South Kesteven Infrastructure Delivery Plan

South Kesteven District Council

June 2025

Quality information

Prepared by	Checked by	Verified by	Approved by
Beth Parsons Senior Consultant	Esther Howe Associate Director	Esther Howe Associate Director	Esther Howe Associate Director
Alex Edwardson Consultant			
Heather Wells Senior Consultant			
Tom Mair Graduate Consultant			
Bruce Fyfe Associate Director			
Daniel Godfrey Associate Director			
Ross Paradise Principal Consultant			
Helen French Principal Consultant			
Mark Dixon Associate Director			
Tony Buckingham Regional Director			
Alastair Rohrer Senior Consultant			
Ben Higson Senior Consultant			
Georgie Carpenter Senior Consultant			

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Prepared for:

South Kesteven District Council

Prepared by:

AECOM

Aldgate Tower

2 Leman Street

London

E1 8FA

United Kingdom

Abbreviations

List of Abbreviations

Abbreviation	Definition
AIMS	Asset Management Information System
A&E	Accident and Emergency
BEIS	Business, Energy and Industrial Strategy
BESS	Battery Energy Storage Systems
BRES	Business Register and Employment Survey
CCA	Combined County Authority
CHP	Combined Heat and Power
CIL	Community Infrastructure Levy
DCMS	Department for Culture, Media & Sport
DfE	Department for Education
DfT	Department for Transport
DHSC	Department of Health and Social Care
DLUHC	Department for Levelling Up, Housing and Communities
DMO	Demand Management Options
DNO	Distribution Network Operators
DWMP	Drainage and Water Management Plan
DYAA	Dry Year Annual Average
EA	Environment Agency
ECA	East Coast Upgrade
EFSA	Education and Skills Funding Agency
EMAS	East Midlands Ambulance Service
FCERM	Flood and Coastal Erosion Risk Management
FCRM	Flood and Coastal Risk Management
FE	Further Education
FTTC	Fibre to the Cabinet
FTTP	Fibre to the Premises
Gbps	Gigabit per second

Abbreviation	Definition
GGSS	Green Gas Support Scheme
GI	Green Infrastructure
GiA	Grant in Aid
GLLEP	Greater Lincolnshire Local Enterprise Partnership
GP	General Practitioner
GSP	Grid Supply Point
GSRR	Grantham Southern Relief Road
GWh	Gigawatt hour
HP	High Pressure
ICB	Integrated Care Board
ICS	Integrated Care System
ICT	Information and Communications Technology
IDB	Internal Drainage Board
IDP	Infrastructure Delivery Plan
IL	Infrastructure Levy
IMD	Indices of Multiple Deprivation
IRMP	Integrated Risk Management Plan
JLFRWMS	Joint Lincolnshire Flood Risk and Water Management Strategy
JLFRWMP	Joint Lincolnshire Flood Risk and Water Management Partnership
LCC	Lincolnshire County Council
LFR	Lincolnshire Fire and Rescue
l / h / d	litres per head per day
LLFA	Lead Local Flood Authority
LPA	Lead Planning Authority
LRIS	Lincolnshire Rail Infrastructure Strategy
LSOA	Lower Super Output Area
LTDP	Long Term Development Plan
LTS	Local Transmission Systems
Mbps	Megabit per second

Abbreviation	Definition
Ml / d	Million litres per day
MW	Megawatt
NG	National Grid
NGED	National Grid Electricity Distribution
NHS	National Health Service
NPPF	National Planning Policy Framework
NVQ	National Vocational Qualification
NTS	National Transmission System
NZHF	Net Zero Hydrogen Fund
O&M	Operation and Maintenance
ONS	Office for National Statistics
PAN	Pupil Admissions Number
PCC	Police and Crime Commissioner
PCN	Primary Care Network
PIA	Physical Infrastructure Access
PPG	Planning Practice Guidance
PPOSS	Playing Pitch and Outdoor Sports Strategy
PRoW	Public Right of Way
PV	Photovoltaics
PWLB	Public Works Loan Board
REPD	Renewable Energy Planning Database
RHI	Renewable Heat Incentive
RMA	Risk Management Authority
RFCC	Regional Flood and Coastal Committee
RoFfSW	Risk of Flooding from Surface Water
RRS	Regional Renewable Statistics
RTC	Road Traffic Collision
S106	Section 106
SAB	SuDS Approval Body

Abbreviation	Definition
SFRA	Strategic Flood Risk Assessment
SKDC	South Kesteven District Council
SoP	Standard of Protection
SPD	Supplementary Planning Document
SuDS	Sustainable Drainage Systems
SUE	Sustainable Urban Extension
TSO	Transmission System Operator
UKSPF	UK Shared Prosperity Fund
UTC	Urgent Treatment Centre
WAFU	Water Available For Use
WRC	Water Recycling Centre
WRMP	Water Resources Management Plan
WRZ	Water Resource Zone

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1. Non-Technical Executive Summary

1.1 Introduction

South Kesteven District Council (SKDC) is currently preparing a Local Plan Review covering the period to 2041. This Infrastructure Delivery Plan (IDP) identifies the various infrastructure which is required to support anticipated growth in order to inform the strategic approach and policies within the Local Plan Review and enable all stakeholders to effectively plan for the timely funding and delivery of that infrastructure.

This report builds on the previous work undertaken by SKDC relating to infrastructure planning. It reflects consultation carried out by AECOM with key infrastructure planners and service providers, including relevant parts of Lincolnshire County Council (LCC) as well as other infrastructure providers and partners.

For each infrastructure type covered within the IDP, the existing infrastructure position within South Kesteven is summarised in terms of what is currently provided where and the balance between supply and demand. Planned investments which will provide additional capacity are reviewed, and future demand is considered together with any potential gaps in provision arising over the Local Plan period. Information on the costs of projects as well as the funding which has been secured to date, and potential delivery arrangements, is also presented.

The Project Schedule which accompanies the infrastructure assessment lists all infrastructure projects which have been identified through stakeholder consultation and documentation as planned to cater for demand over the Plan period.

1.2 Context and Planned Growth

National, regional and local policies and guidance relevant to the delivery of infrastructure in South Kesteven include: the National Planning Policy Framework (2023), the National Infrastructure Strategy (2020), the Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (2023), SKDC's Local Plan 2036 and Draft Local Plan 2041.

South Kesteven is located within the county of Lincolnshire, covering approximately 365 square miles. The current population of South Kesteven is approximately 143,400. There has been population growth of approximately 7.7% over the last 10-year period. The Draft Local Plan estimates that the population will increase to 154,833 in 2041, which represents a growth of around 11,000.

A lower-than-average proportion of working age residents of South Kesteven are economically active. Residents appear to be reasonably well-educated. South Kesteven as a whole ranks as the 234th most deprived local authority out of 317 in England. The majority of deprivation is recorded in and around Grantham.

The most significant broad industrial group in terms of most jobs contributed is the health sector. The economy of South Kesteven grew strongly over the last decade. The largest proportional increase in jobs was in the information and technology broad industrial group (75%). The motor trades (38.9%), agriculture, forestry, and fishing (33.3%), and professional, scientific, and technical (33.3%) industries also experienced large increases in jobs.

To inform the preparation of the IDP, SKDC provided AECOM with a development trajectory. There are 82 housing sites with capacity for 16,922 dwellings. Many of the sites in the development trajectory already have planning permission (c. 6,500 dwellings), have been allocated as part of SKDC's 2036 Local Plan (c. 6,000 dwellings), or are expected to be allocated as part of the Local Plan Review to 2041 (c. 3,000 dwellings). Housing growth is anticipated to be focused on the four market towns: Grantham, Stamford, Bourne and The Deepings.

There are also 14 employment sites which collectively comprise 179.2 hectares of developable land. The proposed employment sites range in size and could deliver a range of employment types.

1.3 Infrastructure Assessment: Transport

Roads

South Kesteven experiences greater car use than the wider East Midlands. Grantham is the main source of peak hour trips within South Kesteven. Outside of the district, Peterborough is the most important destination.

14 planned and potential highway schemes are identified within the Project Schedule (Appendix A). These comprise four schemes in relation to local road infrastructure; and 10 schemes in relation to strategic road infrastructure. There are also two more projects relating to EV and hydrogen charging infrastructure. Further possible schemes in South Kesteven include junction improvements between A52 and A1, and a new distributor road (part of the Stamford North Development).

454 additional EV charging points are forecast to be required by 2030 (mid-growth scenario), with upgrades to the grid capacity required to support the anticipated growth in ULEVs. Lincolnshire's EV Strategy sets out policies to meet these demands on a county-wide level.

In 2015, LCC analysis concluded that the majority of proposed development in South Kesteven had identified infrastructure improvements to mitigate impacts. The exception was the growth around Market Deeping, where further analysis was identified as required given the results of the 2015 LCC modelling (this position will evolve once updated modelling has been undertaken).

Costs are available for five of the 14 highway schemes within the Project Schedule. However only one scheme has been included within the IDP total cost and funding gap, as the other schemes are located outside of South Kesteven and serve wider geographies.

GSRR costs are estimated at £133 million and will be funded as follows:

- £11.9m from the Local Transport Board
- £16.1m from the Single Local Growth Fund
- £5m from the Highways England Growth and Housing Fund

In addition to the £133 million, the bridge extension is expected to cost a further £15 million. The balance of funding will come from developer contributions, which will be forward funded by Lincolnshire CC, who will also be funding part of the scheme.

Rail

South Kesteven experiences greater rail use than the wider East Midlands. Three stations are available within South Kesteven: Ancaster, Grantham, and Stamford. Grantham is the main station, providing long distance trips via the East Coast Mainline.

The Lincolnshire Rail Infrastructure Strategy (LRIS) identifies the East Coast Mainline (ECML) as well as Grantham station to be key infrastructure constraints. The Leicester-Peterborough line is also identified as limiting growth on the rail network.

The Project Schedule identifies five rail projects which will support growth in South Kesteven. It is proposed to deploy traffic management on the ECML via the East Coast Digital Programme. There is an aspiration to implement 140mph running on the ECML.

To enhance service frequency at Grantham station, it is recommended that an extra through platform and potentially an extra bay platform is provided (or alternatively an all station stopping Skegness service to avoid Grantham in some hours).

Full re-signalisation of the Leicester-Peterborough line is also identified within the LRIS as required to support employment and housing growth.

Costs and programme information is not currently available for the projects identified above. Overall, it can be expected that Network Rail (or Great British Rail in future) will be responsible for delivery of

these schemes, funded by the DfT in conjunction with Local Authorities and third parties as required via developer contributions.

Bus

Bus use is much lower in South Kesteven compared to the wider East Midlands. There are bus routes serving Grantham, Stamford, Market Deeping and Bourne and some larger villages. However, based on a review of bus availability, local services suffer from poor frequency, particularly local routes in relation to Stamford, Market Deeping and Bourne.

The Lincolnshire Bus Service Improvement Plan (BSIP) intends to increase patronage via enhancements to the 'Into Town' network (covering Grantham in the first phase, with improvements in the other towns if further BSIP funding becomes available at a later stage). The Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (SIDF) notes an aspiration to pilot e-bus schemes in urban areas across Lincolnshire.

Bus patronage is expected to follow national trends of decline, however it is hoped that specific intervention could enhance patronage on targeted services.

CallConnect (Lincolnshire's demand responsive service) is expected to be important to mitigate against social isolation, particularly if funding for non-commercially viable services is withdrawn.

14 bus projects have been identified within provider plans which will contribute to meeting demand arising from planned growth over the Local Plan period. Of these, 12 are within South Kesteven. Cost are known for three of the 12 projects, totalling £7.17m. No committed funding has been identified and therefore the funding gap is also identified as £7.17m.

It will be important for developers across the Local Plan to contribute towards the bus network as part of S106 contributions.

Likely funding sources over the local plan period will include the DfT, Network North and Local Transport Fund, with bus operators acting as key delivery partners including bus operators, local authorities and TfEM.

Pedestrian and Cycle

South Kesteven experiences greater walking and cycling levels than the wider East Midlands. Grantham has an established network of walking and cycling facilities, however the cycling facilities are typically not up to modern standards (e.g. LTN 1 / 20).

The walking and cycling network of the other urban areas within South Kesteven is more limited, with minimal cycling provision in more rural areas.

17 projects have been identified, as set out within the Project Schedule, which are planned to support growth in South Kesteven to 2041. Eight projects are costed totalling £14.9m; no committed funding has been identified in relation to these projects and so the funding gap is also £14.9m.

Cycling and Walking Network Plans developed for Grantham and Stamford identify specific infrastructure improvements required to support growth in walking / cycling within the district, as well as mechanisms to support accessibility to / from new development.

Future developments within South Kesteven will be required to provide connections to existing walking / cycling networks and also provide links between settlements and service provisions. This will likely be achieved via S106, with behavioural change promoted via Travel Plans.

There are a number of potential national and local funding sources for active travel, including via DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).

1.4 Infrastructure Assessment: Social and Green Infrastructure

Primary Education

There are 52 primary schools in South Kesteven.

There have been surplus capacity levels for the first year of primary school (reception) since 2020 across South Kesteven, and this is predicted to continue until 2026. However LCC forecasts only five years ahead and emphasised during consultation that if birth rates start to rise again this will more increase demand for primary places.

Four new primary schools are currently planned on major sites within South Kesteven over the Plan period (this includes an all-through school), together with the expansion of two existing primary schools. Detail on programme, costs and funding is currently limited.

Applying LCC pupil yields to the sites within the development trajectory which have yet to receive planning permission provides a high-level estimate of demand of 1,784 primary school places over the Local Plan Review period, with an associated cost of £35.9m.

Funding and delivery will be largely through developers, together with local and central government partners.

Secondary Education

There are 10 secondary schools in South Kesteven. Each of these is currently at or near capacity.

To support planned growth, additional funding would be required for secondary schools in Bourne and Grantham, with capacity levels in Stamford monitored. Large developments would look to be self-serving with their own school provision where possible.

At least one new secondary school (as part of an all-through school) is planned over the Local Plan period as part of Spitalgate Heath Garden Village, and a number of existing secondary schools are considering expanding. Detail on programme, costs and funding is currently limited.

Applying LCC pupil yields to the sites within the development trajectory which have yet to receive planning permission provides a high-level estimate of demand of 1,695 secondary school places over the Local Plan Review period, with an associated cost of £44.1m.

Funding of new schools is typically done by developer contributions, and delivery conducted by LCC.

Further Education

FE refers to post 16 (post-secondary) full time education which can be provided either at secondary schools with further education facilities or at separate colleges or sixth form colleges.

There are 10 further education providers across South Kesteven, comprising New College Stamford and Grantham College as well as eight sixth form providers. These provide a range of academic and vocational courses.

There are no known proposals for new or expanded FE colleges, though the plans for new and expanded secondary schools will expand the supply of sixth form places which is relevant to this age group.

Funding sources for new and improved facilities include developer contributions, the Education and Skills Funding Agency (ESFA), central government, the Local Enterprise Partnership (LEP) and local authority grants.

Primary Healthcare

There are five Primary Care Networks (PCNs) and 16 GP practices operating across South Kesteven with varying levels of capacity. Overall, the GP to patient ratio is lower (i.e. better) than the recommended target set by the Royal College of General Practitioners.

The way primary healthcare is being delivered is changing, including through a more integrated model of healthcare which will focus on delivering home-based care first, and then primary care, with the aim to avoid admissions to hospitals unless completely necessary.

No information is currently available on committed plans for primary care practices to support the proposed growth up to 2041, however with the projected population growth expected (with a significantly growing older population) demand is likely to increase for primary care services.

Using high level benchmarks, population growth to 2041 is estimated to generate demand for 6.4 new GPs, with an associated cost of £4.1m.

There are no national dedicated funding streams for primary care capital projects at present, and so S106 funding is important to support growth plans.

Acute Healthcare

There are two hospitals across South Kesteven which provide a range of services to patients including general and more specialised care. There are no A&E services in the district, but a 24-hour Urgent Treatment Centre (UTC) is provided by Grantham and District Hospital and there are a number of other hospitals surrounding South Kesteven which offer 24-hour A&E services.

There is no information available on projects for hospitals in the district. However, it is likely that increases in population forecast to 2041 will translate into increased demand for services. Effective primary healthcare development could reduce the need for emergency hospital admission, medical practices and technologies are evolving rapidly, and novel, agile working practices are being adopted.

Outdoor Sports

In total, there are 136 outdoor sports facilities in South Kesteven, located on 594.6 ha of space. Compared to the total population, this equates to a provision of approximately 4.5 ha outdoor sports facilities per 1,000 people, indicating that overall the current quantitative standard for provision across the district is met.

There are no planned projects identified in South Kesteven for outdoor sports, however, developments may be required to provide or contribute towards provision of facilities where there is an existing deficiency within an accessible distance. Once the Playing Pitch Strategy is adopted by the SKDC, it will provide further detail for Local Plan policies relating to sport and recreation provision.

Indoor Sports

SKDC owns two leisure centres and one leisure pool which are operated by LeisureSK.

There is no known planned provision for indoor sports facilities in South Kesteven, and SKDC does not currently have a Built Facilities Plan or Facilities Planning Model.

The Active Places Power Sports Facilities Calculator was run for South Kesteven by Sports England in March 2024 and based on the forecast population growth to 2041, potential demand has been identified for 0.78 sports halls and 0.57 swimming pools, with an associated cost of £4.8m.

Green Infrastructure

Green infrastructure (GI) encompasses a broad range of open spaces and other environmental features which make an important contribution to quality of life and sustainable development.

Due to the rural nature of the South Kesteven, the highest proportion of open space (47.3%) is natural and semi natural greenspace (total of 1,264.31 hectares). The total amount of open space across the district currently equates to 18.63ha per 1,000 population. The Open Space, Sports and Recreation

Study (2024) finds that, on the basis of an 8% population increase to 2041, current standards will fall slightly to provision of 17.25ha per 1,000 population in 2041.

A number of projects are in the pipeline for delivery by public sector partners (such as the Environment Agency and the Woodland Trust) and mechanisms to increase private sector investment through credit trading models are also in the process of being scoped out.

Going forward, the new mapping developed by the Greater Lincolnshire Nature Partnership will inform a key requirement for developers to demonstrate how they have considered green infrastructure and biodiversity commitments within their proposals.

Costs for one GI project (the EA's Upper Witham Floodplain reconnection and river restoration project) have been identified as £1m. Applying quantitative standards for provision of different types of open space to the projected population increase set out in the Draft Local Plan (11,433) and applying benchmark costs indicates an estimated cost of £9.1m for open space over the Local Plan Review period. This indicates total costs of £10.1m for GI over the Local Plan Review period, of which only £200k is currently committed.

Ambulance

East Midlands Ambulance Service (EMAS) provides the ambulance service in South Kesteven. There are currently three ambulance stations in the district which are located in Grantham, Stamford, and Bourne. Information received during stakeholder consultation illustrated that demand on the ambulance service is high, and although response times and handover delays have improved recently, wait times remain longer than they should be.

There is no evidence that EMAS will require new ambulance stations in South Kesteven to support the proposed growth up to 2041. However, there is a need for maintenance and upkeep at stations, along with vehicle replacements. A key challenge for the ambulance service will be supporting the move to electrification and installation of charging infrastructure. Funding for this is likely to come from NHS England and capital funding via the Integrated Care System (ICS).

Police

Lincolnshire Police provides services across South Kesteven. There are eight police stations within the district, however some of these operate as part-time stations. In addition to the stations, policing is increasingly being delivered 'on the move' which is being facilitated by advances in digital infrastructure.

There are no known projects planned for South Kesteven for new police stations. However, investment in ICT is a key priority for the service, as well as electrification of fleet, installation of electric charging infrastructure, and mobility of the service.

Emergency service requirements will need to be considered for all major developments. Funding for police infrastructure usually derives from a mixture of central government and local taxation.

Fire

The Lincolnshire Fire and Rescue Service provides fire services across South Kesteven. Within the district, there are six fire stations, one of which is a 'whole-time' station.

There is no known planned provision for additional fire stations across the district. However, funding is in place with LCC to support upgrading fleet and equipment, and maintenance of fire stations. The increase in population up to 2041 may present challenges for the fire service and Lincolnshire Fire and Rescue is currently looking into ways that buildings can be fitted with preventative fire safety measures.

Funding for fire infrastructure usually derives from a mixture of central government and local taxation. S106 contributions can also be sought if necessary.

1.5 Infrastructure Assessment: Utilities and Hard Infrastructure

Electricity

National Grid Electricity Distribution (NGED) is the regional Distribution Network Operator (DNO) that serves South Kesteven. Two of the thirteen primary substations that NGED operates within South Kesteven are currently operating with negative demand headroom capacity and do not have spare capacity to support future development.

Within Energy Options for Lincolnshire (Rider Levett Bucknall, 2023), forecasting identified that by 2034 nine of the thirteen primary substations within South Kesteven would have negative demand headroom capacity. The most constrained areas would be Grantham and Stamford due to large planned residential developments in these locations.

Transmission System Operators / DNO only reinforce their network infrastructure ahead of planned development that demonstrates a significant new demand requiring a region and network reinforcement. This is in accordance with their licencing conditions. Distribution network reinforcement takes 12 – 24 months to be implemented once the DNO has approved the reinforcement requirements.

Electric Vehicles (EV) and the electrification of heating systems is expected to create major pressure on the UK's electrical infrastructure network. Upgrades will be required to support the additional electrical loads.

DNOs fund the provision of electrical infrastructure under their licencing conditions. Early engagement with DNOs and Local Authorities along with an early financial commitment from developers can assist overcoming the capacity constraints of the electrical network infrastructure in areas proposed for development.

Gas

South Kesteven's gas is supplied by Cadent Gas through their gas infrastructure network.

The Cadent Gas Long Term Development Plan (LTDP) (October 2023) identifies that demand for gas will reduce from 2025 due to new government legislation imposed as part of the British Energy Security Strategy (2022) which aims to reduce gas consumption by 75% by 2050 in effort to reach the UK carbon net zero target.

The gas industry is playing a significant role in the low carbon economy with the introduction of biogases and hydrogen.

Cadent Gas reinforcement their network on a reactive basis following requirements for planned development.

Potable Water

Anglian Water is the potable water supplier to South Kesteven. South Kesteven is supplied by the Lincolnshire Central and Lincolnshire Bourne Water Resource Zones (WRZs) which, along with all of Anglian Water's supply area, are classed as under serious water stress by the Environment Agency.

The main issues affecting the WRZs' supply-demand balance are population growth, restoring sustainable abstraction and reductions to achieve environmental destinations. Climate change is also predicted to result in a reduction in Water for Available Use (WAFU) in Lincolnshire Central WRZ.

Lincolnshire Central WRZ is forecast to have a 122.8 Ml / day deficit, and Lincolnshire Bourne WRZ a 25 Ml / day, deficit by 2050 if no new measures are put in place.

Anglian Water plans to overcome the predicted deficit in 2050 through a customer-side demand management strategy and a supply-side strategy specifically focussing on transfers from other WRZ's. Key elements of the strategies are as follows:

- The preferred demand management strategy includes smart metering, leakage reduction and water efficiency measures;
- Total cost of the demand management strategy across the Anglian Water region is £4.7 billion; and
- The supply-side strategy focusses on adjusting the import and export of potable water to the WRZs, and upgrading water treatment works and distribution networks, specifically from Ruthamford North and Lincolnshire East WRZs.

The known supply-side strategy costs are approximately £262 million, noting that these costs relate to for the wider supply zones which supply South Kesteven and also other Local Authority areas.

The projects are to be funded by Anglian Water through the Ofwat regulated Price Review process which sets the price that Anglian Water can charge its customers and occurs every five years.

Costs for water connections for new development are paid by developers, as water companies can reclaim the cost of water and sewerage network upgrades from developers. Different types of connections have different charges which are determined by Anglian Water.

Wastewater

Anglian Water are the main sewerage undertakers for South Kesteven. There are 12 Water Resource Centres (WRC's) across South Kesteven and a sewer network of approximately 1,108 km.

It is expected that the demand for wastewater services across South Kesteven will increase due to population growth and climate change leading to more foul and surface water entering the network.

As part of the Water Cycle Study being undertaken to support the Local Plan, Anglian Water have calculated available headroom at WRCs based on increased demand from growth by 2036 from developments identified in the South Kesteven Local Plan. Of the 11 WRCs identified as receiving wastewater from planned growth, five are likely to have sufficient capacity without significant investment, a further three WRCs have headroom currently but require a phased approach to facilitate the planned development alongside planned capacity increases, and three will have insufficient capacity and require further investment.

Through their statutory Drainage and Water Management Plan (DWMP) process, Anglian Water risk-assessed the WRCs and their catchments. Anglian Water identified nine WRC catchments within South Kesteven as "At Risk" by 2050 and as part of the best value plan propose solutions to:

- Remove surface water from the sewerage system using SuDS and traditional strategies;
- Remove unrequired network flows;
- Increase capacity, particularly at WRCs; and
- Introduce targeted education schemes in tandem with partners to reduce demand.

Across their company area, Anglian Water are investing £5 billion between 2025-2050 to mitigate future risks to the wastewater network from expected growth and climate change. Of this, £99m and £266m respectively is estimated to be invested in wastewater infrastructure solutions within the wider river catchments (Welland and Witham Catchment Partnerships areas) in which South Kesteven is located. This gives an indication of the scale of investment that will be required in South Kesteven and surrounding Local Authority areas.

Costs associated with connecting new developments to the network are charged to the developer.

Renewable Energy

Based on publicly available information, there are approximately 3,600 renewable energy installations located in South Kesteven, including a large number of small-scale solar photovoltaic (PV) arrays, 13 onshore wind farms, and various other renewable heat technologies such as anaerobic digestion and biomass technologies. Renewable electricity generation in the district is estimated to be 127 GWh per year. For comparison, electricity demand in South Kesteven was roughly 593 GWh in 2021.

In order to meet the UK's climate change commitments and reach net zero emissions by 2050 as well as the Council's commitment to achieve a net zero carbon position for the entire district before 2050, it will be necessary to significantly increase the level of local renewable energy supply. Studies have identified the potential to increase the number of rooftop solar PV installations, as well as to investigate heat networks and large solar arrays. It has also been identified that South Kesteven and the wider region has good conditions for generating energy from wind, and the recent publication of 'Planning for Onshore Wind' suggests a relaxation of national planning policy which has in recent years restricted onshore wind farms. A more detailed assessment of renewable energy potential could be undertaken for the district to support the Local Plan. SKDC and its partners will need to enable and encourage delivery while also managing potential constraints such as spatial requirements and pressure on local grid infrastructure.

A review of information on costs, funding streams and delivery partners for potential renewables opportunities indicates lowering costs for the deployment of renewables as well as multiple funding routes and a maturing sector.

Digital Infrastructure

Existing infrastructure in South Kesteven is providing superfast broadband to the vast majority of homes.

Openreach is the primary provider in the area. This provides residents and businesses with a wide choice of broadband service providers such as BT, Sky or talk-talk. Virgin Media has coverage which appears to be focused in Grantham town centre and surrounding local areas only. A wider coverage from Virgin Media would provide better options for customers, particularly those with digital TVs.

Given the combination of government funding and telecom supplier self-funding for infrastructure modifications, new projects and developments in South Kesteven will require little funding to procure services. There are no indications that there would be difficulties in the delivery of services to new development. The existing network has already been upgraded and a good geographical distribution of telephone exchanges keep risks for delivery low.

South Kesteven has a suitable fibre network to support both future growth and emerging technologies over the Local Plan period. The fibre network has capabilities to reach much greater broadband speeds than is currently offered to the general public.

Flood Defences

The primary sources of flood risk in South Kesteven are fluvial and surface water, associated with the River Witham and Welland, and their tributaries.

Flood defences are primarily located along the River Witham and Welland, as well as the East and West Glen Rivers. These mainly comprise natural high ground and embankments. The condition and level of protection provided by the flood defences is variable and climate change is likely to reduce the effectiveness of the defences in the long term in the absence of works to maintain the level of protection.

There are areas of the district which are classified by the Environment Agency as having reduced flood risk due to flood defences. These are primarily to the east of the district, in the low lying fenlands areas with pockets along the Foston Beck and River Witham to the north. However, issues with this dataset highlighted by the Environment Agency limit the accuracy of this dataset for the Witham Catchment.

Areas most likely to be affected by fluvial impacts of climate change are:

- Eastern and south-eastern areas of the district due to the areas' low lying topography;
- Regions close to the East and West Glen Rivers; and
- North-western areas of the district, in proximity to Grantham and close to the River Welland confluence with the River Trent.

Areas in the district most sensitive to changes between the 100-year and 1,000-year surface water extents are similar to the areas at risk of fluvial flooding:

- To the north-west of the district, between Grantham and the north of the district boundary;
- To the east of the district, around the low lying fenlands; and,
- To the south of the district, around the Welland confluences with the East and West Glen Rivers.

The Project Schedule sets out 15 proposed flood alleviation schemes. Four schemes have been identified through the liaison with the LLFA and highlighted in the emerging SFRA. These include the following:

- Long Bennington Flood Alleviation Scheme;
- Grantham, Gonerby Road;
- Wilsthorpe; and,
- Bourne, Beech Avenue.

A further series of schemes is also proposed by the Environment Agency across the Witham and Welland Catchments.

There is limited information on funding for the projects above. However, across the Anglian Northern Regional Flood and Coastal Committee (RFCC) area, a total of £87.6m has been made available by the Environment Agency for flood risk management schemes. Since 2018, LCC has spent £1.77m on flood risk management.

The South Kesteven Local Plan 2011-2036 requires all development to be directed to areas at lowest risk of flooding by applying the sequential and exception tests, in line with national guidance. Where future developments within Flood Zone 2 and 3 are proposed, they may require improvements to flood defences to provide or maintain a 1 in 100 year Standard of Protection (SoP). However, this would need to be considered on a case by case basis and it would need to be demonstrated on a catchment level that flood risk is not increased downstream, through the loss of floodplain storage. For the proposed development identified in the Local Plan, the allocations to the east of Bourne in particular may require improvements to defences to ensure adequate protection for the proposed residential and employment sites, which are currently located partially in Flood Zone 2. This may add significant additional expense for developers. Liaison with the Environment Agency and the IDBs within South Kesteven will be required to determine any site-specific requirements with regards to Flood Defences.

Sustainable Drainage

Surface water is one of the main sources of flooding across South Kesteven. Several communities are at risk of flooding from this source. The areas of Grantham, Bourne and Stamford have a high prevalence of reported surface water flooding events in particular.

Strategic scale Sustainable Drainage Systems (SuDS) may form part of flood alleviation projects to reduce the impacts and frequency of existing surface water flooding problems. Anglian Water's DWMP includes long-term strategies to increase drainage capacity through surface water management and upsizing, and via emerging schemes in catchments susceptible to emerging growth. In addition, LCC is working on a flood alleviation scheme within Grantham at Gonerby Road, which may involve the implementation of SuDS.

SuDS for new major development will also be essential to ensure that surface water discharge rates and volumes from growth are kept to a minimum or as close to the pre-development runoff rate as possible, minimising the increase in flood risk downstream, particularly along the River Witham and Welland. It is likely that all the potential development sites referred to in this IDP are of sufficient size to require SuDS provision under the NPPF, however the small size of some of the sites may pose feasibility challenges to including provision within the development boundary.

SuDS must be designed and constructed in consultation with LCC in their role as Lead Local Flood Authority (LLFA) and / or the relevant Internal Drainage Boards (IDBs) as the Drainage Authority. The impacts of climate change must be considered in the design of SuDS schemes.

Funding for SuDS related to growth will be provided by developers, and in some cases where SUDS can form part of a wider solution to manage existing surface water flood risk, these may be part funded by the LLFA, the Environment Agency or water companies on a site by site or project by

project basis. Under the current legislative and policy position, SuDS constructed for new development will be maintained by private owners or in some cases, may be adopted by Anglian Water, the Highways Agency or LCC. Once Schedule 3 of the Flood and Water Management Act is enacted (expected 2024) the SuDS Approval Body (SAB) will adopt SuDS built to the requirements of new national SuDS standards.

Anglian Water's DWMP identifies significant investment in surface water management to manage WRC treatment and transmission capacity; however, SuDS specific schemes within the South Kesteven are not identified at this stage of planning.

Liaison with the LLFA, Environment Agency and the relevant IDBs will be required to determine site-specific requirements prior to SuDS construction and development.

1.6 Headline Findings and Delivery

The Project Schedule (Appendix A) identifies 74 infrastructure projects supporting growth to 2041. An additional five line-items in the Project Schedule relate to the modelled estimates of demand and costs for social infrastructure. Over half of the projects (52) are transport schemes.

Total costs of £269.3m and funding of £148.2m have been identified. This implies a funding gap of £121.3m. Only 24 of the 79 line items in the Project Schedule have costs against them.

Transport projects account for 63% of the costs identified within the IDP and 18% of the funding gap, while social and green infrastructure projects account for the 37% of the costs and 82% of the funding gap. No costs or committed funding have been identified for energy, digital or water projects.

Of the 74 projects, a timescale for delivery is identified for 25. Five schemes are likely to come forward in the 2021/22 to 2025/2026 period. 10 schemes are likely to come forward in the 2026/27 to 2030/31 period. Three schemes are likely to come forward in the 2031/32 to 2035/36 period.

The infrastructure items with the highest cost are the Grantham Southern Relief Road Phases 2 and 3; secondary school provision to 2041, primary school provision to 2041, open space required to 2041; and Route F of the Rutland LCWIP Proposed Route Interventions (Oakham to Stamford via A606 route).

As noted above, for the majority of the infrastructure projects delivery dates are not yet available. This is partly to be expected; most service providers operate to a three to five year programming cycle, and infrastructure provision associated with major allocations will be confirmed as these development projects move through the planning process. However, these gaps do emphasise the importance of ongoing work to develop and firm up the infrastructure projects required to deliver growth.

SKDC has engaged with neighbouring Local Planning Authorities (LPAs) as part of the process for formulating the Local Plan 2041. SKDC is also engaged with sub-regional partners such as the Greater Lincolnshire Local Enterprise Partnership (GLLEP). In November 2023, LCC, North Lincolnshire Council, and North East Lincolnshire Council secured a £750m devolution deal with the Government. This would see the three councils merge into a Combined County Authority (CCA) with an elected mayor. Some CCA funding will go towards housing and economic development projects, and this could be a relevant stream for some South Kesteven infrastructure projects from 2025/26 onwards.

There are a wide variety of infrastructure funding sources and delivery agencies relevant to the South Kesteven Local Plan 2041. As well as central government and its agencies, the third sector and utilities, there is potential for many items on South Kesteven's IDP Project Schedule to be funded by developers. S106 agreements signed in South Kesteven in 2022 / 23 will provide a monetary contribution totalling £7.24m.

The overall context for Local Authorities in recent years has been one of reducing budgets and increased reliance on competitive funding and the private sector to deliver services and new infrastructure. It is therefore important to consider how other funding sources available to Local Authorities could assist in meeting the infrastructure funding gap. Such sources include one-off Public Sector Grants, UK Shared Prosperity Fund (UKSPF), the Public Works Loan Board (PWLB), and third-party equity investment, where there are potential commercial returns for funders.

Beyond adoption of the Local Plan to 2041, the IDP can be updated as more detailed information comes forward. It will therefore provide a valuable tool to ensure that the infrastructure required to support growth in South Kesteven is effectively planned, funded and delivered. The review identifies that there are risks around some well-established funding sources while new alternative funding opportunities are emerging at the same time. Through continued joint-working, SKDC and partners will be in a strong position to respond promptly and effectively to infrastructure funding opportunities, and to attract investment.

2. Introduction

2.1 Objectives of the IDP

The purpose of this Infrastructure Delivery Plan (IDP) is to identify the infrastructure which is required to meet the growth anticipated in South Kesteven over the plan period up to 2041, along with associated costs, timing and delivery arrangements for that infrastructure.

The IDP will form part of the evidence base for the South Kesteven Local Plan. By identifying the infrastructure required to support the growth anticipated over the Local Plan Review period, it will support South Kesteven District Council (SKDC) and its partners in effectively planning for the timely funding and delivery of that infrastructure. This includes assisting decision making for planning applications and informing discussions around developer contributions.

This IDP reflects the findings of consultations carried out by AECOM with key infrastructure planners and service providers, including relevant departmental staff at SKDC, Lincolnshire County Council (LCC) and external partners such as those responsible for utilities, flood risk, and healthcare.

2.2 Scope and Approach

The scope and approach of the IDP reflects national planning policy and guidance, best practice in infrastructure planning, and discussion with SKDC officers. The infrastructure types addressed, as shown in Table 2.1Table 2.1, include services serving a local catchment as well as those which are more strategic in nature.

Table 2.1 IDP Scope by Infrastructure Type

Infrastructure Type	Sub-category
Transport	Roads
	Rail
	Bus
	Pedestrian and Cycle
Social and Green Infrastructure	Primary Education
	Secondary Education
	Further Education
	Primary Healthcare
	Acute Healthcare
	Outdoor Sports
	Indoor Sports
	Green Infrastructure and Open Space
	Ambulance

Infrastructure Type	Sub-category
	Police
	Fire
Utilities and Hard Infrastructure	Electricity
	Gas
	Potable Water
	Wastewater
	Renewable Energy
	Digital Infrastructure
	Flood Defences
	Sustainable Drainage

The preparation of the IDP has involved the following tasks:

- Desktop research was undertaken to understand the context and work undertaken to date, including reviewing local plans and policies and information on the baseline position, planned investment, future demand / supply gaps, and costs versus funding;
- A review of SKDC's development trajectory was undertaken in order to understand the likely quantum of population, housing and employment growth anticipated over the plan period;
- Stakeholder engagement was undertaken with providers of infrastructure in SKDC, so that local understanding of needs, future plans and the cost and funding positions could be reflected;
- Social infrastructure benchmark modelling was undertaken where useful to supplement existing information on needs and costs;
- Funding streams and delivery mechanisms which would best support the additional population and development of South Kesteven were reviewed; and
- The IDP report and Project Schedule (Appendix A) were formulated to present findings and conclusions.

2.3 Document Structure

The remainder of this report is structured as follows:

- Section 3 sets out the policy framework and presents a current profile of South Kesteven in order to set the context for the IDP. Planned housing and employment growth is detailed, including the timing and location of growth;
- Sections 4, 5 and 6 comprise the infrastructure needs assessment. For each topic, the baseline, future outlook, and cost, funding and delivery details are described in order to establish any gaps in provision that are likely to arise over the Local Plan period; and
- Section 7 summarises the Project Schedule, which details all known projects relevant to supporting South Kesteven's growth to 2041, in order to provide a picture of South Kesteven's infrastructure needs, costs and funding gap. Section 7 also sets out in more detail how infrastructure is to be delivered and funded.

This report is accompanied by the Project Schedule which lists the new or expanded infrastructure required in South Kesteven over the Plan period, including potential costs, committed funding and funding gaps, timescales, delivery responsibilities and funding opportunities where these are known.

3. Context

3.1 Policy Framework

The preparation of this IDP has taken into consideration a number of relevant national, regional and local policies and guidance relevant to the delivery of infrastructure in South Kesteven.

National

National Planning Policy Framework (2023)

The National Planning Policy Framework (NPPF), most recently updated in December 2023[1], sets out national planning policies and is supplemented by the Planning Policy Guidance (PPG). Paragraph 8 of the NPPF states that achieving sustainable development is an overarching goal of the planning system. There are three interdependent components within sustainable development, economic, social, and environmental. Paragraph 16 of the NPPF outlines that Local Plans must be prepared with the objective of contributing to sustainable development.

Paragraph 20 states that strategic policies should ensure sufficient provision for infrastructure and develop a strategy for the scale, pattern, and quality of new development:

"Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for… transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat); community facilities (such as health, education and cultural infrastructure); and conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation."

Paragraph 25 suggests that policy-making authorities should engage with infrastructure providers and other relevant bodies to assess and determine local need for new infrastructure provision.

National Infrastructure Strategy (2020)

The National Infrastructure Strategy[2], published in 2020, sets out the Government's ambitions to deliver an infrastructure "revolution", under the following main themes:

- Driving recovery and rebuilding the economy;
- Levelling up and strengthening the Union;
- Decarbonising the economy and adapting to climate change;
- Supporting private investment in infrastructure; and
- Accelerating and improving delivery.

British Energy Security Strategy (2022)

The British Energy Security Strategy published in April 2022[3] responds to the recent rise in energy prices caused by the surge in demand following the relaxation of COVID-19 restrictions as well as a reduction in supply following the Russian invasion of Ukraine. The strategy seeks to secure energy efficiency by reducing the amount of energy that households and businesses require as well as reducing the nation's dependence on imported oil and gas.

By 2030, the intention is for 95% of British energy to be low-carbon and by 2035 to have decarbonised our electricity system, subject to security of supply. This transition reduces dependence

[1] Department for Levelling Up, Housing and Communities. (2023). National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[2] HM Treasury (2020). National Infrastructure Strategy; Fairer, Faster, Greener. Available at: https://www.gov.uk/government/publications/national-infrastructure-strategy
[3] Department for Business, Energy & Industrial Strategy (2022). British Energy Security Strategy. Available at: https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy

on imported oil and gas and is intended to deliver a long-term shift to energy which is cleaner, cheaper and supports high skilled jobs.

Regional

Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (2023)

The Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework[4] (SIDF) provides a framework of the infrastructure opportunities and the need for investment in the region, set within the wider place context. It supports the implementation of strategic infrastructure which harnesses the productive capacity of key sectors, strengthens and future-proofs the region's connective assets, and underpins inclusive growth, in order to present opportunities for the area's businesses and residents.

The SIDF is underpinned by 3 priorities:

- Driving economic recovery and growth;
- Addressing levelling-up challenges; and
- Delivering decarbonisation and climate adaptation.

Specifically in relation to South Kesteven, the SIDF notes that some towns in the District benefit from being relatively well connected compared to other places within Greater Lincolnshire and Rutland, such as Market Deeping and Stamford which offer *"a high quality of life with commuter access to local employment hubs"*.

With regard to challenges, the SIDF states that there is a lack of electricity capacity across the region which constrains growth and limits the opportunities for renewable energy generation. It also suggests that housing affordability is an issue, particularly in areas such as Stamford.

Providing the right housing in the right places will deliver more growth in the region. To enable housing providers to respond to and deliver growth, infrastructure such as energy provision, transport, and water management must be in place.

Sustainable Urban Extensions (SUEs) have been planned across the region to build on and encourage investment to meet strategic needs as well as local needs. The SIDF details six SUEs in South Kesteven where major housing growth is planned and associated infrastructure will be required.[5]

Greater Lincolnshire Strategic Economic Plan (2016)

The GLLEP (Greater Lincolnshire Local Enterprise Partnership) Strategic Economic Plan[6] (SEP) sets out the priorities for growth, developed through economic analysis, commissioning studies and face-to-face interviews with local business leaders in the area. It presents priorities and drivers for success, namely:

- To drive growth by putting expansion into new markets, modern telecommunications, infrastructure improvements and the skills of individuals and business owners, at the forefront of what we do;
- To promote Greater Lincolnshire as a place for sustainable growth through improved transport infrastructure to connect us with national and international markets, enabling wider enjoyment of our world-class heritage sites, culture and strong communities; and
- To recognise the need for new housing for the local population and potential movers to the area, and support balanced housing and economic development through promoting the area's capacity to deliver high-quality economic growth.

[4] Lincolnshire County Council (2023). Greater Lincolnshire and Rutland's Strategic Infrastructure Delivery Framework. Available at: https://professionals.lincolnshire.gov.uk/downloads/file/2432/strategic-infrastructure-delivery-framework-sidf-
[5] These are: Rectory Farm, Grantham, Poplar Farm, Grantham, Elsea Park, Bourne, Prince William of Gloucester Barracks (allocation GR3-H4); Spitalgate Heath Garden Village (allocation GR3-H1); and Stamford North.
[6] Greater Lincolnshire Local Enterprise Partnership (2016). Strategic Economic Plan 2014-2030. Available at: https://www.greaterlincolnshirelep.co.uk/assets/documents/Strategic_Economic_Plan_2016_Refresh.pdf

Local

South Kesteven Local Plan (2020)

The South Kesteven Local Plan (2011-2036)[7] was adopted in January 2020. It aims to encourage sustainable growth and investment in South Kesteven up to 2036, providing greater certainty to both shape and guide development proposals. Within the Local Plan, key issues addressed include, but are not limited to:

- Supporting the growth of our local economy and helping to bring forward new job opportunities; and
- Supporting the prosperity and diversification of the rural economy; and
- Ensuring development is well designed and energy efficient.

The Plan states that *"sustainable growth in South Kesteven will need to be supported by the provision of appropriate new and upgraded infrastructure in order to ensure the best possible impact on the economic and environmental well-being of the district".* Policy ID1 (Infrastructure for Growth) sets out the overarching framework for delivering infrastructure to support growth. It requires consideration of local needs, timing, and viability of such infrastructure in order to be successful.

3.2 Current Profile of South Kesteven

Location and Population

South Kesteven is located in the county of Lincolnshire in the East Midlands. It covers an area of approximately 365 square miles. At the last census in 2021, the population of South Kesteven was approximately 143,404. The population had increased since the 2011 census, representing a 7.7% growth over the decade. This was similar to the East Midlands which experienced a 7.7% growth, and slightly above the national average growth of 6.6%.

According to data published by the Department for Levelling Up, Housing and Communities (DLUHC)[8], in 2022, the number of residential properties in South Kesteven was 66,199.

Workforce

In 2022, the economic activity rate for working age residents in South Kesteven was 73.7%, a lower proportion than in the East Midlands (77.4%) and England as a whole (78.7%)[9].

According to the 2021 census, 30.1% of residents in South Kesteven had achieved a degree-level qualification of above (NVQ Level 4+). This proportion was in line with the East Midlands (29.1%) but slightly lower than national rates (33.9%).

Business Register and Employment Survey (BRES) data indicates that in 2021, there were approximately 54,200 jobs in South Kesteven. The most significant broad industrial group in terms of most jobs contributed was the health sector which employed approximately 9,000, representing 16.6% of total employment. The following most significant employment groups were manufacturing and retail, both representing 11.1% of employment. This is shown in Table 3.1.

Table 3.1 Employment by Broad Industrial Group 2015-2021

Industry	2015 jobs	2021 jobs	Change (%)
Agriculture, forestry & fishing (A)	600	800	33.3
Mining, quarrying & utilities (B,D and E)	1,000	1,000	0.0
Manufacturing (C)	8,000	6,000	-25.0

[7] South Kesteven District Council (2020). Local Plan 2011-2036. Available at: https://www.southkesteven.gov.uk/planning-building-control/planning-policy-local-plans/south-kesteven-local-plan
[8] Department for Levelling Up, Housing and Communities (2023). Live tables on dwelling stock (including vacants).
[9] Office for National Statistics (2023). Annual Population Survey.

Construction (F)	3,000	2,500	-16.7
Motor trades (Part G)	900	1,250	38.9
Wholesale (Part G)	3,000	3,000	0.0
Retail (Part G)	6,000	6,000	0.0
Transport & storage (inc. postal) (H)	1,750	1,750	0.0
Accommodation & food services (I)	4,000	4,000	0.0
Information & communication (J)	1,000	1,750	75.0
Financial & insurance (K)	700	900	28.6
Property (L)	900	1,000	11.1
Professional, scientific & technical (M)	3,000	4,000	33.3
Business administration & support services (N)	3,000	3,000	0.0
Public administration & defence (O)	900	1,000	11.1
Education (P)	5,000	5,000	0.0%
Health (Q)	8,000	9,000	12.5
Arts, entertainment, recreation & other services (R,S,T and U)	2,500	2,250	-10.0
	53,250	**54,200**	**1.8**

Source: ONS (2022). Business Register and Employment Survey.

Deprivation

In 2019, South Kesteven was ranked as the 234th most deprived local authority, out of 317 in England. 9% of Lower Super Output Areas (LSOAs) in the district ranked within the 30% most deprived nationally, and 65% ranked within the 30% least deprived[10].

Deprivation differs across the District spatially with the most deprived areas being concentrated in Grantham, and the least deprived in the southern part of the District, near to Market Deeping and Stamford.

The Ministry of Housing, Communities and Local Government (now DLUHC) also publishes data breaking down the Index of Multiple Deprivation (IMD) into seven domains of deprivation. South Kesteven performs most poorly under the 'barriers to housing and services' domain, ranking the 145th most deprived local authority. On the other hand, it performs best for the 'crime' domain, for which it ranks 291st most deprived.

Economic Outlook

The economy of South Kesteven grew over the last decade, with Gross Value Added (GVA) increasing by 25.6% between 2011 and 2021. However, the UK grew on average by 37.3% over the same period. From an industry perspective, the largest growth in GVA was seen in the agriculture, mining, electricity, gas, water, and waste industry (ABDE)[11], with a 66.7% increase. Additionally, the wholesale and retail trade, and repair of motor vehicles (G); and real estate activities (L) industries

[10] Ministry of Housing, Communities, and Local Government (2019). English indices of deprivation 2019.
[11] Please note that grouping of industries differs for GVA data compared to BRES data in Table 3.1.

experienced 57.1% and 47.7% growth in GVA. However, industries such as financial and insurance (K), and arts, entertainment, and recreation (R) experienced decreases in GVA between 2011 and 2021 of 20.9% and 13.6% respectively.

As shown in Table 3.1, in the period 2015 to 2021, in terms of employment, an additional 950 jobs were recorded, representing an 1.8% increase in total employment. The largest proportional increase occurred in the information and communication group (75.0%). The motor trades (38.9%); agriculture, forestry, and fishing (33.3%); and professional, scientific, and technical (33.3%) industries also experienced large increases in jobs. Contrastingly, the manufacturing; construction; and arts, entertainment, recreation and other services industrial groups experienced declines in total employment (although this finding should be treated with some caution owing to the small numbers involved, this data is representative of the industrial groups that provide jobs within South Kesteven).

3.3 Growth in South Kesteven

Housing Growth

Table 3.2 shows forecast housing delivery by key timebands (five-year phases) over the period of the Local Plan Review to 2041. 16,922 homes are forecast to come forward between 2021 and 2041, with the second phase (2026 / 27 to 2030 / 31) set to deliver the greatest proportion of the total homes (37%). The development trajectory is made up of 82 housing sites. The list of sites, provided by SKDC to AECOM, is set out in Appendix B.

Table 3.2 Summary of Housing Growth by Five-year Phase

	2021 / 22 – 2025 / 2026	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total
New Housing Units	3,594	6,287	4,846	2,195	16,922
Cumulative New Housing Units	3,594	9,881	14,727	16,922	16,922

Source: SKDC

The development trajectory divides into sites which already have planning permission either full or in part (accounting for 6,618 units); sites which were allocated in the adopted Local Plan to 2036 but do not yet have planning permission (accounting for 6,022 units); and sites which SKDC propose are allocated within the Local Plan Review 2021 – 2041 (accounting for 2,901 units). In addition, 1,381 units are assumed to come forward through small sites / windfalls. This is shown in Table 3.3.

Table 3.3 Summary of Housing Growth by Planning Category

Planning Category	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total	2041+
Proposed Allocations in Local Plan to 2041	0	1,723	858	320	2,901	0
Allocated in Local Plan to 2036	180	1,902	2,481	1,459	6,022	4,430
Full planning permission	921	373	10	-	1,304	-
Outline planning permission	110	696	665	250	1,721	-
Reserved matters planning permission	1,350	536	200	16	2,102	-

Planning Category	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total	2041+
Allocated and part has full planning permission	348	640	482	-	1,470	-
Planning permission being considered	21	-	-	-	21	-
Small sites / windfall / demolitions	664	417	150	150	1,381	-
Total	**3,594**	**6,287**	**4,846**	**2,195**	**16,922**	**4,430**

Source: SKDC

Housing growth will be delivered across different sub-areas within South Kesteven, as described in the Draft Local Plan 2021 – 2041[12]. A breakdown of housing growth by sub-area is set out in Table 3.4 below. Most of the 16,922 homes (78%) will be delivered in the market towns of Grantham, Stamford, Bourne and The Deepings.

Table 3.4 Planned Housing Growth by Sub-area

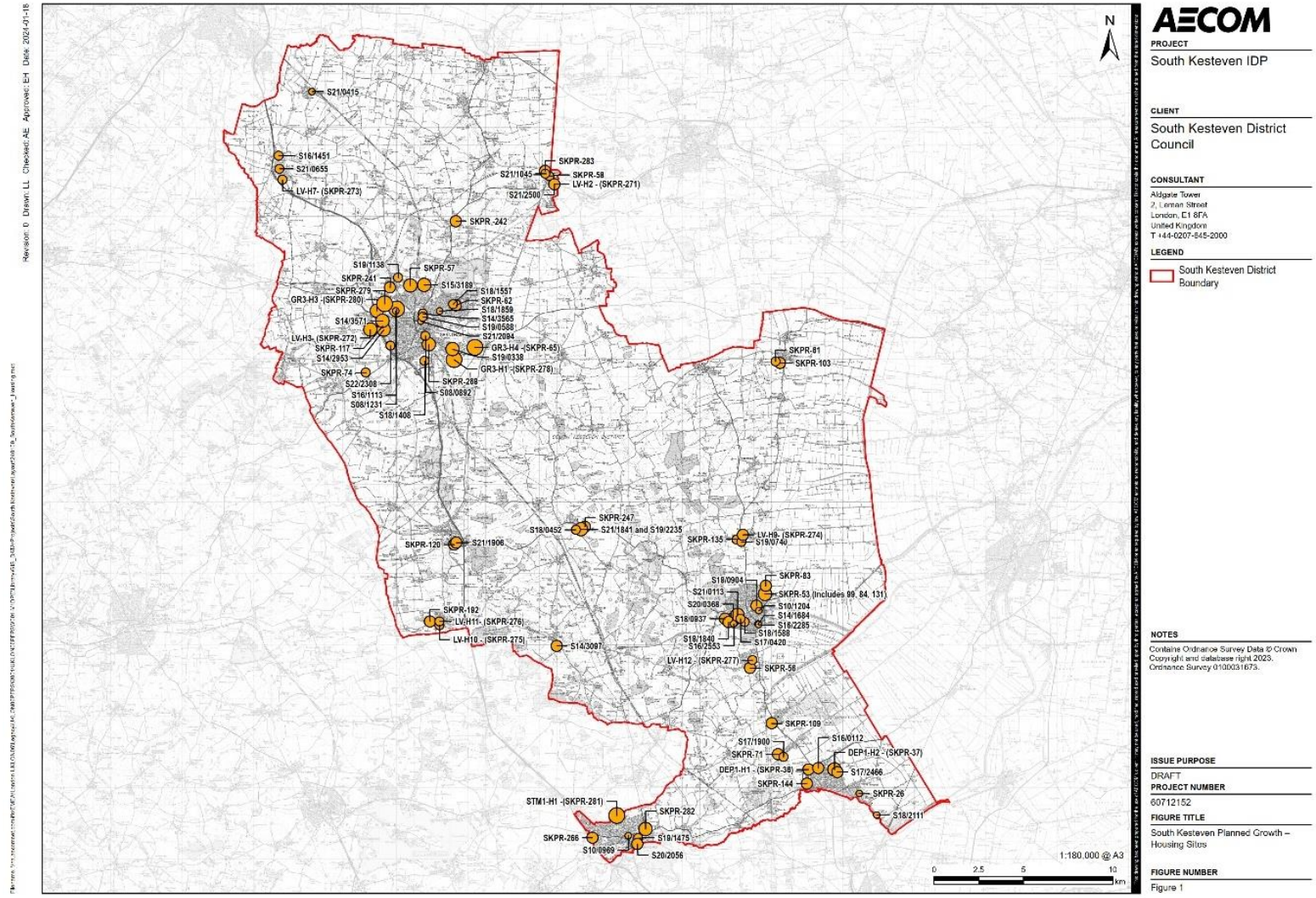
Sub-Area	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total	2041+
Market Towns	2,194	4,374	4,635	2,045	13,248	4,430
Larger Villages	712	1,439	61	-	2,212	-
Smaller Villages	24	57	-	-	81	-
Small sites / windfall / demolitions - no location specified	664	417	150	150	1,381	-
Total	**3,594**	**6,287**	**4,846**	**2,195**	**16,922**	**4,430**

Source: SKDC

Figure 3.1 below illustrates the location of the potential housing sites comprising the development trajectory to 2041.

[12] https://www.southkesteven.gov.uk/draft-local-plan-consultation Accessed March 2024.

Figure 3.1 Housing Growth Sites in South Kesteven 2021-2041



Source: AECOM

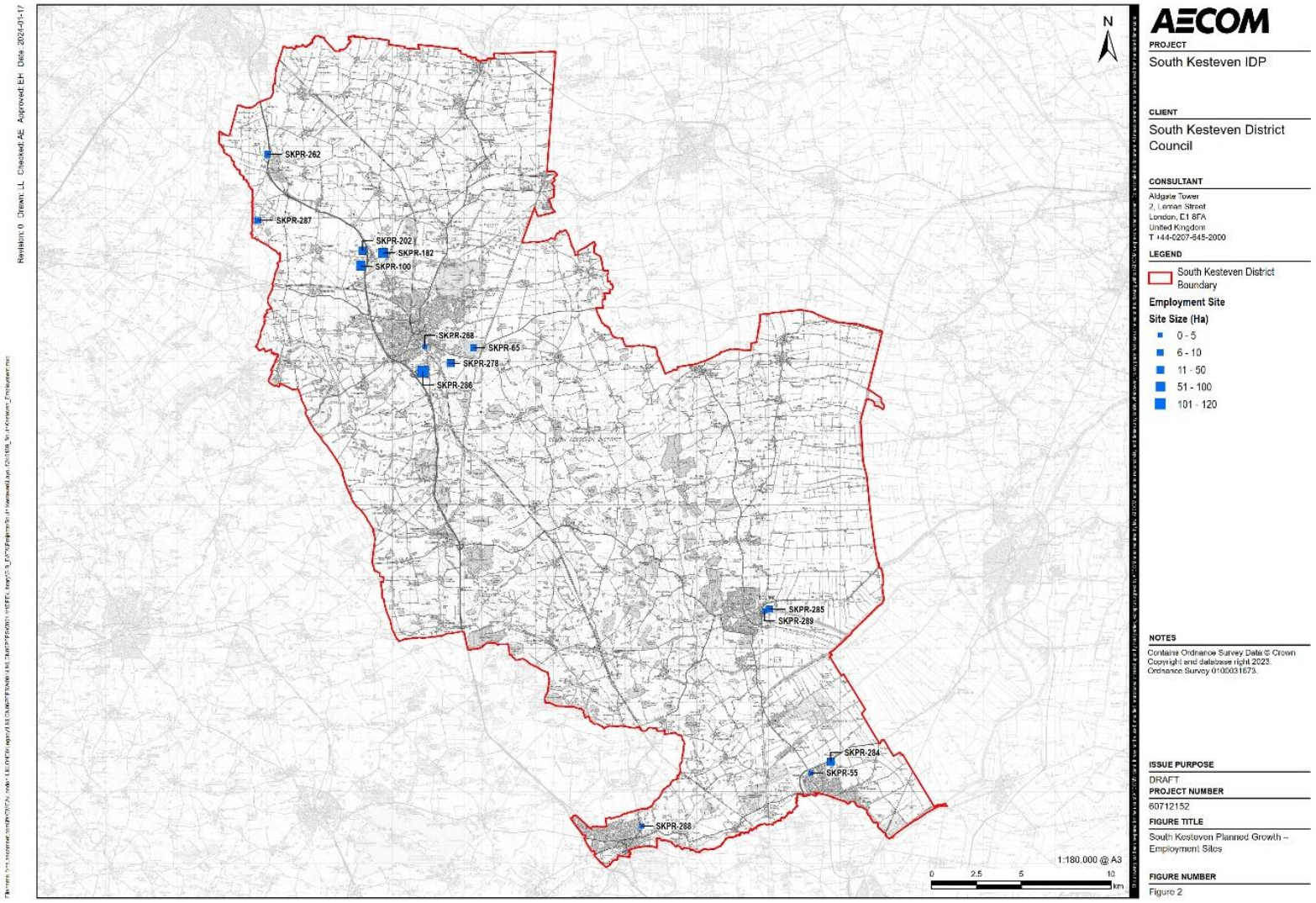
Employment Land

The development trajectory provided by SKDC also identifies potential future employment sites. There are 14 sites which collectively comprise 393.3 hectares of developable land. Appendix B sets out the sites and their size.

Five employment sites, accounting for 179.2ha of employment land, are expected to come forward in the first phase of the Local Plan Review period (i.e. 2021 / 22 – 2025 / 2026), with phasing for other sites as yet unknown. The proposed employment sites could deliver various use classes.

Figure 3.2 shows the location of the potential employment sites.

Figure 3.2 Employment Growth Sites in South Kesteven 2021-2041



Source: AECOM

3.4 Summary

National, regional and local policies and guidance relevant to the delivery of infrastructure in South Kesteven include: the National Planning Policy Framework (2023), the National Infrastructure Strategy (2020), the Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (2023), and SKDC's Local Plan 2036 and Draft Local Plan 2041.

South Kesteven is located within the county of Lincolnshire, covering approximately 365 square miles. There has been population growth of approximately 7.7% over the last 10-year period.

A lower-than-average proportion of working age residents of South Kesteven are economically active. Residents appear to be reasonably well-educated. The most significant broad industrial group in terms of most jobs contributed was the health sector which employed approximately 9,000 (16.6% of total employment).

Indicatively, South Kesteven as a whole ranks as the 234th most deprived local authority out of 317 in England. The majority of deprivation is recorded in and around Grantham.

The economy of South Kesteven grew strongly over the last decade. The largest proportional increase in jobs was in the information and technology broad industrial group (75%). The motor trades (38.9%), agriculture, forestry, and fishing (33.3%), and professional, scientific, and technical (33.3%) industries also experienced large increases in jobs.

Over the Plan period to 2041, South Kesteven is expected to experience significant growth. The Draft Local Plan forecasts that the population of South Kesteven will increase from 143,400 in 2021 to 154,833 in 2041, which represents an increase of around 11,000.

To aid the preparation of the IDP, SKDC provided AECOM with a development trajectory. There are 82 housing sites with capacity for 16,922 dwellings. Many of the sites in the development trajectory already have planning permission (c. 6,500 dwellings), have been allocated as part of SKDC's 2036 Local Plan (c. 6,000 dwellings), or are expected to be allocated as part of the Local Plan Review to 2041 (c. 3,000 dwellings). Housing growth is anticipated to be focused on the four market towns.

There are also 14 employment sites which collectively comprise 393.3 hectares of developable land. The proposed employment sites range in size and could deliver a range of employment types.

4. Infrastructure Assessment: Transport

4.1 Roads

Introduction

The NPPF sets out the importance of sustainability in relation to transport, in particular the need to ensure developments that generate significant movements are located where the need for travel will be minimised and the use of sustainable travel can be maximised.

As South Kesteven is a predominantly rural area, there will inevitably continue to be a heavy reliance on private car use. The purpose of this section is to identify the existing, planned and required provision with regards to road transport. Notwithstanding this, it is understood that South Kesteven District Council and Lincolnshire County Council (the highway authority) are in discussions to undertake modelling of the proposed local plan allocations which will allow a more detailed understanding of transport-related infrastructure requirements to address cumulative impacts.

Baseline

Data from both the 2011 and 2021 Census is summarised in Table 4.1, which shows the primary method of travel to work (a standard proxy for overall travel mode share). From this table, it can be seen that South Kesteven experiences greater car-use than the wider East Midlands (discounting through trips) in both the 2011 and 2021 census.

This also shows that private car mode share from the 2021 Census is greater than in 2011, with an increase of 2.3% for South Kesteven. (It should be noted that the 2021 Census occurred during a covid-related 'lockdown' and, as such, journey to work data during this time period needs to be treated with caution, particularly around public transport mode share).

Table 4.1 Method of Travel to Work

Method of Travel to Work	South Kesteven 2011	South Kesteven 2021	Difference	East Midlands 2011	East Midlands 2021	Difference
Train	2.1%	0.85%	-1.25%	1.4%	0.6%	-0.8%
Bus, minibus or coach	2.4%	1.16%	-1.24%	6.8%	4.4%	-2.4%
Taxi	0.4%	0.44%	+0.04%	0.4%	0.9%	+0.5%
Motorcycle	0.7%	0.53%	-0.17%	0.8%	0.5%	-0.3%
Driving in a car or van	72.4%	74.74%	+2.34%	69.7%	72.0%	+2.3%
Passenger in a car or van	6.2%	5.34%	-0.86%	6.6%	6.8%	+0.2%
Bicycle	3.2%	2.59%	-0.61%	3.0%	2.7%	-0.3%
On foot	12.5%	13.18%	0.68%	11.3%	10.9%	-0.4%

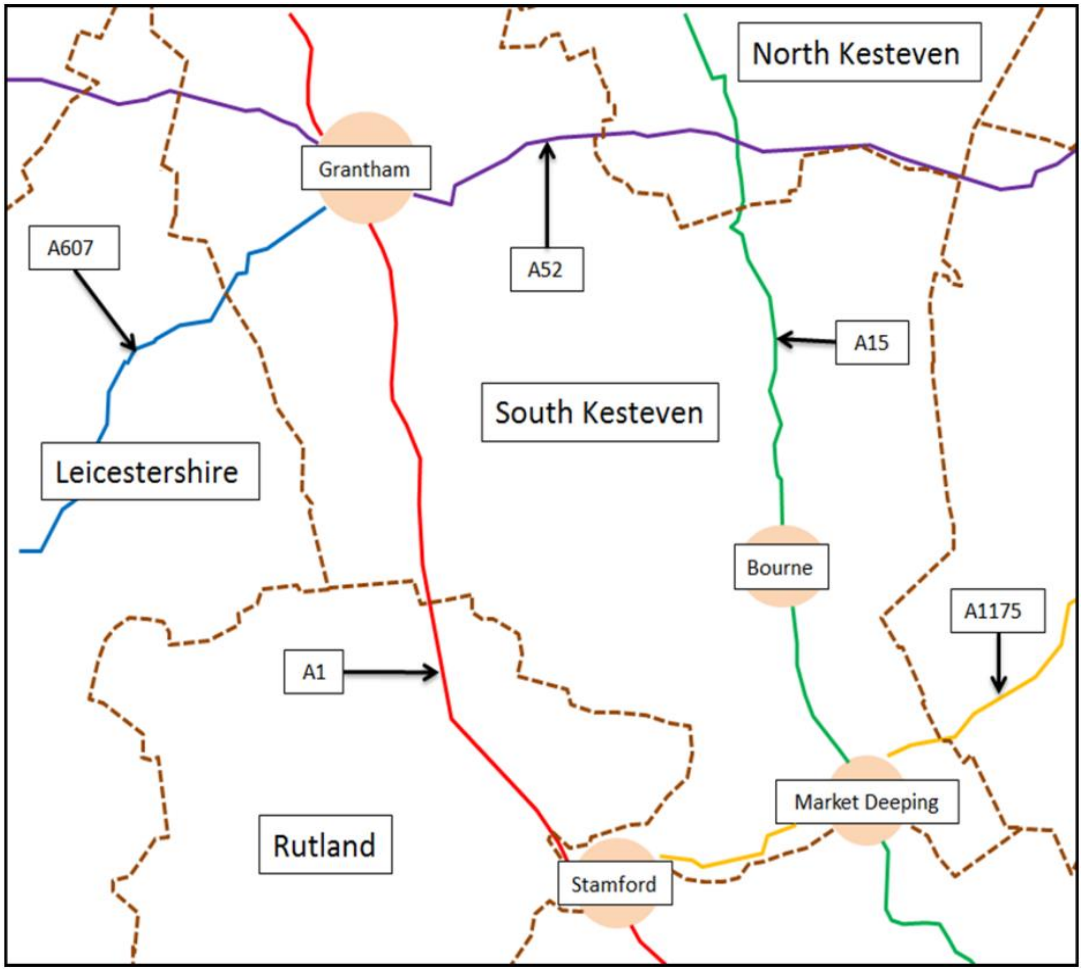
Source: 2011 and 2021 Census (Nomis Database)

Strategic Transport Routes

The A1, A15, A52, A1175 and A607 are strategic transport routes which provide important economic opportunities for the district. These routes are managed by LCC (the local highway authority) and National Highways (who are responsible for the trunk road network).

The routes are shown in Figure 4.1.

Figure 4.1 Strategic Transport Routes for South Kesteven



Source: AECOM

According to traffic modelling work undertaken for LCC in 2015[13], Grantham is the main source of peak hour trips to the Local Plan area, with other towns in South Kesteven – Stamford, Market Deeping and Bourne – also acting as significant sources of trips. Outside of the district, the main sources of trips are the immediately surrounding areas: Peterborough, South Holland, Newark, Lincoln, and Sleaford and North Kesteven.

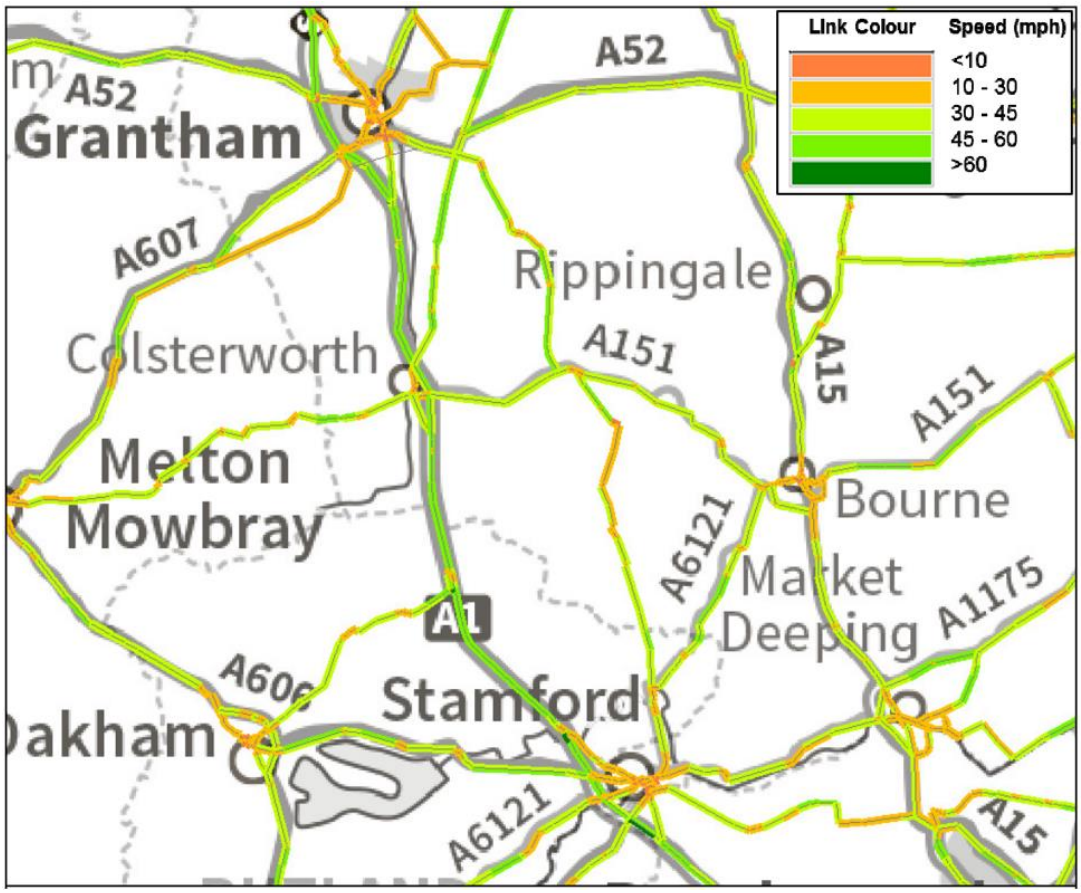
Destinations of trips from South Kesteven within the AM Peak show a similar pattern. Grantham is the single most important destination, and the other main towns within the district are also important. Outside of the district, Peterborough is one of the most significant destinations, and there are also strong connections with Lincoln, Spalding, Sleaford, Newark and Nottingham.

This broad pattern of baseline trips is unlikely to have materially changed since the 2015 modelling.

Figure 4.2 shows existing road network speeds as identified through LCC's modelling. Whilst Grantham and Stamford appear to be the main locations of congestion, the town centre of Bourne continues to suffer from the effects of through traffic, particularly north-south traffic using the A15.

[13] Note: It is understood that further modelling work has been commissioned but has not been completed at the time of writing. Owing to this, the conclusions of this section are interim until modelling is finalised.

Figure 4.2 Link Speeds



Source: Lincolnshire Local Plan Upper Tier Report, September 2015

National Highways Identified Hotspots

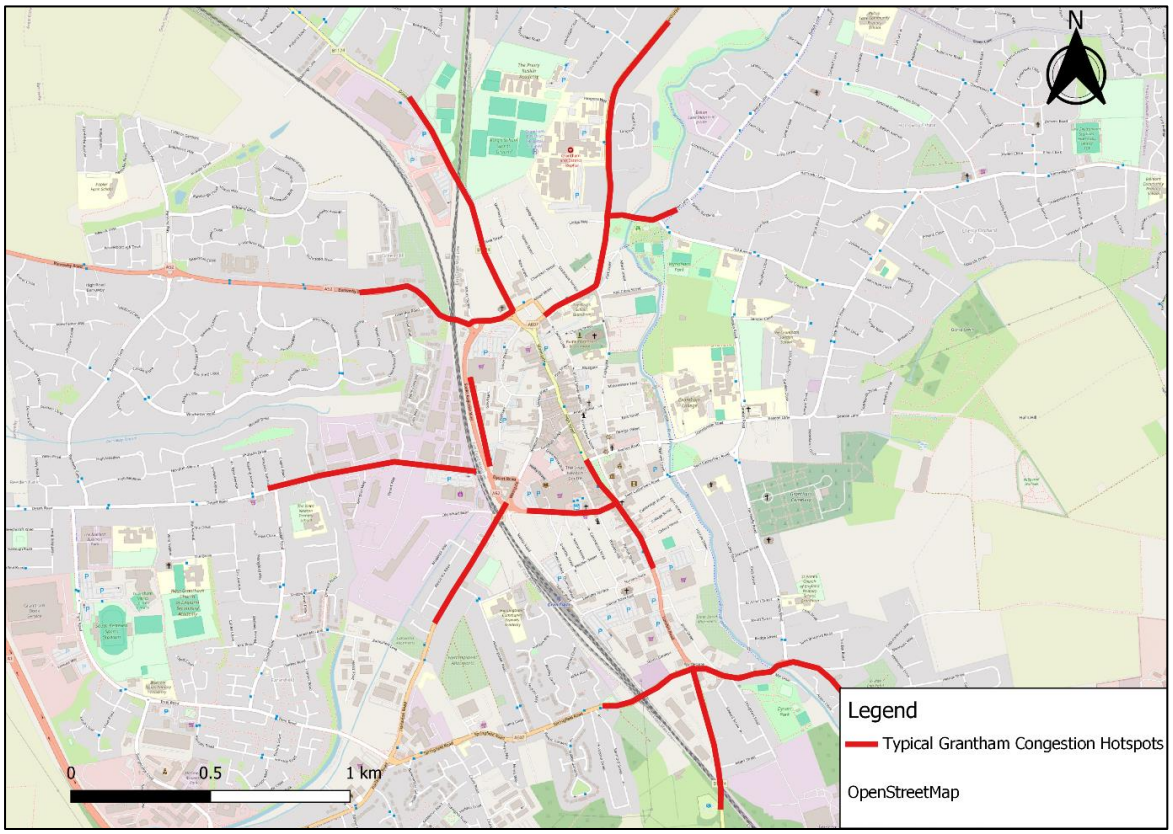
Further to the above, based on information provided by National Highways, the stretch of the A1 between Gonerby Moor and Long Benington has been flagged by National Highways as suffering from existing delays and safety issues. There are no planned improvements for this location but National Highways has identified this junction as an area for further investigation, comprising the A1 / Gonerby Moor junction and the A1 / Long Benington.

A1 Spitalgate interchange has recently opened with National Highways noting no existing issues at this location. However, Employment Allocation SKPR-286 and the Spitalgate Garden Village (SKPR-278) will have a cumulative impact which will need to be tested.

Local Road Network

Based on information provided by LCC, the junction of A52 / A607 (Springfield Road) / B1174 South Parade (Gainsborough Corner) is a particular known congestion hotspot within Grantham. This is shown in Figure 4.3 along with further congestion hotspots within Grantham. Congestion maps for the other urban areas within South Kesteven are shown in Appendix C.

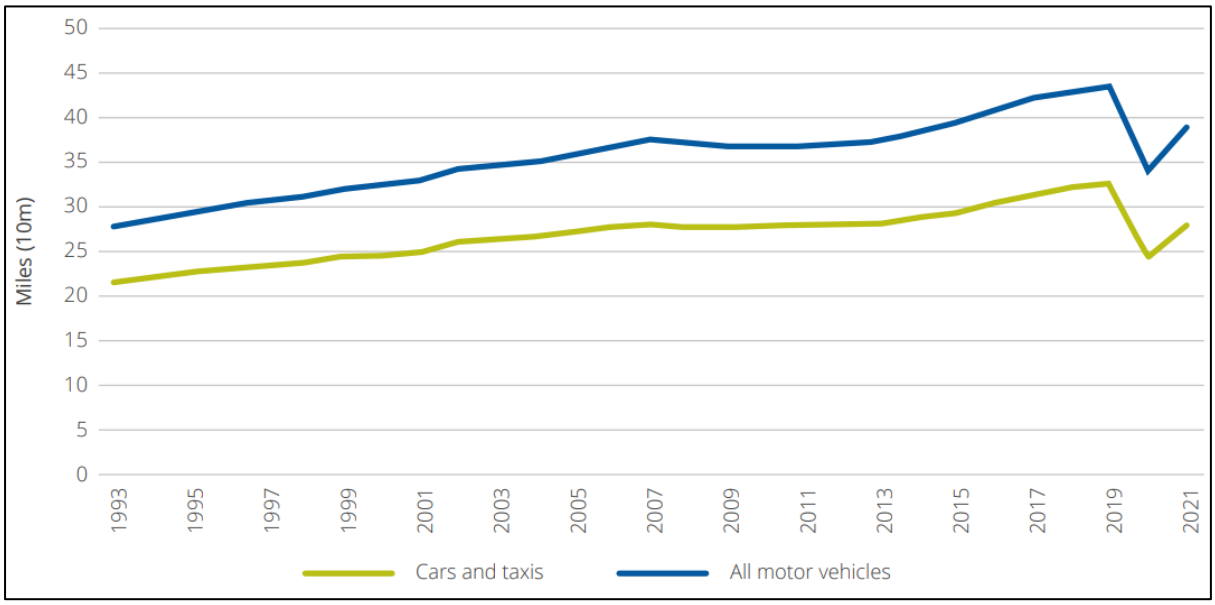
Figure 4.3 Existing Congestion Hotspots within Grantham



Source: Lincolnshire Enhanced Partnership Plan for Buses (Figure 5-7)

In order to benchmark traffic growth on the local road network, information from the Lincolnshire Bus Service Improvement Plan (BSIP) sets out that total vehicle kilometres travelled on Lincolnshire roads have increased by 60.5% between 1993 and 2019, as shown in Figure 4.4.

Figure 4.4 Total Vehicle Km Travelled on Lincolnshire Roads 1993 - 2019



Source: Lincolnshire Bus Service Improvement Plan (BSIP, Figure 6

Ultra-Low Emission Vehicles (ULEVs)

Data contained within the Lincolnshire Electric Vehicle Strategy (2022) indicates that South Kesteven has 622 registered ULEVs, which represents 21% of the total number of ULEVs in the Greater Lincolnshire region.

The availability of electric vehicle (EV) charging infrastructure is typically spread unevenly throughout the study area, with infrastructure tending to be concentrated around urban areas (often due to grid capacity acting as a key constraint on EV charging provision[14] as well as the unequal impact of demand).

Based on statistics regarding the number of publicly available charging devices collected through the electric vehicle charging point platform ZapMap, and based on a population of 143,400 within South Kesteven (ONS, 2021), electric vehicle charging device statistics within South Kesteven boundary are set out in Table 4.2 below, with

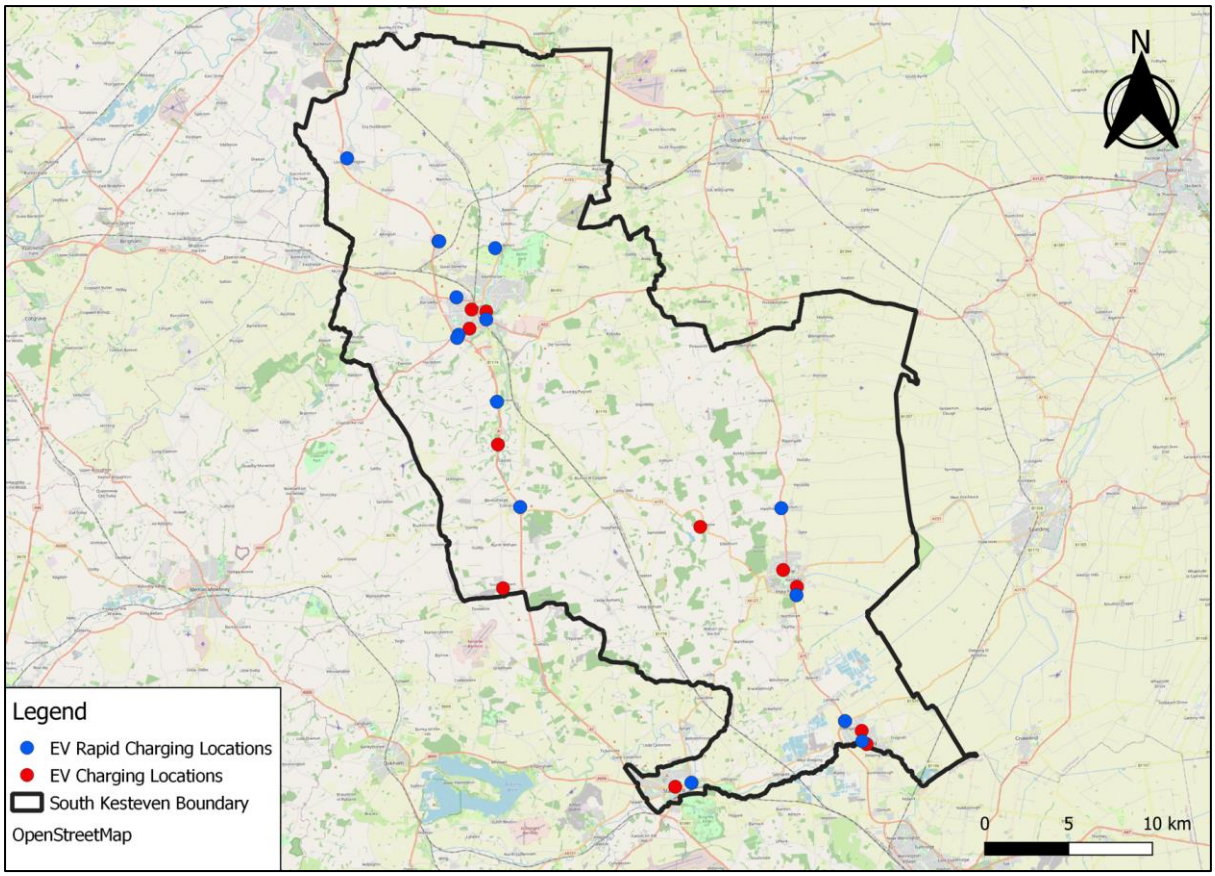
Figure 4.5 showing the locations of charging points.

Table 4.2 EV Charging Devices within the South Kesteven Area (April 2023)

Location	Total Devices	Per 100,000 population	Rapid Devices	Per 100,000 population
South Kesteven	75	52	53	37

Source: ZapMap (2024)

Figure 4.5 Existing EV Charging Infrastructure within South Kesteven



Source: ZapMap and OpenStreetMap (2024)

Forward Look

Future Demand

Road Infrastructure

Modelling undertaken by LCC (Lincolnshire Local Plan Upper Tier Report, 2015) to support the now adopted Central Lincolnshire Local Plan indicates that there is likely to be growth in trips across South

[14] With 80% of Local Authorities contacted as part of the preparation of the Lincolnshire Electric Vehicle Strategy citing this as the key barrier for Electric Vehicle charging infrastructure implementation.

Kesteven of 19.8% from 2014 to the year 2036. This increase in trips is likely to be of significance for several routes through south east Lincolnshire, particularly the A16 and A17.

Transport modelling work to inform the Local Plan is currently being discussed by LCC and SKDC. This section reflects the current position at the time of writing, but it should be noted that the position will evolve once any new modelling has been undertaken. Therefore, the following differences in traffic flows across the network have been extracted from the LCC modelling report (2015) and summarised below.

The most significant differences shown are on the A1 between Grantham and Stamford, with increases of over 750 Passenger Car Units (PCUs) per hour. There are significant increases on the A52 near Grantham on either side of the A1. The A607 to the east of Grantham and the A1175 east of Market Deeping also see increases of over 250 PCUs per hour. On most other links in the district, increases are much more modest.

In terms of highway capacity, the work by LCC shows that there are several areas within South Kesteven where volume to capacity ratios indicate areas for concern. In particular:

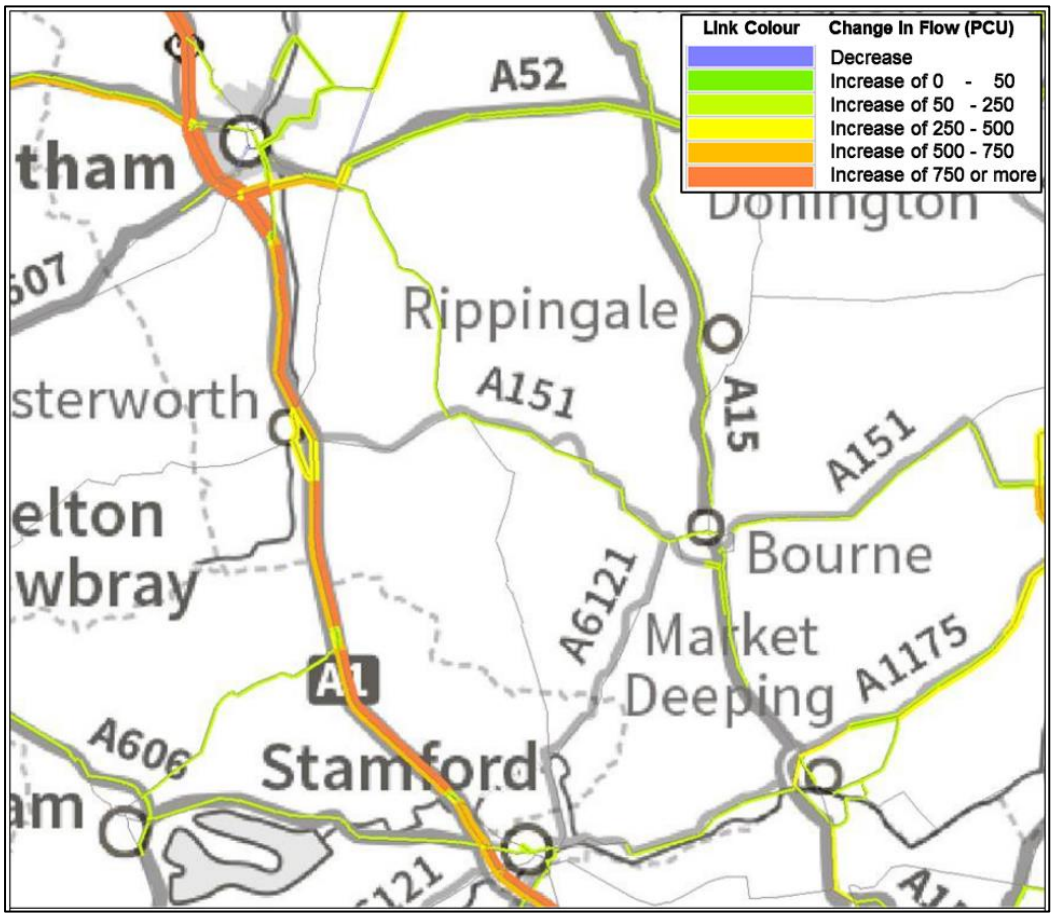
- The A1175 between Market Deeping and Deeping St. Nicholas, which shows volume to capacity ratios of over 85% eastbound in the AM peak and westbound in the PM peak in the study year;
- The A52 west of the A1 near Grantham, which shows volume to capacity ratios of over 85% westbound in the AM peak in the study year; and
- The Harrowby Lane / Alma Park Road route into Grantham from Londonthorpe, which shows volume to capacity ratios of over 70% in the AM peak in the study year.

The mitigation for the traffic associated with specific Local Plan developments appears to have been incorporated into site-specific development plans at an early stage for most areas. This is particularly true of Grantham and Stamford. However, there would appear to be a disparity around the Market Deeping area, where the LCC modelling report notes that:

"*a detailed assessment of growth around Market Deeping may be needed to help understand why the LCC modelling work is identifying potential issues in this area when additional infrastructure delivered in the area should have released capacity on the A1175*."

This is likely best dealt with as part of any Transport Assessment prepared to support a planning application, and could be dealt with via the planning process.

Figure 4.6 Changes in Traffic Flow Across the Lincolnshire Highways Network (2014 – 2036)



Source: Lincolnshire Local Plan Upper Tier Report, 2015

Planned Infrastructure

Grantham Southern Relief Road (GSRR)

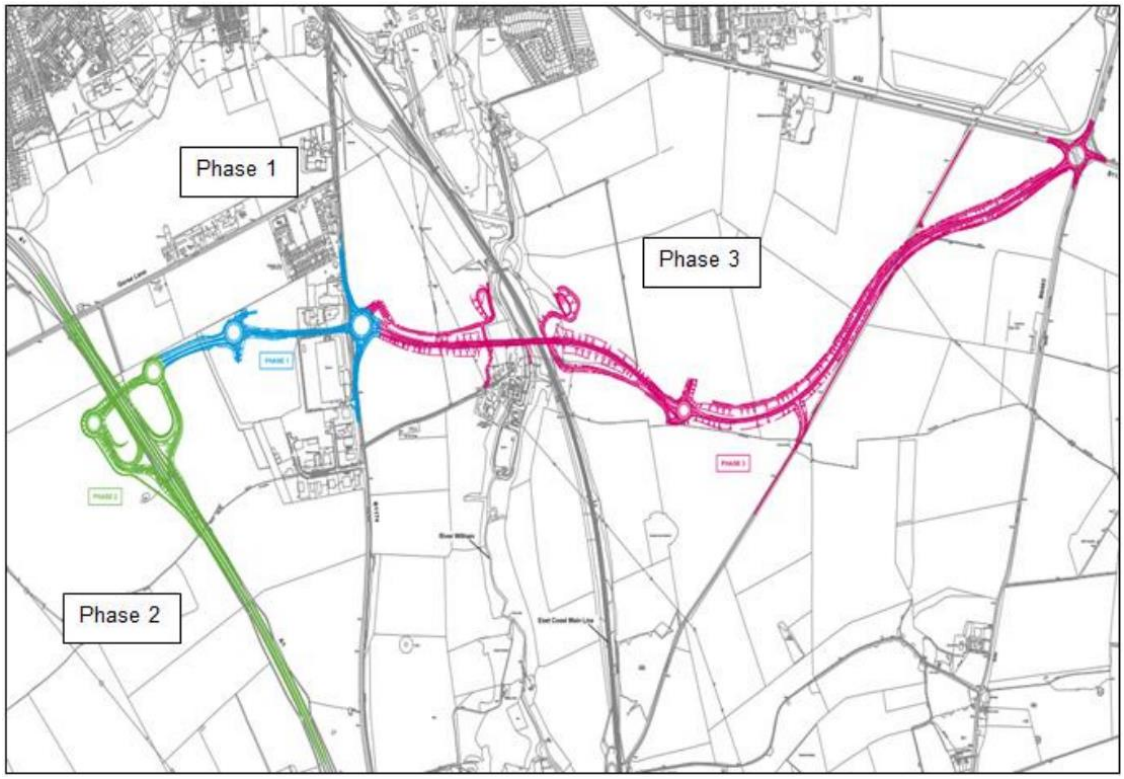
LCC has proposals for significant highway infrastructure which will be delivered in Grantham during the Plan period, most notably the construction of the Grantham Southern Relief Road (GSRR).

The GSRR is a 3.5km road designed to unlock growth in the south of Grantham and improve connectivity (W-E), relieving Grantham town centre from congestion. The road will enable economic growth and improve journey times for traffic travelling east to west, north to south and vice versa by linking the A52 at Somerby Hill to the A1. A plan of the route is shown in Figure 4.7.

- Phase One of the GSRR saw the creation of a roundabout off the B1174 and a road along Tollmache Road leading to a second new roundabout. Works were completed in August 2016;
- Phase Two joined the B1174 to the A1 trunk road via a grade-separated junction and completed in December 2022; and
- Phase Three: links the A52 at Somerby Hill to the new roundabout off the B1174, crossing the Witham Valley, the East Coast railway line and the River Witham by means of a viaduct / bridge. This phase is anticipated to be completed in 2025. The current junction of the A1 / Little Ponton (B1174) will be closed once GSRR is fully operational.

The GSRR will also unlock and provide access to the Spitalgate Heath Garden Village site (allocation Ref: GR3-H1 or Ref: SKPR – 278 within the Local Plan Review) as well as enhance access to the Prince of William of Gloucester Barracks site (allocation ref: GR3-H4 or Ref: SKPR – 65 within the new Local Plan Review).

Figure 4.7 GSRR Phasing



Source: LCC Drawing 1065015 / DEP / 0100 / 026 Rev 1

Pennine Way Link Road

The Pennine Way Link Road is intended to relieve the A52 and the Grantham town centre from passing by traffic, and to connect Poplar Farm housing (North West Quadrant) with Gonerby Hill Foot, as a second access to the Poplar Farm SUE. As such, the Poplar Farm development (North West Quadrant) is conditioned to build the Pennine Way Link Road.

Spalding-Western Relief Road

The Spalding-Western Relief Road (SWRR) is a key strategic road scheme currently under construction to the south west of Spalding, approximately 10km east of Bourne in South Holland District. The 6.5km road links the A1175 and A16 from the B1172 Spalding Common in the south to the B1356 Spalding Road in the north.

The SWRR is identified in LCC's fourth Local Transport Plan (LTP4) as one of four major scheme priorities for the short and medium term. It is needed to support future growth, relieve traffic congestion, improve journey time reliability and support air quality improvement in and around Spalding.

Delivery of the Elsea Park SUE at Bourne has been linked to the delivery of the SWRR[15].

Prince William of Gloucester Barracks – Off-site Highway Infrastructure Improvements

Highway infrastructure improvements are likely to be delivered as part of the Prince William of Gloucester Barracks, intended for up to 4,000 homes. These works relate to access the site and will ensure impact on the existing highway network is minimised (including the provision of any appropriate mitigation to the strategic highway network). This will include safe and convenient highway, footway, and cycleway connections throughout the site connecting it to local schools, community facilities and linking to Grantham, Spitalgate Heath Garden Village and the wider countryside.

[15] Source: Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (SIDF), page 108.

Approximately 1,775 dwellings are expected to be constructed by 2041. Further development and associated infrastructure including off-site transport works will come forward but may not be delivered within the Local Plan Review period.

A1 / A52 Barrowby Interchange

Potential improvements have been discussed between the LA, National Highways and developers. WSP on behalf of LCC looked at issues and potential solutions, including a 5-arm roundabout. The proposal has since been discounted due to funding and land ownership. Following this, LCC proposed a gateway into Grantham scheme which has been discounted by National Highways (NH) due to standards and safety.

Local plan allocations (Rectory Farm and Grantham Designer Outlet Village) have conditions to provide improvement schemes at the A1 / A52 Barrowby Interchange, with LCC pursuing a scheme to replace the priority junction between the A52 and the A1 southbound on / off slip roads with a roundabout junction. Specifically, Rectory Farm Phase 1 is conditioned to improve the A1 / A52 junctions.

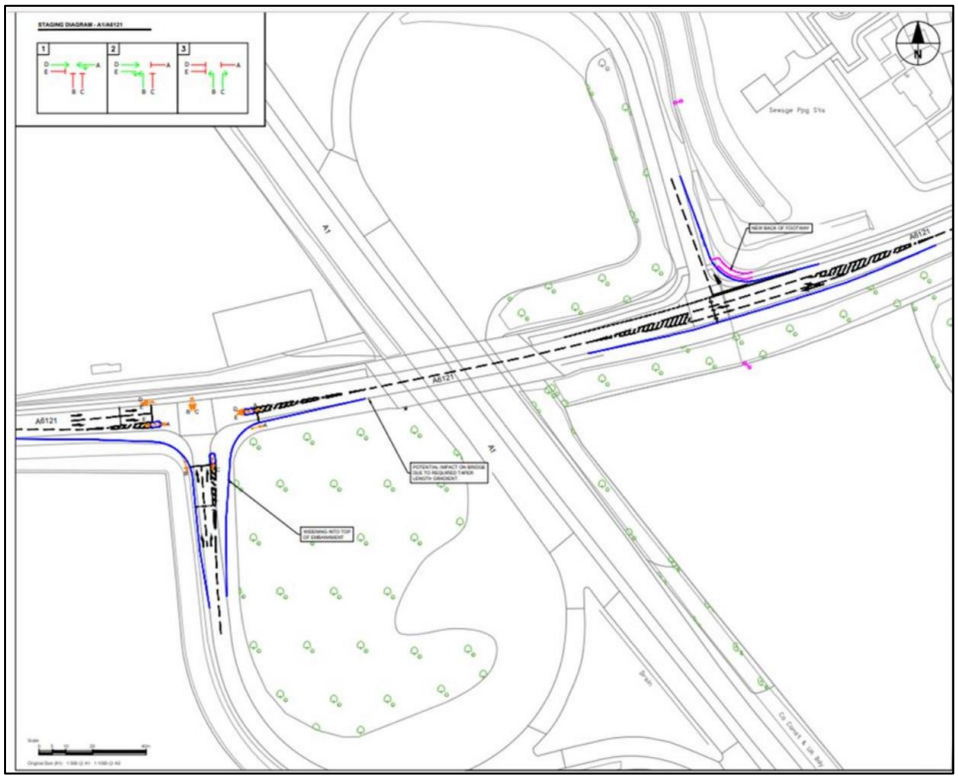
It is currently unknown as to when the Grantham Designer Outlet Village will come forward. Notwithstanding, with existing capacity constraints and the impact of cumulative impact of allocations around Grantham, it is likely that more substantial improvements will be required at this location.

Stamford North

Proposals for a new East-west distributor road are linked to the Stamford North development.

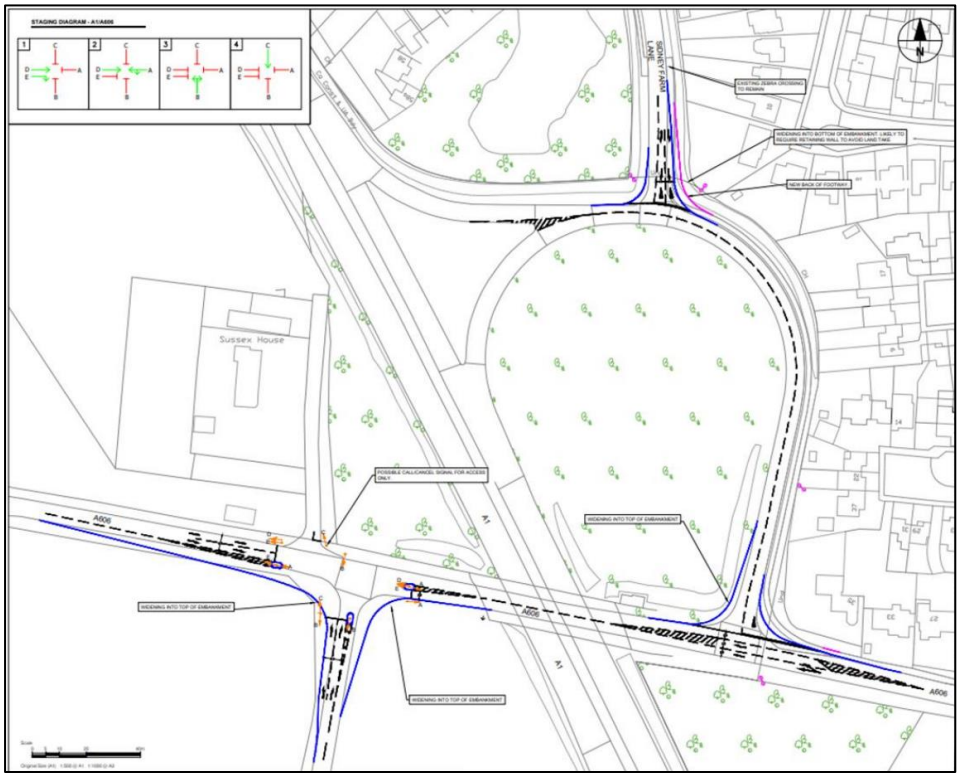
National Highways has two schemes 'on the shelf' for the A1 / A606 and A1 / A121 junctions. National Highways has no plans to deliver these schemes but has suggested that they may be suitable to mitigate the impacts of the Stamford North SUE. They have therefore recommended the applicant for the Stamford North SUE look at junction improvements identified as part of AECOM's A1 Corridor Study. These improvements are set out below.

Figure 4.8 A1 / A6121 Scheme



Source: AECOM, via National Highways

Figure 4.9 A1 / A606 Scheme



Source: AECOM, via National Highways

LCC Call for Sites RAG Assessment

As part of the preparation of this IDP, the Local Highway Authority (LHA) was contacted for comment regarding proposed developments across South Kesteven. For each development, the LHA categorised the anticipated impact of the proposed development upon the local road network, highway network, and access impact (via a Red, Amber, Green rating). In addition, they also provided comments relating to the categorised rating, recognising the key infrastructure constraints from a transport perspective.

Appendix D shows a summary of the LHA comments relating to projected housing and employment sites within South Kesteven.

The following list of developments have anticipated large scale development constraints (in terms of infrastructure delivery cost) relating specifically to road infrastructure:

- SKPR-99: Land to the south of Mill Drove and west of Meadow Drove – Requires widening of existing bridge;
- SKPR-84: Land west of Meadow Drove, Bourne – Requires widening of Braceby Road;
- SKPR-144: Land at Mill Drove – May require junction upgrades (subject to TA modelling);
- SKPR-83: Land north of Mill Drove, Bourne – May require junction upgrades (subject to TA modelling);
- SKPR-268: Station Approach, Grantham - May require junction upgrades (subject to TA modelling);
- SKPR-67: Land off Belton Lane, Great Gonerby – Requires junction upgrades at junctions on Belton Lane with Newark Hill and A607;
- SKPR-37: Linchfield Road (DEP1-H2) - Linchfield Road would need widening along site perimeter; and
- SKPR-56: Land at Obthorpe Lane, Thurlby – Would require widening of Obthorpe Lane.

Wider Area Schemes

Improvements are proposed on the wider network which have been considered in this IDP for completeness. These comprise:

- A52 Nottingham Junctions Improvement Scheme;
- A47 Wansford to Sutton dualling between the A47 and A1 west of Peterborough which will generally support movements on the network. This is expected to be open for traffic by 2025, and is identified as scheme C38 in the NH Delivery Plan 2020 – 2025; and
- A46 Newark Bypass (identified as Scheme C32 within the NH Delivery Plan 2020 – 2025).

Midlands Connect also have an aspiration to upgrade the A1 to A1(M) standard between Peterborough and Blyth to address journey times. Research conducted by Midlands Connect (November 2023) concluded that journey time impacts are costing approximately £1.75m per year for the section of the A1 between Stamford and junction 34 (near Worksop)[16].

Aspirations to enhance north-south connectivity through upgrades to the A1 are also noted within the Greater Lincolnshire and Rutland's SIDF (2023), which states that improvements to the A1 corridor would promote safer journeys as well as improve capacity and route speed for freight journeys.

The SIDF sets out a framework for a more resilient and reliable road network system by upgrading the following routes within South Kesteven:

- A15 – to enable greater access to the M180 SRN (particularly important for freight traffic); and
- A17 / A16 – to enhance connectivity for UK Food Valley freight (a small portion of the A17 traverses South Kesteven).

LCC ULEV Strategy (2022)

Lincolnshire's Electric Vehicle Strategy sets out an action plan of how to facilitate the deployment of Electric Vehicle Charging Points (EVCPs) across Lincolnshire throughout the Local Transport Plan (LTP5) period and aligns with the objectives set out within the LTP5.

The document recognises the greater need for electric vehicle charging infrastructure to service the increasing number of ULEVs on UK roads. Table 4.3 (adapted from a similar table contained within the Strategy document) indicates that South Kesteven requires a further 454 EV charging points by 2030 under the mid-growth scenario to meet demand. Gaps in the charge point network are forecasted to occur in the following locations:

- Remote areas with limited demand, but still requiring baseline provision to cater for low level demand (e.g. tourist sites);
- Rural or secondary routes with moderate levels of demand, but with fewer destinations (retail stores etc.);
- Areas with greater reliance on on-street parking and few amenities with the potential to host local charging hubs;
- Primary routes with high demand and delivery constraints, particularly where there are sections of road with few destinations to readily cater for charge points, or where there are grid constraints making sites commercially unviable;
- Areas of high demand with delivery constraints, including high installation costs / grid constraints which pose a barrier to delivery; and
- Areas with more constrained grid capacities or more remote from a primary substation.

Some of the district's proposed housing and employment sites fall within the location categories listed above and therefore specific attention would be required to ensure the supply of EV infrastructure is available to meet potential future demand.

[16] https://www.midlandsconnect.uk/news/a1-delays-tailbacks-for-commuters-cost-economy-1-390-per-day/

Table 4.3 Forecast Number of EVCPs Required (High, Mid and Low Growth)

Geographic Region	EVCP's (2021)	2020			2025			2030		
		Low	Mid	High	Low	Mid	High	Low	Mid	High
South Kesteven	37	38	52	78	155	275	391	304	491	1,114
Greater Lincolnshire	235	243	335	507	1,044	1,857	2,642	2,106	3,394	7,708

Source: Lincolnshire EV Strategy (2022)

To meet the future demand for EV infrastructure, and to address the existing area-specific constraints, the document makes the following recommendations:

- Accelerate charge point deployment to promote EV uptake;
- Focus on establishing good charge point coverage and plugging gaps;
- Deliver the right solution for the right location;
- Make the most of available funding opportunities;
- Take a balanced approach to delivering charging infrastructure, inviting private investment but retaining control;
- Let the private sector take the strain and carry the risk where possible;
- Collaborative working across Greater Lincolnshire with key stakeholders;
- Decarbonisation of freight and agriculture;
- Promotional activities and awareness raising;
- Increase EV prominence in local policy; and
- Decarbonisation of buses and taxis.

The expansion of EVs will require the installation of additional electric vehicle charging infrastructure. Based on Table 4.3, it is forecast that an additional public 454 EV charging points will be required in South Kesteven by 2030 (under a mid-growth scenario). Limited grid capacity (particularly in areas remote from a primary substation) is typically viewed as the key constraint to the expansion of the EV charging infrastructure network. Given that South Kesteven is rural in nature, it's expected that substantial investment would be required to expand grid capacity to accommodate the forecast demand.

In terms of proposed housing and employment developments, it is expected that EV charging infrastructure will be requested as part of the planning application process, with new EV charging points required to be installed both on public and private property / land. The LPA will therefore need to determine these planning applications in the best interest of the Local Plan (i.e. aligning with policy objectives as well as other land use allocations, committed developments etc.).

There are no policies specifically covering South Kesteven; however, it's expected that the county-wide policies presented above will be implemented on a district level, with particular attention given to new housing and employment sites as part of the planning application process.

Hydrogen Strategy

Electric Vehicles are the primary alternative fuel vehicle type discussed within the Lincolnshire EV Strategy; however, the document recognises that the use of hydrogen is present across the wider East Midlands region.

There are therefore opportunities to pursue hydrogen (or other alternative fuel sources such as biofuel) within South Kesteven for private and commercial use. For example, a hydrogen fuelling station is available on the M1 in Rotherham. In addition, the Viking Link Project in Lincolnshire (a joint venture between GeoPura and Siemens Energy) uses hydrogen as an off-grid fuel source to power the site. Further potential opportunities include utilising hydrogen vehicles as part of the Humber Port decarbonisation scheme.

Encouraging the development of hydrogen powered vehicles is also discussed within the Greater Lincolnshire SIDF document, which recognises the need to support the development of refuelling infrastructure (particularly within the freight and logistics sector).

Autonomous Vehicles

There is a high likelihood that autonomous vehicle technology will become more prevalent during the Local Plan period, although the impact on infrastructure is unclear. Some of the issues which may need to be considered by the highway and planning authorities include:

- Level of segregation of autonomous and non-autonomous traffic;
- Standards of maintenance for traffic and road signs (if vehicles are scanning for such markers, rather than relying on databases); and
- Provision of parking and fuelling facilities.

Wider Schemes

In terms of more traditional considerations, Network Rail is highly likely to continue its programme of level crossing closures.

In addition, it is understood that LCC and National Highways are working to identify sites for additional lorry / HGV parking capacity within the area. These schemes serve a wider geographical area from South Kesteven.

Costs, Funding and Delivery

GSRR

Grantham Southern Relief Road (GSRR) costs are estimated £133 million and will be funded as follows:

- £11.9m from the Local Transport Board
- £16.1m from the Single Local Growth Fund
- £5m from the Highways England Growth and Housing Fund

In addition to the £133 million, the bridge extension is expected to cost a further £15 million.

The balance of funding will come from developer contributions, which will be forward funded by Lincolnshire CC, who will also be funding part of the scheme.

The project is being led by LCC, with support from delivery partners SKDC, Greater Lincolnshire LEP, National Highways, DfT, Network Rail, Homes England and local businesses.

Pennine Way Link Road

As mentioned, the Poplar Farm development (North West Quadrant) is conditioned to build the Pennine Way Link Road with trigger point of 750 dwellings, with an estimated completion year for the SUE of 2030.

A1 / A52 Barrowby Interchange

Previous local plan allocations (Rectory Farm and Grantham Designer Outlet Village) have conditions to provide improvement schemes at the A1 / A52 Barrowby Interchange, with the idea supported by Midlands Connect. Specifically, Rectory Farm Phase 1 is conditioned to improve the A1 / A52 junctions, with a trigger point of 448 dwellings.

Wider Schemes

The A46 Newark Bypass

Costs are also shown in the Project Schedule for:

- The A46 Newark Bypass: £400-500m (set to start in 2024 / 25);

- A52 Nottingham Junctions Improvement Scheme: £68.5m (end date of 2027); and
- A47 Wansford to Sutton dualling between the A47 and A1 west of Peterborough: between £50m and £100m (end date of 2026).

Costs have not been included in within the IDP figures for the total cost and funding gap as these are strategic schemes located outside of South Kesteven.

Spalding Western Relief Road

The SWRR is anticipated to cost £109.5m in total, with approx. £60m for the southern section of the road, the start of which has been delayed likely beyond 2030 as funding has been diverted elsewhere. Lincolnshire County Council, South Holland District Council and Homes England have contributed towards the costs of the road along with money from developers. This project has not been included in estimated the IDP cost total and funding gap as the scheme sits outside of South Kesteven.

SIDF

The SIDF is intended as a 'launch pad' for its partners to raise the case for coordinated infrastructure across Greater Lincolnshire and Rutland. As such, the SIDF sets out potential funding streams but does not allocate these to specific infrastructure projects.

Electric Vehicle Strategy

Some funding is available from central government, including the Local Electric Vehicle Infrastructure (LEVI) fund awarded at County-level, with £5.6m awarded to LCC under tranche 1 of the scheme.

General Comments

For road schemes, National Highways is likely to be leading schemes on the SRN, with other sources potentially required to support funding, whereas LCC is likely to be leading schemes on the local road network, with a range of sources including developer funding. The delivery of schemes will depend on the nature of each scheme and will reflect the lead funding body.

Summary

Key findings relating to roads are as follows:

- Updated traffic modelling is due to be undertaken shortly to consider the cumulative impact of development, to update modelling last undertaken in 2015.
- South Kesteven and Rutland experience greater car use than the wider East Midlands.
- Grantham is the main source of peak hour trips within South Kesteven. Outside of the district, Peterborough is the most important destination.
- 14 planned and potential highway schemes are identified within the Project Schedule (Appendix A). These comprise four schemes in relation to local road infrastructure; and 10 schemes in relation to strategic road infrastructure. There are also two more projects relating to EV and hydrogen charging infrastructure.
- Construction of the GSRR is underway linking the A52 at Somerby Hill to the A1.
- The Pennine Way Link Road is conditioned by developments in the area.
- Further possible schemes in South Kesteven include junction improvements between A52 and A1, and a new distributor road (part of the Stamford North Development).
- 454 additional EV charging points are forecast to be required by 2030 (mid-growth scenario), with upgrades to the grid capacity required to support the anticipated growth in ULEVs. Lincolnshire's EV Strategy sets out policies to meet these demands on a county-wide level.
- In 2015, LCC anlaysis concluded that the majority of proposed development in South Kesteven had identified infrastructure improvements to mitigate impacts. The exception was the growth around Market Deeping, where further analysis was identified as required given the results of the 2015 LCC modelling (this position will evolve once updated modelling has been undertaken).
- Costs are available for five of the 14 highway schemes within the Project Schedule. However only one scheme (GSRR) has been included within the IDP total cost as the other schemes are

located outside of South Kesteven and serve wider geographies. Several schemes are conditioned by development and so developer contributions, while not yet confirmed, are likely to be an important funding stream.

4.2 Rail

Introduction

Rail-based transport has good potential to accommodate medium to long-distance trips by both people and freight. The purpose of this section is to identify the existing, planned and required provision with regards to rail transport.

Baseline

From Table 4.1, it can be seen that South Kesteven makes greater use of the train than the wider East Midlands population.

Grantham Station

Grantham is the only station within Lincolnshire that accommodates regular long distance trips, being located on the East Coast Main Line (ECML). Data from the Lincolnshire Transport Monitoring Report (LTMR (2022)) shows a peak of 1.41 million annual users at Grantham station in 2018 / 19 (data for 2019 / 20 sees a fall in patronage, potentially owing to the COVID-19 pandemic). The report shows a 17.9% growth in patronage between 2013 / 14 and 2018 / 19.

Two secondary lines diverge from the main line north of Grantham: the "Poacher Line" to Skegness and a branch line to Nottingham. The Skegness service is characterised by poor line speeds, heavy leisure travel demand during the summer months and aging rolling stock, whilst the Norwich – Liverpool service experiences substantial year-round demand for a wide variety of journey purposes and becomes 2 -car by splitting at Nottingham. Of these routes, only the ECML is electrified.

Grantham has three through platforms and one north-facing bay platform. Trains depart from Grantham station for London, Edinburgh, Leeds, Hull, Cambridge and Norwich.

Grantham station benefits from step-free access to all platforms and ramps are available for boarding / alighting trains. It has parking available for 63 bicycles and 263 cars (including 17 accessible spaces).

Trains from Grantham to London Kings Cross are provided by London North Eastern Railway (LNER) and Hull Trains. These trains leave approximately every 15 to 20 mins with three trains departing Grantham towards London Kings Cross every hour. On a weekday the first train to Kings Cross departs at 05:49 and the last train departs at 23:30. Journey times on this route range between 1 hr 13 mins and 1 hr 44 mins.

The trains to Liverpool Lime Street are run by EMR, and depart from Grantham every hour. The first direct train from Grantham to Liverpool departs at 07:54 and takes 3 hours 35 minutes, whereas the last direct train to Liverpool departs at 17:59.

Services to Nottingham are also provided by EMR, with a journey time of approximately 40 minutes. The first train from Grantham to Nottingham departs at 05:45 on weekdays and the last train departs at 22:18.

A summary of timetabled rail services departing Grantham station is set out in Table 4.4.

It is understood via consultation with National Rail there are existing issues with the low railway bridge on Old Wharf Road in central Grantham being frequently hit by HGVs.

Table 4.4 Grantham Rail Station Timetable Summary (correct as of February 2024)

Destination	Operator	Frequency			Start			Finish			Journey Time
		Mon-Fri	Sat	Sun	Mon-Fri	Sat	Sun	Mon-Fri	Sat	Sun	
Beverley	Hull Trains	2 per day	1 per day	1 per day	16:50	18:50	18:54	19:52	18:50	18:54	1hr 53 mins
Hull		120 mins	120 mins	6 per day	08:28	08:28	09:31	21:31	20:51	20:52	1hr 28 mins
Bradford Forster Square	London North Eastern Railway	2 per day	2 per day	1 per day	17:42	17:42	20:47	19:43	20:42	20:47	1hr 47mins
Edinburgh (Waverley)		1 per day	1 per day	-	07:28	07:28	-	07:30	07:28	-	3hr 46 mins
Leeds	London North Eastern Railway	60 mins	60 mins	60 mins	07:07	07:07	10:15	22:48	23:07	22:47	1hr 6mins
Lincoln Central		120 mins	120 mins	3 per day	09:14	09:17	10:47	20:21	20:21	20:17	39mins
York		120 mins	120 mins	3 per day	07:28	07:30	16:40	23:08	16:18	23:01	1h 4 19mins
London Kings Cross		30 mis	30 mis	30 mis	05:49	05:51	09:18	23:30	21:30	22:05	1hr 44mins
Liverpool Lime Street		60 mins	60 mins	60 mins	07:54	07:57	11:56	17:59	17:59	16:57	3hr 32mins
Ely		60 mins	60 mins	60 mins	08:12	08:12	09:50	21:13	21:10	21:13	1hr 1min
Norwich	East Midlands Railway	60 mins	60 mins	60 mins	08:12	08:12	09:50	21:13	21:10	21:13	2hr 4mins
Nottingham		30 mis	30 mis	30 mis	05:45	09:00	09:03	22:18	22:44	22:55	30mins
Skegness		60 mins	60 mins	60 mins	05:45	05:42	09:27	21:32	21:29	20:28	1hr 25mins

Source: Trainline.co.uk

Stamford Station

Stamford station is smaller in terms of patronage, with a peak of approximately 385,000 users in 2018 / 19 (an increase of 15.5% since 2013 / 14 (LTMR, 2022)). Stamford station is located on the Birmingham to Peterborough Line. CrossCountry operate the majority of services as part of their Birmingham to Stansted Airport route.

Several amenities are provided at Stamford Station, including the provision of 79 car parking spaces with an additional four accessible car parking spaces. Furthermore, there are 14 cycle storage spaces located outside of the station; this cycle storage is sheltered and covered by CCTV. However, the station does not provide step-free access.

From Stamford there is generally an hourly service (operated by CrossCountry) each day towards Leicester and Birmingham New Street westbound and Peterborough, Cambridge and Stansted Airport eastbound as well as additional PM peak hour services. Services westbound to Birmingham go via Oakham, Melton Mowbray, Leicester, Narborough, Hinckley, Nuneaton and Coleshill. The journey time from Stamford to Birmingham is approximately 1 hour and 45 minutes.

Eastbound services to Stansted Airport are via Peterborough, Whittlesea, March, Ely, Cambridge and Stansted Airport. This journey takes 1 hour and 7 minutes to Cambridge and 1 hour 45 minutes to Stansted Airport.

In addition to these services, twice per day there is a cross country services to Norwich. This train stops at Peterborough, March, Ely, Brandon, Thetford, Attleborough, Wymondham and Norwich. This journey takes 2 hours and 6 minutes.

A summary of timetabled rail services departing Stamford station is set out in Table 4.5.

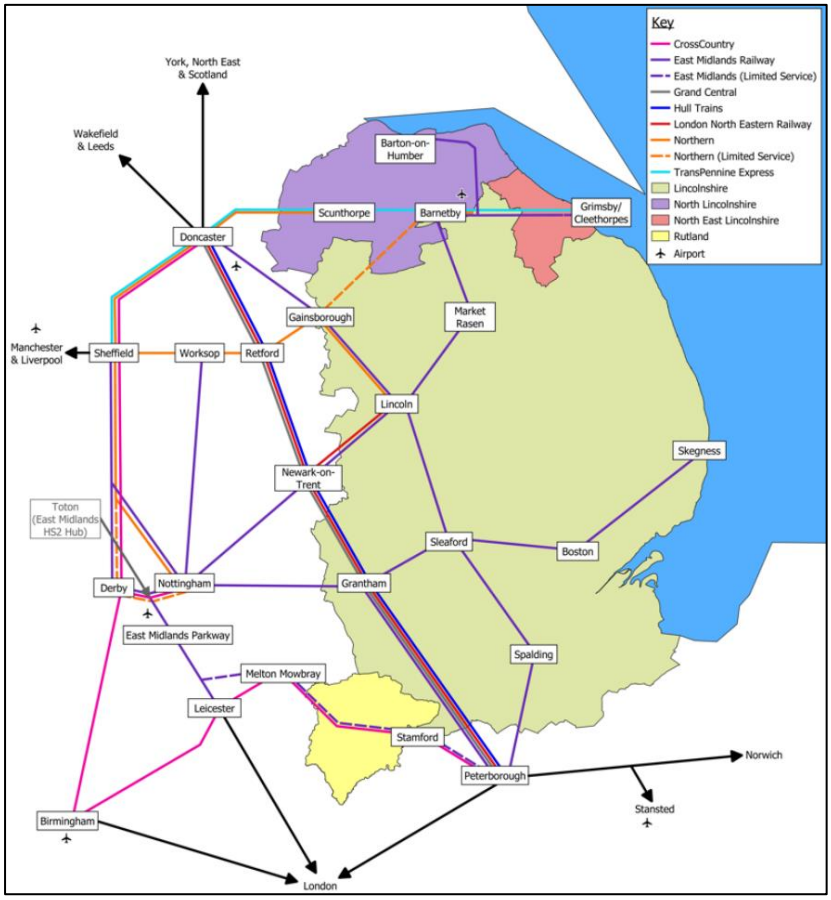
Table 4.5 Stamford Rail Station Timetable Summary (correct as of February 2024)

Destination	Operator	Frequency			Start			Finish			Journey Time
		Mon-Fri	Sat	Sun	Mon-Fri	Sat	Sun	Mon-Fri	Sat	Sun	
Stansted Airport	Cross Country	60 mins	60 mins	60 mins	06:57	06:57	12:54	20:57	20:54	20:54	1hr 45mins
Birmingham New Street		60 mins	60 mins	60 mins	06:23	06:23	12:07	22:13	21:07	21:07	1hr 31mins
Cambridge		60 mins	60 mins	60 mins	06:57	06:57	12:54	21:58	21:54	21:54	1hr 7mins
Norwich	East Midlands Railway	2 per day	2 per day	Not Direct	06:05	06:07	N / A	07:21	07:19	N / A	2hrs 6mins

Source: Trainline.co.uk

Figure 4.10 sets out a map of the rail network across Lincolnshire including South Kesteven.

Figure 4.10 Lincolnshire Rail Network (as of May 2021)



Source: Figure 3.1. Lincolnshire Passenger Rail Strategy (August 2021), Doc Ref: DY / 200734 / LTPVRS / 2

Lincolnshire Rail Infrastructure Strategy (2022)

The Lincolnshire Rail Infrastructure Strategy (LRIS) was produced to identify capacity constraints and potential locations for rail infrastructure enhancements to align with LTP5 key themes. The document has the following objectives:

- Improve the quality and usability of the rail environment to ensure it is safe, affordable and inclusive for all;
- Make travel by train a genuine travel option for residents living and working in the larger communities, in doing so contribute to reducing the environmental impact of travel and improving physical wellbeing alongside other modal strategies;
- Enhance rail to support Lincolnshire's economy, people's access to jobs and training and support the growth of the leisure and tourism industry; and
- Make rail more attractive than the car and improve access to the local stations by bus, bike and on foot, and for more remote communities by car, and the use of stations so that stations and the railway become part of the community.

The report identifies the following known infrastructure constraints relevant to (or passing through) South Kesteven:

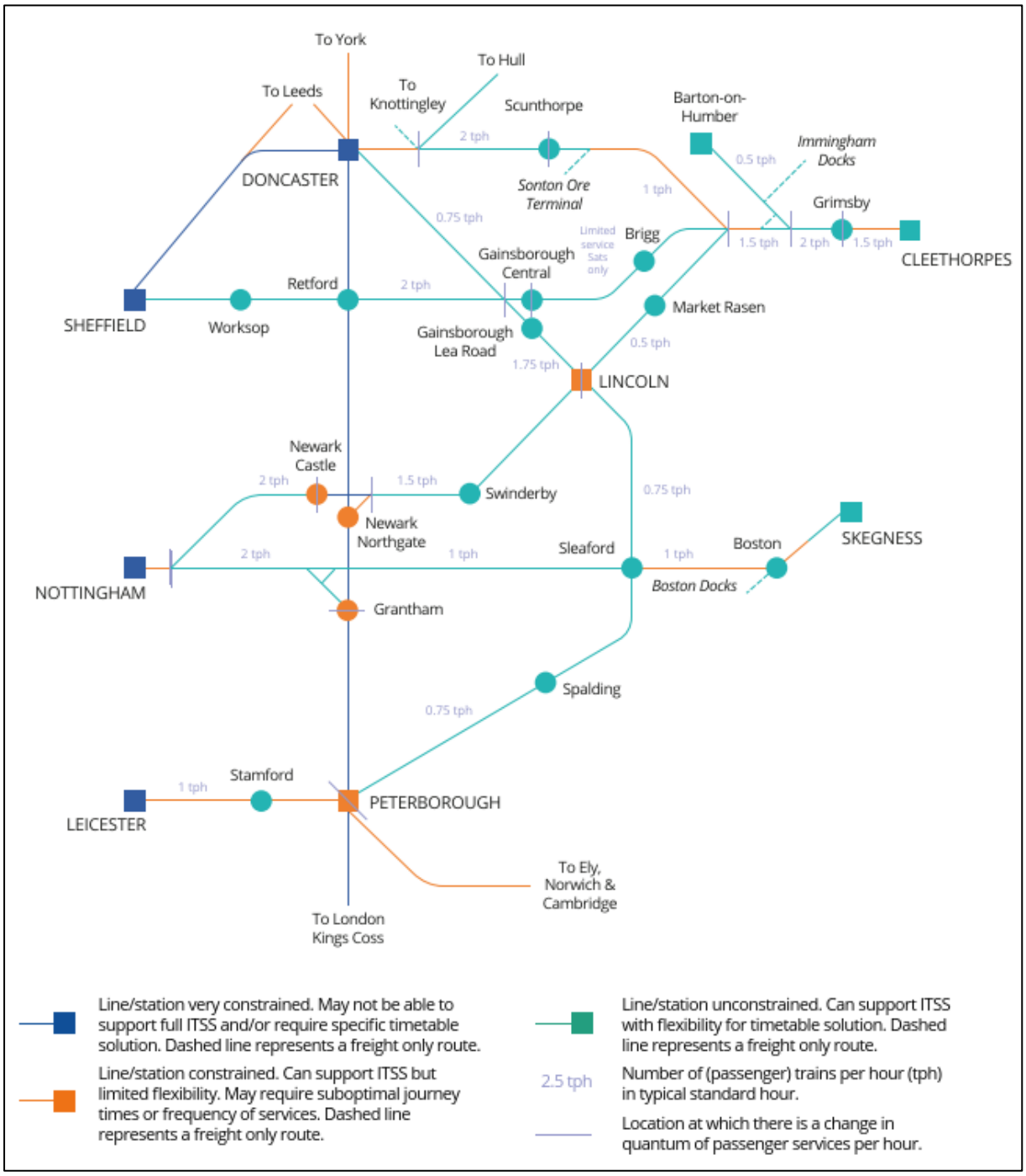
- Skegness-Boston-Sleaford-Grantham-Nottingham Line:
    - Mixture of single and two track along the full route;
    - Line is not electrified;
    - Limited Sunday services; inconsistent calling at smaller stations on East Midlands Railway Services from Nottingham to Skegness;
    - Relatively slow line speeds; and
    - Long signal sections.
- Peterborough-Stamford-Melton Mowbray-Birmingham Line:
    - Leicester Station currently at capacity;
    - Existence of absolute block signalling on route contributes to capacity constraints;
    - Two track along full route;
    - Line is not electrified; and
    - Limited Sunday service due to signal box opening hours.

Figure 4.11 shows an assessment of the rail capacity within Greater Lincolnshire (taken from the LRIS document) in relation to the infrastructure's ability to support the Indicative Train Service Specification (ITSS)[17]. The capacity assessment was conducted pre-COVID. In addition to the capacity restraints noted above, the figure identifies the following restraints relevant to South Kesteven:

- East Coast Mainline: Line is classified as very constrained and may not be able to support full ITSS and / or specific timetable solution.
- Grantham Station: Station is classified as constrained whereby it can support the ITSS but with limited flexibility (with not enough capacity to accommodate all services and signalling headway not suitable for this level of service).

[17] An ITSS combines existing service levels with required service and capacity outputs. It provides an indication of the type and number of train services needed to deliver outputs.

Figure 4.11 Lincolnshire Rail Capacity (2020 – pre-COVID)



Source: Lincolnshire Rail Infrastructure Strategy

East Coast Main Line Power Supply Upgrade

Part of National Rail's £1.2bn East Coast Upgrade (ECU) has comprised upgrades to the power supply across the ECML. This has enabled faster, quieter and more environmentally-friendly electric trains to run, thereby paving the way for the introduction of new trains.

Phase 1 of the power supply upgrade on the EMCL between London and Doncaster, through South Kesteven, was completed between 2014 and 2020. This was delivered by the Rail Electrification (REAL) Alliance, comprising Network Rail, Siemens, J Murphy and Sons, VolkerRail, TSP Projects and Jacobs.

Forward Look

East Coast Digital Programme (ECDP)

Part of the strategy of the Network Rail (Control Period (CP) 7 - 2014 to 2029) includes deployment of traffic management through the East Coast Digital Programme18 (ECDP), a landmark scheme that will introduce in-cab digital signalling on the southern part of the ECML, between London Kings Cross and Grantham.

This programme is part of the East Coast Upgrade (ECU) and will lay the foundation for further improvements across the network, including expansion of existing deployment on the Western route to cover the entire Wales & Western region before 2030.

The programme will eliminate the need for physical rail signals on the network. This system is being piloted, with the first trains expected to operate using the ECDP signalling by 2025, with full implementation across the ECML intended by 2030.

Delivery of the ECDP will reduce the cost of introducing digital signalling elsewhere on the network, which is expected to happen as signalling systems become due for renewal.

This is intended to unlock the benefits of integrated stock and crew management, as well as the benefits of the connected driver advisory system (C-DAS) to optimise the delivery of the network.

Integrated Rail Plan for the North and Midlands (IRP)

The IRP (2021) proposes the establishment of 140mph services along the ECML. Achieving this would require the elimination of level crossings between Peterborough and Grantham. Due to the level of funding required, a piecemeal approach to these closures has been proposed, where specific level crossings are selected for closure and diversion of traffic and / or active modes of transport as required.

Particular level crossings within South Kesteven identified for potential closure include:

- The A1175 Main Road level crossing to the northeast of Talington, Stamford. This would require the creation of a bypass road; and
- To the southwest of Greatford, where a diverted foot crossing will be required.

The total programme would cost in the region of an estimated £345m on the ECML between Peterborough – Doncaster. The proposals are at feasibility stage within Network Rail, with mechanisms required to enable the next steps for funding from the UK government.

Lincolnshire Rail Infrastructure Strategy (2022)

It is expected that demand for rail services will increase over the Local Plan period, with the East Midlands Route Study (2016) identifying a growth of between 91% to 114% between 2013 and 2043. The study attributes this growth to the expansion of employment opportunities, rather than modal shift from the car. However, with behavioural change interventions it is possible that the rail network may experience further demand owing to modal shift.

Based upon anticipated demand changes, the LRIS forecasts rail capacity up to 2034 for the Lincolnshire rail network. Figure 4.12 highlights areas expected to act as key constraints to growth. Within South Kesteven, key constraints limiting the implementation of the increased rail service provision are Grantham Station as well as the Nottingham-Grantham line (with the Leicester to Peterborough line also identified as limiting growth opportunities).

To enhance service frequency within South Kesteven and support rail growth, the following recommendations are made within the LRIS document:

- Grantham Station: likely to require (at minimum) an extra through platform and potentially an extra bay platform (or alternatively an all station stopping Skegness service to avoid Grantham in some hours).
- Leicester-Peterborough Line: Full re-signalisation of the line to enable a standard headway.

Upgrades to Grantham station are key from Network Rail's point of view including creation of a footbridge to the station from the western side of the railway.

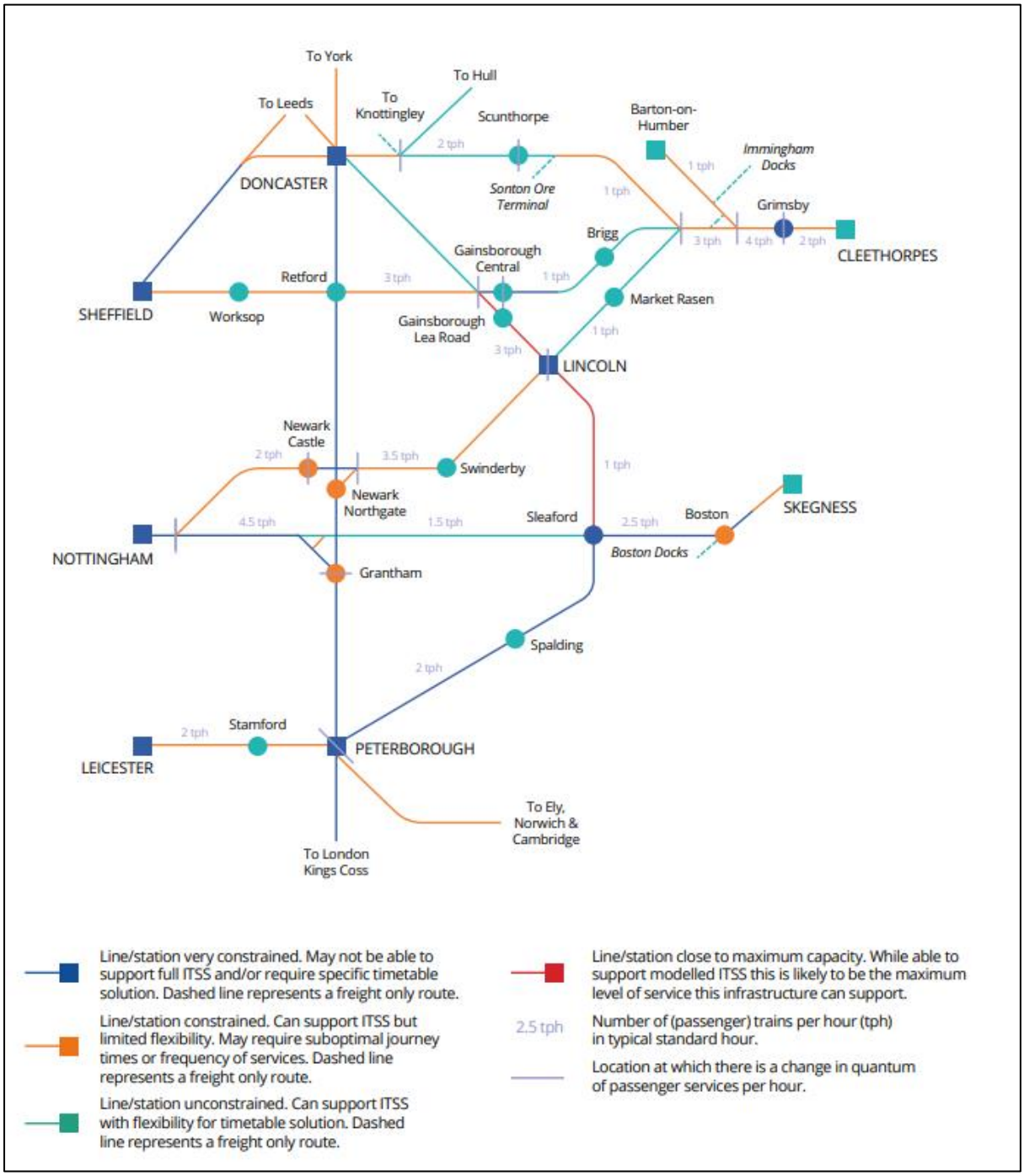
[18] https://www.networkrail.co.uk/running-the-railway/our-routes/east-coast/east-coast-digital-programme/

It is not proposed within the LRIS document to construct any new stations within South Kesteven.

It is also understood that the ITSS for Greater Lincolnshire will be developed up to 2034, with an aim of enhancing connectivity by rail for employment, education and leisure opportunities (and ultimately encouraging modal shift and more sustainable travel). With regards to South Kesteven, the ITSS aspires to increase the service frequency between Nottingham-Grantham-Skegness as well as introduce a second train per hour serving Stamford (on the Leicester-Peterborough line). These service improvements will help support the growth of identified housing and employment developments located close to the urban areas of Grantham and Stamford.

The ITSS recognises that a key constraint limiting the implementation of the increased service provision within South Kesteven is Grantham Station (with not enough capacity to accommodate all services by 2034) as well as the Nottingham-Grantham line (owing to signalling headway leading to capacity constraints).

Figure 4.12 Lincolnshire Rail Capacity (2034, before interventions)



Source: Lincolnshire Rail Infrastructure Strategy

Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (2023)

The SIDF states that, with further collaboration and sufficient investment, the framework aspires to:

- *"Develop additional capacity on the rail network that enables freight growth with benefits for Greater Lincolnshire's businesses, as well as regional freight movement (Greater Lincolnshire to Leeds, Manchester and Liverpool) [as well as] support improved passenger services within Greater Lincolnshire to regional centres, and to London, including price, speed, frequency and quality of services."*
- *"Upgrade our existing rail stations and promote new stations in key rural areas to enable greater accessibility to rail services and alternative commuting options."*

The framework does not propose any rail-related infrastructure improvements aimed specifically at South Kesteven, but recognises that the expansion of the rail network is important for supporting growth (particularly in employment).

Wider Schemes

As part of the Integrated Rail Plan for the North and Midlands (IRP) (2021), Network Rail aspires to establish 140mph services along the ECML. Furthermore, Network Rail is always looking for opportunities to reduce risk at level crossings, whether that be by closure and diversion, extinguishment, downgrading or bridging. This aspiration would be required to consider future cumulative traffic impact of developments through South Kesteven and their impact on level crossings.

Costs, Funding and Delivery

Costs and programme information is not currently available for the specific projects identified above.

As a general note, the UK Government has committed substantial investment of £96bn through the Integrated Rail Plan (IRP) with a substantial portion of these funds being delivered in projects during the course of CP 7. National Rail, funded by the UK Government, will be leading on operations, maintenance and renewal of England and Wales railway.

Capital projects (enhancements) are now funded separately by the UK Government on a case-by-case basis and no longer form part of Network Rail's five-year CP settlement. Any capital enhancements are managed by Network Rail, with the intention that responsibility be transitioned to Great British Railways (GBR), which is intended to replace Network Rail as manager of rail infrastructure across Great Britain.

Operators receive government funding to support the delivery of passenger services and are responsible for leasing rolling stock.

Summary

Key findings include:

- South Kesteven experiences greater rail use than the wider East Midlands;
- Three stations are available within South Kesteven: Grantham, Ancaster and Stamford. Grantham is the main station, providing long distance trips via the East Coast Mainline;
- The LRIS identifies the East Coast Mainline (ECML) as well as Grantham station to be key infrastructure constraints. The Leicester-Peterborough line is also identified as limiting growth on the rail network;
- The Project Schedule identifies five rail projects which will support growth in South Kesteven;
- It is proposed to deploy traffic management on the ECML via the East Coast Digital Programme;
- There is an aspiration to implement 140mph running on the ECML;
- To enhance service frequency at Grantham station, it is recommended that an extra through platform and potentially an extra bay platform is provided (or alternatively an all station stopping Skegness service to avoid Grantham in some hours);

- Full re-signalisation of the Leicester-Peterborough line is also identified within the LRIS as required to support employment and housing growth; and
- Costs and programme information is not currently available for the projects identified above. Overall, it can be expected that Network Rail (or Great British Rail in future) will be responsible for delivery of these schemes, funded by the DfT in conjunction with Local Authorities and third parties as required vai developer contributions.

4.3 Bus

Introduction

As South Kesteven is a predominantly rural area, there will inevitably continue to be a heavy reliance on private car use. This does mean, however, that those without access to a private car can be isolated and have significant issues accessing employment, education and training as well as other services and facilities. The purpose of this section is to identify the current and potential improvements to bus-based public transport services.

Baseline

Based on the 2011 and 2021 census mode share set out in Table 4.1, it can be seen that South Kesteven uses bus-based public transport much less than the wider East Midlands population in both 2011 and 2021.

Bus Routing and Service Provision

The main settlements of Grantham, Stamford, Market Deeping and Bourne all have bus routes serving them. However, based on a review of bus availability, local services suffer from poor frequency, particularly local routes in relation to Stamford, Market Deeping and Bourne.

Grantham

Grantham can be considered the main transport hub in the South Kesteven area. It is well connected on the local bus network in Lincolnshire, with the ‘Interconnect 1’ being the principal bus service between Grantham & Lincoln.

There are also a number of local and rural bus routes, and local services that serve the residential areas of Grantham, such as Alma Park, Great Gonerby, Moy Park, Earlesfield and Woolsthorpe. There are also services that provide connections to Sleaford to the northeast, Stamford to the south, Bingham and Newark on Trent in Nottinghamshire, as well as services to Melton Mowbray and Loughborough in Leicestershire.

In addition, Grantham Callconnect; a ‘bookable’, on demand public transport service, operates six-days-a-week: 7am-7pm, Monday-Friday, and 7:30am-6:30pm on Saturdays, offering journeys for passengers who have mobility impairment and may use mobility aids such as wheelchairs and walking frames. In addition, there are additional timetabled services: Service 4 Grantham to Stamford; and Service 26 Aslackby / Billingborough to Grantham to complement the on-demand bus service.

Appendix E shows a map of bus services covering Grantham.

Stamford

Stamford is well served by regular bus services to the neighbouring county of Rutland via Uppingham and Oakham, in addition to The Deepings, Peterborough, Bourne, Spalding and Grantham. The Grantham service is the No.4 bus, which departs Stamford Bus Station at 08:35, 11:35, 13:05 and 17:25. The journey time to Grantham takes approximately 70 minutes.

There are also local services serving the residential areas of Stamford and other nearby towns and villages such as Essendine, Stretton and Uppingham. Both buses to Essendine (No.29) and Stretton (184) depart Stamford once per day. The No.29 to Oakham stops in Stamford at 07:40 and the service travelling to Essendine departs Stamford at 18:02.

ConnectBus operates within Stamford six days a week: 7am-7pm, Monday-Friday, and 7:30am-6:30pm on Saturdays. The service can be used for direct journeys to Stamford or Peterborough which includes Peterborough City Hospital. In addition, the Callconnect service offers additional timetabled services via Service 4: Stamford to Grantham.

Appendix E shows a map of bus services covering Stamford.

Bourne

Regular public transport links are available to Peterborough, Stamford and Spalding. The No.201 bus departs Bourne Bus Station eleven times per day between 06:10 and 16:45. The journey between Bourne and Peterborough takes approximately 71 minutes and passes through Stamford.

In addition, the ConnectBus operates within Bourne six-days-a-week: 7am-7pm, Monday-Friday, and 7:30am-6:30pm on Saturdays, providing a large operating area including Castle Bytham, Billingborough and the Waterside Garden Centre at Baston.

The bus services operating in Bourne are shown in Appendix E.

Market Deeping

A total of three bus services provide transport links to Spalding, Peterborough and Stamford. The No.101 service in particular provides a link between Morton, Bourne, The Deepings and Peterborough and serves Market Deeping twice per hour on route to Peterborough.

The No. 301 service also routes from Spalding to Bourne Via Market Deeping and Stamford. This Bus stops in Market Deeping once per hour in both directions.

In addition, the ConnectBus service operates six days a week: 7am-7pm, Monday-Friday, and 7:30am-6:30pm on Saturdays. The ConnectBus vehicles are fully accessible and a tail lift is available to accommodate mobility aids, enabling all to travel.

Appendix E shows a map of bus services covering Market Deeping.

Bus timetables covering the four towns are shown in Table 4.6.

Table 4.6 Grantham Bus Timetables (Feb 2024)

Service	Operator	Route	Peak Frequency		Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
1	Stagecoach East Midlands	Lincoln – Grantham	60 mins	120 Mins	05:15	07:45	19:15	16:45
1	Centrebus (North)	Grantham – Alma Park or Earlesfield	20 mins	-	07:05	-	18:05	-
1A	Centrebus (North)	Grantham – Alma Park	1 per day	-	06:25	-	N / A	-
1G	CallConnect	Grantham Callconnect	1 per hour	-	07:00	-	18:00	-
4	Transport Connect	Grantham – Stamford	3 per day	-	07:00	-	16:03	-
6	Centrebus (North)	Grantham – Bottesford	60 mins	-	09:15	-	14:50	-
8		Grantham – Melton Mowbray – Loughborough	120 mins	-	06:40	-	18:00	-
9		Sunningdale – Woolsthorpe	3 per day	-	08:55	-	13:40	-
24		Grantham – Newark	60 mins	-	08:45	-	18:00	-

Service	Operator	Route	Peak Frequency		Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
26		Aslackby – Grantham	1 per day	-	16:50	-	N / A	-
26	Transport Connect	Billingborough – Grantham	1 per day	-	13:15	-	N / A	-
27	Centrebus (North)	Sleaford – Grantham	3 per day	-	09:40	-	15:55	-
28		Grantham – South Witham	5 per day	-	09:00	-	17:45	-
55		Grantham – Melton Mowbray	3 per day	-	07:14	-	13:50	-
56		Grantham – Melton Mowbray	1 per day	-	08:45	-	N / A	-
93	Vectare	Bingham – Grantham	90 mins	-	07:36	-	17:02	-

Source: AECOM (Information from transport providers)

Table 4.7 Stamford Bus Timetables (Feb 2024)

Service	Operator	Route	Frequency		Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
4	Transport Connect	Grantham - Stamford	3 per day	-	07:00	-	13:30	-
4P	CallConnect	Stamford & Peterborough Callconnect	60 mins	-	07:00	-	18:15	-
4R		Stamford & Rutland Callconnect	60 mins	-	07:00	-	18:00	-
4S		Stamford & North East Northants Callconnect	60 mins	-	07:25	-	18:25	-
9	Transport Connect	Oakham – Stamford	1 per day	-	17:20	-	17:20	-
201	Delain Buses	Bourne / Stamford – Peterborough	60 mins	-	06:28	-	17:07	-
301		Bourne / Spalding – The Deepings / Stamford	60 mins	-	09:10	-	17:10	-
R5	Bland's	Stamford – Uppingham	120 mins	-	07:15	-	17:40	-
S95S		Stamford - Grantham	1 per day	-	06:51	-	-	-

Source: AECOM (Information from transport providers)

Table 4.8 Bourne Bus Timetables (Feb 2024)

Service	Operator	Route	Frequency		Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
15B	Callconnect	Bourne Callconnect	60 mins	-	07:00	-	16:00	-

Service	Operator	Route	Frequency	Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
16S		Spalding Callconnect	60 mins	-	07:00	-	18:00	-
37S	CallConnect	Spalding Callconnect	60 mins	-	07:30	-	18:30	-
101	Delaine Buses	Bourne – Peterborough	30 mins	60 mins	6:10	09:00	19:30	16:00
201		Bourne – Peterborough	60 mins	-	06:10	-	16:45	-
301		Bourne – Stamford	1 per day	-	09:10	-	N / A	-
402		Bourne – Spalding	1 per day	-	07:20	-	07:20	-
403		Wilsthorpe – Bourne	1 per day	-	15:35	-	15:35	-
404		Little Bytham - Bourne	1 per day	-	07:30	-	07:30	-

Source: AECOM (Information from transport providers)

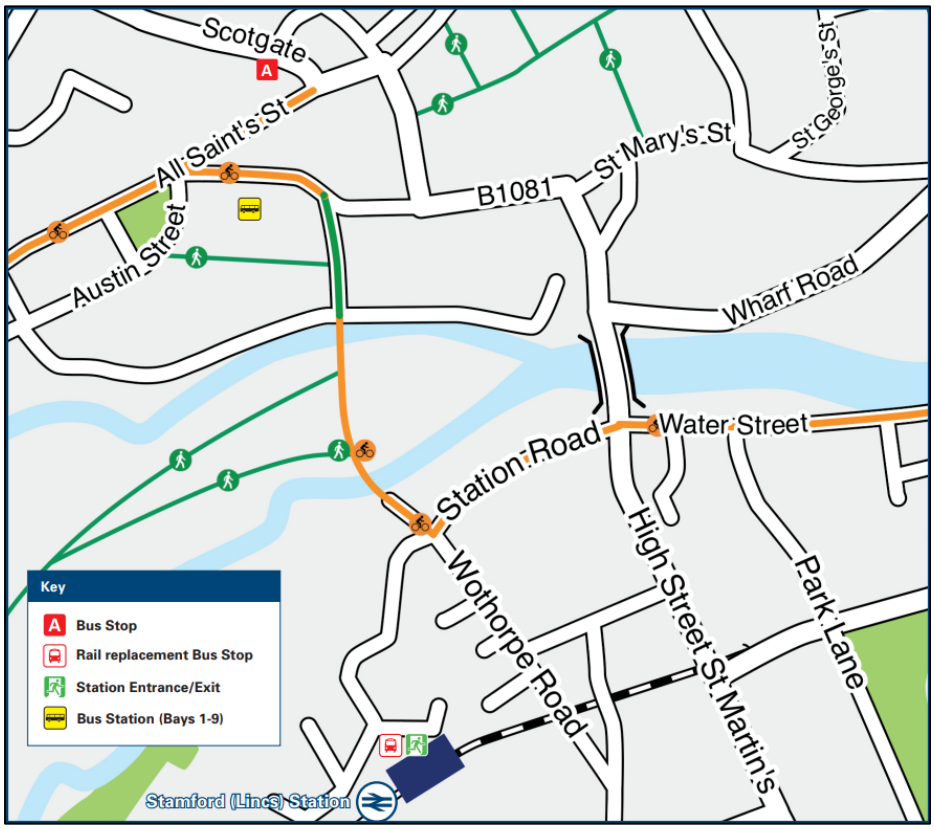
Table 4.9 Market Deeping Bus Timetables (Feb 2024)

Service	Operator	Route	Frequency	Start		Finish	
			Mon-Sat	Sun	Mon-Sat	Sun	Mon-Sat	Sun
15B	CallConnect	Bourne Callconnect	60 mins	-	07:35	-	18:35	-
101	Delaine Buses	Bourne – The Deepings / Peterborough	30 mins	60 mins	06:27	09:17	19:47	16:17
301		Bourne – The Deepings / Stamford	60 mins	-	08:13	-	17:39	-

Source: AECOM (Information from transport providers)

In addition to the above, further localised bus network information in relation to Stamford rail station is provided in Figure 4.13 below. This shows that Stamford bus station is located within 450m walking distance of the rail station.

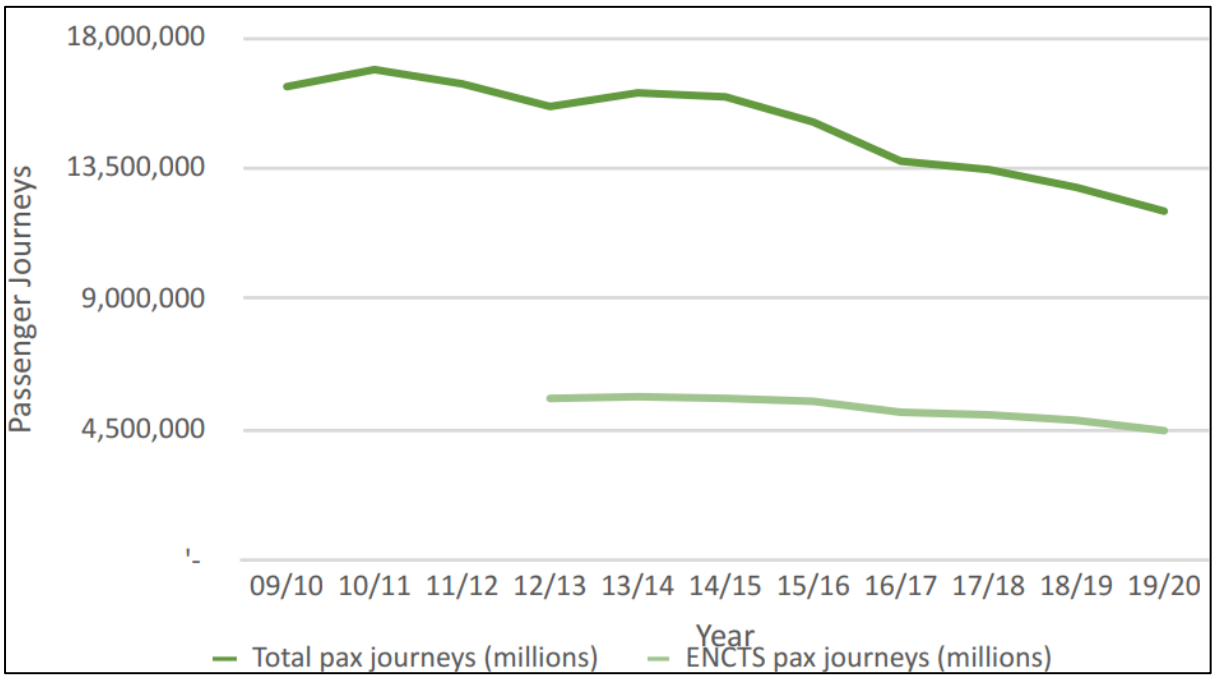
Figure 4.13 Localised Bus Facilities Adjacent to Stamford Rail Station



Source: National Rail (April 2023)

Despite this service provision, Lincolnshire's Bus Service Improvement Plan (BSIP) indicates that local bus passenger journeys within Lincolnshire were typically in decline, as shown in Figure 4.14. This highlights the challenge to ensure local bus services are commercially viable and sustainable.

Figure 4.14 Total Local Bus Passenger Journeys in Lincolnshire by Year



Source: Lincolnshire Enhanced Partnership Plan for Buses

Forward Look

LCC Internal Proposals

It is understood that as part of the planning permission for a new Grantham Designer Outlet Village near the A1, a shuttle bus will be provided linking the proposed outlet with the town centre. It is currently unknown as to when the Grantham Designer Outlet Village will come forward.

Other internal LCC proposals include:

- Implementation of a bus gate on Somersby Hill; and
- The reallocation of land used by the existing Grantham Bus Station, to instead provide further bus stops at St Peters Hill, costing £2 / 3m.

It should be noted that these schemes are not funded and do not have funding status.

Lincolnshire Bus Service Improvement Plan (BSIP (2023))

The primary focus of projects identified within the Lincolnshire BSIP – as agreed by the Lincolnshire Bus Partnership – is to increase bus patronage within areas and on corridors identified within the BSIP. These projects assume funding is provided by DfT.

Furthermore, the plan designates that new developments should be served by bus services from an early stage. The BSIP supports requesting Section 106 (S106) funding towards public transport services and infrastructure as part of the delivery of future developments. In addition, funding may be required to pump prime services covering new developments & adapt existing services where S106 funding is absent or insufficient.

The BSIP intends to deliver enhancements to the 'Into Town' network for Grantham in the first phase, with improvements in the other towns if further BSIP funding becomes available at a later stage.

'Into Town' Proposals relevant to Grantham, Bourne, Stamford and Market Deeping comprise:

- Identify areas within Grantham to optimise routes and service levels based on existing demand and future demand where there is planned housing growth;
- Kickstart funding and financial support to enhance service timetables, for a minimum of an hourly service during core daytime hours, and half-hourly where financially viable;
- Enhance services to operate at weekends and into the evening where there is demand;
- Engage with operators to introduce modern, high quality and low emission buses on the network, including through a potential bus demonstration project in Grantham;
- Provide contactless (Europay, Mastercard and Visa (EMV)) payment options to simplify the payment process and then be part of the national bus £2 fare capping scheme;
- Activate bus priority at all signalised junctions, including reducing lateness triggers. Relevant scheme locations include the following:
    - North Street, Bourne (between Burghley Street and Market Place)
    - High Street, Market Deeping (Godsey Lane-Mkt Place)
- Explore the possibility of bus lanes; and
- Significant investment in bus stop infrastructure, including real time information at popular bus stops in line with Lincolnshire bus stop information standards, along with shelters, raised kerbs, street lighting and CCTV.

'Rural Interchange Hub Corridor' proposals relevant to South Kesteven, including in relation to villages to the south of Bourne, comprise:

- Design and construction of appropriate modal interchange hub(s) in Grantham and in relation to market towns including the villages of Thurlby, Baston and Langtoft within South Kesteven;
- Incorporate bus stop infrastructure within the Hubs;
- Provide nearby secure cycle parking; and

- Promote and raise awareness of the new infrastructure and Hubs to encourage use.

The Lincolnshire Enhanced Partnership (EP) Plan for Buses sets out wider proposals that intend to enhance the bus service offer across the county, including South Kesteven, including:

- Enhancing the existing CallConnect Demand Responsive Transport (DRT) offer through purchase of additional vehicles and roll out across the network. This supports objectives in the Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework which aspires to create infrastructure that *"tackles transport related exclusion, e.g. demand responsive bus services and wheels to work type schemes"*; and
- Integrate bus services with rail stations, focussing on aligning bus timetables with rail timetables for specific trains to key locations such as London.

Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (SIDF (2023))

The SIDF sets out the aspiration to invest in the region's bus fleet with specific aims of enhancing the uptake of public transport, meeting the green agenda, and assisting in the recovery of passenger numbers post-pandemic.

The document notes a desire to run a pilot e-bus programme in urban areas across Lincolnshire.

Lincolnshire Local Bus Strategy (LLBS (2021))

The LLBS sets out the supply of bus services within Lincolnshire, the challenges faced by operators, as well as the potential areas for intervention. The plan notes the importance for any future intervention to align with the National Bus Strategy, with the following polices adopted within the strategy:

Economic Growth

- Improve bus connectivity throughout Lincolnshire, the East Midlands and beyond.
- Ensure a resilient and reliable bus system for people.
- Support the vitality and integrity of our town centre and rural communities.

Thriving Environments

- Provide sustainable access to Lincolnshire's environment and heritage.

Supporting safety, security and a healthy lifestyle

- Increase confidence in a safer and more secure bus network.
- Reduce the impacts of air quality and noise.
- Improve the health of our communities through provision for active travel.

Promote high aspirations

- Improve connectivity and access to employment, education, healthcare and leisure.
- Improve access to public transport.
- Encourage community participation in shaping and delivering transport services.

Improving quality of life

- Reduce negative impacts of transport on people's lives.

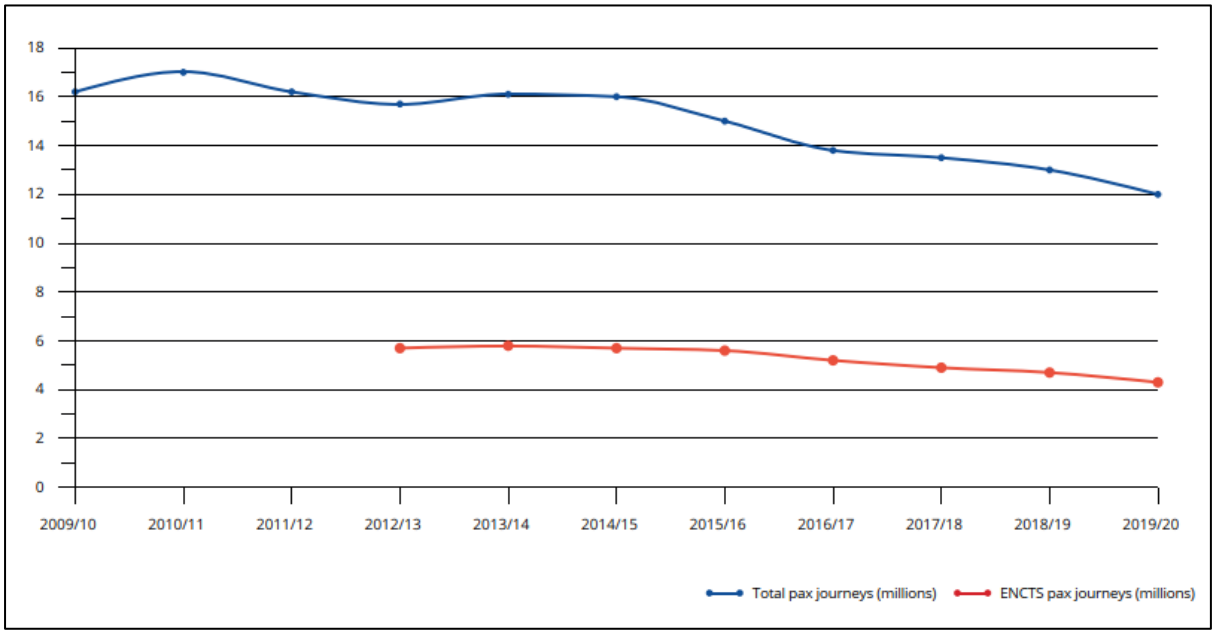
Future Demand

Lincolnshire has seen a downward trend in passenger numbers, with Figure 4.15 showing a reduction of 28.8% between 2013 / 14 and 2019 / 20 (with much of the decline occurring between 2013 / 14 and 2019 / 20, with bus passenger journeys falling from 16.03 million to 12.03 million). As with national trends it's anticipated that demand (across the county) will continue to decline across the Local Plan period.

However, some targeted services as well as those serving urban areas will potentially see an increase in patronage as a result of specific funding allocations and behavioural change interventions. Indeed, within the Lincolnshire Bus Service Improvement Plan (BSIP) it is aspired to increase bus patronage

by 5% on county-wide services by March 2026 as well as improving journey times, reliability and customer satisfaction.

Figure 4.15 Local Bus Passenger Journeys In Lincolnshire By Total And Concessionary* Journeys



*Source: Lincolnshire Local Bus Strategy. * England National Concessionary Travel Scheme (ENCTS)*

Given that behavioural habits are typically formed when an individual experiences a life change (such as moving to a new house or job) it will be important when delivering the Local Plan to ensure that bus intervention strategies are focused during the occupation stage at each large housing and employment development. To maximise the potential for increased bus patronage it is expected that developers will be required to contribute to public transport services via the S106 mechanism.

Given the rural nature of South Kesteven as well as the potential service loss of non-viable routes, it is also anticipated that the demand responsive service, CallConnect, will be important to bridge the gap in provision and prevent widescale social isolation across the district.

LCC Enhanced Partnership Plan for Buses

An EP Plan for Buses has been prepared to formulate the mechanisms by which the proposals in the BSIP will be delivered. In terms of infrastructure, relevant proposals in relation to bus travel in South Kesteven are as set out below. The proposed infrastructure, facilities and measures set out in the Lincs EP Plan and summarised below are a small part of the matters which it is intended to deliver through the EP, reflecting matters which are able to be delivered early in the scheme, and which are not dependent upon further funding.

Bus Priority: LCC intend to incrementally introduce more bus priority at both standalone and Scoot-enabled junctions across the area of the EP Scheme. It is understood from the EP scheme that where appropriate this facility is being activated on a junction-by-junction basis, and will be maintained throughout the period of the EP Scheme.

In addition, the reduction ‘lateness’ requirement in order for buses to receive priority at signalised junctions was reviewed by LCC in 2022-23 and feasible changes to the lateness threshold will be actioned on a junction-by-junction basis as soon as practicable.

Bus Stop Infrastructure: a bus stop inventory for Lincolnshire undertaken during 2022 – 2023 will be used by the EP Forum and Board to identify where bus stop infrastructure could be enhanced.

The next review of the EP Scheme by the EP Board is intended to take place in October 2024.

Costs, Funding and Delivery

In total, there are 14 bus infrastructure projects identified in the project schedule, of which 12 are located in South Kesteven. Costs are known for three of the projects located in South Kesteven; these are summarised below, and together total £7.17m. No committed funding has been identified for these three schemes. Funding sources which could be relevant for buses in South Kesteven in the future are set out below.

Enhanced Partnership Scheme

The LCC EP Plan for Buses includes an EP Scheme and a variation mechanism allowing parties to vary the EP Scheme when new funding becomes available and / or where agreement is reached as to how further objectives of the EP Plan are to be delivered. Therefore, the initial EP Scheme also provides a framework for delivery of further elements of the EP Plan where LCC and relevant operators agree to such further facilities, measures and / or standards and where funding is made available, including any DfT funding.

Table 4.10 summarises the two schemes within South Kesteven which the EP will deliver if LCC receives funding from the DfT.

Table 4.10 EP Scheme Proposals Dependent on Funding from DfT

Proposed Scheme	Measures	Relevant Location within SK	Total Funding Request
Market town bus Improvement Programme	Upgrade to stops & shelters – raised kerbs, street lighting	To be focused on three towns, including Grantham	£4,340,000 between 2023 - 2026
	Introduction of real time information at key bus stops		
	Bus network review in all three towns, assessing routes, timetables		
	Updated timetable information at all bus stops.		
	Traffic light junction priority		
	Identification of pinch points and exploration of optimal solutions such as bus lanes, bus gates, red routes, review of parking provision		
	Enhanced service levels, with increased morning, evening and weekend services		
	Developing business cases for investment in zero emission buses.		
Bus - Cycle Interchanges	Funding study to identify sites for cycle parking at bus stops in rural villages.	Including Thurlby, Baston and Langtoft within South Kesteven	£332,000 between 2023 - 2026
	Priority route for Lincolnshire is the service 101 corridor (Bourne to Market Deeping).	Bourne to Market Deeping corridor	

Source: Lincolnshire Enhanced Partnership scheme for buses, Annexe B

LCC Internal Proposals

Furthermore, funding of £2 / 3m has also been ascribed to the reallocation of land used by the existing Grantham Bus Station to provide further bus stops at St Peters Hill.

'Network North' Funding

It is understood that £230m (redirected funding from HS2) will be invested to increase the frequency of bus services in the Midlands. The distribution of the funding is not yet clear; however, there is potential for the funding to be used to enhance bus operations within South Kesteven.

Local Transport Fund

Further to the above, it is understood that approximately £1bn of funding will be reallocated to the East Midlands from HS2 through the Local Transport Fund. This will intend to improve local transport connections including to local bus service provision and facilities, and will be made available to local authorities from April 2025.

Other Funding Streams

The National Bus Strategy aspires to reverse the national trend of declining bus patronage through the provision of £3 billion for buses in England, to be invested in:

- Giving LHAs the skills and people they need to deliver this strategy – with £300m allocated in between July 2023 and March 2025;
- Bus priority schemes to speed up journeys; and
- Accelerating the delivery of zero-emission buses.

Moreover, Bus Services Operators Grants (BSOG) are available for eligible community transport operators to enable them to recover some of their fuel costs (particularly important on commercial non-viable routes such as in rural areas). This funding may be accessed by LCC to support bus operators within South Kesteven.

Key delivery partners may include bus service operators, local authorities and Transport for the East Midlands (TfEM).

Summary

Key findings are as follows:

- Bus use is much lower in South Kesteven compared to the wider East Midlands;
- There are bus routes serving Grantham, Stamford, Market Deeping and Bourne. However, based on a review of bus availability, local services suffer from poor frequency, particularly local routes in relation to Stamford, Market Deeping and Bourne;
- The Lincolnshire Bus Service Improvement Plan (BSIP) intends to increase patronage via enhancements to the 'Into Town' network (covering Grantham in the first phase, with improvements in the other towns if further BSIP funding becomes available at a later stage);
- The Greater Lincolnshire and Rutland SIDF notes an aspiration to pilot e-bus schemes in urban areas across Lincolnshire;
- Bus patronage is expected to follow national trends of decline, however it is hoped that specific intervention could enhance patronage on targeted services;
- CallConnect (Lincolnshire's demand responsive service) is expected to be important to mitigate against social isolation, particularly if funding for non-commercially viable services is withdrawn;
- 14 bus projects have been identified within provider plans which will contribute to meeting demand arising from planned growth over the Local Plan period. Of these, 12 are within South Kesteven. Cost are known for three of the 12 projects, totalling £7.17m. No committed funding has been identified and therefore the funding gap is also identified as £7.17m.
- It will be important for developers across the Local Plan to contribute towards the bus network as part of S106 contributions.
- Likely funding sources over the local plan period will include the DfT, Network North and Local Transport Fund, with bus operators acting as key delivery partners including bus operators, local authorities and TfEM.

4.4 Pedestrian and Cycle

Introduction

An important element of sustainable transport is the provision of high-quality walking and cycling routes so that short-distance trips can be achieved without using the private car. The purpose of this section is to identify the existing, planned and required provision with regards to walking / cycling.

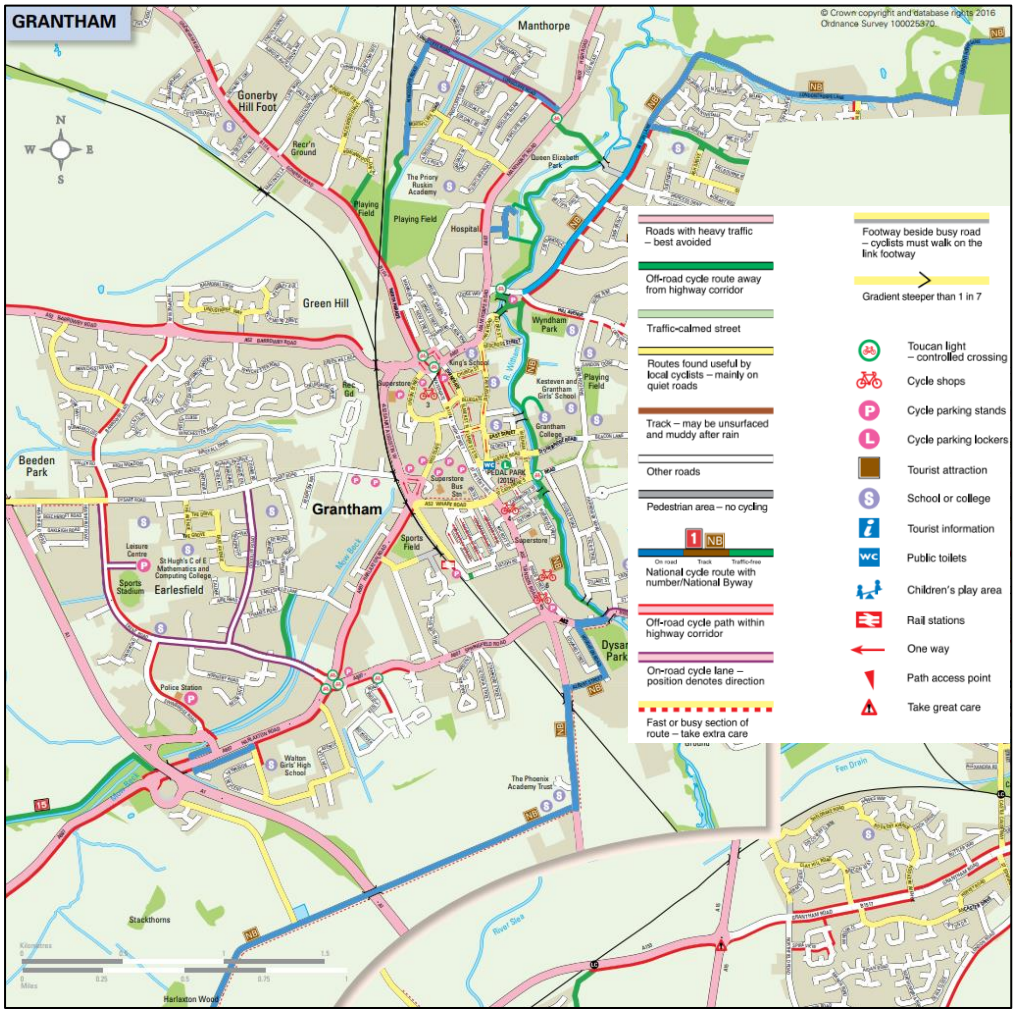
Baseline

Based on Table 4.1, it can be seen that South Kesteven makes use of walking and cycling more than the wider East Midlands population. It is also worth noting that the area benefits from extensive Public Rights of Way (PRoW) networks which, whilst ostensibly for leisure trips, have a role in supporting sustainable trip-making for a range of other purposes.

Grantham

Grantham has an established network of cycle routes and facilities across the town. Open space improvements along the River Witham have included a network of off-road cycleways through parks for a significant length of the River. A network of both segregated and shared cycleway / footways also exists along radial routes into the town centre. These routes generally end leading up to the town centre traffic collar which is a key severance feature for cyclists in the town. A map highlighting cycle infrastructure within Grantham is set out in Figure 4.16 below.

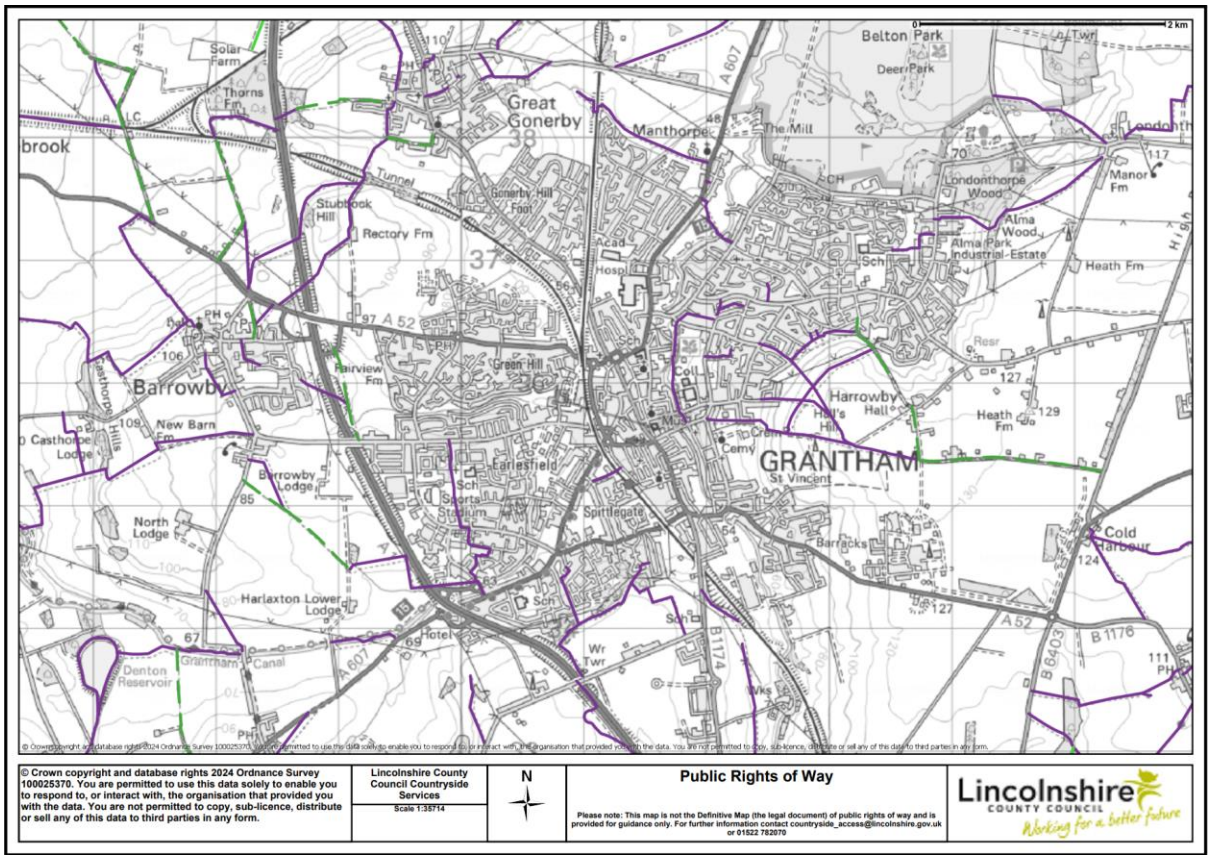
Figure 4.16 Grantham Cycle Network & Infrastructure Map



Source: https: / / www.southkesteven.gov.uk / sites / default / files / 2023-07 / Grantham_Cycling_Map.pdf (2016)

The PRoW network covering Grantham is shown in Figure 4.17. The Figure shows a limited number of bridleways (both walking and cycling) to the east and west of the town centre, with a larger network of footpaths (walking only) available. There are limited PRoWs within the centre of the town.

Figure 4.17 Grantham Public Rights of Way Map



Source: LCC (February 2024)

Stamford

A map of existing cycle infrastructure within Stamford is set out in Figure 4.18. This shows that the cycle network within Stamford is more limited than in Grantham, and comprises mainly of National Cycle (NCN) Route 63 and a National byway. Much of the signed network is on-road, with a further section of shared use footway and cycleway including sections of Ryhall Road, B1081 Casterton Road, Sidney Farm Lane and Empingham Road.

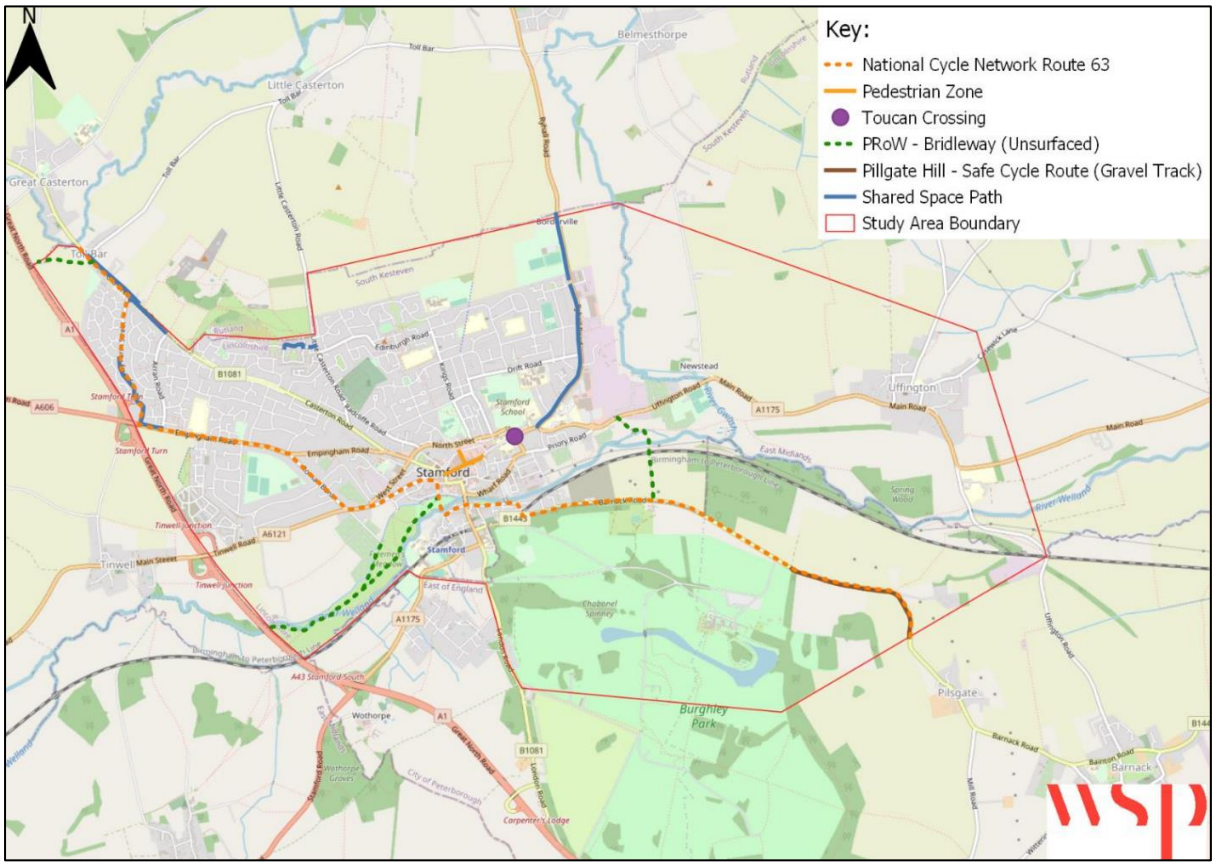
Further to these routes, a Safe Cycle Route is in place on Pilsgate Hill to the southeast of Stamford, facilitating cycle movements adjacent to this section of the B1443 as part of NCN Route 63 between Burley House and Pilsgate.

The Cycle and Walking Network Plan (CWNP) for Stamford also highlights two waterways in the study area which accommodate existing crossing points for walking and cycling:

- River Welland, which flows west to east through Stamford. The river has two road crossings in Stamford which accommodate active mode users: at the A1 and in the town centre at Stamford Bridge. There are also a number of footbridges: the Meadows Footpath to the west of Stamford, three bridges onto Town Meadows, Albert Bridge at Albert Road / Water Street, and east of Stamford towards Burghley House; and
- River Gwash, which flows from Rutland Water around the north and east side of Stamford and Ryhall to join the Welland between Stamford and Uffington.

The Stamford CWNP sets out that major roads in proximity to Stamford are heavily trafficked, which can be a deterrent to walking and cycling due to the actual and perceived risks of walking and cycling. Overall, the CWMP summarises that Stamford lacks a consistently connected cycle network and where provision is in place; in most places it does not reach the current standards presented in LTN 1 / 20.

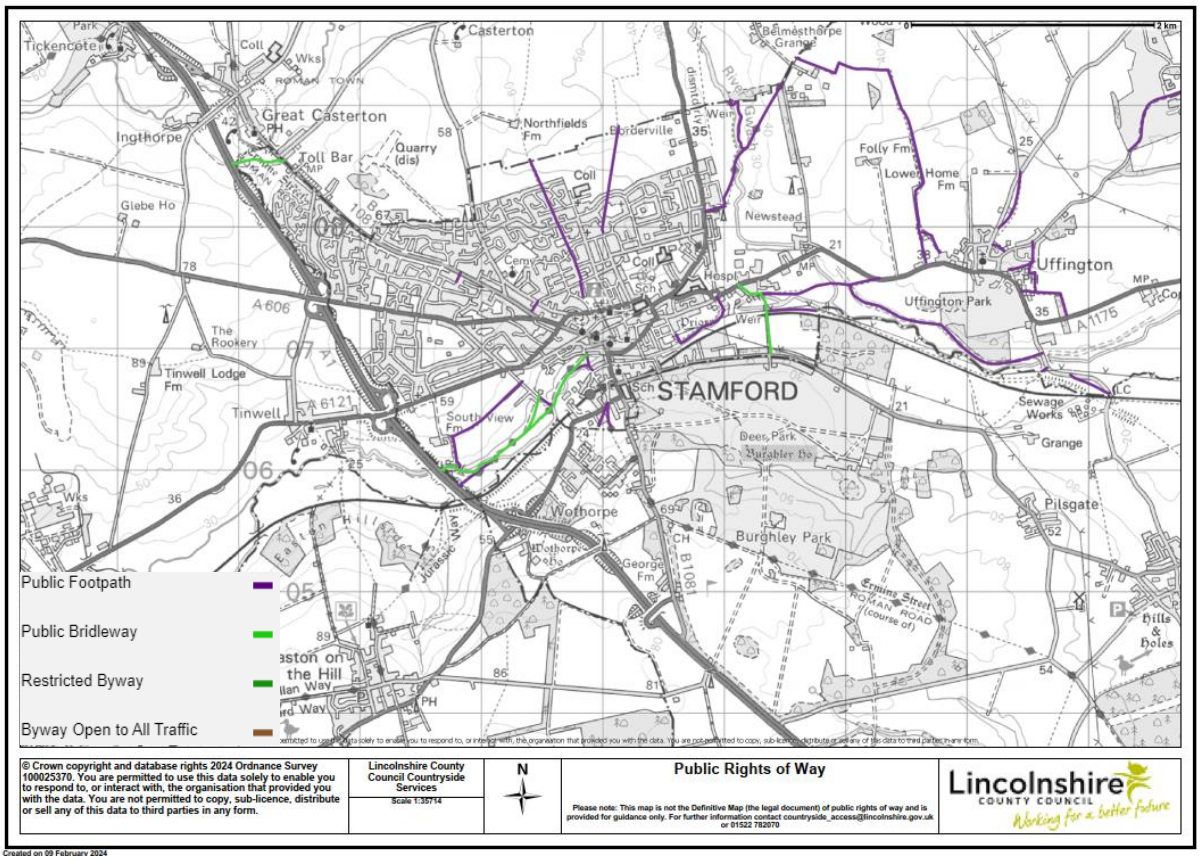
Figure 4.18 Stamford Existing Cycle Infrastructure



Source: Figure 3-2, Stamford CWNP (2022)

Figure 4.19 shows the PRoW network for Stamford. The network is smaller than that of Grantham, with three bridleway connections offering some walking / cycling connectivity. Some off-road footpaths are available to the north / northeast of the town however these are poorly connected to the wider walking network.

Figure 4.19 Stamford Public Rights of Way Map



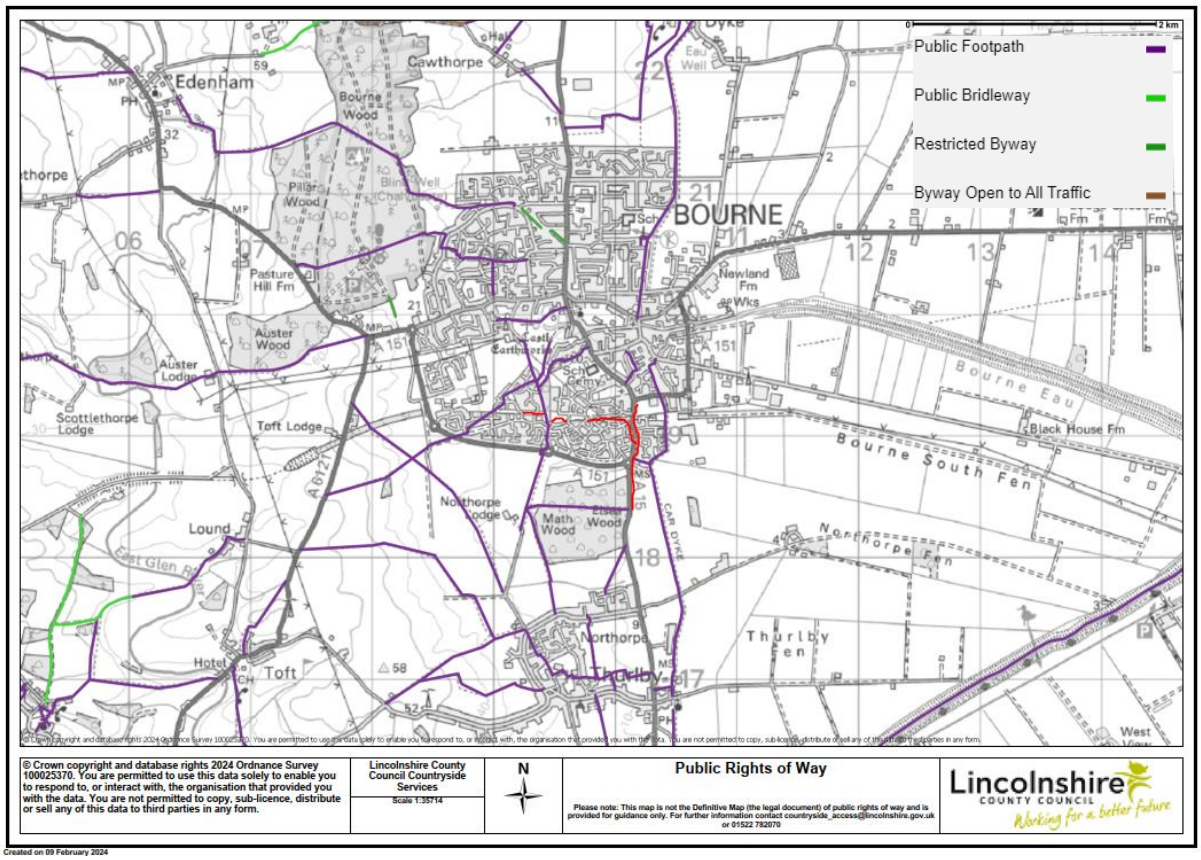
Source: LCC (February 2024)

Bourne

The cycle connectivity to / from and through Bourne is very limited. There are no National Cycle Network (NCN) routes passing within proximity of the town, and only one cycleway located to the south of the town (shown in red in Figure 4.20). The cycleway connects Newton Abbot Way with the A15 (although this is discontinuous in places). The route then extends south along the A15 until after its junction with the A151.

Considering footways, the network is good considering the size of the town. There is good on / off-road infrastructure in terms of connectivity, with both short and longer distance routes available. Bourne is connected by footway infrastructure to the local villages of Northorpe, Thurlby, Edenham and Dyke.

Figure 4.20 Bourne Public Rights of Way Map (incl. cycleways)



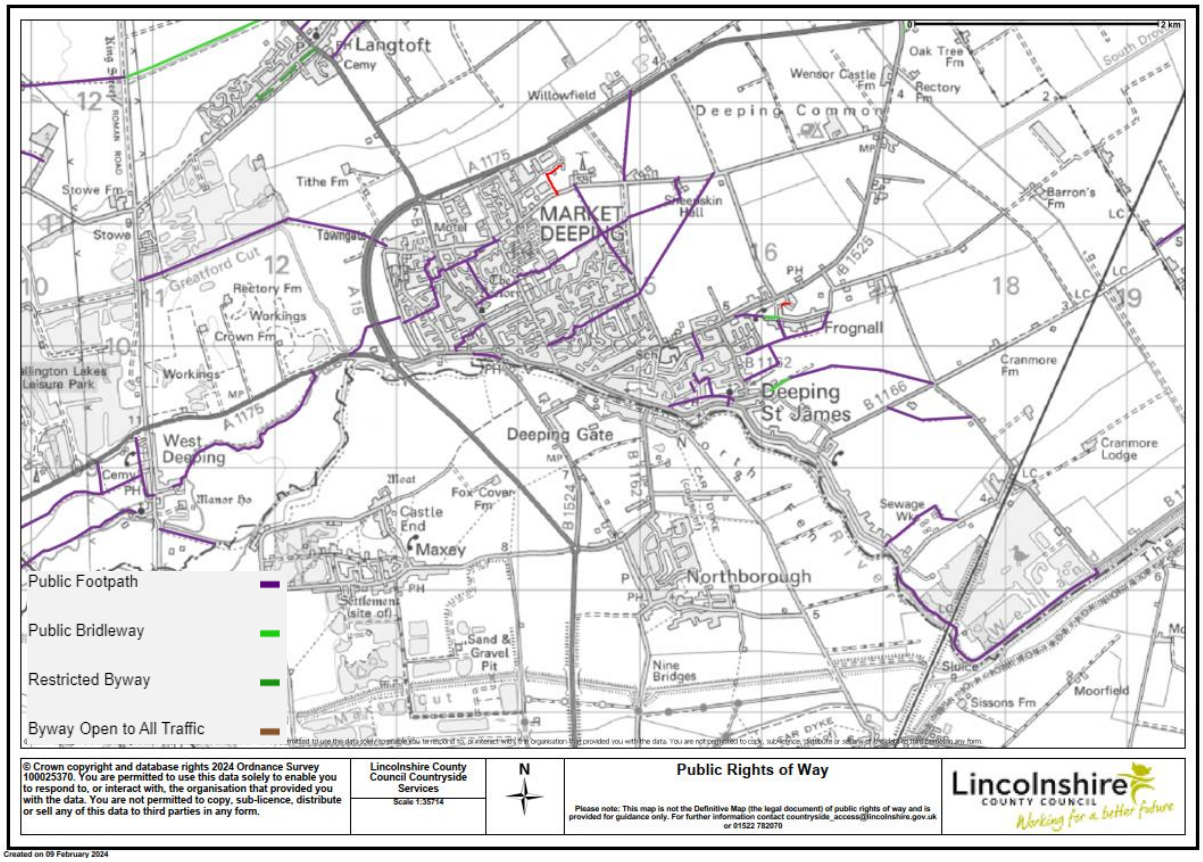
Source: LCC (February 2024)

Market Deeping

Similar to Bourne, there are limited cycle routes to / from or within the town of Market Deeping. NCN 21 is located approximately 4km south of the centre of Market Deeping, providing connection to Peterborough. Within the town there are some cycleways, but these are broadly discontinuous and / or provide limited connectivity (as shown in red within Figure 4.21).

Figure 4.21 shows the PRoW network. Footpaths are available connecting the town centre to the surrounding areas (including some links towards Deeping St James and West Deeping). A bridleway is available to the north of the town near Langtoft.

Figure 4.21 Market Deeping Public Rights of Way Map (including cycleways)



Source: LCC (February 2024)

Forward Look

Future Demand

The Second Cycling and Walking Investment Strategy (DfT, 2022) states that the government aspires to make walking and cycling the norm by 2040 for shorter journeys, with objectives set for cycling levels to double as well as increase the proportion of 5 to 10-year-olds walking to school to 55% by 2025.

To support the increase of walking and cycling in South Kesteven, future developments identified within the Local Plan will be required to provide connections to existing walking / cycling networks, which may include improvements to PRoW networks. It is expected that such infrastructure provision may be secured as part of the S106 mechanism, with Travel Plans produced at each site to encourage walking / cycling amongst residents and employees.

In addition, upgrades to existing infrastructure provision (as highlighted in the section above, particularly the Cycling and Walking Network Plans produced for Grantham and Stamford) is required to encourage modal shift, particularly in areas where infrastructure constraints limit the uptake of walking / cycling as well as within urban areas, such as Grantham and Stamford, where there is typically a higher propensity to walk and / or cycle. Connection and co-ordination with local health initiatives is likely to be required, given that increased walking and cycling fulfil many health objectives.

Infrastructure

LCC Internal Proposals for Grantham

The following required infrastructure improvements have been identified for the Grantham area by LCC officers:

- General improvements to pedestrian crossings within Grantham;
- High Street – St Peters Hill – widening footways;

- Grantham Marketplace, raising carriageways up to the level of footways as part of beautification / public realm improvements, effectively improving the town centre offer for pedestrians through creation of space for walking; and
- Five-arm station junction adjacent to Grantham railway station, new signals and public Realm improvements.

However, these schemes are not funded and do not have funding status.

LCC Call for Sites RAG Assessment

As noted within the Roads section, Lincolnshire Highways (LH) identified comments in relation to projected housing and employment sites within South Kesteven which are considered to be constrained by transport related infrastructure. The following list of developments have constraints relating specifically to pedestrian / cycle infrastructure. The full list is shown in Appendix D:

- SKPR-99: Land to the south of Mill Drove and west of Meadow Drove – requires footway connection with the existing network, as well as improvements to Mill Drove and the adjacent PRoW network;
- SKPR-84: Land west of Meadow Drove, Bourne – Requires connecting footway as well as improvements to the adjacent PRoW;
- SKPR-84: Land to the West of Meadow Drove, Bourne – Considerable works required to facilitate passage of pedestrians to the Town Centre;
- SKPR-144: Land at Mill Drove – Requires significant footway connections;
- SKPR-57: Land off Belton Lane, Great Gonerby - Footway / cycleway connections needed to be provided along Belton Lane to Great Gonerby (around 1km). Site should also provide footway / cycleway connections to residential to south;
- SKPR-65: Prince William of Gloucester Barracks (GR3-H4) - A significant amount of active travel and sustainable transport measures would be necessary to reduce car mode share and make the traffic impact of this development acceptable. Several junctions between the site (notably Gainsborough Corner) would need re-configuring to promote active travel;
- SKPR-109: Land fronting Deeping Road (A15), Baston – Requires connections to the PRoW north of the proposed site along with improvements to the network. Consideration for pedestrians along Deeping Road to connect with existing network also need to be made;
- SKPR-120: Land at the East of Stamford Road, Colsterworth – Requires widening of the existing footway on Bourne Road and Stamford Road;
- SKPR-247: Land North of Bourne Road, Corby Glen - Requires the construction of a frontage footway on Bourne Road, which would require culverting of the existing ditch;
- SKPR-74: Land west of The Drift, Harlaxton – Would require pedestrian crossing mitigation on the A607;
- SKPR-135: Land to the South of Edenham Road, Hanthorpe – Footway widening required along Hanthorpe Road;
- SKPR-55: Land Fronting Peterborough Road, The Deepings - Footway connection required to Market Deeping;
- SKPR-182: Grantham Oakdale, Gonerby Moor, Grantham - Active travel and sustainable transport measures would be unlikely mitigate the impact of traffic which is likely to be severe on the adjoining highway network;
- SKPR-262: Lane at Valley Lane, Long Bennington – Pedestrian connectivity required into village centre, significant length of footway required; and
- SKPR-268: Station Approach, Grantham - Station Road unadopted and would required sustainable improvements.

Stamford Cycling and Walking Network Plan (CWNP) (2022)

LCC commissioned WSP to prepare a Cycling and Walking Network Plan for Stamford in 2022, based on the DfT's Local Cycling and Walking Infrastructure Plans (LCWIP) Guidance (2017). The resultant

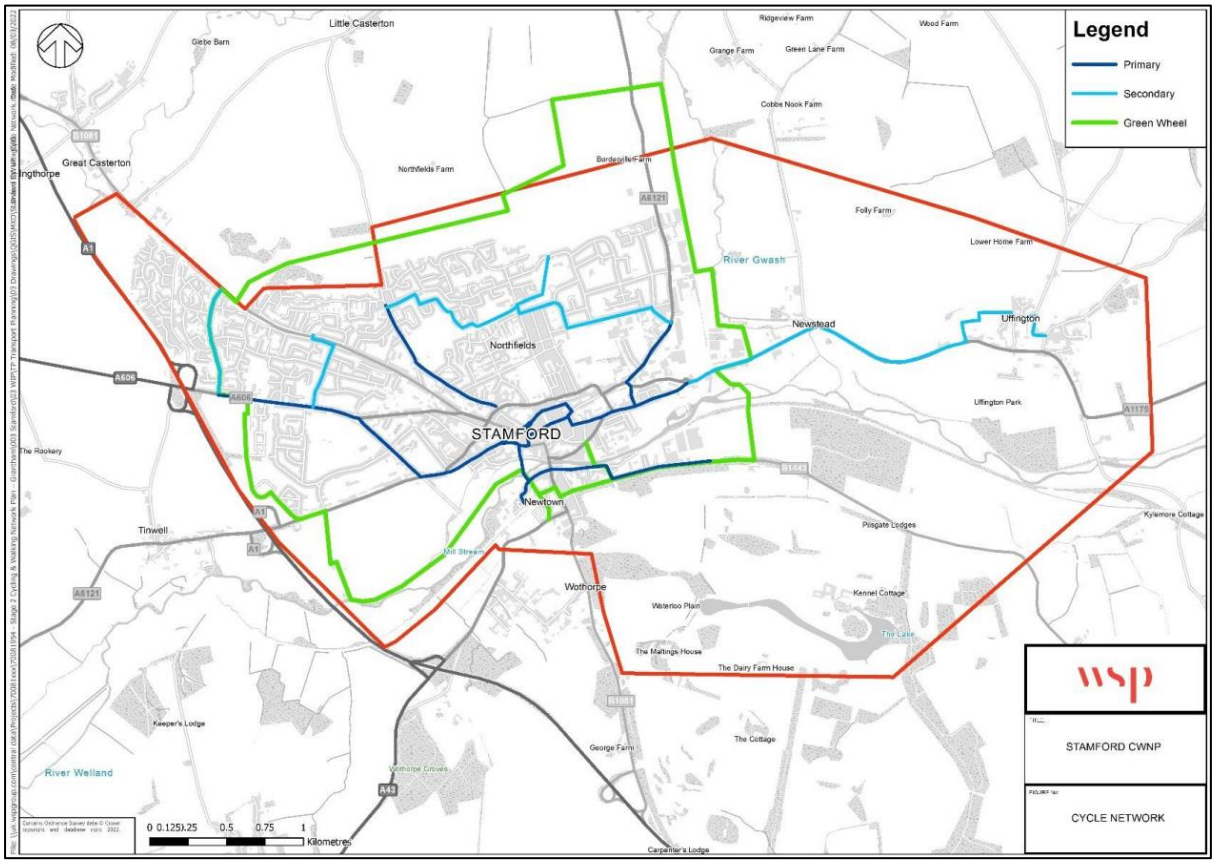
proposed cycle network for Stamford is set out in Figure 4.22. This network has been categorised into primary and secondary routes, which are categorised within the CWNP for Stamford. The network comprises:

- Routes along Arran Road, Sutherland Way and Empingham Road, Roman Bank and Tinwell Road connecting with the town centre;
- An orbital route provided to the north, making use of quieter streets and off-road routes to connect residential areas with educational and retail facilities;
- To the east, Uffington is connected with Stamford via A1175; and
- To the south, routes are provided along Barnack Road, Water Street and Station Road, connecting employment sites and the rail station with the town centre via the existing bridges across the River Welland.

In line with LTN 01 / 20 guidance, cycle infrastructure has been proposed to be separated from motor traffic where speed and flow of motor traffic requires this. Where direct routes are not available due to high traffic volumes and width constraints, alternative routes have been provided that are either quieter or propose infrastructure to support cycling.

The plan also includes an existing proposal to provide a leisure cycle route around Stamford, referred to as 'The Green Wheel', which uses existing PRoWs, the route of a disused railway line, on-carriageway sections, and new provision to the north of Stamford, through land allocated for residential development. This 'Green Wheel' proposal is intended to run concurrently with the route considered as part of the CWNP for Stamford.

Figure 4.22 Proposed Stamford Cycle Network

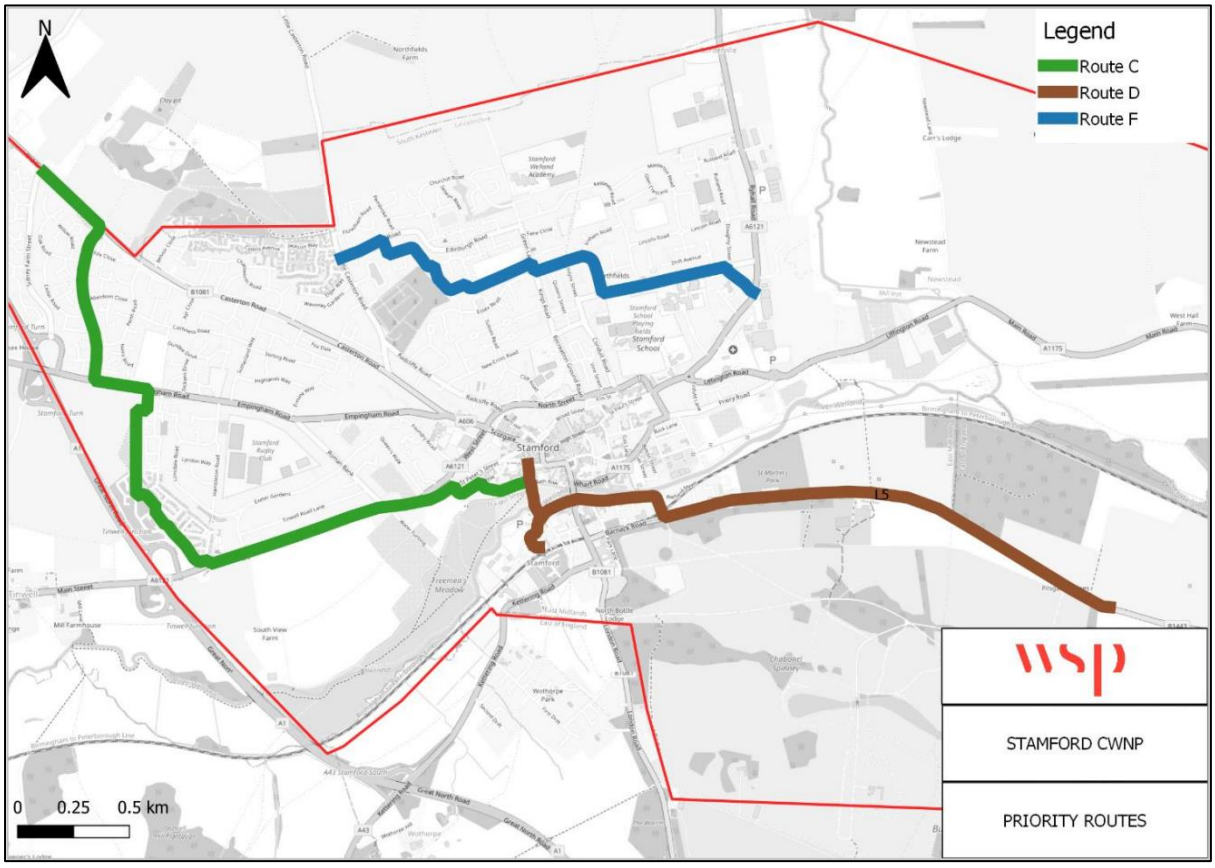


Source: Stamford CWNP (2022)

In addition to the cycling network and measures proposed above and based on analysis of walking trips within Stamford, the CWNP for Stamford proposes a Walking Network. This sets out a 400m Core Walking Zone from the centre point within the town centre at Sheep Market / Castle Street, an expanded Controlled Walking Zone (CWZ) and a 2km Outer Walking Zone.

Based on this and the proposed cycle network, three priority routes have been identified, to be taken forward for auditing, development of infrastructure options, costing, appraisal and prioritisation, as set out in Figure 4.23.

Figure 4.23 Stamford Priority Routes



Source: Stamford CWNP (2022)

Table 4.11 summarises the interventions for the proposed routes.

Table 4.11 Stamford CWNP Proposed Interventions

Route	Location	Summary of Interventions	Indicative Cost (£)
Route C	Eleanor Cross To Casterton Road	• Reduce speed limit to 20mph • Resurface Kings Mill Lan • Provide Toucan crossings • Widen existing footways to minimum 3m to create a shared use path, including on Rutland Terrace • Improved crossing facilities • Traffic calming features to reinforce speed limit changes	1,704,400
Route D	Barnack Road To Eleanor Cross	• Reduce speed limit to 20mph • Traffic calming features to reduce traffic speed • Provide two new cycle bridges over the River Welland • Provide a new segregated cycle track across Town Meadows • Provide segregated bi-directional 3m wide cycle track • Realign existing parking provision • Introduce separately signalled cycle stop lines • Make Water Street one-way only eastbound to motor vehicles • Improve junction crossing facilities • Provide segregated bi-directional 3m wide cycle track • Provide Toucan crossing	2,491,200

Route	Location	Summary of Interventions	Indicative Cost (£)
		• Widen existing footway to minimum 3m to create a shared use path	
Route F	Little Casterton Road To Ryhall Road	• Reduce speed limit to 20mph • Traffic calming features to reduce traffic speed should be considered • Possible point closure to be considered • Improve path surface, including between Edmonds Close and Ryhall Road • Introduce toucan crossing	401,800

Source: Section 6, Stamford CWNP (2022)

An Active Mode Appraisal Toolkit (AMAT) assessment shows that Route F generates the highest Benefit to Cost Ratio and is likely the most deliverable of the schemes (and could be realised in the short term). Route D scored highest against prioritisation criteria but the cost of the scheme is likely to impact the delivery of the route, whilst Route C has the greatest potential to serve residential developments to the west of Stamford. The schemes could potentially be supported by multiple funders and future funding opportunities.

The CWNP found that a fundamental requirement for the provision of cycle improvements that affects all three of the prioritised routes is the inclusion of 20mph zones, the provision of which would also be a key improvement for pedestrians, especially around the town centre area.

Grantham Cycling and Walking Network Plan (CWNP) (2020)

LCC commissioned WSP to prepare a Cycling and Walking Network Plan for Grantham in 2022, based on the DfT's Local Cycling And Walking Infrastructure Plans (LCWIP) Guidance (2017) where applicable, in order to set out a list of temporary highway options to enable cycling and walking for day to day trips in Grantham. The Plan provides an overview of area-wide requirements that should be considered across Grantham to be used as appropriate alongside area based temporary interventions.

The report highlights initial cycling and walking plans for Grantham, based on allocation of funding sources as summarised in the Costs, Funding and Delivery section below.

The plan proposes a range of location specific interventions within Grantham intended to facilitate walking and cycling journeys, including:

- 20mph zone within Grantham town centre;
- Implementation of cycle gates, cycle lanes, widening footways, cycle crossings;
- Restrictions to on-street parking;
- Traffic speed calming measures on junction approaches;
- Removing lanes of traffic;
- Pedestrianisation;
- One-way systems for traffic;
- Increasing pedestrian green time at crossings;
- Junction configuration to account for one-way traffic routes;
- New cycle route signage and promotion of routes;
- Use of planters to avoid parking on footways;
- Review highway crossing points from safety point of view; and
- Improved road markings at pedestrian crossings.

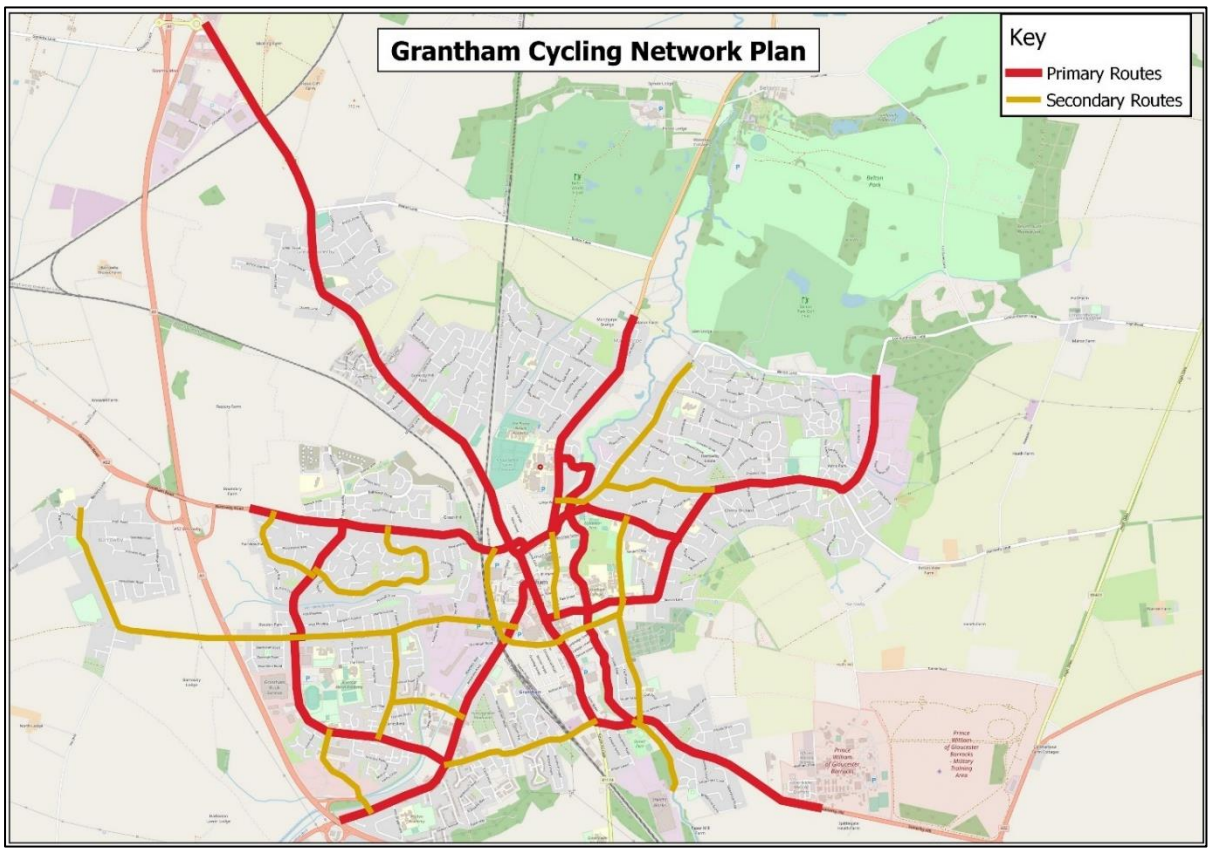
The CWNP also sets out proposed interventions in relation to Great Gonerby and Gonerby Hill Foot, located to the northwest of Grantham. These proposed interventions include:

- 20mph speed limit throughout Great Gonerby;
- Suspend on-street parking in particular locations;
- Extend footway widths;
- Temporary controlled crossings;
- Permit contraflow cycling on particular roads; and
- Marked pedestrian priority crossings.

Following the measures set out above, the CWNP sets out an initial proposed cycling network plan, shown in Figure 4.24 and produced in development with LCC.

The plan includes primary routes (high potential flows of cyclists along routes that link large residential areas to trip attractors such as the town centre), and secondary routes (medium potential flows of cyclists along routes that link to the primary routes and often to trip attractors such as schools and employment sites). The primary routes follow key road routes into the town centre including the A607, Harrowby Lane, A52, A607 and Barrowby Road, as well as the River Witham path and Barrowby Gate and Trent Road. Secondary routes run either parallel to or as connections between the primary routes.

Figure 4.24 Grantham Initial Proposed Cycle Network Plan

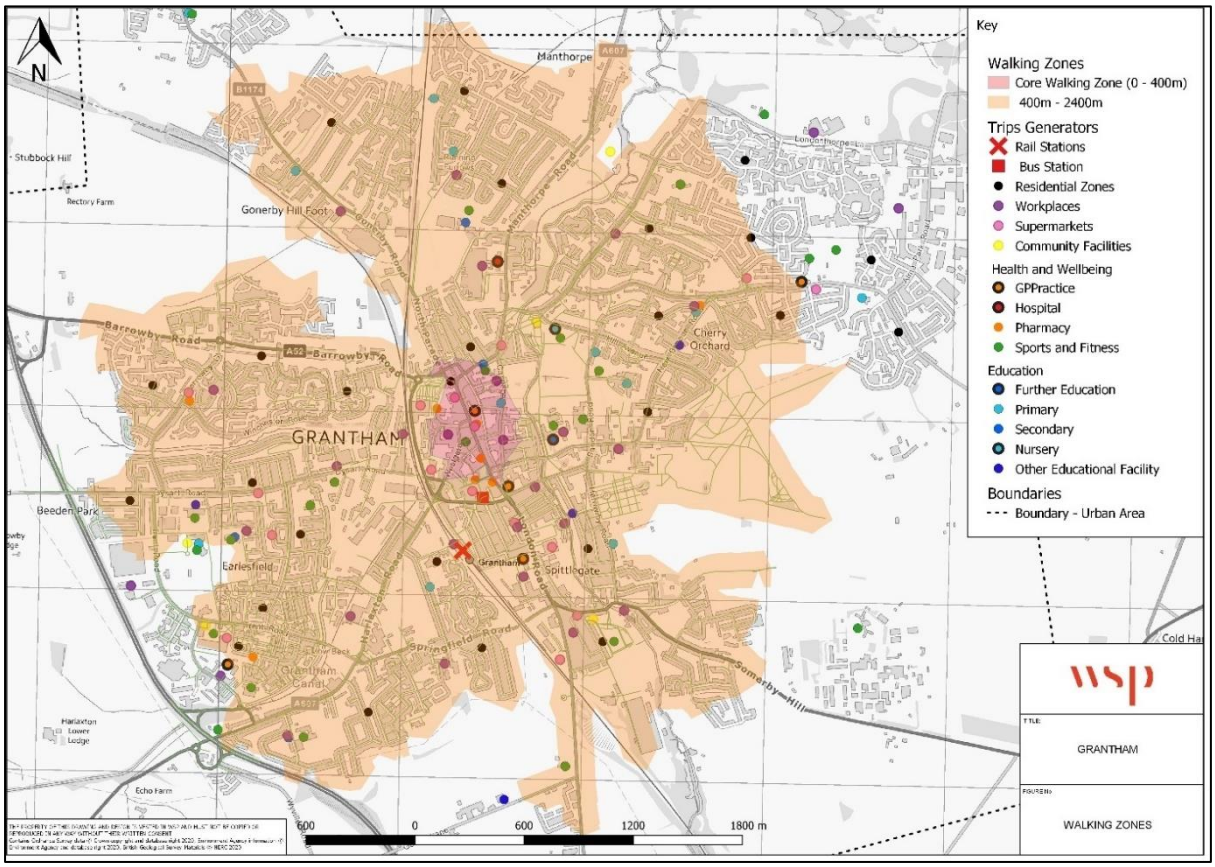


Source: Grantham CWNP (2020)

In addition, the Plan produces an initial Core Walking Zone (CWZ) plan including walkable areas to the CWZ, produced in development with LCC. This displays the priority areas for walking infrastructure improvements within Grantham.

This plan is intended to remove key man-made barriers to walking in the form of the busy main roads, through a range of short and longer-term measures are required to improve the conditions for walking and make this a more attractive mode of transport.

Figure 4.25 Grantham Core Walking Zone Plan



Source: Grantham CWNP (2020)

The CWNP presents high level consideration for potential funding sources for longer term measures but sets out no programme timeframes or costings.

The Plan proposes a monitoring and evaluation plan is developed in line with DfT guidance to provide greater accountability and a stronger evidence base for future decision making.

Rutland LCWIP

The Rutland LCWIP sets out the proposed network improvements and design interventions. Although outside of South Kesteven, several proposed improvements are relevant to Stamford. These are set out in Table 4.12 below. This includes a high-level costing for each route, which makes use of the same costing toolkit as for town centre routes set out within the LCWIP.

Table 4.12 Rutland LCWIP – Routes Relevant to South Kesteven

Ref:	Route	Description of Relevant Interventions Proposed in proximity to Stamford	Total Costing (RCC Interventions Only)
F	Oakham - Stamford via A606	- Shared use footway / cycleway; - Signalise slip roads with addition of Toucan crossing across the slip road; - Tighten junction. Shared use priority over side road with full setback; and - Further interventions in proximity to the west of Stamford determined via a LCC LCWIP.	£5,250,010
L	Normanton – Stamford	- Shared use footway / cycleway; - Signalise slip roads with addition of Toucan crossing across the slip road; and - Further interventions determined within a LCC LCWIP.	£1,956,484

Ref:	Route	Description of Relevant Interventions Proposed in proximity to Stamford	Total Costing (RCC Interventions Only)
M	Ryhall – Stamford	- Shared use footway / cycleway alongside Ryhall Road; and - Parallel crossing with raised table + footway works adjacent to Borderville Farm.	£483,230
N	Woolfox – Stamford	- Shared use footway / cycleway along the A1 into Great Casterton, approx. 3km northwest of Stamford; and - Cycling in carriageway – 'Traffic in Village' approach within Great Casterton	£1,591,657
S	Stamford - Great Casterton	- Cycle in carriageway through Great Casterton; - shared use footway / cycleway; - signalisation of all arms of the B1081 / Sidney Farm Lane junction as with new development anticipated; and - Further interventions determined within a LCC LCWIP.	£1,051,346

Source: Rutland County Council LCWIP (2023)

Lincolnshire Walking Strategy

The Lincolnshire Walking Strategy (LWS) has been produced to set out how the potential for increasing walking for all trip purposes can be realised. The document has the following four key aims:

- Improve the quality and usability of the walking environment to ensure it is safe and inclusive for all;
- Make walking a part of Lincolnshire residents' everyday travel choice to improve physical and mental health wellbeing;
- Enhance walking within Lincolnshire's leisure and tourism offer to support the economy; and
- Increase pedestrian safety and make walking feel a safe and accessible method of travel for all.

The LWS sets out how these aims will be achieved. The following interventions are intended to be implemented county-wide and are therefore applicable to South Kesteven. However, being aspirational themes that are not specific to South Kesteven, these interventions have not been included within the Project Schedule.

Theme 1 (Infrastructure)

- Develop and review cycling and walking infrastructure plans for every local transport strategy area in line with the DfT LCWIP guidance;
- Use LCWIPs where available to identify and implement infrastructure improvements to facilitate walking trips to key destinations, such as schools, towns / village centres, employment sites and transport interchanges;
- Work collaboratively with partners to enforce travel plans where relevant as part of the planning process to maximise funding opportunities for walking infrastructure from every available source, including S106 and competitive bidding;
- Improve the pedestrian environments in urban centres by promoting infrastructure changes and traffic management measures as part of placemaking and creating spaces where people want to walk, and carry out linked trips through schemes such as streetscape planting and urban realm enhancements;
- Ensure that all infrastructure changes associated with new or improved walking routes include comprehensive wayfinding and safety features such as lighting where appropriate;
- Expand the 'School Living Streets' programme across Lincolnshire based on initial trial in Lincoln; and

- Develop an updated Rights of Way Improvement Plan (PROWIP) that includes plans to enhance the existing PRoW network and develop new connections.

Theme 2 (Network and Connectivity)

- Revamp mapping, ensuring digital and paper coverage of maps for active travel journeys; and
- Integrate walking with other modes of travel as part of a sustainable door-to-door journey.

Theme 3 (New Developments)

- Work with planning authorities to ensure that walking is prioritised through effective planning and design of new developments;
- Work with planning authorities to prioritise development that provides mixed land use creating neighbourhoods that are walkable and well connected;
- Enhance existing PRoW and identify opportunities for additions to the PRoW network in relation to new developments;
- Work with planning authorities to maximise funding opportunities related to new developments, such as S106 funding; and
- Work with planning authorities to ensure travel plans that encourage and facilitate walking are developed and implemented.

Theme 4 (Leisure and Tourism)

- Work with partners to develop a co-ordinated walking tourism offer as part of Brand Lincolnshire;
- Work with partners to promote walking routes and destinations, such as the Wolds, the Viking Way and the Coast, as part of Lincolnshire's tourism offer;
- Identify and enhance where needed the key highway and PRoW routes that offer opportunities for people to access local green space, particularly those in urban areas;
- Build on the increase in local leisure walking during the lockdown periods by promoting local routes and green spaces; and
- Continue to support and promote events that celebrate walking, such as local Walking Festivals.

Theme 5 (Encouraging and Enabling)

- Identify population segments that have a higher propensity for walking and develop targeted approaches to encouraging and facilitating walking among these segments;
- Continue engagement with schools to support them in encouraging and facilitating more students to walk to school or walk as part of the journey;
- Promote walking as an accessible and enjoyable part of a healthy lifestyle with physical and mental health benefits, working across teams and with partners to develop active travel ampaigns;
- Work with the Lincolnshire Road Safety Partnership to reduce the number and severity of pedestrian casulaties, working towards vision zero in terms of deaths and serious injuries;
- Work with partners, such as Ageing Better to support the ageing population in adopting and maintaining active lifestyles through walking; and
- Encourage, enable and promote people to walk (or use walking as part of a multi-modal journey) to events.

Lincolnshire Cycling Strategy

The Lincolnshire Cycle Strategy (LCS) sets out how LCC will support cycling in the long-term to improve cycling provision and increase the number of people who cycle. The document recognises the area-specific barriers to cycling, such as the rural nature of the environment, limited infrastructure, and personal barriers (ill-health, deprivation, disability etc.).

The LCS sets out how the strategy will increase cycling. The following interventions are intended to be implemented county-wide and are therefore applicable to South Kesteven. However, as above, these

aspirational interventions are not specific to South Kesteven and as such have not been included within the associated Project Schedule.

Theme 1 (Infrastructure)

- Ensure all new infrastructure is developed according to national standards (for example LTN 1 / 20 and the Manual for Streets) and ensure cycling is considered in new major infrastructure projects;
- Examine opportunities to retrofit existing infrastructure to improve quality and ideally according to LTN 1 / 20;
- Work with planning authorities, parish councils, and other bodies to identify and mitigate physical barriers to cycling, such as the crossing of roads, railways and waterways, particularly those identified as key links and where the current and proposed PRoW network intersects;
- Work collaboratively with partners and enforce travel plans where relevant as part of the planning process to maximise funding opportunities for cycling infrastructure from every available source, including S106 and competitive bidding;
- Develop and review cycling and walking network plans for every local transport strategy area along the lines of the DfT's LCWIP process; and
- Expand the 'School Living Streets' programme across Lincolnshire based on initial trial in Lincoln.

Theme 2 (Health)

- Work with the health sector to propose prescription cycling;
- Promote and advocate cycling as a public health benefit, working across teams and with partners to develop cycling campaigns;
- Continue our support of Bikeability in the county to develop confident cyclists at the earliest possible age. Work with the DfT to establish Lincolnshire as a rural 'beacon' authority for Bikeability training;
- Continue to prioritise behavioural change campaigns by targeting residents at key points in their lives to establish active travel as a natural transport choice; and
- Work with the Lincolnshire Road Safety Partnership to reduce the number and severity of cycle user casulaties, working towards vision zero in terms of death and serious injuries.

Theme 3 (Leisure, Tourism and Brand Lincolnshire)

- Develop (alongside partners) a consistent signage and way finding strategy enabling cycle users to easily identify routes;
- Work with partners to develop and promote a 'Cycle Lincolnshire' brand, building on the success of the Cycle England project;
- Revamp mapping, ensuring digital and paper coverage of maps for all types of cycle users;
- Continue to support cycling events such as Lincoln Grand Prix Sportive and others throughout the year to establish Lincoln as a destination for amateur cyclists; and
- Develop community cycle champions around the county and engaging with local cycling groups.

Theme 4 (Economic Development and Partnerships)

- Continue support of the hire bike scheme in Lincoln and examine opportunities for bike share in other areas;
- Work collaboratively with planning aurthorities to enable access to non-highway funding, for example, the Future High Streets Fund;
- Engage with businesses and business groups to maximise employee cycle potential;
- Ensure parking is considered in network planning to enable residents to dwell and shop via bike; and
- Encourage and facilitate the use of cycling for 'first mile and last mile' trips in urban areas for both people and freight, reducing the economic burden and costs of congestion.

Costs, Funding and Delivery

Walking and cycling initiatives, as set out in the Grantham and Stamford CWNP's and summarised above, may be unlocked within South Kesteven by accessing available funding allocations. For example, the Grantham CWNP highlights initial cycling and walking plans for Grantham based on allocation of national[19] and local funding sources including DfT Emergency Active Travel Funding, Capability and Ambition Fund and the Ministry of Housing, Communities and Local Government's Reopening High Streets Safely Fund.

Specifically, Lincolnshire is anticipated to be allocated £262.34m through DfT Local Transport Fund allocations 2025 - 2032 in addition to £3.34m of existing Integrated Transport Block (ITB) funding.

In addition, SKDC may have opportunities to access other forms of funding such as Levelling Up Fund, Town Deal, and Shared Prosperity Fund which are available for walking and cycling initiatives.

Summary

Key findings are as follows:

- South Kesteven experiences greater walking and cycling levels than the wider East Midlands;
- Grantham has an established network of walking and cycling facilities, however the cycling facilities are typically not up to modern standards (e.g. LTN 1 / 20);
- The walking and cycling network of the other urban areas within South Kesteven is more limited, with minimal cycling provision in more rural areas;
- 17 projects have been identified, as set out within the Project Schedule, which are planned to support growth in South Kesteven to 2041. Eight projects are costed totalling £14.9m; no committed funding has been identifed in relation to these projects and so the funding gap is also £14.9m;
- Cycling and Walking Network Plans developed for Grantham and Stamford identify specific infrastructure improvements required to support growth in walking / cycling within the district, as well as mechanisms to support accessibility to / from new development;
- Future developments within South Kesteven will be required to provide connections to existing walking / cycling networks and also provide links between settlements and service provisions. This will likely be achieved via the S106 mechanism, with behavioural change promoted via Travel Plans; and
- There are a number of potential national and local funding sources for active travel, including via DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).

[19] Source: Cycling and Walking Investment Strategy Report to Parliament (2022)

5. Infrastructure Assessment: Social and Green Infrastructure

5.1 Primary Education

Introduction

Primary education facilities in England deliver schooling for students from ages 5 to 11. They also often include facilities for younger children; however early years education and childcare do not fall within the scope of this chapter.

Primary education will develop students through Key Stages 1 and 2 and will prepare students for the transition into secondary education at age 11. Attendance at a primary education facility is compulsory for children ages five and over, although some four-year-olds also attend primary education dependent on their birth month. LCC has a statutory duty to ensure there is sufficient primary education provision for all children in its administrative boundary.[20]

As set out in paragraph 95 of the NPPF[21], "*it is important that a sufficient choice of school places is available to meet the needs of existing and new communities. Local planning authorities should take a proactive, positive and collaborative approach to meeting this requirement, and to development that will widen choice in education. They should:*

a) give great weight to the need to create, expand or alter schools through the preparation of plans and decisions on applications; and

b) work with school promoters, delivery partners and statutory bodies to identify and resolve key planning issues before applications are submitted."

Baseline

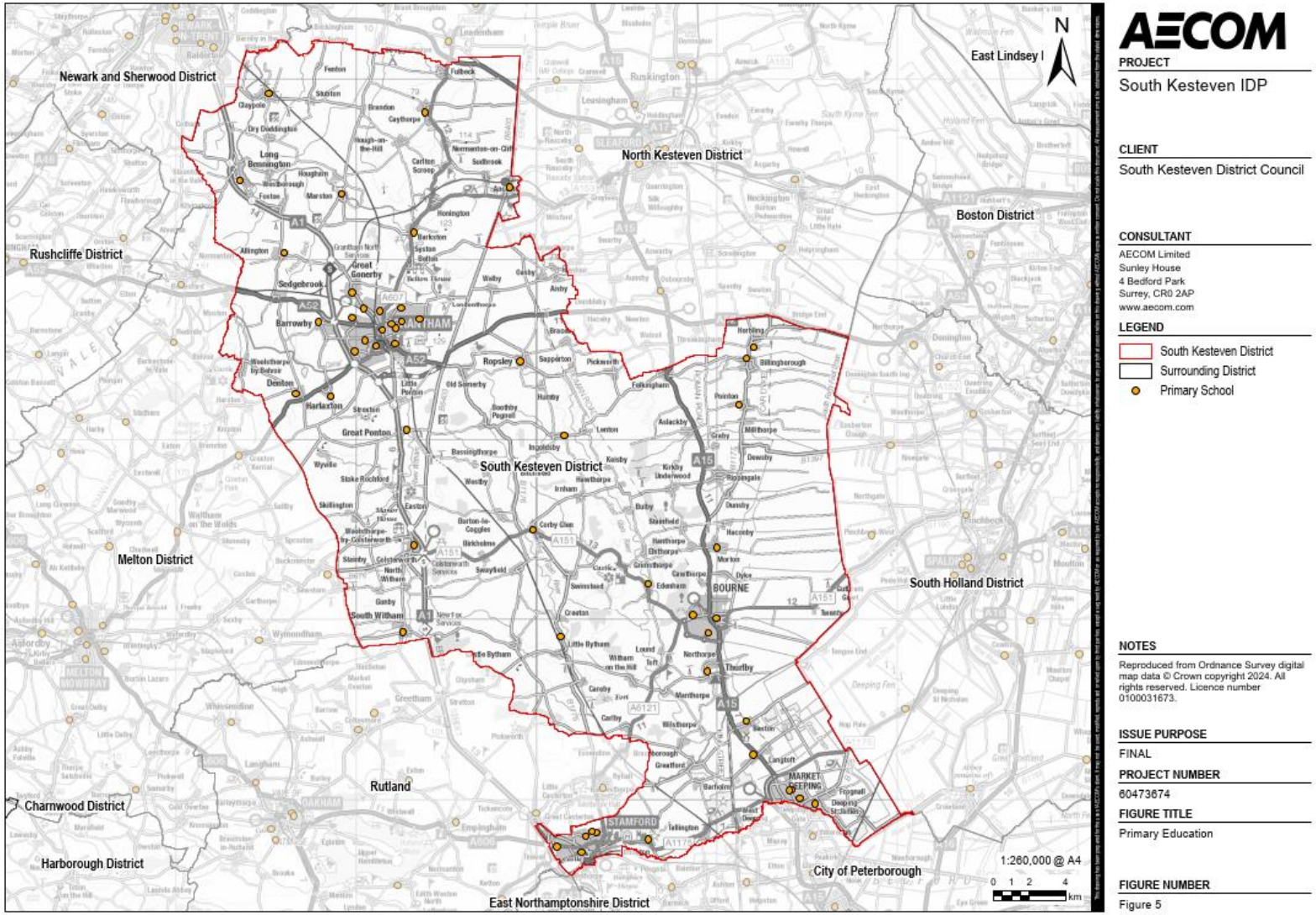
There are 52 state funded primary schools in South Kesteven; these are shown on Figure 5.1 below. These schools are a mixture of sizes and comprise of a mixture of Local Authority maintained schools and academies. Appendix F details the 52 Primary Schools in South Kesteven and distinguishes the type of school, the Pupil Admission Number (PAN), as well as the associated planning area. One new primary school has opened in South Kesteven since the last iteration of the IDP, which is Poplar Farm School, located in Grantham West as part of the North West Quadrant development.

The Schools Organisation Plan (2023 / 24) for Lincolnshire[22] indicates that birth rates continue to be the main contributing factor which affects the need for primary school places. Other factors affecting demand for both primary and secondary places across the district include:

- Migration (both externally and internally);
- High numbers of Royal Air Force bases throughout Lincolnshire;
- Varying numbers of students attending private education (this reduced in 2021, but has been increasing since 2022);
- Seasonal variations; and
- Travellers.

[20] While some families may choose to send their children to fee paying private schools, these are not overseen by LCC and are not accessible to all. Students with additional needs may also attend local schools which are outside of the mainstream education offering. These schools are not considered within the scope of this study.
[21] Department for Levelling Up, Housing and Communities. (2023). National Planning Policy Framework.
[22] Lincolnshire County Council (2023); School Organisation Plan 2023 to 2024.

Figure 5.1 Location of Primary Schools



Source: AECOM

LCC, like most LEAs, typically forecasts supply and demand for school places for five years ahead. As demonstrated in Table 5.1 below, the Lincolnshire School Organisation Plan states that there have been surplus capacity levels for the first year of primary school (reception) since 2020 across South Kesteven, and also predicts this to continue until 2026. This is a trend which is being seen both nationally and locally. LCC emphasised during consultation that whilst this can give the impression of capacity levels which will continue into the future, if birth rates start to rise again, additional capacity in primary schools may be required across the district than is currently suggested.

Table 5.1 Actual and Projected Reception Numbers, including Capacity

Year	Number on roll	Projections	Capacity
2020	1,494		1,739
2021	1,439		1,714
2022	1,444		1,729
2023	1,385		1,714
2024		1,341	1,714
2025		1,257	1,714
2026		1,275	1,714

Source: Lincolnshire County Council (2023): School Organisation Plan 2023 to 2024.

Forward Look

Looking forward, there is spatial variation in the projected supply-demand balance of primary school places across South Kesteven. LCC advised that large developments would look to be self-serving with their own school provision where possible, or to expand existing primary schools with developer funding. LCC only forecasts five years ahead, but with regard to the new allocations detailed in the emerging SKDC Local Plan, LCC commented that additional funding would be required for primary schools in both Bourne and Grantham (with the exception of Grantham West). Capacity levels in Stamford should also be monitored, owing to the number of outline applications for large scale development in the surrounding area.

The following plans for new primary schools in South Kesteven over the Local Plan period have been identified:

- Land for a new all-through (primary and secondary) school as well as a separate two form entry primary school at the Spitalgate Heath Garden Village, Grantham. Details of funding are currently being scoped out. A new two form entry primary school is also to be provided at this site. Funding and delivery is anticipated to be via the landowner and developer;
- A new primary school will be required to cater for new demand at the Prince William of Gloucester Barracks, Grantham. Details are to be confirmed when the development programme for the Barracks is agreed. Through the planning application process it is likely that funding and delivery will be via the developer and landowner;
- A new two form entry primary school in Stamford as part of the proposed residential development at Stamford North. Land will be provided by the landowner / developer and potential funding sources include LCC and developer contributions; and
- The expansion of existing primary schools in Bourne and The Deepings; these expansions are to be funded through developer contributions.

Over and above the new and expanded schools described above, developer contributions will be required by new developments across the district to fund the expansion of primary schools in areas where existing schools are close to capacity.

To estimate demand for primary places when a development comes forward, LCC uses a pupil yield of 20 pupils per 100 dwellings[23]. Applying this assumption to the development trajectory (taking account of the 8,923 homes which have yet to gain planning permission only[24]), it is estimated that there will be demand for 1,784 primary school places over the Local Plan Review period. It is recognised that in reality requirements will depend on the supply-demand position in the locality in question when a planning application comes forward, but in the absence of other information this approach provides a high level indication of demand to 2041.

Costs, Funding and Delivery

As described above, new and expanded primary schools are planned to help meet demand arising over the Local Plan period to 2041, but at present many of the proposals are yet to be confirmed in terms of scale and timing and funding has yet to be committed.

When considering developer contributions, LCC applies a cost of £21,990 for a new build primary place and £18,367 for a place within an extended primary school. Taking the average of these two costs and applying this benchmark to the high level demand estimate set out above (1,784 children) indicates a cost of £35.9m to meet primary school demand to 2041.

Funding will be drawn from developer contributions, with LCC and SKDC overseeing the collection of funding. DfE basic need capital may be drawn upon where required, if available.

Delivery will be either conducted by the LCC or by developers as part of larger housing developments, noting that during consultation LCC confirmed that they currently have no plans for any construction works for the next four years. Larger sites may also be required to provide on-site provision of free serviced land within the development, to accommodate identified educational needs and school facilities. This includes a fully serviced site, buildings, equipment and associated playing fields. The Council (in this case, LCC) will negotiate with prospective developers with a view to securing the necessary provision and payment.

Summary

Key findings are as follows:

- There are 52 primary schools in South Kesteven.
- There have been surplus capacity levels for the first year of primary school (reception) since 2020 across South Kesteven, and this is predicted to continue until 2026. LCC forecasts only five years ahead and emphasised during consultation that if birth rates start to rise again this will increase demand for primary places.
- Four new primary schools are currently planned on major sites within South Kesteven over the Plan period (this includes on all-through school), together with the expansion of two existing primary schools.
- Applying LCC pupil yields to the sites within the development trajectory which have yet to receive planning permission provides a high level estimate of demand of 1,784 primary school places over the Local Plan Review period, with an associated cost of £35.9m.
- Funding and delivery will be largely through developers, together with local and central government partners.

5.2 Secondary Education

Introduction

Secondary education typically refers to provision for children aged 11 to 16 years of age. All secondary schools in South Kesteven are classified as Academy schools. Rather than being funded and maintained by the Local Education Authority, Academy schools receive funding directly from the

[23] Source: methodology used to assess and seek development contributions (Section 106) for education facilities - Find a freedom of information request – Lincolnshire County Council Accessed March 2024.
[24] It is assumed for homes which already have planning permission, developer contributions or in kind provision has already been agreed and so these 6,681 homes are not included in the demand estimate.

Department for Education (DfE) or external providers such as sponsors or voluntary groups. Across Lincolnshire County, there are a total of 15 grammar schools, three of which are located in South Kesteven (The Bourne Grammar School, The Kings School, and Kesteven & Grantham Girls' School).[25]

There is a desire to ensure that primary education places are provided locally to a new development, but secondary school age pupils can travel longer distances to school, providing there is a safe route. Therefore, only the largest developments are likely to be asked to provide on-site secondary education provision, with smaller sites asked to contribute to the cost of expanding local secondary schools where needed.

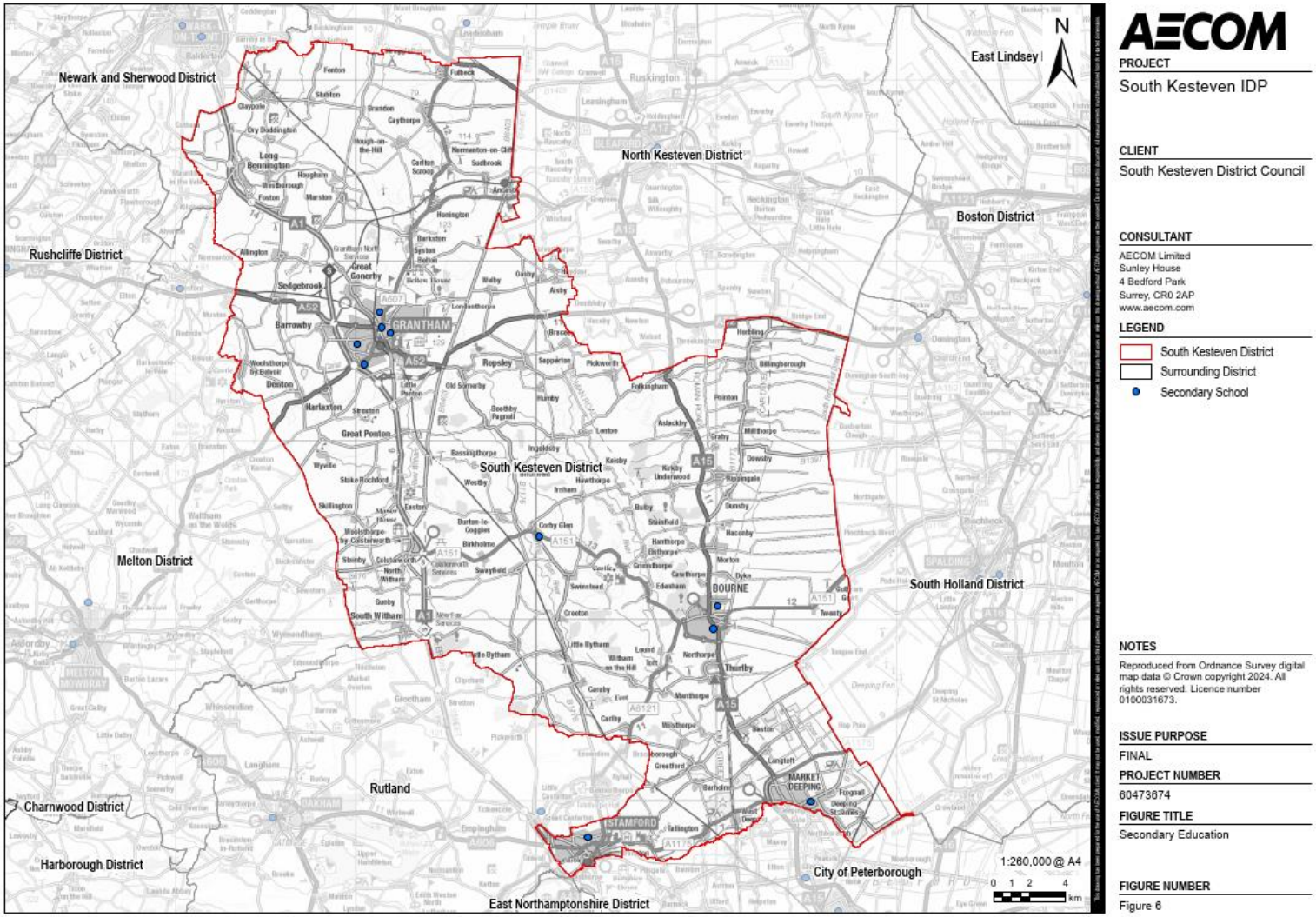
This section analyses the existing provision of secondary education providers in South Kesteven, as well as the anticipated growth in demand of secondary education provision over the draft Local Plan 2041 period.

Baseline

Secondary Education in South Kesteven is provided at 10 Academy schools of varying sizes across the district. An overview of secondary education provision across the district is provided in Figure 5.2 below, with a full list provided in Appendix F. The majority of secondary schools are located in Grantham, Stamford and Bourne. Secondary schools within the towns are generally at, or close to capacity.

[25] While some families may choose to send their children to fee paying private schools, these are not overseen by LCC and are not accessible to all and are therefore not considered here. Students with additional needs may also attend local schools which are outside of the mainstream education offering. Therefore, these schools are not considered in this study.

Figure 5.2 Location of Secondary Schools



Source: AECOM

Forward Look

Planned and Committed Projects

South Kesteven's secondary schools are currently at or near capacity. In order to meet the expected increase in demand for school places generated from major new developments within South Kesteven, provision for new secondary schools and expansions to existing schools is proposed. LCC advised that large developments would look to be self-serving with their own school provision where possible, or to expand existing secondary schools with developer funding. With regard to the new allocations included in the emerging Local Plan to 2041, LCC commented that additional funding would be required for secondary schools in Bourne and Grantham, with capacity levels in Stamford monitored, owing to the number of outline applications for large scale development in the surrounding area.

As is the case with primary schools, irrespective of development allocations identified in the SKDC Local Plan, it has been noted by LCC that birth rates both nationally and locally have been lower than average in the lead up to 2025 / 26. If birth rates start to rise again this would lead to a surge of demand for primary school places and in due course this would feed through to secondary schools meaning greater capacity is required across the district.

The following planned investment has been identified:

- An all-through school including new secondary provision will be provided at Spitalgate Heath (Grantham). There may also be a requirement for a new secondary school at the Prince William of Gloucester Barracks (Grantham); this is yet to be confirmed;
- In addition, several secondary schools across South Kesteven are considering expansion; this includes an additional form of entry at The Deepings School and expansion in Bourne, where schools are currently over capacity and unable to accommodate new students; and
- The expansion of Stamford Welland Academy is proposed to meet demand for secondary school places generated by major development at Stamford North and Stamford Gateway (Exeter Fields), as well as to address capacity issues in surrounding areas. Land will be provided as part of the development and funding sources will likely include S106 monies in South Kesteven.

To estimate demand for secondary places when a development comes forward, LCC uses a pupil yield of 19 pupils per 100 dwellings[26]. Applying this assumption to the development trajectory (taking account of the 8,923 homes which have yet to gain planning permission only[27]), it is estimated that there will be demand for 1,695 secondary school places over the Local Plan Review period. It is recognised that in reality requirements will depend on the supply-demand position in the locality in question when a planning application comes forward, but in the absence of other information this approach provides a high level indication of demand to 2041.

Costs, Funding and Delivery

Many of the proposals for new secondary schools to 2041 are yet to be confirmed and have funding committed. As noted above, new secondary school provision in South Kesteven is planned to meet the identified demand. This includes at least one new secondary school and the expansion of a number of existing secondary schools; however, details of the scale and timing of provision remain to be confirmed and it is not clear whether funding is fully committed.

When considering developer contributions, LCC applies a cost of £26,627 per pupil for a new build secondary school and £25,503 for a secondary school extension. Taking the average of these two costs and applying this benchmark to the high level demand estimate set out above (1,695 children) indicates a cost of £44.1m to meet primary school demand to 2041.

[26] Source: methodology used to assess and seek development contributions (Section 106) for education facilities - Find a freedom of information request – Lincolnshire County Council Accessed March 2024.
[27] It is assumed for homes which already have planning permission, developer contributions or in kind provision has already been agreed and so these 6,681 homes are not included in the demand estimate.

The funding of new schools is typically drawn from developer contributions (S106) on a site-specific basis, with LCC and SKDC overseeing the collection of funding. DfE funding is expected only as a contingency.

Delivery of schools is either conducted by LCC or by developers as part of larger housing developments, noting that during consultation it was confirmed that LCC are not planning any construction works for at least the next four years. Larger sites may also be required to provide on-site provision of free serviced land within the development, to accommodate identified educational needs and school facilities. The Council (in this case, LCC) will negotiate with prospective developers with a view to securing the necessary provision and payment.

Summary

Key findings are as follows:

- There are 10 secondary schools in South Kesteven. Each of these are currently at or near capacity.
- To support planned growth, additional funding would be required for secondary schools in Bourne and Grantham, with capacity levels in Stamford monitored. Large developments would look to be self-serving with their own school provision where possible.
- At least one new secondary school (as part of an all-through school) is planned over the Local Plan period and a number of existing secondary schools are considering expanding.
- Applying LCC pupil yields to the sites within the development trajectory which have yet to receive planning permission provides a high-level estimate of demand of 1,695 primary school places over the Local Plan Review period, with an associated cost of £44.1m.
- Funding of new schools is typically done by developer contributions, and delivery conducted by LCC.

5.3 Further Education

Introduction

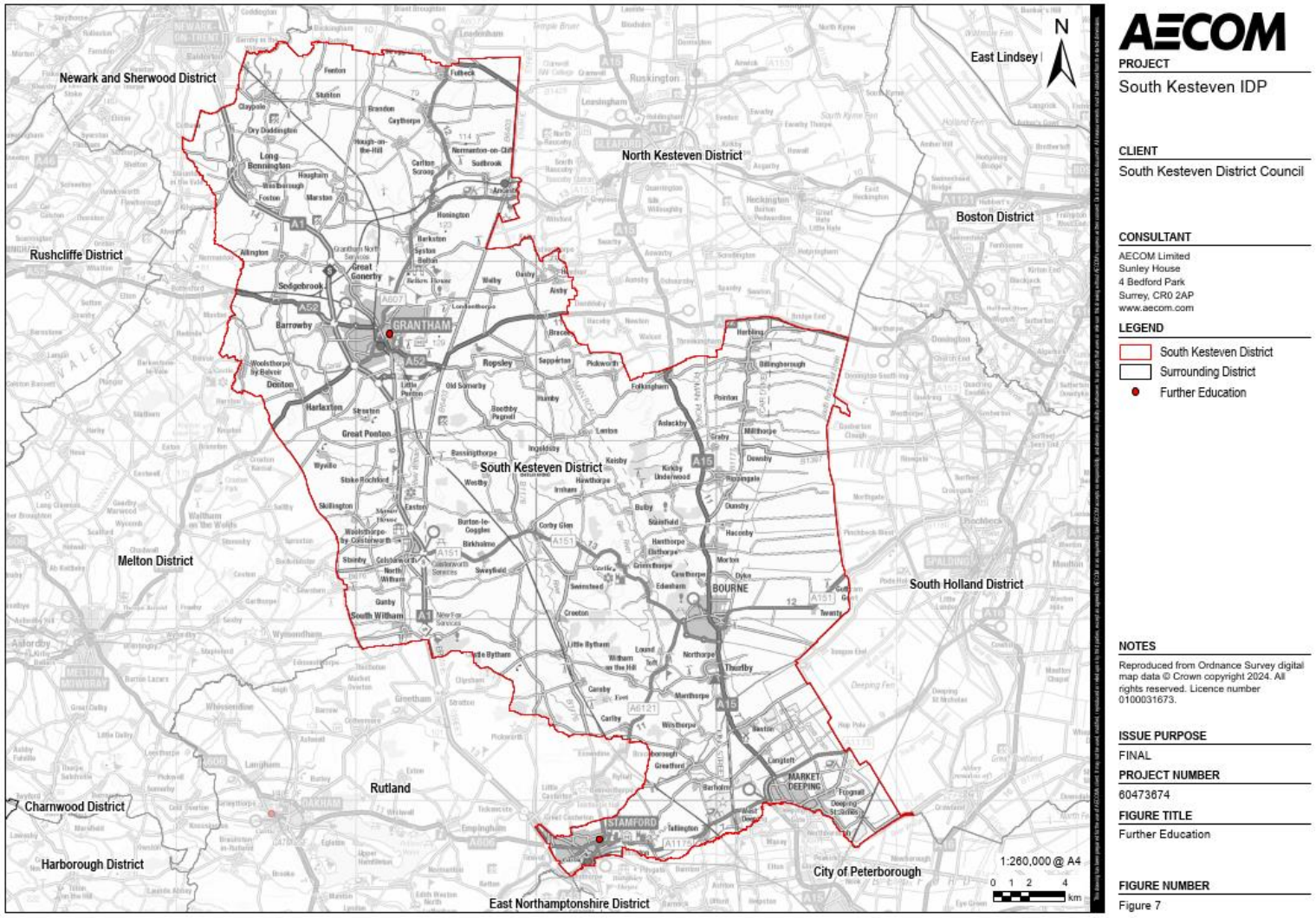
Further Education (FE) refers to post-16 (post-secondary) education. The Education and Skills Act (passed in November 2008)[28] introduced compulsory education until the age of 18. In England, FE can be provided at sixth form facilities which form part of a secondary school, or at separate colleges that specialise in post-16 education. Not all options for children leaving secondary school are full time education, with some children choosing to enter apprentices and other forms of education.

Baseline

Of the 10 secondary schools in South Kesteven (see Figure 5.2 above and the list of schools in Appendix F), eight of these have also have a sixth form[29]. There are no independent sixth form colleges located in the South Kesteven. However, FE is provided at New College Stamford and Grantham College, as shown on Figure 5.3.

[28] UK Public General Acts: Education and Skills Act (2008)
[29] The two which do not have an associated sixth form are: Corby Glen Charles Read Academy and Grantham The West Academy St Hugh's.

Figure 5.3 Location of Further Education Colleges



AECOM

PROJECT
South Kesteven IDP

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South Kesteven District Council

CONSULTANT
AECOM Limited
Sunley House
4 Bedford Park
Surrey, CR0 2AP
www.aecom.com

LEGEND
- South Kesteven District
- Surrounding District
- Further Education

NOTES

ISSUE PURPOSE
FINAL

PROJECT NUMBER
60473674

FIGURE TITLE
Further Education

FIGURE NUMBER
Figure 7

Source: AECOM

New College Stamford provides A-Level, part-time, full-time, and apprenticeship courses. The college offers a wide range of subjects such as English, mathematics, science, art and design, media production, fashion and textiles, beauty therapy, and uniformed protective services. The college is located in Stamford and meets the needs of Uffington, Talington, Barholm and West Deeping as well as Great Casterton and Belmesthorpe (outside of South Kesteven).

In addition, Grantham College offers both full-time and apprenticeship programmes, covering more vocational courses such as animal care, business & accountancy, catering, construction, engineering, functional skills, health & social care, performing arts, sport, and travel & tourism and uniformed protective services. The college is located in the town of Grantham and meets the needs of surrounding areas such as Ancaster, Long Bennington, Claythorpe, Barrowby, Harlaxton, Ropsley, Oasby and Great Ponton.

Forward Look

Planned and Committed Projects

There are plans to expand the Stamford Welland Academy, which could include expansion of the sixth form. This could be funded through S106 monies. The plans for a new secondary school at Spitalgate Heath Garden Village and expansion at The Deepings School described above may also expand the supply of local sixth form places.

There are no known plans to expand the two FE colleges in South Kesteven.

Costs, Funding and Delivery

Where new facilities are required, they may be built as part of a new secondary school. The funding of new schools is drawn from developer contributions, with LCC overseeing the collection of funding, with the delivery of schools either conducted by the Council or by developers as part of larger housing developments.

Funding for the two FE colleges comes from the Education and Skills Funding Agency (ESFA) and other further education funding bodies, with tuition fees and education contracts also providing income. Other capital funding sources may include central government, the LEP, and local authority grants.

Summary

Key findings are as follows:

- FE refers to post 16 (post-secondary) full time education which can be provided either at secondary schools with further education facilities or at separate colleges or sixth form colleges.
- There are 10 further education providers across South Kesteven, comprising New College Stamford and Grantham College as well as eight sixth form providers. These provide a range of academic and vocational courses.
- There are no known proposals for new or expanded FE colleges, though the plans for new and expanded secondary schools will expand the supply of sixth form places which is relevant to this age group.
- Funding sources for new and improved facilities include developer contributions, the ESFA, central government, the LEP and local authority grants.

5.4 Primary Healthcare

Introduction

General Practices (GPs) are the foundation of primary healthcare infrastructure. They provide a general and emergency healthcare service to communities and can refer patients elsewhere for more specialised services. A wide range of professionals and services can be accessed at GP surgeries, including health visitors, district nurses, and pharmacists.

In 2022, the Government passed a new Health and Care Act[30]. The new Act proposed new health reforms in England, and formalised Integrated Care Systems (ICS). Each ICS has an integrated care board (ICB), which is a statutory NHS organisation responsible for developing a plan in collaboration with NHS trusts / foundation trusts and other system partners for meeting the health needs of the population, managing the NHS budget and arranging for the provision of health services in the defined area. GP services in South Kesteven are commissioned by NHS Lincolnshire ICB.

Additionally, Lincolnshire County Council (LCC) published the Joint Health and Wellbeing Strategy for Lincolnshire in 2022, which focuses on the priority areas that the health and care system will focus on into the future. These priorities include:

- Mental Health & Emotional Wellbeing (Children & Young People);
- Mental Health (Adults);
- Carers;
- Physical Activity;
- Housing and Health;
- Healthy Weight; and
- Dementia

Baseline

There are five Primary Care Networks (PCNs) operating within South Kesteven, each with an indicative population coverage as shown in Table 5.2 PCNs in South Kesteven . These networks are based around groupings of General Practices working together to focus on the population health needs of their combined patient lists, and to support the resilience of their services across the network. PCNs employ a range of professionals to support patient care across their network.

Table 5.2 PCNs in South Kesteven

PCN	Population Coverage
Four Counties	44,174
Grantham and Rural	74,539
K2 Healthcare Sleaford	56,678
Spalding	44,000
South Lincs and Rural	77,130

Source: Lincolnshire Primary Care Network Alliance (2024).Primary Care Networks.

There are 16 GP surgeries in South Kesteven. These facilities are shown in Figure 5.4.

The Royal College of General Practitioners recommends that the ratio of GPs (Full Time Equivalent (FTE)) to patients is one to 1,800[31]. The GP practices within South Kesteven and their patient list size are shown in Table 5.3. The GP to patient ratio varies between practices. For example, the New Springwells Practice has a ratio of one GP to 5,989 patients which greatly exceeds (i.e. is worse than)

[30] HM Government (2022). Health and Care Act 2022.
[31] Royal College of General Practitioners, (2005); Information Paper 20.

the recommended ratio. However, at the Harrowby Lane Surgery, the ratio is one GP to 709 patients, which is lower (i.e. is better than) the recommended ratio.

Overall, when considering South Kesteven as a whole, the GP to patient ratio is one to 1,347, which is 25% lower (i.e. better than) the recommended ratio of 1,800.

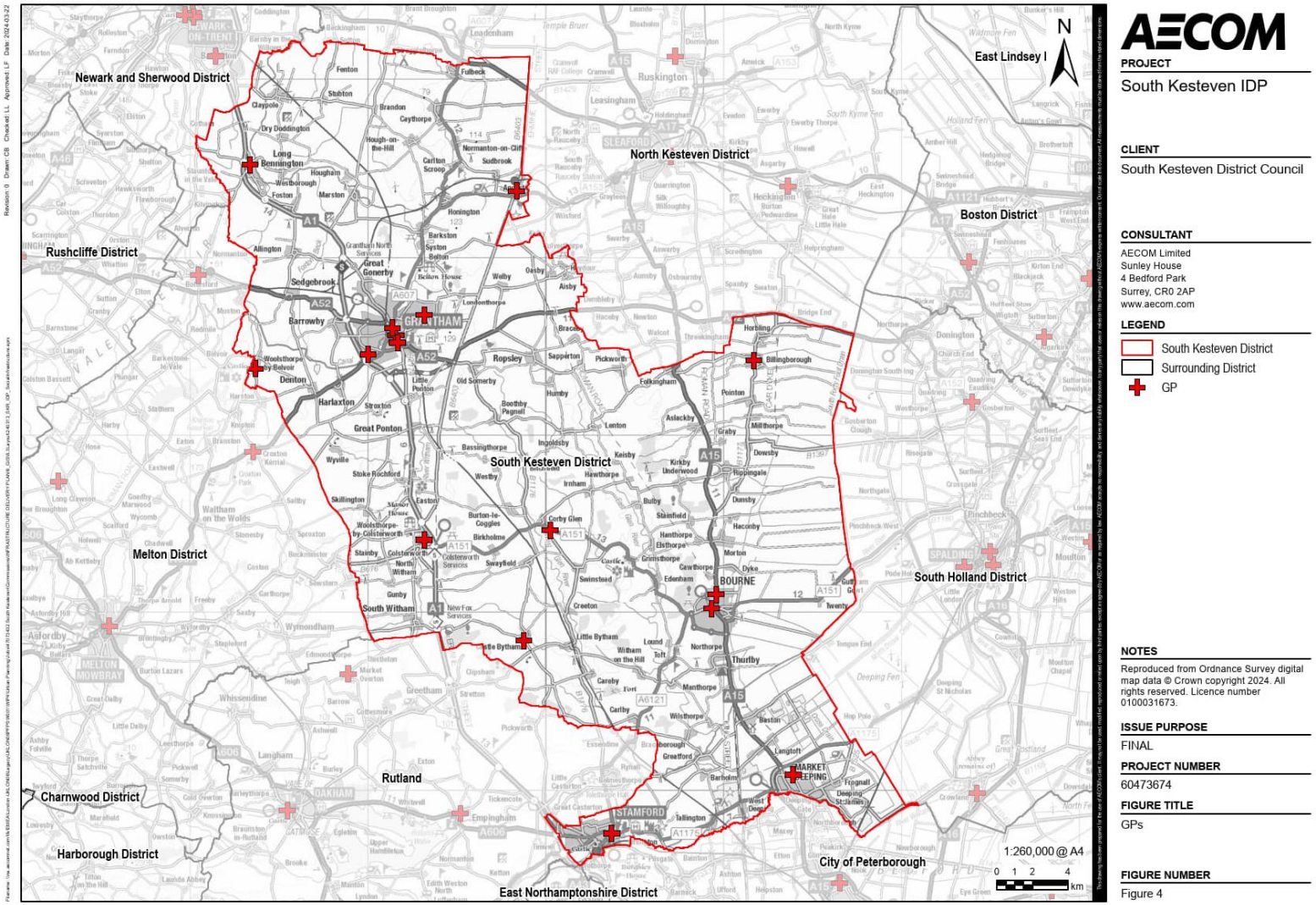
Table 5.3. Patient List Size

Practice Name	Total Patients	GP (FTE) Count	Ratio
Bourne Galletly Practice Team	15,138	13	1,164
Caythorpe & Ancaster Medical Practice	9,690	17	570
Colsterworth Surgery	2,515	2	1,258
Hereward Medical Centre	11,866	13	913
Lakeside Healthcare Stamford	7,826	3	2,609
Long Bennington Medical Centre	27,408	16	1,713
Market Cross Surgery	8,539	6	1,423
St. John's Medical Practice	13,676	10	1,368
St. Peter's Hill Surgery	14,779	11	1,344
Stackyard and Woolsthorpe Surgery	3,718	3	1,239
Swingbridge Surgery	3,618	2	1,809
The Deepings Practice	7,106	7	1,015
The Glenside Country Practice	23,904	25	956
The Harrowby Lane Surgery	3,547	5	709
The New Springwells Practice	5,989	1	5,989
Vine House Surgery	9,661	5	1,932

Source: NHS Digital (2023). General Practice Workforce.

Figure 5.4 shows the distribution of GP practices in South Kesteven.

Figure 5.4 GP Practices in South Kesteven



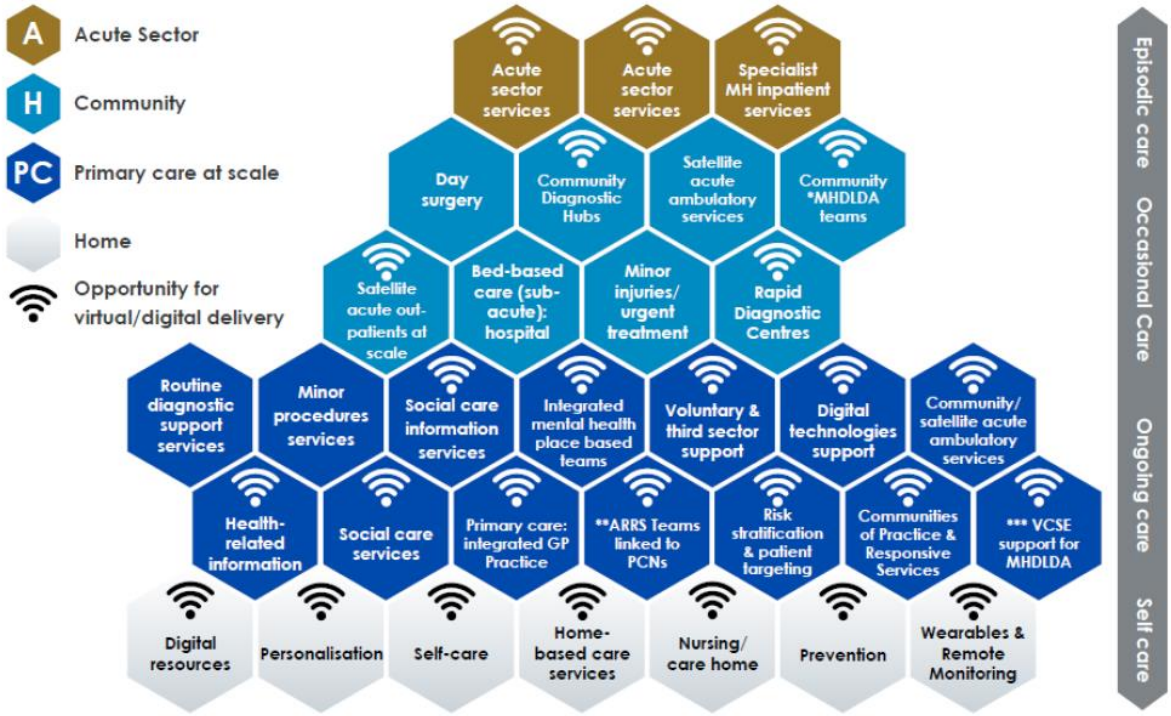
Source: AECOM

Forward Look

Lincolnshire ICB have assessed the capacity of existing healthcare facilities in South Kesteven and developing plans for the health estate to meet demand arising from forecast growth. However, further information on planned projects is not currently available.

Consultation with Lincolnshire ICB highlighted that the way that primary healthcare is being delivered is changing. There is emphasis on delivering care as close to home as possible via home-based care services, digital resources, remote monitoring, and self-care methods. Ongoing and occasional care will be delivered at the primary and community level, and so the aim is for acute services to be used only when completely necessary. This is shown in the diagram below.

Figure 5.5 Lincolnshire ICB Strategic Framework



Source: Lincolnshire ICB (2024).

Further to the above, there is growing awareness that tackling issues relating to inequality and the wider determinants of health (such as deprivation, social cohesion, access to good quality food, green infrastructure and safe design) is of fundamental importance to maintaining good health and avoiding the need for medical treatment.

Related to this, the ICB is also cognisant of the role of healthcare facilities in place-making – for example, generating footfall in town centre locations – and aims to take this into account when planning the future estate.

As discussed in the Draft Local Plan, the population of South Kesteven is projected to grow from a population of 143,400 in 2021 to 154,833 in 2041. Alongside this, the age profile of the district will also change significantly through a growing older population. Additional elderly population is associated with increased demand for primary care services.

The benchmark of 1,800 patients per GP has been used to estimate demand for primary healthcare services to 2041. The estimated population growth of 11,433 set out in the Draft Local Plan implies a requirement for 6.4 new GPs. It is noted that this benchmark does not fully reflect emerging models of care, and that issues such as accessibility and patient choice make planning more complex than this benchmark might imply. However in the absence of detailed information about future plans for the primary estate, this benchmark allows a high level articulation of the scale of potential demand in the future.

Costs, Funding and Delivery

No information is currently available on future costs associated with the healthcare estate. In the absence of this information, benchmarks have been applied to the estimated demand of 6.4 GPs over the period to 2041. It is assumed that each GP requires 199 sqm primary care floorspace[32], and each sqm floorspace costs £3,281[33]. This results in an estimated cost of £4.1m.

There are no national funding streams for primary care capital projects at present, and so S106 funding is important to support growth plans.

The management of GPs and primary care centres is varied, with some buildings being owner occupied, and others third party developer leased.

Summary

Key findings are as follows:

- There are five PCNs and 16 GP practices operating across South Kesteven with varying levels of capacity. Overall, the GP to patient ratio is lower (i.e. better) than the recommended target set by the Royal College of General Practitioners.
- The way primary healthcare is being delivered is changing, including through a more integrated model of healthcare which will focus on delivering home-based care first, and then primary care, with the aim to avoid admissions to hospitals unless completely necessary.
- No information is currently available on committed plans for primary care practices to support the proposed growth up to 2041, however with the projected population growth expected (with a significantly growing older population) demand is likely to increase for primary care services.
- Using high level benchmarks, population growth to 2041 is estimated to generate demand for 6.4 new GPs, with an associated cost of £4.1m.
- There are no national funding streams for primary care capital projects at present, and so S106 funding is important to support growth plans.

[32] Source: HUDU healthcare contributions model https://www.healthyurbandevelopment.nhs.uk/our-services/delivering-healthy-urban-development/hudu-model/
[33] Source: AECOM. Cost for primary care space (GPs + related community healthcare services); this excludes VAT, specialist medical equipment, external works, professional fees and survey costs and contingencies.

5.5 Acute Healthcare

Introduction

For the purposes of this study acute healthcare is defined as comprising hospitals and specialist care services, including mental health care.

The NHS Long Term Plan[34], published in 2019 sets out a number of ambitions and reforms for the NHS, including amongst other targets, the development of a new service model which integrates a number of local care services according to population needs, with an aim to reduce pressure on emergency hospital services.

Baseline

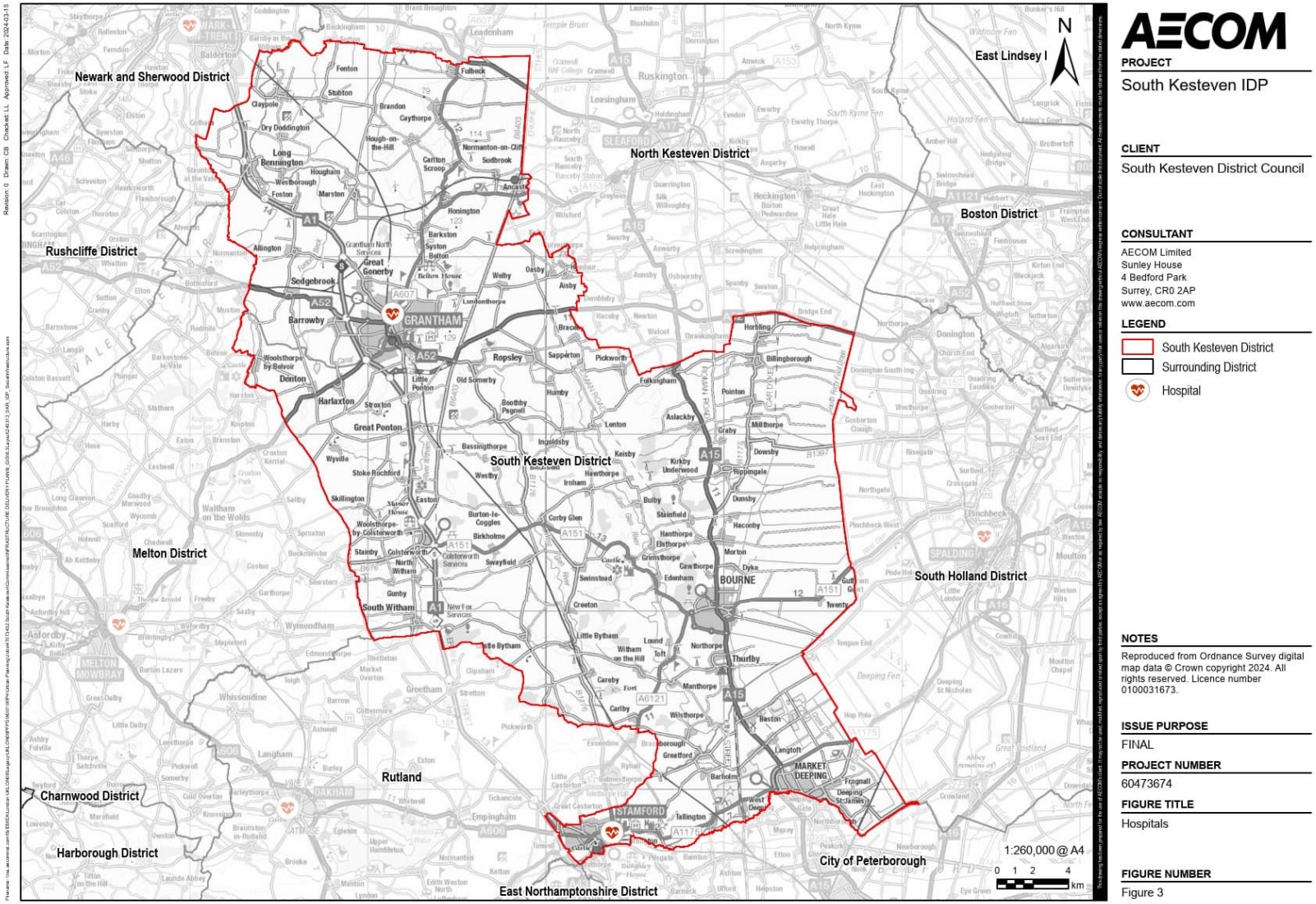
United Lincolnshire Hospitals NHS Foundation Trust and North West Anglia NHS Foundation Trust act as the providers of acute healthcare in South Kesteven. The trusts are responsible for delivering the range of acute healthcare services across the two hospitals in South Kesteven: Grantham and District Hospital, and Stamford and Rutland Hospital.

There are no accident and emergency (A&E) services in South Kesteven following the closure of the A&E department at Grantham and District Hospital in 2020. Grantham and District Hospital has an urgent treatment centre (UTC) to provide medical help for non-life-threatening conditions. The UTC is open 24 hours a day, seven days a week. There are several other hospitals surrounding South Kesteven which offer 24-hour A&E services, including in Lincoln or Boston.

Figure 5.6 shows the location of these hospitals within South Kesteven.

[34] NHS, (2019); The NHS Long Term Plan

Figure 5.6 Location of Hospitals



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- Hospital

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ISSUE PURPOSE
FINAL

PROJECT NUMBER
60473674

FIGURE TITLE
Hospitals

FIGURE NUMBER
Figure 3

Source: AECOM

Forward Look

Planned and Committed Projects

There are no known committed projects for hospitals in the district.

Lincolnshire ICS has however set out a vision for '20-minute health hubs' to be implemented across Lincolnshire that are available for locally determined at scale services. These would include current community hospitals and planned integrated health and care hubs including Stamford and Grantham.

Demand to 2041

It is inherently difficult to predict the future profile of patient needs as has been demonstrated by the emergence of a global pandemic and the required response in the healthcare setting. This is further complicated by the development of medical technologies and treatments over time. However, generally speaking it is expected that increases in population translate to increased demand for acute healthcare infrastructure.

The Draft Local Plan highlights that South Kesteven is projected to grow from a population of 143,400 in 2021 to 154,833 in 2041. Alongside this, the age profile of the district will also change significantly through a growing older population. Additional elderly population is associated with increased demand for emergency care.

As discussed in Section 5.4, the way Lincolnshire ICB delivers care is changing. There is emphasis on delivering care as close to home as possible via home-based car services, digital resources, remote monitoring, and self-care methods. For ongoing and occasional care, this will be delivered by primary and community level care, and so the aim is for acute services to be used only when totally necessary.

Costs, Funding and Delivery

No detail is available of likely costs associated with required investment to 2041.

Funding for acute healthcare derives from government allocations and the healthcare trust's own resources. Charitable donations can also support enhanced facilities.

At the national level, additional capital funding is secured through a bidding process in which ICSs or transformation partnerships apply for funds from central NHS pools. Bidding opportunities can be sporadic, and this does not support long term planning.

Summary

Key findings are as follows:

- There are two hospitals across South Kesteven which provide a range of services to patients including general and more specialised care. There are no A&E services in the district, but a 24-hour UTC is provided by Grantham and District Hospital and there are a number of other hospitals surrounding South Kesteven which offer 24-hour A&E services.
- There is no information available on projects for hospitals in the district. However, it is likely that increases in population forecast to 2041 will translate into increased demand for services. Anticipating future needs with precision over such a long period is challenging. Effective primary healthcare development could reduce the need for emergency hospital admission, medical practices and technologies are evolving rapidly, and novel, agile working practices are being adopted.

5.6 Outdoor Sports

Introduction

Outdoor sports relate to any sporting activity that is played outside. This can include team sports such as football, hockey, and rugby, or individual sports such as hiking, climbing, and running. Outdoor sports facilities include both natural and artificial surfaces for sports that are owned by local authorities, councils, sport associations, companies, and sports clubs[35].

This chapter has been informed by the South Kesteven Open Space, Sports, and Recreation Study.[36] SKDC has also commissioned the development of a Playing Pitch and Outdoor Sports Strategy (PPOSS); however at the time of writing the PPOSS has not been finalised and so it has not informed this IDP. The PPOSS will include an audit of all playing pitches and outdoor sports facilities, current and predicted future demand for this provision and the identification of key issues and challenges that create barriers to increasing participation. The PPOSS will lead to a comprehensive set of recommendations for the future development of suitable outdoor provision according to where housing growth is expected to arise.

The Outdoor Industries Association and Sport England report 'Getting Active Outdoors'[37] examines the demand and supply of the outdoor activity market nationally, taking account of demography, motivation, participation and provision in outdoor sport and recreation. It finds that there are 28.6m regularly active adults in England, the highest activity levels ever recorded. Additionally, physical inactivity is at the lowest level ever recorded. The increase in participation in physical activity has been driven by increases in walking and adventure sports such as hill and mountain walking, climbing and orienteering. However, there are constraints and challenges to the development of outdoor sports. For example, there are significant disparities between socio-economic groups. Those of lower socio-economic backgrounds are most likely to be inactive. Sport England state that traditional outdoors participation is often considered *"to take place in rural settings, accessed by white, middle class, car-owning people or families doing traditional 'outdoors' activities"*[38]. However, the landscape is altering and there are some key trends to be considered in order to drive growth in outdoor activity.

Furthermore, the growth of online communities, informal sports, flash-fitness and natural fitness have all helped encourage outdoor physical activity. Opportunities to take part as an individual or an informal group, at any time of the day or week, frequently or infrequently, have all contributed to increased interest in engaging in outdoor activities. Sport England state that *"there are a wide variety of demographic, social, political and trend-related reasons why outdoor recreation and activities have enjoyed an increase in interest including growth in outdoor activity tourism, an increase in the number of outdoors mass participation events and an overall growth in revenue sales across the outdoors commercial sector"*[39].

Baseline

Currently, open space is covered by Policy OS1 in the adopted Local Plan. This policy sets out standards to ensure the availability of adequate open space for all areas, and includes a standard for outdoor sports space, as presented in Table 5.4 below.

Table 5.4 South Kesteven Outdoor Sports Space Standards

	Standard	Component Parts
Outdoor sports space	1.0 ha per 1000 population within 480m (10mins walk time)	Dedicated outdoor sports pitch provision (includes grass pitch provision and sometimes hard / synthetic surfaces)

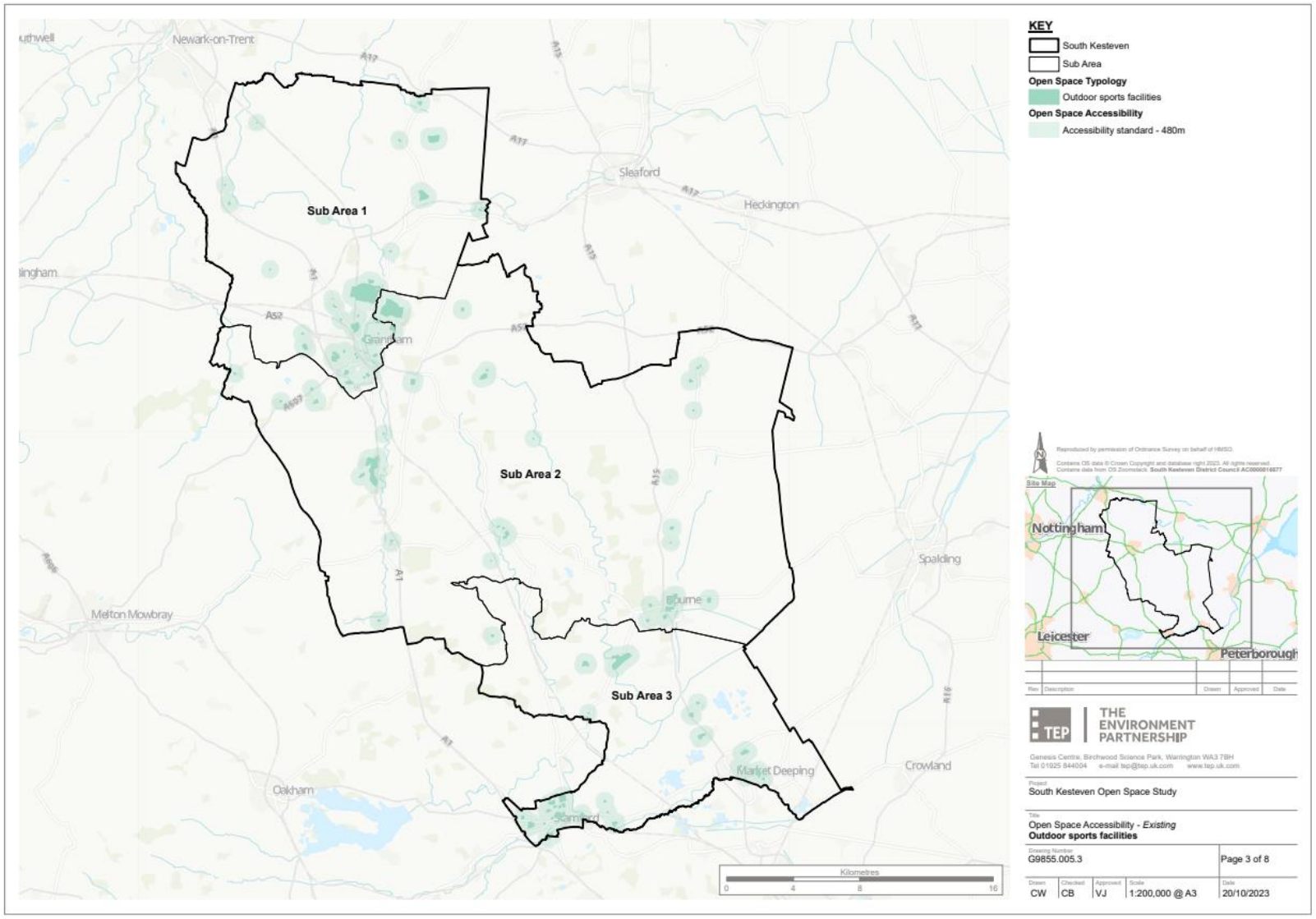
[35] South Kesteven District Council (2024). Open Space, Sports, and Recreation Study.
[36] South Kesteven District Council (2024). Open Space, Sports, and Recreation Study.
[37] Outdoor Industries Association; Sport England (2015). Getting Active Outdoors: A study of demography, motivation, participation and provision in outdoor sport and recreation in England.
[38] Sport England (2024). Research and data: Outdoors. Available at: https://www.sportengland.org/research-and-data/research/outdoors?section=at_a_glance
[39] Sport England (2024). Research and data: Outdoors. Available at: https://www.sportengland.org/research-and-data/research/outdoors?section=at_a_glance

Source: South Kesteven District Council (2020). Local Plan 2011-2036.

The Open Space, Sports, and Recreation Study assesses the current provision of outdoor sports facilities in South Kesteven. The report considers the local needs of the present population and the demands that will be made by future development. It finds that there are 136 outdoor sports facilities in South Kesteven, located on 594.6 ha of space. With regard to provision, the Study found that in 2021, across the whole of South Kesteven there was approximately 4.5 ha outdoor sports facilities per 1,000 population, which is in line with the standard set out in Table 5.4.

Figure 5.7 below shows the locations of outdoor sports facilities in South Kesteven. Facilities are generally clustered around Grantham, Stamford and Bourne but there are also facilities located in more rural areas. While overall provision standards set out in Policy OS1 are met, it can be seen that in many places outdoor sports facilities are not accessible within the recommended catchment of 480m.

Figure 5.7 Location of Outdoor Sports Facilities



Source: South Kesteven District Council (2024). Open Space, Sports, and Recreation Study.

Forward Look

There are no known planned or committed projects for outdoor sports facilities in the district.

The Open Space, Sports and Recreation Study contains analysis of future need for outdoor sports facilities to 2041. Based on ONS projections, the Study states that the future population is estimated at 154,893 in 2041. If the current stock of outdoor sports facilities remains the same, there would be 3.8 ha provision per 1,000 population. This exceeds the standard in Table 5.4 considerably.

During preparation of the Open Space, Sports, and Recreation Study, stakeholder consultation was undertaken to gauge public opinion on quantity, quality, and accessibility of facilities in the borough. A common theme within the responses was the need to provide more areas and activities for children and young people. In addition, The Deepings was highlighted as an area that is expanding and recreational facilities are not seen to be keeping up with the increase in residents.

Overall, respondents to the consultation believed there was a 'good' provision of outdoor sports facilities across the district and residents are happy to travel up to 30 mins to access facilities. It is proposed in the Study to increase the current standard of 1 ha per 1,000 population for outdoors sports facilities to align with the Fields in Trust national benchmark of 1.6 ha per 1,000 population[40]. Both current and forecast levels of provision across the district as a whole, as set out above, would exceed this standard. However, in locations in the district where outdoor sports facilities are not available within the prescribed accessibility standard, then as set out in the Draft Local Plan policy OS1 development proposals will be required to make appropriate provision based upon the policy standard and to demonstrate that they respond to the recommendations of the ‘sub area’ analysis set out in the Open Space, Sport and Recreation Study.

Although it has not been published at the time of writing, the PPOSS is currently at Stage D of its production. Via consultation, Sport England have indicated that as part of this Stage, major housing developments planned in particular areas will be considered to see how the additional population will impact on the capacity of existing facilities and whether improvements are required to these facilities and / or new provision is required to accommodate this growth. Stage D will then allow a clear action plan to be formulated which will provide a programme of work and identify the infrastructure requirements needed to meet the current and future demand for playing pitches in South Kesteven. Once the PPOSS has been adopted by SKDC it will provide the robust evidence base / audit for sporting and recreation provision as required by Paragraph 102 of the NPPF including quantitative or qualitative deficits or surpluses to assess what open space, sport and recreational provision is needed. Sport England’s Playing Pitch Calculator can then be used and will be an important planning tool for assessing the requirement for additional on site and / or off site provision and / or potential cost contributions arising from any development.

Costs, Funding and Delivery

There are no planned outdoor sports projects identified in South Kesteven, however, developments may be required to provide or contribute towards provision of outdoor sports facilities where there is an existing deficiency within an accessible distance. The Open Space, Sports, and Recreation Study recommends that funding is sought through S106 agreements and developer contributions as appropriate. This should be used to improve the quality of existing open space, as well as improving walking and cycling accessibility to open spaces through provision of improved connectivity.

Summary

Key findings are as follows:

- In total, there are 136 outdoor sports facilities in South Kesteven, located on 594.6 ha of space. Compared to the total population, this equates to a provision of approximately 4.5 ha outdoor sports facilities per 1,000 people, indicating that overall the current quantitative standard for provision across the district is met.
- There are no planned projects identified in South Kesteven for outdoor sports, however, developments may be required to provide or contribute towards provision of facilities where there is an existing deficiency within an accessible distance. Once the PPOSS is adopted by the

[40] Fields in Trust (2020). Guidance for Outdoor Sport and Play: Beyond the Six Acre Standard

Council, it will provide further detail and a robust evidence base for Local Plan policies relating to sport and recreation provision.

5.7 Indoor Sports

Introduction

Indoor sports facilities can accommodate a variety of recreational activities and can be grouped together in a leisure centre or a standalone space. This IDP focuses on facilities which are owned by the public sector; it is acknowledged however that many people use facilities which are privately owned and operated, for example which are part of health clubs or fitness centres.

The Sport & Physical Activity Strategy[41] for South Kesteven sets out the mission to provide opportunities for residents to live healthy, active lifestyles. To achieve this, the Strategy aims to ensure participation is affordable and accessible, and to invest in the Council's leisure facilities to ensure that they meet the needs of customers. Key themes of the Strategy are:

- Active Society: enhancing understanding of, and appreciation for, the many benefits of regular physical activity, according to ability and at all ages;
- Active Place: creating environments for people, of all ages, to have equitable access to safe places and spaces, in which to take part in regular physical activity;
- Active People: providing opportunities and programmes across many settings to help all people and communities to take part in regular physical activity; and
- Active System: creating the leadership, governance and partnerships, plus workforce capabilities across sectors to use resources in a more coordinated way to reduce sedentary behaviour.

Baseline

The Sport & Physical Activity Strategy[42] outlines that LeisureSK was established in 2021 to run leisure provision in the district and provide more opportunities for people to be more active. SKDC owns three leisure centres which are operated by LeisureSK: Bourne Leisure Centre; Grantham Meres Leisure Centre; and Stamford Leisure Pool.

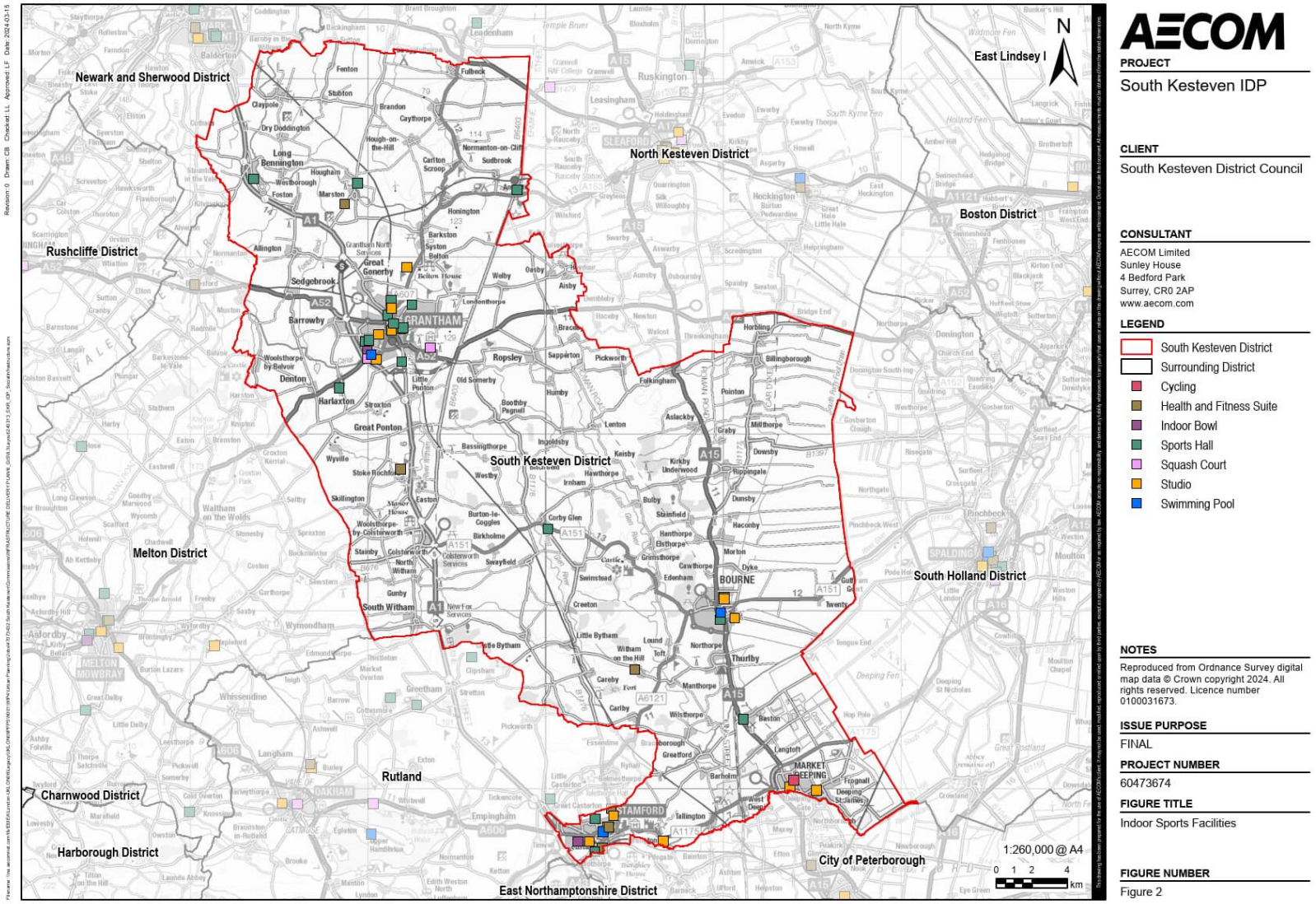
Bourne Leisure Centre is home to a swimming pool, gym, badminton court, basketball court, and football court. Grantham Meres Leisure Centre contains a swimming pool, leisure pools, three activity sports halls, and a gym offering instructor led classes. Stamford Leisure Pool offers a swimming pool, leisure pool, and gym.

In addition to the facilities provided at the above leisure centres, other indoor sports facilities are available within South Kesteven. These include health and fitness studios, squash courts, swimming pools, and indoor bowls. Not all of the above have secure community use.

Figure 5.8 shows the location of these facilities within South Kesteven.

[41] South Kesteven District Council (2021). Sport & Physical Activity Strategy.
[42] South Kesteven District Council (2021). Sport & Physical Activity Strategy.

Figure 5.8 Location of Indoor Sports Facilities



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ISSUE PURPOSE
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PROJECT NUMBER
60473674

FIGURE TITLE
Indoor Sports Facilities

FIGURE NUMBER
Figure 2

Source: AECOM

Forward Look

Planned and Committed Projects

There are no known planned investment projects relating to indoor sports facilities in South Kesteven. During engagement with Sport England, it was highlighted that South Kesteven does not have a Built Facilities Plan or Facilities Planning Model. Sport England emphasised that production of these plans should be a priority in order to identify specific needs and deficits or surpluses of indoor sports facilities in the district.

Although there are no committed projects in the district, to deliver the outcomes within the Sport & Physical Activity Strategy, an action plan is presented which outlines how SKDC will provide sport provision into the future. Table 5.5 summarises this.

Table 5.5 South Kesteven Sports and Physical Activity Action Plan

Activity area	Theme	How will this be achieved?
Active Society	Ensure participation is affordable and accessible to the whole community	• Work with the leisure provider to ensure pricing structures are affordable • Ensure outreach activities are accessible in our rural communities • Work with partner organisations and local groups to facilitate sport and physical activity for people with disabilities and / or long-term health conditions
Active Place	Invest in the Council's leisure facilities to ensure that they meet the needs of customers	• Undertake consultation to understand the needs and demands of our residents and users of leisure facilities • Invest in sustainable, high quality leisure facilities across the district • Agree resource to develop detailed assessments of the Council's leisure facilities to contribute towards the Council's carbon reduction goals
Active People	Support a broad range of sport and physical activity opportunities that reflect the interests and needs of the community and visitors to the district	• Ensure the leisure provider has a wide range of programmes and activities on offer • Strengthen the traditional sports offer by embracing new initiatives • Develop a programme of activities that provides opportunities for families to be active together
Active System	Facilitate partnerships and collaboration between authorities, organisations, communities, and groups to empower those who can make change	• Create innovative, robust partnerships aimed at tackling inactivity • Be part of the conversation with other districts • Work with partners from all sectors to tackle health and other inequalities in areas of the highest need

Source: South Kesteven District Council (2021). Sport & Physical Activity Strategy.

Demand to 2041

The Sport and Physical Activity Strategy highlights that although there is a range of leisure facilities in South Kesteven, future opportunities need to be focused in areas that will make the most difference to local people. There are health inequalities in communities and SKDC recognise the need to ensure services reach and access priority communities. The Strategy also states that with the population forecasted to grow by around 4.5% over the next ten years, and by 7.7% between now and 2040, ensuring spaces to be active in growing communities forms an important part of planning processes for sport.

Via consultation, Sports England indicated that the Sport England Active Places Power Sport Facility Calculator[43] is a tool that can be used to help estimate the amount of demand for key community sport facilities that would be created by new development. The calculator can provide an indication of the likely demand that would be generated by a development for certain facility types. It indicates that a population increase of 11,433 persons in South Kesteven by 2041 would generate a demand for an additional 924 visits per week in the peak period to sports halls and an additional 738 visits per week in the peak period to swimming pools. This would result in the following new / refurbished facility requirements and costs.

Table 5.6 Indoor Sports Facility Requirements and Costs

Sports Halls		Swimming Pools	
Courts	3.14	Lanes	2.28
Halls	0.78	Pools	0.57
Visits per week in peak period	924	Visits per week in peak period	738
Cost	£2,289,666	Cost	£2,542,370

Source: Sports England, Sport England Active Places Power Sport Facility Calculator. Contains Data © Sport England.

Costs, Funding and Delivery

SKDC funds South Kesteven's three leisure facilities via LeisureSK Ltd, an SKDC-owned company contracted by the Council to provide leisure services on its behalf.

There are no planned projects identified in South Kesteven for indoor sports facilities. However, developers may be required to provide or contribute towards provision of facilities where appropriate to meet new demand.

As set out above, the Sport England Sport Facilities Calculator indicates that meeting the requirements of the additional population to 2041 would generate a cost of £4.8m.

Summary

Key findings are as follows:

- SKDC owns two leisure centres and one leisure pool which are operated by LeisureSK.
- There is no known planned provision for indoor sports facilities in South Kesteven, and SKDC does not currently have a Built Facilities Plan or Facilities Planning Model. Sport England recommended that these plans are produced to identify needs and deficits or surpluses of indoor sports facilities.
- The Active Places Power Sports Facilities Calculator was run for South Kesteven by Sports England in March 2024 and based on the forecast population growth to 2041, potential demand has been identified for 0.78 sports halls and 0.57 swimming pools, with an associated cost of £4.8m.

[43] Sport England (2024). Active Places Power Sports Facilities Calculator. Contains Data © Sport England.

5.8 Green Infrastructure and Open Space

Introduction

This chapter considers Green Infrastructure (GI) provision across South Kesteven. Table 5.7 below sets out the different typologies of open space considered within the SKDC Open Space, Sports and Recreation Study (2024). In addition to these categories, GI includes green and blue corridors, which as defined by Natural England[44], includes: rivers and canals, including their banks, roads and rail corridors, cycling routes, pedestrian paths and rights of way.

Table 5.7 Types of Open Space

Type of Open Infrastructure	Description
Allotments and Community Gardens	Opportunities for people (who wish to do so) to grow their own produce as part of the long-term promotion of sustainability, health and social inclusion.
Amenity Greenspace	Most commonly, but not exclusively found in housing areas. Includes informal recreation green spaces and village greens.
Churchyards and Cemeteries	Cemeteries and churchyards including disused churchyards and other burial grounds.
Natural and Semi-Natural Greenspace	Includes country parks, nature reserves, publicly accessible woodlands, urban forestry, scrub, grasslands, wetlands and wastelands.
Outdoor Sports Facilities	Includes both natural and artificial surfaces for sports and recreation that are owned and managed by local authorities, town and parish councils, sports associations, companies and individual sports clubs. This typology includes golf courses.
Parks and Gardens	Includes urban parks and formal gardens. Parks usually contain a variety of facilities, and may have one or more of the other types of open space within them.
Provision for Children and Young People	Areas designed primarily for play and social interaction specifically designed as equipped play facilities for children and young people.

Source South Kesteven District Council (2024): Open Space, Sports and Recreation Study.

GI makes a valuable contribution to quality of life, health and the economy. GI spaces can deliver a series of environmental, social and economic benefits such as mitigating climate change, flood alleviation, and ecosystem services. They are multi-functional - for example, an area of GI might play an important ecological role, whilst also promoting physical activity and improving health and well-being. Areas of GI can also attract visitors which may support the economy through tourism. Therefore, GI is an important component in sustainable development. The National Planning Policy Framework (NPPF)[1] places particular emphasis on GI's role in addressing the social and environmental components of sustainable development.

Baseline

South Kesteven is predominately a rural district, containing open farmland and smaller settlements. It is made up of mixed farming landscape, broad river valleys and some areas of woodland.

A GI project of note recently completed last year within the district is the Witham / Slea Blue Green corridor project. The project aims to restore and reconnect the river and river corridors through the urban areas of Grantham and Sleaford. In total, this encompasses 14 different projects, to create new wildlife friendly environments for the local community. This includes in channel improvements, wetland creation, wildlife meadow creation, tree management and footpath creation. This was partially funded partly by the European Research Development Fund, providing 60% of the project costs, and the

[44] Natural England (2009); Green Infrastructure Guidance

remainder was provided in match funding by SKDC as well as other partners including North Kesteven District Council, the Environment Agency and the National Trust.

In the Open Space, Sports and Recreation Study, South Kesteven is split into three sub-areas: North, Central and South, which mirrors the categorisation to be presented in the Playing Pitch Strategy (PPS):

- North Sub-Area: This has the largest population across South Kesteven and is characterised by rural villages and countryside to the north, and Grantham to the south, which includes all open space typologies. Grantham, a key location for new development, has a range of open space typologies, including three Green Flag Award sites at Dysart Park, Queen Elizabeth Park and Wyndham Park;
- Central Sub- Area: this has the smallest current population and comprises mostly of rural villages and countryside to the east, and Bourne to the West. This sub-area includes all open space typologies mostly comprising of churchyards and cemeteries, allotments and amenity greenspace. Bourne town has a range of open space typologies as well as new open space opportunities within the Elsea Park development. Large areas of natural and semi-natural open space are also present in this sub-area, including woodlands such as Temple Wood, Twyford Wood, Bourne Wood and Morkery Wood, which are accessible via a network of Public Rights of Way (PRoW); and
- South Sub-Area: this has the second highest population due to market towns of Stamford and Market Deeping, as well as a number of smaller villages. Stamford has been identified for substantial new development, including Stamford North Sustainable Urban Extension (SUE). This sub area includes all open space typologies.

An overview of the open space typology in the district is also shown in the table below. Due to the rural nature of the district, the highest proportion of open space (47.3%) is natural and semi natural greenspace (total of 1,264.31 hectares). The total amount of open space across the district currently equates to 18.63ha per 1,000 population. Based on the Open Space Study's assumption of an 8% population increase to 2041, this falls slightly to provision of 17.25ha per 1,000 population in 2041.

Formal greenspace comprises of more formally managed areas of green space, namely parks and gardens, amenity green space and allotments. There is a good level of formal green space across South Kesteven, with 5.14ha per 1,000 people.

Table 5.8 Open Space by Typology, Number and Area

Open Space Typology	No.	Area (ha)	Area (%)	ha per 1,000 pop (2021)	ha per 1,000 pop (2041)
Allotments & Community Gardens	45	50.35	1.90%	0.35	0.33
Amenity Greenspace	218	71.34	2.70%	0.5	0.46
Cemetries and Churchyards	129	64.45	2.40%	0.45	0.42
Natural and Semi-Natural Greenspace	27	1,264.31	47.30%	8.82	8.16
Outdoor Sports Facilities	136	594.55	22.30%	4.15	3.84
Parks and Gardens	60	615.56	23.00%	4.29	3.97
Provisions for Children and Young People	119	10.37	0.40%	0.07	0.07
Total	**734**	**2,670.92**	**100.00%**	**18.63**	**17.25**

Source: South Kesteven District Council (2024): Open Space, Sports and Recreation Study.

Standards to meet needs of future population growth

Recommended standards of provision are determined by local assessment and analysis but are also influenced by national recommended standards, in line with the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG). Relevant benchmark standards include:

- Accessible Natural Green Space (Natural England): this is a set of recommendations for the provision of accessible natural green space, referred to as the 'Angst model'. This recommends at least 2ha of accessible natural green space per 1,000 population;
- Woodland Access Standard (Woodland Trust): these guidelines advise that no person should live more than 500m from at least one area of accessible woodland of no less than 2ha in size; and there should be at least one area of accessible woodland of no less than 20ha within 4km (8km round trip) of people's homes. South Kesteven is an area which holds good opportunity for new woodland, as currently coverage is much lower than the national average.
- Natural England Green Infrastructure (GI) Framework (2023): Launched last year, this provides an assessment tool to ascertain where greenspace in urban areas is needed most, ensuring access to good quality greenspace for the whole community. This combines five key standards:
    - Urban Recovery Standard: aims to boost nature recovery, integrate nature based solutions and build resilience to climate change;
    - Urban Greening Factor: to improve GI provision and increase greening levels in urban areas (standard is set at 0.4 for residential development);
    - Urban Tree Canopy Cover Standard: to promote an increase in tree canopy cover in urban environments;
    - Accessible Greenspace Standards: to promote access to good quality greenspace within 15 minutes walk from home; and
    - Green Infrastructure Strategy: to support the NPPF's policy that local authorities should develop strategies and policies for GI.

These recommendations, and the review of the existing provision, have been taken into consideration when determining the proposed targets for future GI provision across South Kesteven. The proposed targets can be seen in Table 5.9 below.

Table 5.9 Proposed Quantity Standards for the District

Open Space Typology	Existing Provision (ha / 1,000)	National Benchmark (Target)	Existing Standard (ha / 1,000)	Proposed Standard (ha / 1,000)
Allotments & Community Gardens	0.35	No Standard	No Standard	No Standard
Amenity Greenspace	0.50	0.60	2.00	0.60
Cemetries and Churchyards	0.45	No Standard	No Standard	No Standard
Natural and Semi-Natural Greenspace	8.82	1.80	2.00	2.00
Outdoor Sports Facilities	4.15	1.60	1.00	1.60
Parks and Gardens	4.29	0.80	0.30	0.50
Provisions for Children and Young People	0.7	0.25	0.15	0.15

Source: South Kesteven District Council (2024): Open Space, Sports and Recreation Study.

As set out in the Open Space, Sports and Recreation Study, 307 sites were identified for auditing across the borough (excluding outdoor sports facilities). Of these, 61% of sites achieved a quality score of either good, very good or excellent.

Forward Look

Planned and Committed Projects

After the success of the Witham / Slea Blue Green Corridor Project, which was completed in 2023, a number of future opportunities for larger scale floodplain reconnection and river restoration are currently under development by the Environment Agency in South Kesteven. Of note, is a Project in the section of the Upper Witham between Saltersford and Colsterworth: the Upper Witham Floodplain reconnection and river restoration. In addition to restoration, opportunities to provide fish passage and where feasible, remove historic weirs are being explored. This is currently being explored at Papermill weir, where East Mercia Rivers Trust have a full design in place for a by-pass of the existing weir.

The Woodland Trust is currently working with the National Trust to link their site at Londonthorpe Woods to the eastern part of the Belton House estate, in Grantham. This project, supported by the National Lottery Heritage Fund, will further increase provision accessible green space across the district by unification of the two spaces.

The Greater Lincolnshire Nature Partnership (GLNP) are also in the process of developing a Local Nature Recovery Strategy (LRNS). Established by the Environment Bill 2020, they are designed to drive more coordinated, practical and focussed action to help nature. These documents will support delivery of mandatory biodiversity net gain and as well as agree local priorities for nature's recovery as well as mapping out existing as well as proposals for creation or improvement of habitats[45]. The strategy, once published, will therefore detail other local projects which are currently at the early stages of development throughout South Kesteven as well as throughout Lincolnshire.

Some sites allocated within the Local Plan already have green infrastructure provision identified within emerging plans, such as the riverside park in Spitalgate Heath Garden Village.

Demand to 2041

At the current time, no further GI projects have been identified which will cater for new demand arising to 2041. However, the Draft Local Plan includes policies to ensure requirements are identified and met as development sites come forward.

Policy EN3: Green Infrastructure in the Draft Local Plan commits to maintain and improve the existing GI network throughout the district, by enhancing, creating and managing green space within and around settlements which are connected to one another and the wider countryside. Development proposals must demonstrate how the GI Mapping prepared by the Greater Lincolnshire Nature Partnership, as well as national guidance such as Natural England's Green Infrastructure Framework, has been taken into consideration.

New Policy 4: Biodiversity Opportunity and Delivering Measurable Net Gains states that all development proposals should ensure opportunities are taken to retain, protect and enhance biodiversity and geodiversity features. Development proposals should create new habitats, and links between habitats to maintain and enhance a network of wildlife sites and corridors, to minimise habitat fragmentation and provide opportunities for species to respond and adapt to climate change. Proposals for major development should seek to deliver wider environmental net gains where feasible, of at least 10% biodiversity net gain on qualifying development sites. The Green Infrastructure and Biodiversity Opportunity Mapping prepared by the Greater Lincolnshire Nature Partnership will need to be utilised to identify existing areas of high biodiversity value and local biodiversity priority. Development proposals must also be in line the biodiversity opportunity principles, and the Local Nature Recovery Strategy (once completed).

Policy OS1: Open Space and Recreation within the Draft Local Plan aims to ensure that new housing developments provide sufficient new (or improved) open space to meet the needs of the development. For new housing developments capable of providing 10 or more dwellings, in areas where the

[45] Greater Lincolnshire Nature Partnership (2020): GLNP Nature Strategy 2020: developing a Local Nature Recovery Strategy

standards for open space in Table 5.9 are not currently met, development proposals will be required to make appropriate provision based upon the standards, Developments will also need to demonstrate that the recommendations of the 'sub area' analysis set out in the Open Space, Sport and Recreation Study (2023) have been considered and addressed.

The quantitative standards for provision of different types of open space set out in Table 5.9 have been applied to the projected population increase set out in the Draft Local Plan (11,433) to provide a estimate of demand for new open space to 2041. It is acknowledged that Policy OS1 indicates that these standards only apply where the standards are not currently being met; however in the absence of information on planned projects, this exercise provides a high level estimate of need over the Local Plan Review period.

Table 5.10 Open Space Requirements to 2041

Open Space Typology	Demand (ha) to 2041
Amenity greenspace	6.86
Natural and semi-natural green space	18.29
Parks and gardens	5.72
Children and young people	1.71

Source: AECOM, Open Space, Sports and Recreation Strategy 2024

Costs, Funding and Delivery

It is estimated that the Upper Witham Floodplain reconnection and river restoration Project will cost circa £1m, with £0.2m secured to date from the Regional Flood and Coastal Committee (RFCC) local levy. This presents a potential funding gap of £0.8m, with costs to be refined following detailed design, planning consent and landowner approvals. The Project will be delivered by the Environment Agency, in partnership with East Mercia Rivers Trust and the Wild Trout Trust.

Beyond this, no detail is currently available on likely costs associated with GI to meet needs arising over to 2041. Benchmark costs have therefore been applied to the demand estimates set out above; this results in an estimated cost of £9.1m for open space over the Local Plan Review period.

Table 5.11 Costs of Open Space Provision in South Kesteven to 2041

Open Space Typology	Cost (£)
Amenity greenspace	1,440,558
Natural and semi-natural green space	3,841,488
Parks and gardens	1,772,115
Children and young people	2,095,840
Total	**9,150,001**

Source: AECOM

Funding for Green Infrastructure projects has a number of sources, including through central government, Natural England, Heritage Lottery Fund, third sector contributions and (mostly) developer contributions. Whilst developer contributions are likely to be secured in line with SKDC policies relating to GI and Biodiversity, these funds have yet to be committed.

Promoting private sector investment in GI is also being explored. In line with New Policy 4 in the South Kesteven Local Plan, a new scheme, Green Investment in Greater Lincolnshire, is currently being scoped out by Lincolnshire Wildlife Trust to improve local biodiversity, through a credit trading model. This focuses on encouraging private sector investment by buying and selling biodiversity and water credits locally, to improve net gain requirements. In July 2021, this project received UK Government funding, from the 'Natural Environment Investment Readiness Fund' to begin exploring this requirement and was match funded by Anglian Water and the Humber Nature Partnership. Currently, demand across South Kesteven is being explored, to ascertain whether this could be a feasible approach in the district.

Other public sector partners such as the Woodland Trust do not have a role in directly new implementing GI projects, but do sometimes hold a role in advising on obligations for GI delivery, or maintaining and managing their current estates.

Summary

Key findings are as follows:

- GI encompasses a broad range of greenspaces and other environmental features which make an important contribution to quality of life and sustainable development.
- Due to the rural nature of the South Kesteven, the highest proportion of open space (47.3%) is natural and semi natural greenspace (total of 1,264.31 hectares). The total amount of open space across the district currently equates to 18.63ha per 1,000 population. Based on the Open Space Study's assumption of an 8% population increase to 2041, this falls slightly to provision of 17.25ha per 1,000 population in 2041.
- A number of projects are in the pipeline for delivery by public sector partners (such as the Environment Agency and the Woodland Trust) and mechanisms to increase private sector investment through credit trading models are also in the process of being scoped out.
- Going forward, the new mapping developed by the Greater Lincolnshire Nature Partnership will inform a key requirement for developers to demonstrate how they have considered green infrastructure and biodiversity commitments within their proposals.
- The cost for one GI project (the EA's Upper Witham Floodplain reconnection and river restoration project) has been identified as £1m. Applying quantitative standards for provision of different types of open space to the projected population increase set out in the Draft Local Plan (11,433) and applying benchmark costs indicates an estimated cost of £9.1m for open space over the Local Plan Review period. This indicates total costs of £10.1m for GI over the Local Plan Review period, of which only £200k is currently committed.

5.9 Ambulance

Introduction

The East Midlands Ambulance Service (EMAS) provides accident and emergency services and where commissioned non-emergency patient transport services across the East Midlands, including within South Kesteven. Regional Ambulance Trusts, such as EMAS, may collaborate closely with other ambulance services, the wider emergency services or wider system providers to deliver appropriate patient care.

According to the most recent EMAS Annual Report[46], throughout 2022 / 2023, EMAS continued to support the regional system response to the ongoing COVID-19 challenges. While the impact of COVID-19 is not as great as it was, EMAS still faces a number of service delivery related challenges, such as winter pressures and recently internal and external industrial action.

In 2023, EMAS published its Five Year Strategy 2023-2028[47]. Ambitions of the Strategy are as follows:

- Deliver outstanding patient care;
- Be an attractive employer of choice;
- Deliver improved outcomes for patients;
- Deliver safe, effective, compassionate care; and
- Work in partnership to reduce health inequalities.

Baseline

EMAS operates a fleet of 720 operational vehicles, including emergency ambulances, fast response cars, specialised and driver training vehicles, community first responder vehicles and urgent care and patient transport vehicles. On average, EMAS receives a new 999 call every 25 seconds (1,246,000 emergency and urgent calls received during 2022 / 2023). In 2022 / 23 there were also 234,000 calls for patients booking non-emergency transport[48].

The Non-Emergency Patient Transport Services provided by EMAS provides an essential lifeline for people unable to use public or other transport due to their medical condition. These much-needed journeys support patients who are:

- Attending hospital outpatient clinics or other healthcare locations;
- Being admitted to or discharged from hospital wards; and
- Needing life-saving treatments.

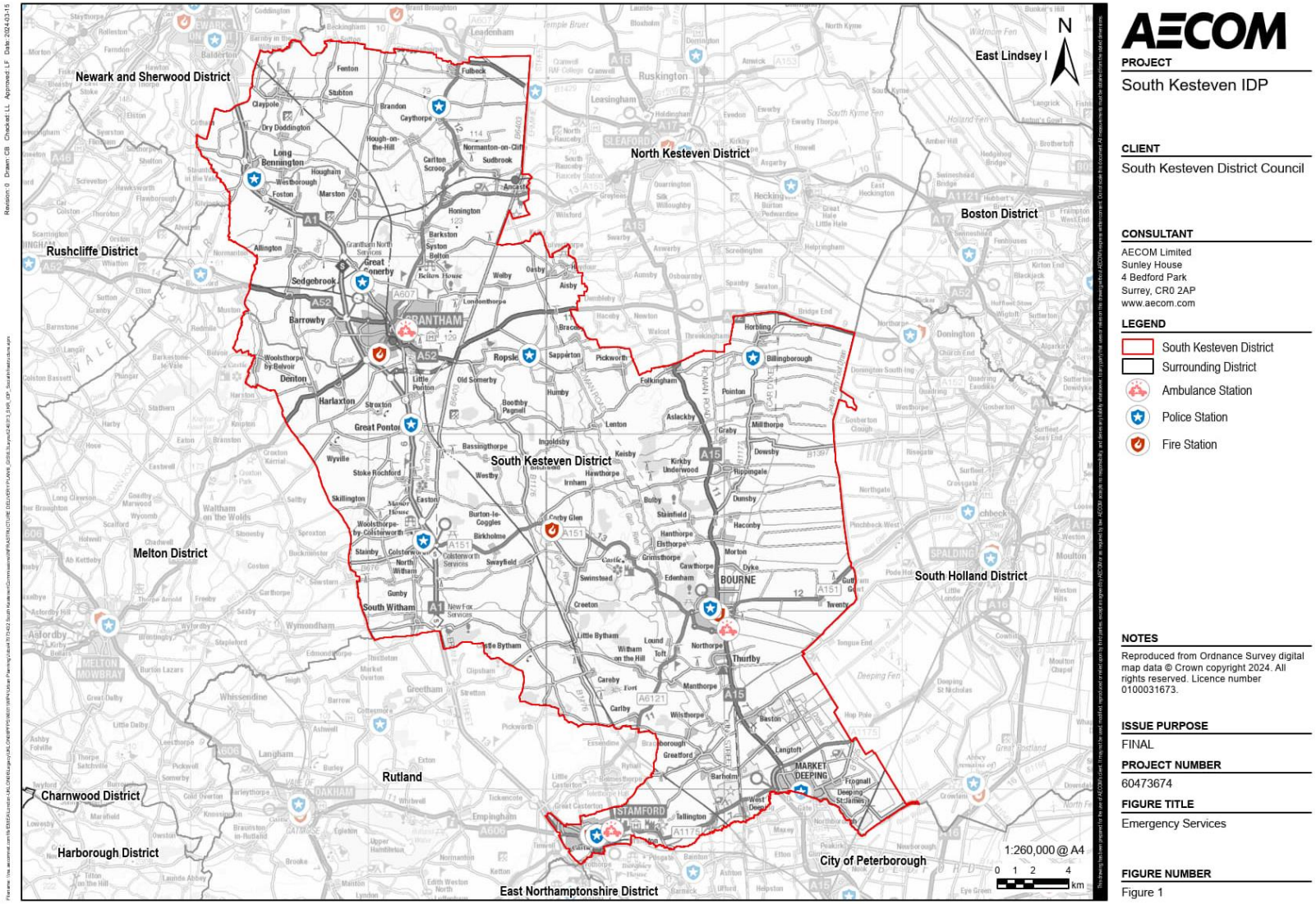
The EMAS Strategy details that with four large cities, major arterial roads, an international airport, a lengthy coastline and several country parks, demand on EMAS can increase particularly during the summer months when visitor numbers to the region increase. Response times and handover delays have improved in recent times however waits remain longer than they should be. In February 2023 EMAS lost over 9,000 hours to handover delays, where ambulances were waiting to hand patients over to the emergency department, equivalent to 26 ambulances out of action for a full 12- hour shift. The impact of this along with higher demand on services is that EMAS has been unable to respond as quickly as required to patients in the community waiting for an ambulance; this in turn increases the risk of poor patient outcomes and improving this situation is therefore a key focus for EMAS.

In South Kesteven specifically, in 2023 there were a total of 30,769 calls for an ambulance. Of these, 17,632 were responded to with an ambulance, and the remainder were triaged and supported to access other services required. Ambulance stations are located in Grantham, Stamford and Bourne.

Figure 5.9 illustrates the location of ambulance stations across the district.

[46] East Midlands Ambulance Service (2023). EMAS Annual Report 2022/2023.
[47] East Midlands Ambulance Service (2023). EMAS Strategy 2023-2028.
[48] East Midlands Ambulance Service (2023). EMAS Annual Report 2022/2023.

Figure 5.9 Location of Emergency Services



Source: AECOM

Forward Look

Planned and Committed Projects

EMAS plans for 3% growth in activity year on year, though the demographic and socio-economic profile of the population, as well as its size, is an important determinant of demand for services.

At present EMAS indicate that there is no evidence that new ambulance stations will be required in South Kesteven to cater for the growth proposed to 2041. There is an ongoing need to maintain facilities to ensure they are fit-for-purpose and safe; associated capital works, along with vehicle replacements, are dealt with as part of an annual capital investment plan. Also, EMAS is experiencing a move towards more electric vehicles within its fleet. This will require more electric charging infrastructure in the future. The EMAS Annual Report states that progress towards fleet electrification is limited by the fact that infrastructure to support electric vehicle charging is costly and not always suitable for all sites.

Demand to 2041

A detailed estates review is planned to take place within the next year to ensure that the ambulance estate is fit for purpose to respond to the increasing population and its changing profile.

Costs, Funding and Delivery

Costs

While there are currently have no plans for redeveloping or expanding the ambulance estate in South Kesteven, EMAS have provided indicative costs of vehicles and defibrillators to enable response as follows:

- Double crewed ambulance: £165,000;
- Electric Skoda first response vehicle (ambulance car): £80,000; and
- Defibrillator for local community: £13,000.

Funding and Delivery

Capital funding for ambulance trusts has declined in recent years. The Department of Health and Social Care (DHSC) provides capital funding to ambulance trusts via Integrated Care Systems (ICS). NHS England passes funding to the lead commissioner (Derbyshire ICS) which is then shared across all ICSs in the East of England; therefore EMAS is bidding against partner organisations for a limited pot. Additional funding is available from NHS England through the submission of a business case, and charitable donations also provide a small amount of funding. There may also be opportunities arising out of new net zero funding streams.

Summary

Key findings are as follows:

- East Midlands Ambulance Service (EMAS) provides the ambulance service in South Kesteven. There are currently three ambulance stations in the district which are located in Grantham, Stamford, and Bourne. Information received during stakeholder consultation illustrated that demand on the ambulance service is high, and although response times and handover delays have improved recently, wait times remain longer than they should be.
- There is no evidence that EMAS will require new ambulance stations in South Kesteven to support the proposed growth up to 2041. However, there is a need for maintenance and upkeep at stations, along with vehicle replacements. A key challenge for the ambulance service will be supporting the move to electrification and installation of charging infrastructure. Funding for this is likely to come from NHS England and capital funding via the ICS.

5.10 Police

Introduction

In South Kesteven, police services are operated by Lincolnshire Police, which has a statutory duty to deliver policing services across the county of Lincolnshire. Lincolnshire Police is overseen by the Police and Crime Commissioner (PCC) for Lincolnshire.

'Making Lincolnshire Safe'[49] sets out the strategic direction for Lincolnshire Police, supporting the Police and Crime Commissioner's Police and Crime Plan. Priorities contained within the Plan include:

- Stop crime and anti-social behaviour;
- Protect from harm; and
- Help those in need.

Baseline

There are eight police stations within South Kesteven located at Billingborough, Bourne, Grantham, Long Bennington, Caythorpe, Market Deeping, Colsterworth and Stamford. Some of these stations operate as part-time stations. The existing police stations within South Kesteven are placed in the towns and largest villages and are suitably located to provide services to the population.

Policing in Lincolnshire is increasingly delivered 'on the move' (in particular from police vehicles) rather than from police stations, facilitated by advances in digital infrastructure and technology.

Figure 5.9 illustrates the location of police stations across the district.

Forward Look

Planned and Committed Projects

There are currently no known planned projects for expansion of the physical police infrastructure in South Kesteven. As noted above, investment in robust ICT rather than an expanded estate will be increasingly important to service delivery.

A priority for the PCC is the move to net zero and electrification of fleet. It must be considered where charging points infrastructure will be installed for this transition.

In addition, ensuring new developments 'design out crime' (i.e. adhere to urban design and planning principles which discourage crime and promote a sense of safety) is an important element of mitigating future demand for policing services arising from growth.

Demand to 2041

Consultation with the PCC highlighted that housing growth up to 2041 would unlikely trigger the need to build more police stations. Rather, the focus is on mobility of the service. Where it is identified that the police estate need reconfiguring, the PCC would look at opportunities to co-locate with partners including Local Authorities and other service providers.

Aside from population growth, other external factors and events such as the need to police asylum accommodation can increase demand for policing.

Costs, Funding and Delivery

Lincolnshire Police funding is overseen by the PCC for Lincolnshire, which operates within the same financial framework as a Local Authority. Policing is primarily funded through two main streams: via central government, and local taxation.

[49] Lincolnshire Police (2021). Making Lincolnshire Safe.

Funding from central government is calculated using the established Police Relative Needs Funding Formula, and has been declining in recent years. In 2023 / 24, the core Police Grant for Lincolnshire was £71.6m[50]. The second funding stream is via council tax; these monies are generally used for revenue costs.

Summary

Key findings are as follows:

- Lincolnshire Police provides services across South Kesteven. There are eight police stations within the district, however some of these operate as part-time stations. In addition to the stations, policing is increasingly being delivered 'on the move' which is being facilitated by advances in digital infrastructure.
- There are no known projects planned for South Kesteven for new police stations. However, investment in ICT is a key priority for the service, as well as electrification of fleet, installation of electric charging infrastructure, and mobility of the service.
- Emergency service requirements will need to be considered for all major developments. Funding for police infrastructure usually derives from a mixture of central government and local taxation.

5.11 Fire

Introduction

Lincolnshire Fire and Rescue (LFR) is responsible for assessing and responding to risks that occur within South Kesteven. LFR is overseen by LCC. The types of incidents responded to include, but are not limited to, fires, road traffic collisions (RTCs), water-based accidents, and flooding. The service employs approximately 700 staff operating a total of 38 fire stations across Lincolnshire[51].

The ability to understand risks and resource to them is key to delivering a modern fire and rescue service. By law, LFR must publish an Integrated Risk Management Plan (IRMP) covering a three-year time span. The Draft IRMP for Lincolnshire, "Our Community Plan" [52], identifies risks to the community and plans to reduce them. It highlights that the number of fires attended has decreased over the last five years, and the number of RTCs attended has increased.

The IRMP states that reductions in funding over the last decade have driven LFR to be more innovative in the way services are delivered, and to rise to the challenge of continuing to offer a *"first-class fire and rescue service to people living, working and visiting Lincolnshire"*.

Objectives of the IRMP are as follows:

- Reduce fires and their consequences;
- Reduce road traffic collisions and their consequences;
- Improve health and wellbeing;
- Protect the community and environment from the impact of major emergencies;
- Manage our resources effectively;
- Manage our people effectively; and
- Govern the business effectively.

In 2024, LFR published the Proposed Community Risk Management Plan 2024-2028[53], which will supersede the IRMP once finalised. It states that although the cycle of the IRMP is not yet finished, it can be reported that:

[50] Lincolnshire Police & Crime Commissioner (2023). Budget Report for 2023/24.
[51] Lincolnshire Fire and Rescue (2024). Proposed Community Risk Management Plan 2024-2028.
[52] Lincolnshire Fire and Rescue (2024). Proposed Community Risk Management Plan 2024-2028.
[53] Lincolnshire Fire and Rescue (2024). Proposed Community Risk Management Plan 2024-2028.

- Domestic dwelling fires are at their lowest number for five years;
- Despite an increase in the number of RTCs incidents attended, 2022 / 23 saw a 19% decrease in the number of people killed or seriously injured; and
- The duty systems of wholetime stations have been reviewed and findings will be implemented in 2024.

Baseline

There are six fire stations within South Kesteven. Grantham is a 'whole time' station with an on-call compliment. This means that there are firefighters on the station 24 / 7 who are then supported by on-call firefighters if required. Billingborough Bourne, Corby Glen, Market Deeping and Stamford are on-call stations with local on-call firefighters called in when required.

Figure 5.9 illustrates the location of fire stations across the district.

The Community Risk Management Plan 2024-2028 sets out the budget for LFR as follows:

- revenue budget 2023 to 2024: £22.2m (day-to-day running of the organisation – predominantly salary and wages budget); and
- Capital budget 2023 to 2024: £2.7m.

The capital programme pays for long-term works such as:

- Improvements to fire stations;
- Replacing firefighting vehicles and equipment; and
- Purchasing ICT hardware.

Forward Look

Planned and Committed Projects

There is no information to indicate that any additional physical infrastructure is currently planned for the fire service in South Kesteven (such as new fire stations). However, the Proposed Community Risk Management Plan (2024-2028) states that LFR has a ten-year capital plan agreed with LCC where funds are released when needed in project lifecycles. This is in place to support purchase of new fleet vehicles and equipment, and improvements and minor refurbishments to existing fire stations.

Demand to 2041

At present there is no evidence that new fire stations will be required in South Kesteven to cater for the growth proposed to 2041; however, a consideration of the scale and location of planned development will be included within LFR's risk and resource planning process.

Consultation with LFR highlighted the challenge that if the population is to increase, fire-related risks will inevitably increase. LFR emphasised the importance of ensuring safety measures outlined in the statutory guidance document Fire Safety: Approved Document B[54] are incorporated into building design. Relevant preventative measures include automatic fire detection and domestic sprinklers. With an ageing population in South Kesteven, some of these measures are particularly important for residents who may be less mobile.

Costs, Funding and Delivery

Costs, Funding and Delivery

As noted above, there are no plans to reconfigure or expand the LFR estate at present.

At the national level, funding for fire and rescue services derives from central government, although these contributions have decreased gradually over recent years. At the local level, funding for fire and

[54] HM Government (2022). The Building Regulations 2010. Fire Safety: Approved Document B. Volume I.

rescue services derives from council tax contributions. LCC may seek S106 contributions on behalf of LFR if appropriate.

Summary

Key findings are as follows:

- The Lincolnshire Fire and Rescue Service provides fire services across South Kesteven. Within the district, there are six fire stations, one of which is a ‘whole-time’ station.
- There is no known planned provision for additional fire stations across the district. However, funding is in place with LCC to support upgrading fleet and equipment, and maintenance of fire stations. The increase in population up to 2041 may present challenges for the fire service and LFR is currently looking into ways that buildings can be fitted with preventative fire safety measures.
- Funding for fire infrastructure usually derives from a mixture of central government and local taxation. S106 contributions can also be sought if necessary.

6. Infrastructure Assessment: Utilities and Hard Infrastructure

6.1 Electricity

Introduction

Locally, the electrical infrastructure to provide power to both business and residential consumers is operated and maintained by the Distribution Network Operators (DNO) who are responsible for the distribution assets. All DNOs are licensed companies that own and operate the network of towers, transformers, cables and meters that carry electricity from the national transmission system and distribute it throughout Britain to commercial, industrial and residential properties.

The DNO regional maps confirm that South Kesteven is served solely by National Grid Electricity Distribution (NGED). As such, NGED is responsible for operating and managing all electrical infrastructure in the district.

National Grid (NG) is the Transmission System Operator (TSO) for the area. NG is responsible for operating and maintaining all local transmission assets such as extra high voltage transmission lines and substations. The DNOs are supplied with power from the transmission system.

Baseline

NGED operate thirteen primary substations within South Kesteven. Currently, two of these primary substations have a negative demand headroom capacity, which means they do not have spare capacity to support future development.

Table 6.1 Primary Substations in South Kesteven

Primary Substation	Demand Headroom Availability (MVA)
Bourne	0.00
Dowsby Fen	1.77
Easton	3.26
Grantham North	24.80
Granthan South	0.00
Market Deeping	10.21
Market Overton	1.69
New Beacon Road, Grantham	8.94
Skillington	10.18
Stamford	6.68
Tunnel Bank, Bourne	13.60
West Deeping	0.86
West Borough	4.69

Source: Energy Options Analysis for Greater Lincolnshire (Rider Levett Bucknall, 2023)

The spare capacity of each sub-station set out above should be considered as indicative only. Large developments have larger demands and potentially cannot be accommodated even from substations with apparently good (or 'unconstrained') spare capacity, due to other constraints.

It is also important to highlight the following caveats in the above data:

- The available data does not reveal other technical constraints that might prevent the supply of a new load that could otherwise be accommodated by the available spare capacity. Constraints such as fault level limits or ageing equipment are common and although this detail is outside the scope of this study, they will undoubtedly be encountered during more detailed assessment.
- The distribution level headroom is entirely reliant on the available spare capacity upstream at the transmission level. Primary substations are dependant on the capacity of South Kesteven Grid Supply Points (GSPs). Information on the capacity these GSPs is not available. Furthermore, as the transmission system is shared across large regions, increased demand in other adjacent areas and regions of the country could impact the available headroom at some of the GSPs that feed the South Kesteven distribution system.

Forward Look

Rider Levett Bucknall's 2023 study *Energy Options Analysis for Greater Lincolnshire* performed an assessment to forecast the capacity of the existing South Kesteven primary substations for the next 11 years incorporating the planned development as noted in the adopted Local Plan. The results of this analysis are listed in Table 6.2 below:

Table 6.2 South Kesteven Primary Substation Capacity

Primary Substation	Demand Headroom Availability (MVA)		
	2024-2026	2027-2033	2034+
Bourne	-0.95	-9.36	-13.33
Dowsby Fen	1.77	1.77	1.77
Easton	-1.16	-1.67	-5.85
Grantham North	22.42	14.22	-9.17
Granthan South	-3.93	-11.39	-40.41
Market Deeping	6.05	-4.44	-21.85
Market Overton	1.22	1.08	0.28
New Beacon Road, Grantham	-11.99	-37.18	-70.55
Skillington	10.18	9.56	9.39
Stamford	-0.49	-14.65	-29.15
Tunnel Bank, Bourne	11.08	7.84	6.50
West Deeping	-1.32	-2.02	-2.33
West Borough	4.32	0.84	-3.27

Source: Energy Options Analysis for Greater Lincolnshire (2023)

As is evident from the analysis performed by Rider Levett Bucknall, 2023, nine of the thirteen primary substations will have a negative demand headroom from 2034. The Grantham area appears to be the area where demand headroom availability is most constrained. Planned future electricity demand will be split predominantly between residential (46%) and employment (42%). This coincides with largest planned residential development occurring in Granthan and Stamford, with three major developments for Grantham.

Potential Future Constraints and Opportunities

Rider Levett Bucknall's 2023 study *Energy Options Analysis for Greater Lincolnshire* forecast indicates there will be an electrical capacity bottleneck for South Kesteven at the distribution level due

to planned residential development. In areas where future capacity constraints have been identified, infrastructure reinforcements will be required to ensure this lack of capacity does not obstruct the planned development.

Typically, distribution network reinforcement takes 12 - 24 months to be implemented, once the DNO has established the business case for the reinforcement. The preparation of development briefs and masterplans for larger strategic sites can assist in ensuring that these needs are identified early in the planning process. Those responsible for planned residential developments should engage early with the DNO to ensure distribution network reinforcements are implemented in time for the development.

Limiting Regulatory Frameworks

One reason for the relatively limited demand headroom available at the distribution level is that DNOs like NGED are limited by their licence conditions in “investing ahead of need”. In effect, this means that to trigger reinforcement works, the TSO / DNO are required to demonstrate that a significant new demand will develop in the region and that network reinforcement is needed to support it.

Where development requires electrical network reinforcement, developers may often have to carry a disproportionate amount of the initial capital costs of reinforcement to demonstrate the legitimacy of proposed development. Strategic investment in the electricity network to facilitate development on strategic sites will need to be considered at an early stage in the planning process. The introduction of more flexibility or changes in the regulatory framework in the future might ease these constraints and enable more proactive reinforcement investment.

Preparatory Investment for EV and Electrification of Heat

Another important factor in future infrastructure investment in the energy sector is the expected fast-paced adoption of Electrical Vehicles (EVs) and the electrification of heat, following on from the Government’s aims for decarbonisation of the grid. Vehicles and heat have traditionally drawn on fossil fuel derived power, but the recent legislation introduced across the UK (i.e. 2050 net zero carbon target, 2035 ban on new petrol vehicles) will require the adoption of EVs and the electrification of heat to gain widespread momentum. This is expected to create a major pressure on the country’s existing electrical infrastructure. The scale and speed at which these sectors are forecast to grow implies that major infrastructural investment will be needed quickly to support these new loads.

This will undoubtably have a regional impact on the scale of planned infrastructure reinforcements and the overall capacity in the network. However, due to existing DNO licence constraints, the required infrastructure reinforcements will only materialise once the demand grows, which in turn could constrain spare capacity available for new development.

Costs, Funding and Delivery

At this stage, no planned investment projects relating to electricity infrastructure in South Kesteven have been identified. There is insufficient information available to estimate of the cost of the upgrades and reinforcements of the electrical infrastructure required to deliver growth to 2041.

The development of electrical infrastructure is funded and implemented by the DNOs under their licence conditions, typically using funds provided by developers in paying connection fees. As set out above, the DNOs are severely constrained in providing any investment ahead of need. Forward planning and liaison between the local authority and the DNO can help overcome this to ensure the provision of electrical infrastructure does not constrain the development of an area. However, as mentioned earlier, this can require early financial commitment from the developer.

Summary

The assessment of South Kesteven’s electricity infrastructure can be summarised as follows:

- National Grid Electricity Distribution (NGED) is the regional Distribution Network Operator (DNO) that serves the entire South Kesteven.
- Two of the thirteen primary substations that NGED operates within South Kesteven are currently operating with negative demand headroom capacity and do not have spare capacity to support future development.

- Within Energy Options for Lincolnshire (Rider Levett Bucknall, 2023), forecasting has identified that by 2034 nine of the thirteen primary substations within South Kesteven would have negative demand headroom capacity. The most constrained areas would be Grantham and Stamford due to large planned residential developments in these locations.
- TSO / DNO only reinforce their network infrastructure ahead of planned development that demonstrates a significant new demand requiring a region and network reinforcement. This is in accordance with their licencing conditions. Distribution network reinforcement takes 12 – 24 months to be implemented once the DNO has approved the reinforcement requirements.
- Electric Vehicles (EV) and the electrification of heating systems is expected to create major pressure on the UK's electrical infrastructure network. Upgrades will be required to support the additional electrical loads.
- DNOs fund the provision of electrical infrastructure under their licencing conditions.
- Early engagement with DNOs and Local Authorities along with an early financial commitment from developers can assist overcoming the capacity constraints of the electrical network infrastructure in areas proposed for development.

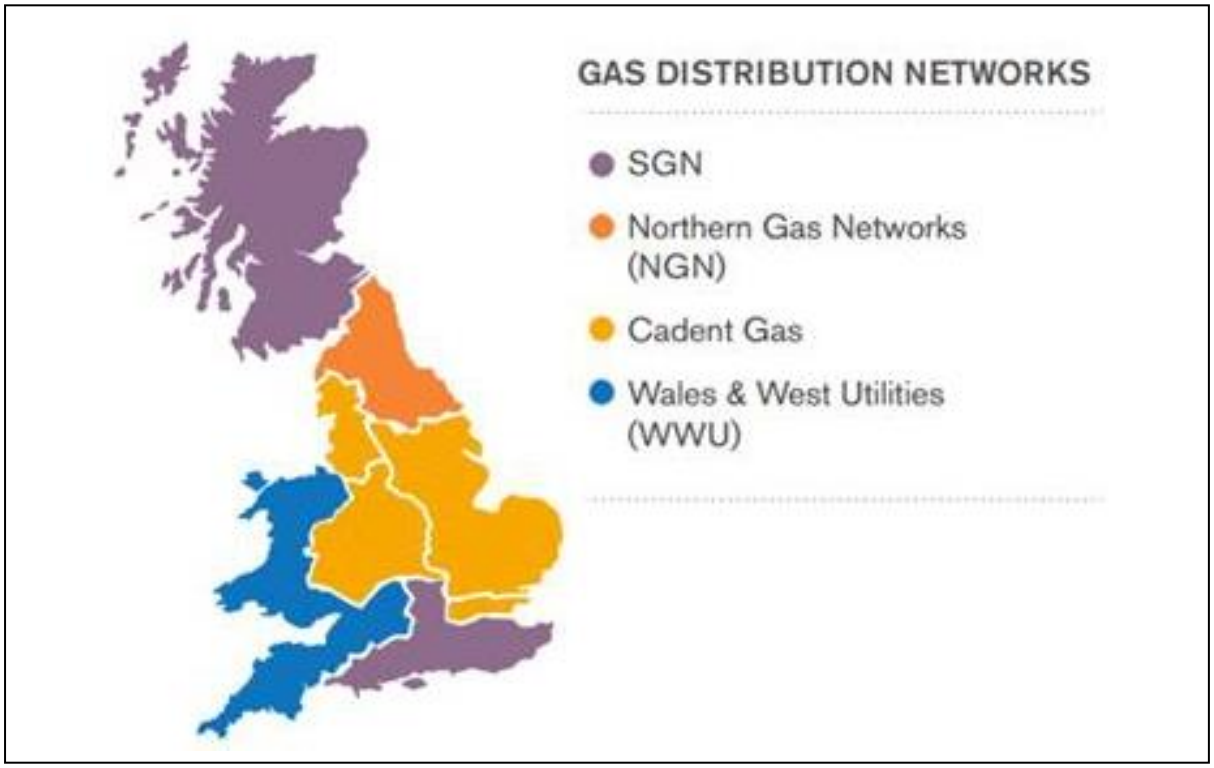
6.2 Gas

Introduction

National Grid own and operate the gas transmission networks for the whole of the United Kingdom. These are mostly high pressure (HP) pipelines, typically operating between 16 and 100 bar, forming the National Transmission System (NTS). These transport gas from gas sources such as storage sites and reserves to the Local Transmission Systems (LTS) operated by the distribution companies. The amount of gas within the NTS at any one time is balanced by National Grid to ensure the demand requested by the LTS can be met.

There are four Gas Distribution Network Operator areas in the UK. These are shown in Figure 6.1 below. The Cadent Gas distribution network covers most of central England and this includes the South Kesteven. South Kesteven is part Cadent Gas's East Midlands region.

Figure 6.1 Ofgem Gas Distribution Operators



Source: Ofgem. Note: Scotia Gas Networks' (SGN) is the holding company of Scotland Gas Networks (the distribution company serving Scotland) and Southern Gas Networks (the distribution company serving Southern England).

Baseline

High pressure mains operated by National Grid run north from the east of Bourne to a pressure reducing station in Sleaford. Another branch runs westward from this reducing station past the north of Grantham from Peterborough through St Neot's and onward to Cambridge. Pressure reducing stations are where the pressure steps down to supply the Cadent network.

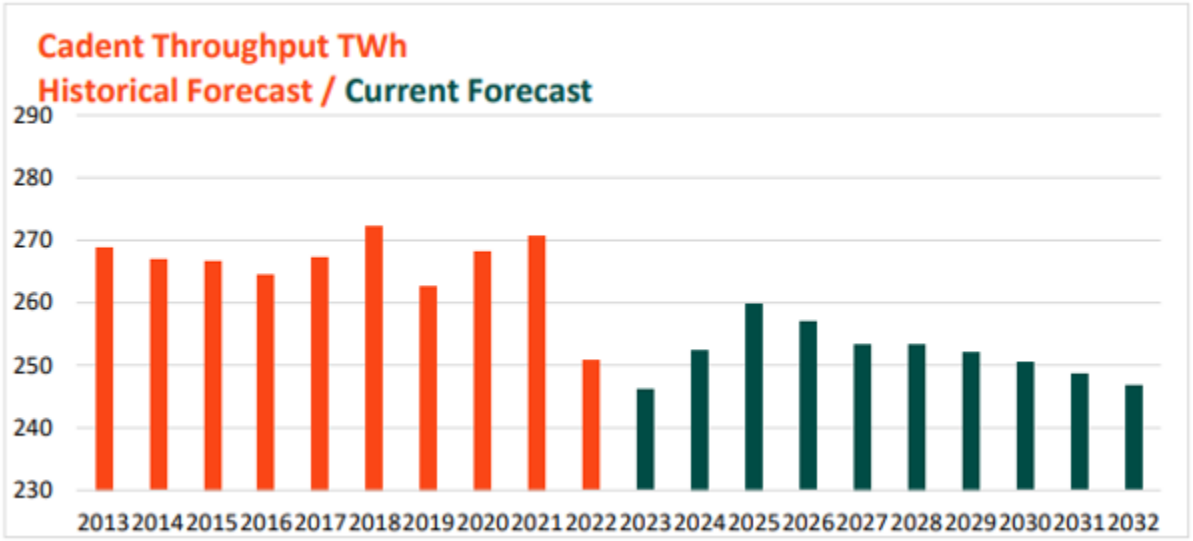
Forward Look

Future Demand

Cadent Gas provided a Long Term Development Plan (LTDP) in October 2023, which states that planning assumptions are based on market observations and stakeholder engagement, working closely with National Grid who typically provide a short term forecast for future demand.

The Cadent Gas LTDP includes predictions regarding future demand. Gas demand is predicted to remain largely flat through to 2032, whereafter there is expected to be a gradual tapering off in demand due to the progressive move to lower carbon energy sources. The demand prediction to 2032 is illustrated in Figure 6.2 below.

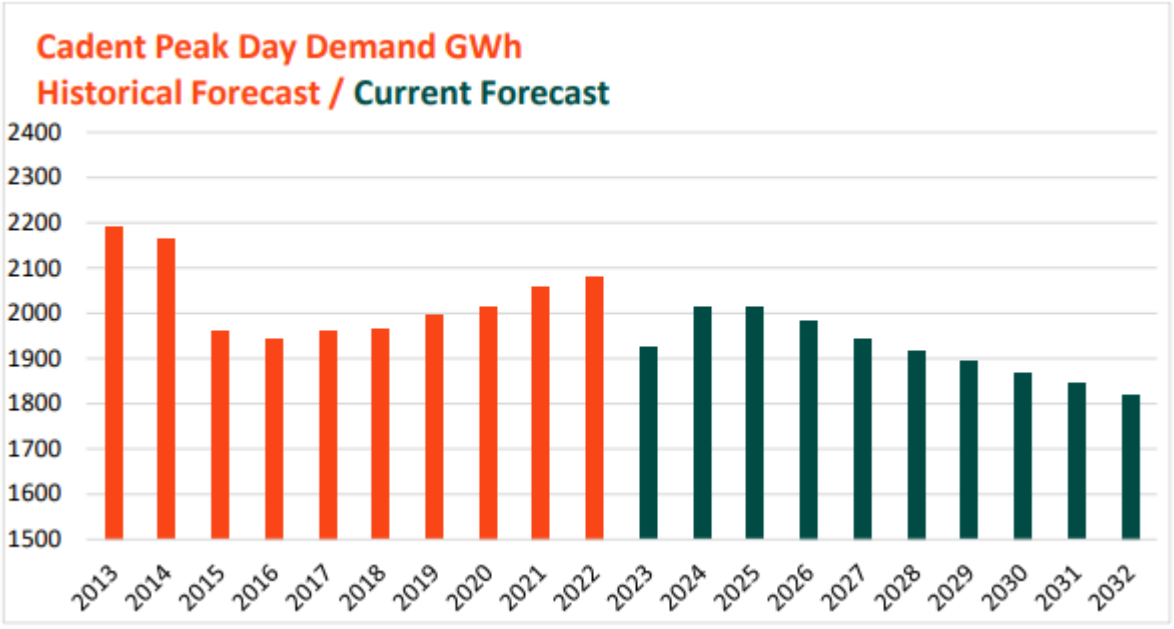
Figure 6.2 Cadent Gas Annual Throughput 10-year Historical vs 10 -year Forecast



Source: Cadent Gas Long Term Development Statement, Oct 2020

The forecast annual peak demand is expected to increase slightly between 2023 and 2025 due to the addition of gas turbine electricity generating stations being added to the network. After 2025, gas demand is expected to decline. This is shown in Figure 6.3 below.

Figure 6.3 Cadent Gas Historical and Forecast Peak Gas Demand



Source: Cadent Gas Long Term Development Statement, Oct 2020

Government Policy and Future Trends

Following the introduction of the Future Homes Standard and Future Building Standard for England & Wales Building Regulations (anticipated in 2025), virtually all new build residential developments are expected to be heated by electrically led heat pumps. Therefore, there will be little or no investment by gas distribution operators in extending their networks to new residential developments.

While the demand for gas is expected to remain flat over the next 10 years, scenarios within National Grid studies predict that gas demand may start to decline after this. This will be in line with a possible change in the energy mix which sees an increased contribution from non-carbon sources such as nuclear, solar and wind. The British Energy Security Strategy (2022) aims to reduce the UK's gas consumption by 40% by 2030 and in meeting net zero by 2050, to use a quarter of the gas that we use now.

It should be noted that the gas industry is playing a significant role in the low carbon economy, with the introduction of renewable gasses such as bio-methane into their networks. Further down the line, hydrogen may also become a significant contributor to zero carbon gasses.

However, despite this focus on developing low and zero carbon gasses and on the research and testing of networks to deliver them, it is not expected that new gas networks to homes will be viable until beyond 2040.

Bio-gasses may be delivered in some local areas where sources of raw materials are readily available to produce them.

Hydrogen as a viable alternative to natural gas is limited by safety concerns, and by the technology to produce it economically. Extracting hydrogen from natural gas produces carbon which has to be captured and stored for the long term. Electrolysis requires more energy to produce it than is provided by the hydrogen itself with current technologies. This can be mitigated by using renewable electricity from wind turbines when there is excess capacity available, for example on very windy nights.

Costs, Funding and Delivery

Despite the anticipated future reduction in gas demand due to the electrification of heating in residential homes built after 2025, Cadent Gas is still required to invest in major projects to ensure safe and high-quality supply to new non-residential development as well as existing developments.

Cadent Gas assesses connections on a reactive basis, therefore assessed available capacity is constantly changing. With regards to funding sources, if a new connection to the system triggers a

requirement for Cadent Gas to reinforce their network, an economic test is performed to calculate the level of developer's contribution, if required at all.

Summary

The assessment of South Kesteven's gas infrastructure can be summarised as follows:

- South Kesteven's gas is supplied by Cadent Gas through their gas infrastructure network.
- The Cadent Gas Long Term Development Plan (LTDP) (October 2023) identifies that demand for gas will reduce from 2025 due to new government legislation imposed as part of the British Energy Security Strategy (2022) which aims to reduce gas consumption by 75% by 2050 in effort to reach the UK carbon net zero target.
- The gas industry is playing a significant role in the low carbon economy with the introduction of biogases and hydrogen.
- Cadent Gas reinforcement their network on a reactive basis following requirements for planned development.

6.3 Potable Water

Introduction

Anglian Water provides water supply and water recycling services to South Kesteven and a large part of the East of England. The East of England is the driest region in the UK, with low rainfall and high evaporation losses. It is classified by the Environment Agency as an area of serious water stress[55]. By 2050, Anglian Water will have 30% less water to supply customers; this is driven by abstraction licence capping, reducing the amount of water that is taken from sensitive environments, resilience to drought and adapting to climate change.

Anglian Water produced a draft Water Resources Management Plan (WRMP) in September 2023[56] that covers the period from 2024 to 2050. This document sets out Anglian Water's proposed strategy to meet customer demand for the next 25 years, as supply diminishes.

To develop forecasts of supply-demand balances, Anglian Water divides its region into 33 geographical areas known as Water Resource Zones (WRZs). These zones share the same raw resources for supply and are interconnected by supply pipes, treatment works and pumping stations. As such, the customers within these zones share the same available 'surplus of supply' of water when it is freely available, but also share the same risk of supply when water is not as freely available during dry periods (i.e. deficit of supply).

This chapter outlines the existing potable water infrastructure, in addition to the current demand and supply in the South Kesteven, and any known planned provisions for the future development of the area.

Baseline

The current per capita consumption across the Anglian Water region is 136 l / h / d (litres per head per day). The supply rate of Anglian Water is approximately 1,157 Ml / d (million litres per day), but this can peak to 1,400 Ml / d when demand is high. The existing supply of water must be managed and future demands met. Anglian Water predict that the average daily demand for potable water will increase across their supply region to 1,217 Ml / day by 2050, with no intervention, due to an increase in population of 891,000. In addition, available water is also forecast to decrease by approximately 30% across the period due to climate change. As such, there are likely to be shortfalls across the Anglian Water region.

Across the region, water supply comes from a variety of sources, with 50% from reservoirs and surface waters and 50% from groundwaters.

Water supplies to South Kesteven, which has a population of approximately 143,000 and covers a total area of 946 km^2, are made up of a combination of groundwater, particularly from the Sandstone and Lincolnshire Limestone Principal Aquifers, and surface water sources from the River Trent.

64South Kesteven is located within the Lincolnshire Central and Lincolnshire Bourne Water Resource Zones (WRZs). A summary of these Zones is provided below.

Lincolnshire Central WRZ[57]:

- 2,953 km^2;
- 85.7 Ml / day household demand;
- 46.5 Ml / day non-household demand;
- Mainly sourced from Lincolnshire Limestone aquifer and the River Trent; and,
- Forecast population growth from 488,000 to 545,000 by 2050.

[55] Environment Agency (2021). *Water stressed areas – final classification 2021.* Available at: Water stressed areas – 2021 classification - GOV.UK (www.gov.uk). (Accessed: 12/03/24).
[56] Anglian Water (2022). *Water Resources Management Plan.* Available at: V3 WRMP24 main report (anglianwater.co.uk) (Accessed: 22/02/2024).
[57] Anglian Water (2024). *Water Resource Zone Summaries: Lincolnshire Central.* Available at: rdwrmp24-wrz-summary-lnc-supporting-document.pdf (anglianwater.co.uk). (Accessed: 06/03/2024).

Lincolnshire Bourne WRZ[58]:

- 1,087 km^2;
- 23.3 Ml / day household demand;
- 15.1 Ml / day non-household demand;
- Mainly sourced from Lincolnshire Limestone aquifer; and,
- Forecasts population growth from 165,000 to 190,000 by 2050.

[58] Anglian Water (2024). *Water Resource Zone Summaries: Lincolnshire Bourne.* Available at: rdwrmp24-wrz-summary-lnb-supporting-document.pdf (anglianwater.co.uk) (Accessed: 06/03/2024).

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By 2025, Lincolnshire Central and Lincolnshire Bourne WRZs are expected to go into a supply-demand deficit. Under Dry Year Annual Averages (DYAA), Lincolnshire Central WRZ is expected to have a deficit of in excess of 122.8 Ml / day and Lincolnshire Bourne WRZ of 25 Ml / day by 2050 without any planned water management measures.

This is predominantly due to a growth in demand coupled with a fall in Water Available for Use (WAFU) - i.e. a requirement to reduce water usage due to the need to restore sustainable abstractions and reductions in output to achieve environmental destinations (reductions in amounts of water taken from sensitive environments). Table 6.3 summarises these output reductions.

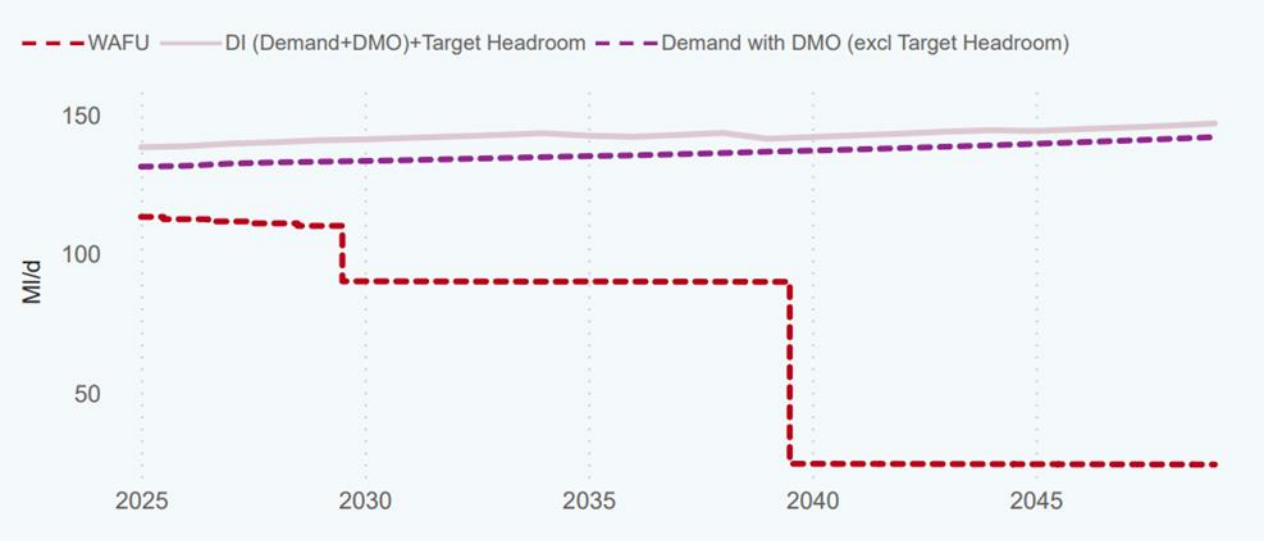
Table 6.3 Reductions in Water Available for Use

Reason for WAFU	Reduction in WAFU (Ml / d)	
	Lincolnshire Central	Lincolnshire Bourne
Restoring sustainable abstraction by 2030	-21.8	-2.6
Environmental destinations	-65.5	-20.7
Climate Change by 2050	-1.8	0.0

Source: Anglian Water

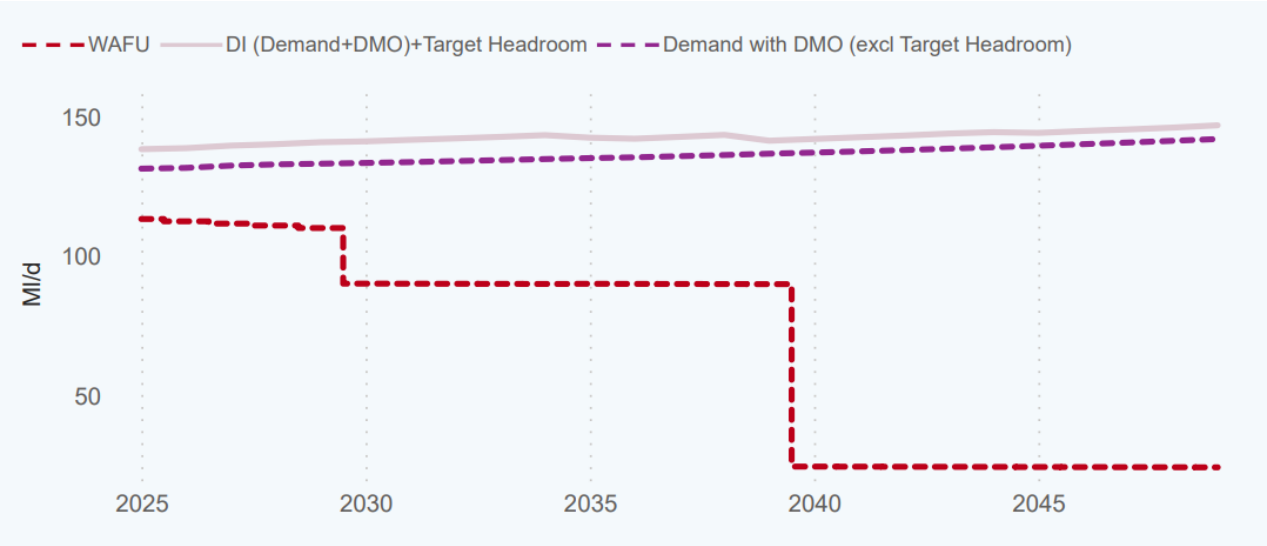
Figure 6.5 and Figure 6.6 below also outline this reduction in WAFU. As shown by the red line on the graphs, the target for reducing abstractions comes before 2030, with reductions to environmental destinations required by 2040.

Figure 6.5 Lincolnshire Central Baseline Supply Demand Balance to 2050 for DYAA conditions



Source: Water Resource Zone Summaries: Lincolnshire Central. DMO – Demand Management Options – options that aim to reduce the amount of water used or lost in the water network.

Figure 6.6 Lincolnshire Bourne Baseline Supply Demand Balance to 2050 for DYAA conditions



Source: Water Resource Zone Summaries: Lincolnshire Bourne. DMO – Demand Management Options – options that aim to reduce the amount of water used or lost in the water network.

Forward Look

Planned and Committed Projects

Demand to 2041

To combat shortfalls and stresses, Anglian Water are proposing a 'Tryptic Approach' as their preferred option across their supply area. This centres primarily on demand management (customer side), alongside construction of two new raw water storage reservoirs, increasing transfers across the networks and utilising other sources of water such as desalination (supply-side).

Table 6.4 outlines the proposed Anglian Water customer-side demand management measures across their supply area.

Table 6.4 Anglian Water: Preferred Options around Demand Management - Customer Side

Measure	Action	Reduction by 2050 (Ml / day)
Smart Metering	• Continue smart metering roll out to theoretical maximum of 95% • Engagement with customers to further educate on smart meter use • Reduce Customer supply pipe and plumbing losses	45
Leakage Reduction	• Replacement and repair of leaking assets, both customer supply and network leaks	72
Water Efficiency	• Campaigns and targeted communications • Retrofit fit smart devices (e.g. smart showers) that can send data to the customer portal. • Mandatory labelling of water usage on appliances	98.6

Source: Anglian Water Demand Management Preferred Plan[59]

Within the Lincolnshire Central WRZ and Lincolnshire Bourne WRZ total smart metering and efficiency measures are forecast to reduce total household and non-household demand by 20.2 Ml / day and 8.1 Ml / day respectively. Leakage reduction measures within Lincolnshire Central WRZ and

[59] Anglian Water (2023). *Demand Management Preferred Plan.* Available at: V3 Demand Management Preferred Plan (anglianwater.co.uk) (Accessed: 08/03/2024).

Lincolnshire Bourne WRZ are forecast to reduce overall leakage by 4.2 Ml / day and 1.7 Ml / day respectively.

However, demand management alone will not be enough to meet future demands and supply-side measures will also be required. The WRZ summaries appended to the WRMP identify potential supply-side measures for Lincolnshire Central and Lincolnshire Bourne WRZs. This includes transfers of treated potable water from other WRZs into the WRZs covering South Kesteven, such as from Ruthamford North WRZ to both Lincolnshire Central and Lincolnshire Bourne WRZs and from Lincolnshire East WRZ to Lincolnshire Central WRZ. Table 6.5 outlines all the preferred side-supply options for Lincolnshire Central and Lincolnshire Bourne.

Table 6.5 Preferred Supply-Side Options for Lincolnshire Central and Lincolnshire Bourne WRZs

Lincolnshire Central WRZ	Lincolnshire Bourne WRZ
Adjustment to existing potable water export	Adjustment to existing potable water export
Adjustment to potable water import	Adjustment to potable water import
Adjust for Licence cap scenario 8	Adjust for Licence cap scenario 8
Ruthamford North WRZ to Lincolnshire Central WRZ potable transfer (20Ml / day)	Ruthamford North WRZ to Lincolnshire Bourne WRZ potable transfer (20Ml / day)
Lincolnshire East WRZ to Lincolnshire Central WRZ potable transfer (29 Ml / day)	
Trent trade	
Hall Water Treatment Works surface water enhancement	

Source: Water Resource Zone Summaries: Lincolnshire Central and Lincolnshire Bourne

The WRMP does not outline the specific sources of raw water that will supply the proposed potable water transfers. However, due to the flexibility of the strategic grid and the potable transfer network, this is likely to come from a range of existing sources within other WRZs with the potential for input from new strategic resources such as the proposed Fens and South Lincolnshire Reservoirs (two new reservoirs that are proposed outside South Kesteven to supply water across the Anglian Water area) as demand increases and existing abstractions are reduced or changed.

In total, net transfers to Lincolnshire Central will total 17.8 Ml / day and Lincolnshire Bourne 24.0 Ml / day.

The combined impact of the proposed demand management measures and supply side options in both Lincolnshire Central and Lincolnshire Bourne WRZs results in a forecast balance of supply and demand by 2050.

Costs, Funding and Delivery

There are high costs associated with both the customer-side (demand management) schemes and the supply-side schemes proposed by Anglian Water for the WRZs supplying South Kesteven. The projects are to be funded by Anglian Water through the Ofwat-regulated Price Review process which sets the price that Anglian Water can charge its customers. The upcoming Price Review period is PR24 which runs from 2025-2030. This review happens every 5 years.

Costs for demand management schemes are not broken down by WRZ and are instead presented Anglian Water-wide. Total costs[60] to 2050 are £4.7bn, as can be seen below in Table 6.6 for customer-side demand management schemes.

Table 6.6 Customer-side Demand Management Scheme Costs for the Anglian Water Region

Demand Management Strategy Action	Cost (£m)
Smart Metering	243

[60] Anglian Water (2023). *Demand Management Preferred Plan.* Available at: V3 Demand Management Preferred Plan (anglianwater.co.uk) (Accessed: 08/03/2024).

Demand Management Strategy Action	Cost (£m)
Water Efficiency (household + non-household)	97
Leakage Reduction (mains and household)	4,370
Total	**4,710**

Source: Anglian Water (2023), Demand Management Preferred Plan

Supply-side costs are published for each WRZ[61]. However, not every preferred option listed within Table 6.4 is identified. Capex costs, where available, are outlined in Table 6.7. For those side-supply schemes that are listed, total costs across the Lincolnshire Central and Lincolnshire Bourne WRZs to 2050 are £262.8m. However, the total cost is likely to be higher as not all options have cost estimates available at the time of writing. It is also noted that these costs cover the wider supply zones which provide water to other Local Authority areas and not just to South Kesteven.

Table 6.7 CAPEX costs

Lincolnshire Central	CAPEX (£k)	Lincolnshire Bourne	Capex (£k)
Ruthamford North to Lincolnshire Central potable transfer (20Ml / day)	147,138.8	Ruthamford North to Lincolnshire Bourne potable transfer (20Ml / day)	17,542.01
Lincolnshire East to Lincolnshire Central potable transfer (29 Ml / day)	68,924.16		
Hall WTW surface water enhancement	29,228.75		
Total	**245,291.71**		**17,542.01**

Source: Anglian Water (2023). Supply-side Option development.

In terms of connection of new development sites to the water supply network, the Water Industry Act (1991) allows for water companies to reclaim the cost of water and sewerage network upgrades from developers as part of the normal requisition process. Connection to the mains through a boundary box / manifold connection are charged at £483.00 per connection with internal meters an additional £235.00 per connection. Other types of connection have different charges which are subject to change by Anglian Water. Therefore, with regard to the new dwellings and non-residential development which the Draft Local Plan proposes to 2041, costs of connections would be paid by the developer.

Summary

Key findings relating to potable water are as follows:

- Anglian Water is the potable water supplier to South Kesteven.
- South Kesteven is supplied by the Lincolnshire Central and Lincolnshire Bourne WRZs which, along with all of Anglian Water's supply area, are classed as under serious water stress by the Environment Agency.
- The main issues affecting the WRZs' supply-demand balance are population growth, restoring sustainable abstraction and reductions to achieve environmental destinations. Climate change is also predicted to result in a reduction in Water for Available Use (WAFU) in Lincolnshire Central WRZ.

[61] Anglian Water (2023). *Supply-side Option Development.* Available at: V3 Supply side option development (anglianwater.co.uk) (Accessed: 08/03/2024).

- Lincolnshire Central WRZ is forecast to have a 122.8 Ml / day deficit, and Lincolnshire Bourne WRZ a 25 Ml / day, deficit by 2050 if no new measures are put in place.
- Anglian Water plans to overcome the predicted deficit in 2050 through a customer-side demand management strategy and a supply-side strategy specifically focussing on transfers from other WRZ's. Key elements of the strategies are as follows:
    - The preferred demand management strategy includes smart metering, leakage reduction and water efficiency measures.
    - Total cost of demand management strategy across the Anglian Water region is £4.7bn.
    - The supply-side strategy focusses on adjusting the import and export of potable water to the WRZs, and upgrading water treatment works and distribution networks, specifically from Ruthamford North and Lincolnshire East WRZs.
    - The known supply-side strategy costs are approximately £262m, noting that these costs relate to wider supply zones which supply South Kesteven and also other Local Authority areas.
- The projects are to be funded by Anglian Water through the Ofwat regulated Price Review process which sets the price that Anglian Water can charge its customers every five years.
- Cost for water connections for new development are paid by developers, as water companies can reclaim the cost of water and sewerage network upgrades from developers. Different types of connections have different charges which are determined by Anglian Water.

6.4 Wastewater

Introduction

Anglian Water are the sewerage undertakers for the South Kesteven. Anglian Water produced a Drainage and Wastewater Management Plan (DWMP) in May 2023[62] which outlines how the wastewater and drainage systems across the Anglian Water region will be maintained, improved and extended over the next 25 years to ensure a robust and resilient network to future pressures. Following stakeholder workshops, Anglian Water's DWMP was developed and presented in the spatial context of Catchment Partnerships areas. South Kesteven falls partly within the Welland Catchment Partnership and Witham Catchment Partnership areas.

Across the Anglian Water region, Anglian Water recycle wastewater from 2.7m households and maintain a network of sewers approximately 76,500 km long. Anglian Water's current wastewater infrastructure includes different types of systems. In terms of sewer networks:

- 25% of the network are surface water sewers which convey rainwater drained off roads, roofs and other hard surfaces and release it into rivers, the sea, the ground or to combined sewers;
- 52% of the network is made up of foul sewers which carry used water from homes and businesses to Water Recycling Centres (WRCs); and,
- 23% of AW's sewer network is combined sewers, which carry both rainwater and used water to the WRCs.

In addition to the sewer network, Anglian Water operate 1,130 WRCs across their area where wastewater is treated and discharged back to the environment. Anglian Water operate their WRCs subject to permits set by the Environment Agency which have conditions which must be met with regards to the flow and quality of discharges of the final treated effluent.

This chapter includes an outline of the existing wastewater infrastructure and any known planned provisions of future infrastructure within the South Kesteven.

[62] Anglian Water (2023). *Our Drainage and Wastewater Management Plan.* Available at: Final DWMP (anglianwater.co.uk) (Accessed: 04/03/2024).

Baseline

67The proposed growth settlements within South Kesteven are served by 13 WRCs, with a household population of approximately 143,000.

The sewer network within South Kesteven is approximately 1,108 km in length and consists of approximately:

- 315 km of surface water sewers (28% of the total network);
- 724 km of foul sewers (66% of the total network) to carry used water; and
- 69 km of combined sewers (6% of the total network).

67Forward Look

It is expected that the amount of surface water that enters the Anglian Water sewer network will increase due to increased rainfall, as a result of climate change, and increased wastewater generated from expected growth. Anglian Water has identified this in their DWMP and recognise that new or improved foul and surface water infrastructure may be required to cater for projected growth and the impacts of climate change.

Demand to 2041

Based on the development sites within the South Kesteven Local Plan, Anglian Water have undertaken an assessment of headroom at 11 of the key WRCs across South Kesteven as part of the South Kesteven Water Cycle Study (2024), which could expect additional growth. Table 6.8 outlines the current headroom at these WRCs.

Table 6.8 Current headroom at WRCs identified by Anglian Water for the South Kesteven Water Cycle Study

WRC	Current headroom (No of households)
Marston (Lincs)	129
Stamford	7236
Bourne	275
Corby Glen	194
Deeping	-104
Ancaster	-2
Castle Bytham	697
Billingborough	55
Colsterworth	388
Thurlby	0
Long Bennington	437

Source: Anglian Water 2024

Most of the WRCs outlined have headroom for some level of future growth, the exceptions being Deeping, Ancaster and Thurlby. Further calculations were undertaken by Anglian Water incorporating the permitted Dry Weather Flows to determine whether current headroom is sufficient for proposed future growth requirements at the WRCs. The results of these calculations are displayed in Table 6.9.

Table 6.9 WRC RAG Assessment after Predicted 2030 Growth

WRC	Predicted Growth to 2030	RAG Assessment	Year of headroom exceedance
Marston (Lincs)	2733		2024
Stamford	1399		2041
Bourne	1117		2026

WRC	Predicted Growth to 2030	RAG Assessment	Year of headroom exceedance
Corby Glen	419		2028
Deeping	418		2023
Ancaster	232		2023
Castle Bytham	162		2041
Billingborough	140		2028
Colsterworth	140		2041
Thurlby	163		2026
Long Bennington	126		2041

	Headroom available for proposed future growth
	Some headroom available for proposed future growth – may require phasing to allow for future planned investment to come forward
	No headroom for the proposed level of future growth, and no immediate plans for future investment

Source: Anglian Water 2024

Anglian Water's projections indicate that headroom is available for the allocated development sites at five of the 11 WRCs identified. A further three have some available headroom for the development sites but are likely to require phasing of development to enable the planned investment to come forward. Approximately 46% of the planned growth from the development sites is to occur where headroom for the growth does not exist. If these sites are to be developed, additional investment into the WRCs highlighted will be required.

Planned and Committed Projects

As part of the DWMP process, water recycling catchments across the Anglian Water network have been risk-assessed to understand the impact of future growth and climate change to 2050.

The assessment undertaken by Anglian Water highlighted the WRC catchments in South Kesteven in Table 6.10 as at risk from future growth and climate change. Anglian Water's Medium Term and Long Term Plans of how these risks will be mitigated are also presented in Table 6.10.

Table 6.10: WRC Catchments Identified "At Risk" in the DWMP

WRC Catchment	Medium Term Plan (2035)	Long Term Plan (2050)
Ancaster	WRC – new permit with increased capacity	Wait and see
Bourne	-	Customer education and water efficiency
Caythorpe	Networks – mixed strategy with main solution of SuDS.	25% surface water removal
Deeping	WRC – Increase Capacity	Customer education
Edenham	WRC – Increase Capacity	Wait and see
Harlaxton	Networks – mixed strategy with main solution of SuDS.	10% surface water removal
Little Bytham	Networks – mixed strategy with main solution of increased sewer capacity	25% surface water removal
Londonthorpe	WRC – transfer between catchments	Wait and see
Marston (Lincs)	WRC – Increase Capacity. Networks - attenuation	10% surface water removal

WRC Catchment	Medium Term Plan (2035)	Long Term Plan (2050)
Stamford	Network – Increased capacity	25% surface water removal

Anglian Water (2023), Our Drainage and Wastewater Management Plan

A variety of measures to reduce the risk of impact to WRC capacity from future growth and climate change are included in the DWMP. These are summarised below:

- Removing surface water from the sewerage system using Sustainable Drainage Systems (SuDS) and traditional strategies;
- Removing unrequired network flows;
- Increasing capacity, particularly at WRCs; and
- Targeted education schemes in tandem with partners to reduce demand for potable water which in turn reduces foul water discharge volumes to the network.

Two WRC highlighted by Anglian Water during liaison regarding the Water Cycle Study as having potential capacity limits within the Local Plan period (Thurlby and Corby Glen) were not identified as at risk in the DWMP and hence no measures are identified for these WRCs in the medium or long term. As such, further investigation is likely to be required at these WRCs which will be considered in the Water Cycle Study supporting the Local Plan Review to 2041.

Costs, Funding and Delivery

At a company level, the DWMP has highlighted that between 2025-2050, £5bn will be invested by Anglian Water in their wastewater infrastructure to mitigate future risks to the wastewater network and recycling centres, including for the impacts of expected growth and climate change.

The exact breakdown of this spending in relation to WRCs and other wastewater network solutions in South Kesteven is not provided in either the DWMP nor the Water Recycling Long Term Plan published prior to the DWMP in 2018[63]. However, as part of the best value plan detailed in the DWMP, Anglian Water has estimated the investment it expects to make in wastewater infrastructure at a Catchment Partnership spatial scale. Wastewater infrastructure in the Welland Catchment Partnership and Witham Catchment Partnership areas is expected to see £99m and £266m in investment to 2050 respectively. Whilst South Kesteven only represents part of the area likely to receive this investment, the values give an indication of the scale of investment in wastewater infrastructure planned by Anglian Water in the district (and neighbouring authorities) over the Local Plan period and beyond.

As growth plans adapt and develop, it is likely that other WRC catchments will require additional finance to support growth. In addition, regular maintenance across the network will be required to ensure that the rest of the network that is not expecting population growth is fit to function and has headroom and network capacity for predicted rainfall increases.

Costs associated with connecting new developments to the network are charged to the developer. Connection costs are subject to the size of the development and service requirements.

Summary

Key findings are as follows:

- Anglian Water are the main sewerage undertakers for South Kesteven.
- There are 12 WRC's across South Kesteven and a sewer network of approximately 1,108 km.
- It is expected that the demand for wastewater services across the South Kesteven will increase due to population growth and climate change leading to more foul and surface water entering the network.
- As part of the Water Cycle Study being undertaken to support the Local Plan, Anglian Water have calculated available headroom at WRCs based on increased demand from growth by 2036 from developments identified in the South Kesteven Local Plan. Of the 11 WRCs identified as receiving wastewater from planned growth, five are likely to have sufficient capacity without

[63] Anglian Water (2018) *Water Recycling Long Term Plan*. Available at: water-recycling-long-term-plan.pdf (anglianwater.co.uk) (Accessed: 04/03/2024).

significant investment, a further three WRCs have headroom currently but require a phased approach to facilitate the planned development alongside planned capacity increases, and three will have insufficient capacity and require further investment.

- Through their statutory DWMP process, Anglian Water risk-assessed the WRCs and their catchments. Anglian Water identified nine WRC catchments within South Kesteven as “At Risk” by 2050 and as part of the best value plan propose solutions to:
    - Remove surface water from the sewerage system using SuDS and traditional strategies;
    - Remove unrequired network flows;
    - Increase capacity, particularly at WRCs; and
    - Introduce targeted education schemes in tandem with partners to reduce demand.
- Across their company area, Anglian Water are investing £5 billion between 2025-2050 to mitigate future risks to the wastewater network from expected growth and climate change. Of this, £99m and £266m respectively is estimated to be invested in wastewater infrastructure solutions within the wider river catchments (Welland and Witham Catchment Partnerships areas) in which South Kesteven is located. This gives an indication of the scale of investment that will be required in South Kesteven and surrounding Local Authority areas.
- Costs associated with connecting new developments to the network are charged to the developer.

6.5 Renewable Energy

Introduction

This section describes the existing and planned renewable and low carbon energy technologies located within South Kesteven, which generate electricity and / or supply heat. It illustrates the relative scale of current renewable energy supply, compared with the total energy demand in the district, and considers the implications of planned growth to 2041. It also provides benchmark costs for renewable technologies and sets out current funding and delivery opportunities.

Data sources and technologies assessed

To inform the analysis within this chapter, data on existing renewable energy technologies was taken from the Regional Renewable Statistics (RRS), which are published by the Department of Business, Energy and Industrial Strategy (BEIS) and updated annually.[64] The dataset reports the number of installations, capacity and annual electricity generation from the following technologies:

- Photovoltaics (PV);
- Onshore wind;
- Offshore wind;
- Hydroelectric;
- Anaerobic digestion;
- Wave / tidal power;
- Sewage gas;
- Landfill gas;
- Municipal solid waste (MSW);
- Animal biomass;
- Plant biomass; and
- Cofiring.

This information was cross-referenced with Renewable Heat Incentive (RHI) deployment statistics which report the total number of installations. The RHI is a financial incentive scheme aimed at increasing uptake of renewable heat technologies, and the dataset records the number of installations that are registered within each Local Authority. The 'Domestic RHI' includes solid biomass boilers, solar thermal technologies, and air, ground or water source heat pumps. The 'Non-Domestic RHI' includes these technologies in addition to biomethane, biogas, Combined Heat and Power (CHP), and deep geothermal technologies. The RHI deployment statistics do not include details of the split of technologies at a Local Authority level.[65]

Data on planned renewable energy technologies was taken from the Renewable Energy Planning Database (REPD), which records the status of all renewable electricity and CHP projects for which a planning application has been submitted, including the dates of permission being granted or refused, and when the project became operational. The database is updated quarterly. Small-scale technologies that do not require planning permission are not included in this dataset.[66]

Limitations

The amount of publicly available information varies depending on the technology in question, and therefore the information within the chapter represents a 'best estimate' rather than a definitive list of every renewable energy installation in the district.

Most of the data relating to renewable energy technologies is based on records of installations that have been registered under an accreditation scheme or similar measure. Technologies that are not supported by such schemes or that are not registered for some other reason are therefore likely to be

[64] https://www.gov.uk/government/statistics/regional-renewable-statistics
[65] https://www.gov.uk/government/collections/renewable-heat-incentive-statistics
[66] https://www.gov.uk/government/publications/renewable-energy-planning-database-monthly-extract

underrepresented in this analysis. This includes renewable heat technologies that are not RHI accredited, and small-scale electricity generating technologies (particularly PV) that would previously have been registered under the Feed-in Tariff incentive scheme, which closed to new registrations in 2019.

Baseline

Table 6.11, below, outlines the estimated number of installations, capacity and annual electricity generation of renewable energy sources in South Kesteven, based on the RRS 2022 dataset.

Table 6.11 Renewable Energy Technologies in South Kesteven - Existing Provision

	Solar PV	Onshore wind	Hydro	Anaerobic digestion	Sewage gas	Landfill gas	Animal biomass	Plant biomass	Total
Number of installations	3,624	13	0	6	0	1	0	3	**3,647**
Capacity installed, MW	72.5	1.1	0	3.8	0	2	0	3.3	**82.7**
Generation, MWh p.a.	78,866	2,290	0	20,953	0	8,647*	0	16,858	**127,614**

** Latest available data for Landfill gas from RRS 2018 dataset*

It can be seen that renewable electricity generation in the district is estimated to be approximately 127 GWh per year. For comparison, electricity demand in South Kesteven was roughly 593 GWh in 2021.[67]

In terms of number of installations, photovoltaics (solar PV) has by far the most ~99%, but collectively they make up only ~62% of the generation in South Kesteven. This suggests that a large percentage of these installations are likely to be domestic-scale roof-mounted arrays rather than large-scale solar arrays.

In March 2023, the RHI documented 26 accredited full applications for a combined installed capacity of 5MW for non-domestic installations since March 2014. 436 accredited domestic installations were also documented within South Kesteven between March 2014 and March 2023. These applications are not specific in terms of certain technologies; however, they include all forms of heat pumps, biomass boilers, combined heat and power (CHP) engines, geothermal energy and biogases.

Forward Look

Planned Projects

There are 14 different planned renewable energy schemes within South Kesteven, visible on the REPD, which have had records last updated or added since 2020. The majority of these planned developments are rooftop solar PV installations (0.15 - 0.68 MW) or large solar farm arrays (30.0 – 49.99 MW), but they also include Battery Energy Storage Systems (BESS) sites (25-26 MW), and a dedicated biomass installation (0.25 MW).

The majority of these schemes have had planning permission granted and are awaiting construction, with the most recent additions in 2024 waiting on planning permission approval.

Other renewables planned, such as heat pump installations, have not been documented in this section as the data set in the RHI does not disaggregate applications by Local Authority.

[67] BEIS, '*Sub-national total final energy consumption'* (data for 2021, published in 2023). Available at: https://www.gov.uk/government/collections/total-final-energy-consumption-at-sub-national-level

Constraints and Gaps in Provision

From a technical and regulatory standpoint there is no minimum or optimal requirement for renewable energy provision in a given area. However, it is useful to compare the renewable energy supply with total energy demand, because increasing the former is crucial for the UK to meet its commitments relating to climate change mitigation, as described below:

- The Climate Change Act legally commits the UK Government to reducing greenhouse gas emissions by 100% (i.e. net zero emissions) by the year 2050, compared with a 1990 baseline[68]; and,
- The Committee on Climate Change report 'Net Zero: The UK's contribution to stopping global warming' (2019) confirms that, in order to meet this goal, it will be necessary to shift towards the use of renewable electricity wherever possible and maximise the use of low carbon heating technologies, such as heat pumps[69]. This will require a radical overhaul of the UK energy system, which must include increasing local provision of renewable energy.

SKDC declared a climate emergency in September 2019 and has committed to reducing its own carbon footprint by at least 30% by 2030. The Council also aspires to achieve a net zero carbon position for the entire district before 2050. The South Kesteven Climate Action Strategy[70] outlines how the Council will respond to the climate emergency and covers both climate mitigation and adaptation. One aim of the Climate Action strategy vision is that by 2030 South Kesteven will have increased renewable energy generation and is more self-sufficient for energy.

As shown above in Table 6.11, renewable electricity generation in the district is estimated to be 127 GWh per year. For comparison, electricity demand in South Kesteven was roughly 593 GWh in 2021[71]. Therefore, delivering 100% local renewable electricity, to meet current demand, would require increasing annual renewable electricity generation by around 466 GWh per year, assuming that no demand reduction measures are implemented. In fact, electricity demand is expected to rise over time, due to increases in the use of electric vehicles, heat pumps, IT equipment and other electronic appliances as well as additional development. In this sense, there is a major gap in renewable energy provision – and there is a risk of placing additional pressure on existing grid infrastructure.

From a technical standpoint, the deployment of additional renewable electricity technologies in future will depend on constraints in electricity grid infrastructure, which are discussed in Section 6.1. Similarly, any increase in the use of low carbon gas (e.g. hydrogen gas or biogas) will be linked with constraints in the gas grid, discussed in Section 6.2.

In general, the following measures will be necessary to mitigate potential future impacts on existing infrastructure:

- Reducing demand for electricity and heat by implementing energy efficiency measures (e.g., insulation, draughtproofing, high-performance glazing) in new and existing buildings, promoting sustainable modes of travel such as walking, cycling and use of public transport, and reducing journey numbers;
- Delivering energy efficiently; for instance, by using highly efficient technologies such as heat pumps and recovering waste heat from industrial or other processes;
- Use of storage systems to reduce peak demands on the electricity grid; and
- Other technological and non-technological demand management measures such as smart meters, behaviour change initiatives, and optimising energy use via vehicle-to-grid charging infrastructure.

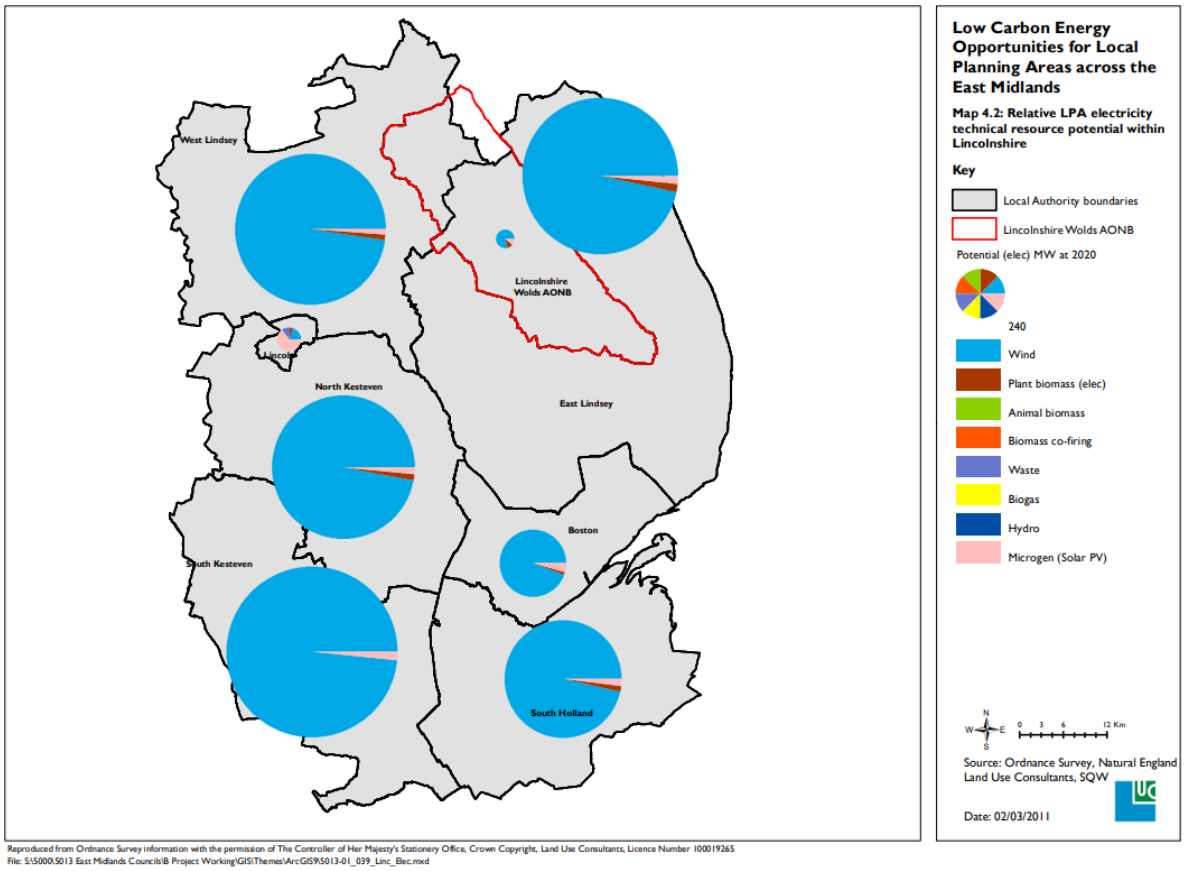
Potential future renewable energy sources

There are a range of different potential renewable energy sources in South Kesteven that could be capitalised on in the future to increase the green energy supply in the district. The main sources of renewable energy in South Kesteven are currently solar PV, anaerobic digestion and plant biomass

[68] The original (2008) target of 80% was amended through subsequent legislation in 2019. *See 'The Climate Change Act 2008 (2050 Target Amendment) Order 2019'*: http://www.legislation.gov.uk/uksi/2019/1056/contents/made
[69] Available at: https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/
[70] Available at: https://www.southkesteven.gov.uk/sites/default/files/2023-10/Climate_Action_Strategy.pdf
[71] BEIS, '*Sub-national total final energy consumption'* (data for 2021, published in 2023). Available at: https://www.gov.uk/government/collections/total-final-energy-consumption-at-sub-national-level

(as set out in the baseline section above). Renewable potential was considered within the Low Carbon Energy Opportunities and Heat Mapping for Local Planning Areas Across the East Midlands: Final Report[72]. Figure 6.8 below illustrates the opportunities for renewable energy of multiple Local Authority areas which were identified within that report. It shows the largest potential sources to be within wind and solar PV. It should be noted however that this study was undertaken over 10 years ago.

Figure 6.8 Low Carbon Energy Opportunities Across East Midlands



Source: East Midlands Councils, 2011

Wind Energy

The Greater Lincolnshire Energy Options Analysis states that "The Greater Lincolnshire Region provides good conditions for locating onshore turbines and wind farms with large areas of flat open land and proximity to the coast. Average wind speed in the region ranges from 8-10 knots inland to 10-15 knots in coastal regions."

The 2011 East Midlands Councils Low carbon Energy Opportunities Report shows that the greatest renewable energy potential for South Kesteven lies within onshore wind, identifying a potential capacity of 1803 MW, 41 MW and 834 MW for large, medium and small wind respectively from the technical resource assessment. It is recognised that there are several conservation areas and the Lincolnshire Wolds Area of Outstanding Natural Beauty (AONB) within Lincolnshire County, which could constrain the area for potential wind energy sites. However there is still considerable potential for future development in appropriate locations.

Rooftop Solar

As noted previously, there are already a large number of small-scale domestic rooftop solar PV installations in South Kesteven (as suggested by the number of installations compared to the generation figures in Table 6.11). There are still many other sites where solar PV could be installed with minimal disruption, including public hospitals, post offices and council buildings. Carparks could also have good generating potential, if solar PV canopies were to be installed, as they have little to no

[72] East Midlands Council (2011) *Low Carbon Energy Opportunities and Heat Mapping for Local Planning Areas Across the East Midlands: Final Report.* Available at: https://www.emcouncils.gov.uk/write/Emids-low-carbon-energy-opportunities-Final-Report-07-2011-update.pdf

overshading risks. Table 6.12 sets out some recent applications for Solar PV rooftop installations detailed in the Energy Options Analysis report for Greater Lincolnshire.

Table 6.12 Recent Applications for Solar PV Rooftop Installations in South Kesteven

Name	Location	Type of Generation	Generation Start Date	Generation Capacity (MV)	Status
Mid UK Recycling, Caythorpe Heath Lane – Solar PV panels	Mid UK recycling limited, Caythorpe Heath Lane, Caythorpe, Grantham	Solar	N / A	0.97	Prior Approval
Morrison – Roof mounted solar panels	W Morrison Supermarkets Ltd, Uffington Road, Stamford	Solar	N / A	0.68	Granted June 2022
BGB Engineering Limited, Solar Panels Scheme	357 Dysart Road, Grantham	Solar	N / A	0.21	Granted July 2022
Openfield, Colsterworth – Solar PV System	Openfield Honey Pot Lane, Colsterworth, Grantham	Solar	N / A	0.38	Granted Aug 2022
Cherryholt Road – Solar Panels	Cherryholt House, Cherryholt Road	Solar	N / A	0.17	Granted Aug 2022
New Earth Solutions West, High Dike - Solar Panels & Battery Storage	New Earth Solutions (West) Ltd, Copper Hill Industrial Estate, High Dike, Wilsford	Solar	N / A	4.80	Granted Jan 2023

Source: Energy Options Analysis Report for Greater Lincolnshire (2023)

Large Solar Arrays

The Greater Lincolnshire Energy Options Analysis states that solar PV is a key renewable energy source for the region noting that there are 79 solar PV developments either in operation, under construction or which have received planning permission to proceed with a generation capacity of approximately 840MW in Greater Lincolnshire. Whilst large solar arrays provide a substantial capacity uplift for an area, as well as maximising efficiency with design, they are often built on greenfield sites, which could have adverse effects on the local biome and agricultural land value. Table 6.13 sets out recent applications for solar PV installations in South Kesteven detailed in the Energy Options Analysis report for Greater Lincolnshire.

Table 6.13 Recent Applications for Large Solar PV Arrays in South Kesteven

Name	Location	Type of Generation	Generation Start Date	Generation Capacity (MV)	Status
Mallard Press Solar Farm	East Coast Mainline near Essentine, South Kesteven	Solar	2026	350.00	Currently awaiting a decision from the Secretary of State for Energy Security and Net Zero[73]

[73] Mallard Pass Solar Project - Project information (planninginspectorate.gov.uk)

Bypass Solar Farm	S / O The A1, Foston By-Pass, Foston, Grantham	Solar	N / A	50.00	Granted Mar 2021
Gonerby Moor, Great Gonerby – Solar Farm	Gonerby Moor, Great Gonerby	Solar	N / A	50.00	Granted Jan 2024

Source: Energy Options Analysis Report for Greater Lincolnshire (2023)

Costs, Funding and Delivery

Costs of Installation

It is difficult to directly assess the cost of installing various renewable schemes, as each scheme will have a set of unique challenges to overcome. The best estimate can be found is the BEIS Electricity Generation Costs (2023), which is an update of the BEIS Electricity Generation Costs (2020)[74]. It has been found[75] that wind and solar installations are 30% – 50% cheaper than previously reported, showing a positive trend in declining costs per kW installed. Adding to this, the levelised cost per MWh for solar energy is 50% cheaper than gas-fired electricity, showing that renewables are a more cost-effective route for energy generation.

Appendix G shows a small sample of the BEIS 2023 dataset including wind and solar generation technologies, which could be installed in South Kesteven. The 2023 data shows that the average load factor, defined as the expected annual generation as a percentage of theoretical maximum generation, has increased from 34% to 48% for onshore wind from the 2020 data, while that of large-scale solar PV remained the constant at 11%. The costs associated with construction, as well as operation and maintenance (O&M) of onshore wind, are also higher in the 2023 dataset. The opposite is shown in the case of large-scale solar PV, where both construction and O&M costs have decreased, with further cost reductions expected for commissioning years between 2030 and 2040. This may be affected by the choice of a larger reference plant size of 20 MW, as opposed to 16 MW in the 2020 dataset. Connection and use of system charges for both onshore wind and solar PV have decreased significantly.

Cost data for heat network delivery is less up-to-date, with the most recent data collected in 2013 / 2014 by AECOM for a report entitled: Assessment of the Costs, Performance, and Characteristics of UK Heat Networks[76]. Table 6.14 shows the report's summary of costs for bulk schemes (which sell heat to multiple customers in bulk), and for non-bulk schemes (which sell heat to individual customers). The overall cost (£ / MWh) is substantially lower for bulk schemes than for non-bulk schemes.

Table 6.14 Cost Comparison Between Bulk and Non-Bulk District Heating Network Schemes (2015 data)[77]

	Bulk Scheme	Non-Bulk Scheme
Overall Cost, £ / MWh	612.7	3,095.4

AECOM 2015

Funding Streams[78]

There are a number of small- and large-scale funding streams available to support renewable energy schemes in South Kesteven.

[74] BEIS Electricity Generation Costs 2020 Report – *data has been collected in 2018.*
[75] According to one source: CarbonBrief.Org
[76] Assessment of the Costs, Performance, and Characteristics of UK Heat Networks – AECOM 2015
[77] Bulk schemes are ones which sell heat to multiple customers in bulk, whilst non-bulk sell heat to individual customers.
[78] A useful source to consistently be checked for updated funding programmes is the Grant Finder website: https://www.grantfinder.co.uk/funding-highlights/funds/energy/

Large scale electricity generation

- Green Gas Support Scheme (GGSS) – Provides tariff support for plants producing biomethane via anaerobic digestion which is injected into the gas grid. Tariffs are calculated to compensate plants for the building of new infrastructure to produce biomethane and ongoing operation costs. The GGSS opened in November 2021 and is accepting applications for 4 years. Registered participants will receive tariff payments for 15 years.
- Net Zero Hydrogen Fund (NZHF) – A significant initiative by the UK government aimed at advancing the development and deployment of low carbon hydrogen production projects. The NZHF is worth up to £240m and the aim is to support the commercial deployment of new low carbon hydrogen production projects during the 2020s, ensuring the UK has a diverse and secure decarbonised energy system fit for meeting its ambition of 5GW low carbon hydrogen production by 2030, and commitment to reach net zero by 2050.

Heat networks

- Green Heat Network Fund (GHNF) – Formally HNIP (Heat Networks Investment Programme), this is a capital grant fund established by the UK government to support the development and expansion of low and zero-carbon heat networks in England. It was launched in 2022 and organizations can apply for funding that can be drawn down in financial years 2023-2024 through 2026-2027.

Small scale renewables

- Heat Pump Ready Programme – The Programme is part of the Net Zero Innovation Portfolio which allocates up to £60m for innovation. The Heat Pump Ready Programme supports the development of innovative solutions across the heat pump sector. Split into three streams, it focuses on solutions for deployment of heat pumps; developing tools; and technology and supporting education and knowledge sharing.
- Clean Heat Grant (CHG) – Formally the RHI (Renewable Heat Incentive), the CHG is being directed towards households and small non–domestic buildings across the UK to aid upfront installation costs of heat pumps which provide space heating and hot water. The CHG is simpler than the RHI, which is a heat demand-based system and encourages a fabric-first approach with a minimum insulation requirement. The Government-run scheme will provide grants of up to £4,000 towards heat pump installations, covering ground source heat pumps, air source heat pumps, and water source heat pumps.
- Community Energy Fund – A £10m grant fund designed to empower communities across England to develop local renewable energy projects that benefit the local area. Communities can apply for projects such as solar panels, rural heat networks and car clubs.
- Private sector funding programmes – Banks and other private sector companies are offering grants and loans for SMEs to transition into a low carbon economy.

Delivery of renewables

There are many stakeholders, including the Council itself, who could potentially be involved in delivering renewable schemes in the district, however they would be engaged at different scales and in different sectors. Table 6.15 below outlines the delivery partners for these various scales and sectors. This table is not exhaustive and other stakeholders may be known by the Council who have previously expressed interest in delivering a scheme.

Table 6.15 Potential Delivery Stakeholders for Renewable Energy Schemes

	Small Scale	Medium Scale	Large Scale
Public Sector	Council Specialist Contractors Heat Pump Ready Programme	Council Specialist Contractors Consultancies Public Institutions	District Heating Network Operators Consultancies Energy Companies Governmental Agencies

	Small Scale	Medium Scale	Large Scale
Private Sector	Specialist Contractors Private individuals Housing Developers Heat Pump Ready Programme	Specialist Contractors Consultancies Housing Developers	District Heating Network Operators Consultancies Energy Companies

These delivery stakeholders could be responsible for all manner of renewable energy schemes; from heat network rollouts to small-scale rooftop PV installations. Most stakeholders (excluding district heating network operators) have been known to engage in multiple renewable technology schemes.

Summary

Key findings are as follows:

- Based on publicly available information, there are approximately 3,600 renewable energy installations located in South Kesteven, including a large number of small-scale solar PV arrays, 13 onshore wind farms, and various other renewable heat technologies such as anaerobic digestion and biomass technologies. Renewable electricity generation in the district is estimated to be 127 GWh per year. For comparison, electricity demand in South Kesteven was roughly 593 GWh in 2021.
- In order to meet the UK's climate change commitments and reach net zero emissions by 2050 as well as the Council's commitment to achieve a net zero carbon position for the entire district before 2050, it will be necessary to significantly increase the level of local renewable energy supply. Studies have identified the potential to increase the number of rooftop solar PV installations, as well as to investigate heat networks and large solar arrays. It has also been identified that South Kesteven and the wider region has good conditions for generating energy from wind, and the recent publication of 'Planning for Onshore Wind'[79] suggests a relaxation of national planning policy which has in recent years restricted onshore wind farms. A more detailed assessment of renewable energy potential could be undertaken for the district to support the Local Plan. The Council and its partners will need to enable and encourage delivery while also managing potential constraints such as spatial requirements and pressure on local grid infrastructure.
- A brief review of information on costs, funding streams and delivery partners for potential renewables opportunities indicates lowering costs for the deployment of renewables as well as multiple funding routes and a maturing sector.

[79] House of Commons (2024). Planning for onshore wind. Available at: https://researchbriefings.files.parliament.uk/documents/SN04370/SN04370.pdf

6.6 Digital Infrastructure

Introduction

This chapter describes the provision of digital infrastructure within South Kesteven. It assesses existing broadband provision, provides an overview of future planned digital infrastructure, and identifies constraints and gaps to provision.

Broadband speeds have been identified using nationally recognised categories and units of measurement as defined by Ofcom:

- Gigabit – More than 1Gbps;
- Ultrafast – More than 300Mbps but less than 1Gbps;
- Superfast – More than 30Mbps but less than 300Mbps; and
- Decent – More than 10Mbps but less than 30Mbps

For the purpose of assessing broadband service levels, Superfast will be used as the benchmark. This benchmark aligns with the achieved 2020 government objectives for the provision of Superfast broadband to 95% of UK premises. This level of service has been described as suitable for current household needs.

In addition to the benchmark service level described in section 0, Gigabit capabilities for South Kesteven will also be assessed to indicate performance / progress towards the more recent government target of providing up to 85% of UK premises with Gigabit capabilities by 2025.

The following acronyms have been used:

- Mbps – Megabit per second;
- Gbps – Gigabit per second, i.e. 1,000 Mbps;
- FTTC – Fibre to the Cabinet is a connectivity technology that is based on a combination of fibre optic cable and copper cable. The fibre optic cable is in place from the local telephone exchange to a distribution point (commonly called a roadside cabinet), hence the name Fibre to the Cabinet (FTTC). From this distribution point, a standard telephone line based on copper is then used to deliver the broadband connectivity; and
- FTTP – Fibre to the Premises is the installation of optical fibre from the carrier directly into the premises. This is also known as “fibre to the home” (FTTH).

Baseline

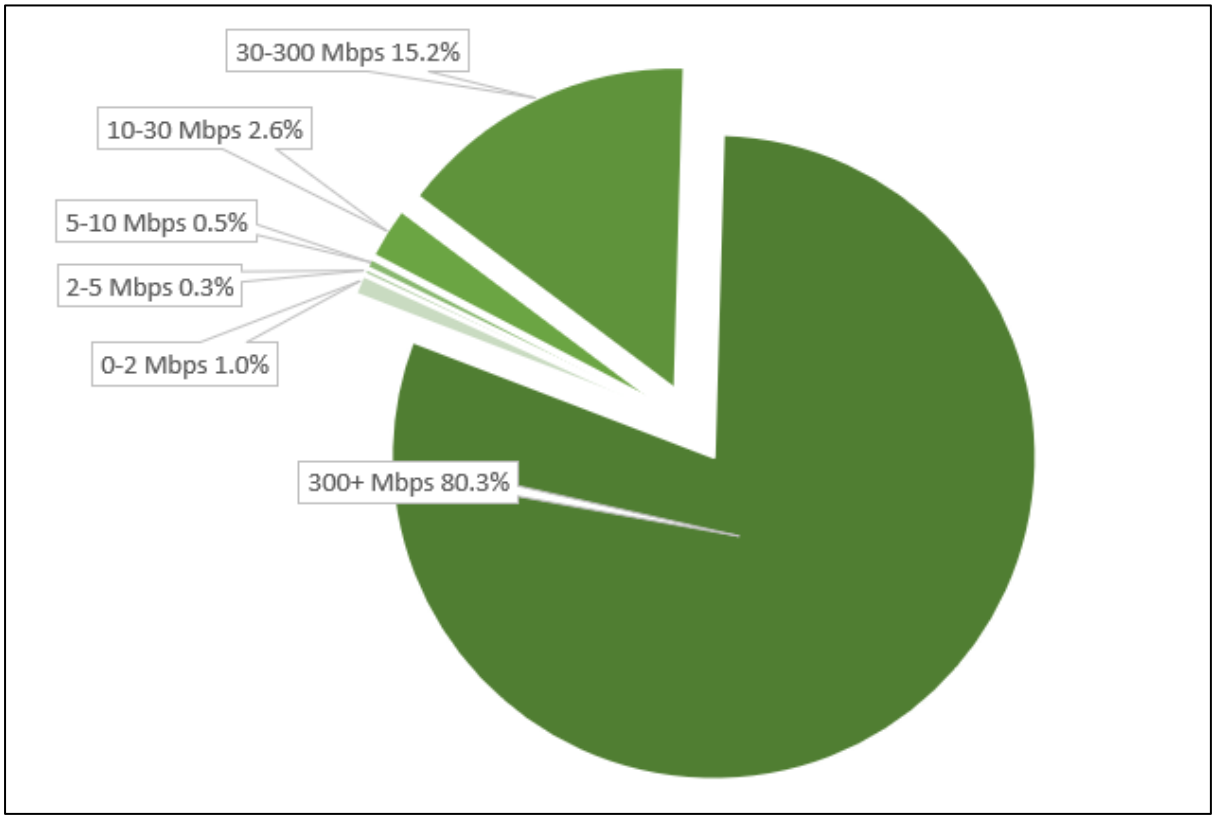
South Kesteven has two core broadband infrastructure suppliers, Openreach and Virgin Media. These two providers supply and own the majority of the physical infrastructure. Virgin Media offers broadband services directly to customers, whereas Openreach provides services wholesale to other sub-suppliers such as BT, Talk-Talk, Sky, Vodafone and others.

There are also options from other providers within the area, however these providers tend to expand their network on a per-project basis. This is to control capital expenduture on infrastructure until there is a suitable potential customer base. One notable service provider is Hyperoptic. They often use lease lines from the Openreach network to provide a direct line to a development. Hyperoptic then install their switching equipment into a rack within the development to distribute services to plots. As lease lines provide a more stable broadband, Hyperoptic are able to provide 1Gbps service that suffers very little speed drop from peak network use in comparison to other suppliers.

On some developments Hyperoptic, and other telecom service sroviders, install their own optical fibre cables in Openreach ducts, installed under a Physical Infrastructure Access (PIA) agreement. This provides a cost effective method of deploying broadband services without the need to deploy new costly ducts and infrastructure.

Figure 6.9 below provides an overview of the broadband speeds in the district. The information is based on a dataset of 55,463 residential and commercial properties[80].

Figure 6.9 Maximum Broadband Availability (% of properties in South Kesteven)



Source: Ofcom 2023

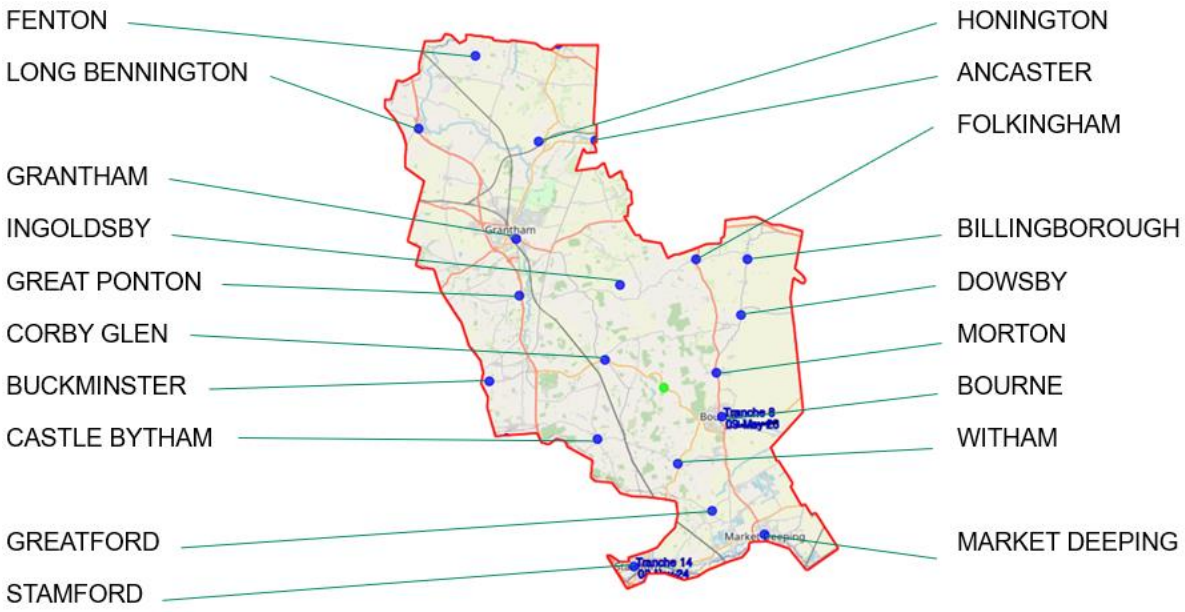
Figure 6.9 shows that 95.5% of the district has access to 30 Mbps (Superfast) services or better. This exceeds the government 2020 achieved UK target of 95%. It should also be noted that while currently in the UK 27% of properties have access to 1 Gbps[81], South Kesteven has reached 77.89%. This shows that South Kesteven is above average against the Government 2025 target and is also a good indicator that higher levels of broadband service are likely to be available for future developments.

For clarification, the data in Figure 6.9 is a representation of the infrastructure availability and not the speeds currently being provided to all users. For example, 77.89% of properties have infrastructure that is capable of 1 Gbps service, however not all of these homes have subscribed to a 1 Gbps service.

Telephone exchanges are locations where the telephone / broadband services distribute at a local level to homes and businesses in the area. Figure 6.10 and Table 6.16 below provide a summary overview of exchanges within the district.

[80] Ofcom dataset, 20/09/2023, file: fixed_pcon_coverage_r01.csv
[81] House of Commons Library, 30 April 2021, Gigabit Broadband Government targets and policy

Figure 6.10 Telephone Network Exchanges



Source: Location data, Thinkbroadband.com

Table 6.16 Telephone Exchange Service Data

Exchange	Exchange ID	Postcode	Virgin media	BT Wholesale	FTTC availability	FTTP availability
FENTON	EMFENTO	NG23 5DE	YES	YES	YES	YES
LONG BENNINGTON	EMLBENN	NG23 5DN	NO	YES	YES	YES
HONINGTON	EMHNGTN	NG32 2PG	NO	YES	YES	YES
GRANTHAM	EMGRHAM	NG31 6JR	YES	YES	YES	YES
GREAT PONTON	EMGPONT	NG33 5DG	NO	YES	YES	YES
INGOLDSBY	EMINGOL	NG33 4BD	NO	YES	YES	YES
CORBY GLEN	EMCRGLN	NG33 4NP	NO	YES	YES	YES
BUCKMINSTER	EMBUCKM	NG33 5RY	NO	YES	YES	YES
CASTLE BYTHAM	EMCABYT	NG33 4SB	NO	YES	YES	YES
ANCASTER	EMANCAS	NG32 3PS	NO	YES	YES	YES
FOLKINGHAM	EMFOLKI	NG34 0SB	NO	YES	YES	YES
BILLINGBOROUGH	EMBILLI	NG34 0LW	NO	YES	YES	YES
DOWSBY	EMDOWSB	PE10 0TL	NO	YES	YES	YES
MORTON	EMMRTON	PE10 0NR	NO	YES	YES	YES

BOURNE	EMBOURN	PE10 9ET	NO	YES	YES	YES
WITHAM	EMWIOTH	PE10 0JH	NO	YES	YES	YES
GREATFORD	EMGRTFO	PE9 4PU	NO	YES	YES	YES
MARKET DEEPING	EMMKDEE	PE6 8AN	NO	YES	YES	YES
STAMFORD	EMSTMFD	PE9 2PP	NO	YES	YES	YES

Source: thinkbroadband.com & Telephone-exchange database

Figure 6.10 and supporting data in Table 6.16 show that Openreach has services available in all of the exchanges in South Kesteven. It also shows that FTTC services are available at all exchanges, which indicates that minimal modification to the existing infrastructure will be required to provide 30Mbps+ services to new developments.

Current supply gaps

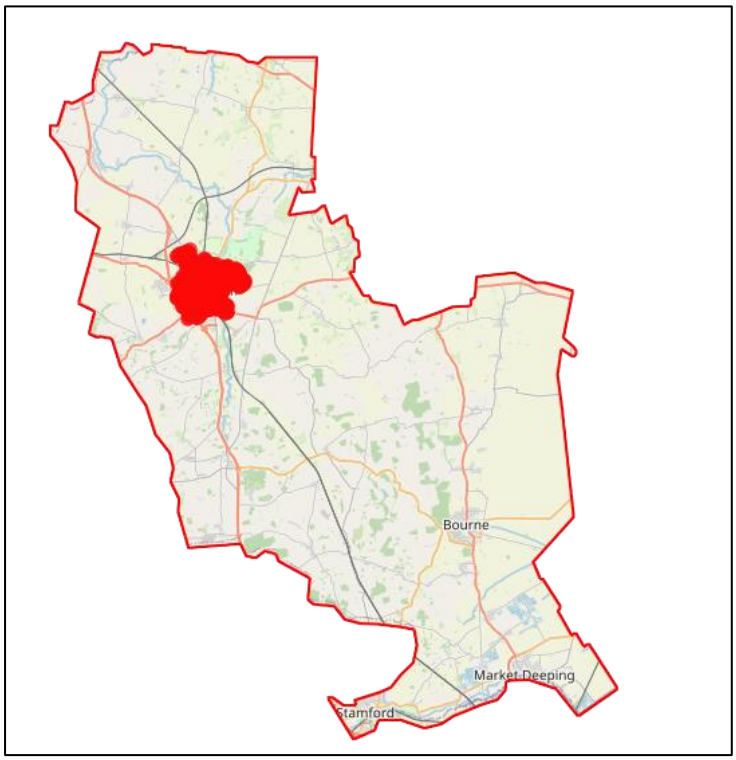
In general, no gaps in supply have been highlighted during the data analysis. This can be attributed to Openreach's self-funded network upgrades and extensions. Typically gaps in service appear where a new building / development is in an area not covered by existing broadband infrastructure. However when the unconnected building is registered, Openreach would extend coverage to the area, thus closing the gap.

The data in Table 6.16 shows that Virgin Media services are available in two of the 19 exchanges in the district. This indicates that Virgin Media services are limited to the local area of these exchanges. As a method to validate this conclusion, exchange postcodes where Virgin Media were not active were entered into the Service Checker function on the Virgin Media website[82]. The results from this exercise confirmed that Virgin Media services were not available at these locations.

In support of the findings from the postcode check above, data from Thinkbroadband.com maps[83] indicates that Virgin Media coverage is isolated largely in the Grantham town centre and surrounding areas.

[82] Virgin Media postcode checker: https://www.virginmedia.com/broadband/postcode-checker
[83] Thinkbroadband.com provides graphical data cellular and fixed broadband services. Data is collected via the use of Speed test apps in conjunction with data supplied from service providers

Figure 6.11 Virgin Media Service Area



Source: Thinkbroadband.com

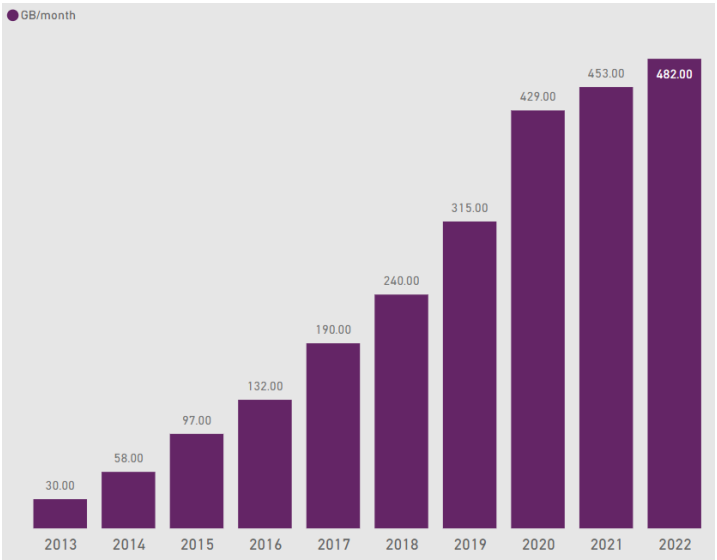
Forward Look

Planned and Committed Projects

Demand to 2041

Demand for increased bandwidth will continue to grow to 2041 as more users use broadband for data-heavy applications such as streaming and remote working. Latest studies show that in 2022 the average data use per broadband connection was 482GB, up from 453GB in 2021 and 429GB in 2020[84].

Figure 6.12 Average Monthly Data Per Connection



Source: Ofcom Communications Report 2023

[84] Ofcom, communications report 2023

Analysis undertaken by Strategy Analytics shows that long-term demand rises are expected towards 2030 and beyond, with indications that the historical annual increases of ~30% per annum will reduce to ~6% in 2030[85]. The basis of this hypothesis is that historically large annual increases were mainly driven by changes in technology, such as the shift from broadcast TV to streaming on-demand services. As these technologies become even more established over time, the incremental increases required for the provision of these services will also be smaller.

The market research hypothesis referenced above also indicated that a broadband speed of 300Mbps would be suitable to meet demand through to 2030. As the UK is moving to full fibre broadband and as 1Gbps services are already being deployed by suppliers, combined with the government 2025 Gigabit targets, the broadband infrastructure is expected to meet demand growth in South Kesteven through to 2041.

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Infrastructure Projects to support growth`

The infrastructure projects described below will provide a solid base for expanding full fibre connectivity to new residential and commercial properties. This, combined with supplier policies to provide only full fibre connectivity to all new connections, will be able to support the growth proposed in South Kesteven to 2041

The most significant project to support planned growth to 2041 is the Openreach “Full Fibre” investment project. This has the objective of providing 20 million premises throughout the UK with Ultrafast and Gigabit capable infrastructure by the late 2020s. This investment by Openreach includes the “Fibre First” programme which means new developments will be planned with a full fibre solution.

All of the telephone exchanges data suggests that this rollout has been completed in South Kesteven.

Similar to Openreach, Virgin Media announced on the 7th of December 2020 that they have completed “Project Lightning” which has upgraded their network to offer Gigabit broadband[86]. It is not clear if this upgrade included a physical expansion of the network, however this upgrade suggests that the areas highlighted in Figure 6.11 will have Gigabit capable service availability for new developments.

Constraints to growth

The most common constraint experienced by suppliers relates to civil engineering, and specifically the pit and duct system in which they install cabling. Capacity and duct damage / blockages can cause delays to installations and have a cost impact in terms of repairs.

Physical Infrastructure Access (PIA), introduced by Ofcom to create competition, allows Telecoms Service Providers to install their own optical fibre cabling within the existing Openreach duct infrastructure, but deployment is still reliant on the available space and integrity of the ducts and chambers.

Costs, Funding and Delivery

Virgin Media have committed £10bn over the next 5 years to invest into their network. This funding is a combination of private investment and self-funding.

Openreach have committed £12bn to make additional upgrades to their network as well as extending it to rural areas. This funding is a combination of private investment and self-funding.

While most suppliers are self-funding upgrades to their network, they also have mechanisms to assist with installation costs to developers. Typically, with developments with 20 or more plots, suppliers will “Free-issue” the cabling and equipment to the developer, who will then install these into the building. Once construction is complete the supplier will make the final connections to commission the broadband. The supplier will offer the developer a rebate (typically based on a per plot fixed amount) to contribute towards the cost of installation. For developments with less than 20 plots, suppliers will charge for the cost of installation.

[85] Strategy Analytics “Is fixed Broadband Traffic Growth Slowing Down” Report 14th May 2021
[86] Virgin Media news article https://news.virginmediao2.co.uk/virgin-media-o2-completes-gigabit-upgrade-in-boost-for-britains-broadband-target/

It is essential that suppliers are made aware of a development broadband requirement as soon as possible to allow suitable time for the supplier to undertake any necessary due-diligence and conduct any works as required. This is done via the New Site registration portals. The developer can register a new development online with Hyperoptic, Virgin Media and Openreach. This registration will start the process for supplier engagement.

The Department for Digital, Culture, Media and Sport (DCMS) have allocated £5m to support the growth of the Gigabit broadband network. This is provided through subsidies towards the upgrade costs to Gigabit services through "Gigabit broadband vouchers"[87].

Gigabit vouchers are small grants to individual residents and small businesses that support the installation costs for Gigabit broadband. They provide the ability for communities to group vouchers together and work collectively with suppliers to bring Gigabit services to a wider area.

Summary

Key findings are as follows:

- Existing infrastructure in South Kesteven is providing superfast broadband to the vast majority of homes. The majority of the coverage in the area is provided by Openreach.
- Openreach is the primary provider in the area. This provides residents and businesses with a wide choice of broadband service providers such as BT, Sky or talk-talk. Virgin Media has coverage which appears to be focused in Grantham town centre and surrounding local areas only. A wider coverage from Virgin Media would provide better options for customers, particularly those with digital TVs.
- Given the combination of government funding and telecom supplier self-funding for infrastructure modifications, new projects and developments in South Kesteven will require little funding to procure services. There are no indications that there would be difficulties in the delivery of services to new development. The existing network has already been upgraded and a good geographical distribution of telephone exchanges keep risks for delivery low.
- South Kesteven has a suitable fibre network to support both future growth and emerging technologies over the Local Plan period. The fibre network has capabilities to reach much greater broadband speeds than is currently offered to the general public.

[87] DDCM project Gigabit Phase One Delivery Plan

6.7 Flood Defences

Introduction

Flood defences are structures which reduce the risk of flooding to land. They can include raised banks, raised land, embankments, flood walls, or flood attenuation areas. They can also include features which were designed and built for an unrelated purpose but which provide a flood defence function and hence are designated as flood risk management assets under the Flood and Water Management Act 2010.

Flood defence ownership and maintenance is varied. In many cases the owners and maintainers are private riparian landowners. In these instances, the Environment Agency or other Risk Management Authority (RMA) under the Flood and Water Management Act may have permissive powers for works to flood defence assets (or may directly maintain them) in order to provide effective flood risk management. In some cases, assets may be owned and maintained directly by the RMA such as the Environment Agency, or Internal Drainage Boards (IDBs).

In cases where structures have been designed specifically as a flood defence, they will be categorised according to the Standard of Protection (SoP) they provide. This is based on the return period of the flood event they provide protection against (e.g. 100-year flood event). The effective SoP may decrease due to deterioration in condition or increases in flood risk due to climate change. Therefore, formal structural defences are also given a rating based on a grading system for their condition. The grading system used by the Environment Agency has 5 grades from 'Very good' to 'Very poor'.

This chapter provides a high-level summary of the current flood risk in the administrative boundary of South Kesteven, from all sources (fluvial, tidal, surface water, sewer, groundwater, and infrastructure failure) and considers how planned growth to 2041 will either affect or be affected by flood risk, including climate change. It also covers the current level of protection, including condition of the existing flood defences and any known planned provisions for the future development of the area. Information on flood risk has been taken from the emerging SKDC Level 1 Strategic Flood Risk Assessment (SFRA)(2024), the Anglian River Basin District Flood Risk Management Plan[88]; and the Joint Lincolnshire Flood Risk and Water Management Strategy 2019-2050[89].

Sources of Flooding

The National Planning Policy Framework (NPPF) defines the following Flood Zones to classify the different ranges and probability of flood risk from **fluvial and tidal sources**:

- Flood Zone 1 – Low probability: less than 0.1% chance of river and sea flooding in any given year;
- Flood Zone 2 – Medium probability: between 1% and 0.1% chance of river flooding in any given year or 0.5% and 0.1% chance of sea flooding in any given year;
- Flood Zone 3a – High probability: greater or equal to 1% chance of river flooding in any given year or greater than 0.5% chance of sea flooding in any given year; and
- Flood Zone 3b – Functional floodplain: greater then or equal to 3.33% chance of river flooding in any given year, land where water has to flow or be stored in times of flood.

It is important to note that Flood Zones do not take into account surface water, sewer, groundwater, infrastructure flooding or climate change impacts. Furthermore, these Flood Zones do not cover all catchments or ordinary watercourses with areas <3 km^2.

Surface water (or pluvial) flooding would most likely occur as a result of intense rainfall consequently overwhelming the drainage network, which not designed to cope with extreme storms. This type of flooding can be complicated by blockages to drainage networks, sewers being at

88 Environment Agency, (2016). *Anglian River Basin District Flood Risk Management Plan.* Available at: https://www.gov.uk/government/publications/anglian-river-basin-district-flood-risk-management-plan (Accessed: 23/02/2024).

89 Lincolnshire County Council (2019). *Joint Lincolnshire Flood Risk and Water Management Strategy 2019-2050.* Available at: Joint flood risk water management strategy 2019-2050 (lincolnshire.gov.uk) (Accessed: 23/02/2024).

capacity, and / or high-water levels in watercourses that cause local drainage networks to surcharge. The Environment Agency Risk of Flooding from Surface Water (RoFfSW) mapping classifies this type of flood risk in four categories:

- High: More than 3.3% chance of surface water flooding in any given year;
- Medium: between 1% and 3.3% chance of surface water flooding in any given year;
- Low: between 0.1% and 1% chance of surface water flooding in any given year; and
- Very Low: less than 0.1% chance of surface water flooding in any given year.

Sewer flooding occurs when intense rainfall and / or river flooding overloads sewer capacity, or when sewers cannot discharge to watercourses due to high water levels. It can also be due to blockages, collapses, equipment failure or groundwater leaking into sewer pipes.

Groundwater flooding can be caused by:

- High water tables, influenced by the type of bedrock and superficial geology;
- Seasonal flows in dry valleys, which are particularly common in areas of chalk geology; or
- Rebounding groundwater levels, where these have been historically lowered for industrial or mining purposes.

Reservoir or canal flooding generally occurs due to infrastructure failure. The likelihood of this type of flooding is generally low and residual but when it occurs, it can be particularly widespread, damaging and costly. Robust inspection and maintenance regimes are expected to be in place for these structures to minimise the likelihood of failure.

Baseline

In South Kesteven, the 2024 Level 1 SFRA finds that the dominant sources of flood risk are fluvial and surface water, with several records of historical flooding obtained from the Environment Agency and Lincolnshire County Council (LCC) (Lead Local Flood Authority (LLFA)). Fluvial records date from 1922, and the most recent event was in December 2020, predominately associated with the River Witham and River Welland. Surface water flooding accounts for most of the Section 19 Flood Investigations[90,91] produced between 2012 and 2023. However, it is important to note that due to the diverse nature of flooding mechanisms, surface water flooding can often occur from a combination of different sources including sewer flooding, fluvial flooding and / or groundwater flooding.

Fluvial Flooding within the South Kesteven

There are a several watercourses classified by the Environment Agency as ‘main rivers’ within the district:

- The River Witham:
  - 132 km in length
  - 557.3 km^2 catchment area (59% of the district)
- The River Welland:
  - 105 km in length
  - 369 km^2 catchment area (39% of the district)
- The River Devon:
  - 6 km in length

[90] Legislation.gov.uk. *Flood and Water Management Act (2010).* Available at: Flood and Water Management Act 2010 (legislation.gov.uk) (Accessed: 08/03/2024).

[91] Section 19 definition: On becoming aware of a flood event within the administrative area, the LLFA must investigate and publish a Section 19 Investigation report (under the Flood and Water Management Act 2010). These are written in the aftermath of a flood event and aim to explain a flood event and the responsibilities of the multiple authorities during the event. The recommendations help the relevant authorities learn from the event and address the infrastructure needs associated with it.

- 13.08 km^2 catchment area (2% of the district)

Within South Kesteven there are four Internal Drainage Boards (IDBs), responsible for managing water levels within their respective Drainage Districts. IDBs work towards reducing flood risk to people and property, and manage water levels for agricultural and environmental purposes. They undertake these responsibilities by actively maintaining some watercourses within their jurisdiction and consenting works that may impact water levels. These IDBs are Black Sluice IDB, Welland and Deepings IDB, Trent Valley IDB and Upper Witham IDB. IDBs are not responsible for regulating main rivers within their administrative areas as these remain the responsibility of the Environment Agency. Table 6.17 summarises key watercourses within South Kesteven. There are a large number of land drains in the fenlands to the east of the district that are maintained by Black Sluice IDB and Welland and Deepings IDB. Due to their number, these have not been included in the table below.

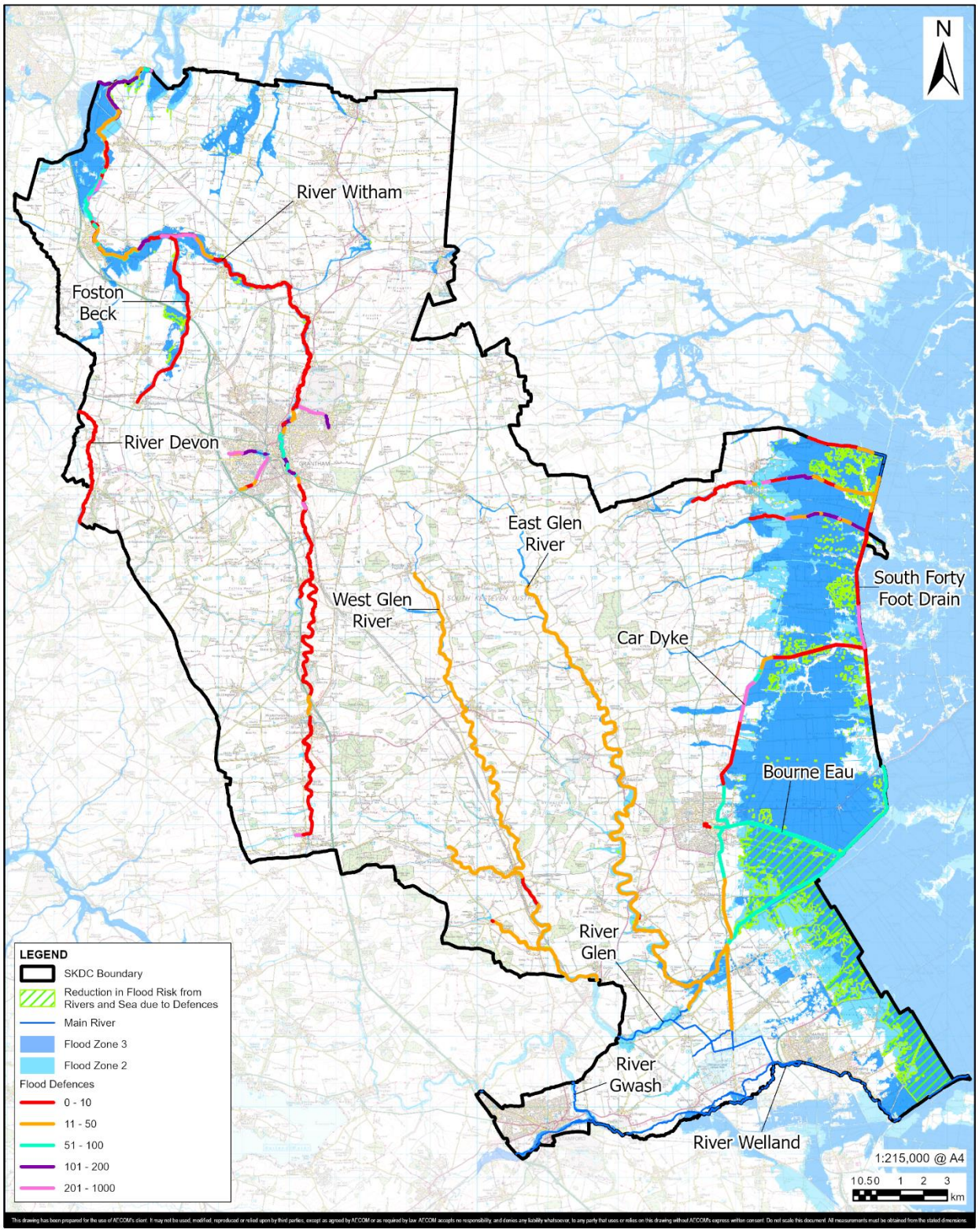
Table 6.17: Key Watercourses in the South Kesteven

Watercourse Name	Classification	Catchment	Flood Risk Management Authority
River Witham	Main River	Witham	Environment Agency
Cringle Brook	Ordinary Watercourse	Witham	Lincolnshire County Council
Running Furrows	Ordinary Watercourse	Witham	Upper Witham IDB & Lincolnshire County Council
Honington Beck	Ordinary Watercourse	Witham	Upper Witham IDB
Foston Beck	Main River	Witham	Environment Agency
Ease Drain	Ordinary Watercourse	Witham	Upper Witham IDB
Shire Dyke	Ordinary Watercourse	Witham	Upper Witham IDB
Sutton Dyke	Ordinary Watercourse	Witham	Upper Witham IDB
River Brant	Ordinary Watercourse	Witham	Upper Witham IDB
River Welland	Main River	Welland	Environment Agency
River Gwash	Main River	Welland	Environment Agency
River Glen	Main River	Welland	Environment Agency
East Glen River	Main River	Welland	Environment Agency
West Glen River	Main River	Welland	Environment Agency
Bourne Eau	Main River	Welland	Environment Agency
Car Dyke	Main River	Welland	Environment Agency & Black Sluice IDB
South Forty Foot Drain	Main River	Welland	Environment Agency

The primary source of fluvial flood risk in South Kesteven District is associated with the River Witham, River Welland and their tributaries. Figure 6.13 shows the flood zones and flood defences (including

their SoP) in South Kesteven. The areas along the River Welland and Witham are classified mainly as Flood Zone 3 with some areas identified as Flood Zone 2. The low-lying areas to the east of the district are located extensively in Flood Zone 3, associated with South Forty Foot Drain and low-lying fenlands. This presents a fluvial flood risk to the urbanised settlements of Grantham, Bourne, Stamford and Market Deeping, and to the rural areas of the district, including the low-lying areas to the east. None of the watercourses within the district are tidally influenced, and therefore risk of tidal flooding is considered low. Several ordinary watercourses, land drains, ponds and lakes within the district also present a risk of fluvial flood risk, however mapped outputs are unavailable for these.

Figure 6.13 Fluvial Flood Risk Map within the SKDC Boundary



Source: AECOM produced map. Contains public sector information licenses under the Open Government Licence v3.0 © Crown copyright and database rights 2024. Ordnance Survey 0100031673

Flood Defences within South Kesteven

Flood defences in South Kesteven are identified within the Level 1 SFRA and the Environment Agency Asset Information Management System (AIMS) Programme dataset. This dataset includes defences in private ownership and more informal structures which were not constructed specifically as flood defences, but have the effect of providing at least partial protection to land from flooding. Flood defences are located along most of the banks of the main rivers in the district. However, according to

the Environment Agency's 'Reduction in Risk from Rivers and Sea due to Defences' dataset[92], only 9% of the district is considered to have a reduced risk of flooding, with flood risk being heavily concentrated to the south-east. Localised areas of reduced risk are also present in isolated pockets across the district, with a notable absence around the River Witham – it should be noted though that guidance from the Environment Agency recommends that this dataset is not used for the River Witham due to limitations identified locally within the dataset, and this may explain these absences.

Approximately 405 km of flood defences are identified in the AIMS layer in SKDC. Attributes of these defences can be downloaded from the Environment Agency, including information on their length, condition and design SoP. Most of the flood defences in South Kesteven have a SoP below the 1 in 100 year event, although some do have a SoP of greater than 1 in 200 year event. These defences are located throughout the district but are mainly concentrated in the north-west and east of the District. Of the 405 km of defences, only 117 km have an Environment Agency condition rating. Of these, 107 km have a condition rating of 'Moderate' or 'Good'. The remaining 10 km are rated 'Poor', defined as "Defects that would significantly reduce the performance of the asset. Further investigation needed."

Table 6.18 provides a summary of the type of defences within the district as per the Environment Agency AIMS dataset.

Table 6.18: Flood Defence Type and Length in South Kesteven

Defence Type	Length (km)
Embankment	98.8
Natural High Ground	304.7
Engineered High Ground	0.6
Wall	1.2
Total	**405.3**

Source: Environment Agency AIMS dataset

The IDBs monitor the levels of water within the dykes and drainage channels within their administrative area and, in some cases, control these levels as they have powers of supervision over all matters relating to water level management, including maintenance of watercourses and designation of flood management features and structures.

Black Sluice IDB and Welland and Deepings IDB predominantly work to maintain the level of protection that is provided by the network of drainage channels and pumping stations within their areas of jurisdiction. However, the level of protection that is provided is low in some areas, protecting farmland up to the 1 in 10 year event, as can be seen from the defence SoP in the east of the district in Figure 6.13. In general, response to flood events by Black Sluice IDP and Welland and Deepings IDB's focusses on managing water levels within the network to reduce the risk of a more widespread flood as a result of raised canal breaches. The IDBs carry out maintenance as required and as resource permits, seeking further support and funding from Defra, if available, for larger projects. A key role of the IDBs is working with developers to ensure developments do not detrimentally impact flood risk to surrounding receptors and to ensure that funding can be obtained for new or upgraded defences where these are required to protect the site.

Upper Witham IDB maintains three short lengths of embanked defences. These are located at Grantham (on Running Furrows Drain); Long Bennington (on Church Ease Drain); and, at Houghton (Houghton Beck No. 2). The SoP and condition of these defences is unknown.

Trent Valley IDB maintains a short length of watercourse in South Kesteven, Moor Lane, located to the west of Long Bennington. This watercourse is noted as being in a 'fair' condition and is maintained on a 3-year cycle.

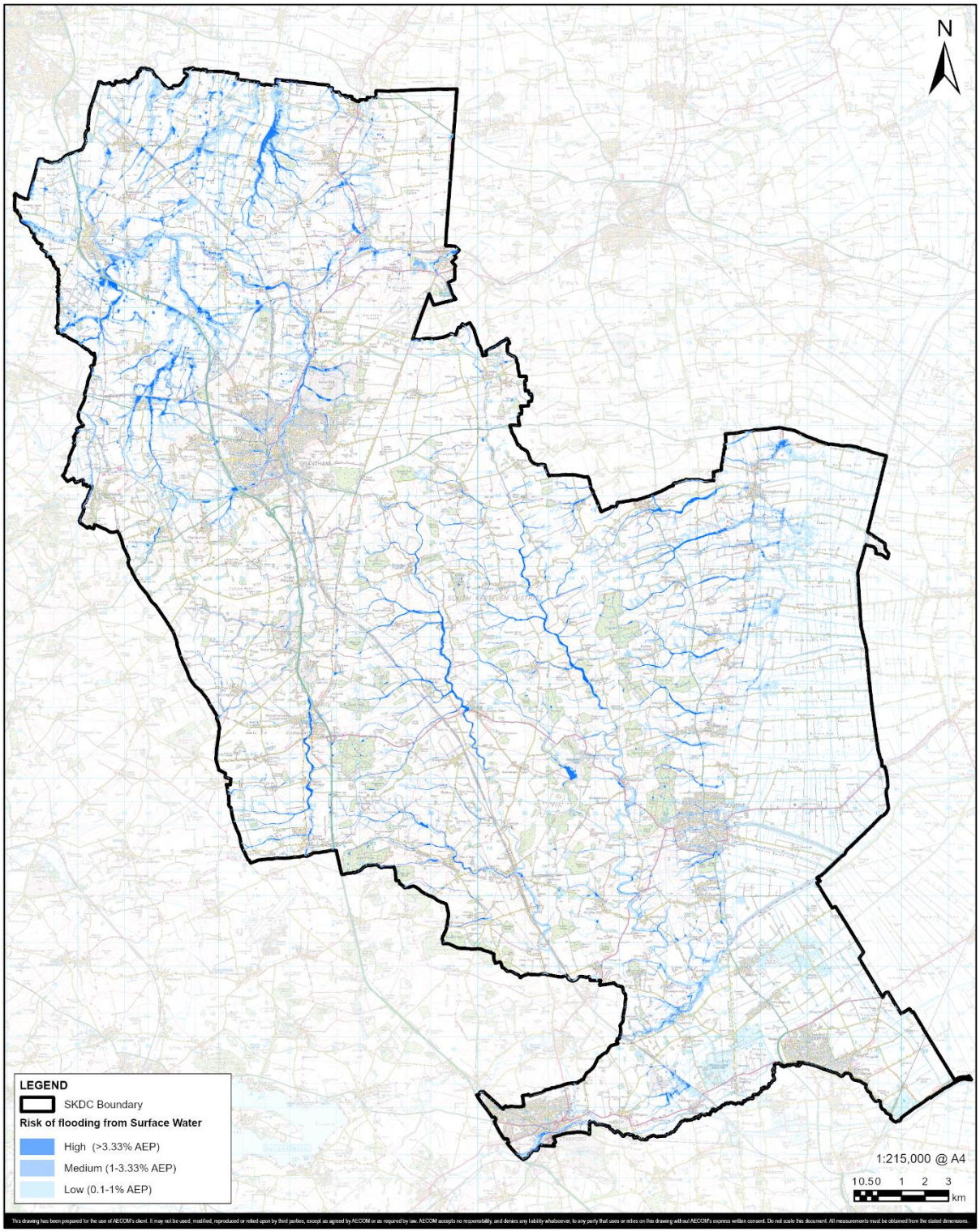
[92] Environment Agency (2024). *Reduction in Risk of Flooding from Rivers and Sea due to Defences.* Available at: Reduction in Risk of Flooding from Rivers and Sea due to Defences - data.gov.uk (Accessed: 14/03/2024).

Other private landowners may have other flood defences which have not been captured within this report.

Surface Water Flooding within South Kesteven

The Environment Agency RoFfSW mapping (Figure 6.14) shows that several communities are at risk of flooding from surface water across the district. Surface water predominantly follows topographical flow paths of existing watercourses and dry valleys and can pond in low lying areas. In most cases, the risk is confined to river channels and flow routes. However, within the urban areas of the district, such as Grantham and Bourne, there are flow pathways around roads and properties.

Figure 6.14 Risk of Flooding from Surface Water Map



Source: AECOM produced map. Contains public sectior information licenses uncer the Open Government Licence v3.0 © Crown copyright and databaserights 2024. Ordnance Survey 0100031673

Sewer Flooding within South Kesteven

Anglian Water's DG5 records of public foul, surface water or combined sewer flooding are shown on a postcode basis and indicates that in South Kesteven, 1,328 incidents have been recorded since 2014 as shown in Table 6.19. This information can help identify flooding hotspots, where there is limited capacity, and help inform future schemes and mitigation. It should be noted that as schemes may have been implemented since areas of sewer flooding had been recorded, these records may not be representative of current sewer flood risk.

Table 6.19 Historic Flood Risk Register (DG5) for Sewer Flooding between 2014-2024

Postcode	Recorded Flood Events
NG23 5	40
NG31	364
NG32	34
NG33	118
NG34	269
PE10	104
PE11	60
PE6	140
PE9	199

Source: Anglian Water DG5 records

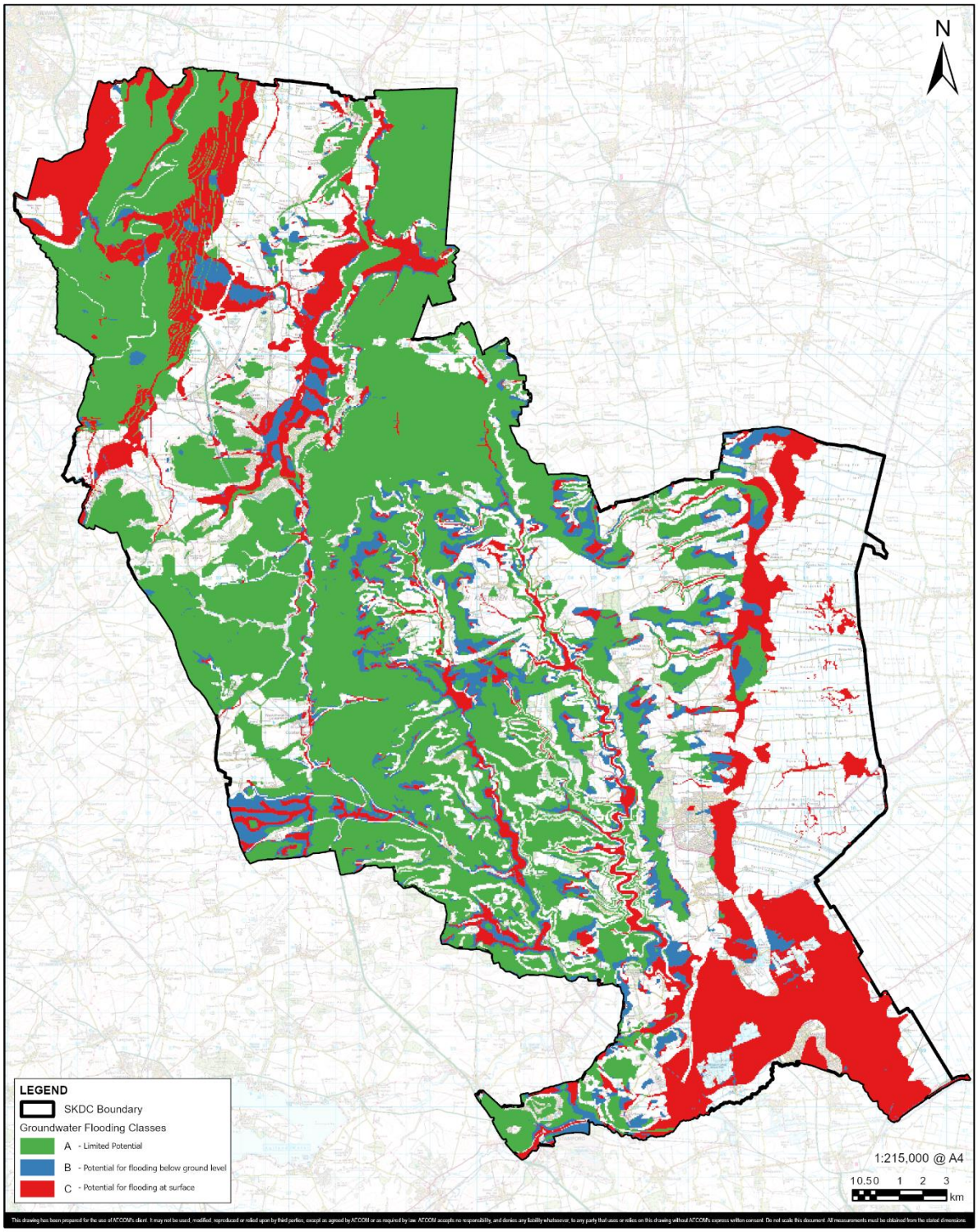
Groundwater Flooding within South Kesteven

The risk of flooding from groundwater is low to much of the district as shown in the vulnerability of flooding from groundwater dataset in Figure 6.15. In summary, this data set shows:

- 39% of the district has limited potential for groundwater flooding to occur (Classification A);
- 7% of the district has potential for groundwater flooding of property situated below ground level (Classification B);
- 17% of the district as potential for groundwater flooding to occur at the surface (Classification C); and
- The remaining 37% of the district is unclassified.

There are two records of groundwater flooding across the district noted in the South Kesteven SFRA: in 2012 at a property in Long Bennington and in 2014 at a property in Stamford.

Figure 6.15 Susceptibility of Flooding from Groundwater



Source: AECOM produced map. Contains public sectior information licenses uncer the Open Government Licence v3.0 © Crown copyright and databaserights 2024. Ordnance Survey 0100031673

Reservoir Flooding within South Kesteven

The risk of flooding from reservoir failure is generally low considering the level and standard of inspection and maintenance required by the Reservoir Act (1975). The Level 1 SFRA indicates that there are six reservoirs over 10,000 m^3 within the SKDC boundary and a further three outside of the district boundary that, if breached, have the potential to affect property and infrastructure in the district. These are listed below in Table 6.20.

Table 6.20 Reservoirs that have the potential to impact the district over 10,000 m^3

Location	Reservoir	National Grid Reference
Within the District	Denton Reservoir	SK 87049 33697
	Specimen Lake	SK 97517 43894
	Harlaxton Manor	SK 88888 32971
	The Lake at Grimsthorpe	TF 03952 22186
	Holywell Lake	TF 00548 16038
	The Lake at Lakeside Farm	SK 94244 47272
Outside the District	Rutland Water	SK 93290 07327
	Boathouse Pond	SK 93586 39342
	Knipton Reservoir	SK 81749 30439

Forward Look

The future risk of flooding within South Kesteven is influenced by several factors. These include:

- More intense rainfall periods due to climate change;
- Population increase leading to increased hard standing development, increased surface ponding and surface water runoff rates;
- Pressure for new development in areas at high risk of flooding;
- Inadequate maintenance of existing structures and assets;
- Deterioration of structures and features that currently provide protection; and
- Heightening river levels preventing surface water draining from developments.

Where climate change modelled flood extents are not available, Flood Zone 2 outlines are generally referred to when trying to identify areas most likely to be affected by climate change. Fluvial impacts are likely to be exacerbated due to climate change in the following areas:

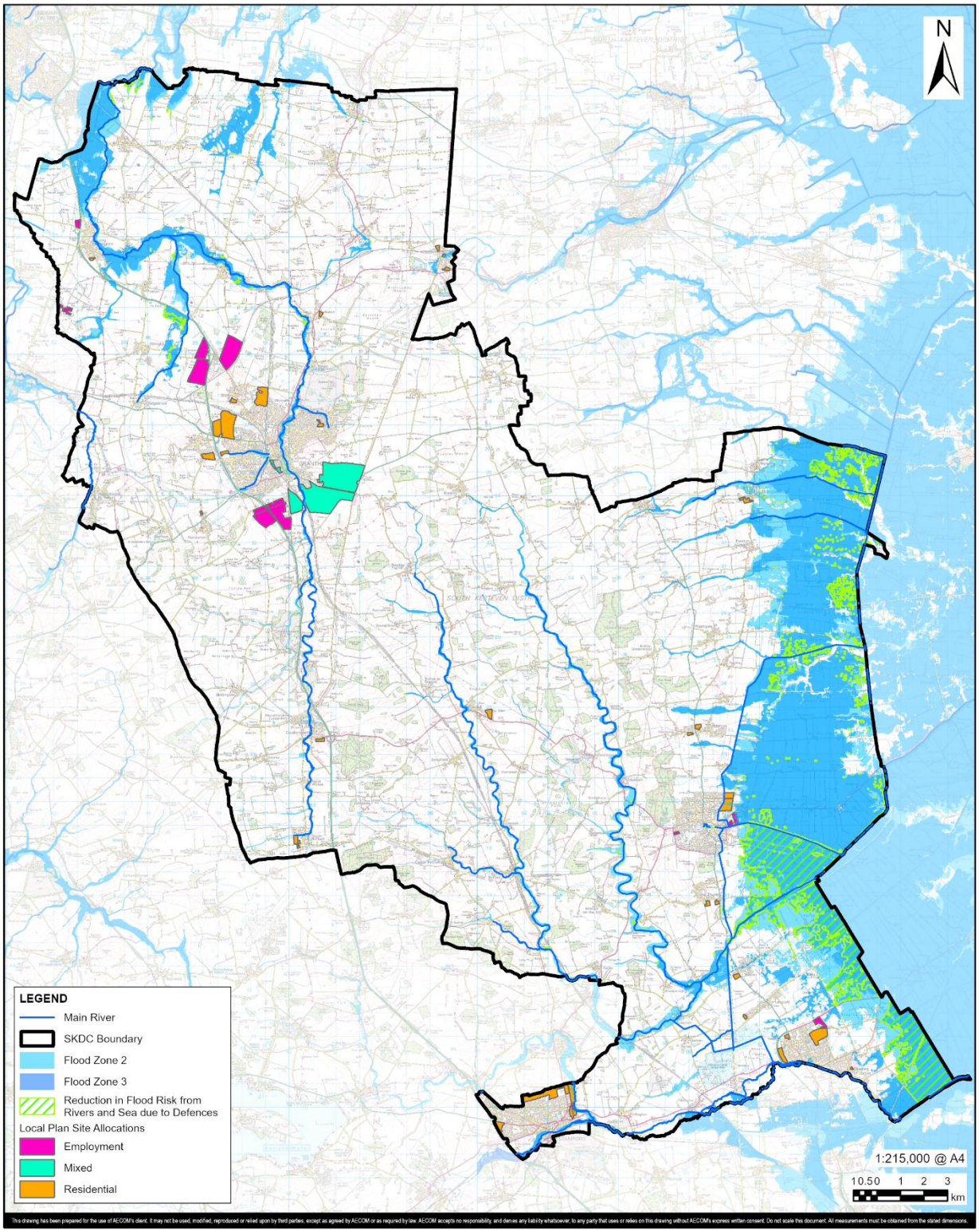
- Eastern and south-eastern areas of the district due to the areas' low lying topography;
- Regions close to the East and West Glen Rivers; and
- North-western areas of the district, in proximity to Grantham and close to the River Witham confluence with the River Trent.

In the absence of models of surface water flood risk with climate change uplifts, the 1,000-year surface water flood extent is used as an indication of climate change. Areas in the district that are most sensitive to changes between the 100-year and 1,000-year surface water extents are:

- To the north-west of the district, between Grantham and the north of the district boundary;
- To the east of the district, around the low-lying fenlands; and,
- To the south of the district, around the Welland confluences with the East and West Glen Main Rivers.

The Draft Local Plan outlines proposed housing and employment development sites within the district to 2041. There is a forecasted growth of 16,922 dwellings to 2041 with 85% of this development predicted to be within the urban areas of Bourne, Grantham, Stamford and The Deepings. This is shown in Figure 6.16. Where employment development sites are proposed, some sites intersect slightly with Flood Zones 2 and 3, particularly in the east of the district in the Bourne area. This is also true of housing sites: there is encroachment of Flood Zone 2 in the sites located in the Bourne area.

Figure 6.16 Proposed Development Sites and Flood Zones



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Planned and Committed Projects

Programmes to address flood risk and drainage management in South Kesteven are detailed in the Joint Lincolnshire Flood Risk and Water Management Strategy (JLFRWMS)[93]. This is a partnership developed by the Joint Lincolnshire Flood Risk and Water Management Partnership (JLFRWMP), made up of the Environment Agency, LCC, 14 IDBs, seven District Councils, two water and sewerage

[93] JLFRWMP (2019). *Joint Lincolnshire Flood Risk and Water Management Strategy 2019-2050.* Available at: Flood risk and water management strategy - Policies, strategies and plans – Lincolnshire County Council

companies operating within Lincolnshire, Natural England, Lincolnshire Resilience Forum and the Regional Flood and Coastal Committee. There is one specific Flood Defence Project proposed specifically for the South Kesteven by members of the JLFRWMP during the period of this IDP. This is the Lower Witham Flood Resilience Project to be led by the Environment Agency. This aims to reduce flood risk from the River Witham and is planned for delivery between 2021-2027. The schemes identified in this plan may not be up to date as the Strategy was written in 2019. The JLFRWMS also mentions core activities to be undertaken annually by each member of the Partnership. These include feasibility studies and scheme appraisals; routine maintenance of assets; and responding to emergency incidents and assisting recovery.

Further projects across the district have been identified and are explored in more detail below. Projects are also summarised in the Project Schedule in Appendix A.

The Environment Agency and LCC jointly produce Flood Risk Management Plans explaining the objectives and measures needed to manage flood risk at a national and local level. The latest plans for The Witham and Welland Catchments[94] for the 2021-2027 period are outlined in Table 6.21.

Table 6.21 Witham and Welland Management Catchment Schemes

Catchment	Description of Scheme	Time Frame
Witham	Undertake a programme of monitoring and evaluation of the natural flood management scheme in Swaton.	2021-2024
	Collaborate with partner organisations, to research and monitor the impact of flood plain reconnection schemes on sediment and water flows, in the Lower and Upper Witham.	2021-2027
	Engage with landowners and partner organisations to identify appropriate opportunities for flood bank re-alignment, and novel approaches to flood plain reconnection in the Witham Catchment.	
	Play a key role working with partners through the South Lincolnshire Water Partnership in the South Forty Foot Catchment.	
	Progress the Lower Witham Flood Resilience Project to establish a programme to improve and sustain work in the Lower Witham catchment	
	Review the required maintenance for all main river systems, working with partners, communities and landowners in Witham Catchment.	
	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in Witham Catchment.	
Welland	Investigate opportunities to support Lincs Wildlife Trust to develop a project at Bourne North Fen Wetland in Welland Catchment.	2021-2027
	Look to identify and prioritise specific communities at flood risk to engage with in the Welland Catchment.	
	Review the performance and progress appraisal of the Crowland and Cowbit Washes. This work will also support the Welland Rivers Trust in the Welland Catchment.	
	Review the required maintenance for all main river systems, working with partners, communities and landowners in the Welland catchment.	

[94] Environment Agency (2023). *Anglian River Basin District.* Available at: Anglian River Basin District – Flood Plan Explorer (data.gov.uk) (Accessed: 29/02/23)

Catchment	Description of Scheme	Time Frame
	Work with landowners, communities and professional partners to identify opportunities for natural flood management schemes in the Welland Catchment.	
	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in the Welland Catchment.	

Liaison with LCC through the preparation of the South Kesteven Level 1 SFRA (2024) has revealed further flood alleviation projects in the district, as follows:

- Long Bennington Flood Alleviation Scheme – This will protect in excess of 50 properties in Long Bennington by improving existing pipework capacity, constructing an additional outfall into the River Witham, and introducing a number of new highway assets. Property Flood Resilience (PFR) measures to 10 properties identified as requiring additional measures within the area of benefit have also been offered. LCC have not provided a planned delivery period;
- Grantham, Gonerby Road – A Strategic Outline Case has been produced for this location with further feasibility, hydraulic modelling and optioneering to take place to fully understand if a feasible flood alleviation scheme can be delivered. This works are programmed for 2026 / 2027;
- Wilsthorpe – Watercourse surveys have recently been undertaken by LCC in collaboration with Black Sluice IDB to get a greater understanding of watercourse bed levels which may lead to development of a future flood alleviation project; and
- Bourne, Beech Avenue – A Hydraulic Modelling Assessment and Options Report has been produced to determine feasibility of a flood alleviation scheme. Findings have suggested that improved maintenance of existing assets could be the most beneficial and cost effective measure.

Maintenance of assets by the IDBs are also key in managing flood risk to South Kesteven. The IDBs propose:

- Welland IDB[95] – Continued maintenance of infrastructure, and where appropriate, targeted improvements to pumping stations and watercourses;
- Black Sluice IDB[96] – Continued maintenance of infrastructure as per current arrangements. Decisions regarding flood risk are taken into account with the Environment Agency and LLFA strategies;
- Upper Witham IDB[97] – Continued maintenance of assets, pumping stations and defences to reduce flood risk to developed areas; and,
- Trent Valley IDB[98] – build, maintain and improve flood and coastal erosion management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society as well as achieving wider environmental benefits.

Demand to 2041

Climate change is expected to increase the frequency and severity of flooding in many areas. This may particularly affect the areas in the east of South Kesteven, particularly to the east of Bourne where sites proposed for development will be at increased risk of flooding due to climate change. In addition to improving the condition of the existing defences, it may be necessary to increase the level of protection provided. This could occur either because climate change makes extreme rainfall events

[95] Welland and Deepings IDB (2023). *Policy Statement on Water Level and Flood Risk Managementl.* Available at: 2023-june-policy-statement-on-water-level-flood-risk-management.pdf (wellandidb.org.uk) (Accessed: 14/03/2024).
[96] Black Sluice IDB (2024). *Policy Statement.* Available at: Policy Statement | Black Sluice Internal Drainage Board (blacksluiceidb.gov.uk) (Accessed: 14/03/2024).
[97] Upper Witham IDB (2018). *Policy Statement on Water Level and Flood Risk Management.* Available at: UW-Policy-Statement-2018.pdf (witham3idb.gov.uk) (Accessed: 14/03/2024).
[98] Trent Valley IDB (2024). *Policy Statement on Water Level and Flood Risk Management.* Available at: ecef50_abbfa1ebc93b4ccc9d926bf5be8d4ed2.pdf (wmc-idbs.org.uk) (Accessed: 14/03/2024).

more likely or if land is allocated for residential development, which generally requires a higher level of protection from flooding than is required by undeveloped land.

Drawing on the AIMS dataset, it can be deduced that if the SoP needed to be increased to 1 in 100 year (the limit of Flood Zone 3) across South Kesteven, approximately 329 km of flood defences would require improvements.[99] This would require significant investment which would need to be provided based on a partnership approach. However, in practice, increasing the level of protection by flood defences is likely to be undertaken only where development of land requires it and where it doesn't move flood risk further downstream in the catchment. Areas to the south-east of the district, currently protected by defences, may require improvements to defences in the future to maintain the SoP and account for climate change impacts.

In terms of development, most of the known development sites within South Kesteven are within Flood Zone 1, so additional work to defences would not be needed. Windfall development may also come forward for development in the small villages throughout South Kesteven which may be permitted for land which currently benefits from flood defences. Defences may require improvements due to changes in required protection. In this case, improvements would be funded by the developer.

Costs, Funding and Delivery

The need for additional or improved flood defences will be met through a combination of measures by the relevant risk management authorities, in addition to measures taken by private landowners, depending on the type and ownership of the individual flood defence.

The SKDC Local Plan 2011-2036 requires all development to be directed to areas at lowest risk of flooding by applying the sequential and exception tests, in line with national guidance, and also requires all development to incorporate appropriate surface water drainage. The Draft Local Plan follows the same policy approach. This should ensure that all sites are located outside the floodplain, by preference, or that flood defences are improved by developers if required and arrangements are made for their long-term management and maintenance. SKDC's Sustainable Drainage System Design Guidelines 2021[100] provides guidance on the requirements of and approaches to surface water drainage in developments.

Costs are not currently available for the flood management schemes set out in the Project Schedule. However, available relevant information on funding for flood defence schemes in South Kesteven is set out below.

The Environment Agency budget for maintenance of flood defences is provided by central government, while the IDBs are mainly funded through charging fees to landowners protected by their assets (Drainage Rates). Flood and Coastal Risk Management (FCRM) Allocation Principles were agreed by the Environment Agency Board on the 7th of October 2020. These include an investment of £5.4bn to better protect properties and infrastructure nationally by 2026 / 27. This will be done through a broad range of resilience actions, alongside protection measures which will provide better protection to over 336,000 properties and reduce flood and coastal erosion risk by 11% nationally.

The Anglian Northern Regional Flood and Coastal Committee (RFCC) funding[101] includes an indicative programme for capital allocations within the 6-year programme from 2022 / 2023 – 2026 / 2027 for the Anglian Northern region, which includes South Kesteven. This programme includes a total expenditure of £87.6m from central government. Online mapping[102] indicates only one of these schemes is within South Kesteven. This is the Westborough Flood Alleviation Scheme, managed by Upper Witham IDB, which was completed since 2021. However, the River Basin Management Plans for the Witham and Welland Catchment indicate that further projects are identified which are due to receive Environment Agency funding.

[99] GIS layers have been used to determine the length of assets which are currently classified below a 1 in 100 year SOP in the AIMS database.
[100] Rutland & South Kesteven District Council (2021). *Design Guidelines for Rutland and South Kesteven.* Available at: Appendix 1 Design Guidelines for Rutland and South Kesteven Supplementary Planning Document.pdf (Accessed: 14/03/2024).
[101] Department for Environment, Food and Rural Affairs (2023). F*unding for Flood and Coastal Erosion Risk Management (FCERM) March 2023 - updated 13102023.* Available at: Funding for Flood and Coastal Erosion Risk Management (FCERM) March 2023 - updated 13102023 - GOV.UK (www.gov.uk) (Accessed: 27/02/2024).
[102] Department for Environment, Food and Rural Affairs (2024). *Asset Management.* Available at: Asset Information and Maintenance Programme (data.gov.uk) (Accessed: 27/02/2024).

As the LLFA, LCC are also responsible for managing risk of flooding from local sources of flood risk and ordinary watercourses within their area of jurisdiction. Table 6.22 outlines total spend per year by LCC on Flood Risk Management as detailed within the receipts of Local Authority spending[103].

Table 6.22 LCC Spending on Flood Risk Management since 2018

Financial Year	Total Spending (£k)
2018-2019	212
2019-2020	0
2020-2021	0
2021-2022	375
2022-2023	688
2023-2024*	500
Total	**1,775**

**forecast spending*

Many organisations which make up the JLFRWMP will have contingency funds to respond to flooding but this may not cover the cost of extensive mitigation measures. Alternative sources of funding may be required, such as an application to Defra for Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA) funding, or a Local Levy.

Summary

Key findings are as follows:

- The primary sources of flood risk in South Kesteven are fluvial and surface water, associated with the River Witham and Welland, and their tributaries.
- Flood defences are primarily located along the River Witham and Welland, as well as the East and West Glen Rivers. These mainly comprise natural high ground and embankments. The condition and level of protection provided by the flood defences is variable and climate change is likely to reduce the effectiveness of the defences in the long term in the absence of works to maintain the level of protection.
- There are areas of the district which are classified by the Environment Agency as having reduced flood risk due to flood defences. These are primarily to the east of the district, in the low lying fenlands areas with pockets along the Foston Beck and River Witham to the north. However, issues with this dataset highlighted by the Environment Agency limit the accuracy of this dataset for the Witham Catchment.
- Areas most likely to be affected by fluvial impacts of climate change are:
    - Eastern and south-eastern areas of the district due to the areas' low lying topography;
    - Regions close to the East and West Glen Rivers; and
    - North-western areas of the district, in proximity to Grantham and close to the River Welland confluence with the River Trent.
- Areas in the district most sensitive to changes between the 100-year and 1,000-year surface water extents are similar to the areas at risk of fluvial flooding:
    - To the north-west of the district, between Grantham and the north of the district boundary;
    - To the east of the district, around the low lying fenlands; and,
    - To the south of the district, around the Welland confluences with the East and West Glen Rivers.

[103] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government, (2023). *Local authority capital expenditure, receipts and financing.* Available at: Local authority capital expenditure, receipts and financing - GOV.UK (www.gov.uk) (Accessed: 04/03/2024).

- The Project Schedule sets out 15 proposed flood alleviation schemes. Four schemes have been identified through the liaison with the LLFA and highlighted in the emerging SFRA. These include the following:
    - Long Bennington Flood Alleviation Scheme;
    - Grantham, Gonerby Road;
    - Wilsthorpe; and,
    - Bourne, Beech Avenue.
- A further series of schemes is also proposed by the Environment Agency across the Witham and Welland Catchments.
- There is limited information on funding for the projects above. However, across the Anglian Northern RFCC, a total of £87.6m has been made available by the Environment Agency for flood risk management schemes. Since 2018, LCC has spent £1.77m on flood risk management.
- The South Kesteven Council Local Plan 2011-2036 requires all development to be directed to areas at lowest risk of flooding by applying the sequential and exception tests, in line with national guidance. Where future developments within Flood Zone 2 and 3 are proposed, they may require improvements to flood defences to provide or maintain a 1 in 100 year SoP. However, this would need to be considered on a case by case basis and it would need to be demonstrated on a catchment level that flood risk is not increased downstream, through the loss of floodplain storage. For the proposed development identified in the Local Plan, the allocations to the east of Bourne in particular may require improvements to defences to ensure adequate protection for the proposed residential and employment sites, which are currently located partially in Flood Zone 2. This may add significant additional expense for developers. Liaison with the Environment Agency and the IDBs within South Kesteven will be required to determine any site-specific requirements with regards to Flood Defences.

6.8 Sustainable Drainage

Introduction

Sustainable drainage infrastructure comprises structures which are designed to manage surface water flows to limit runoff rates and increase infiltration from the built environment. Sustainable Drainage Systems (SuDS), such as infiltration basins, wetlands, swales or rainwater harvesting schemes, are designed to maximise the opportunities and benefits that can be secured from surface water management practices.

The National Planning Policy Framework (NPPF) requires that major development incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. Further, enactment of Schedule 3 of the Flood and Water Management Act 2010 is expected in 2024 which would likely make SuDS mandatory for almost all development, and for SuDS to be designed and built according to national standards so they can be adopted by a SuDS Approval Body (SAB). The CIRIA C753 SuDS Manual[104] and SKDC Level 1 Strategic Flood Risk Assessment (SFRA) (2024) also recommends that all new developments proposals are required to ensure that SuDS for management of runoff are implemented, unless demonstrated inappropriate. Currently, the developer is responsible for ensuring the design, construction, and future ongoing maintenance of the scheme are carefully and clearly defined.

As the Lead Local Flood Authority (LLFA), LCC provides advice to the Planning Department on the management of surface water flood risk as the Risk Management Authority (RMA) for 'local sources of flood risk', under the Flood and Water Management Act (2010). As the Local Planning Authority (LPA), SKDC ensures that a development's proposed minimum standards of operation are appropriate and that there are clear arrangements for on-going maintenance over the lifetime of the development. As part of the planning process, the LLFA has a statutory role as consultee on major developments and

[104] CIRIA SuDS Manual C753. https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C753 Accessed: 01/03/24.

need to be consulted for any proposals for new SuDS provision or surface water management relating to planning applications for all Major Developments[105].

This chapter provides an outline of the current flood risk from surface water in South Kesteven, the future challenges and uncertainties affecting this risk as well as the implications of potential growth for sustainable infrastructure. It also summarises the existing sustainable drainage infrastructure and any known planned provision to support future development in the area.

Baseline

Surface water is one of the main sources of flooding across the district and predominantly follows topographical flow paths of existing watercourses and dry valleys and can also pond in low lying areas. In most cases, the risk is confined to valleys, but there are notable prominent runoff routes around properties and roads in urban areas. The EA Risk of Flooding from Surface Water (RoFfSW) mapping (Figure 6.14) shows that several communities in South Kesteven are at risk of flooding from this source. The South Kesteven SFRA summarises the outputs of several Section 19 Flood Investigations[106] relating to surface water flood events from April 2012 across the district. Areas such as Grantham, Bourne and Stamford are shown to have a higher number of historical flooding records associated from surface water.

Anglian Water's DG5 register shows incidents of public foul, surface water and combined sewer flooding. Table 6.19 shows this data on a postcode basis which was obtained from the SKDC Level 1 SFRA and highlights areas potentially affected from surface water and sewer flooding as a result of capacity exceedance and discharge from sewers. This information can help identify flooding hotspots, where there is limited sewer capacity, and help inform future schemes and mitigation. At the time of writing, the table indicates a total of 1,328 recorded incidents since 2014, with Grantham and Stamford accounting for 42% of the total recorded events.

Forward Look

Climate change is expected to increase the number and severity of extreme rainfall events in the coming decades. This may result in increased instances of surface water and sewer flooding, creating a need for additional capacity within existing urban drainage systems. Furthermore, urban development increases the area of impermeable surfaces, which if not mitigated, results in an increase in the rate and volume of surface water runoff.

National planning policy states that development must not increase flood risk elsewhere. This can occur when increased rates and volumes of surface water are discharged from a site following development. The Lincolnshire Development Roads and Sustainable Drainage Design Approach (2021)[107] states that runoff rates from greenfield developments must be as close as reasonably practicable to the predevelopment greenfield runoff rate. Runoff rates and volumes should therefore be limited to greenfield runoff rates and under the NPPF, SuDS should be incorporated to manage surface water for all major development. SuDS may include measures which enable infiltration to ground, and / or swales (shallow grassed ditches) and ponds for storing runoff prior to discharge to a watercourse.

The South Kesteven Local Plan 2011-2036 states that all planning applications and development within the South Kesteven should be accompanied by a statement of how surface water is to be managed and discharged. SuDS are to be included in these plans where this is demonstrated to be technically feasible and connection to the public sewerage network will only be made in exceptional circumstances. For example, where the development footprint and design does not facilitate enough

[105] Definition of Major Development (NPPF) – For housing, development where 10 or more homes will be provided, or the site has an area of 0.5 hectares or more.

[106] Section 19 Definition – On becoming aware of a flood event within the administrative area, the LLFA must investigate and publish a Section 19 Investigation report (under the Flood and Water Management Act 2010). These are written in the aftermath of a flood event and aim to explain a flood event and the responsibilities of the multiple authorities during the event. The recommendations help the relevant authorities learn from the event and address the infrastructure needs associated with it.

[107] Lincolnshire County Council (2021). *Lincolnshire Development Roads and Sustainable Drainage Design Approach.* Available at: Development Roads and Sustainable Drainage Design Approach (lincolnshire.gov.uk) (Accessed: 07/03/2024).

space for SuDS. However, all of the sites identified in the Local Plan meet the size requirements for SuDS to be considered.

Anglian Water's Drainage and Wastewater Management Plan (DWMP) (2023)[108] includes strategies to increase drainage capacity in defined schemes to 2050 through surface water management and upsizing, and in emerging schemes in catchments susceptible to emerging growth. In particular, between 2025-2050, approximately £365m will be spent across the Witham and Welland Catchment Partnership areas by Anglian Water to manage future risks, including increase Water Recycling Centre (WRC) capacity, removing surface water from the network and investment in SuDS.

Across the Witham and Welland Catchment areas, (within which South Kesteven sits), Anglian Water expects a population increase of approximately 80,000 by 2050. A number of settlements have been forecast as areas with high growth between 2025-2050. As such, Anglian Water have identified expected investment required to meet the long-term growth at the catchment scale. The Welland Catchment is expected to receive £266m and The Witham Catchment £99m by 2050. Although these funds have not been specifically allocated to projects, each water recycling catchment in each area has been examined and a strategy produced. For example, at Marston, the long term strategy indicates a focus on surface water removal; at Bourne, customer education and efficiency measures; and, at Deeping a new WRC.

Increases in capacity and construction of new WRCs requires stringent regulation of treated discharges from WRCs to ensure there is no additional surface water flood risk in the environment downstream. This is relevant in particular along the Rivers Witham and Welland, which are known to pose a high fluvial flood risk to downstream communities.

Costs, Funding and Delivery

Anglian Water's DWMP identifies the need for future investment to increase drainage capacity in Lincolnshire. Across the Anglian region, over 25 years, a total of £5 billion will be invested in the network across a range of schemes, including increasing drainage capacity through SuDS and upsizing. The DWMP does not identify specific areas for the investment for specific SuDS schemes at this stage. However. across the Witham and Welland Catchments, a total of £365m is to be invested to 2050 (£266m in the Welland Catchment and £99m in the Witham Catchment) to increase drainage capacity and WRC capacity, subject to agreement by Ofwat.

Within South Kesteven, no flood alleviation schemes involving SuDS have been identified at this stage, with costs of delivering projects yet to be determined. However, the Grantham Gonerby Road Outline Business Case has been produced, recommending further modelling and optioneering. SuDS may therefore form part of the feasibility study in the future.

SuDS may form part of future schemes to mitigate any increased risk of localised flooding and, in line with the NPPF, it will be expected that SuDS will be designed, built and funded by developers for all major development. SuDS should be designed and developed in consultation with LCC which has the role of LLFA and works closely with other risk management authorities such as Internal Drainage Boards (IDBs).

Any future schemes to address surface water flooding problems will be investigated by LCC in their role as LLFA, and financing of these schemes will be sought through partnership funding approaches involving one or more potential partners including the relevant IDBs as the Drainage Authority, private developers or the Environment Agency. As legalisation currently stands, SuDS may be retained within private ownership or adopted for maintenance by the IDB, LLFA, Highways Agency or Anglian Water on a site-by-site basis. However, subject to the timing of adoption of Schedule 3 in the Flood and Water Management Act expected in 2024, a SuDS Approval Body (SAB) at the LLFA will adopt new drainage systems on the basis that SuDS mandatory standards are met.

Funding for SuDS through the Joint Lincolnshire Flood Risk and Water Management Partnership or Flood and Coastal Erosion Risk Management Grant in Aid funding may be available.

[108] Anglian Water (2023). *DWMP*. Available at: Final DWMP (anglianwater.co.uk) (Accessed: 05/03/2024).

Summary

Key findings are as follows:

- Surface water is one of the main sources of flooding across South Kesteven. Several communities are at risk of flooding from this source. The areas of Grantham, Bourne and Stamford have a high prevalence of reported surface water flooding events in particular.
- Strategic scale Sustainable Drainage Systems (SuDS) may form part of flood alleviation projects to reduce the impacts and frequency of existing surface water flooding problems. Anglian Water's DWMP includes long-term strategies to increase drainage capacity through surface water management and upsizing, and via emerging schemes in catchments susceptible to emerging growth. In addition, LCC is working on a flood alleviation scheme within Grantham at Gonerby Road, which may involve the implementation of SuDS.
- SuDS for new major development will also be essential to ensure that surface water discharge rates and volumes from growth are kept to a minimum or as close to the pre-development runoff rate as possible, minimising the increase in flood risk downstream, particularly along the River Witham and Welland. It is likely that all the potential Draft Local Plan 2041 development sites referred to in this IDP are of sufficient size to require SuDS provision under the NPPF, however the small size of some of the sites may pose feasible challenges to including provision within the development boundary.
- SuDS must be designed and constructed in consultation with LCC in their role as LLFA and / or the relevant IDBs as the Drainage Authority. The impacts of climate change must be considered in the design of SuDS schemes.
- Funding for SuDS related to growth will be provided by developers, and in some cases where SUDS can form part of a wider solution to manage existing surface water flood risk, these may be part funded by the LLFA, the Environment Agency or water companies on a site by site or project by project basis. Under the current legislative and policy position, SuDS constructed for new development will be maintained by private owners or in some cases, may be adopted by Anglian Water, National Highways or LCC. Once Schedule 3 of the Flood and Water Management Act is enacted (expected 2024) the SAB will adopt SuDS built to the requirements of new national SuDS standards.
- Anglian Water's DWMP identifies significant investment in surface water management to manage WRC treatment and transmission capacity; however, SuDS specific schemes within the South Kesteven are not identified at this stage of planning.
- Liaison with the LLFA, EA and the relevant IDBs will be required to determine site-specific requirements prior to SuDS construction and development.

7. Headline Findings and Delivery

7.1 Introduction

This section reviews the Project Schedule in order to draw together the key findings of the infrastructure assessment. It goes on to consider the mechanisms for delivering and funding the infrastructure required to support the Local Plan 2041, and to set out next steps for SKDC.

7.2 Summary of Infrastructure Assessment

The IDP has identified infrastructure projects which will be required over the Local Plan 2041 period to meet the needs arising from planned growth. These projects are listed in the Project Schedule (Appendix A). A summary analysis of the Project Schedule is presented in Table 7.1 below.

74 infrastructure projects have been identified. An additional five line-items in the Project Schedule relate to the modelled estimates of demand and costs for social infrastructure.

Over half of the projects (52) are transport schemes. Many of the highway and rail schemes sit only partially in, or are located outside of, South Kesteven, but have been included because they play a part in meeting the transport needs of the district.

Total costs of £269.3m and funding of £148.2m have been identified. This implies a funding gap of £121.3m. Only 24 of the 79 line items in the Project Schedule have costs against them.[109]

Transport projects account for 63% of the costs identified within the IDP and 18% of the funding gap, while social and green infrastructure projects account for the 37% of the costs and 82% of the funding gap. No costs or committed funding have been identified for energy, digital or water projects.

Of the 74 projects, a timescale for delivery is identified for 25, though in most instances a broad period rather than a single year is given. Five schemes are likely to come forward in the 2021/22 to 2025/2026 period. 10 schemes are likely to come forward in the 2026/27 to 2030/31 period. Three schemes are likely to come forward in the 2031/32 to 2035/36 period.

The infrastructure items with the highest cost are:

- Grantham Southern Relief Road, a 3.5km road designed to unlock growth in the south of Grantham and relieve congestion in Grantham town centre. Phase 3 is due to complete in 2025 (£148m);
- Secondary school provision for an estimated 1,695 students to 2041, estimated by applying LCC pupil yields to sites yet to receive planning permission (£44.1m);
- Primary school provision for an estimated 1,784 students to 2041, estimated by applying LCC pupil yields to sites yet to receive planning permission (£35.9m);
- 32.5ha of open space required to 2041, based on application of quantitative standards from SKDC Open Space Study to projected population increase to 2041 (£9.1m); and
- Route F of the Rutland LCWIP Proposed Route Interventions, comprising various infrastructure interventions for pedestrians and cyclists on the Oakham to Stamford via A606 route (£5.2m)

The infrastructure items with the greatest funding gap are secondary school provision to 2041, primary school provision to 2041, and open space required to 2041.

[109] For six of the 24 schemes, costs have not been included in the total because the schemes are located entirely outside of South Kesteven, or are regional / national schemes with no detail currently available on potential local investment.

Table 7.1 Summary Analysis of the Project Schedule

Infrastructure Category	Line Entries (no.)	Identified Costs (£)	Identified Funding (£)	Funding Gap (£)
Transport				
Road	14	£148,000,000	£148,000,000	
ULEV	2			
Rail	5			
Bus	14	£7,172,000		£7,172,000
Pedestrian & Cycle	17	£14,930,127		£14,930,127
Total	*52*	*£170,102,127*	*£148,000,000*	*£22,102,127*
Social and Green Infrastructure				
Primary education	4	£35,920,428		£35,920,428
Secondary Education	2	£44,189,819		£44,189,819
Primary healthcare		£4,147,124		£4,147,124
Secondary healthcare				
Indoor sports		£4,832,036		£4,832,036
Police				
Green infrastructure	1	£10,150,001	£200,000	£10,150,001
Total	*7*	*£99,239,409*	*£200,000*	*£99,239,409*
Hard Infrastructure				
Energy				
Water				
Digital Infrastructure				
Flood Defences				
Sustainable Drainage	15			
Total	***15***			
	74	**£269,341,536**	**£148,200,000**	**£121,341,536**

Source: AECOM

7.3 Delivery

This IDP demonstrates that work is well underway by SKDC, service providers and partners to identity future requirements and to deliver the infrastructure required for development over the Plan period.

Figure 7.1 below shows South Kesteven's growth trajectory, illustrating how housing delivery will be phased over the Local Plan Review period. Infrastructure projects are mapped onto the Local Plan timeline, where timescale / phasing or trigger information is known. As noted above, for the majority of the infrastructure projects delivery dates are not yet available. This is partly to be expected; most service providers operate to a three to five year programming cycle, and infrastructure provision associated with major allocations will be confirmed as these development projects move through the planning process. However, these gaps do emphasise the importance of ongoing work to develop and firm up the infrastructure projects required to deliver growth.

The IDP has formed a basis for conversations about how future growth in South Kesteven can be delivered. Going forward, as a comprehensive assessment of infrastructure and projects needed to support growth, the IDP can provide a tool for future partnership working and co-ordination in the planning and delivery of services.

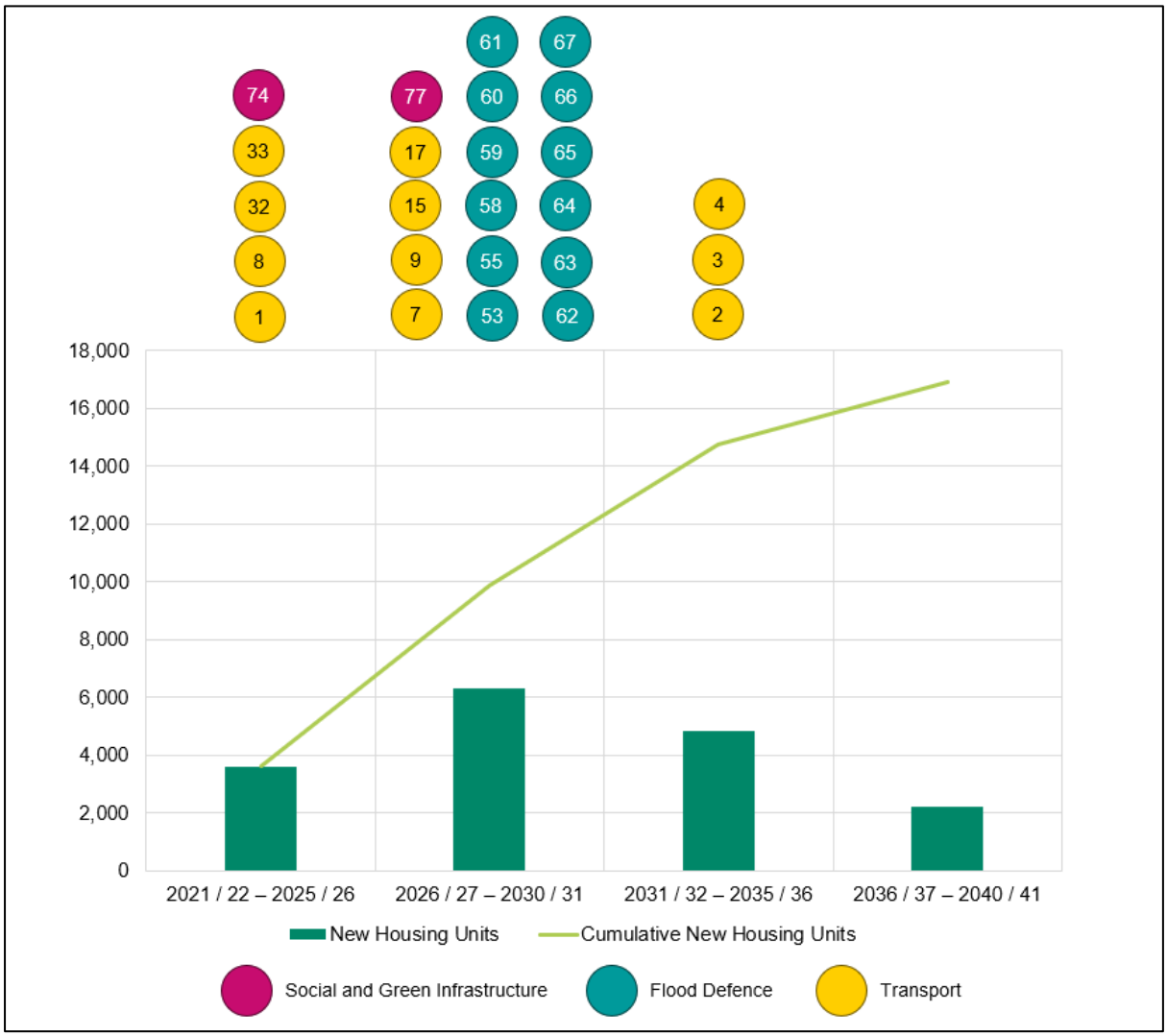
SKDC has engaged with neighbouring Local Planning Authorities (LPAs) as part of the process for formulating the Local Plan 2041, in line with the Localism Act 2011 which created a duty for neighbouring authorities to co-operate on strategic planning issues[110]. Cross-boundary strategic matters of particular importance relate to housing need and provision (Rutland County Council, Peterborough County Council, and South Holland District Council) and infrastructure (Lincolnshire County Council and its Districts).

SKDC is also engaged with sub-regional partners such as the Greater Lincolnshire Local Enterprise Partnership (GLLEP), which spans four upper tier / unitary authorities (LCC, North Lincolnshire, North East Lincolnshire, and Rutland County Council) and Lincolnshire's lower tier councils (West Lindsey, East Lindsey, North Kesteven, South Kesteven, South Holland, Boston, City of Lincoln). The IDP may present opportunities to feed into emerging sub-regional and regional proposals.

In November 2023, LCC, North Lincolnshire Council, and North East Lincolnshire Council secured a £750m devolution deal with the Government. This would see the three councils merge into a Combined County Authority (CCA) with an elected mayor. It is anticipated that the first mayoral election will be held in May 2025. Furthermore, the GLLEP will be disbanded and integrated into the CCA. Some CCA funding will go towards housing and economic development projects, and could therefore be a relevant stream for some South Kesteven infrastructure projects; funding could through this stream could arrive in 2025/26.

[110] The Levelling-up and Regeneration Act, passed on 26 October 2023, abolishes the duty to cooperate requirement. Going forward, the government will replace the duty to cooperate with a new flexible alignment policy (as yet undefined) that will ensure appropriate engagement between Local Planning Authorities (LPAs) on cross-boundary strategic matters.

Figure 7.1 South Kesteven Infrastructure Project Delivery against Planned Growth



Source: AECOM

Table 7.2 Key: Infrastructure Delivery against Planned Growth

Project ID	Project name	Location
1	Grantham South Relief Road (GSRR)	South of Grantham
2	Pennine Way Link Road	North of Grantham
3	Spalding-Western Relief Road	Spalding (outside South Kesteven District)
4	Prince William of Gloucester Barracks highway improvements	Southeast of Grantham
7	A52 Nottingham Junctions Improvement Scheme	A52 Nottingham Junctions
8	A47 Wansford to Sutton dualling	A47 Wansford to Sutton
9	A46 Newark Bypass	Northwest of SK
15	EV Charging Infrastructure Strategy	South Kesteven
17	East Coast Digital Programme (ECDP) - traffic management on rail network	East Coast Main Line (Grantham to Kings Cross)
32	Market town Bus Improvement Programme	Focused on three towns, including Grantham
33	Bus - Cycle Interchanges in rural villages	Including Thurlby, Baston and Langtoft within South Kesteven; Bourne to Market Deeping corridor
53	Lower Witham Flood Resilience Project	Lower Witham Catchment
55	Grantham, Gonerby Road Flood Alleviation Scheme	Grantham
58	Swaton Natural Flood Management Monitoring	Swaton
59	Upper and Lower Witham Floodplain Reconnection	Upper and Lower Witham Catchment
60	Witham Catchment flood bank re-alignment	Witham Catchment
61	South Forty Foot Drain Catchment	Witham Catchment
62	Witham Catchment main river system review	Witham and Welland Catchments
63	Command and Control Structure and Multi-Agency Flood Plan review	Witham and Welland Catchments
64	Bourne North Fen Wetland - project with Lincolnshire Wildlife Trust	Bourne North Fen
65	Communities at risk of flood risk project	Welland Catchment
66	Crowland and Cowbit Washes performance review	Crowland and Cowbit Washes + Welland Catchment
67	Natural Flood Management opportunities	Welland Catchment
74	Expanding capacity of existing facilities at The Deepings School by 1FE	The Deepings
77	Upper Witham Floodplain reconnection and river restoration (Environment Agency)	Upper Witham above and below Grantham.

Source: IDP Project Schedule (Appendix A)

7.4 Funding

Mainstream Funding Sources

Table 7.3 below summarises the key infrastructure funding sources and delivery agencies relevant to South Kesteven Local Plan 2041, by infrastructure type.

Table 7.3 Infrastructure Delivery Agencies and Funding Sources in South Kesteven

Infrastructure Type	Delivery Agencies	Funding Sources for Capital Investment
Transport		
Strategic Road Network	National Highways	National Highways, central government (DfT), LCC, developer contributions
Local Road Network & Transport Projects	LCC (and neighbouring Local Authorities)	LCC, central government, developer contributions
Rail	Network Rail, train service operators	Network Rail
Bus, Cycling and Pedestrian	SKDC, bus service providers (Stagecoach East Midlands, Grant Palmer Ltd, Uno Bus)	SKDC, central government
Education		
Primary Education, Secondary Education	LCC, landowners / developers, Academy Schools	Developers (land / financial contributions, DfE)
Further Education	Colleges, LCC (sixth forms), developers	Education and Skills Funding Agency, developers (land / financial contributions), central government, LEP, local authority grants
Healthcare		
Primary Healthcare	NHS Lincolnshire Integrated Care Board, United Lincolnshire Hospitals NHS Trust, North West Anglia NHS Foundation Trust, developers, NHS	NHS Lincolnshire Integrated Care Board, United Lincolnshire Hospitals NHS Foundation Trust, North West Anglia NHS Foundation Trust, developers, NHS
Acute Healthcare	United Lincolnshire Hospitals NHS Trust, North West Anglia NHS Foundation Trust, NHS Lincolnshire Integrated Care Board	United Lincolnshire Hospitals NHS Trust, North West Anglia NHS Foundation Trust, central government (NHS / DoH programmes, including those drawing on private equity), charitable funds
Green Infrastructure and Open Space	Environment Agency, East Mercia Rivers Trust, Wild Trout Trust. Lincs Wildlife Trust, Woodland Trust	Developer contributions, Regional Flood and Coastal Committee (RFCC) levy, central government, Natural England, HLF, third sector, private sector (credits)
Sports		
Indoor Sports	LeisureSK, SKDC, private sector	Developer contributions, SKDC, private sector
Outdoor Sports	Sport England, SKDC, private sector	Developer contributions, SKDC, private sector
Utilities and Digital		
Electricity, Renewable Energy	Distribution Network Operators, National Grid (formerly Western Power Distribution), Cadent Gas, various renewable energy operators, Ofgem, BEIS, SKDC, District Heating Network Operators, private individuals, consultancies	Distribution Network Operators, private utilities, developers, private companies, third sector contributions, central government, BEIS, SKDC
Gas	National Grid, Cadent Gas	Cadent Gas

Infrastructure Type	Delivery Agencies	Funding Sources for Capital Investment
Water and Wastewater	Anglian Water	Anglian Water, Internal Drainage Boards, developers
Broadband	Openreach, Virgin Media, cellular operators, Department for Digital, Culture, Media and Sport	Commercial operators, central and local government, Department for Digital, Culture, Media and Sport
Emergency Services		
Fire and Rescue Service	Lincolnshire Fire and Rescue Service	Central government, local taxation
Police	Lincolnshire Police	Central government, local taxation
Ambulance Services	East Midlands Ambulance Service NHS Trust	Department of Health and Social Care, NHS England
Flood Defences and Drainage		
Flood Risk and Drainage	Environment Agency, LCC, SKDC, Internal Drainage Boards, Anglian Water, Anglian Northern Regional Flood and Coastal Committee, landowners and developers, Canal and River Trust, National Highways	Central government and local grant funding, Environment Agency, LCC, SKDC, Internal Drainage Boards, Anglian Water, landowners and developers

Developer Contributions

The town planning process provides the means for developers to contribute to the cost of infrastructure necessary to support new development. Developer contributions can take various forms including planning conditions, S106 agreements between local authorities and developers, Section 278 agreements which cover contributions to highways, and the Community Infrastructure Levy (CIL). As outlined in the Levelling Up and Regeneration Bill 2022, a new Infrastructure Levy (IL) will replace S106 agreements and the CIL. However, S106 agreements and the CIL are still in use as the details of the IL have not yet been published.

There is potential for many items on South Kesteven's IDP Project Schedule to be funded by developers. Charges on development and how they are levied will be determined in due course, in line with SKDC policy on developer contributions. The approach will depend on the context for and characteristics of individual developments (including needs arising directly from development and viability) and will also reflect a consideration of priorities given the scale of the infrastructure costs identified within this IDP versus the funding available.

As stated in the SKDC Supplementary Planning Document[111], where on-site or off-site facilities cannot be provided, the developer is required to provide a financial contribution to mitigate this. SKDC policy states that developer contributions will be in the form of planning obligations that are secured through S106 contributions. SKDC has not adopted the CIL as a funding mechanism, but retains the option to consider its introduction.

S106 contributions will be determined on a site by site basis, and must be:

- Necessary to make the development acceptable in planning terms;
- Directly related to the development; and
- Fairly and reasonably related in scale and kind to the development.

In 2022 / 23 SKDC reports that[112]:

- 39 S106 agreements were signed in 2022 / 23 and these will provide a monetary contribution totalling £7.24m;
- £1.01m was received through planning obligations in 2022 / 23;
- A total of £306,000 was spent, including £285,000 for affordable housing, £15,800 for digital infrastructure, and £4,670 for open space and leisure;
- £3.21m will be provided through planning obligations agreed in 2022 / 23 to fund school places in the district; and
- Non-monetary contributions relating to open space, education, tourism, and commitment to affordable housing units have also been secured through planning obligations.

The income associated with S106 Agreements collected in the 2022 / 23 financial year is shown in Table 7.4[113].

Table 7.4 S106 Income 2022 / 23

Monetary Contributions Through Planning Obligations in 2022 / 23	£
Total money received	£1,001,937
Total money spent	£305,902
Total money retained	£3,575,719

Source: South Kesteven District Council, (2023); Infrastructure Funding Statement 2022 / 2023.

[111] South Kesteven District Council, (2012); Planning Obligations Supplementary Planning Document.
[112] South Kesteven District Council, (2023); Infrastructure Funding Statement 2022/2023.
[113] As with CIL contributions, funds deriving from S106 Agreements may be collected at varying stages of a development, and usually at trigger points determined by identifying the point most beneficial to the development. Accordingly, funds received in a financial year may derive from Agreements in preceding years.

Alternative Funding Sources

The overall context for Local Authorities in recent years has been one of reducing budgets and increased reliance on competitive funding and the private sector to deliver services and new infrastructure. Other public sector agencies have similarly been under budgetary pressure, while the ability of development to contribute to infrastructure is frequently limited by viability constraints.

It is therefore important to consider how other funding sources available to Local Authorities could assist in meeting the infrastructure funding gap. Such sources are diverse, and include:

- One-off Public Sector Grants. Recent examples of one-off capital grants available via a competitive bid process include the Levelling Up Fund (DLUHC), Future High Streets Fund, Safer Streets Fund, Getting Building Fund (GBF), Innovate UK Launchpad Programme, the Local Growth Fund (SEMLEP), the National Productivity Investment Fund (DfT), and the Active Travel Fund (DfT). Forthcoming opportunities include the Brownfield, Infrastructure and Land Fund.[114]
- New Homes Bonus. The New Homes Bonus is a grant paid by central government to local councils to reflect and incentivise housing growth in their areas. It is based on central government match funding the council tax raised for new homes and properties brought back into use, with an additional amount for affordable homes, for the following four years.
- UK Shared Prosperity Fund (UKSPF). While a member of the EU, the UK received around £2bn in structural funding, and could also access the European Investment Bank115. Arrangements for national successor funding were confirmed in April 2022 when the Government launched the UKSPF[116]. This is a £2.6bn fund for local investment with all areas of the UK receiving an allocation via a funding formula rather than a competition. The fund is centred around three key themes: Community and Place, Supporting Local Businesses and People and Skills. SKDC has been allocated a total of £3.9m to spend between 2023 and March 2025. SKDC has also been allocated an additional £540,460 as part of the Rural Fund which is integrated into to the UKSPF to support activities that address the needs of rural areas.
- Public Works Loan Board (PWLB). Councils can obtain loans at low rates from the PWLB under prudential principles. However, the availability of revenue funding to repay the loan and the political appetite for borrowing are factors affecting the attractiveness of this option.
- Third-party equity investment, where there are potential commercial returns for funders. This includes institutional investors / sovereign wealth funds and pension funds who are attracted to the UK infrastructure market as a place to invest.

7.5 Next Steps

This IDP forms part of the evidence base on infrastructure provision for the Local Plan Review. Beyond adoption of the Local Plan to 2041, the IDP can be updated as more detailed information comes forward. It will therefore provide a valuable tool to ensure that the infrastructure required to support growth in South Kesteven is effectively planned, funded and delivered. In particular, the IDP schedule provides a comprehensive project database which can be further developed as project information emerges, providing a basis for future collaboration between stakeholders and a mechanism to appropriately align the work of service providers and other partner organisations.

The review of funding sources presented above demonstrates that the funding landscape is dynamic. There are risks around some well-established funding sources while new alternative funding opportunities are emerging at the same time. As a next step, SKDC and partners may need to prioritise projects (or clusters or portfolios of projects) and to explore further which specific combination of funding sources is likely to be most appropriate in each instance. Through continued joint-working, SKDC and partners will be in a strong position to respond promptly and effectively to infrastructure funding opportunities, and to attract investment.

[114] Homes England, (2023); Brownfield, Infrastructure and Land Fund
[115] House of Commons Library, (2021); The UK Shared Prosperity Fund.
[116] House of Commons Library, (2021); The UK Shared Prosperity Fund.

Appendix A Project Schedule

Appendix B Development Trajectory

B.1 Housing Sites

Table B.1 Housing Sites

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
Proposed Local Plan 2041 Allocations								
SKPR-266	Stamford Gateway (Exeter Fields), Stamford	-	-	160	20	-	180	-
SKPR-26	Priory Farm Land, Deeping St James	-	-	18	-	-	18	-
SKPR-144	Land to the West Millfield Road / East of A15, Market Deeping	-	-	120	80	-	200	-
SKPR-53 (includes 99, 84, 131)	Land at Mill Drove, PE6 9PB	-	-	80	175	30	285	-
SKPR-83	Land north of Mill Drove, Bourne	-	-	132	40	-	172	-
SKPR-117	Land to the east of Sheepwash Lane, Grantham	-	-	72	-	-	72	-
SKPR-268	Station Approach, Grantham NG31 6HS	-	-	-	218	50	268	-
SKPR-57	Land off Belton Lane, Great Gonerby, NG31 8NB	-	-	88	300	240	628	-
SKPR-62	The Grantham Church (VA) High School Playing Fields, Queensway, Grantham	-	-	76	-	-	76	-
SKPR-58	Land on the east side of at Ermine Street, Ancaster, NG32 3PP	-	-	26	-	-	26	-

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
SKPR-283	Land off St Martins Way, Ancaster	-	-	65	-	-	65	-
SKPR -242	Land East of Honington Road, Barkston	-	-	65	-	-	65	-
SKPR-109	Land fronting Deeping Road (A15), Baston	-	-	86	-	-	86	-
SKPR-103	Land to the West of Pointon Road, Billingborough	-	-	99	-	-	99	-
SKPR-61	Site of former Aveland School, Birthorpe Road, Billingborough, Sleaford, NG34 0QT	-	-	41	-	-	41	-
SKPR-120	Land at the East of Stamford Road, Colsterworth	-	-	70	-	-	70	-
SKPR-247	Land North of Bourne Road, Corby Glen	-	-	144	-	-	144	-
SKPR-241	Land off Church Lane, Great Gonerby, South Kesteven, , Lincolnshire, NG31 8JU	-	-	86	-	-	86	-
SKPR-74	Land west of The Drift, Harlaxton	-	-	24	-	-	24	-
SKPR-71	Land north of Dickens Close, Stowe Road, Langtoft	-	-	55	-	-	55	-
SKPR-135	Land to the South of Edenham Road, Hanthorpe	-	-	48	-	-	48	-
SKPR-56	Land at Obthorpe Lane, Thurlby	-	-	86	-	-	86	-
SKPR-192	Land North of Mill Lane / High Street, South Witham, NG33 5QL	-	-	82	25	-	107	-
Sub-Total		-	-	**1,723**	**858**	**320**	**2,901**	-

Adopted Local Plan Allocation (no planning permission yet)

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
LV-H2 - (SKPR-271)	LV-H2: Wilsford Lane (South)	-	-	35	-	-	35	-
LV-H3- (SKPR-272)	LV-H3: Low Road	-	140	130	-	-	270	-
LV-H10 - (SKPR-275)	LV-H10: Thistleton Lane and Mill Lane	-	-	18	16	-	34	-
LV-H11- (SKPR-276)	LV-H11: Land North of High Street	-	-	31	-	-	31	-
LV-H12 - (SKPR-277)	LV-H12: Part of Elm Farm Yard	-	-	30	20	-	50	-
GR3-H1 - (SKPR-278)	GR3-H1: Spitalgate Heath - Garden Village (Southern Quadrant)	-	-	350	500	500	1,350	2,350
GR3-H3 - (SKPR-280)	GR3-H3: Land adjacent to Rectory Farm (Phase 3 North West Quadrant)	-	-	120	200	84	404	-
GR3-H4 - (SKPR-65)	GR3-H4: Prince William of Gloucester Barracks	-	-	395	675	675	1,745	2,080
STM1-H1 - (SKPR-281)	STM1-H1: Stamford North	-	40	470	640	200	1,350	-
DEP1-H1 - (SKPR-36)	DEP1-H1: Towngate West	-	-	73	-	-	73	-
DEP1-H2 - (SKPR-37)	DEP1-H2: Linchfield Road	-	-	250	430	-	680	-
Sub-Total			**180**	**1,902**	**2,481**	**1,459**	**6,022**	**4,430**

Full Planning Permission

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
S21 / 1841 and S19 / 2235	LV-H5: Swinstead Road / Bourne Road	-	183	82	-	-	265	
S21 / 0655	LV-H8: Main Road (North)	-	43	-	-	-	43	
S18 / 0904	BRN1-H1: Land at Manning Road, Bourne	-	95	26	-	-	121	
S21 / 1045	1 Station Approach, Ancaster, NG32 3QY	-	-	30	-	-	30	-
S19 / 1475	Land Off Cherryholt Road, Cherryholt Road, Stamford, PE9 2EP	-	31	-	-	-	31	-
S18 / 1408	Spittlegate Farm , Gorse Lane, Grantham, NG31 7UF	-	4	17	-	-	21	-
S21 / 1906	LV:H4: Bourne Road	-	-	70	-	-	70	-
S19 / 0740	Land At Bourne Road, Morton	-	22	-	-	-	22	-
S14 / 2953	Land North Of 372-400, Dysart Road	-	227	-	-	-	227	-
S21 / 0415	Land to the North of Doddington Lane, Claypole	-	16	-	-	-	16	-
S10 / 1204	Fossitt & Thorne, Eastgate, Bourne, PE109LB	-	11	-	-	-	11	-
S10 / 0969	Former Welland Motor Factors Site, North Street, Stamford	-	-	13	-	-	13	-
S16 / 0112	Land North Of Towngate East And South Of Northfield Road Market Deeping	62	58	110	10	-	178	-
S21 / 2094	Swinegate	-	20	-	-	-	20	-
S18 / 1859	81 Harrowby Lane, Grantham, MG31 9HZ	-	13	-	-	-	13	-

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
S14 / 1684	Southfield Business Park, Southfield House, Falcon Way, Bourne, Lincolnshire, PE10 0FF	-	3	-	-	-	3	-
S14 / 3565	85 Manthorpe Road, Grantham Lincolnshire NG31 8DE	-	26	-	-	-	26	-
S19 / 1138	LV-H6: Easthorpe Road	-	46	-	-	-	46	-
S19 / 0588	Land To Rear Of Gladstone Terrace , Prospect Place, Grantham, NG31 8BW	-	24	-	-	-	24	-
S16 / 1451	Land Off Main Road, long Bennington	-	21	-	-	-	21	-
S18 / 2111	153 Eastgate, Deeping St James, Lincolnshire, PE6 8RB	-	7	-	-	-	7	-
S21 / 2500	LV-H1: Wilsford Lane (North)		71	25			96	-
Sub-Total		**62**	**921**	**373**	**10**	**-**	**1,304**	**-**
Outline planning permission								
LV-H7- (SKPR-273)	LV-H7 Main Road (South)	-	39	11	-	-	50	-
LV-H9- (SKPR-274)	LV-H9: Folkingham Road	-	71	-	-	-	71	-
S19 / 0338	Bridge End Road, Grantham, NG31 7TS	-	-	120	85	-	205	-
S18 / 1557	The Grantham Church High School, Queensway, Grantham, NG31 9RA	-	-	40	-	-	40	-
S08 / 0892	former Grantham Tyre & Auto, Rycroft Street, Grantham, NG316	-	-	38	-	-	38	-

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
S20 / 2056	Land North Of Barnack Road, Stamford	-	-	110	80	-	190	-
SK.94 / 0125	Elsea Park	1945	-	-	-	-	-	-
S08 / 1231	Poplar Farm	402	-	377	500	250	1,127	-
Sub-Total		**2347**	**110**	**696**	**665**	**250**	**1721**	**-**
Reserved Matters Planning Permission								
S15 / 3189	Land North of Longcliffe Road and Ryedale Close, Manthorpe Road	-	64	200	200	16	480	-
S14 / 3097	The Old Quarry, Station Road, Castle Bytham	-	24	57	-	-	81	-
S16 / 2285	Falcon Way, Bourne, PE10 0FF	-	19	-	-	-	19	-
S18 / 0452	Ferndale House , Swinstead Road, Corby Glen, NG33 4NU	-	25	-	-	-	25	-
S17 / 2466	Land West of Linchfield Road, Deeping St James	11	134	-	-	-	134	-
S17 / 1900	Former Gravel Works, Stowe Road	-	35	-	-	-	35	-
S14 / 3571	Land South Of Barrowby Road	42	258	-	-	-	258	-
S20 / 0368	Land At Elsea Park, Bourne - Zone 8	-	218	166	-	-	384	-
S21 / 0113	Land South of Harvey Close and West of Wincanton Way, Bourne, PE10 9PQ	-	260	113			373	-
S18 / 0937	Zone 9, Land East of A151, Raymond Mays Ways	-	165	-	-	-	165	-

Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
S18 / 1840	Zone 9, Land to the North of Musselburgh Way, Elsea Park, PE10 OXY	-	63	-	-	-	63	-
S18 / 1588	Land West of Sandown Drive and North of the Centre Zone 3, Elsea Park, Bourne, PE100WL	-	34	-	-	-	34	-
S17 / 0420	Zone 6 (Phase B) , Elsea Park, Bourne , PE10 9PQ	-	39	-	-	-	39	-
S16 / 2553	Zone 4 and 6 (in part), Elsea Park	-	4	-	-	-	4	-
S16 / 1113	Barratt & DWH Development, Grantham Phase 2, Barrowby Road, Grantham, NG31 8SE	263	8	-	-	-	8	-
Sub-Total		**316**	**1350**	**536**	**200**	**16**	**2102**	-
Part has Full Planning Permission								
SKPR-279	GR3-H2: Rectory Farm (Phase 2 North West Quadrant)	-	108	560	482	-	1,150	-
SKPR-282	STM1-H2: Stamford East	-	240	80	-	-	320	-
Sub-Total		-	**348**	**640**	**482**	**-**	**1,470**	-
Planning permission being considered								
S22 / 2308	Larch Close	-	21	-	-	-	21	-
Sub-Total		-	**21**	**-**	**-**	**-**	**21**	**-**

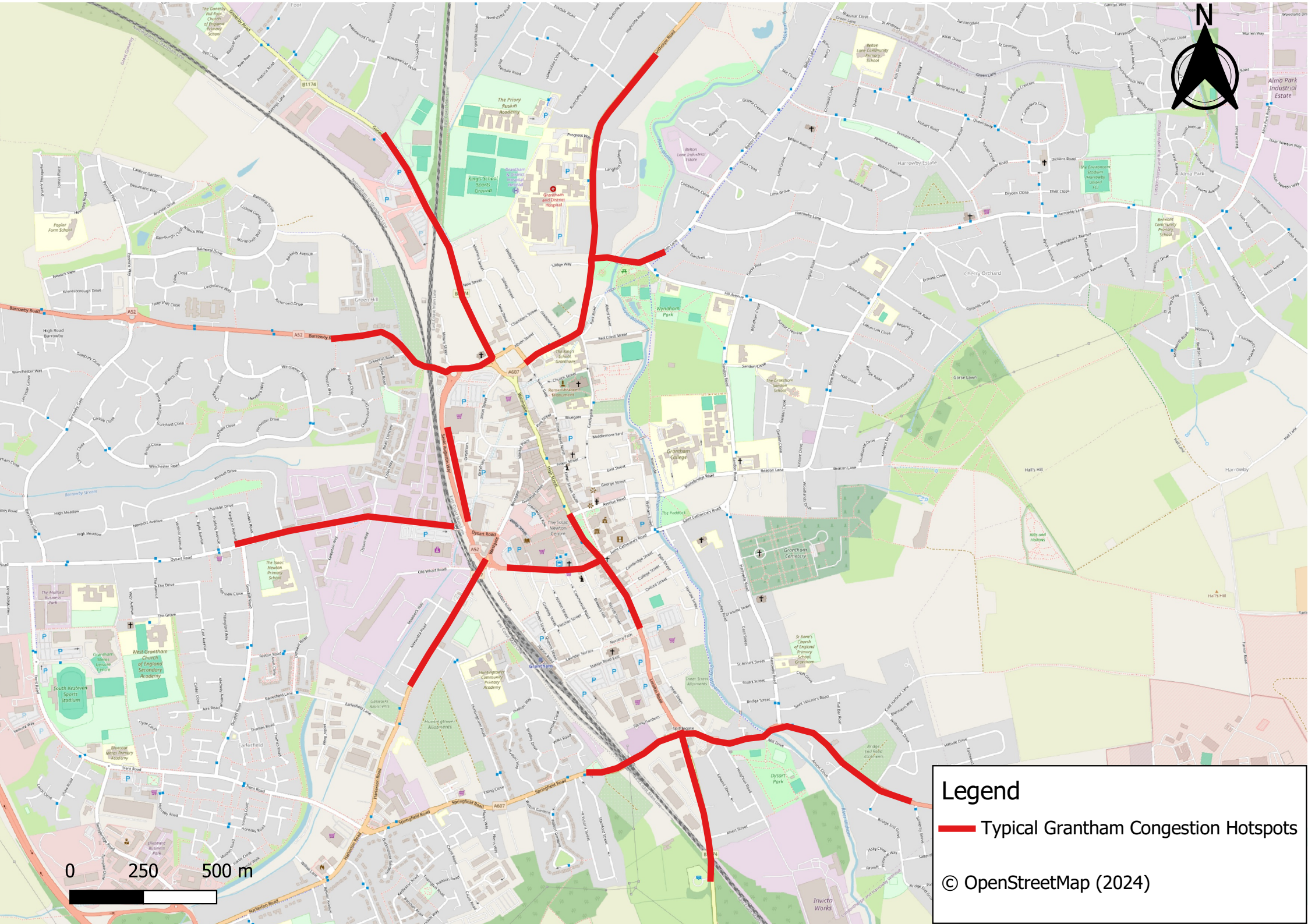
Site Reference	Site Name	Completion on site before 2021 / 22	2021 / 22 – 2025 / 26	2026 / 27 – 2030 / 31	2031 / 32 – 2035 / 36	2036 / 37 – 2040 / 41	Total 2021 – 2041	2041+
All Small Sites with Planning Permission (less than 10 dwellings with planning consent)			238	-	-	-	238	-
With planning permission, including under construction (Total Small Sites Minus 10% Lapse Rate)			402	267	-	-	669	-
Windfall allowance expected to contribute to years			30	150	150	150	480	-
Demolitions			-6	-	-	-	-6	-
Supply			**3,594**	**6,287**	**4,846**	**2,195**	**16,922**	**4,430**

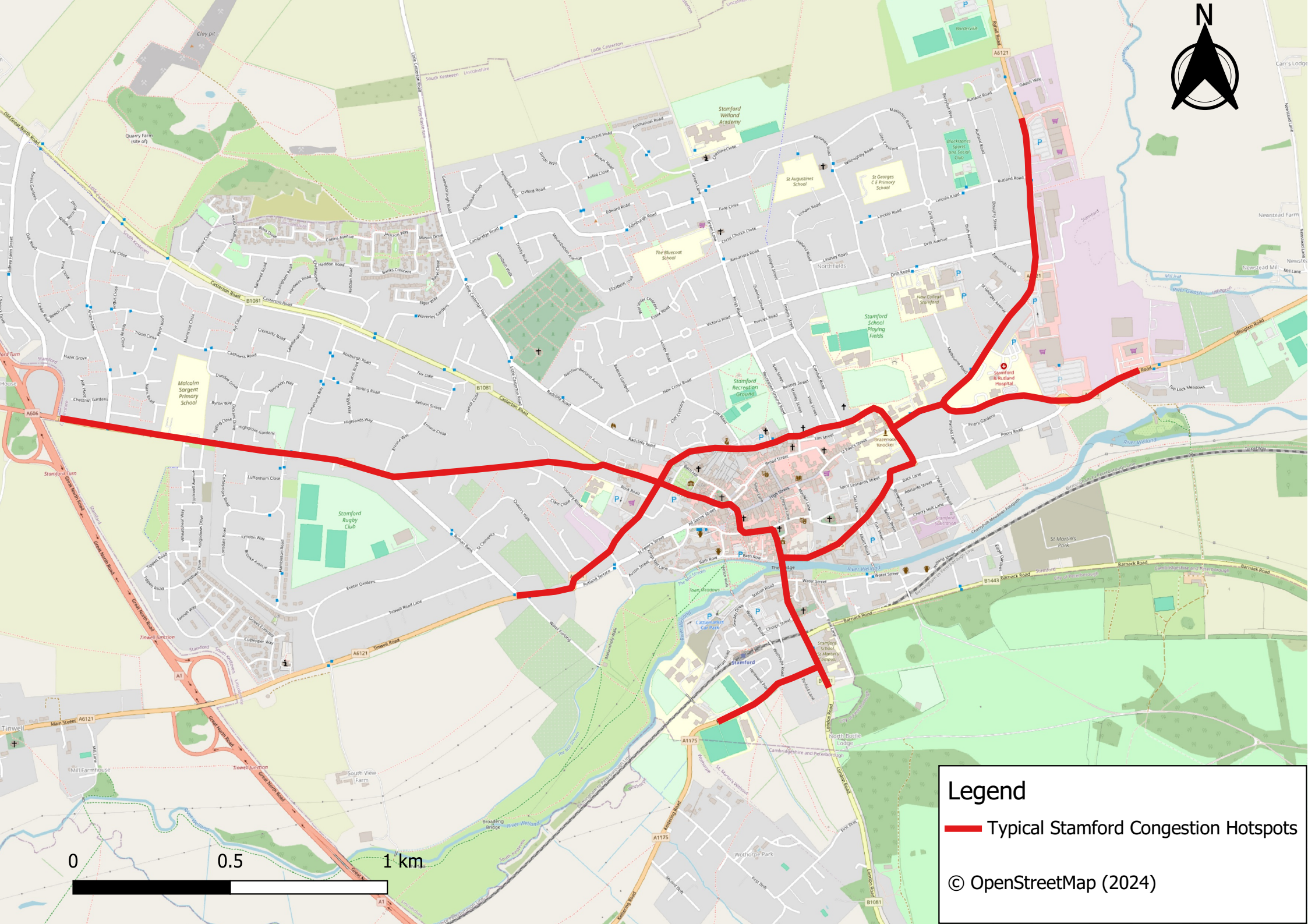
B.2 Employment Sites

Table B.2 Employment Sites

Site ID	Site address	Size (ha)
SKPR-286	Grantham Southern Gateway, Grantham (GR-SE1)	119.8
SKPR-285	Land South of Spalding Road, Bourne (BO-SE1)	8.0
SKPR-284	Extension to Northfields Industrial Estate, The Deepings (DEP-SE1)	14.0
SKPR-287	Roseland Business Park, Long Bennington (RPB-E1)	9.0
SKPR-288	Land East of Ryhall Road, Stamford (ST.E1)	2.2
SKPR-289	Land North of Bourne Eau and East of Car Dyke, Bourne (BO.E2)	3.0
SKPR-55	Land fronting Peterborough Road, The Deepings (DEP1-E1)	4.2
SKPR-65	Prince William of Gloucester Barracks, Grantham (GR3-H4)	8.0
SKPR-182	Grantham Oakdale, Gonerby Moor, Grantham	80.0
SKPR-100	Land South of Gonerby Lane, West of the A1, Gonerby Moor, Grantham	63.7
SKPR-202	Land at Gonerby Lane, Gonerby Moor, Grantham	29.0
SKPR-262	Land at Valley Lane, Long Bennington	6.3
SKPR-278	Spitalgate Heath Garden Village Grantham (GR3-H1)	45.9
SKPR-268	Station Approach, Grantham	0.2
Total		**393.3**

Appendix C Congestion Maps


N
0
250
500 m
Legend
Typical Grantham Congestion Hotspots
© OpenStreetMap (2024)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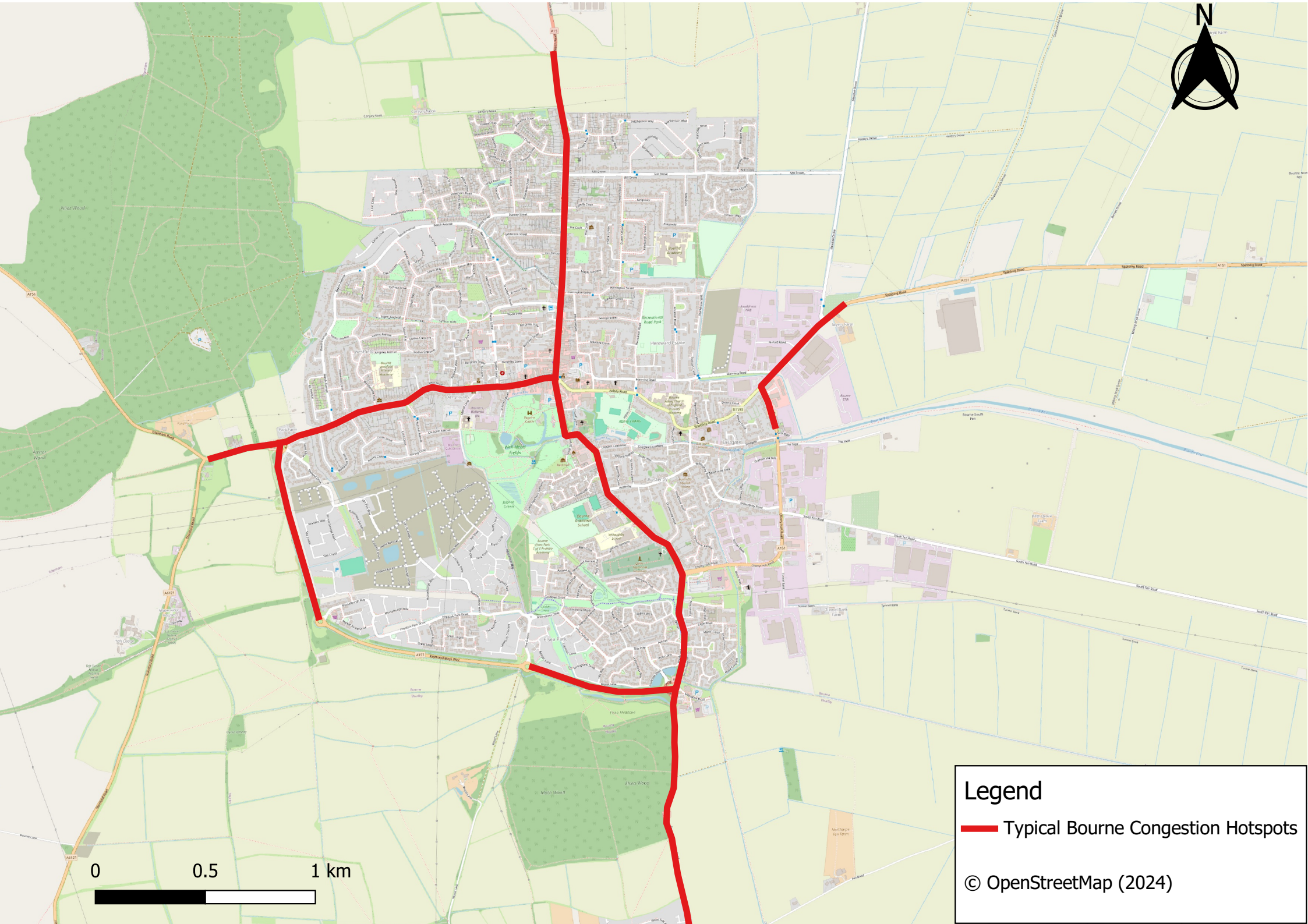
1 km
Legend
Typical Stamford Congestion Hotspots
© OpenStreetMap (2024)


N
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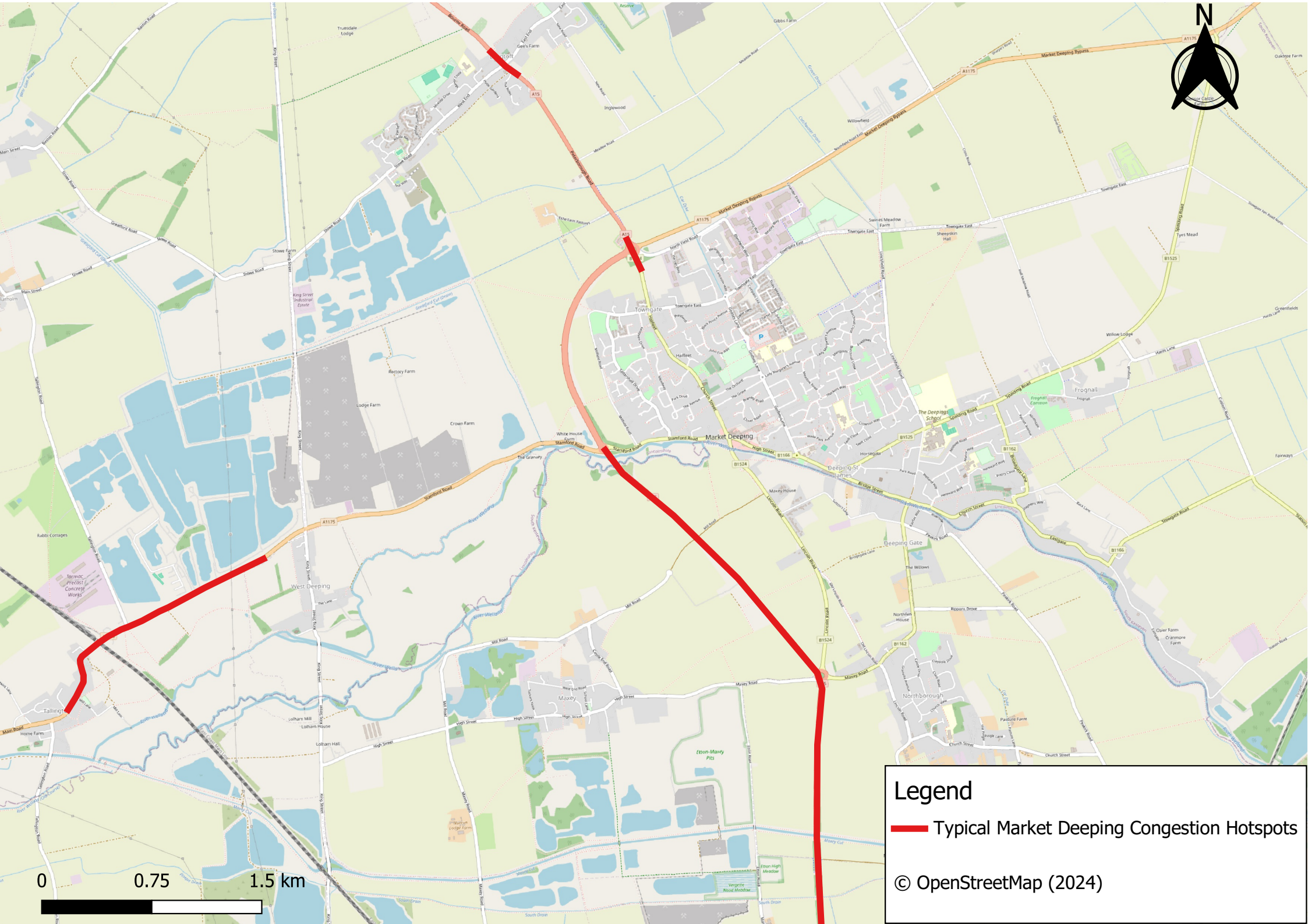
0.5
1 km
Legend
Typical Bourne Congestion Hotspots
© OpenStreetMap (2024)


N
Legend
Typical Market Deeping Congestion Hotspots
© OpenStreetMap (2024)
0
0.75
1.5 km

Appendix D LCC Comments in Relation to Allocated Sites (Summary)

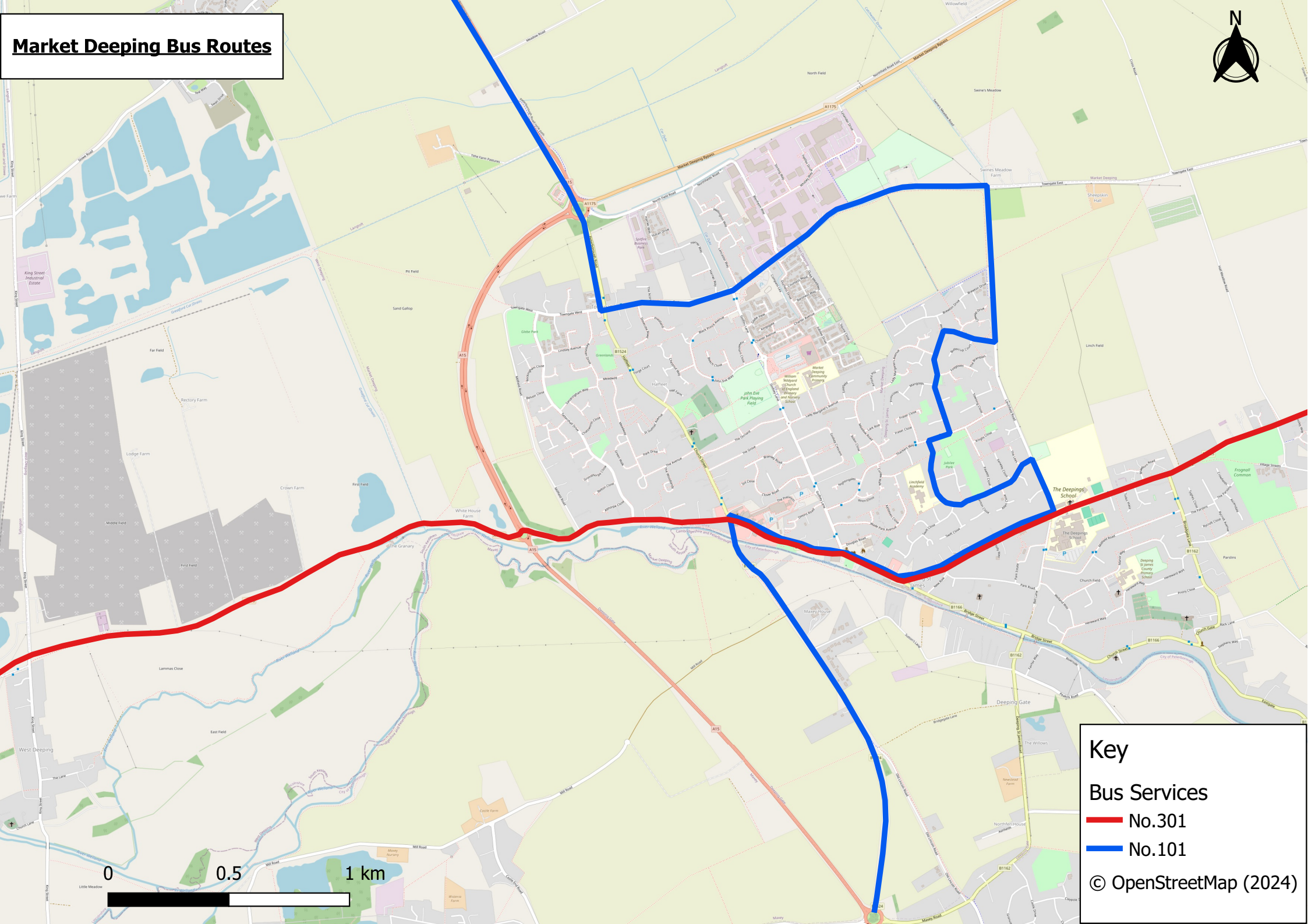
	Site Ref	Site Name	Comment	Infra Type								
				Highways / Carriageway	Speed Limits	Junctions	Bus stops / infra	PRoW	Cycling	Walk / Footway	Flood Risk	Internal/External Infrastructure Constraint
SKPR-26		Priory Farm Land, Deeping St James	Footway connection to existing network on Broadgate Lane	×	×	×	×	×	×	✓	×	Internal
SKPR-144	SKPR-99	Land to the south of Mill Drove and west of Meadow Drove	Extension of speed limit. Footway required to connect with the existing network along with improvements to Mill Drove and widening the existing bridge. Access served from Mill Dove. Improvements to the adjacent PROW network.	✓	✓	×	×	✓	×	✓	×	Internal & External
	SKPR-84	Land west of Meadow Drove Bourne	Extension of 30mph speed limit. Braceby Road to be widened fronting the site up to the junction with Peck Hill. Connecting footway to link with the existing network. Adjacent PROW to be improved and connections made from the development.	✓	×	✓	×	✓	×	✓	×	External
	SKPR-131	Land to the West of Meadow Drove, Bourne	Extension of speed limit to accommodate devleopment. Lack of footways in the vicinity of the site, considerable works required to facilitate passage of pedestrians to the Town Centre.	×	✓	×	×	×	×	✓	×	External
	SKPR-144	Land at Mill Drove, PE6 9PB	Large site likely to have significant impact on highway network and junctions may need upgrading subject to TA modelliing. Also needs significant footway connections (see also sitesSKPR-84 and SKPR-131 for further comments)	✓	×	✓	×	×	×	✓	×	
SKPR-83		Land north of Mill Drove, Bourne	Large site likely to have some impact on highway network and junctions may need upgrading subject to TA modelliing. Footway connections needed to along frontage of site and to existing facilities	✓	×	✓	×	×	×	✓	×	Internal & External
SKPR-117		Land to the east of Sheepwash Lane, Grantham	Upgrade access to Sheepwash Lane, visibility concerns. Check adjacent developments for access possibilities. SW flood risk / watercourse?	✓	×	✓	×	×	×	×	✓	External
SKPR-268		Station Approach,Grantham NG31 6HS	Access to Station Road East appears ok. Existing accesses to public car parks. Station Road/A52 traffic light controlled. Station Road East jnc A52 appears ok. Possible capacity betterment when comparing existing/proposed uses. Station Road unadopted would require sustainable improvements.	✓	×	✓	×	×	×	×	×	External
			Large site likely to have some impact on highway network and junctions may need upgrading subject to TA modelliing. Footway connections needed to along frontage of site and to existing facilities	✓	×	✓	×	×	×	✓	×	External
SKPR-57		Land off Belton Lane, Great Gonerby, NG31 8NB	Access at Belton Lane acceptable in princicple subjct to TA. Traffic impact at junctions on Belton Lane with Newark Hill and A607 likely to need significant junction upgrades. Footway/cycleway connections needed to be provided along Belton Lane to Great Gonerby (around 1km). SIte should also provide footway/cycleway connections to residential to south. Overall mitigation requirec probably too great for site.	×	×	✓	×	×	✓	✓	×	Internal & External
SKPR-62		The Grantham Church (VA) High School Playing Fields, Queensway, Grantham	FW connections at joint of Queensway. SW flooding?	×	×	×	×	×	×	✓	✓	External
GR3-H4 -(SKPR-65)		GR3-H4: Prince William of Gloucester Barracks	This site has good highway access onto the A52 and the GSRR (When complete). The A52 provides a highway connection to the Town Centre. A significant amount of active travel and sustainable transport measures would be necessary to reduce car mode share and make the traffic impact of this development acceptable. Several junctions between the site (notably Gainsborough Corner) would need re-configuring to promote active travel. A detailed Transport Assessment and TRavle Plan would be necessary.	✓	×	✓	×	×	✓	✓	×	External
DEP1-H2 - (SKPR-37)		DEP1-H2: Linchfield Road	TA required to show if any junctions on highway network would need upograding. Linchfield Road would need widening along site perimeter and footway/cycleways providing, in addition to connections to Town Centre which need providing.	✓	×	✓	×	×	✓	✓	×	External
S14/3571		Land South Of Barrowby Road	Access on Barrowby Road will need consideration, close to A1/A52 junction (National Highways) and other approved permitted accesses.	✓	×	✓	×	×	×	×	×	External
SKPR -242		Land East of Honington Road, Barkston	SW flood risk. Frontage footpath and possibly one opposite. Honington Road is a bus route.	×	×	×	✓	×	×	✓	✓	Internal & External
SKPR-109		Land fronting Deeping Road (A15), Baston	Visibility concerns due to existing boundary treatments. Possible extension of speed limit dependant on access location. Connections to be made to the PROW north of the proposed site along with improvements to the network. Consideration for pedestrians along Deeping Road to connect with existing network. TA and TP to support application proposals.	×	✓	×	×	✓	×	✓	×	Internal & External
SKPR-120		Land at the East of Stamford Road, Colsterworth	Bourne Road- 30mph, existing footway- sections need to be widened, wide verges- vis ok, check access width Stamford Road- 60mph, needs connecting footway, existing footway to be widened Stamford Road/Bourne Road junction- poor vis/stop line.	✓	✓	✓	×	×		✓	×	Internal & External
SKPR-247		Land North of Bourne Road, Corby Glen	No existing footway links. Frontage footway on Bourne Road would need to be provided which would require culverting of existing ditch. Access would need to be from Bourne Road as there if no direct access to the publicly maintained highway on Walsingham drive. TA and TP required.	✓	×	✓	×	×	×	✓	×	Internal & External
SKPR-241		Land off Church Lane, Great Gonerby, South Kesteven, , Lincolnshire, NG31 8JU	Church Lane single track restricted byway. Surfaced to bend only. No footways/kerbing/drainage. Would require bringing up to adoptable standard to point of access. Improvements to link to PROW. SW flood issues. Church Lane jnc with Grantham Road vis ok. FW provision to Grantham ok with good access to shops and school.	✓	×	✓	×	✓	×	✓	✓	Internal & External
SKPR-74		Land west of The Drift, Harlaxton	30mph. FW adj and opposite. Vis achievable depending on poition. SW flood issues. Possible 3rd party land issues if access direct to The Drift. Ped crossing issues A607?	×	✓	×	×	×	×	✓	✓	Internal & External
SKPR-135		Land to the South of Edenham Road, Hanthorpe	Principle is acceptable. Footway widening/improvements along Hanthorpe Road.	×	×	×	×	×	×	✓	×	External
SKPR-56		Land at Obthorpe Lane, Thurlby	Obthorpe Lane needs to be widened to point of access. Access should be positioned to north of site. Link footway to be provided to link to the existing footway on obthorpe Lane. TRO required to extend speed limit.	✓	✓	×	×	×	×	✓	×	Internal & External
SKPR-192		Land North of Mill Lane / High Street, South Witham, NG33 5QL	Carriageway width acceptable. Suitable access point achievable. No existing frontage footways. Footway link would need to be provided to link to existing footway on High Street. TRO to extend existing speed limit on Mill Lane, will be required.	✓	✓	×	×	×	×	✓	×	Internal & External
S17/1900		Former Gravel Works, Stowe Road	Preferred to have access via adjacent development and not a further access along Stowe Road which could be problematic due to its proximity to the adjacent access.	✓	×	✓	×	×	×	×	×	External

S21/0415	Land to the North of Doddington Lane, Claypole	Accessed form existing commited development (existing Lindum's S38). Check adjacent planning apps regarding frontage footpaths, passing places and PROW. SW flood issue.	×	×	×	×	✓	×	✓	×	External

Employment Sites

Site Ref	Site Name	Comment	Infra Type								
			Highways / Carriageway	Speed Limits	Junctions	Bus stops / infra	PRoW	Cycling	Walk / Footway	Flood Risk	Internal/External Infrastructure Constraint
SKPR-55	d fronting Peterborough Road, The Deepings (DEP1-	TA/TP Spitfire Park is private and would need upgrading to an adoptble standard. Alternate preferred access from Peterborough Road. Footway connection to Market Deeping.	×	×	✓	×	×	×	✓	×	Internal & External
SKPR-65	nce William of Gloucester Barracks, Grantham (GR3-I	This site has good highway access onto the A52 and the GSRR (When complete). The A52 provides a highway connection to the Town Centre. A significant amount of active travel and sustainable transport measures would be necessary to reduce car mode share and make the traffic impact of this development acceptable. Several junctions between the site (notably Gainsborough Corner) would need re-configuring to promote active travel. A detailed Transport Assessment and TRavle Plan would be necessary.	✓	×	✓	×	×	✓	✓	×	Internal & External
SKPR-182	Grantham Oakdale, Gonerby Moor, Grantham	This site could take access from the B1174. However, due to its remote lcoation from Grantham Town Centre and its access to the A1, it is likely to be predominantly reliant on the private car for travel. Active travel and sustainable modes would be unlikely to mitigate the impact of traffic which on the B1174 junctions is likely to be severe.	✓	×	✓	×	×	✓	✓	×	Internal
SKPR-100	Land South of Gonerby Lane, West of the A1, Gonerby Moor,Grantham	This site could take access from Gonerby Lane, which would need upgrading to the A1 junctions. However, due to its remote lcoation from Grantham Town Centre and its immediate access to the A1, it is likely to be predominantly reliant on the private car for travel. Active travel and sustainable modes would be unlikely to mitigate the impact of traffic which is likely to be severe on the adjoining highway network.	✓	×	✓	×	×	✓	✓	×	Internal & External
SKPR-202	Land at Gonerby Lane, Gonerby Moor,Grantham	The proposals show employment uses and not residential ? This site is same as Parcel A of SKPR-185, not suitable for residential.	×	×	×	×	×	×	×	×	N/A
SKPR-262	Land at Valley Lane, Long Bennington	Pedestrian connectivity required into Village Centre, significant length of footway required. Significant ditch fronts the site.	×	×	×	×	×	×	✓	×	Internal & External
SKPR-268	Station Approach,Grantham	Access to Station Road East appears ok. Existing accesses to public car parks. Station Road/A52 traffic light controlled. Station Road East jnc A52 appears ok. Possible capacity betterment when comparing existing/proposed uses. Station Road unadopted would require sustainable improvements.	✓	×	✓	×	×	×	×	×	External

Appendix E Bus Maps


Market Deeping Bus Routes
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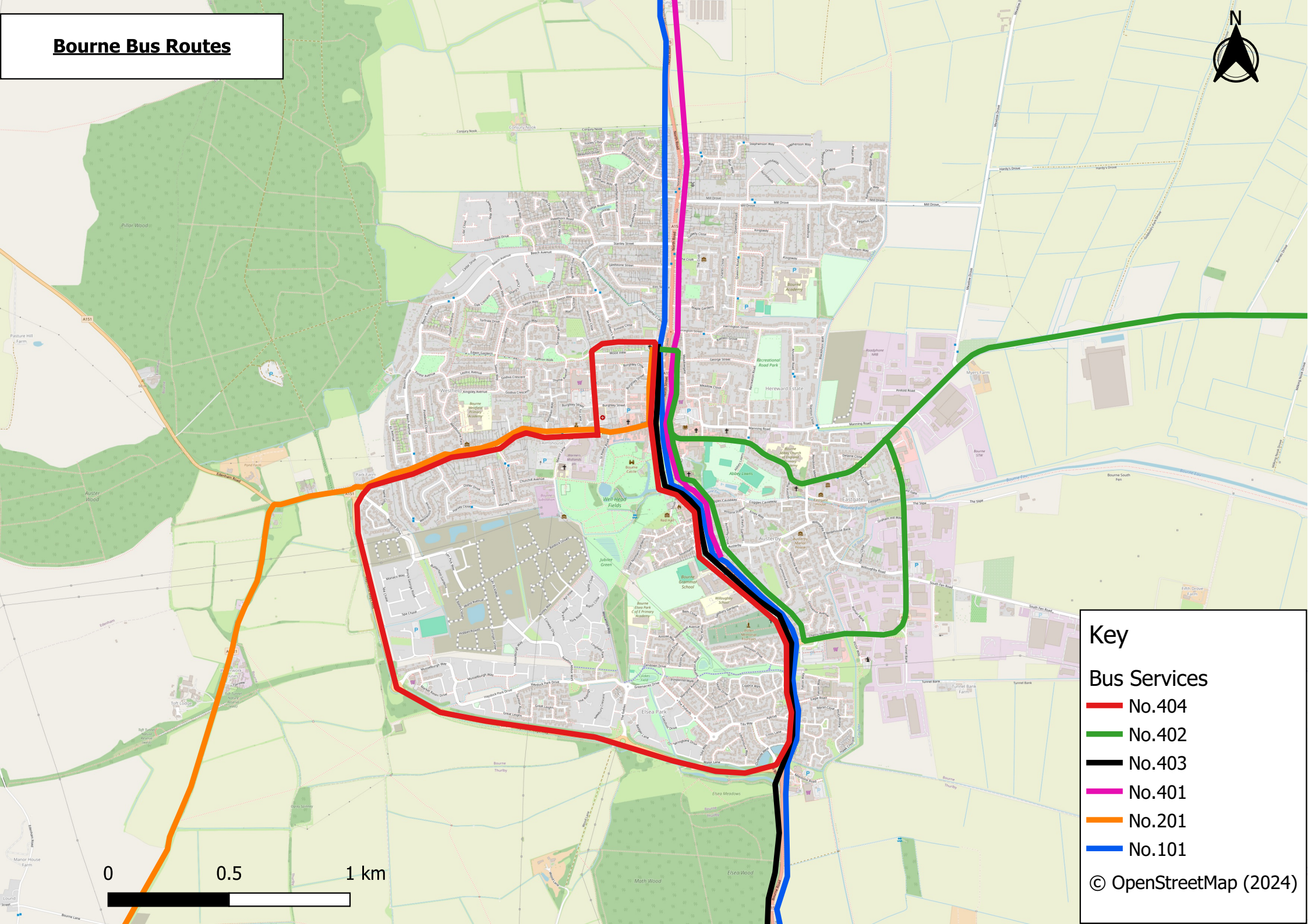
0.5
1 km
Key
Bus Services
No.301
No.101
© OpenStreetMap (2024)


Bourne Bus Routes
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Key
Bus Services
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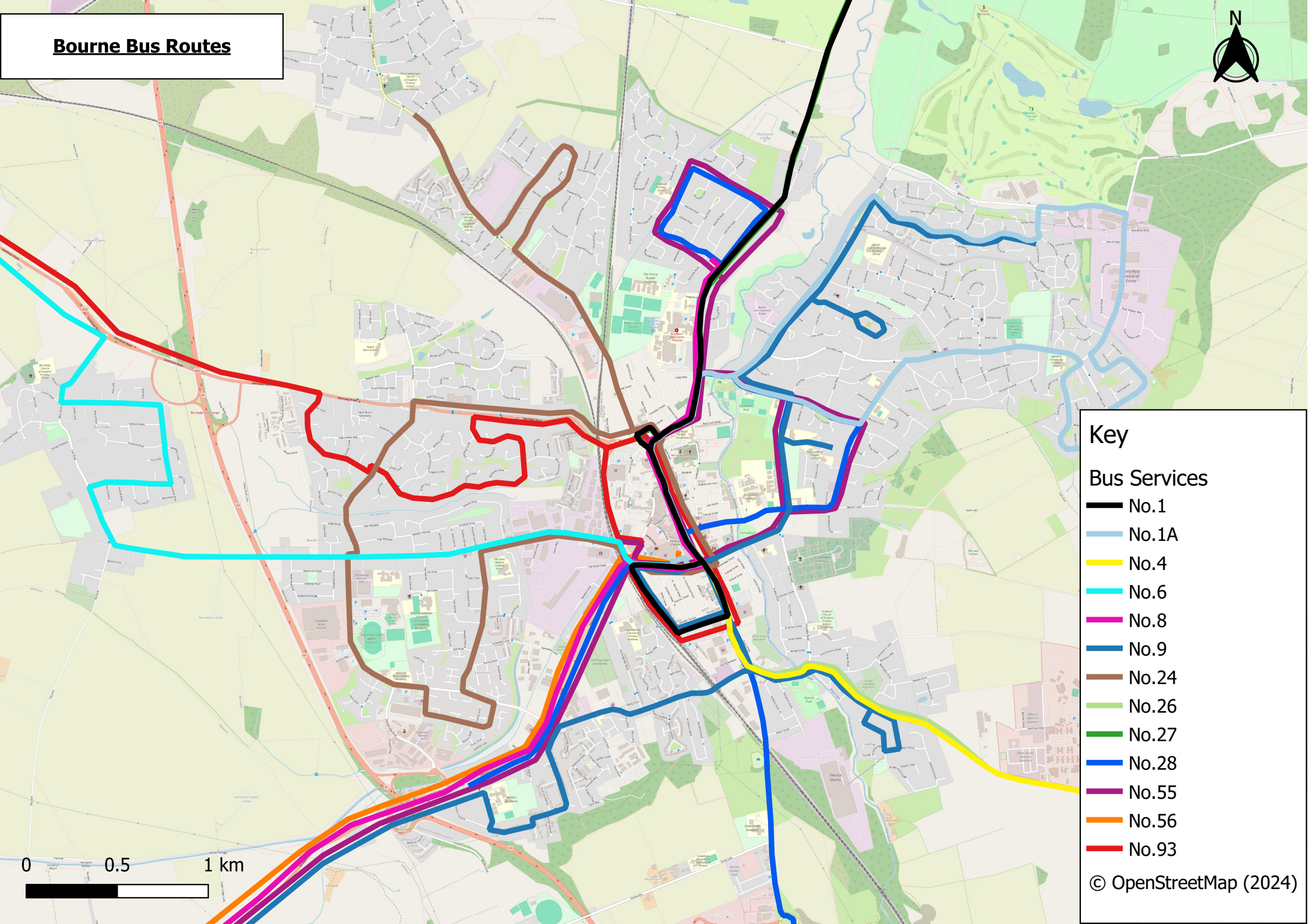
No.402
No.403
No.401
No.201
No.101
© OpenStreetMap (2024)
0
0.5
1 km


Bourne Bus Routes
N
Key
Bus Services
No.1
No.1A
No.4
No.6
No.8
No.9
No.24
No.26
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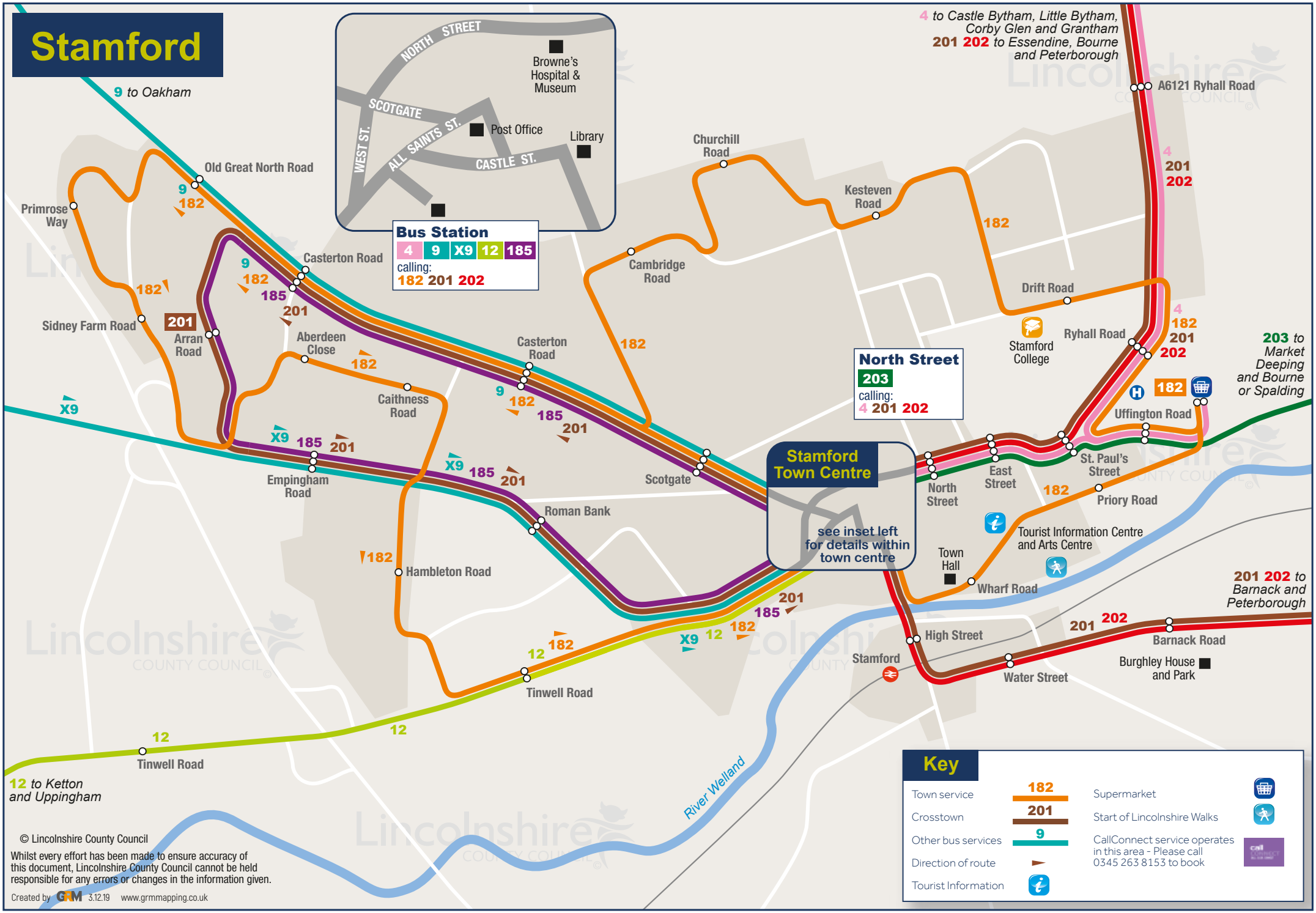
0
0.5
1 km



Appendix F Local Education Facilities

Table F.1 below details the 52 primary schools in South Kesteven, and distinguishes the type of school, Pupil Admission Number (PAN) as well as the associated planning area.

Table F.1 Primary Schools across South Kesteven

School Name	School Type	Pupil Admission Number (PAN)	Planning Area
Ancaster C of E Primary School	LA maintained school	25	Ancaster
Barkston and Syston C of E Primary School	LA maintained school	15	Ancaster
Caythorpe Primary School	Academy	20	Ancaster
Marston Thorold's Charity C of E School	LA maintained school	10	Ancaster
Billingborough Primary School	LA maintained school	20	Billingborough
Horbling Brown's C of E Primary School	Academy	15	Billingborough
Pointon St Gilbert of Sempringham C of E Primary School	LA maintained school	15	Billingborough
Bourne Abbey C of E Primary Academy	Academy	90	Bourne
Bourne Elsea Park C of E Primary Academy	Academy	30	Bourne
Bourne Westfield Primary Academy	Academy	90	Bourne
Edenham C of E School	Academy	17	Bourne
Morton C of E (Controlled) Primary School	Academy	30	Bourne
Thurlby Community Primary School	LA maintained school	30	Bourne
Bythams Primary School	LA maintained school	12	Corby Glen
Colsterworth C of E Primary School	LA maintained school	25	Corby Glen
Corby Glen Community Primary School	LA maintained school	20	Corby Glen

South Witham Community Primary School	Academy	15	Corby Glen
Baston C of E Primary School	LA maintained school	25	Deepings
Deeping St James Community Primary School	LA maintained school	30	Deepings
Deeping St James Lichfield Community Primary School	LA maintained school	60	Deepings
Langtoft Primary School	LA maintained school	30	Deepings
Market Deeping Community Primary School	LA maintained school	45	Deepings
Market Deeping William Hildyard C of E Primary and Nursery School	LA maintained school	30	Deepings
Grantham Belmont Community Primary School	LA maintained school	30	Grantham East
Grantham Belton Lane Community Primary School	LA maintained school	45	Grantham East
Grantham Cliffedale Primary School	LA maintained school	45	Grantham East
Grantham Harrowby C of E Infant School	Academy	30	Grantham East
Grantham Little Gonerby C of E Infant School	Academy	30	Grantham East
Grantham St Anne's C of E Primary School	LA maintained school	30	Grantham East
Grantham St Mary's Catholic Primary School	LA maintained school	30	Grantham East
Grantham St Wulframs National Church of England	Academy	45	Grantham East
Barrowby C of E Primary School	LA maintained school	34	Grantham West
Grantham Huntingtower Community Primary Academy	Academy	60	Grantham West
Grantham Poplar Farm	Academy	60	Grantham West
Grantham The Isaac Newton Primary School	Academy	60	Grantham West
Grantham The West Grantham Academy St John's	Academy	45	Grantham West

Grantham Gonerby Hill Foot C of E Primary School	LA maintained school	40	Grantham North
Great Gonerby St Sebastian's C of E Primary School	LA maintained school	15	Grantham North
Denton C of E School	LA maintained school	10	Harlaxton
Great Ponton C of E School	LA maintained school	10	Harlaxton
Harlaxton C of E Primary School	LA maintained school	30	Harlaxton
Allington with Sedgebrook C of E Primary School	LA maintained school	16	Long Bennington
Claypole C of E Primary School	LA maintained school	25	Long Bennington
Long Bennington C of E Academy	Academy	40	Long Bennington
Ingoldsby Academy	Academy	15	Ropsley
Ropsley C of E Primary School	LA maintained school	15	Ropsley
Stamford Malcolm Sargent Primary School	Academy	90	Stamford
Stamford Saint Augustine's Catholic Voluntary Academy	Academy	30	Stamford
Stamford Saint George's C of E Primary School	LA maintained school	30	Stamford
Stamford St Gilbert's C of E Primary School	Academy	45	Stamford
Stamford The Bluecoat School	LA maintained school	30	Stamford
Uffington C of E Primary School	LA maintained school	15	Stamford

Table F**.** below details the 10 secondary schools in South Kesteven, and distinguishes the type of school, Pupil Admission Number (PAN) as well as the associated planning area. Of these 10 schools, eight have associated sixth forms.

Table F.2 Secondary Schools across South Kesteven

School Name	School Type	Pupil Admission Number (PAN)	Planning Area	Sixth Form
Bourne Academy	Academy	250	Bourne	Yes

The Bourne Grammar School	Academy	240	Bourne	Yes
The Deepings	Academy	261	Deepings	Yes
Corby Glen Charles Read Academy	Academy	58	Grantham	No
Kesteven and Grantham Girls' School	Academy	174	Grantham	Yes
The King's School	Academy	174	Grantham	Yes
The Priory Ruskin Academy	Academy	210	Grantham	Yes
The West Grantham Academy St Hugh's	Academy	120	Grantham	No
Walton Academy	Academy	180	Grantham	Yes
Stamford Welland Academy	Academy	150	Stamford	Yes

Table F. below displays the two further education colleges in South Kesteven, providing education to local residents over the age of 16. Secondary schools across the South Kesteven which provide sixth form education are shown in the table above.

Table F.3 Further Education Provision across South Kesteven

School Name	School Type	Education Type
Grantham College	Further Education	16+
New College Stamford	Further Education	16+

Appendix G Excerpt from BEIS Electricity Generation Costs

Table G.1 BEIS Electricity Generation Costs

Technology			Onshore Wind				Solar PV Large-scale			
Commissioning Year			2025	2030	2035	2040	2025	2030	2035	2040
Reference plant size		*MW*	51	51	51	51	20	20	20	20
Average load factor (net of availability)		*%*	45%	48%	48%	48%	11%	11%	11%	11%
Average fuel efficiency		*%*	-	-	-	-	-	-	-	-
Operating lifetime		*years*	25	25	25	25	35	35	35	35
Pre-development cost	Low	*£ / kW*	40	40	40	40	10	10	10	10
	Medium	*£ / kW*	130	130	130	130	50	50	50	50
	High	*£ / kW*	210	210	210	210	110	110	110	110
Pre-development period		*years*	4	4	4	4	1	1	1	1
Pre-development phasing (% spent in each year)	Year 1	*%*	25%	25%	25%	25%	100%	100%	100%	100%
	Year 2	*%*	25%	25%	25%	25%	-	-	-	-
	Year 3	*%*	25%	25%	25%	25%	-	-	-	-
	Year 4	*%*	25%	25%	25%	25%	-	-	-	-
Construction cost	Low	*£ / kW*	900	900	900	900	300	300	200	200
	Medium	*£ / kW*	1,100	1,100	1,100	1,100	400	300	200	200
	High	*£ / kW*	1,200	1,200	1,200	1,200	400	300	300	200
Construction period		*years*	2	2	2	2	1	1	1	1
Construction phasing (% spent in each year)	Year 1	*%*	50%	50%	50%	50%	100%	100%	100%	100%
	Year 2	*%*	50%	50%	50%	50%	-	-	-	-
Infrastructure		*£'000*	3,800	3,800	3,800	3,800	1,400	1,400	1,400	1,400
Fixed O&M		*£ / MW / year*	25,400	25,500	25,700	25,900	6,000	5,600	5,300	4,900
Variable O&M		*£ / MWh*	6	6	6	6	0	0	0	0
Insurance		*£ / MW / year*	1,700	1,700	1,700	1,700	2,000	1,900	1,800	1,700
Connection and use of system charges		*£ / MW / year*	3,600	3,600	3,600	3,700	1,300	1,200	1,200	1,100

Technology		Onshore Wind				Solar PV Large-scale			
Hurdle Rate	%	5.2%	5.2%	5.2%	5.2%	5.0%	5.0%	5.0%	5.0%

South Kesteven Infrastructure Delivery Plan

PROJECT SCHEDULE

Project ID	Infrastructure Cat. 1	Infrastructure Cat. 2	Infrastructure Cat. 3	Project name	Project description	Location	Timing, including any triggers	Cost (£)	Funding secured (£)	Funding gap (£)	Funding Sources	Delivery responsibility	Other comments	Source(s) of information
1	Transport	Highway Infrastucture	Local Road Infrastucture	Grantham South Relief Road (GSRR)	A 3.5km road designed to unlock growth in the south of Grantham and improve connectivity (W-E) and relieving Grantham town centre from congestion. The road will enable economic growth and improve journey times for traffic travelling east to west, north to south and vice versa by linking the A52 at Somerby Hill to the A1	South of Grantham	Three phases, phase one and two completed. Phase three to complete in 2025.	£148m	£148m	£0	£11.9m from the Local Transport Board. £16.1m from the Single Local Growth Fund. £5m from the National Highways Growth and Housing Fund. The balance of funding will come from developer contributions, which will be forward funded by Lincolnshire CC, who will also be funding part of the scheme.	Led by LiCC, with support from delivery partners SKDC, Greater Lincolnshire LEP, National Highways, DfT, Network Rail, Homes England and local businesses.	GSRR will unlock and provide access to the Spitalgate Heath Garden Village site (allocation GR3-H1), LCC want developer contributions from the Northern Western Quadrant (Rectory Farm) to go towards the GSRR.	LCC Highways, AECOM
2	Transport	Highway Infrastucture	Local Road Infrastucture	Pennine Way Link Road	Intended to relieve the A52 and Grantham town centre from passing by traffic, and to connect Poplar Farm housing (North West Quadrant) with Gonerby Hill Foot, as a second access to the Poplar Farm SUE	North of Grantham	To be started before 2030 Poplar Farm development (North West Quadrant) is conditioned to build the Pennine Way Link Road with trigger point of 750 dwellings, with an estimated completion year for the SUE of 2030.				May include the developer of the Poplar Farm SUE	May include the developer of the Poplar Farm SUE		LCC Highways, AECOM
3	Transport	Highway Infrastucture	Local Road Infrastucture	Spalding-Western Relief Road	New Strategic Relief Road to the west of Spalding. Delivery of the Elsea Park SUE at Bourne is reported to be linked to this scheme.	Spalding (outside South Kesteven District, 10km from Bourne))	Northern section under construction, southern section start delayed until likely post 2030	£109.5m total, c.£60m for southern section	Not known, however northern section is under construction	At least £60m	LCC, South Holland District Council and Homes England have contributed towards the costs of the road along with money from developers.	Includes Lincolnshire County. Council Highways Alliance	Costs / funding / funding gap not included in totals, as scheme sits outside of South Kesteven District	LCC Highways
4	Transport	Highway Infrastucture	Local Road Infrastucture	Prince William of Gloucester Barracks	Highway infrastructure improvements to access the site and to ensure impact on the existing highway network is minimised (including the provision of any appropriate mitigation to the strategic highway network) are likely to be delivered as part of the Prince William of Gloucester Barracks, intended for up to 4,000 homes.	Southeast of Grantham	Intended to come forward by the end of the current Local Plan period of 2036.				Likely to include developer contributions	Likely to include the developer		LCC Highways, SKDC Local Plan
5	Transport	Highway Infrastucture	Strategic Road Infrastucture	A1 / A52 Barrowby Interchange	LiCC proposed a gateway into Grantham scheme which has been discounted by NH due to standards and safety LiCC also pursued a scheme to replace the priority junction between the A52 and the A1 southbound on / off slip roads with a roundabout junction.	A1 / A52 Barrowby Interchange, Grantham	Not known, however Rectory Farm Phase 1 is conditioned to improve the A1 / A52 junctions, with a trigger point of 448 dwellings. Grantham Designer Outlet Village) have conditions to provide improvement schemes at the A1 / A52 Barrowby Interchange				Likely to include developer contributions		With existing capacity constraints and the impact of cumulative impact of allocations around Grantham including the proposed Grantham Designer Outlet village, it is likely that substantial improvements will be required at this location	National Highways, AECOM A1 Corridor Study
6	Transport	Highway Infrastucture	Strategic Road Infrastucture	Stamford North	Proposals for a new East-west distributor road, with NH proposals for the A1/A606 and A1/A121 junctions	A1/A606 and A1/A121 junctions, Stamford							NH have suggested that these schemes may be suitable to mitigate the impacts of Stamford North SUE NH have recommend the applicant for the Stamford North SUE look at junction improvements identified as part of AECOM's A1 Corridor Study	NH & AECOM A1 Corridor Study
7	Transport	Highway Infrastucture	Strategic Road Infrastucture	A52 Nottingham Junctions Improvement Scheme	Several junctions identified for improvement, to reduce congestion and provide capacity for more traffic from local developments.	A52 Nottingham Junctions (sits outside South Kesteven)	End date 2027	£68.5million			National Highways		Costs not included in totals as scheme sits outside and serves a wider area than South Kesteven District.	National Highways
8	Transport	Highway Infrastucture	Strategic Road Infrastucture	A47 Wansford to Sutton	Duallling between the A47 and A1 west of Peterborough which will generally support movements on the network	A47 Wansford to Sutton (sits outside South Kesteven)	End date 2026	Between £50-£100 million					Identified as scheme C38 in the NH Delivery Plan 2020 – 2025. Costs not included in totals as scheme sits outside and serves a wider area than South Kesteven District.	National Highways
9	Transport	Highway Infrastucture	Strategic Road Infrastucture	A46 Newark Bypass	Connecting the M1 and Leicester to the A1 and central Lincolnshire	To northwest (outside) of South Kesteven	Start date: 2024 -25 - End Date: Road Period 3 (2025 - 2030)	£400m - £500m					Identified as Scheme C32 within the Delivery Plan 2020 – 2025. Costs not included in totals as scheme sits outside and serves a wider area than South Kesteven District.	National Highways
10	Transport	Highway Infrastucture	Strategic Road Infrastucture	A1 to A1(M) standard	Midlands Connect aspiration for upgrade to address journey times	Between Peterborough and Blyth, including A1 near Stamford								National Highways
11	Transport	Highway Infrastucture	Strategic Road Infrastucture	A1 north-south connectivity upgrades	Enhance north-south connectivity through upgrades to the A1	A1								Greater Lincolnshire and Rutland Strategic Infrastructure Delivery Framework (SIDF) (2023)
12	Transport	Highway Infrastucture	Strategic Road Infrastucture	A15	To enable greater access to the M180 SRN (particularly important for freight traffic)	A15 / M180								Greater Lincolnshire and Rutland SIDF (2023)
13	Transport	Highway Infrastucture	Strategic Road Infrastucture	A17 / A16	Enhance connectivity for UK Food Valley freight	A17 / A16								Greater Lincolnshire and Rutland SIDF (2023)
14	Transport	Highway Infrastucture	Strategic Road Infrastucture	A180 / M180 interchange and new A18 Bridge	Enhanced accessibility to Humberside Airport.	In proximity of Humberside Airport								Greater Lincolnshire and Rutland SIDF (2023)
15	Transport	ULEV Strategy	Electric Vehicle Charging Points	EV Charging Infrastructure Strategy	454 EV charging points by 2030 under the mid-growth scenario to meet demand. Anticipated that county-wide policies will be implemented on a district level, with particular attention given to new housing and employment sites as part of the planning application process.	South Kesteven	454 EV charging points by 2030 under the mid-growth scenario				£5.6m awarded to LiCC available from central government under tranche 1 of the Local Electric Vehicle Infrastructure (LEVI) fund awarded at County-level.			LCC EV Strategy (2022) LEVI Scheme
16	Transport	ULEV Strategy	Hydrogen Vehicle Infrastructure	Strategy for Hydrogen Vehicles Infrastructure	Opportunities to pursue hydrogen (or other alternative fuel sources such as biofuel) within South Kesteven for private and commercial use Need to support the development of refuelling infrastructure (particularly within the freight and logistics sector)	South Kesteven								LCC EV Strategy (2022)
17	Transport	Rail Infrastructure	Network Rail	East Coast Digital Programme (ECDP)	Part of the strategy of the Network Rail (Control Period (CP) 7 - 2014 to 2029) includes deployment of traffic management through the East Coast Digital Programme (ECDP), a landmark scheme that will introduce in-cab digital signalling on the southern part of the ECML, between London Kings Cross and Grantham. This programme is part of the East Coast Upgrade (ECU) and will lay the foundation for further improvements across the network	East Coast Main Line	Intended completion on the ECML by 2030				Department for Transport	Network Rail		Network Rail (Control Period (CP) 7 - 2014 to 2029)
18	Transport	Rail Infrastructure	Network Rail	Establishment of 140mph running on the ECML	Network Rail aspires to establish 140mph services along the ECML.	East Coast Main Line					Department for Transport	Network Rail	Aspiration from Network Rail	Network Rail and Integrated Rail Plan for the North and Midlands (2021)
19	Transport	Rail Infrastructure	Indicative Train Service Specification	ITSS for Greater Lincolnshire	Regarding South Kesteven, the ITSS aspires to increase the service frequency between Nottingham-Grantham-Skegness as well as introduce a second train per hour serving Stamford (on the Leicester-Peterborough line). These service improvements will help support the growth of identified housing and employment developments located close to the urban areas of Grantham and Stamford. ITSS recognises that constraints in SK are Grantham Station (with not enough capacity to accommodate all services by 2034) as well as the Nottingham-Grantham line (owing to signalling headway leading to capacity constraints).	Nottingham-Grantham-Skegness line; and Stamford rail station								Lincolnshire Rail Infrastructure Strategy (2022)
20	Transport	Rail Infrastructure	LCC Future Demand and Delivery	Grantham Station	Station likely to require (at minimum) an extra through platform and potentially an extra bay platform (or alternatively an all station stopping Skegness service to avoid Grantham in some hours)	Grantham								Lincolnshire Rail Infrastructure Strategy (2022)
21	Transport	Rail Infrastructure	LCC Future Demand and Delivery	Leicester-Peterborough Line	Full re-signalisation of the line to enable a standard headway	Leicester-Peterborough								Lincolnshire Rail Infrastructure Strategy (2022)
22	Transport	Bus Infrastructure	LiCC Internal Proposals	Grantham Designer Outlet Village shuttle bus	Shuttle bus to be provided as part of the development to link the proposed outlet with the town centre.	Grantham Designer Outlet Village					Likely to include developer contributions			LCC
23	Transport	Bus Infrastructure	LCC Internal Proposals	Bus gate on Somersby Hill	Implementation of a bus gate on Somersby Hill.	Somersby Hill, Grantham					Internal LCC proposals, not currently funded			LCC
24	Transport	Bus Infrastructure	LCC Internal Proposals	Bus stops at St Peters Hill	Reallocation of land used by the existing Grantham Bus Station to provide further bus stops at St Peters Hill	Grantham Bus Station		£2-3m		£2-3m	Internal LCC proposals, not currently funded			LCC

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25	Transport	Bus Infrastructure	Lincolnshire Bus Service Improvement Plan (BSIP (2023))	'Into Town' Proposals relevant to Grantham, Bourne and Market Deeping	•Identify areas within Grantham to optimise routes and service levels based on existing demand and future demand where there is planned housing growth. •Kickstart funding and financial support to enhance service timetables, for a minimum of an hourly service during core daytime hours, and half-hourly where financially viable. •Enhance services to operate at weekends and into the evening where there is demand. •Engage with operators to introduce modern, high quality and low emission buses on the network, including through a potential bus demonstration project in Grantham. •Provide contactless EMV payment options to simplify the payment process and the be part of the national bus £2 fare capping scheme. •Activate bus priority at all signalised junctions, including reducing lateness triggers. Relevant scheme locations include the following: –North Street, Bourne (between Burghley Street and Market Place); and –High Street, Market Deeping (Godsey Lane-Mkt Place). •Explore the possibility of bus lanes. •Significant investment in bus stop infrastructure, including real time information at popular bus stops in line with Lincolnshire bus stop information standards, along with shelters, raised kerbs, street lighting and CCTV.	Grantham, Bourne and Market Deeping								Lincolnshire Bus Service Improvement Plan (BSIP (2023))
26	Transport	Bus Infrastructure	Lincolnshire Bus Service Improvement Plan (BSIP (2023))	'Rural Interchange Hub Corridor' proposals	•Design and construction of appropriate modal interchange hub(s) in Grantham and in relation to market towns including Thurlby, Baston and Langtoft within South Kesteven. •Incorporate bus stop infrastructure within the Hubs •Provide nearby secure cycle parking •Promote and raise awareness of the new infrastructure and Hubs to encourage use.	South Kesteven market towns								Lincolnshire Bus Service Improvement Plan (BSIP (2023))
27	Transport	Bus Infrastructure	Lincolnshire Bus Service Improvement Plan (BSIP (2023))	Lincolnshire Enhanced Partnership Plan for buses	•Enhancing the existing CallConnect Demand Responsive Transport (DRT) offer through purchase of additional vehicles and roll out across the network. •Integrate bus services with rail stations, focussing on aligning bus timetables with rail timetables for specific trains to key locations such as London.	Lincolnshire-wide								Lincolnshire Bus Service Improvement Plan (BSIP (2023))
28	Transport	Bus Infrastructure	SIDF	Bus Fleet Investment	Aspiration to invest in the region's bus fleet with specific aims of enhancing the uptake of public transport, meet the green agenda, and assist in the recovery of passenger numbers post-pandemic.	Greater Lincolnshire								Greater Lincolnshire and Rutland SIDF (2023)
29	Transport	Bus Infrastructure	SIDF	Pilot e-bus programme	Pilot e-bus programme in urban areas across Lincolnshire.	Urban areas across Lincolnshire								Greater Lincolnshire and Rutland SIDF (2023)
30	Transport	Bus Infrastructure	Enhanced Partnership	Bus Priority	Introduce more bus priority at both standalone and Scoot-enabled junctions across the area of the EP Scheme. In addition, the reduction 'lateness' requirement in order for buses to receive priority at signalised junction was reviewed by Lincolnshire County Council in 2022-23 and feasible changes to the lateness threshold will be actioned on a junction-by-junction basis as soon as practicable.	Lincolnshire-wide	Where appropriate this facility will be activated on a junction-by-junction basis from April 2023, and will be maintained throughout the period of the EP Scheme. No other programme timeframes or costings				Initial EP Scheme provides a framework for delivery of further elements of the EP Plan where LCC and relevant operators agree to such further facilities, measures and/or standards and where funding is made available, including any DfT funding.	Lincolnshire Enhanced Bus Partnership		Enhanced Partnership Scheme (2023)
31	Transport	Bus Infrastructure	Enhanced Partnership	Bus Stop Infrastructure	Bus stop inventory for Lincolnshire undertaken during 2022 – 2023 will be used by the Enhanced Partnership Forum and Board to identify where bus stop infrastructure could be enhanced. An Enhanced Partnership Plan and Enhanced Partnership Scheme have been prepared to formulate the mechanisms by which the proposals in the BSIP will be delivered. The next review of the EP Scheme by the EP Board is intended to take place in October 2024.	Lincolnshire-wide					Initial EP Scheme provides a framework for delivery of further elements of the EP Plan where LCC and relevant operators agree to such further facilities, measures and/or standards and where funding is made available, including any DfT funding.	Lincolnshire Enhanced Bus Partnership		Enhanced Partnership Scheme (2023)
32	Transport	Bus Infrastructure	Lincolnshire Enhanced Bus Partnership	Market town bus Improvement Programme	Upgrade to stops & shelters – raised kerbs, street lighting Introduction of real time information at key bus stops Bus network review in all three towns, assessing routes, timetables Updated timetable information at all bus stops. Traffic light junction priority Identification of pinch points and exploration of optimal solutions such as bus lanes, bus gates, red routes, review of parking provision Enhanced service levels, with increased morning, evening and weekend services Developing business cases for investment in zero emission buses.	Focused on three towns, including Grantham	Funding request for 2023 - 2026	£4,340,000		£4,340,000	DfT	Lincolnshire Enhanced Bus Partnership	Funding requested. LCC Enhanced Bus Partnership will deliver the following three schemes if LCC receives funding from the DfT	Lincolnshire Enhanced Bus Partnership
33	Transport	Bus Infrastructure	Lincolnshire Enhanced Bus Partnership	Bus - Cycle Interchanges	Funding study to identify sites for cycle parking at bus stops in rural villages. Priority route for Lincolnshire is the service 101 corridor (Bourne to Market Deeping).	Bourne to Market Deeping corridor. Thurlby, Baston and Langtoft.	2023 - 2026	£332,000		£332,000		Lincolnshire Enhanced Bus Partnership		Lincolnshire Enhanced Bus Partnership
34	Transport	Bus Infrastructure	Network North	'Network North' Funding	Funding (redirected funding from HS2) will be invested to increase the frequency of bus services in the Midlands.	Midlands-wide		£230m					Costs not included in totals as scheme serves a wider area than South Kesteven and there is no detail currently available on potential local investment	Network North
35	Transport	Bus Infrastructure	National Bus Strategy	National Bus Strategy Funding	•Supporting new and increased services •Giving LTAs the skills and people they need to deliver this strategy •Bus priority schemes to speed up journeys – with the first schemes delivered in 2021/22.	England-wide		Provision of £3 billion total with at least £300m July 2023 to March 2025.			Funding may be accessed by LCC to support bus operators within South Kesteven Bus Services Operators Grants (BSOG) are available for eligible community transport operators to enable them to recover some of their fuel costs		Costs not included in totals as scheme serves a wider area than South Kesteven and there is no detail currently available on potential local investment	National Bus Strategy
36	Transport	Pedestrian and Cycle Infrastructure	LiCC Internal Proposals	LiCC Internal Proposals	•General improvements to pedestrian crossings within Grantham; •High Street – St Peters Hill – widening footways; •Grantham Marketplace, raising carriageways up to the level of footways as part of beautification / public realm improvements, effectively improving the town centre offer for pedestrians through creation of space for walking; and •Five-arm station junction adjacent to Grantham railway station, new signals and public Realm improvements.	Grantham					Internal LCC proposals, not currently funded			LCC
37	Transport	Pedestrian and Cycle Infrastructure	Cycling and Walking	Stamford Cycling and Walking Network Plan (CWNP) (2022)	•Routes along Arran Road, Sutherland Way and Empingham Road, Roman Bank and Tinwell Road connecting with the town centre; •An orbital route provided to the north, making use of quieter streets and off-road routes to connect residential areas with educational and retail facilities; •To the east, Uffington is connected with Stamford via A1175; and •To the south, routes are provided along Barnack Road, Water Street and Station Road, connecting employment sites and the rail station with the town centre via the existing bridges across the River Welland.	Stamford					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
38	Transport	Pedestrian and Cycle Infrastructure	Cycle Infrastrucrture	The Green Wheel	Existing proposal to provide a leisure cycle route around Stamford. which uses existing public rights of way, the route of a disused railway line, on-carriageway sections, and new provision to the north of Stamford, through land allocated for residential development. This 'Green Wheel' proposal is intended to run concurrently with the route considered as part of the CWNP for Stamford.	Stamford					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
39	Transport	Pedestrian and Cycle Infrastructure	Walking Infrastrucrture	Stamford Walking Network	This sets out a 400m Core Walking Zone from the centre point within the town centre at Sheep Market/Castle Street, an expanded Controlled Walking Zone (CWZ) and a 2km Outer Walking Zone.	Stamford					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
40	Transport	Pedestrian and Cycle Infrastructure	Stamford CWNP Proposed Interventions	Route C	•Reduce speed limit to 20mph •Resurface Kings Mill Lan •Provide Toucan crossings •Widen existing footways to minimum 3m to create a shared use path, including on Rutland Terrace •Improved crossing facilities •Traffic calming features to reinforce speed limit changes	Stamford (Eleanor Cross To Casterton Road)		£1,704,400		£1,704,400	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)

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41	Transport	Pedestrian and Cycle Infrastructure	Stamford CWNP Proposed Interventions	Route D	•Reduce speed limit to 20mph •Traffic calming features to reduce traffic speed •Provide two new cycle bridges over the River Welland •Provide a new segregated cycle track across Town Meadows •Provide segregated bi-directional 3m wide cycle track •Realign existing parking provision •Introduce separately signalled cycle stop lines •Make Water Street one-way only eastbound to motor vehicles •Improve junction crossing facilities •Provide segregated bi-directional 3m wide cycle track •Provide Toucan crossing •Widen existing footway to minimum 3m to create a shared use path	Stamford (Barnack Road To Eleanor Cross)		£2,491,200		£2,491,200	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
42	Transport	Pedestrian and Cycle Infrastructure	Stamford CWNP Proposed Interventions	Route F	•Reduce speed limit to 20mph •Traffic calming features to reduce traffic speed should be considered •Possible point closure to be considered •Improve path surface, including between Edmonds Close and Ryhall Road •Introduce toucan crossing	Stamford (Little Casterton Road To Ryhall Road)		£401,800		£401,800	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
43	Transport	Pedestrian and Cycle Infrastructure	Stamford CWNP Proposed Interventions	20mph zones	CWNP found that a fundamental requirement for the provision of cycle improvements that affects all three of the prioritised routes is the inclusion of 20mph zones, the provision of which would also be a key improvement for pedestrians, especially around the town centre area	Stamford					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Stamford CWNP (2022)
44	Transport	Pedestrian and Cycle Infrastructure	Cycling and Walking	Grantham Proposals	The plan proposes a range of location specific interventions within Grantham intended to facilitate walking and cycling journeys, including: •20mph zone within Grantham town centre; •Implementation of cycle gates, cycle lanes, widening footways, cycle crossings; •Restrictions to on-street parking; •Traffic speed calming measures on junction approaches; •Removing lanes of traffic; •Pedestrianisation; •One-way systems for traffic; •Increasing pedestrian green time at crossings; •Junction configuration to account for one-way traffic routes; •New cycle route signage and promotion of routes; •Use of planters to avoid parking on footways; •Review highway crossing points from safety point of view; and •Improved road markings at pedestrian crossings.	Within Grantham					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Grantham Cycling and Walking Network Plan (CWNP) (2020)
45	Transport	Pedestrian and Cycle Infrastructure	Cycling and Walking	Great Gonerby and Gonerby Hill Foot Proposals	These proposed interventions include: •20mph speed limit throughout Great Gonerby; •Suspend on-street parking in particular locations; •Extend footway widths; •Temporary controlled crossings; •Permit contraflow cycling on particular roads; and •Marked pedestrian priority crossings.	Grantham (Great Gonerby and Gonerby Hill Foot)					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Grantham Cycling and Walking Network Plan (CWNP) (2020)
46	Transport	Pedestrian and Cycle Infrastructure	Grantham CWNP Proposed Cycle Infrastructure	Grantham Initial Proposed Cycle Network Plan	Initial proposed cycling network plan produced in development with LiCC. includes primary routes (high potential flows of cyclists along routes that link large residential areas to trip attractors such as the town centre), and secondary routes (medium potential flows of cyclists along routes that link to the primary routes and often to trip attractors such as schools and employment sites). The primary routes follow key road routes into the town centre including the A607, Harrowby Lane, A52, A607 and Barrowby Road, as well as the River Witham path and Barrowby Gate and Trent Road. Secondary routes run either parallel to or as connections between the primary routes.	Within Grantham					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Grantham Cycling and Walking Network Plan (CWNP) (2020)
47	Transport	Pedestrian and Cycle Infrastructure	Grantham CWNP Proposed Walking Zone	Initial Core Walking Zone (CWZ)	Walkable areas to the CWZ, produced in development with LiCC. This displays the priority areas for walking infrastructure improvements within Grantham. This plan is intended to remove key man-made barriers to walking in the form of the busy main roads, through a range of short and longer-term measures are required to improve the conditions for walking and make this a more attractive mode of transport.	Within Grantham					Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Grantham Cycling and Walking Network Plan (CWNP) (2020)
48	Transport	Pedestrian and Cycle Infrastructure	Rutland LCWIP Proposed Route Interventions	Route F	•Shared use footway / cycleway; •Signalise slip roads with addition of Toucan crossing across the slip road; •Tighten junction. Shared use priority over side road with full setback; and •Further interventions in proximity to the west of Stamford determined via a LiCC LCWIP.	Oakham - Stamford via A606		£5,250,010		£5,250,010	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Rutland LCWIP
49	Transport	Pedestrian and Cycle Infrastructure	Rutland LCWIP Proposed Route Interventions	Route L	•Shared use footway / cycleway; •Signalise slip roads with addition of Toucan •Crossing across the slip road; and •Further interventions determined within a LiCC LCWIP.	Normanton – Stamford		£1,956,484		£1,956,484	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Rutland LCWIP
50	Transport	Pedestrian and Cycle Infrastructure	Rutland LCWIP Proposed Route Interventions	Route M	•Shared use footway / cycleway alongside Ryhall Road; and •Parallel crossing with raised table + footway works adjacent to Borderville Farm.	Ryhall – Stamford		£483,230		£483,230	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Rutland LCWIP
51	Transport	Pedestrian and Cycle Infrastructure	Rutland LCWIP Proposed Route Interventions	Route N	•Shared use footway / cycleway along the A1 into Great Casterton, approx. 3km northwest of Stamford; and •Cycling in carriageway – 'Traffic in Village' approach within Great Casterton	Woolfox – Stamford		£1,591,657		£1,591,657	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Rutland LCWIP
52	Transport	Pedestrian and Cycle Infrastructure	Rutland LCWIP Proposed Route Interventions	Route S	•Cycle in carriageway through Great Casterton; •Shared use footway / cycleway; •Signalisation of all arms of the B1081 / Sidney Farm Lane junction as with new development anticipated; and •Further interventions determined within a LiCC LCWIP.	Stamford - Great Casterton		£1,051,346		£1,051,346	Potential national and local funding sources include DfT (e.g. Local Transport Fund and Integrated Transport Block funding) and regeneration grants (e.g. Shared Prosperity Fund).			Rutland LCWIP
53	Flood Defences	Flood Resilience	Lower Witham Flood Alleviation Scheme	Lower Witham Flood Resilience Project	Reduce flood risk to the Lower Witham area through progression of a scheme in the Lower Witham catchment	Lower Witham Catchment	2021-2027				Environment Agency	Environment Agency	No specific project name. Catchment-wide measures and not specific to South Kesteven	Joint Lincolnshire Flood Risk and Water Management Strategy
54	Flood Defences	Flood Resilience	LLFA Flood Alleviation Schemes	Long Bennington Flood Alleviation Scheme	This scheme will protect in excess of 50 properties in Long Bennington by improving existing pipework capacity, constructing an additional outfall into the River Witham, and introducing a number of new highway assets. Property Flood Resilience (PFR) measures to 10 No. properties identified as requiring additional measures within the area of benefit have also been offered	Long Bennington					Lincolnshire County Council	Lincolnshire County Council as LLFA		South Kesteven Level 1 SFRA
55	Flood Defences	Flood Resilience	LLFA Flood Alleviation Schemes	Grantham, Gonerby Road Flood Alleviation Scheme	A Strategic Outline Case has been produced for this location with further feasibility, hydraulic modelling and optioneering to take place to fully understand if a feasible flood alleviation scheme can be delivered.	Grantham	2026 - 2027				Lincolnshire County Council	Lincolnshire County Council as LLFA		South Kesteven Level 1 SFRA
56	Flood Defences	Flood Resilience	LLFA Flood Alleviation Schemes	Wilsthorpe	Watercourse surveys have recently been undertaken by LCC in collaboration with Black Sluice IDB to get a greater understanding of watercourse bed levels.	Wilsthorpe					Lincolnshire County Council / Black Sluice IDB	Lincolnshire County Council as LLFA		South Kesteven Level 1 SFRA
57	Flood Defences	Flood Resilience	LLFA Flood Alleviation Schemes	Bourne, Beach Avenue	A Hydraulic Modelling Assessment and Options Report has been produced to determine feasibility of a flood alleviation scheme. Findings have suggested that improved maintenance of existing assets could be the most beneficial and cost effective measure.	Bourne					Lincolnshire County Council	Lincolnshire County Council		South Kesteven Level 1 SFRA
58	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Swaton NFM monitoring	Undertake a programme of monitoring and evaluation of the natural flood management scheme in Swaton	Swaton	2021 - 2024				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency		Witham Management Catchment - Anglian River Basin District Flood Plan Explorer
59	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Upper and Lower Witham Floodplain Reconnection	Collaborate with partner organisations, to research and monitor the impact on flood plain reconnection schemes on sediment and water flows, in the Lower and Upper Witham.	Upper and Lower Witham Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	No specific project name. Catchment-wide measures and not specific to South Kesteven	Witham Management Catchment - Anglian River Basin District Flood Plan Explorer

Project ID	Infrastructure Cat. 1	Infrastructure Cat. 2	Infrastructure Cat. 3	Project name	Project description	Location	Timing, including any triggers	Cost (£)	Funding secured (£)	Funding gap (£)	Funding Sources	Delivery responsibility	Other comments	Source(s) of information
60	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Witham Catchment flood bank re-alignment	Engage with landowners and partner organisations to identify appropriate opportunities for flood bank re-alignment, and novel approaches to flood plain reconnection in the Witham Catchment.	Witham Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	No specific project name. Catchment-wide measures and not specific to South Kesteven	Witham Management Catchment - Anglian River Basin District Flood Plan Explorer
61	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	South Forty Foot Drain Catchment	Play a key role working with partners through the South Lincolnshire Water Partnership in the South Forty Foot Catchment.	Witham Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	No specific project name. Catchment-wide measures and not specific to South Kesteven	Witham Management Catchment - Anglian River Basin District Flood Plan Explorer
62	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Witham Catchment main river system review	Review the required maintenance for all main river systems, working with partners, communities and landowners in Witham and Welland Catchments.	Witham and Welland Catchments	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	Catchment-wide measures and not specific to South Kesteven	Witham Management Catchment - Anglian River Basin District Flood Plan Explorer
63	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Command and Control Structure and Multi-Agency Flood Plan review	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in the Witham and Welland Catchments.	Witham and Welland Catchments	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	Catchment-wide measures and not specific to South Kesteven	Witham Management Catchment - Anglian River Basin District Flood Plan Explorer
64	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Bourne North Fen	Investigate opportunities to support Lincs Wildlife Trust to develop a project at Bourne North Fen Wetland in Welland Catchment.	Bourne North Fen	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency		Welland Management Catchment - Anglian River Basin District Flood Plan Explorer
65	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Communities at risk	Look to identify and prioritise specific communities at flood risk to engage with in the Welland Catchment.	Welland Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	Catchment-wide measures and not specific to South Kesteven	Welland Management Catchment - Anglian River Basin District Flood Plan Explorer
66	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	Crowland and Cowbit Washes performance review	Review the performance and progress appraisal of the Crowland and Cowbit Washes. This work will also support the Welland Rivers Trust in the Welland Catchment.	Crowland and Cowbit Washes + Welland Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	Catchment-wide measures and not specific to South Kesteven	Welland Management Catchment - Anglian River Basin District Flood Plan Explorer
67	Flood Defences	Flood Resilience	LLFA and EA Flood Risk Management Plan	NFM Opportunity	Work with landowners, communities and professional partners to identify opportunities for natural flood management schemes in the Welland Catchment.	Welland Catchment	2021 - 2027				Lincolnshire County Council / Environment Agency	Lincolnshire County Council / Environment Agency	Catchment-wide measures and not specific to South Kesteven	Welland Management Catchment - Anglian River Basin District Flood Plan Explorer
68	Social & Green Infrastructure	Education	Primary Education	4FE Primary School at Spitalgate Heath Garden Village	Primary Education Expansion	Grantham					Land and provision by developer	Landowner and developer, in partnership with LiCC		LiCC, 2024
69	Social & Green Infrastructure	Education	Primary Education	New Primary School at Prince William of Gloucester Barracks	Primary Education Expansion	Grantham					Land and provision by developer	Landowner and developer, in partnership with LiCC		LiCC, 2024
70	Social & Green Infrastructure	Education	Primary Education	2FE Primary School at Stamford North	Primary Education Expansion	Stamford					Landowner and developer, developer contributions	Developer, LCC		LiCC, 2024
71	Social & Green Infrastructure	Education	Primary & Secondary Education	All through school at Spitalgate Heath Garden Village	Primary & Secondary Education Expansion	Grantham					Land from landowner, developer contributions from other sites	Landowner and developer, in partnership with LCC		LiCC, 2024
72	Social & Green Infrastructure	Education	Primary schools	Primary schools - estimated demand / costs to 2041	Demand for 1,784 primary school places to 2041, based on applying LiCC pupil yields to sites yet to receive planning permission	South Kesteven-wide	2021-2041	£35.9m		£35.9m	Developers (in kind and financial contributions), DfE	Developers, LCC, SKDC	LiCC typically aim for sites with 1,000 units to provide a new school on site Demand and costs are estimated from high level modelling	AECOM
73	Social & Green Infrastructure	Education	Secondary Education	Expanding capacity of existing facilities at Stamford Welland Academy	Secondary Education Expansion	Stamford					Land provision, Stamford North developer, DfE	LCC, Welland Academy		LiCC, 2024
74	Social & Green Infrastructure	Education	Secondary Education	Expanding capacity of existing facilities at The Deepings School by 1FE	Secondary Education Expansion	The Deepings	Work underway; will meet demand arising over next 10-15y				Not known	LCC and Academy Schools		LiCC, 2024
75	Social & Green Infrastructure	Education	Secondary Education	Secondary schools - estimated demand / costs to 2041	Demand for 1,695 secondary school places to 2041, based on applying LiCC pupil yields to sites yet to receive planning permission	South Kesteven-wide	2021-2041	£44.1m		£44.1m	Developers (in kind and financial contributions), DfE	Developers, LCC, SKDC	Demand and costs are estimated from high level modelling	AECOM
76	Social & Green Infrastructure	Health	Primary healthcare	Primary healthcare - estimated demand / costs to 2041	Demand for 6.4 new GPs to 2041, based on applying benchmark standard to projected population growth	South Kesteven-wide	2021-2041	£4.1m		£4.1m	Developers (in kind and financial contributions), central government, third sector	Developers, NHS (ICS)	Demand and costs are estimated from high level modelling	AECOM
77	Social & Green Infrastructure	Green Infrastructure	Habitat creation / River and floodpain restoration	Upper Witham Floodplain reconnection and river restoration	Continuing work on the Upper Witham to reconnect the river more frequently with its floodplain. Work has been done to site but several new sites are being developed.	Upper Witham above and below Grantham.	2024 onwards	£1m	£0.2m	£0.8m	RFCC Local Levy	EA / East Mercia Rivers Trust / Wild Trout Trust	Costs need to be refined following detailed design, consents and landowner approvals.	Witham Catchment Partnership Plan, Anglian River Basin Management Plan.
78	Social & Green Infrastructure	Green Infrastructure	Open space	Open space - estimated demand / costs to 2041	32.5ha of open space required to 2041, based on application of quantitative standards from SKDC Open Space Study to projected population increase to 2041.	South Kesteven-wide	2021-2041	£9.15m		£9.15m	TBC - developer contributions/in kind provision, third section, government agencies	Developers, third sector, government agencies, SKDC	Demand and costs are estimated from high level modelling	AECOM
79	Social & Green Infrastructure	Indoor Sports	Indoor Sports	Indoor Sports Facilities - estimated demand / costs to 2041	0.78 sports halls and 0.57 swimming pools, based on the Sports England Active Places Power Sports Facilities Calculator	South Kesteven-wide	2021-2041	£4.8m		£4.8m	Developer contributions, SKDC	LeisureSK, SKDC	Demand and costs are estimated from high level modelling	AECOM