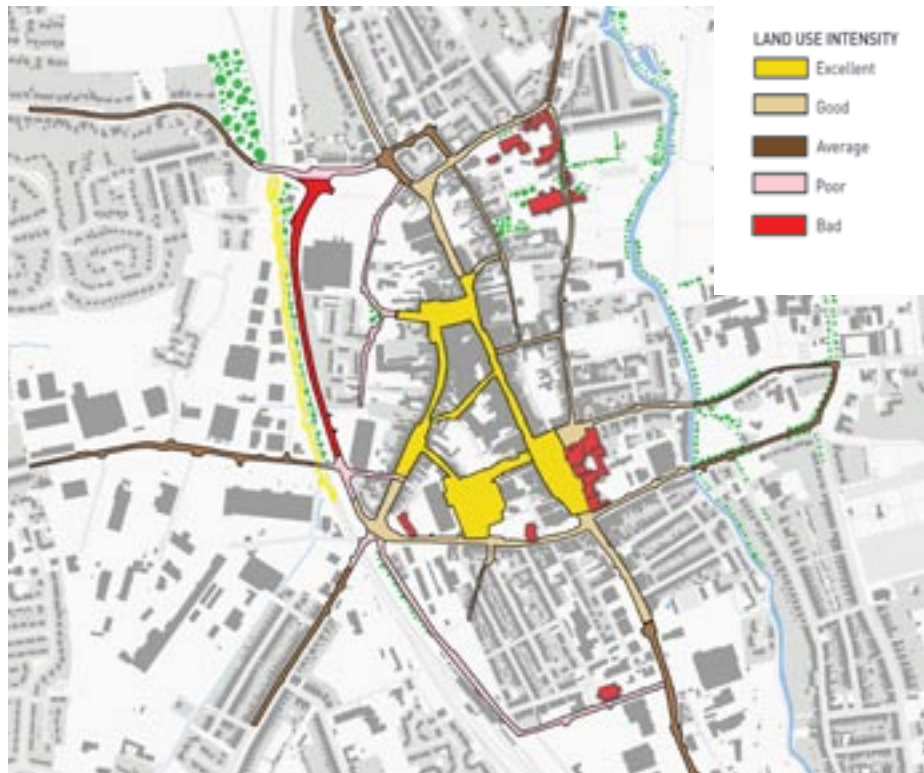
In addition to the town wide link + place analysis, a further assessment of the place characteristics of the town centre has been undertaken in terms of land use intensity, townscape and character, and public realm quality. This analysis is presented overleaf.

The full link + place assessment is included in the appendix, documenting the reasoning behind existing and proposed link and place categorisations.





Proposed 'link and place' strategy for Grantham (see the matrix opposite for link and place values)



LAND USE INTENSITY

As would be expected of a market town the size Grantham, land uses get more intense the closer you are to the historic core of Market Place, and around newer retail malls and supermarkets, for example the Isaac Newton Centre. The town centre traffic collar generally has an average to good rating that is at odds with its strategic traffic function. Sankt Augustine Way has a bad rating as it is effectively screened from adjoining land uses by a landscaped strip and the ECML. Radial routes have an average land use intensity given there predominantly residential contexts.



TOWNSCAPE

Grantham has a rich townscape fabric in the core of the town. St Wulfram's Church and the Market Place are the most prominent townscape features in Grantham. The historic core also has an average to good rating, as with key radial approaches and the town centre traffic collar (with the exception of Sankt Augustine Way). Key gateways to the town have a poor townscape rating such as the Harlaxton Road junction and the Asda Roundabout. The townscape analysis builds upon the Townscape Character Assessment undertaken by Forum Heritage Services and their partner consultants.



PUBLIC REALM QUALITY

The quality of Grantham’s public realm is generally below standard when compared to land use intensity and townscape characteristics. Market Place and Wide Westgate are some of Grantham’s most important streets, yet the quality of the public realm is generally average to poor. LCC already have plans to address public realm deficiencies in Market Place and Wide Westgate. The quality of public realm along the High Street and St Peter’s Hill is generally good and this treatment should be extended to include Watergate in the future.

The town centre traffic collar has a poor rating given the lack of crossing facilities provided over side streets, as well as the collar itself, the presence of guard rail, and the overall feeling of severance. The traffic collar is a critical gateway to the town centre, and the quality of public realm should be improved.



TOWN CENTRE LINK AND PLACE STRATEGY

Based on the previous analysis the following conclusions can be drawn:

- Deficiencies in public realm quality on Market Place and Wide Westgate should be addressed
- Public realm quality on the town centre traffic collar should be improved, on balance with the need to retain traffic and bus capacity
- Streets that run near or through proposed regeneration sites of Station Approach, Wharf Road and Greyfriars are currently poor, and should be brought up to a good or excellent standard as befitting areas of planned town core expansion.

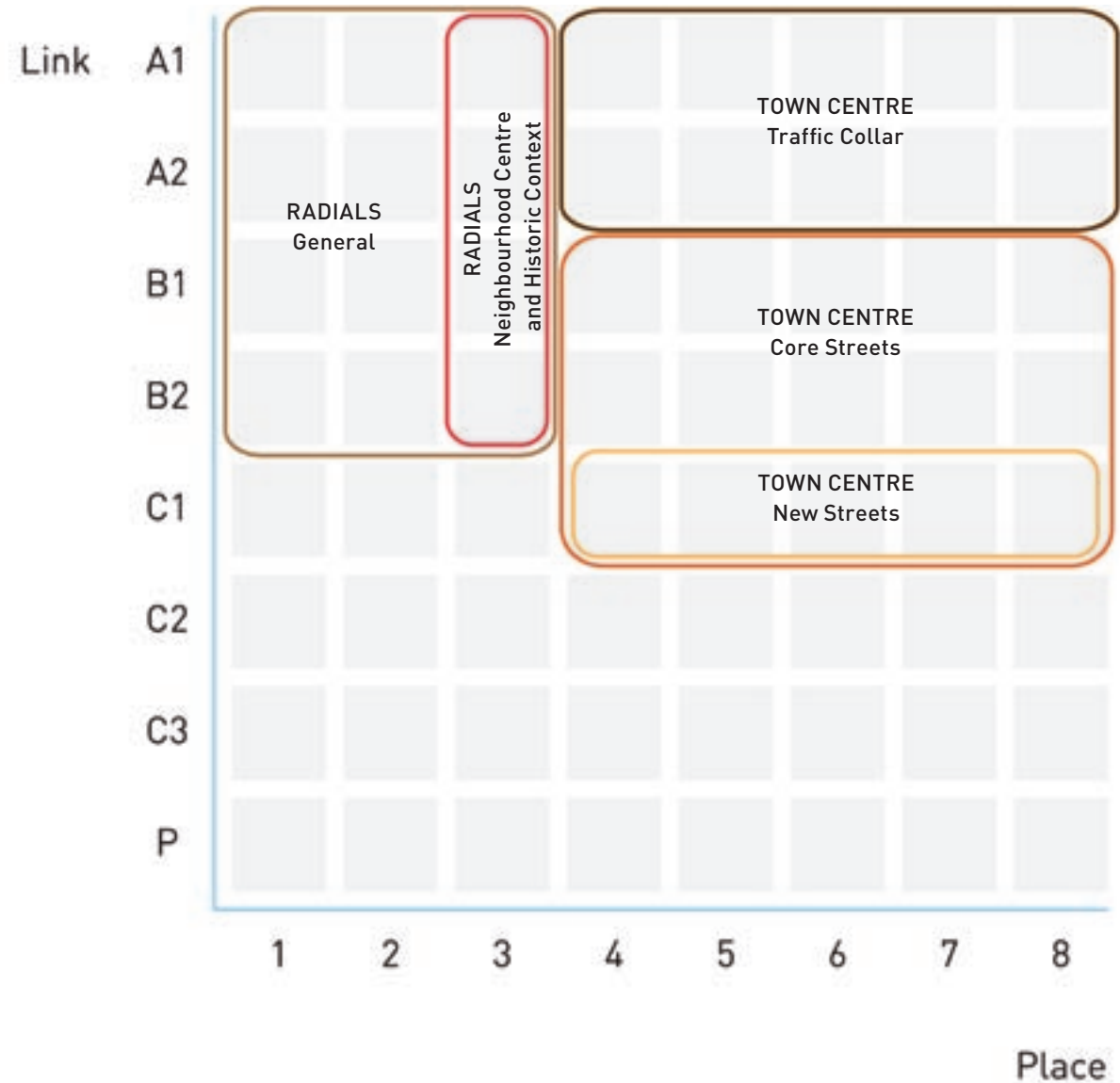
STREET STRATEGY

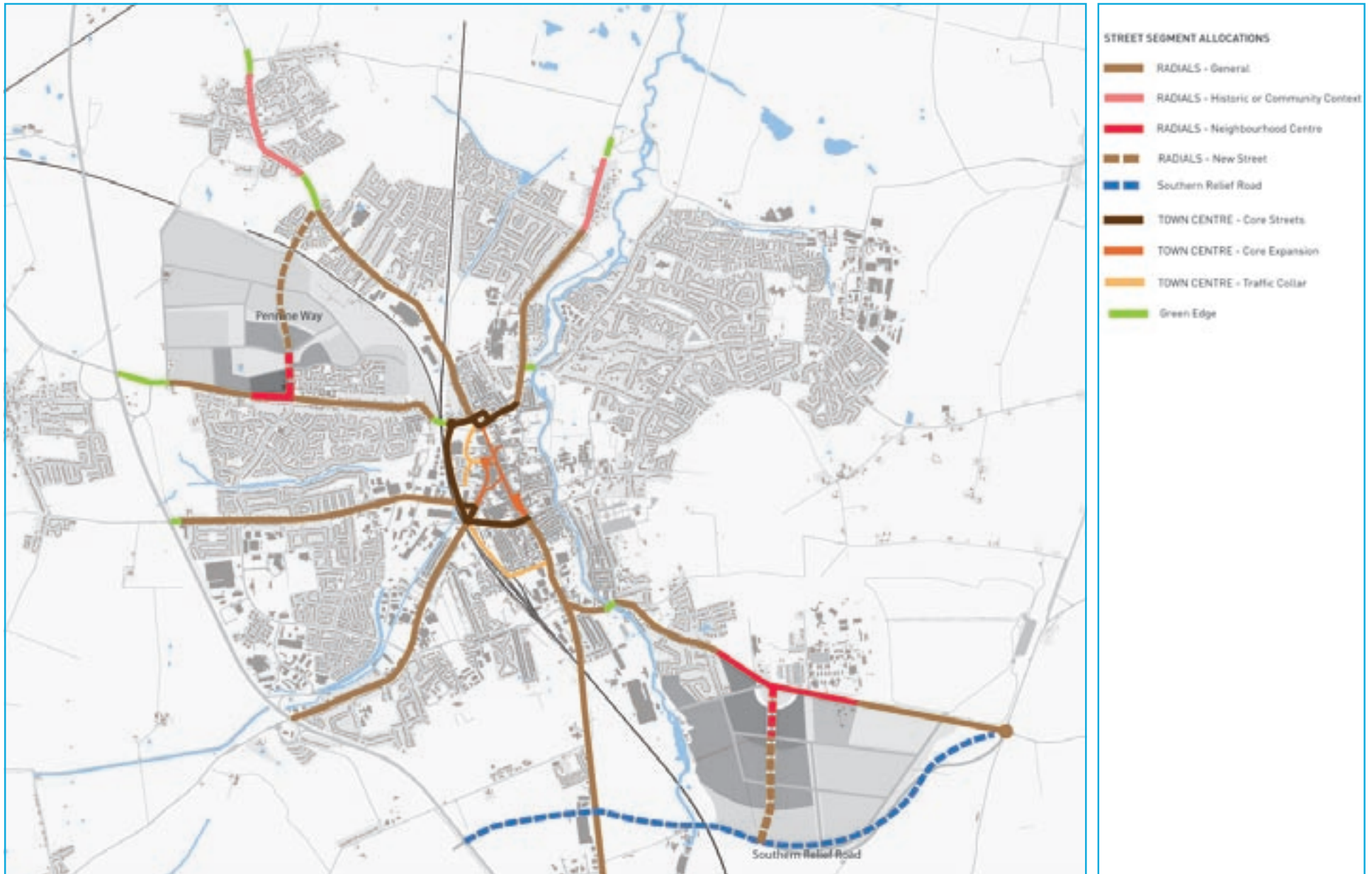
The link and place analysis presented above has been synthesised into a series of street segment types found across the existing and proposed town. The segment types are grouped into those found on the radial network, and those found in the town centre as follows:

- RADIALS - General segments
- RADIALS - Historic Context
- RADIALS - Neighbourhood Centre
- TOWN CENTRE - Core Streets
- TOWN CENTRE - Core Expansion
- TOWN CENTRE - Traffic Collar

The matrix opposite illustrates how the link and place classifications have been combined into the above segment types, and the plan shows how the segment types have been allocated across the street network.

The street segment allocations will be the starting point for any street design exercise dealing with the town's key streets. The next section provides guidance on the segment allocations themselves, and establishes a set of guiding objectives and design guidance for each.





Street Segment Allocations

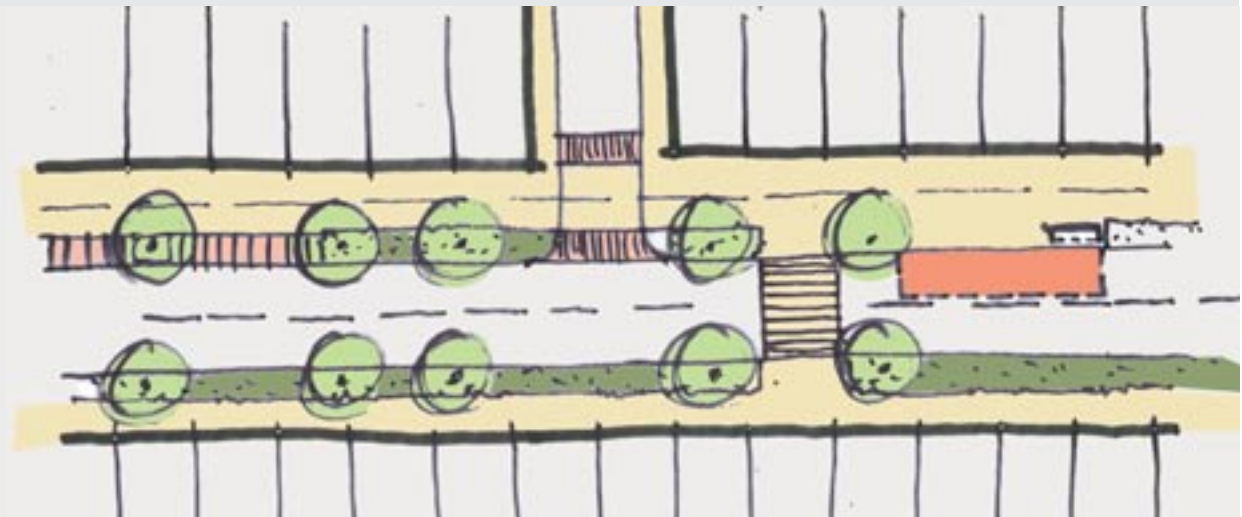
STREET SEGMENT DESIGN RESPONSES

The street is a variety of things to a variety of people. It is a place of movement both regionally and locally, a place of meeting and social activity, and places of economic exchange and of cultural expression. Accordingly, the design and management of streets needs to consider all of these aspects to understand how best to design them, and this section describes these in more detail so as to enable this to occur.

Principled design guidance is given for each segment, illustrating the kinds of outcomes that are sought for different parts of the network according to their overall link and place status. Existing and proposed cross sections also give an indication of possible design interventions.

The design guidance presented is intended to guide the design process, not propose rigid solutions. Each project will need to consider the guidance on the basis of a more detailed understanding of the issues, opportunities and constraints for each street segment.

RADIALS OVERALL DESIGN TOOL BOX



- Inset footway parking in support of neighbourhood centres or community facilities
- 'Bus border' facilities where buses stopping in the live travel lane (rather than inset) and kessle boarding kerbs
- Retain and extend grass verge arrangement where possible
- Trees Provide Scale & Enclosure

RADIALS - GENERAL

Context

The radials general segment is a common condition found across Grantham's radial street network. These segments are generally busy A Roads with connections to the A1(M), or are busy B Roads with an important town wide movement function. They also serve as principle bus routes and the most direct cycle routes between residential areas and the town centre. In terms of place status (P1 and P2) the radial general segment passes by lower density semi-detached and terraced residential housing, and or areas of lower employment intensity.

Key issues

The key issues faced by this segment type is the current emphasis on efficient movement of vehicles, and the lack of allocation of space and function to pedestrians and cyclists.

Objectives

Small-scale and inexpensive improvements to walking and cycling infrastructure can have a marked impact on the safety, efficiency and quality of walking and cycling journeys. The key objective is to focus on the tactical delivery of improvements to walking and cycling facilities along and across these routes. As illustrated opposite, raised side road entry treatments can slow traffic entry and exit speeds, and can provide continuous walking and cycling facilities into the town.

EXISTING



Side roads break cycle network by
Giving priority to vehicles

Lack of formal crossing facility

PROPOSED



Cycleway / footway over side roads
& driveways
Trees provide scale & enclosure

Provide crossings on desire lines

RADIALS - COMMUNITY OR HISTORIC RESPONSE

Context

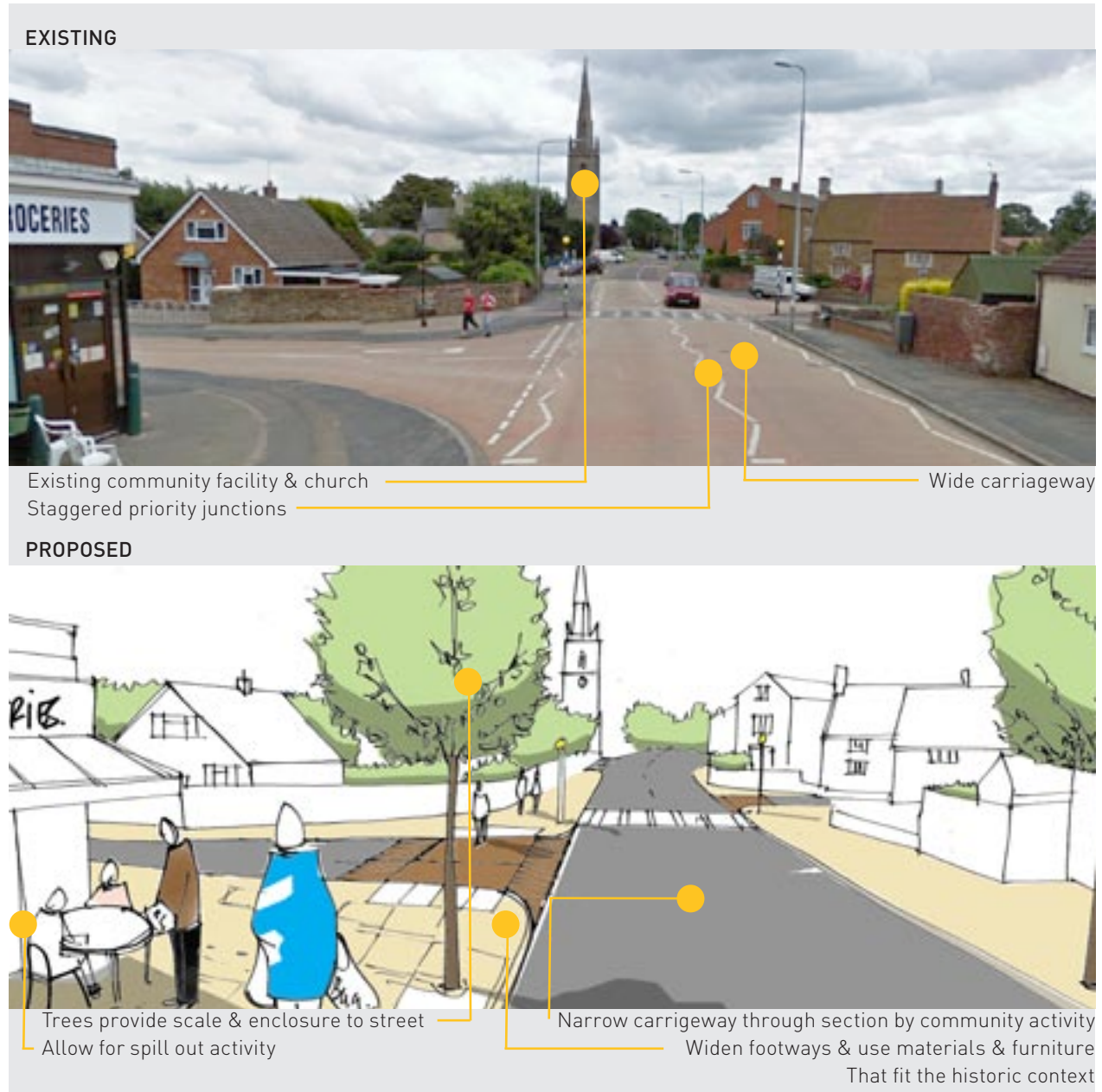
This street segment type passes through the historic villages of Manthorpe and Great Gonerby. Both of these villages sit on a busy A Road and suffer from high volumes of interurban traffic and HGVs and there are sections through both villages that have narrow footways and carriageways. At the same time, both Great Gonerby and Manthorpe are largely intact medieval villages that have significant townscape value, community identity and are home to an array of fine quality buildings and community facilities.

Key issues

The key issues faced by these segments are the impact that traffic and freight is currently having on walkability and liveability, particularly for vulnerable road users such as school children or the elderly.

Design focus

The focus for this segment type is to slow traffic speed and manage behaviour to improve walkability both along and across the street. Improvements should be undertaken at key points of land use activity, such as in the vicinity of schools, churches, community facilities and local shops/services. As indicated in the example opposite, carriageways should be narrowed to a width acceptable for HGVs to pass by at slower speeds (6- 6.5m). Corner radii on side streets should also be tightened and raised tables should be inserted to slow traffic entry and exit speeds, as well as aid pedestrian movement. Footway/cycleway facilities should ideally be provided, although this is considered difficult due to width constraints found along this segment type. Given townscape significance through these villages, higher quality public realm elements such as paving should be considered if affordable.



RADIALS - FUTURE NEIGHBOURHOOD CENTRE

Context

This segment type has been allocated to areas where new neighbourhood centres are proposed to serve the urban extensions to the north and the south of the town. As with 'radial-general' segment types, these routes cater for high volumes of traffic and HGVs. At present these locations have a low place status.

Key issues

The key issues faced by this segment type are how the new centre should interface with the street and how carriageway and footway space will need to respond to this context.

Design focus

The focus for this segment will be on extending the towns footway and cycleway network (Barrowby Road and Somerby Hill). Sufficient land should be set aside to deliver a grassed verge with tree planting (potential incorporation of SUD features) and a 3-3.5m footway/cycleway. Development should incorporate footway through the neighbourhood centre, or a small privacy strip as this can provide additional separation for residential uses. Insertion of on-street parking can provide access to retail activities.

EXISTING



PROPOSED



Inadequate Footway

New centre with frontage development

Widen footways where possible and plant new trees

New crossings on key desire lines

RADIALS - NEW STREETS

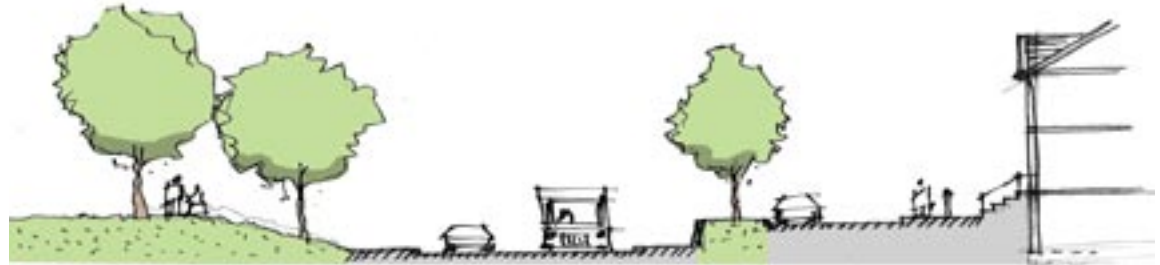
A number of new streets are proposed as part of the northern and southern urban extensions. The design of these streets is crucial to both improving movement network issues, as well as ensuring the extensions themselves are successful places in their own right.

As indicated on the street segment allocation drawing, the southern relief road has its own allocation given its specific traffic and HGV by-pass function. A cross section is shown opposite illustrating how topographical issues can be resolved so as to provide an active development frontage and a positive edge to the town.

Pennine Way in the northern extension and the proposed 'mainstreet' through the southern are both identified as radial-general and neighbourhood centre streets. Although the objectives and guidance provided above should be followed, specific issues for each street have been identified throughout the development of the movement strategy that require a more bespoke cross section.

The new radial route through the southern quadrant may have to cater for HGV traffic given its relationship with the A1(M). Accordingly it is proposed that access be managed by way of a planted central reservation. Parking should only be provided in inset bays and access to side streets should generally be limited or appropriately spaced.

Current proposals for Pennine Way include a 'boulevard' treatment with strong tree planting, managed parking in inset bays, and the provision of service lanes in particular circumstances, as is shown opposite.



Cross section showing how the southern relief road can manage the interface between road level and building levels, at the same time as providing a high quality and well contained edge to the town.



Cross section illustrating how the southern extension mainstreet can be designed to accommodate both high link and high place status along its length through the use of a solid median.



Cross section illustrating how the Pennine Way can be designed to accommodate efficient movement of traffic, whilst providing a high amenity condition for residences along it through the use of a service lane.

TOWN CENTRE - CORE STREETS THE HIGH STREET

Context

The High Street has always been the most prominent communication route through the town. It carries high volumes of general vehicle and bus traffic, and in places is very wide, as is shown opposite. At the same time the High Street is one of the most important gateways to the town and serves as the focus for high street retailing with direct access to the Issac Newton Shipping centre and the South Kesteven Council Offices and the Guildhall.

Key issues

The key issues to be addressed are the conflicts between walking and vehicles. We need to discourage unnecessary through traffic and improve the quality and accessibility of bus facilities and nodes.

Design focus

The focus for this segment is to provide higher amenity walking and cycling facilities along and across the street, with a higher order public realm treatment commensurate with its town centre core streets status. Traffic should be encouraged to make greater use of the town centre traffic collar and additional carriageway space should be given over to the provision of high quality public transport facilities where possible.

EXISTING



Wide Road Dominated by Cars

PROPOSED



Higher quality public realm, material & furniture
Widen footways where possible
Provide new local bus node with bus border facilities

Improved landscaped park edge

TOWN CENTRE - CORE STREETS WESTGATE

Context

As with the High Street, Westgate and Wide Westgate has been a defining feature of the town's urban structure and focus for civic activity since medieval times. The street largely caters for destination and access traffic. Excess carriageway space is currently given over to echelon car parking. The street is a landmark townscape feature for the town, and retail uses run along the length of the street.

Key issues

The key issues to be addressed are the current domination of car parking over other street users, and the poor quality of the public realm.

Design focus

The design focus for this segment is to recreate the street as one of the town's foremost townscape features, and as a key part of the town's retail circuit. While parking should be retained, it should be rationalised to allow for the provision of raised tables to encourage informal movement to and from key destinations, such as into the Isaac Newton Centre, and to the High Street. Ideally parking should be shifted into the centre of the street in a perpendicular arrangement. This will allow for market stalls to face back to back, and thus do away with existing issues of the stalls' back doors facing onto existing retail premises. Footways should be widened and trees should be planted where possible, and in positions that do not block sight lines of St Wulframs Church.

EXISTING



Wide carriageway dominated by cars

Historic townscape context

No pedestrian crossing facilities

PROPOSED



High quality public realm treatment

Shift parking to footway level in central reservation

Narrow carriageway

TOWN CENTRE - CORE EXPANSION

Context

The 'core expansion' street segments are those that run adjacent to or through the proposed town centre regeneration sites of Station Road, Wharf Road and Greyfriars. These segments are predominantly lower order roads that will provide access to the sites. They currently have very little in the way of intensive land uses or townscape character, and the quality of the public realm is generally poor.

Key issues

The key issues for this segment are to address the lack of land use activity/frontage, and poor walking and cycling facilities.

Design focus

The focus for this segment type will be to transform these streets into extensions of the existing core streets like Westgate or the High Street. New high quality redevelopment should provide a positive edge to the street. Building forms should respect surrounding townscape conditions - for example Greyfriars fine grain burgage plots - and provide flexible ground floor spaces to allow for changes in activity over time.

The streets themselves should be as narrow as possible (approx 5.5m) to manage traffic speeds to that commensurate with access only traffic. Footway parking can be used to create flexible areas for walking and parking alike, and trees should line these streets to provide a softer environment for residential uses, in contrast to the other key town core streets where trees should be used only sparingly. Raised tables should be used to provide high quality walking connections on key desire lines. Public realm elements should be of high quality, but not necessary to the level expected of core streets.

EXISTING



Poor Quality Public Realm and Frontage

PROPOSED



Inset footway parking bays

Narrow carriageway and raised table crossings

Structured tree planting

TOWN CENTRE - TRAFFIC COLLAR

Context

Grantham's town centre traffic collar is a critical route for all forms of motorised traffic moving to, from and within the town. It caters for high volumes of traffic, and this role will increase with proposals to emphasise the use of the High Street for public transport, as well as uplifts in vehicular traffic in associated with planned growth across the town. The northern and southern sections of the traffic collar also have, or will have, a reasonably high place status. This tension between movement and place can be characterised by sections of Wharf Road that where frontage development is suffering under the burden of congestion, high numbers of HGV's and pedestrian severance.

Key issues

The key issues for this segment are to resolve congestion impacts on walkability.

Design focus

The focus for this segment type is to greatly improve walking and cycling connections across the traffic collar into the town centre proper. Opportunities exist to deliver improved connections through private development at the three town centre regeneration sites. Station Road and Wharf Road in particular have the opportunity to markedly improve walking connections across Wharf Road as illustrated opposite. New development also has the opportunity to markedly improve the scale, enclosure and activity through the delivery of new positive edges fronting the street. It is critical that any and all crossing improvements consider possible traffic carrying capacity and seek to minimise them as far as is reasonably possible.

EXISTING



Negative frontage
Exposed bus station

Narrow footways
No pedestrian crossing facility on desire lines

PROPOSED



Potential frontage
New frontage enclosing bus station

Side road entry treatments
Pedestrian crossing facility on desire line

DESIGN DEVELOPMENT AND DELIVERY

The street strategy and design guidance presented above provides a sound basis for considering the future form and function of streets. Yet, successfully designing streets is not just a matter of resolving the physical complexities found on the street, but also involves the resolution of a myriad of different public and private stakeholder interests into a holistic, coherent and deliverable solution for the street.

PROJECT SET UP

When setting up a street design study or project, it is important that the team of designers are multidisciplinary, and include as a minimum a traffic engineer and transport planner, an urban designer and planner and a landscape architect. Other specialisms should be brought in as and when required including public artists, structural engineers and quantity surveyors and physical works contract managers.

At the outset of the project, the team should consult directly with utility operators and those responsible for maintaining the public realm so as to understand constraints on the design process.

Wider stakeholder and public engagement is a critical part of the design process. The engagement process needs to be open and democratic, with genuine opportunities for people to contribute to the direction of the design.

STREET STRATEGY REVIEW

The project should begin with a review of the street segment allocations presented in this document. A more detailed investigation of particular movement and place issues should allow for a more detailed list of issues, opportunities and constraints, as well as a fuller list of design objectives for the study area in question.

Deviations from the design guidance provided here should be agreed with SKDC and LCC.

BASELINE CONDITIONS

A baseline assessment of physical conditions should be undertaken at the outset of the project and should include all of the aspects of streets as discussed above and listed again below:

- Land use activity and diversity,
- Townscape character,
- Public realm function and form,
- Landscape and planting features,
- Access, servicing and parking,
- Carriageway opportunities and constraints,
- Current and future movement demands both regionally and locally.

It is also critical that the street design project review in detail:

- Geographic and topographical conditions
- Utilities and services
- Wider development policy and projects
- Procedural issues
- Funding streams

STREET PROCESSES

Streets are the fabric in which people interact socially, economically and culturally, and where people are engaged in the continual process of making decisions about where to move to in response to this interaction. Understanding the process of interaction on the street is as important as the baseline conditions, as the street must be fit for purpose to accommodate the right kind of movement in the right way.

As a result of this we must engage with the people who use the spaces every day and find out what they want and why they do what they do.

This is best achieved through either a street audit and/or workshop process, both of which have been used successfully to deliver the movement strategy and street planning framework. The workshop should aspire to cover the key problems and potentials of the area from the perspective of the street user. The design team needs to respond with what is possible based on the baseline assessment undertaken previously and in response to specific constraints as well as those which are less site specific such as money. Finally, it is important that proposals are presented to stakeholders and street users so as to allow them the ability to examine, criticise and choose as this allows designs to evolve to the needs of the people in question.

CATALYSTS

Only once there is an understanding of an area's existing conditions and evolving processes can the design team and decision makers be able to make informed decisions about interventions in the public realm. Whether it is the introduction of new street lighting, public seating or bus priority measures, the objective should always be focused on catalysing new and positive interactions between movement and place, such as encouraging people to feel safe when using streets at night, spend more time on the street, to use public transport. Only by understanding how places work can decisions be processed in confidence that our interventions will really benefit the people who use them.

APPENDIX A: PROJECTS

NORTHERN CURRENT

BARROWBY ROAD

The existing route is an A1 road of mixed place status along its length. The road is classified as the A52 and provides for regional movement including interchange with A1.

(i)

This segment is suburban residential in character and has direct frontage to the south side. The road section includes a segregated cycle / footway and is subject to a 40mph limit.

(ii)

This section of Barrowby includes a more mature suburban area with frontage development. This segment also has a segregated cycle / footway and an existing speed limit of 30mph. Towards the eastern end, the street character rises to P2.

GONERBY ROAD

This road provides an important link to the A1 from Grantham town centre and has been classified as a B1 route. Its place status varies significantly along route reflecting the variable urban and townscape contexts through which the road passes.

(i)

This segment includes the area of rural hinterland and the historic village of Great Gonerby. Within this segment the road changes from a fast (60mph) rural distributor to a busy village street (30mph) with place status reaching P3 (P2 + 1) towards the centre around the local school, church, pub and shop. An advisory 20mph is located towards the village centre.

(ii)

Following a short section of rural road (P0), the road travels through the suburban area of north Grantham. The road has a cycle / footway on the north side providing continuous access along the corridor. Along its length the place status is generally P1 but increases to P2 for two short sections around a local school and public open space.

(iii)

Once under the rail bridge this section of Gonerby Road contains a fine example of a historic Georgian Avenue with character frontage (P2). The cycle / footway provide quality access along this link.

MANTHORPE ROAD

This route provides access to the north east of Grantham, in particular to Lincoln, and has been classified as a B1 route. The route travels through a mix of urban and townscape types including rural area, villages, suburban fringe and edge of town centre areas. Place status is generally P1 but increases on several sections due to character areas and near the town hospital.

(i)

This segment includes the transition from rural distributor to urban area. This includes a step down in speed limit from 50 – 30mph and corresponding increase in place status from P0 to P2 due to historic village character. The route is classified as the A607 but is noted to be less busy than the A607 towards the south west of Grantham.

(ii)

This segment travels through more mature and historic areas of Grantham, with a corresponding place status of P1 and P2 when it passes the hospital.



Link and Place - existing situation

NORTHERN STRATEGY

BARROWBY ROAD

(i)

The whole northside of the road will be developed as part of the northern urban extension. Traffic management measures and a reduction of speed limit to 30mph are recommended. A series of lateral connections between the existing neighbourhoods to either side of the Northwest Quadrant should be brought forward as part of development here. The area of Barrowby Road approaching the roundabout will become a new local centre and street frontage should be designed to include on street parking or a parallel street for parking.

(ii)

Increased traffic arising from town centre development may necessitate improved pedestrian crossings on this route. Towards the eastern section the urban extension should include new cycle / footpath links from the development to Barrowby Road that may necessitate a new Toucan Crossing to provide walking and cycle access to both sides of Barrowby Road in vicinity of the rail bridge.

PENNIE WAY

(i)

The new section should be redesigned to B1 P2 status and balance the needs of movement with local centre pedestrian and kerbside space requirements.

(ii)

The main section of Pennine Way should be designed to B1 P3 status and include an element of frontage development along with a steady level of service for buses and vehicles.

GONERBY ROAD

(i)

Increased traffic on this route may require public realm treatments to improve pedestrian movement in the village centre. On street parking should be formalised to provide for local access to the village amenities.

(ii)

This section of road will act as a key bus spine. Passive or active bus priority measures should be provided in areas of possible delay. Increased traffic may require more formal traffic management zones to be provided at P2 locations and other P1 areas.

(iii)

Given the P2 status the road may benefit from environmental improvements such as a tree planting. Additionally active or passive bus priority should be considered especially the approach to the traffic signals.

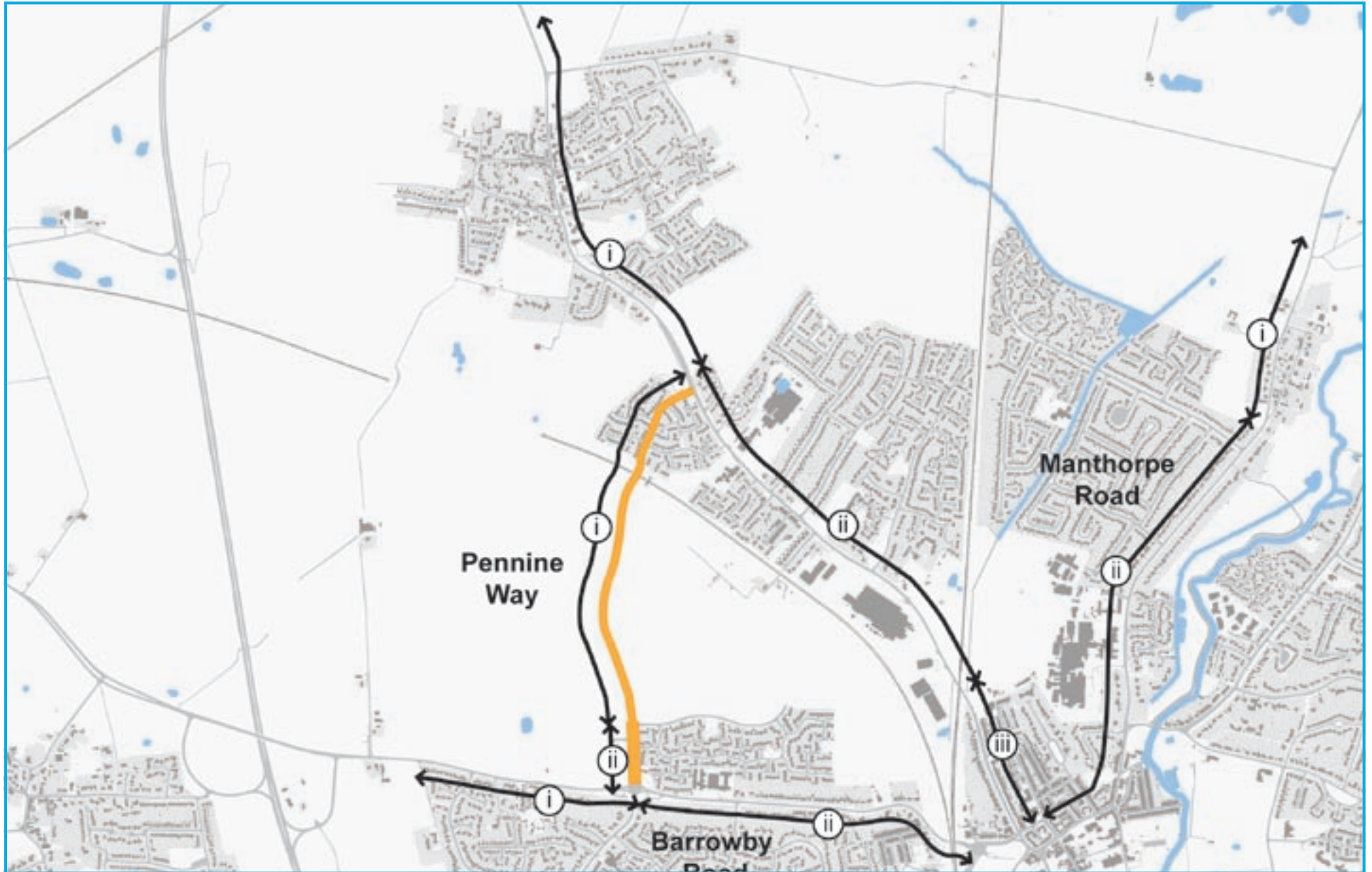
MANTHORPE ROAD

(i)

This section of Manthorpe Road may require public realm treatments to improve conditions for walking and cycling and reduce the impact of freight on the village. Wider freight network planning may be able to redirect HGVs away from this route.

(ii)

This section will need to deal with increased traffic. Local traffic management projects are recommended to better deal with neighbourhood integration along route. The signalised junction with Belton Lane should have pedestrian crossing facilities installed as a priority.



Link and Place - Strategy

SOUTHERN CURRENT

SOMERBY HILL

Somerby Hill is part of the A52, an interurban route connecting the A1(M) to destinations in the east (including Boston) via Grantham town centre. It carries mixed traffic with heavy freight flows. The place status varies along its route and is highest towards the town centre.

(i)

This section of Somerby Hill is named Bridge End Road as it approaches Gainsborough Corner. Given the intensity of small scale retail and some restaurants the area has been classified as place status P3. Two Pelican crossings are provided, suggesting that unaided pedestrian crossing is difficult.

(ii)

This segment travels through the existing suburban fringe and urban edge. There are a number of local residential roads connecting into this segment and a single Pelican crossing. The road is of normal character and classified as P1.

(iii)

This section of road is predominantly rural in nature will open landscape to south and the army Barracks to the north. The segment is classified as A2 P0.

(iv)

As with segment (iii), this section is rural in nature and classified P0.

SPITTLGATE LEVEL

The road provides a link to the A1(M) South via south facing slip roads. The road is designated as a B1 and travels through a mix of land use contexts as it moves from the town centre fringe through to the countryside.

(i)

This segment passes through Gainsborough Corner, with a row of character cottages on the eastern side, along with some out of town retail including an Aldi food store. The segment is categorised as a P2.

(ii)

This section of Spittlegate Level travels through a mix of edge-of-settlement land uses including a residential caravan park, car sales and small scale manufacturing facilities along with rural open land. The place status fluctuates from P0 to P1 along its length.

LONDON ROAD

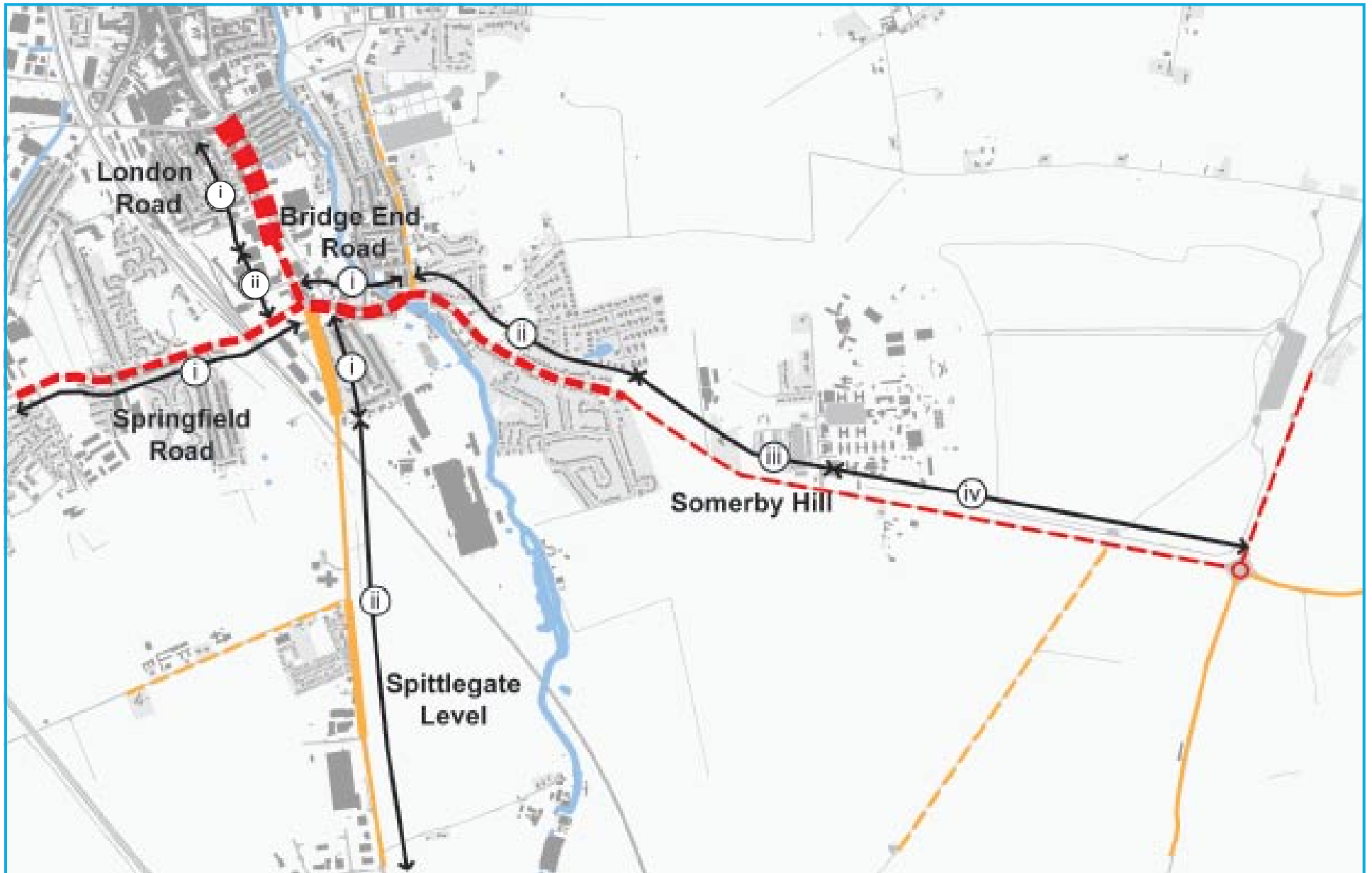
This road is a busy radial street connecting into the town centre with a heavy traffic function due to the convergence of three routes at its southern end. At its northern end, the street enjoys much character and is lined with historic buildings and is categorised as P2. Towards its southern end, the street has lost some of its character over time as bulk retail units and light industrial units have emerged. Given the traffic volumes the street has been categorised as an A1.

(i)

This is the northern most section of London Road and has been categorised as P2. The carriageway at this point is very wide and accommodates a mix of traffic functions.

(ii)

This segment provides access to several bulk retail and light industrial uses.



Link and Place - existing situation

SOUTHERN PROPOSED

SOUTHERN RELIEF ROAD

This route will provide a high standard A2 link between the A1(M) and the A52 and form part of the inter urban road network in order to provide much needed relief to town centre streets. The route will have significant regeneration benefits as it will relieve through and freight traffic, opening up land for the southern urban extension and unlocking town centre regeneration sites.

(i)

This section will include a new grade separated junction with the A1(M) and provide direct access to large scale warehousing and distribution uses, connecting into Spittlegate Level via a large roundabout. The scale and nature of route on this segment will be A2 P1, with speed limit of 40 – 50mph.

(ii)

This section of the road will travel over the valley floor and above the River Witham and the ECML. Given the embankment at either end of the bridge structure (approximately 300m), the segment will have little opportunity for development and should be designed to A2 P0.

(iii)

This segment will be formed 'at grade', working with existing landform and proposed development as it traverses up the slope towards the hill summit. A junction will provide access to the urban extension main street. This segment will provide a positive development frontage, albeit set back from the relief road with landscaping and accessed via it's own

neighbourhood street. This typology would provide a definite and positive edge to the town. The L+P classification should be A2 P2.

(iv)

This segment will traverse the final section of slope towards the brow of the hill linking back to the existing junction. This portion of the urban extension will be mainly open space and highway frontage with structural landscaping. The L+P design response should be A2 P0.

SOMERBY HILL

(i)

This section of Somerby Hill will benefit significantly from a reduction in traffic and freight through the delivery of the southern relief road. As the urban extensions grows, however, there may be a net increase in general traffic on this route unless measures are taken. The road will need to act as a key bus spine to and from the urban extension. Traffic management measures should be used to capitalise upon traffic and freight relief afforded by the southern relief road and relocated space and function to kerb side activity, walking, cycling and public transport on balance with traffic capacity. A new/improved connection between Dysart Park and the River Witham walking and cycling facility should be pursued.

(ii)

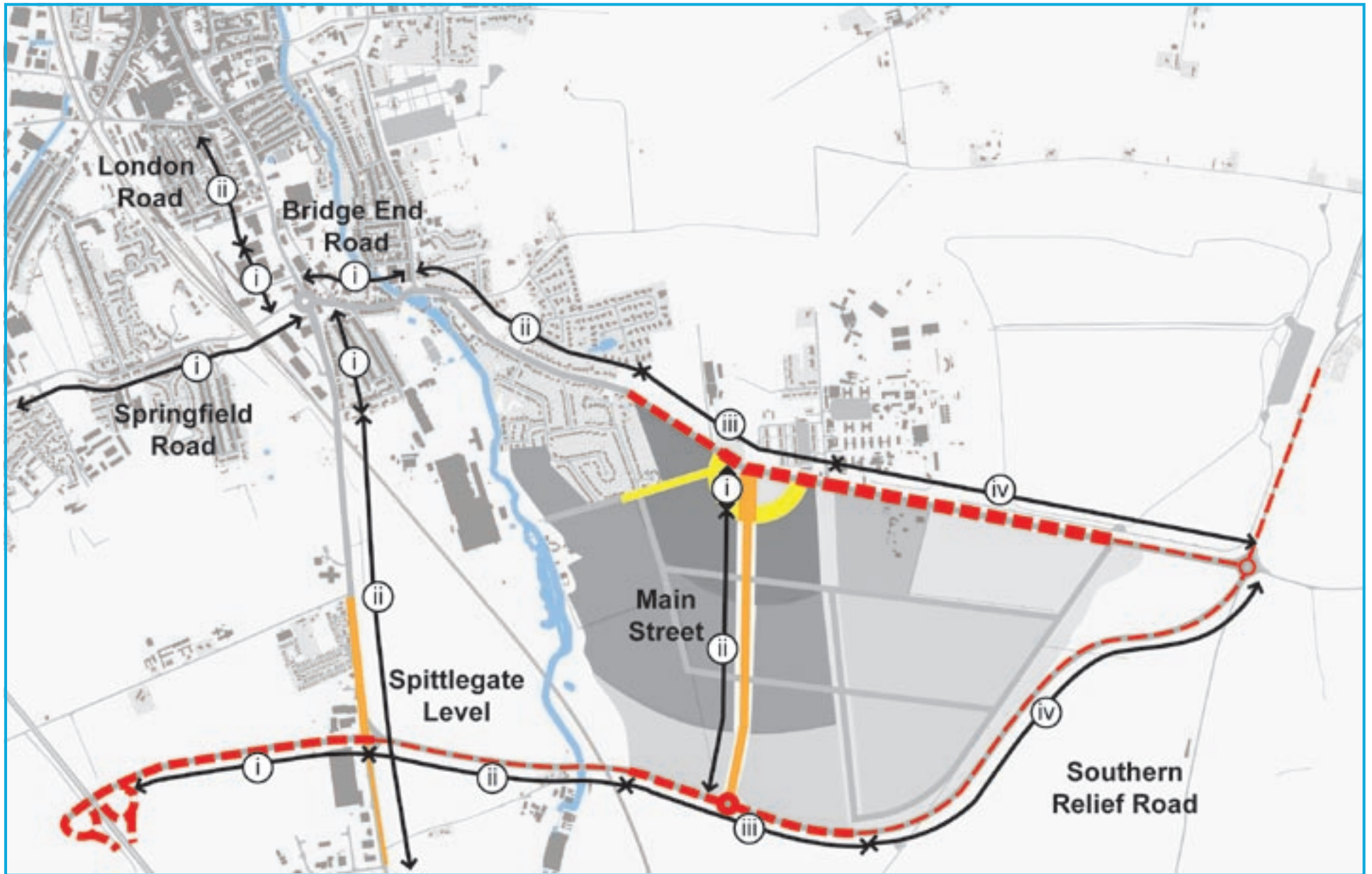
This segment will need to deal with the increased multi-modal demands along the corridor and will be improved to include better footway / cycleway provision and bus priority.

(iii)

This segment will change from a rural highway to urban street and provide a 'front door' to the development and its new local centre. A crescent or similar shaped street could become the setting for a new village green lined with local shops and amenities. Under this arrangement, Somerby Road will be classified P2, and the town centre crescent will be P4.

(iv)

This section of the redesigned Somerby Road will provide a change from a rural highway to urban street. It's suggested that the place status is P2 reflecting its new context.



Link and Place - Strategy

MAIN STREET

The street will serve as an important link connecting the southern relief road to the A52 through the heart of the new urban extension. It will both function as a B1 link with a place status of P2 to P4 as it will also serve as the urban extensions 'mainstreet', with a diverse range of local amenities and facilities provided along it. Additionally, the road will need to accommodate a new bus loop service serving the development.

(i)

This segment will act as a focus for the new local centre and should be designed to a high place status of P4 (local centre with character). The design of the street will need to balance the competing demands for movement with kerb side activity (such as parking and loading) and the needs of pedestrians.

(ii)

This section of the street will connect into the southern relief road at its southern end. It will be designated as a B1 P2 status.

SPITTLGATE LEVEL

(i)

Traffic levels on this route are forecast to increase with the provision of the southern relief road, and it will be necessary to provide additional capacity approaching Gainsborough Corner for all modes of transport. Additionally, the street will need to act as an important bus corridor to and from the urban extension.

LONDON ROAD

(i)

This busy street will require improvements to better cater for the needs of traffic, bus traffic and kerb side activity. It is likely that given street width constraints that reallocation of function and space to buses will be required, most likely in the form of bus lanes in mid block locations, and/or approaching signals. Detailed traffic modelling will be required to determine the best arrangement here. Kerb side activity is also important. Property access arrangements could potentially be consolidated by connecting private parking courts together, and thus reducing the number of turning movements along London Road.

(ii)

As with segment (i) above, traffic management improvement to regulate right turning traffic and improve lateral pedestrian movement will form important aims for this segment, along with the aforementioned bus priority improvements.



Cross section showing how the Southern Relief Road can manage the interface between road level and building levels, at the same time as providing a high quality and well contained edge to the town.



Cross section illustrating how the mainstreet can be designed to accommodate both high link and high place status along its length.

TOWN CENTRE CURRENT

WATERGATE / HIGH STREET / ST PETERS HILL AREA

Historically this street formed part of the Great North Road, and continues to serve as the mainstreet through the heart of the town. Given the streets prominent network position and heavy traffic flows it has been categorised as a B1. The street is lined with high quality historic frontage along most of it's length. Additionally, the whole street lies within the town centre core, taking its place status up to P6 along it's whole length. The road space along St Peters Hill is fairly generous with 4 lanes provided. Watergate and High Street have less highway space with a single running lane in each direction. Two northbound approach lanes are provided towards the traffic collar. Kerbside space is regulated through waiting and loading restrictions.

MARKET PLACE / CONDUIT LANE / UNION STREET / WIDE WESTGATE

Historic Market Place forms an important part of Grantham's urban structure and form, and once served as a focus for market activity for centuries. Given the special character and core town centre location, the space has been categorised as P7 (the highest possible).

Conduit Lane and Union street provide for local access northwards from Market Place. Although the street forms part of the town centre (P4), the place status has been downgraded to P3 to take account of poor quality townscape. Wide Westgate is also an important part of Grantham's historic fabric with special character arising from it's broad form and historic frontage. Again, the street has been classified as P7, although this drops to P4 at the junction of Dysart Road.

BROAD ST / BROOK ST

These streets currently form part of the town centre traffic collar on the northern edge of the town centre proper. Although none of the routes form part of the 'A' road network, the streets are very busy given the convergence of several radial routes, close junction spacing and proximity of large car parks. The area has been designated as P4 status given the town centre context.

SANKT AUGUSTIN WAY

This road is a critical part of the town centre traffic collar providing a by-pass for town centre streets. The road is classified as link status 'A1' given that it forms part of the A52 interurban network with high volumes of traffic and large proportions of HGVs. The road does suffer from a poor streetscene and this has contributed to a downgrading of the place status from P4 (Town Centre) to P3.

WHARF ROAD / STATION APPROACH

Wharf Road is part of the A52 interurban network from the A1(M) through to London Road, and has been classified as Link A1. Due to low bridge height issues throughout the town many HGV trips from the A1 are forced to use the Harlaxton Road bridge given lack of alternatives, creating a noisy and hostile street environment on Wharf Road.

Station Approach currently provides access to the Station and is classified as a C1 link. The road is just beyond the town centre boundary and has thus been classified as a P1, although the area near the historic cottages has been upgraded to P2. The southern approach to Station Approach is accessed off London Road and provides a similar function, albeit its place status is defined as P2 given it's character.



Link and Place - existing situation

TOWN CENTRE OVERARCHING STRATEGY

WATERGATE / HIGH STREET / ST PETERS HILL AREA

The overall town centre strategy seeks to reprioritise town centre streets for destination movement. The St Peters Hill area in particular will be downgraded to a B2 Link status to reflect this shift in priority. Non access traffic will be encouraged to use the town centre traffic collar by way of traffic management measures. Reduced traffic volumes and speeds on St Peters Hill must be capitalised upon with bus priority improvements, as well as improved walking and cycling connections. Collectively, all of these initiatives are designed to better serve the town centre, particularly the retail and civic uses that run along the length of the street.

MARKET PLACE / CONDUIT LANE / UNION STREET / WIDE WESTGATE

Given the high place status of Market Place, the strategy seeks to downgrade the link function to a pedestrian only route on the eastern side. This would necessitate traffic rerouting along Conduit Lane / Union Street. Wide Westgate's high place status would benefit from a reduction in vehicular flow and street improvements that widen footways and better manage kerbside parking. Buses could also be re-routed along this street. Options for the Market Place and Wide Westgate are discussed further on in this chapter.

BROAD ST / BROOK ST

The strategy for this section of town focuses on providing much better pedestrian and cycle connections from radial routes across the town centre traffic collar to the town centre. This could include proper integration of cycle facilities into traffic junction layouts and signal arrangements. This may reduce traffic capacity marginally, but the need for these improvements are reinforced by the P4 status of the street network.

SANKT AUGUSTIN WAY

The strategy for this section of road focuses on maintaining level of service for traffic, which in practice will mean considering improvements to the junctions to the north (Asda roundabout) and south (Dysart Road Gyratory). Both of these junctions will be under pressure from the increased traffic loading arising from the urban extensions that needs to be provided for, alongside improvements to other modes.

WHARF ROAD / STATION APPROACH

The construction of the southern relief road will reduce HGV traffic on Wharf Road, London Road and Harlaxton Road. However, general increases in traffic are expected from the urban extensions and town centre development. The strategy will therefore need to maintain traffic capacity on this corridor whilst better integrating other modes such as pedestrians, cyclists and buses along and across it. A new local street connection should be delivered between Wharf Road and London Road via Station Approach and Station Road east. This link would provide much more flexible local access to the Station Approach development area, as well as the significant town centre car parks and reduce the amount of unnecessary circulation on Wharf Road. In a more extreme form, the road would be opened up to some through traffic, thus taking the pressure off Wharf Road / London Road. It is understood that LCC are in discussions with East Coast Trains to adopt privately owned sections of road into public highway to enable this to occur.



Link and Place - Strategy