



**Mansfield District Council**  
*Creating a District where People can Succeed*

# Mansfield Local Plan Infrastructure Delivery Plan (IDP)

June 2018

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- Appendix E – Utilities Supporting Information
- Appendix F – Green Infrastructure Supporting Information
- Appendix G – Transport Supporting Information



# 1 INTRODUCTION

## 1.1 IDP OBJECTIVES

1.1.1 This Infrastructure Delivery Plan (IDP) has been produced in support of Mansfield District Council's new Local Plan to cover the period up to 2033. The purpose of the IDP is to identify the new or improved infrastructure required to facilitate planned growth within the District to the end of the Plan period. Figure 1 shows the IDP study area and Figure 2 shows the relationship between Mansfield District and surrounding authorities.

1.1.2 This IDP has been prepared in consultation with the relevant infrastructure providers and adjacent local authorities. It identifies:

- Existing infrastructure provision
- Existing infrastructure capacity
- The additional demands that planned growth will place on existing infrastructure
- The new or improved infrastructure that will be required to facilitate planned growth
- Infrastructure delivery costs and responsibilities

1.1.3 Infrastructure requirements are summarised in a schedule in Appendix A to this report.

## 1.2 TYPES OF INFRASTRUCTURE

1.2.1 For the IDP, infrastructure is defined as:

- Social - healthcare, education, libraries, community facilities, **children's centres, post offices** and sports/leisure
- Waste Management – waste collection, processing and disposal/recycling
- Utilities - gas, electricity, water, wastewater, telecommunications
- Flood Risk – flood prevention/protection/alleviation
- Green Infrastructure and Corridors - natural and semi-natural green space, amenity green space, parks and recreation grounds, outdoor sport facilities, play areas and allotments. Within the District, Green Infrastructure is also provided by areas of strategic green infrastructure (green corridors) where the new Local Plan proposes further strengthening and enhancement of multiple benefits (i.e. multi-functional) that these areas offer for people and wildlife.
- Transport – public transport, walking, cycling and highways



## 1.3 STUDY AREA & CHARACTER

### Study Area

1.3.1 This IDP examines infrastructure needs within the Mansfield District of Nottinghamshire.

### Character

1.3.2 Mansfield District is in the north west of Nottinghamshire. As shown on Figure 2, it is bounded by three Districts within Nottinghamshire (Bassetlaw, Newark & Sherwood and Ashfield) and one in Derbyshire (Bolsover).

1.3.3 Mansfield is a relatively small District with a population of circa 100,000. The District is predominantly urban in character comprising the urban areas of Mansfield and Mansfield Woodhouse immediately to the north as well as part of Rainworth to the east. Mansfield is a **market town and is the District's main business, shopping and service centre and home to approximately three quarters of the District's population**. The secondary centre of Market Warsop is located to the north of the District and acts as a service centre for smaller centres in Bassetlaw. The villages of Church Warsop and Meden Vale are located to the far north of the District.

1.3.4 The Mansfield urban area is connected to Nottingham to the south by the A60 Mansfield Road which passes through the District on an approximate north-south alignment. The A38 connects Mansfield to Derby to the south west and terminates at the Ring Road around the town centre. The A6191 passes diagonally through the District on an approximate north-west to south-east alignment and forms the northern part of the Ring Road around the town centre.

1.3.5 The A617 Mansfield to Ashfield Regeneration Route (MARR) was completed in 2004 to open development areas to the south of Mansfield to stimulate economic regeneration and provide traffic relief to the town. MARR effectively provides a bypass to the south of the town, skirting around the southern edge of the District connecting the A38 at its western end to the A617/A6191 at its eastern end. From here the A617 continues south-east to Newark-on-Trent. MARR has helped to relieve some local traffic issues however there are still known peak period traffic congestion problems, particularly on the A617 and A60 approaches into the town.

1.3.6 There are no trunk roads or motorways within the District and all roads are the responsibility of the local highway authority, Nottinghamshire County Council.

1.3.7 Mansfield town has a railway station on the Robin Hood Line, a rail link that connects Nottingham and Worksop providing approximately hourly connections between Mansfield and Nottingham



(Monday to Friday). Mansfield also has a bus station (opened in 2013) which is located close to the rail station and within walking distance of the main retail areas of the town centre. The urban area is well served by bus services that are primarily operated by Stagecoach, Trent Barton and National Express.

1.3.8 **King's Mill Hospital (part of the Sherwood Forest Hospitals NHS Foundation Trust)** serves Mansfield and Ashfield Districts and surrounding areas and is located off the A38 to the west of Mansfield town on the border between Mansfield and Ashfield Districts. The hospital has seen significant investment from the NHS over the last seven years with a major modernisation and reconstruction programme. It has a full A&E department and maternity facilities and provides healthcare to circa 300,000 people.

1.3.9 The River Maun passes through the District on an approximate south-west to north-east alignment and through the centre of the Mansfield urban area. The River Meden passes through the north of the District to the north of Market Warsop.

1.3.10 The District is well served by established walking and cycling routes, mostly running east to west alongside the river corridors of the Rivers Maun and Meden, and on former mineral railway lines, these provide opportunities for recreation, and sustainable travel.

1.3.11 The District and surrounding areas support a rich diversity of flora and fauna, including several sites of special scientific interest (SSSIs), local nature reserves (LNRs) and local wildlife sites (LWSs). The Sherwood Forest area covers the eastern side of the District and this supports important bird and other species. There is a network of multi-functional green infrastructure (green corridors) that the Local Plan is seeking to further strengthen through improved access and habitat enhancement and creation.

## 1.4 REPORT STRUCTURE

1.4.1 The IDP comprises the following sections:

- Planning policy context (Chapter 2)
- Baseline conditions within the District (Chapter 3)
- Planned residential and employment growth within the District (Chapter 4)
- Future conditions within the District with planned growth in place (Chapter 5)
- A delivery plan for the identified infrastructure needs (Chapter 6)



## 2 PLANNING POLICY CONTEXT

### 2.1 NATIONAL PLANNING POLICY (NPPF)

2.1.1 This study has been prepared in accordance with the requirements of the National Planning Policy Framework (NPPF). **The NPPF contains the Government's planning policies for England** and is therefore a strong material consideration in the determination of planning applications and formation of planning policy. The NPPF promotes sustainable development and to achieve a strong, responsive and competitive economy; strong, vibrant and healthy communities and the protection of the natural, built and historic environment.

2.1.2 Paragraph seven of the NPPF identifies the three dimensions to sustainable development: economic, social and environmental. This theme is continued into paragraph nine which states that pursuing sustainable development involves seeking positive improvements in the quality of **the built, natural and historic environment, as well as in people's quality of life, including but not limited to:**

- replacing poor design with better design
- improving the conditions in which people live, work, travel and take leisure
- widening the choice of high quality homes

2.1.3 The NPPF advises that the social role of planning encompasses contributing to strong, vibrant and healthy communities by providing, inter alia, accessible local services that reflect the **community's needs and support its health, social and cultural well-being.**

2.1.4 Infrastructure requirements are considered in paragraph 162 of the NPPF. This specifies that local planning authorities should work with other authorities and providers to assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands. Planning authorities should take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.

2.1.5 Paragraph 177 of the NPPF observes that it is equally important to ensure that there is a reasonable prospect that planned infrastructure is deliverable in a timely fashion. To facilitate this, it is important that local planning authorities understand District-wide infrastructure costs at the time Local Plans are drawn up.



2.1.6 In line with the NPPF this study examines physical, social and green infrastructure. No nationally significant infrastructure has been identified within the District. This study has been prepared in consultation with the relevant infrastructure providers and adjacent local authorities to identify any cross-boundary issues and is therefore compliant with the requirements of the NPPF.



## 3 BASELINE CONDITIONS

### 3.1 INTRODUCTION

3.1.1 This section of the report describes the existing situation within the District for each category of infrastructure.

### 3.2 SOCIAL INFRASTRUCTURE

#### Community Facilities

3.2.1 Aspects to be considered within the remit of community facilities are healthcare, education, libraries, leisure and cultural facilities. Existing community facilities are shown in Figure 3.

#### Primary Healthcare

3.2.2 Primary care focuses on the treatment of minor injuries and illnesses, and deals with minor surgery and the on-going management of chronic conditions. It is the generally the first point of contact most people have with the NHS, and is delivered by a wide range of professionals, including General Practitioners (GPs), nurses, dentists, pharmacists and opticians.

3.2.3 A GP is the main point of contact for general healthcare for NHS patients, they are trained in all aspects of general medicine, where they cannot provide a service themselves they act as the patients advocate to provide the link to further health services.

3.2.4 The Mansfield and Ashfield Clinical Commissioning Group (MACCG) provides NHS primary healthcare (along with other, specialist healthcare). The MACCG covers both Mansfield and Ashfield Districts. There are fourteen GP Practices within the District at fifteen different locations.<sup>1</sup> These Practices offer a total of 61.15 Full Time Equivalent (FTE) GPs covering slightly less than 120,000 registered patients.

3.2.5 There are further practices, based at Pleasley and Rainworth which are outside the District. However, they also serve patients within Mansfield and are therefore included. Table 1 summarises existing GP Practices within the District.

3.2.6 Certain areas of the District (for example Forest Town) do not have any GP practices within their area, however these areas are served by practices in adjacent areas (for example Clipstone or Mansfield Town centre).

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<sup>1</sup> Forest Medical is split between Oak Tree Lane and Rosemary Street but operated as a single Practice.

Image 1 – Locations of GP Practices in the North of the District<sup>2</sup>

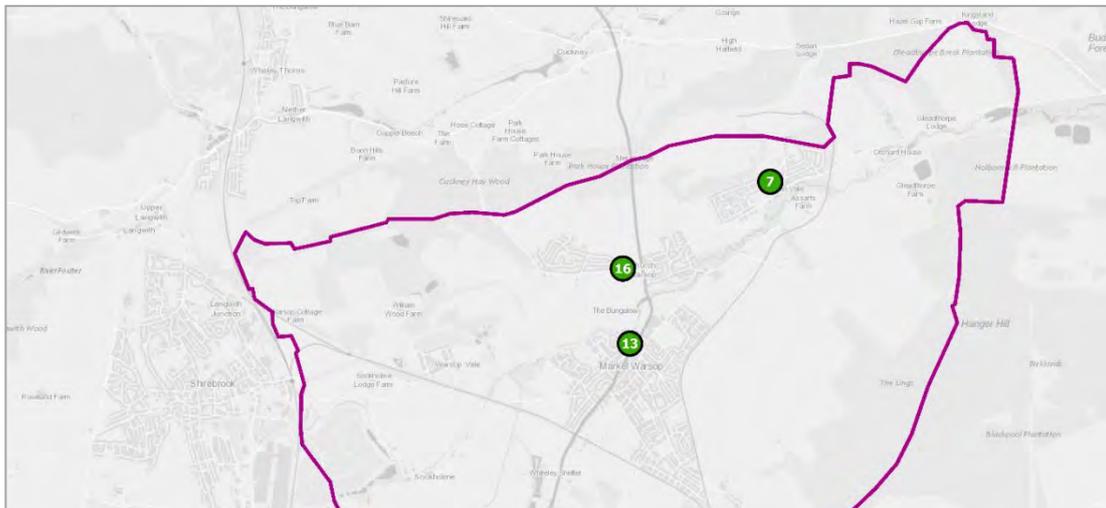
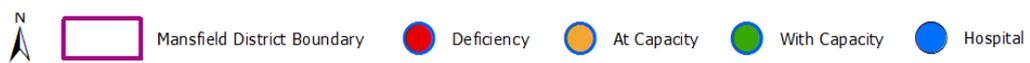
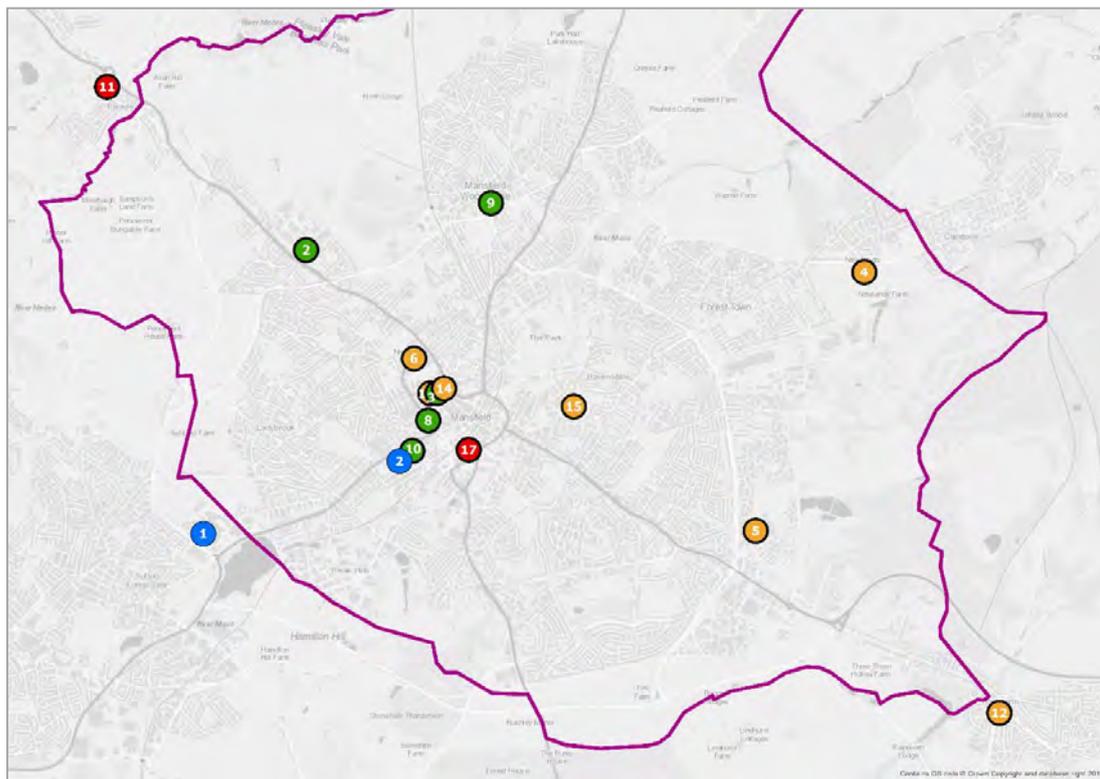


Image 2 – Locations of GP Practices (and Hospitals) in the South of the District



<sup>2</sup> See paragraph 5.2.9 on page 83 for explanation of capacity assumptions



Table 1 – Existing GP Practices within the District

Plan Ref	GP Practices	Location	Patients
1	Acorn Medical Practice	Mansfield Urban Area	2,908
2	Bull Farm Primary Care Resource Centre	Pleasley	2,733
3	Churchside Medical Practice	Mansfield Urban Area	6,117
4	Sherwood Medical Partnership	Clipstone	15,575
5	Forest Medical - Oak Tree Lane Surgery	Mansfield Urban Area	14,823
6	Forest Medical - Rosemary Street Medical Centre	Mansfield Urban Area	
7	Meden Medical Services	Meden Vale	6,120
8	Millview Surgery	Mansfield Urban Area	8,368
9	Oakwood Surgery	Mansfield Woodhouse	13,291
10	Orchard Medical Practice (Mansfield Community Hospital)	Mansfield Urban Area	19,190
11	Pleasley Surgery	Pleasley	3,383
12	Rainworth Health Centre	Rainworth	6,010
13	Riverbank Medical Services	Warsop	4,465
14	Roundwood Surgery	Mansfield Urban Area	13,244
15	Sandy Lane Surgery	Mansfield Urban Area	5,955
16	Shires Healthcare	Church Warsop	15,916
17	St Peters Medical Practice	Mansfield Urban Area	2,749
Hospitals			
1	King's Mill Hospital	Sutton in Ashfield	-
2	Mansfield Community Hospital	Mansfield Urban Area	-
Totals			140,847
Average per Practice			8,803

3.2.7 The average number of patients per surgery is around 8,800 with an average of 0.48 FTE GPs per 1,000 patients (which is less than the national average of 0.58 FTE GPs per 1,000 patients<sup>3</sup>).

3.2.8 Pharmacists and chemists play a key role in providing quality healthcare to patients. Under government arrangements the aim is to place greater emphasis on the provision of a wider range of pharmacy by making better use of pharmacists' expertise and clinical skills. As well as dispensing prescribed medications, many pharmacists can now give confidential advice on a range of minor ailments, and suggest non-prescribed medications or a GP visit if necessary.

3.2.9 There are 24 pharmacies located across the District. One pharmacy operates until 8pm, four until 10:00-10:30pm, two until 11pm and one operates until midnight.

<sup>3</sup> Source: NHS Choices (<https://www.nhs.uk/Scorecard/Pages/IndicatorFacts.aspx?MetricId=100063>)

Image 3 – Locations of Pharmacies – North of the District

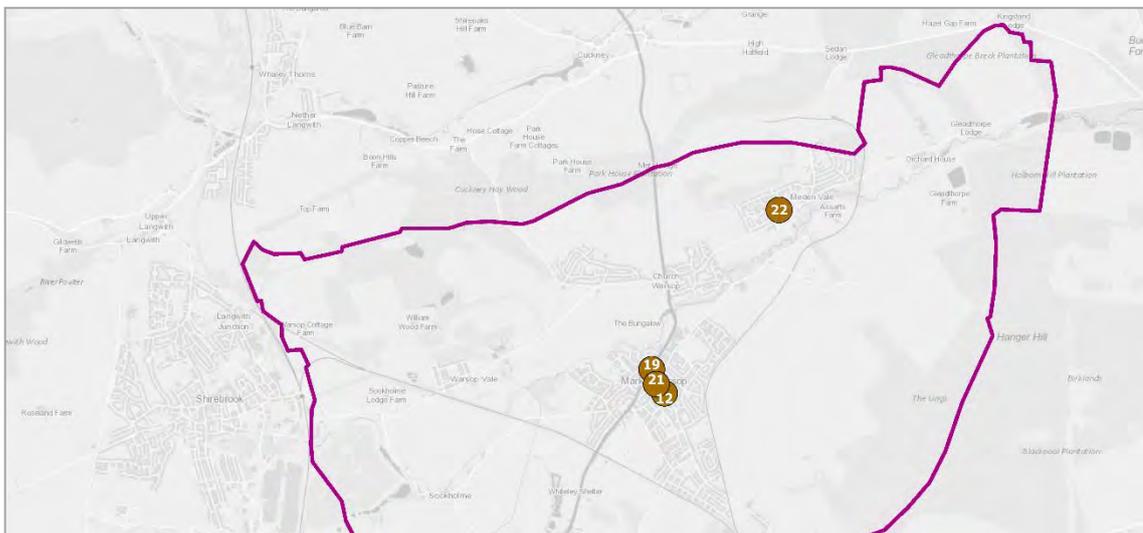
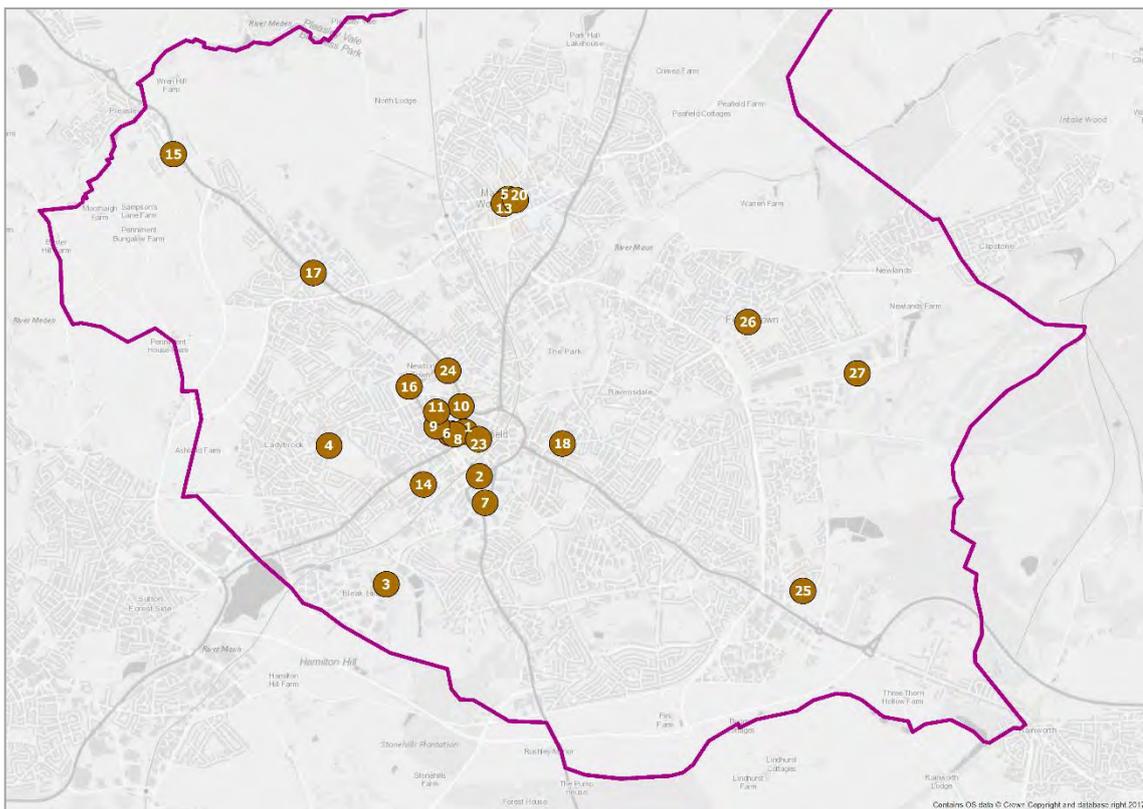


Image 4 – Locations of Pharmacies – South of the District



3.2.10 The provision of dental services in the community plays an important role in the overall health and wellbeing of residents. Everyone should therefore expect to be able to access good quality NHS dental services at reasonable cost.

Image 5 – Locations of Dentists – North of the District

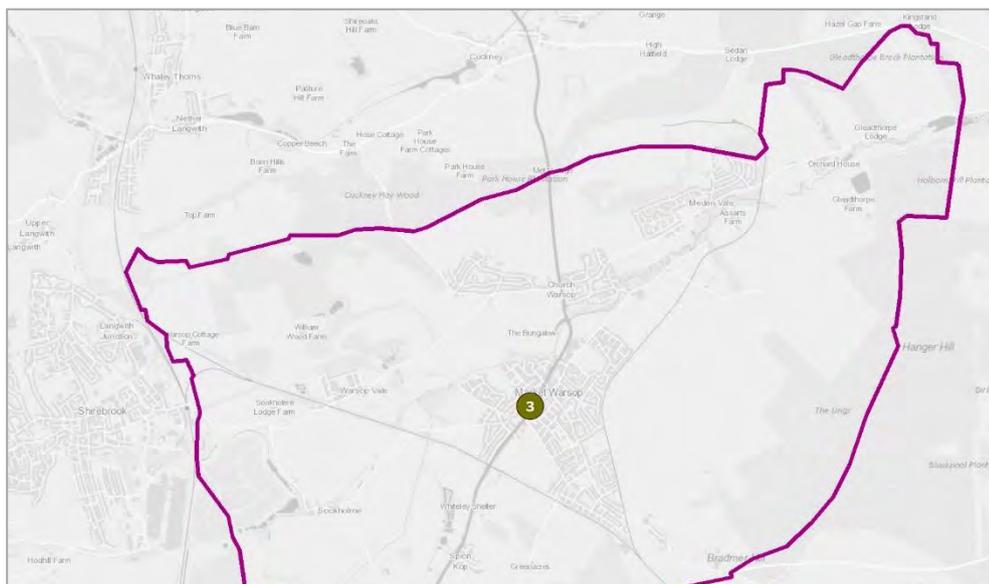


Image 6 – Locations of Dentists – South of the District





3.2.11 Dental care is available from 17 individual practices across the District. Of this total 15 practices offer NHS treatment and two of these practices are currently accepting new NHS patients (adult and child)<sup>4</sup>, with a further five NHS practices providing no data on admissions. As can be seen from the images dentist provision is focussed in Mansfield town centre and Mansfield Woodhouse.

#### Secondary Care (Hospitals)

3.2.12 Secondary care covers medical and surgical services and specialist hospitals are for conditions that cannot be dealt with by secondary care. Secondary care services include a wide range of services that are generally provided via GP referral in the first instance, or as a response to an incident (such as an emergency requiring an ambulance).

3.2.13 Hospital facilities are provided by Sherwood Hospitals NHS Foundation Trust. The only community hospital within the District is Mansfield Community Hospital on Stockwell Gate, Mansfield. The Foundation Trust also operates **King's** Mill Hospital in Sutton-in-Ashfield and Newark Hospital in Newark-on-Trent town centre. The three hospitals provide complimentary services with most of these being located at the largest and newest; King's Mill.

3.2.14 **King's** Mill Hospital has over 550 bed spaces and treats about 45,000 in-patients, 82,000 day cases and 120,000 emergencies in the Accident and Emergency department each year. **King's** Mill Hospital provides an extensive range of services which cater for the health needs of the local population in Mansfield.

3.2.15 Other services **provided at King's Mill** Hospital include (but are not limited to) surgical care and maternity care. Community hospitals typically provide in-patient rehabilitation, out-patient care, palliative care and the specialist services of a dietitian, podiatrist, and speech and language therapy.

3.2.16 More specialist services are referred to other Hospitals including the City Hospital, and Queens Medical Centre in Nottingham. In addition, for residents in the northern part of the District, there is the opportunity to travel to Bassetlaw Hospital in Worksop which is a smaller general hospital operated by Doncaster and Bassetlaw Hospitals NHS Foundation Trust.

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<sup>4</sup> Source: NHS Direct website <https://www.nhs.uk/Service-Search/Dentists/LocationSearch/3>



Table 2 – Baseline Conditions Summary - Healthcare

Mansfield Urban Area			
GPs	Pharmacies	Dentists	Hospitals
There are national issues with GP recruitment/retention. The NHS is introducing new models of care to increase the number of supporting health professionals. There are capacity issues at some GPs within the Mansfield urban area. Several are also approaching capacity. However, provision remains respectable in comparison to the national average.	No identified issues.	There is an adequate supply of dentists, the majority of which offer treatment through the NHS.	<b>King's</b> Mill Hospital is located within Ashfield District and has no known capacity issues.
Market Warsop Urban Area and the Villages			
GPs	Pharmacies	Dentists	Hospitals
No identified issues as most practices are well below capacity.	No identified issues.	There is only one dentist in the northern part of the District. Several other dentists are available nearby in surrounding Districts.	<b>King's</b> Mill Hospital is located within Ashfield District and has no known capacity issues. Bassetlaw Hospital is available within Worksop District.

### Education

3.2.17 Nottinghamshire County Council has a duty to provide places for children in full-time education up until the age of 16. In addition, the County Council has a duty to ensure a sufficiency of pre-school places (through Play Group and/or Nursery provision) for children aged three and four years under the Childcare Act 2006. Local authorities also have a duty to provide free early education to disadvantaged two-year olds which is an extension to the entitlement for three and four-year olds.

3.2.18 Mansfield District is served by a mix of types of school, including Local Authority maintained and Academy schools. Academies (both primary and secondary schools) are centrally funded but provide capacity for local pupils. Parents have a duty to ensure that their children attend school and Nottinghamshire County Council has a statutory duty to make arrangements to facilitate attendance at school for eligible pupils. The provision is compliant with the duties and powers of local authorities as set out in the Education Act 1996 and the Education and Inspections Act 2006. Eligibility is assessed on a case by case basis.

### Primary Schools

3.2.19 There are 35 primary and/or nursery schools within the District as detailed in Table 3 (page 14).

Image 7 – Locations of Primary Schools – North of the District

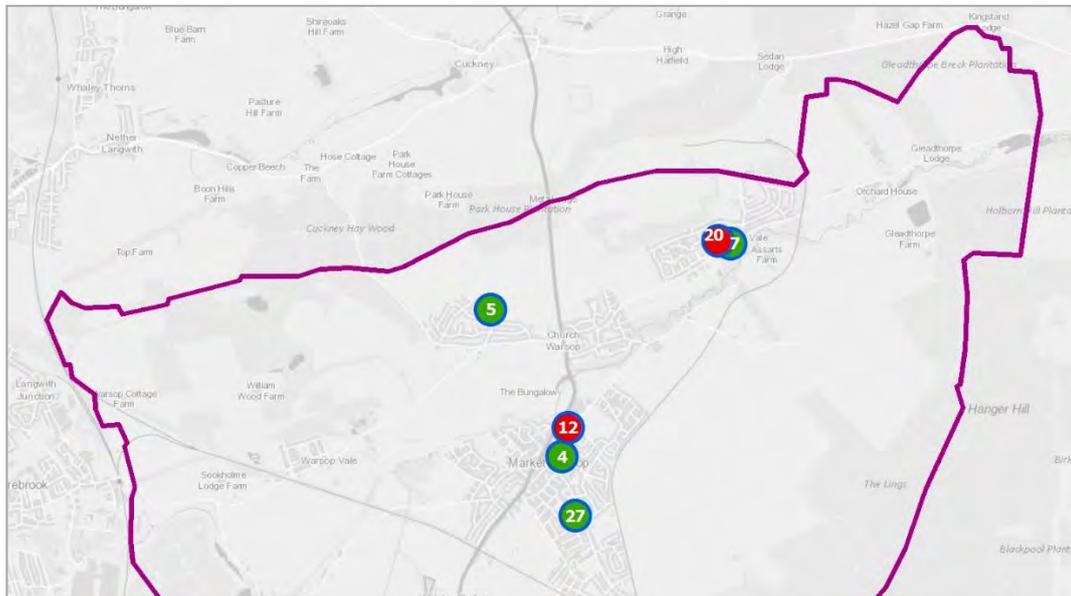


Image 8 – Locations of Primary Schools – South of the District

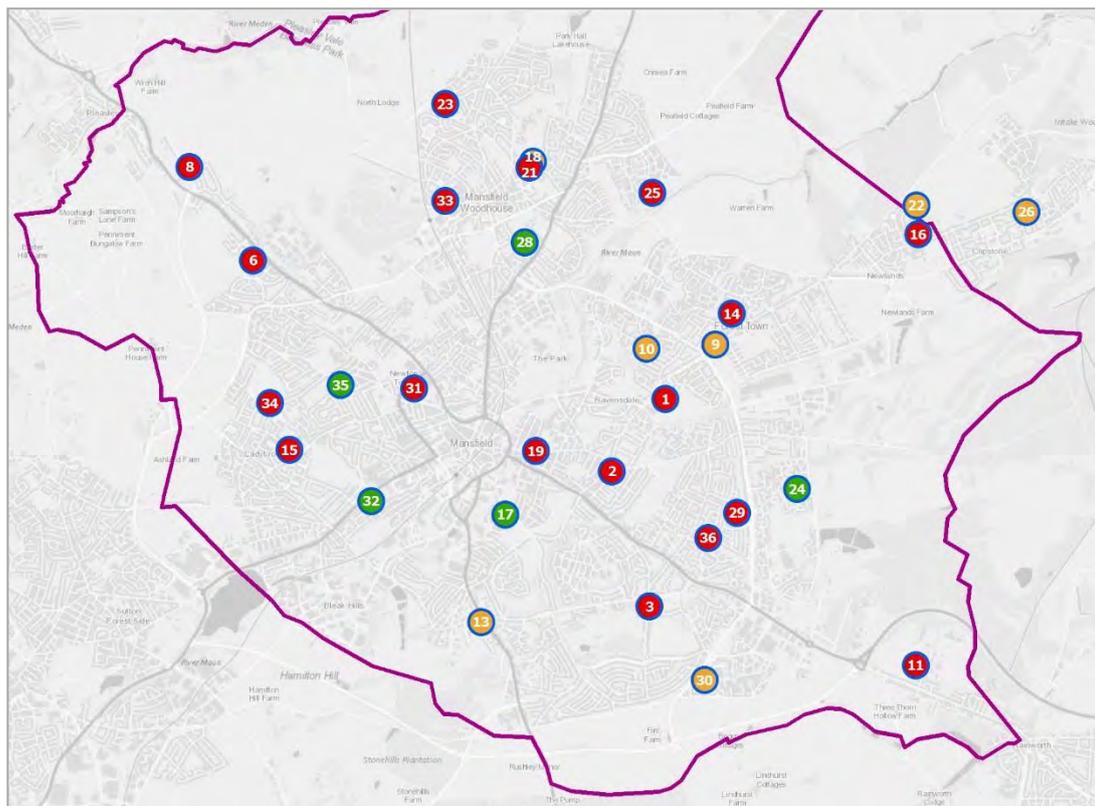




Table 3 – Existing Primary Schools and Capacity within the District

Plan Ref	School Name	Spare Capacity (Pupil Places)
1	Abbey Primary School	-5
2	Asquith Primary School	2
3	Berry Hill Primary School	13
4	Birklands Primary School	40
5	Church Vale Primary School and Foundation Unit	8
6	Crescent Primary School	57
7	Eastlands Junior School	9
8	Farmilo Primary School and Nursery	67
9	Forest Town Primary School	-30
10	Heatherley Primary School	-32
11	Heathlands Primary School	3
12	Hetts Lane Infant and Nursery School	16
13	High Oakham Primary School	9
14	Holly Primary School	-33
15	Intake Farm Primary School	-3
16	John T Rice Infant and Nursery School	-10
17	King Edward Primary School	212
18	Leas Park Junior School	8
19	Mansfield Primary Academy	8
20	Netherfield Infant School	28
21	Nettleworth Infant and Nursery School	-2
22	Newlands Junior School	11
23	Northfield Primary and Nursery School	35
24	Oak Tree Primary School	17
25	Peafield Lane Academy	0
26	Samuel Barlow Primary Academy*	-7
27	Sherwood Junior School	26
28	St Edmund's CofE (C) Primary School	-14
29	St Patrick's Catholic Primary School, A Voluntary Academy	4
30	St Peter's CofE Primary Academy, Mansfield	44
31	St Philip Neri With St Bede Catholic Voluntary Academy	-31
32	Sutton Road Primary School	47
33	The Bramble Academy	19
34	The Flying High Academy	-8
35	Wainwright Primary Academy	53
36	Wynndale Primary School	-3
Totals		558

\*Adjacent to and serving the District, but situated in Newark & Sherwood District

Notes: 1. Spare capacity calculated based on December 2017 data

2. Thresholds applied:

Less than 1 space available = Deficiency

1 space to 14 spaces available = At Capacity

More than 14 spaces available = With Capacity

3. For primary schools a capacity threshold of 14 places has been applied which assumes an average of 2 places per school year. Which for a primary with a reception/foundation year would be  $2 \times 7 = 14$  spaces).



3.2.20 There is a broad range of primary school capacities throughout the District although the majority are slightly or significantly over capacity. The most serious shortfalls in primary school education are in and around the Mansfield urban area. Areas to the north of the District generally have a small amount of additional capacity.

### Secondary Schools

3.2.21 There are seven secondary schools within the District. These all provide education through to sixth form level and are identified in Table 4.

Table 4 – Existing Secondary Schools within the District

Plan Ref	School Name	Sixth Form	Spare Capacity (Pupil Places)
1	All Saints Catholic Voluntary Academy	Yes	-173
2	Garibaldi College	Yes	90
3	Meden School	Yes	529
4	Queen Elizabeth Academy	Yes	509
5	Samworth Church Academy	Yes	-153
6	The Brunts Academy	Yes	-256
7	The Manor Academy	Yes	489
Totals			1,035

Notes: 1. Spare capacity calculated based on January 2017 data

2. Thresholds applied:

Less than 1 space available = Deficiency

1 space to 10 spaces available = At Capacity

More than 10 spaces available = With Capacity

3. For secondary schools a capacity threshold of 10 places has been applied which assumes an average of 2 places per school year (2 x 5 = 10)

Image 9 – Locations of Secondary Schools – North of the District

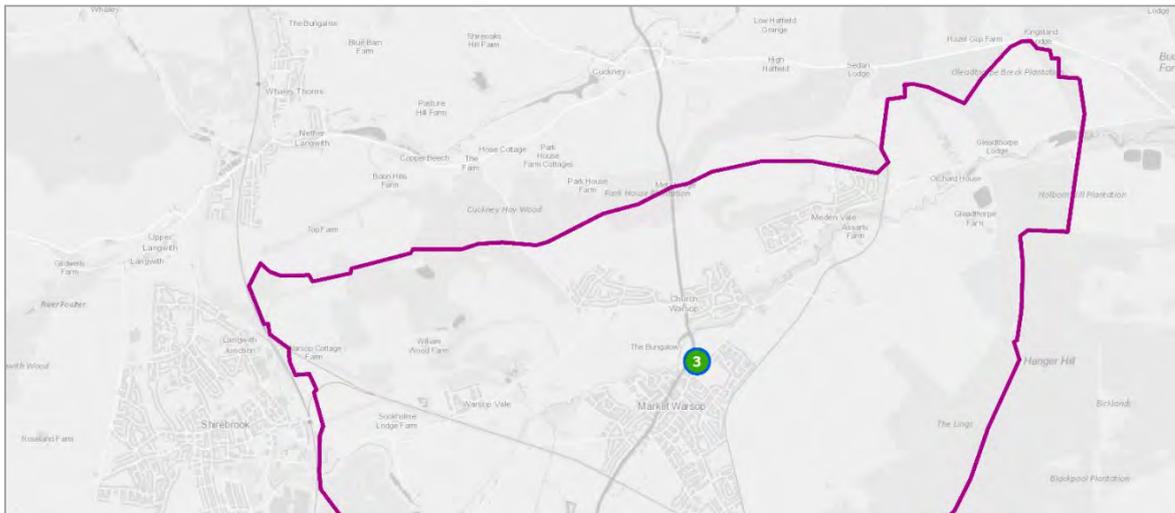
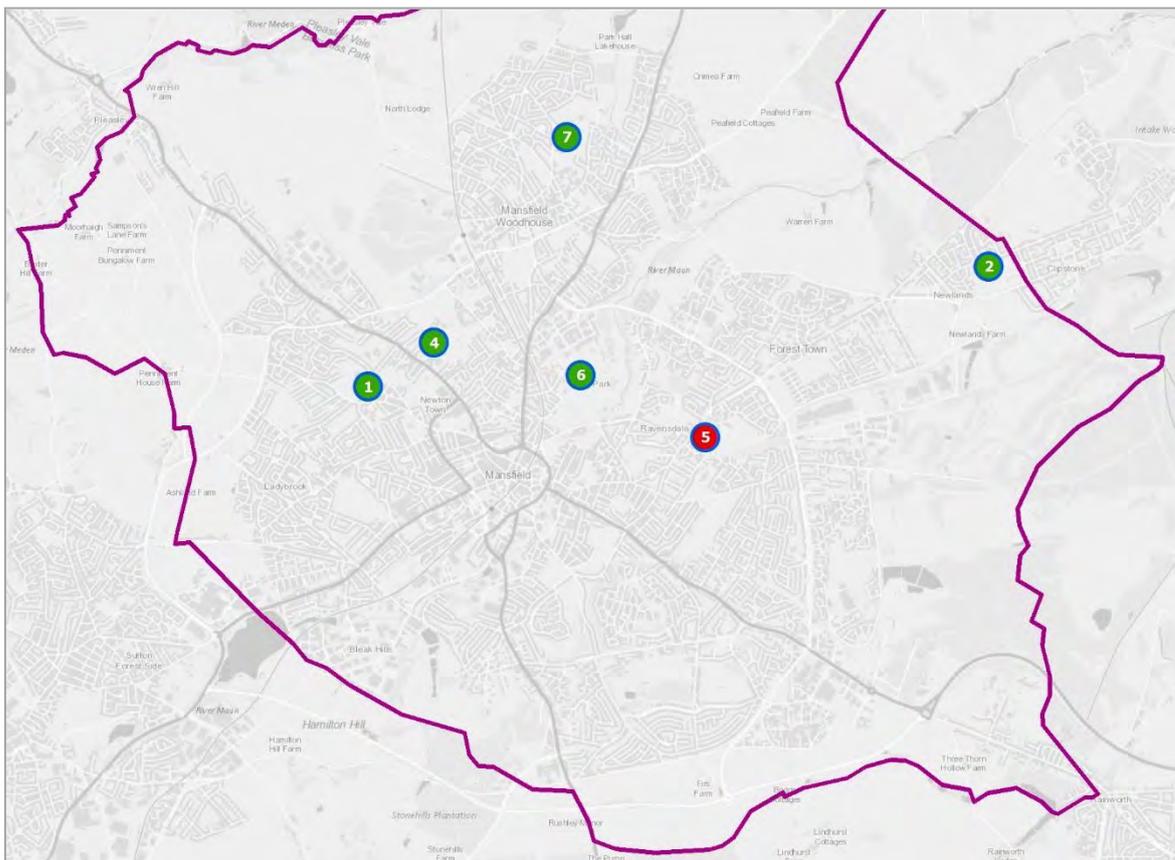


Image 10 – Locations of Secondary Schools – South of the District





3.2.22 All the secondary schools within the District have a sixth form. Except for the; All Saints Catholic Voluntary Academy, Samworth Church Academy and the Brunts Academy, all secondary schools demonstrate spare capacity. However, all secondary education providers are located within the Mansfield urban area, except for the Meden School which is in Warsop.

#### Sixth Form Colleges/Tertiary Education

3.2.23 Vision West Nottinghamshire College is the tertiary provider in the District. It offers education from 16 years and upwards and includes A-levels, apprenticeships, further education and business school. The college has two main campuses at Derby Road on the southern edge of Mansfield, and Chesterfield Road South on the edge of Mansfield town centre.

Table 5 – Baseline Conditions Summary - Education

Mansfield Urban Area			
Early years	Primary	Secondary	Further and Higher
Provision is adequate.	There is a significant shortfall in primary school places.	There is spare capacity within most secondary schools.	No known capacity issues at West Nottinghamshire College.
Market Warsop Urban Area and the Villages			
Early years	Primary	Secondary	Further and Higher
Provision is adequate.	There is a small surplus of primary school places.	The northern part of the District only has one secondary school (Meden School) which has spare capacity.	There is no further education provision in the north of the District.

#### Libraries

3.2.24 There are six libraries that serve the District as identified in the images on the following page and in Table 6 below.

Table 6 – Existing Libraries within the District

Plan Ref	Libraries	Location
1	Clipstone Library	Clipstone
2	Forest Town Library	Forest Town
3	Ladybrook Library	Mansfield West
4	Mansfield Central Library	Mansfield
5	Mansfield Woodhouse Library	Mansfield Woodhouse
6	Warsop Library	Warsop

Image 11 – Locations of Libraries – North of the District

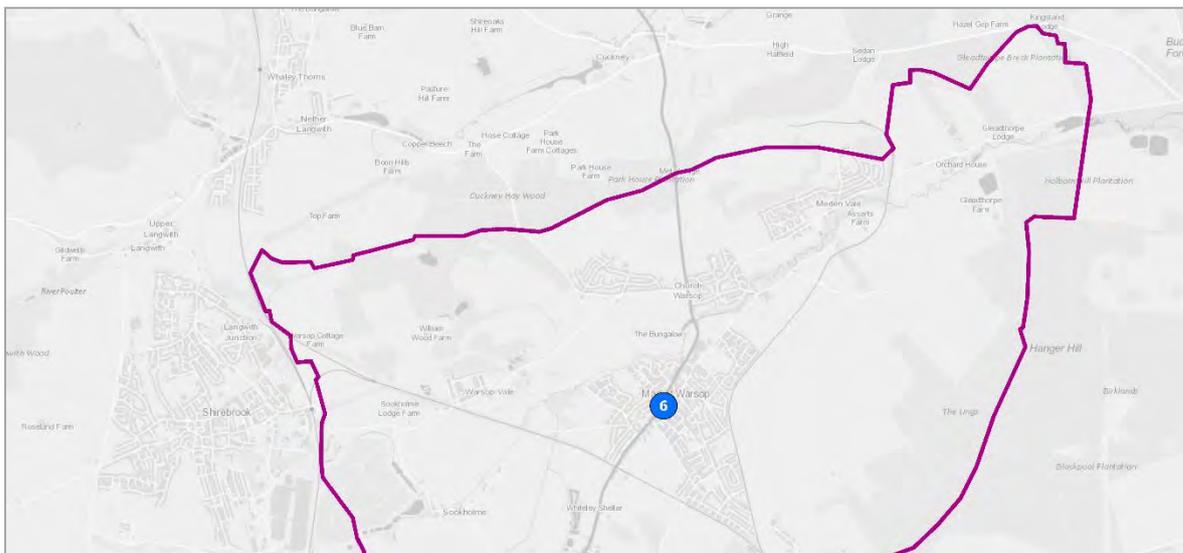
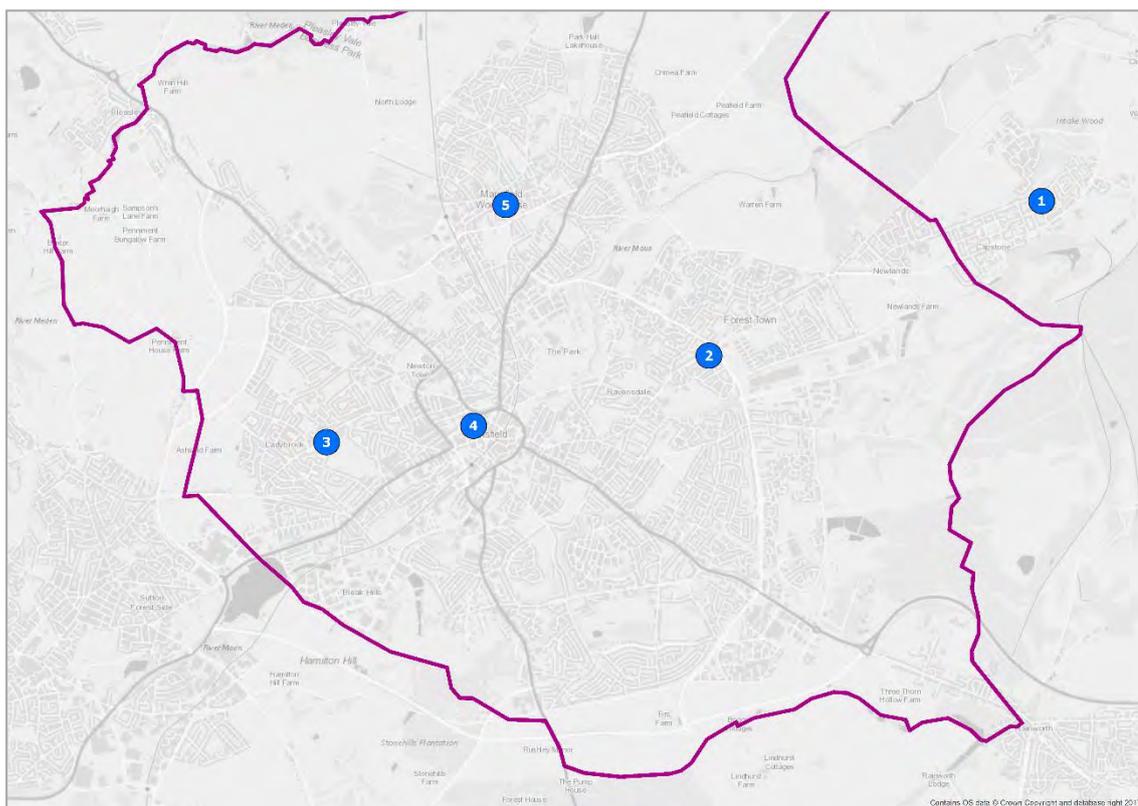


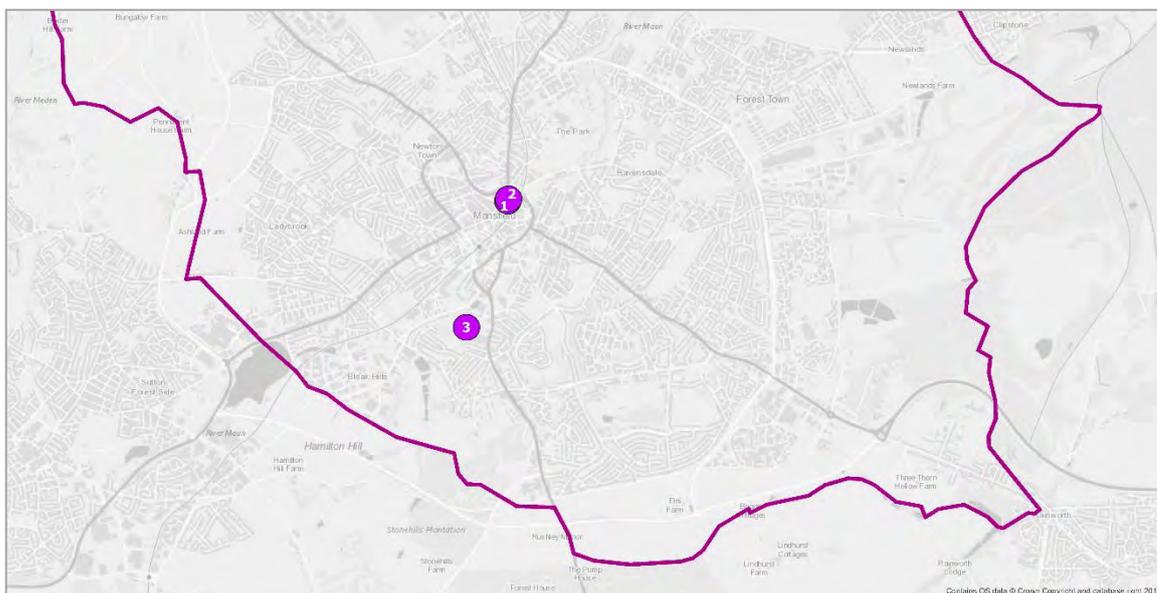
Image 12 – Locations of Libraries – South of the District





- 3.2.25 Libraries provide books, audio books and public access computers for adults and children. The library service has regular activities such as sessions for under-fives, a range of reading groups for all ages and it also offers learning and cultural events at the larger libraries.
  - 3.2.26 Mansfield Central Library was refurbished in 2012 and is the largest library building in the county and is designated as the central library for Nottinghamshire County Council. The second floor called 'The Central' provides a 192-seat theatre, large 'studio floor' and several smaller meeting rooms and is a key venue for hire and library events.
  - 3.2.27 Mobile library services are also available which offer monthly routes to the rural parts of the District.
  - 3.2.28 The standard of provision is defined in the '**Museums, Libraries and Archives Council's report Public Libraries, Archives and new development: a standard approach (2008)**'. The appropriate space standards are based on 30sqm of public space per 1,000 head of population and stock requirement of 1,532 items per 1,000 head of population.
  - 3.2.29 It is understood that the County Council is open to the idea of co-locating services within libraries or libraries within other community or retail facilities to maximise the impact and value of its library provision. Where new development generates a need for additional library provision the County Council may seek a contribution towards building costs and/or book stock costs.
- Museums and Galleries, Theatre and Cinema
- 3.2.30 Mansfield Museum offers a range of displays focused on local interest and history. It includes displays linked to the national curriculum and runs holiday sessions. The Museum is continually expanding its remit and is currently undergoing a major refurbishment of the arcade gallery supported by the Heritage Lottery Fund.
  - 3.2.31 The Mansfield Palace Theatre is owned and run by the District Council. It puts on a variety of amateur and touring shows including music and dance.
  - 3.2.32 Mansfield cinema is located to the south of the town centre and is operated by Odeon.

Image 13 – Locations of Museum (1), Theatre (2) and Cinema (3) – South of the District



### Community Centres

3.2.33 There are numerous town and village halls, or other community hubs including places of worship throughout the District. These offer a variety or multiple uses including Town or Parish Council Halls, nursery groups, community groups etc. Most also regularly host a variety of clubs and activities. The list below details a selection of community venues or information points throughout Mansfield, Mansfield Woodhouse, Forest Town and Warsop. Many have rooms available to hire.

Table 7 – Community Venues or Information Points

Name	Location	Managed By
Church Warsop community centre	Church Warsop	Mansfield District Council
Crescent Centre	Mansfield	Mansfield District Council
The Heath Centre	Mansfield	Framework Housing Association
Kingsway Hall	Forest Town	Kingsway Charitable Fund
Ladybrook Community Centre	Mansfield	Ladybrook Enterprises Ltd
Malcolm Sargison Resource Centre	Warsop Vale	Warsop Vale Village Association
Northfield Focus Point Community Centre	Mansfield Woodhouse	Northfield Neighbourhood Management Team
Park Road Resource Centre	Mansfield Woodhouse	Mansfield Woodhouse Community Development Group
Pleasley Landmark Centre	Pleasley	Pleasley Y2K Ltd
South Mansfield Community Centre	Mansfield	South Mansfield Community Association
St Lawrence's Church Hall	Mansfield	St Lawrence's Church
St. Peter's Centre	Mansfield	St Peter's and St Paul's Church
Stanhope Centre	Mansfield	Bridge Street Methodist Church
Titchfield & Oakham Community Point	Mansfield	Titchfield & Oakham Children's Centre
Turning Point	Mansfield	Ladybrook Community Centre

Source: Mansfield District Council Website



## Children’s Centres

3.2.34 Sure Start Children’s Centres are a national initiative aimed at improving outcomes for young children and their families and reducing inequalities, particularly those families in need of greatest support.

3.2.35 There are **11 children’s centres** which serve Mansfield Urban Area with two additional centres in Meden Vale and Warsop as shown in Table 8.

Table 8 – Existing **children’s Centres** within the District

Plan Ref	Children’s Centre	Location
1	Bellamy Children’s Centre	Mansfield
2	Forest Town Children’s Centre	Forest Town
3	Ladybrook Children’s Centre	Mansfield
4	Mansfield Woodhouse Children’s Centre	Mansfield Woodhouse
5	Meden Vale Children’s Centre	Meden Vale
6	Oaktree Children’s Centre	Mansfield
7	Pleasley Hill Children’s Centre	Pleasley
8	Ravensdale Children’s Centre	Forest Town
9	Sandy Bank Children’s Centre	Mansfield
10	Sherwood East Children’s Centre	Clipstone
11	Sherwood West Children’s Centre	Rainworth
12	Titchfield & Oakham Children’s Centre	Mansfield
13	Warsop Children’s Centre	Warsop

Image 14 – Locations of **Children’s Centres** – North of the District

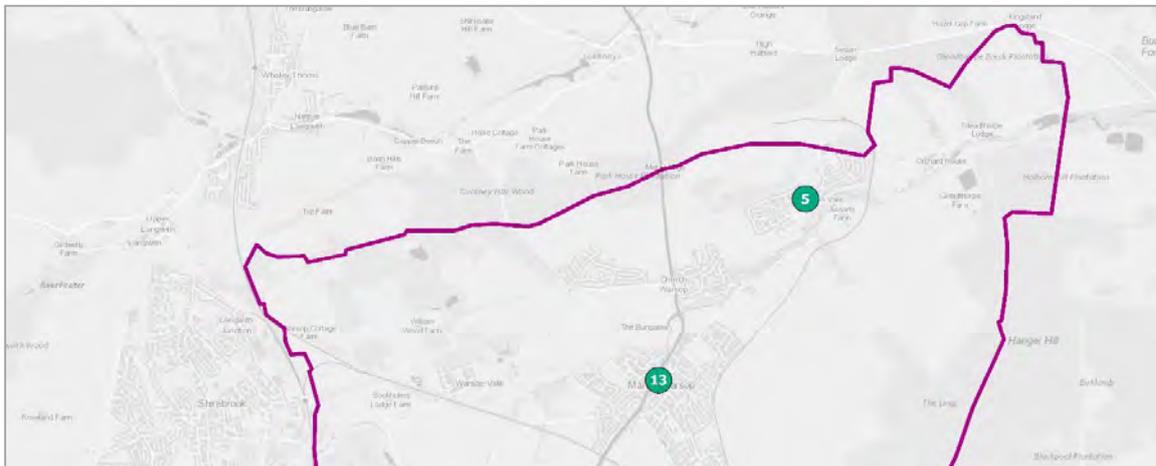
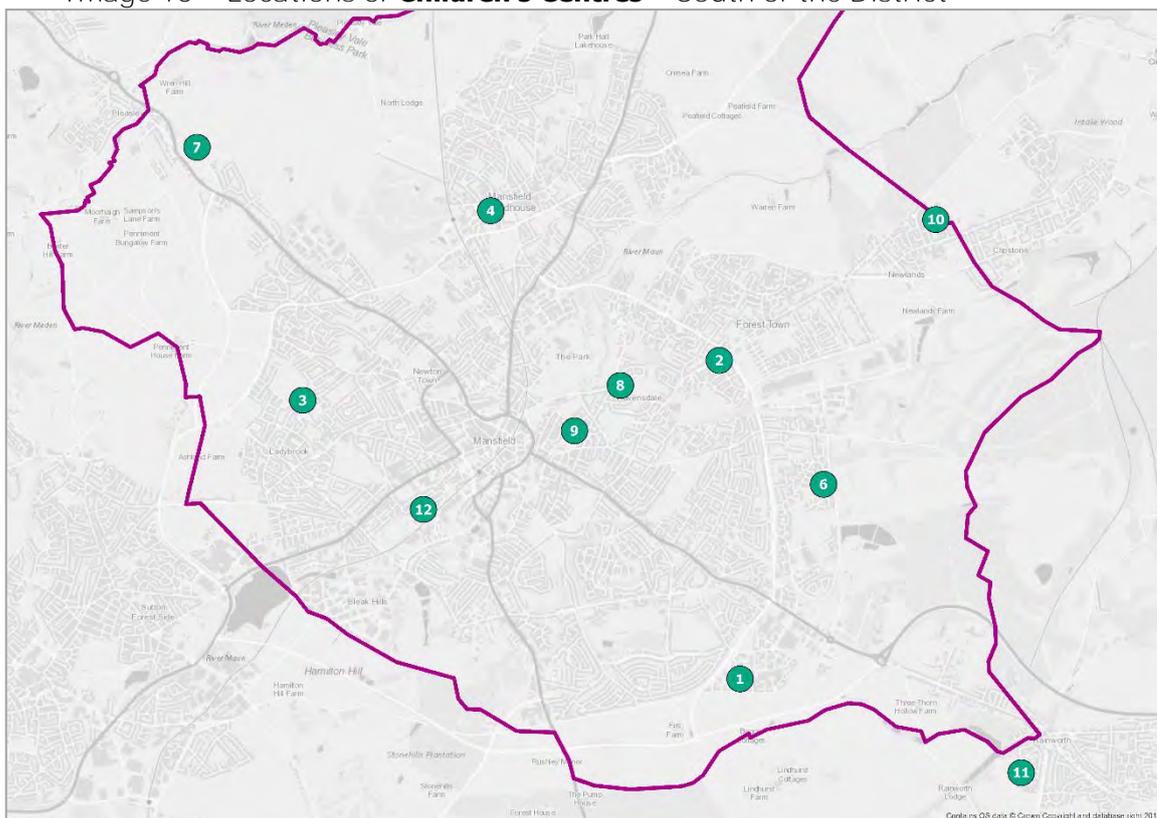


Image 15 – Locations of **Children’s Centres** – South of the District



## Post Offices

3.2.36 The main post office is in Mansfield town centre, located within WHSmith on West Gate, and this is supplemented by 13 smaller Sub-Post Offices at various locations spread throughout the Mansfield urban area and in the local villages as identified in Table 9 (page 24).

Image 16 – Locations of Post Offices – North of the District

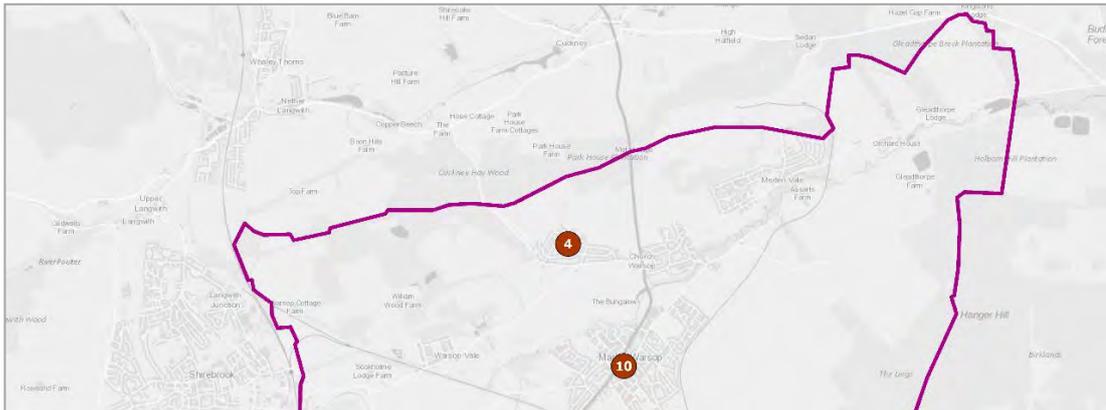


Image 17 – Locations of Post Offices – South of the District

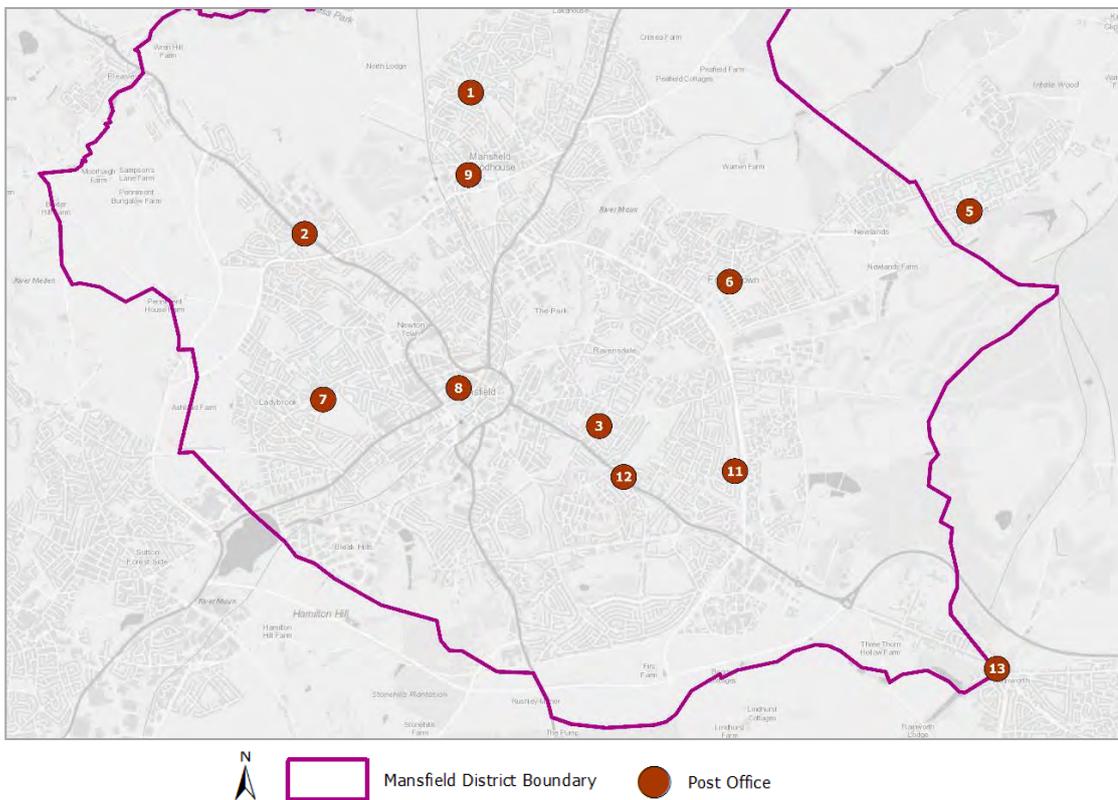




Table 9 – Existing Post Offices within the District

Plan Ref	Post Office	Location
1	Brown Avenue	Mansfield Woodhouse
2	Bull Farm	Mansfield Woodhouse
3	Carter Lane	Mansfield East
4	Church Warsop	Warsop
5	Clipstone Village	Clipstone
6	Forest Town	Forest Town
7	Ladybrook	Mansfield West
8	Mansfield	Mansfield
9	Mansfield Woodhouse	Mansfield Woodhouse
10	Market Warsop	Warsop
11	Oak Tree Lane	Mansfield East
12	Southwell Road	Mansfield East
13	Rainworth	Rainworth

### Indoor Leisure Centres

3.2.37 There are five indoor leisure centres within the District that are operated by the Mansfield District Leisure Trust. These are:

Table 10 – Indoor Leisure Centres within the District

Plan Ref	Indoor Leisure Centres	Location
1	Meden Sports Centre <sup>5</sup>	Warsop
2	Oak Tree Leisure Centre	Mansfield East
3	Rebecca Adlington Swimming Centre	Mansfield
4	River Maun Recreation Centre	Mansfield
5	Water Meadows Swimming and Fitness Centre	Mansfield

<sup>5</sup> At the time of writing The Meden Centre is due to close in April 2018 due to running costs.

Image 18 – Locations of Leisure Centres – North of the District

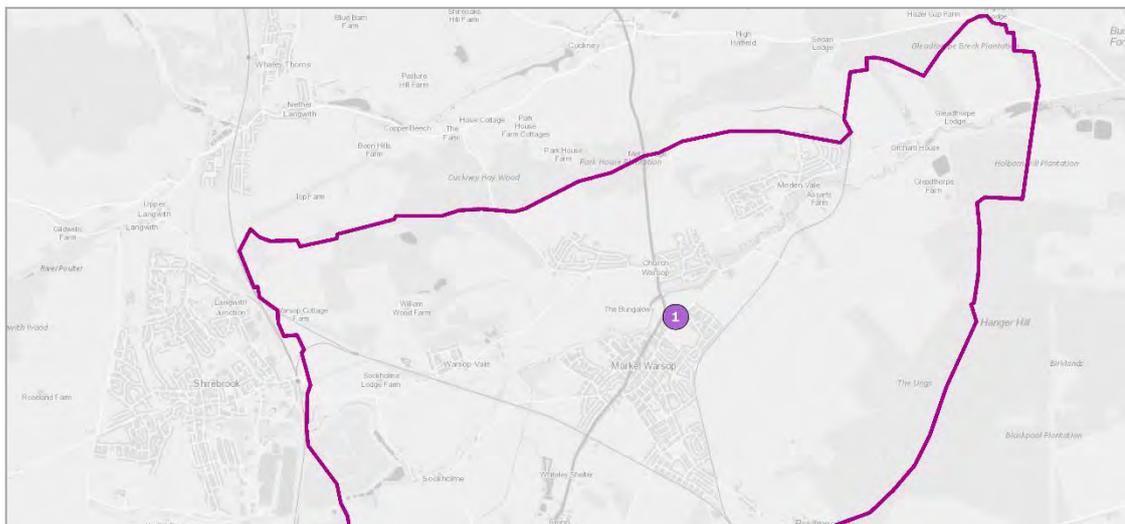
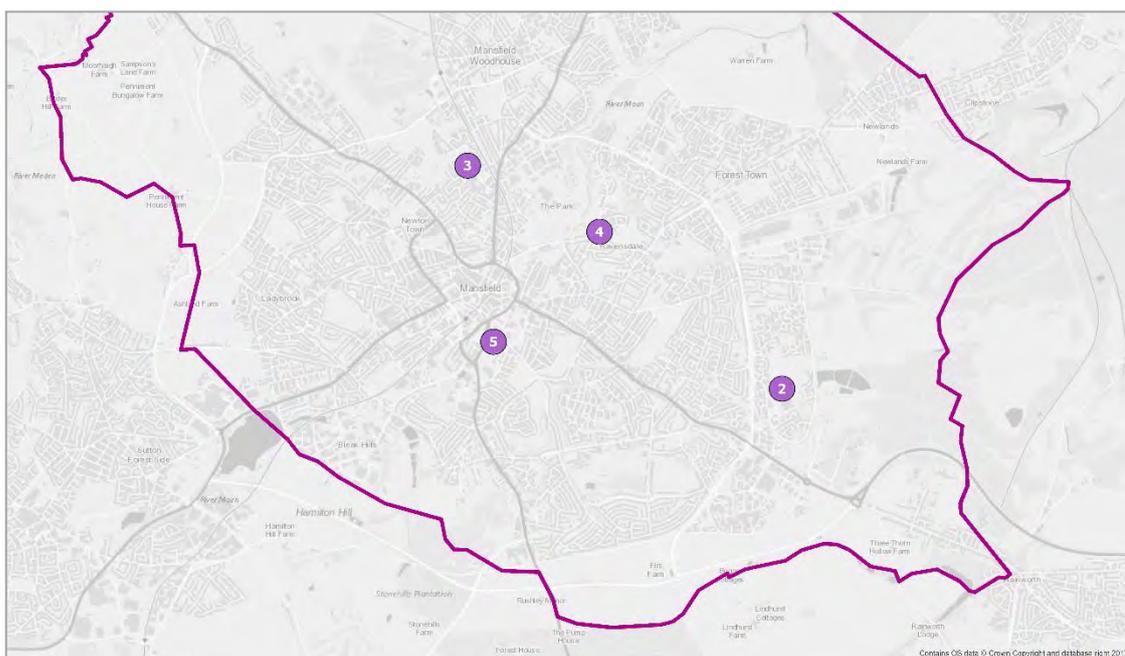


Image 19 – Locations of Leisure Centres – South of the District





3.2.38 The leisure centres provide a range of facilities including swimming pools, fitness centres and gyms. Most of the leisure centres also have outdoor facilities.

Table 11 – Baseline Conditions Summary – Social Infrastructure

Mansfield Urban Area			
Community Centres, Churches and Social Clubs	Libraries	Leisure Centres	Post offices
No unmet needs or deficiencies have been identified.	Provision of libraries and stock is considered adequate.	Good range and provision of leisure centres.	A reasonable network of post offices are available across the town.
Market Warsop Urban Area and the Villages			
Community Centres, Churches and Social Clubs	Libraries	Leisure Centres	Post offices
No unmet needs or deficiencies have been identified	Provision of libraries and stock is considered adequate.	Good range and provision of leisure centres.	Smaller branches available within this area.

### 3.3 WASTE MANAGEMENT

#### Introduction

3.3.1 This section of the report examines baseline waste arisings from Local Authority Collected Waste (LACW) – i.e. household waste - and Commercial and Industrial (C&I) waste arisings. The existing capacity of waste sorting/processing and disposal infrastructure is then identified. This information is summarised from a Waste Needs Assessment Report that can be found in Appendix D.

#### Local Authority Collected Waste (LACW)

3.3.2 Mansfield District Council (MDC) collects waste from its residents using:

- Green wheeled bins for the collection of residual (non-recyclable) household waste;
- Blue wheeled bins for the collection of dry mixed recyclable household waste including mixed paper; cardboard; plastic bottles and plastic tubs and trays; and cans. Glass bottles are not collected at kerbside using the blue bin; and
- Brown wheeled bins for the collection of garden waste (on a chargeable basis).

3.3.3 Residents are encouraged to take their glass to one of the local bring sites – there are 23 such facilities that currently accept glass in the Mansfield District area, as summarised in Table 12.



Table 12 – Existing **Recycling 'Bring Sites'** within the District

Plan Ref	Description	Location	Glass	Textiles	Paper	Cans	Books
1	ASDA, Old Mill Lane	Forest Town	•	•			
2	Coronation Drive	Forest Town	•	•			
3	ASDA, Bancroft Lane	Mansfield		•			
4	Barringer Road, Car Park	Mansfield	•				
5	Civic Centre, Rosemary Street	Mansfield		•			
6	Mansfield Train Station, Car Park	Mansfield		•			
7	Moor Lane Community Centre	Mansfield	•				
8	Morrisons, Sutton Road	Mansfield	•	•	•	•	•
9	Peel Crescent	Mansfield	•				
10	Pleasley Square, Chesterfield Road	Mansfield	•				
11	Red Gate Inn, Westfield Lane	Mansfield	•				
12	Sainsburys, Nottingham Road	Mansfield	•		•	•	
13	Sir John Cockle Public House, Sutton Road	Mansfield		•			
14	Tesco, Chesterfield Road South	Mansfield	•			•	
15	Tesco, Oak Tree Lane	Mansfield	•	•		•	•
16	The Ladybrook Public House, Ladybrook Lane	Mansfield	•	•			
17	The Ling Forest, Eakring Road	Mansfield	•				
18	The Local Inn, Armstrong Road	Mansfield	•				
19	Water Meadows Leisure Centre, Bath Street	Mansfield		•			
20	B&Q, Old Mill Lane	Man' Woodhouse		•	•	•	
21	<b>Ex Servicemen's Club, Slant Lane</b>	Man' Woodhouse	•				
22	Morrisons, Welbeck Road	Man' Woodhouse	•	•		•	
23	Sunnydale Inn, Brown Ave	Man' Woodhouse		•			
24	Netherfield Lane, Car Park	Meden Vale	•				•
25	The Three Lions, Netherfield Lane	Meden Vale	•				
26	Welbeck Miners Welfare, Elkesley Rd	Meden Vale	•				
27	Laurel Avenue	Church Warsop	•				
28	The Woodend Pub, Wood Lane	Warsop	•				
29	Co-op, The Market Place, High St	Warsop	•	•			
30	New England Way, Pleasley	Pleasley	•	•			

Image 20 – Locations of Recycling Sites – North of the District

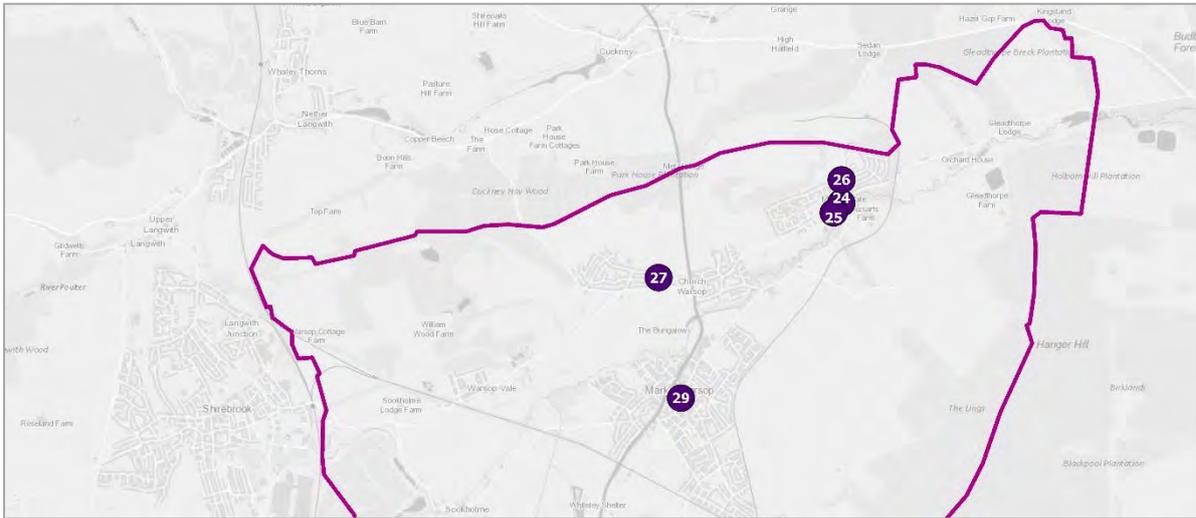
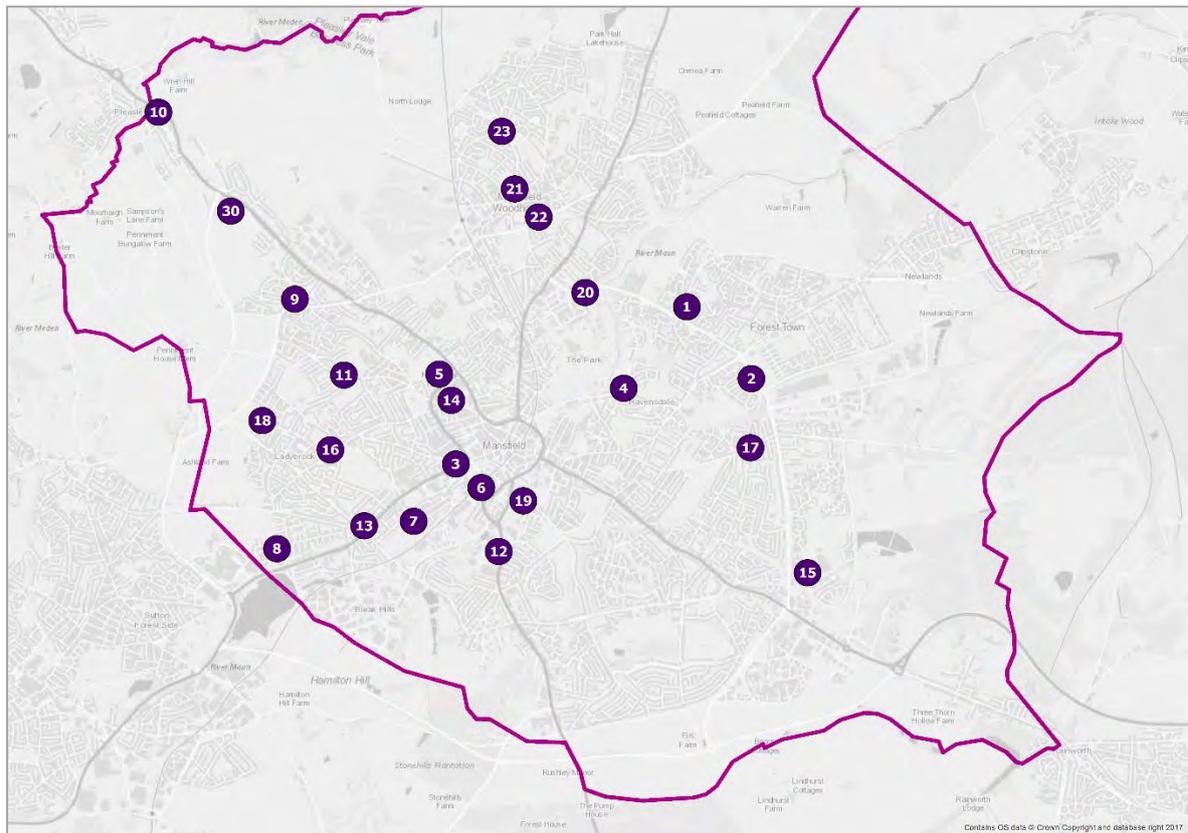


Image 21 – Locations of Recycling Sites – South of the District





- 3.3.4 MDC also offers a trade waste service for businesses in the District and collects both recyclable and non-recyclable waste. This is a chargeable service and the Council operates with a menu of services including a range of bins sizes and frequency of collection.
- 3.3.5 MDC also operates a clinical waste collection service for its residents that is free of charge providing a duly completed and authorised Healthcare Waste Referral Form has been submitted by the resident(s) requiring this service. Infectious waste is collected directly but clinical waste classified as non-infectious can be bagged and placed in the green residual wheeled bin for standard kerbside collection.
- 3.3.6 The Council also provides a bulky waste collection service for its residents for which it makes a small charge, but encourages residents, in the first instance, to consider donation of suitable items to charity for reuse or to take items direct to one of the Household Waste Recycling Centres (HWRCs) operated by Nottinghamshire County Council.
- 3.3.7 Reported collection volumes between 2011/12 and 2015/16 for MDC are presented in Table 13 below, these include all kerbside collections, recycling collected at bring sites and recycling/composting collected through other recycling schemes.

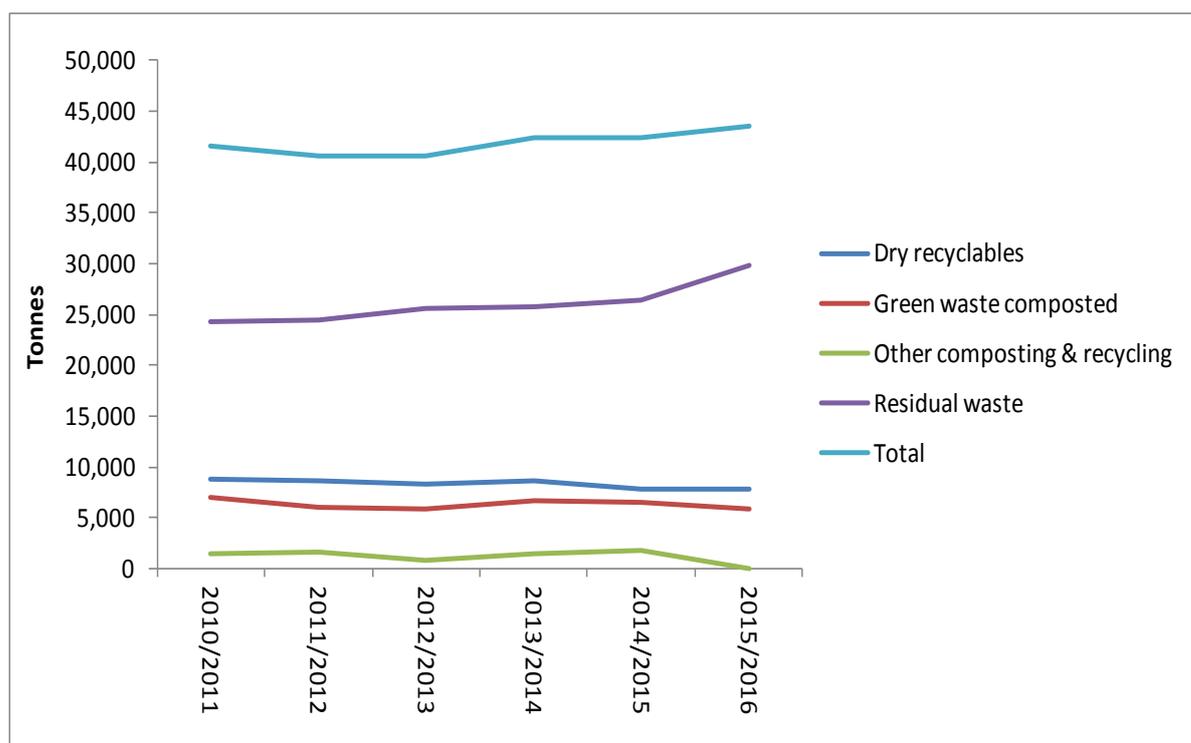
Table 13 - LACW Tonnages in Mansfield 2010/11 - 2015/16

Waste Type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Dry recyclables	8,843	8,553	8,294	8,543	7,750	7,771
Garden waste	7,002	5,975	5,861	6,741	6,424	5,827
Other composting & recycling	1,405	1,572	820	1,396	1,769	52
Residual waste	24,341	24,415	25,595	25,693	26,453	29,856
<b>Total</b>	<b>41,591</b>	<b>40,515</b>	<b>40,570</b>	<b>42,373</b>	<b>42,396</b>	<b>43,505</b>
<b>% recycled &amp; composted</b>	<b>41.5%</b>	<b>39.7%</b>	<b>36.9%</b>	<b>39.4%</b>	<b>37.6%</b>	<b>31.4%</b>

Source: [www.Wastedataflow.org](http://www.Wastedataflow.org)

- 3.3.8 The information in Table 13 is illustrated graphically in Image 22 on the next page, showing the historic trend of LACW by waste type in Mansfield District Council.

Image 22 - Historic Trend of LACW by Waste Type, Mansfield District Council



What happens to this waste?

3.3.9 The destination of LACW in Mansfield for 2014/15 is summarised in Table 14 on the next page. All kerbside dry mixed recycling (DMR) collected by the Council is taken to a Materials Recovery Facility (MRF) in Mansfield where it is sorted and separated into its constituent materials before being sent for recycling by various operators. The green/garden waste collected by the Council is sent for composting at a facility in Oxtun.

3.3.10 Between 2010/11 and August 2014, residual waste was taken to FCC Alfreton Waste Transfer Station (WTS) and FCC Dorket Head landfill near Nottingham. From September 2014, all residual waste was delivered to Alfreton WTS and was either treated and sent as Refuse Derived Fuel (RDF) to Europe or is landfilled. This arrangement remained in place until the end of March 2017. For the next three years (to April 2020) residual waste will be sent to the new Veolia Welshcroft Close WTS, in Kirby in Ashfield, where it will be treated and sent as RDF to Europe. From 2020 to 2033, residual waste will continue to be delivered to the Veolia Welshcroft Close WTS and be treated and used as RDF in the UK.



Table 14 – Destination of LACW in Mansfield

Kerb-Side Dry Mixed Recycling (Tonnage represents permitted annual capacity of the MRF)
MRF, Crown Farm Industrial Estate, Mansfield, 80,000 tonnes per annum
UPM Kymmene (UK) Ltd (paper and pulp mill), Deeside, 360,000 tonnes per annum
Mark Lyndon Paper Enterprises UK Ltd, Nottingham
Morris & Co. Handlers Ltd, Rossington, Doncaster
Novelis UK Ltd, Warrington, 150,000 tonnes per annum
Veolia E S Cleanaway (UK), Rainham, Essex, 65,000 tonnes per annum
Recresco Ltd, Kirkby-in-Ashfield, Nottinghamshire
Ardagh Glass Ltd, Knottingley, West Yorkshire, 250,000 tonnes per annum
Garden/Green Waste
Simpro Ltd (composting), Ollerton Road, Oxtun, Southwell, 50,000 tonnes per annum
Residual
FCC Alfreton WTS for treatment to produce RDF (for export to Europe) or landfilled

3.3.11 In 2014/2015, approximately 44.6% of the LACW in Nottinghamshire County was recycled or recovered, i.e. 34.6% recycled/composted<sup>6</sup>, 10% was sent for energy recovery, and 55.4% was sent to landfill. Overall, countywide recycling rates for LACW have slowed significantly in line with regional and national trends.

#### Commercial and Industrial Waste (C&I)

3.3.12 Unlike LACW, there is no regular reporting done for the C&I and Construction and Demolition (C&D) waste arisings and therefore data on these wastes is not readily available. Although local authorities do provide waste collection services to businesses, most C&I waste is collected by private waste management companies and therefore not reported to local authorities. The Environment Agency, through the Waste Data Interrogator (WDI), provides data from annual returns made by private waste operators about the waste handled at their facilities. However, this data is not reliable for obtaining C&I waste estimates because the waste can pass through several facilities where it is sorted, bulked up and sent for treatment leading to double counting and overestimation of the arisings. It does, however, provide an indication of the operational waste management capacity available for this waste.

3.3.13 Regional and national surveys have been undertaken in previous years to estimate the amount of C&I waste generated by businesses. The most recent national survey of C&I waste was undertaken by Defra in 2009/10, which provides C&I waste estimates at both national and regional levels. Based on the assumption that C&I arisings in Nottinghamshire declined in line

<sup>6</sup> Source: Wastedataflow



with the national average, it is estimated that businesses in Nottinghamshire and Nottingham City generate approximately 900,000 tonnes of C&I waste per annum<sup>7</sup>.

3.3.14 As with data on estimates of C&I waste generated by businesses, there is limited local data and **information on how this waste is managed. The Environment Agency's WDI reports approximately 387,000 tonnes of Nottinghamshire's municipal** and C&I waste was sent to landfill in 2013/2014.

3.3.15 To provide an estimate of what proportion of this was from commercial and industrial sources, 150,000 tonnes of LACW in the County that is estimated to have been landfilled in 2013/14 was deducted from 387,000 tonnes, giving approximately 237,000 tonnes of C&I sent to landfill by Nottinghamshire in 2013/14.

3.3.16 This estimate should however be taken with caution as some of the waste might have originated from outside the County and the waste produced within the County might have been sent outside of the County and there could also be some double counting due to waste passing through other facilities before its destination.

#### Conclusion

3.3.17 Table 15 below summarises information and data on waste collections services and waste management in MDC as follows:

Table 15 - Summary of Waste Collection and Management, Mansfield District Council

Waste collection services	Residual waste, chargeable garden waste, mixed dry recyclates, chargeable bulky waste, chargeable trade waste, clinical waste
2015/2016 LACW tonnages	43,505 tonnes
2015/2016 recycling and composting rate	31.4%
Dry recyclates destination	Various facilities, see Table 14 (page 31)
Garden waste destination	Simpro Ltd (composting), Ollerton Road, Oxtun, Southwell, 50,000 tonnes per annum
Residual waste destination	FCC Alfreton WTS for treatment to produce RDF (for export to Europe) or landfilled

<sup>7</sup> Estimate derived from Survey of Commercial and Industrial Waste Arisings, Defra, 2010



3.3.18 The baseline position is that there is sufficient capacity for the current management of waste collected by MDC, but there are some challenges going forwards. Existing capacities and a capacity gap analysis are set out in detail in the Waste Needs Assessment report in Appendix D. In summary, non-hazardous landfill void will be filled in 2 -3 years and the County Council will need to find alternative methods of managing residual waste (Annual Monitoring Report 2014/15). However, MDC has arrangements in place up to 2033 whereby its residual waste will be treated and used as Refuse Derived Fuel (RDF) in the UK. In respect of Energy from Waste, there is enough capacity in the County for municipal waste based on the forecast municipal waste recovery annual tonnages. Existing available capacity for municipal recycling and composting in Nottinghamshire will not be sufficient over the plan period. Municipal recycling and composting tonnages are forecast to increase beyond existing available capacities which means that additional capacity will be required in Nottinghamshire over the period of the plan.

### 3.4 UTILITIES

#### Water

3.4.1 Severn Trent Water (STW) is the statutory water undertaker for Mansfield. Water companies have historically undertaken medium to long term planning of water resources to demonstrate there is a long-term plan for delivering sustainable water supply within its operational area to meet existing and future demand.

3.4.2 As of 2007, it became a statutory requirement for water companies to prepare and maintain Water Resource Management Plans (WRMPs) which demonstrate how water companies are managing the balance between available supply and future demand over a 25-year plan. These plans are subject to consultation and approval by Secretary of State every five years, but must be updated annually.

3.4.3 The STW WRMP<sup>8</sup> builds on the strategy set out in the previous WRMP published in 2010. The plan explains STW proposals for making sure there is sufficient water available, in the right place and at the right time to supply customers in an affordable, sustainable way over the next 25 years. The draft WRMP was published in 2013 and was subject to stakeholder comment and Secretary of State approval with the final plan being issued in May 2014.

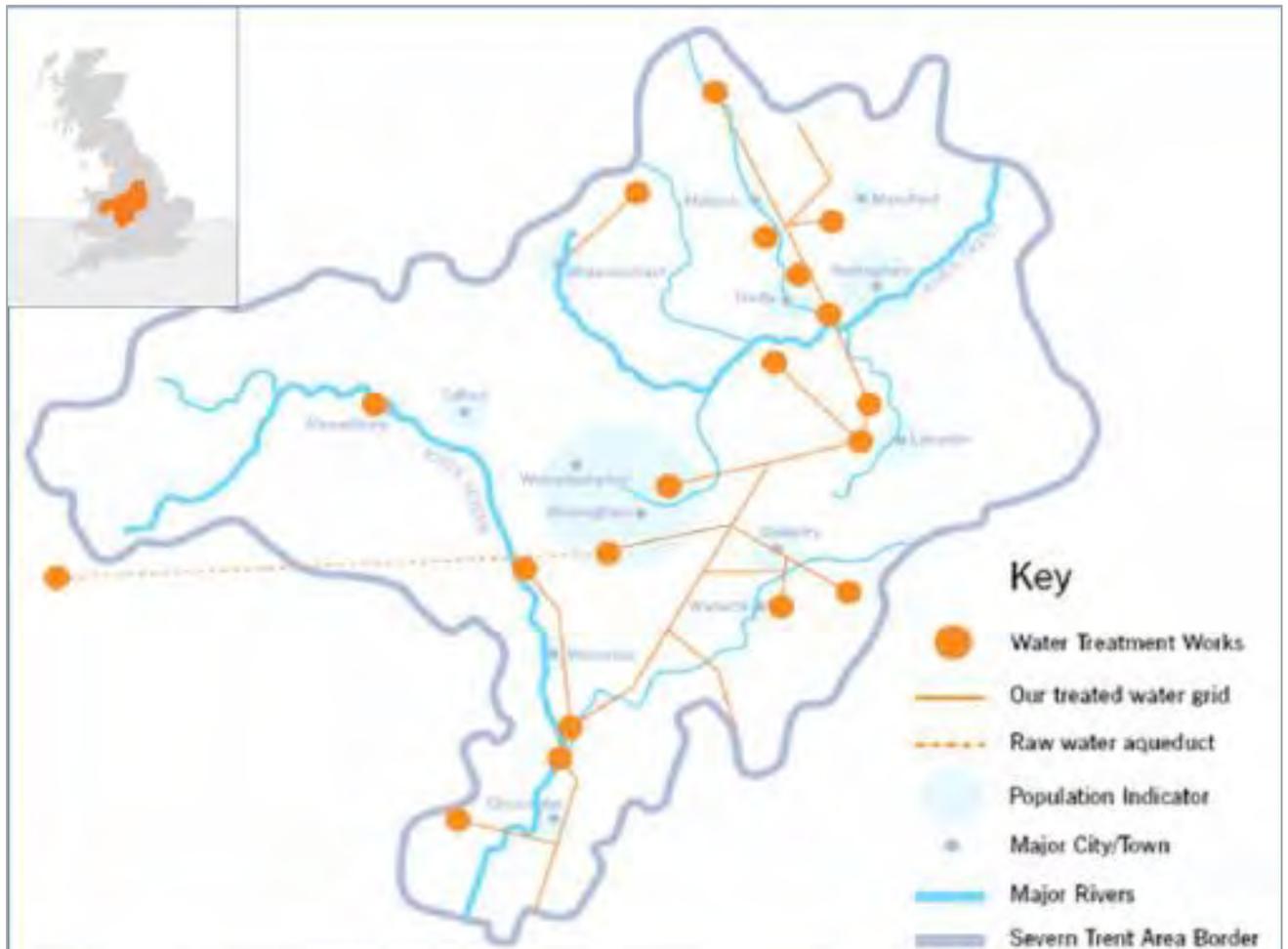
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<sup>8</sup> [https://www.severntrent.com/content/dam/stw/ST\\_Corporate/About\\_us/Docs/WRMP-2014.pdf](https://www.severntrent.com/content/dam/stw/ST_Corporate/About_us/Docs/WRMP-2014.pdf)



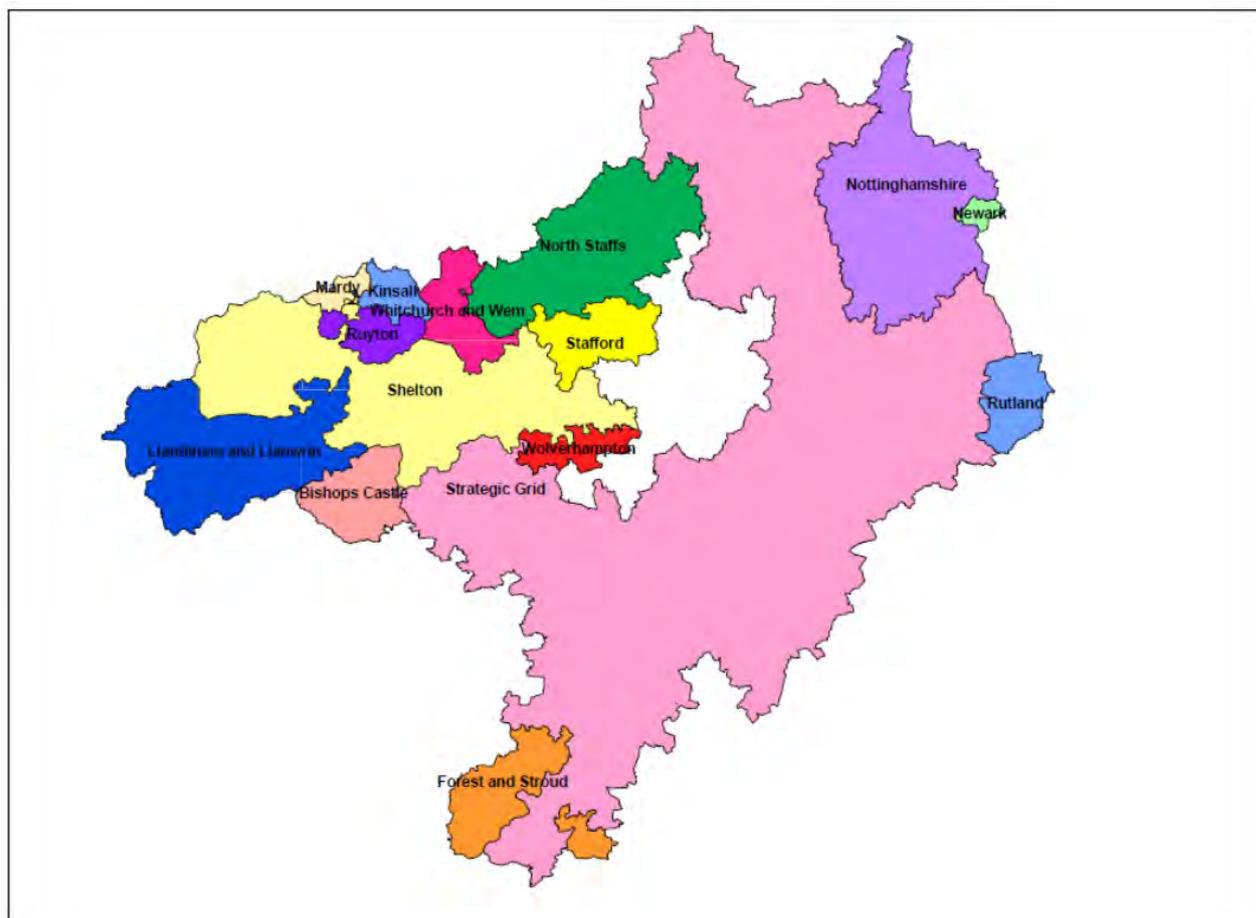
- 3.4.4 STW plan their investment based on 5-year business plans known as Asset Management Plans (AMP). We are currently in AMP 6 which runs between 2015-2020. STW are currently finalising their AMP 7 plans.
- 3.4.5 Water companies manage available water resources within key zones, called Water Resource Zones (WRZ). These zones share the same raw resources for supply and are interconnected by **supply pipes, treatment works and pumping stations. The zones share the same '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.
- 3.4.6 Severn Trent Water has 15 water resource zones of varying sizes. The strategic grid zone supplies most customers and smaller zones supply the smaller populated areas. Water companies undertake resource modelling to predict the likely surplus or deficit of available water in each WRZ by 2035, once additional demand from growth and other factors such as climate change are considered.
- 3.4.7 Mansfield District is located within the Nottinghamshire Water Resource Zone which covers the whole of the county. The water supplies in the Nottinghamshire zone come from a combination of local groundwater sources and imports of surface water from within the surrounding Strategic Grid Zone. The north and east of the zone are predominantly fed by borehole water while the south is normally fed from Strategic Grid surface water treatment works which abstract from the River Derwent. The nearest water treatment works and treated water strategic mains are located to the west of Mansfield and Nottingham. There is no STW strategic water infrastructure or water treatment works to the east or north of Nottingham.

Image 23 - STW Supply Network



Source: STW Water Resources Management Plan 2014

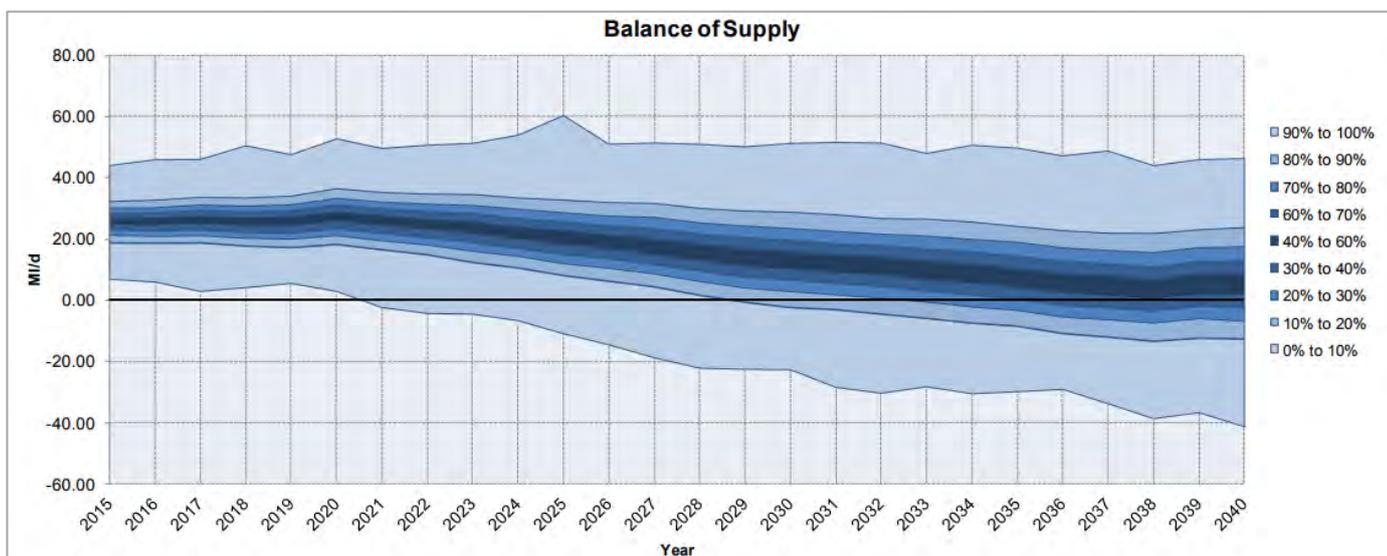
Image 24 - STW Water Supply Zones



Source: STW Water Resources Management Plan 2014

- 3.4.8 The 2014 WRMP highlights that the Nottinghamshire zone will require new sources of supply in the long term to sustain growth and climate change. The overall strategy for the Nottinghamshire zone is based around reducing leakage and the demand for water within the zone itself together with providing support from within the Strategic Grid zone.
- 3.4.9 The main new supply scheme for this zone is to provide a major treated water link to the Strategic Grid Zone which will allow for a more flexible supply system, better able to cope with drought conditions.
- 3.4.10 The new main supply scheme for the Nottinghamshire zone, programmed for delivery within AMP 10 [2035-2040], is to provide a major treated water link from Ogston Reservoir to Mansfield connecting with the Strategic Grid zone. This is beyond the local plan period (2013-2033).

Image 25 – Nottinghamshire Supply Zone supply/demand balance



Source: STW Water Resources Management Plan 2014

3.4.11 STW have raised no concerns relating to the supply of water across the District to meet future demand in their WRMP or in their AMP programme. Local network capacity would therefore be the only limiting factor. Any local capacity issues would be dealt with on a development-by-development basis, and the extents of any offsite works determined on application for capacity. These works would be programmed in by STW to comply with the developer’s programme. It is recommended that early consultation is made with STW, at the planning stage of each project, to identify any local constraints and off-site works required.

#### Wastewater

3.4.12 Severn Trent Water has 2 sewerage treatment works in the District located at Bath Lane in Mansfield and at Broomhall Lane in Church Warsop. Parts of Forest Town drain into Edwinstowe STW, whilst parts of Berry Hill and Lindhurst drain into Rainworth STW. The topography of the District **dictates that much of Mansfield’s waste water is gravity** fed to Bath Lane STW. There are also pumping stations which lift flows from the Mansfield Woodhouse area.

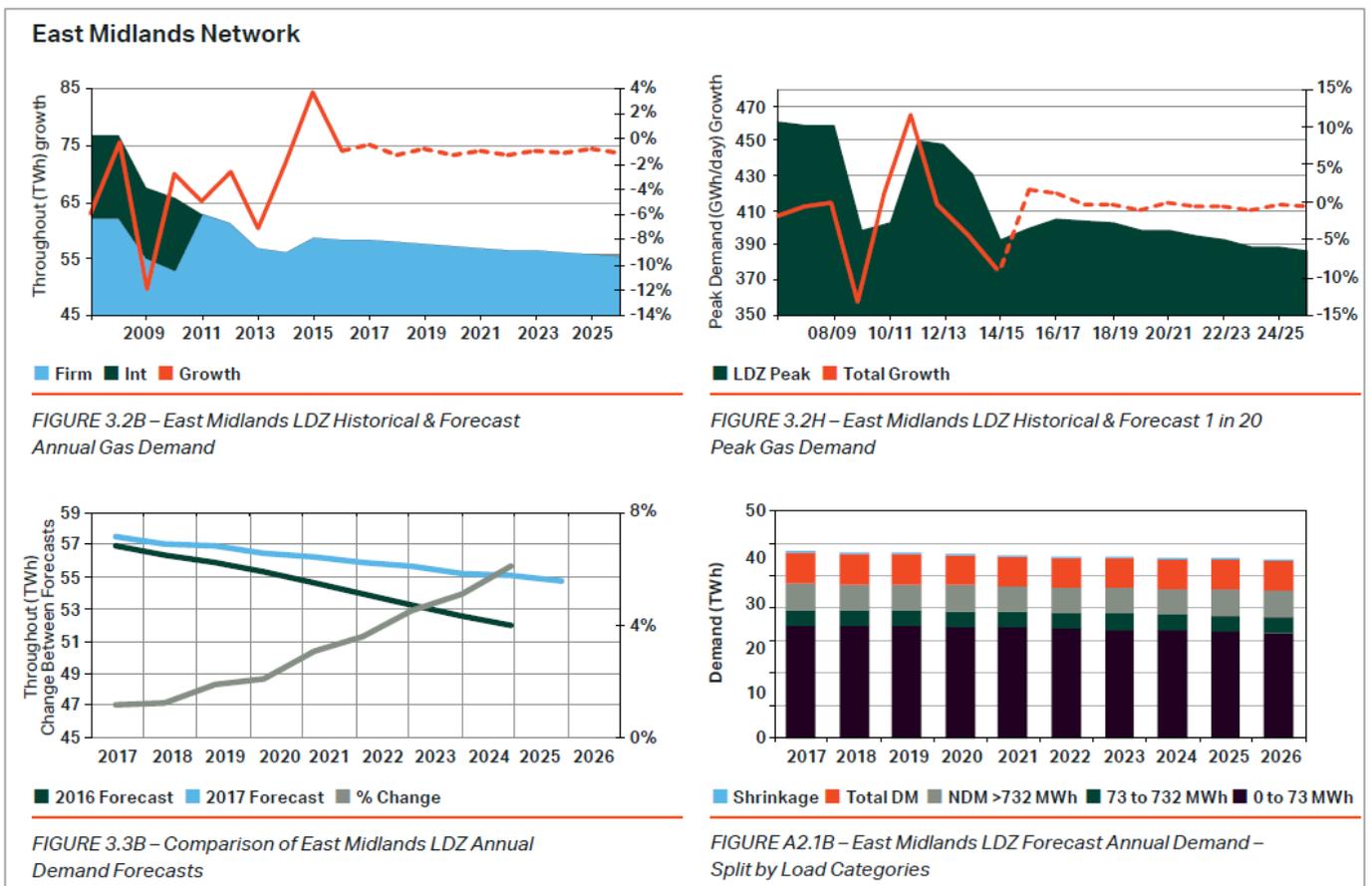
3.4.13 The Mansfield District Council Water Cycle Strategy – Scoping Study Report dated June 2009 notes that the Mansfield Bath Lane, Church Warsop and Rainworth STWs have been identified as being at capacity when current development is considered.

Gas

3.4.14 Cadent Gas, formerly National Grid Gas prior to 1<sup>st</sup> May 2017, have provided details of all medium pressure, intermediate pressure, local high pressure and national high-pressure mains within Mansfield District.

3.4.15 **Mansfield District falls within the East Midlands Local Distribution Zone. Cadent Gas’s** Long-Term Development Plan 2017 highlights no planned capital investment schemes for the strategic high-pressure gas infrastructure within the East Midlands Local Distribution Zone between 2017/18 and 2020/21. This implies that no strategic capacity issues are expected and therefore local capacity would be the limiting factor, which would be dealt with on a development-by-development basis on application.

Image 26 – Cadent Gas 10 Year Forecast Demand

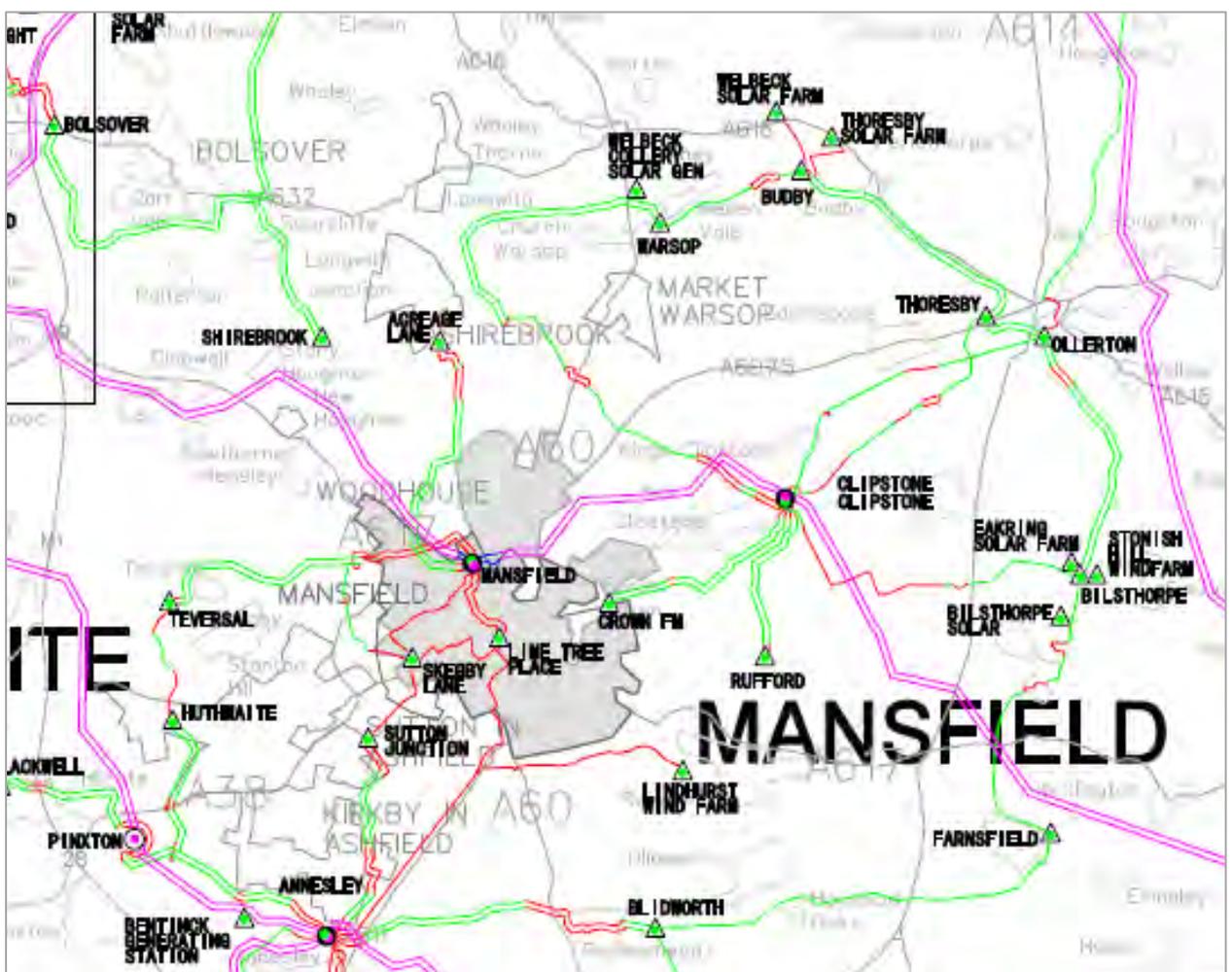


Source: Cadent Gas Long Term Development Plan 2017

## Electricity

3.4.16 National Grid (NG) own and operate 400kV and 275kV transmission assets within the adjacent Newark and Sherwood District. There is one NG operated grid supply point within the Newark and Sherwood District, Staythorpe 400kV, which transmits electricity to Western Power Distribution (WPD) electricity infrastructure within Mansfield via 132kV overhead lines to 132kV to 33kV bulk supply points. 33kV services supply primary power stations where it transforms down to 11kV for distribution purposes.

Image 27 – WPD Transmission System (see following page for key)



Source: WPD East Midland Long-Term Development Statement 2016



Key for Image 27 on the previous page:

	<b>132kV OVERHEAD LINE</b>		<b>POWER STATION</b>
	<b>132kV UNDERGROUND CABLE</b>		<b>N.G.C. GRID SUPPLY POINT</b>
	<b>66kV OVERHEAD LINE</b>		<b>132kV/66kV OR 33kV SUBSTATION</b>
	<b>66kV UNDERGROUND CABLE</b>		<b>132kV/11kV OR 25kV SUBSTATION</b>
	<b>33kV OVERHEAD LINE</b>		<b>66kV SUBSTATION</b>
	<b>33kV UNDERGROUND CABLE</b>		<b>33kV SUBSTATION</b>
	<b>OTHER NETWORK OPERATORS' CIRCUITS</b>		<b>33kV SWITCHING STATION</b>
	<b>25kV CIRCUITS</b>		<b>66kV SWITCHING SUBSTATION</b>
			<b>132kV SWITCHING STATION</b>
			<b>25kV TRACKSIDE SUBSTATION (BR)</b>

3.4.17 There are Grid supply points at Chesterfield and Staythorpe and Bulk Supply Points (BSP) at Mansfield within the District; Annesley and Alfreton to the south of the District, Clipstone and Staythorpe to the east of the District; Chesterfield to the north west of the District; and Whitwell, Warsop and Checkerhouse to the North of the District.

3.4.18 Primary substations within the District are Mansfield, Crown Farm, Lime Tree Place and Skegby Lane. Outside the District but serving parts of the District are also Acreage Lane, Shirebrook, Warsop, and Rufford.

3.4.19 Table 16 shows the primary substations within the Mansfield area and their current firm capacity together with their current available capacity (Demand Headroom). This shows that there is sufficient capacity to cover current loads with spare available for future connections.

Table 16 - WPD Power Distribution

Primary Sub-Station	Bulk Supply Point (BSP)	Grid Supply Point	Firm Capacity MVA	Measured Peak Demand MVA	Demand Headroom MVA
Mansfield	Mansfield	Chesterfield	35.20	25.25	9.95
Crown Farm	Clipstone	Chesterfield	24.60	14.30	10.30
Lime Tree Place	Mansfield	Chesterfield	40.00	21.67	18.33
Skegby Lane	Mansfield	Chesterfield	18.60	16.35	2.25
Warsop	Clipstone	Chesterfield	24.00	5.35	18.65
Acreage Lane	Mansfield	Chesterfield	24.00	18.50	5.50
Annesley	Annesley	Chesterfield	32.60	23.17	9.43
Shirebrook	Whitwell	Chesterfield	6.00	3.40	2.51
Rufford	Clipstone	Chesterfield	25.00	6.25	18.75

Source: WPD Network Capacity Map



3.4.20 WPD would manage connections and the local network to ensure continued supply as primary substations approach capacity. Developments close to these substations would likely trigger upgrades to be made, at **the developer's expense**.

3.4.21 **WPD's East Midlands Long Term Development Statement** dated November 2016 identifies no works to the 132kV or 33kV systems in the area.

3.4.22 Assessment of the 132kV and 33kV networks is carried out annually or where a new connection is requested. The trigger for reinforcement being compliance with Engineering Recommendation P2/6 which gives minimum standards to be maintained for the security of supply.

3.4.23 When considering the BSP upstream of each Primary Substation, it is noted that there appears to be limited capacity at Annesley BSP by the year 2017 and this may limit growth in the surrounding areas.

#### Telecommunications

3.4.24 **Openreach is the regulated 'Open Access' Telecommunications network provider within Mansfield District. Other 'open access' and 'closed access' operators are available but these are not regulated in terms of duty to provide physical connections to meet growth aspirations. Existing Openreach coverage is summarised in Image 28 and Table 17 on the following pages. As can be seen from the image most the built-up areas of the District are covered.**

Image 28 – Existing Openreach Coverage

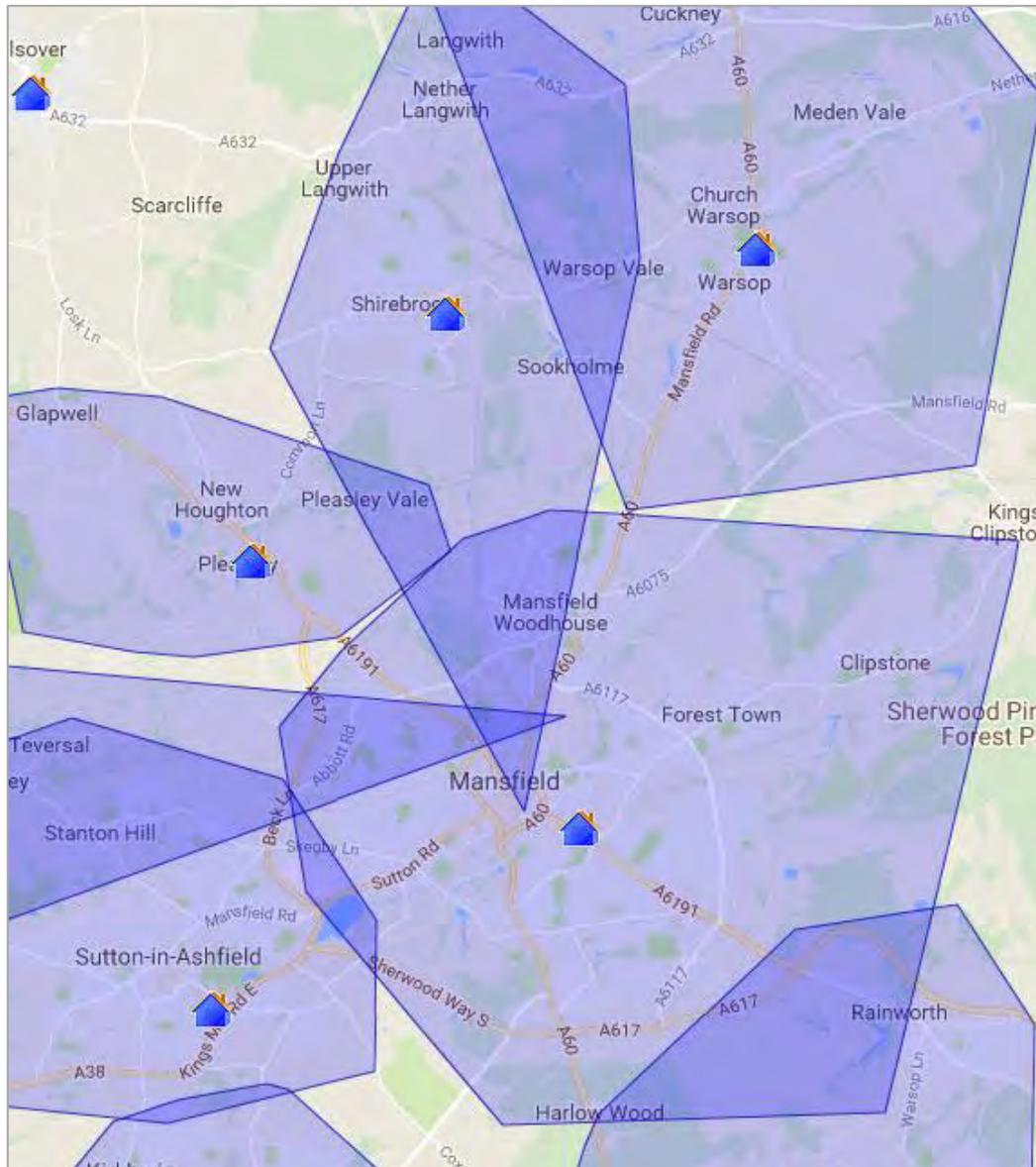




Table 17 – Openreach Exchange – Coverage<sup>9</sup>

Openreach Exchange	Currently Serving – Residential	Currently Serving – Non Residential	ASDL Enabled	SDSL Enabled	FTTC Enabled	FTTP Enabled
Mansfield	41,957	1,549	Yes	Yes	Some areas	Some areas
Pleasley	2,665	99	Yes	No	Some areas	Some areas
Warsop	5,184	178	Yes	No	Some areas	Not available
Tibshelf	4,658	145	Yes	No	Some areas	Not available
Shirebrook	6,108	236	Yes	No	Some areas	Not available
Kirkby in Ashfield	11,487	455	Yes	Yes	Some areas	Some areas
Blidworth	7,719	195	Yes	No	Some areas	Some areas

Notes:

ASDL = Asymmetric digital subscriber line – fast data transmissions over telephone lines, generally used by private customers

SDSL = Symmetric digital subscriber line - fast data transmissions over telephone lines, generally used by business customers

FTTC = Fibre to the cabinet

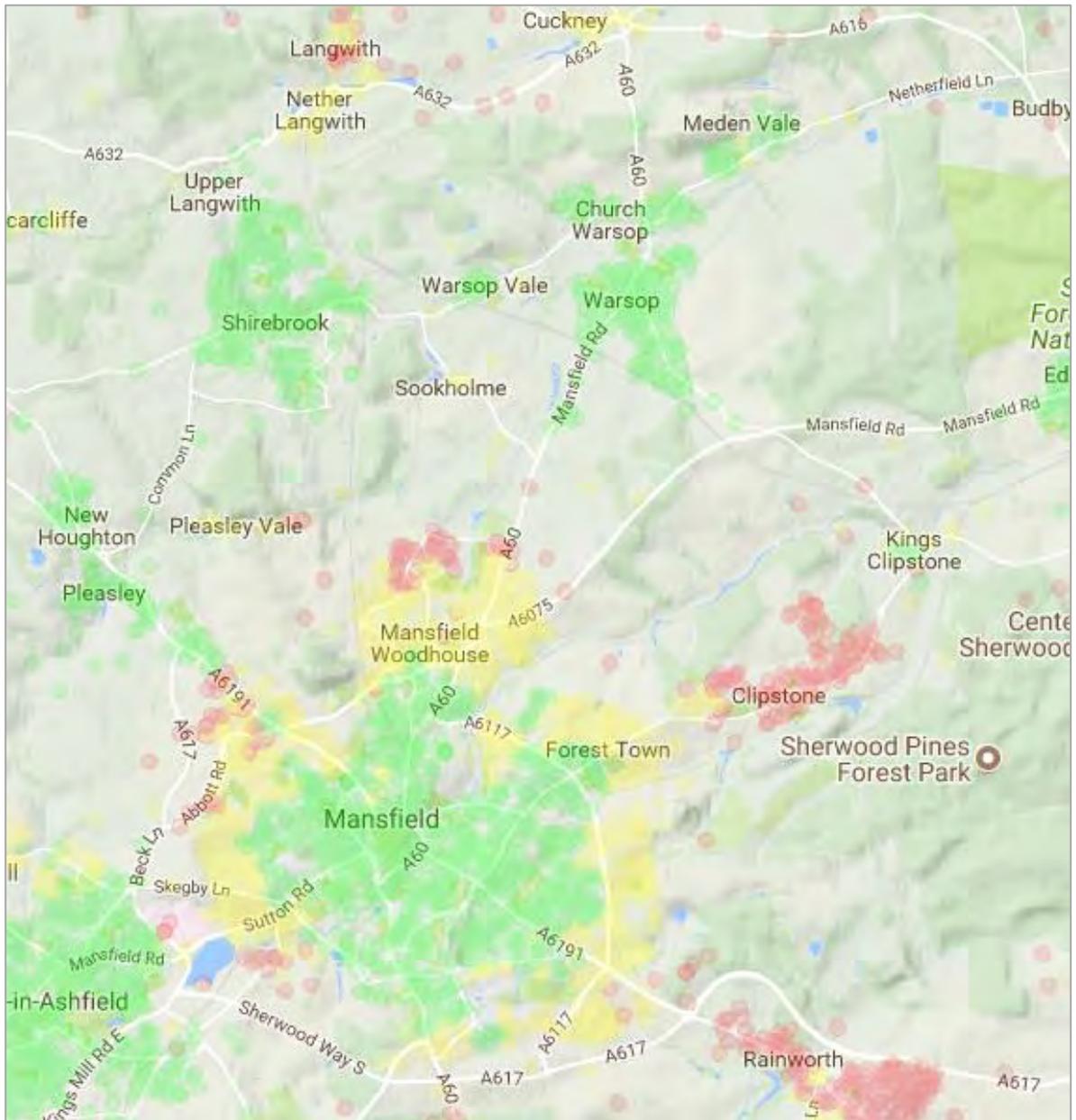
FTTP = Fibre to the premises

3.4.25 The government set targets for broadband delivery for the UK. Phase 1 was to provide superfast broadband to 90% of UK premises by early 2016 and access to basic broadband (2Mbps) for all from December 2015. Phase 2 to provide superfast broadband coverage to 95% of UK premises by the end of 2017 and then to explore options to provide superfast coverage to the hardest to reach parts of the UK, the final 5%. Ofcom data as at June 2016 showed that about 1% of UK premises were unable to receive speeds of 2Mbps. House of Commons briefing paper dated 9<sup>th</sup> March 2017 – Superfast Broadband Coverage in the UK lists Hornby, Mansfield in the list of top 20 wards in Great Britain for highest percentage of connections receiving superfast speeds (>30 Mbps).

3.4.26 Whilst ASDL technology is universally enabled across the District it can be seen from the two images below that there are currently some areas of the District where typical download speeds are below 2 megabits per second (2Mbps).

<sup>9</sup> Source: SamKnows.com

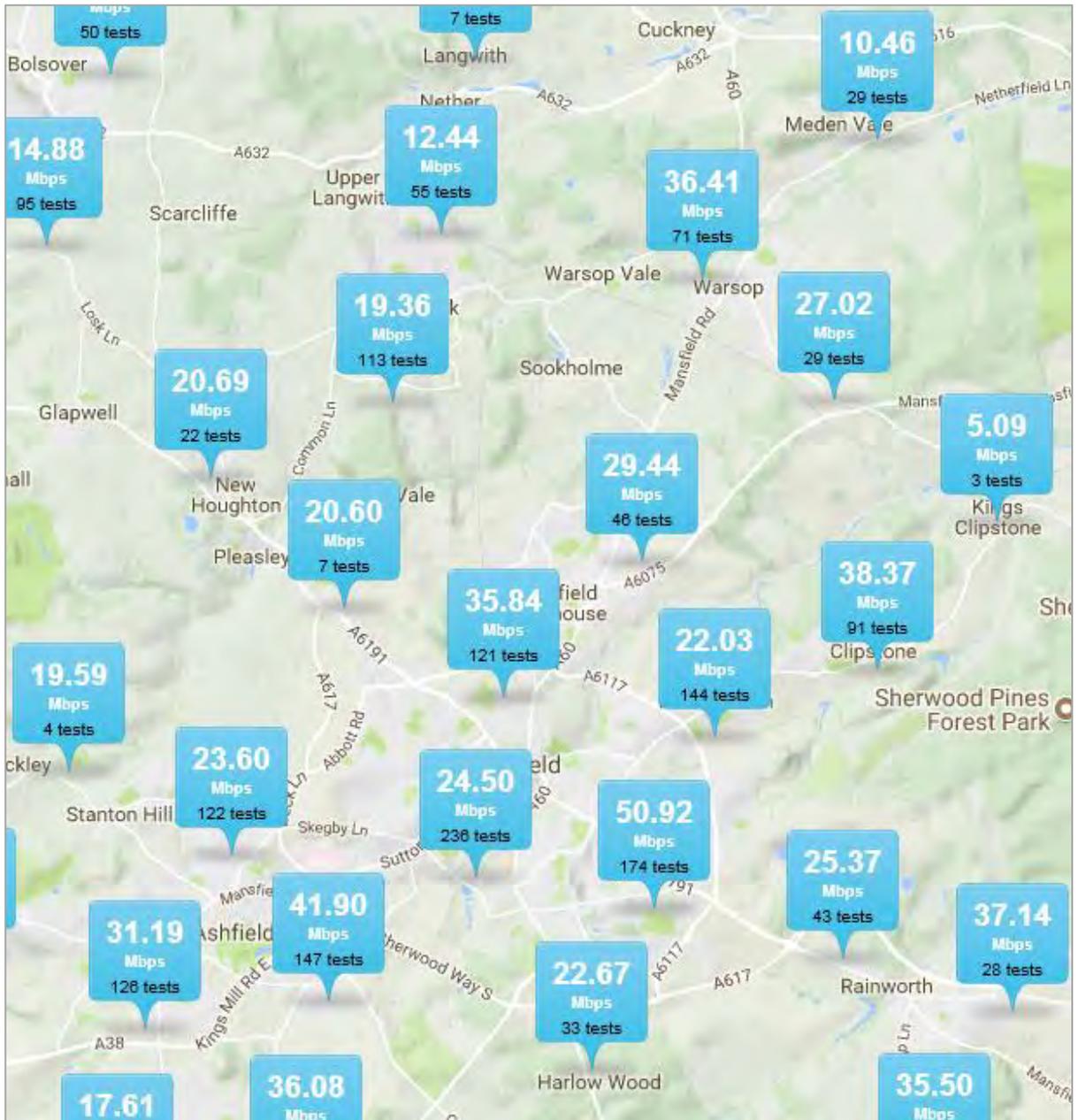
Image 29 – Openreach ASDL Speeds



**ADSL2+ Speeds (Estimate)**  
 Source: [thinkbroadband.com](http://thinkbroadband.com) [disable](#)  
 ■ 0Mbps to 2Mbps  
 ■ 2Mbps to 8Mbps  
 ■ 8Mbps and above

Source: thinkbroadband.com

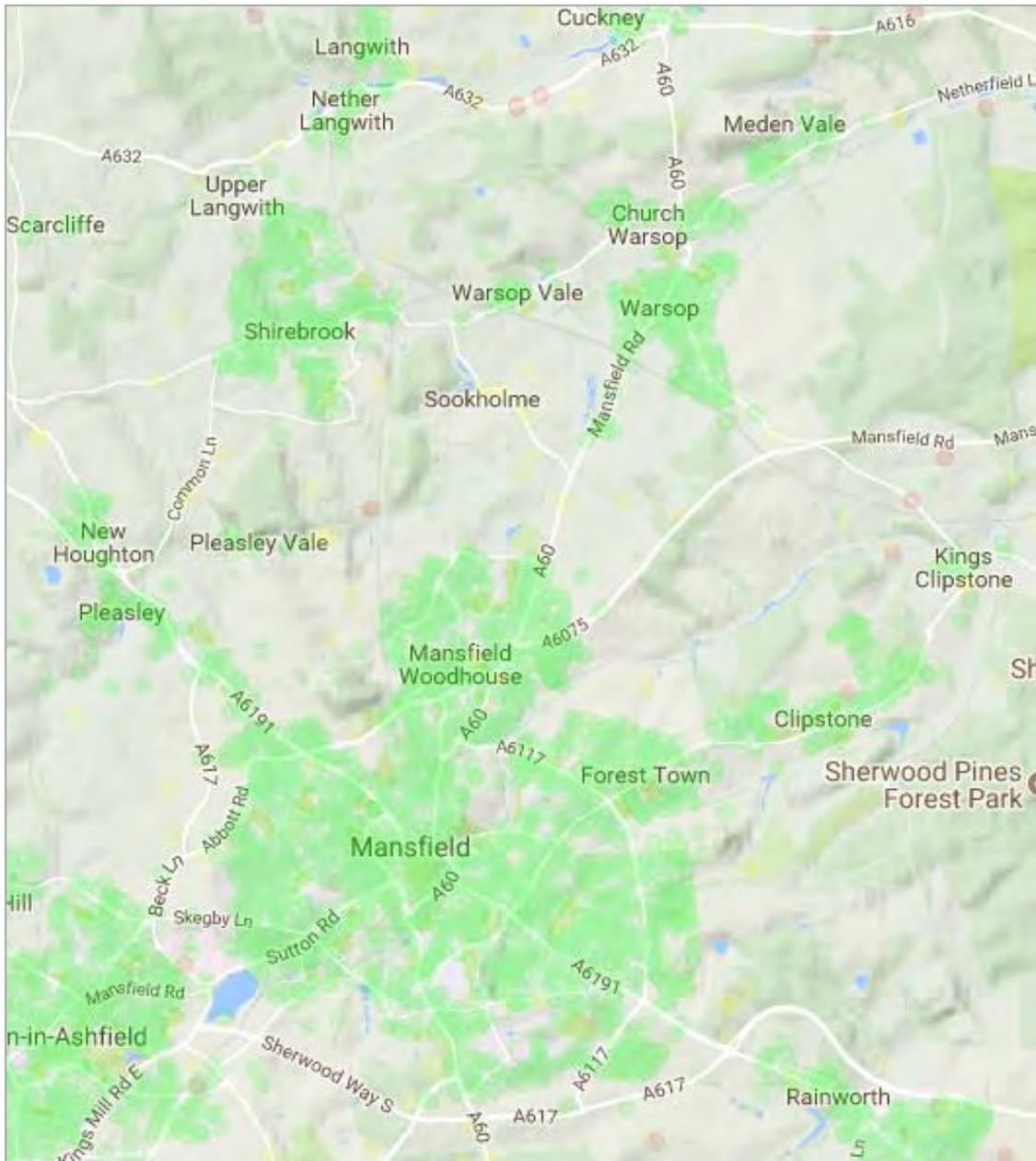
Image 30 – Broadband Speed Test Results



[Speed Test Results](#) [disable](#)  
 Speeds tests in your area.  
 Source [thinkbroadband speed test](#)  
 (updated daily)

Source: thinkbroadband.com

Image 31 – Openreach FTTC/FTTP Speeds



**Openreach FTTC/FTTP Speeds (Live Postcodes)**  
[Source: labs.thinkbroadband.com/local](#) [disable](#)

- 0Mbps to 4Mbps
- 4Mbps to 24Mbps
- 24Mbps and above

Source: thinkbroadband.com

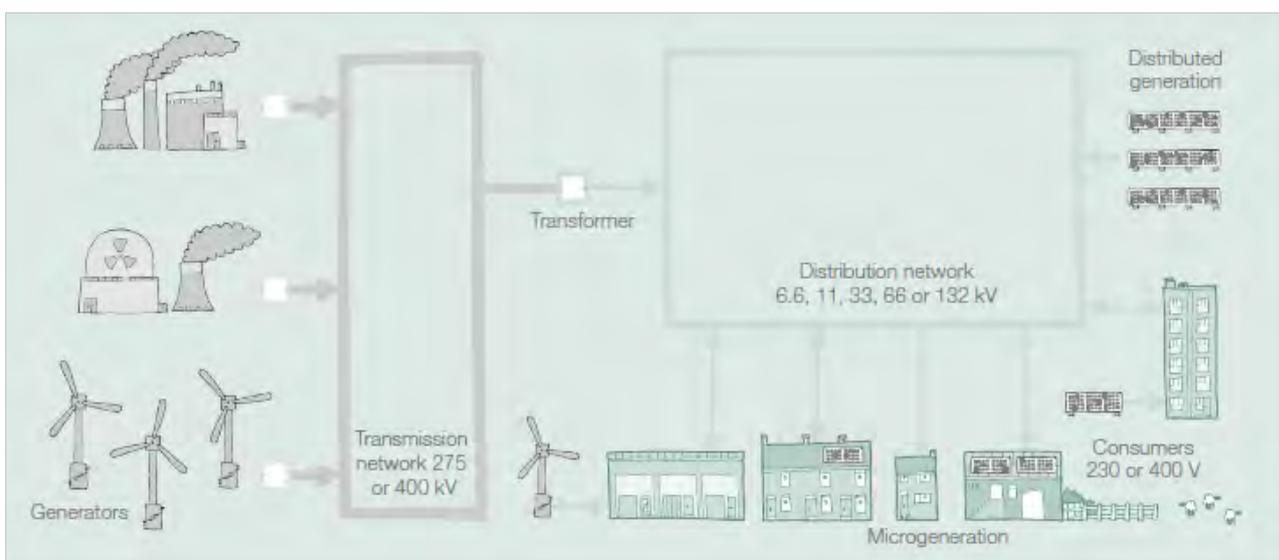


## Renewables

3.4.28 The scale of renewable, decentralised and low carbon energy generation in the District is currently limited with the area being predominantly reliant on mains electricity and gas. Increasing the generation of renewable and low carbon energy will be critical in reducing the **District's contributions to climate** change, helping to meet national emission targets and improving energy security.

3.4.29 In the District, the key local renewable and low carbon energy opportunities relate to potential for micro-generation including heat pumps, solar thermal and solar PV on new buildings. Many of these renewables can export generated electricity to the grid. Some technologies such as heat pumps do not export electricity to the grid but still need an import connection.

Image 33 – Electricity Network



Source: WPD Connecting Community Energy

3.4.30 Much of the electricity network is now considered at capacity due to the amount of distributed generation that has been connected. Therefore, whilst it is still possible to get an electricity generation connection, it might take longer and be at a higher cost due to the need to modify or reinforce the network. The electricity network was not designed to support high levels of distributed generation and this creates various constraints on the network:

- It can make the power flow in the distribution network more dynamic and unpredictable which can cause thermal limits to be exceeded and reverse power flows. The thermal limit is



the maximum reliable capacity of the cable determined by the heating effect caused by electrical losses. Reverse power flows are the flow of energy in the opposite direction from consumers.

- It can contribute to fault levels – the highest electric current that can exist in an electrical system under short-circuit conditions – and cause the network to exceed safe levels if it is already close to its fault level limit.
- It can affect power quality – the quality of the voltage, which determines the fitness of electrical power to consumer devices – limits from distorting the shape of voltage waveform, for example by increasing the levels of harmonics.

3.4.31 Table 18 on the next page is taken from the WPD Generation Capacity Register for the East Midlands Region dated 4<sup>th</sup> December 2017. We have extracted data for the substations covering the Mansfield District only. This shows generators which are: connected to the network; have accepted offers to connect to the network; have received offers to connect to the network. This register is due to be updated on the 8<sup>th</sup> January 2018.

3.4.32 WPDs large generator connection map<sup>10</sup> shows the geographical position of generators with an export capacity of at least 1MVA and includes both generators which are connected to the WPD network and those which have accepted offers to connect to the WPD network. The East Midlands Distributed Generation Constraint Map dated 1<sup>st</sup> December 2017 is included in Appendix B. The next planned update of this document is 4<sup>th</sup> January 2018.

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<sup>10</sup> [https://www.westernpower.co.uk/docs/connections/Generation/Generation-capacity-map/Generation-capacity-register/LargeGeneratorConnection\\_20161004.aspx](https://www.westernpower.co.uk/docs/connections/Generation/Generation-capacity-map/Generation-capacity-register/LargeGeneratorConnection_20161004.aspx).



Table 18 – WPD Generation Capacity

GSP	BSP	Primary	Generator Technology	Voltage	Latest Connected Export Capacity [kVA]	Change in Connected Export Capacity [kVA]	Latest Accepted-not-yet-Connected Export Capacity [kVA]	Change in Accepted-not-yet-Connected Export Capacity [kVA]	Latest Offered-not-yet-Accepted Export Capacity [kVA]	Change in Offered-not-yet-Accepted Export Capacity [kVA]
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	33kV connection	Landfill Gas, Sewage Gas, Biogas (not CHP)	33kV	12,000	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	33kV connection	Photovoltaic	33kV	4,800	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	33kV connection	Photovoltaic	33kV	4,968	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	ANNESLEY (KIRKBY) 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	6,000	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	ANNESLEY (KIRKBY) 11kV S STN	Onshore Wind	Aggregate of HV & LV	2,111	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	ANNESLEY (KIRKBY) 11kV S STN	Photovoltaic	Aggregate of HV & LV	981	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	BLIDWORTH 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	1,010	-	-	-	-	-
CHESTERFIELD 132kV S STN	ANNESLEY 33kV S STN	BLIDWORTH 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	652	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	CLIPSTONE 11kV S STN	Photovoltaic	Aggregate of HV & LV	663	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	CROWN FM 33 11kV S STN	Hydro	Aggregate of HV & LV	4	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	CROWN FM 33 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	3,800	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	CROWN FM 33 11kV S STN	Micro CHP (Domestic)	Aggregate of HV & LV	2	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	CROWN FM 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	862	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	RUFFORD 33 11kV S STN	Mixed	Aggregate of HV & LV	753	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	RUFFORD 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	700	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	RUFFORD 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	1,259	250	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	RUFFORD 33 11kV S STN	Storage (Battery)	Aggregate of HV & LV	7,370	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	WARSOP 33 11kV S STN	Other Generation	Aggregate of HV & LV	4	-	-	-	-	-
CHESTERFIELD 132kV S STN	CLIPSTONE 33kV S STN	WARSOP 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	389	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	33kV connection	Onshore Wind	33kV	9,500	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	33kV connection	Other Generation	33kV	20,000	-	-	-	-	-



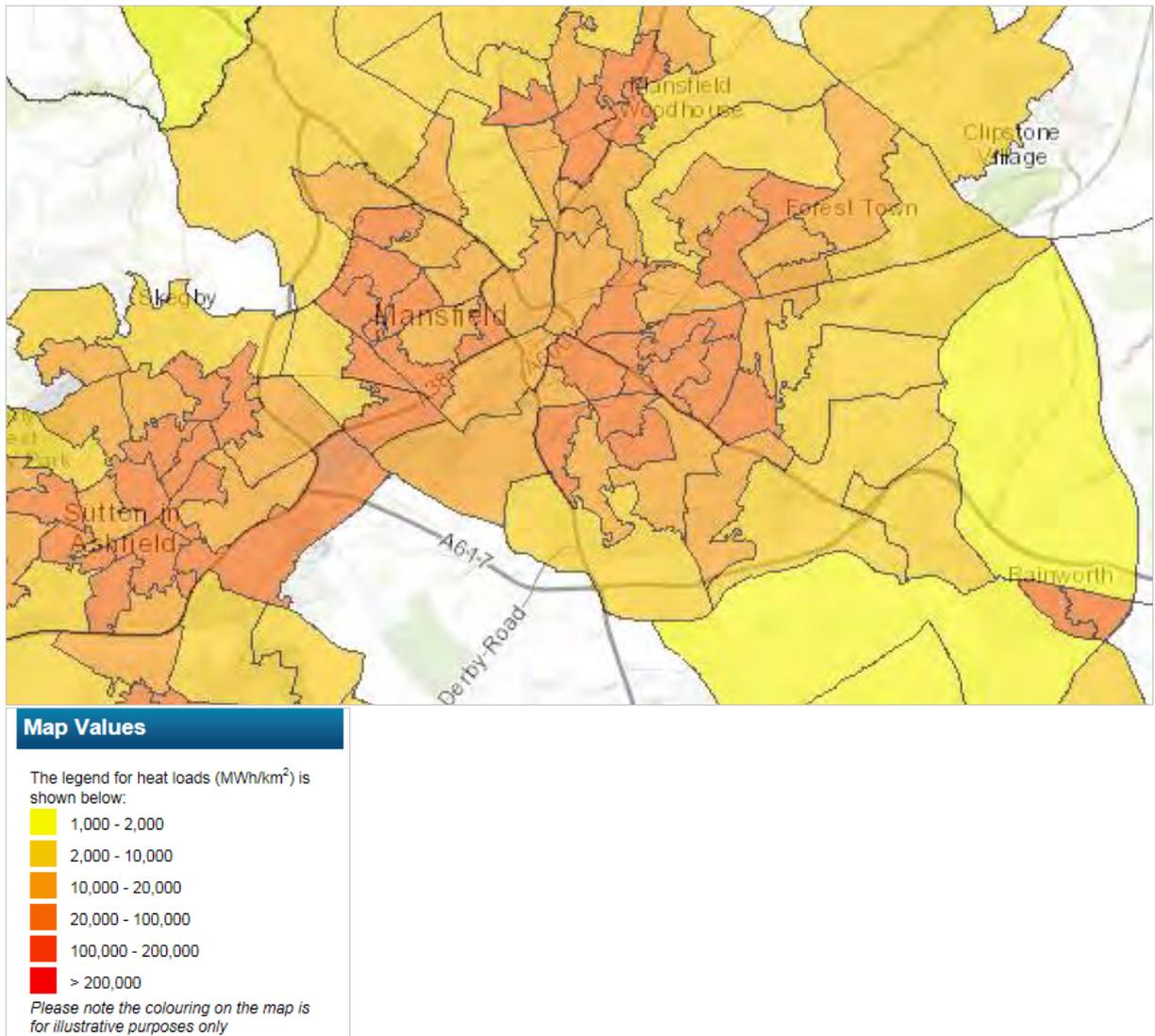
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	33kV connection	Photovoltaic	33kV	3,800	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	33kV or 66kV connection	Other Generation	33kV or 66kV	-	-	21,000	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	33kV or 66kV connection	Other Generation	33kV or 66kV	-	-	10,000	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	ACREAGE LANE 33 11kV S STN	Hydro	Aggregate of HV & LV	4	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	ACREAGE LANE 33 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	2,700	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	ACREAGE LANE 33 11kV S STN	Mixed	Aggregate of HV & LV	10,050	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	ACREAGE LANE 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	55	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	ACREAGE LANE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	3,681	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	LIME TREE PLACE 33 11kV S STN	Mini CHP (<1MW)	Aggregate of HV & LV	-	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	LIME TREE PLACE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	515	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	MANSFIELD 11kV S STN	Mixed	Aggregate of HV & LV	1,500	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	MANSFIELD 11kV S STN	Onshore Wind	Aggregate of HV & LV	1	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	MANSFIELD 11kV S STN	Other Generation	Aggregate of HV & LV	3,000	3,000	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	MANSFIELD 11kV S STN	Photovoltaic	Aggregate of HV & LV	5,458	79	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	SKEGBY LANE 33 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	3,100	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	SKEGBY LANE 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	11	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	SKEGBY LANE 33 11kV S STN	Other Generation	Aggregate of HV & LV	-	-	4,000	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	SKEGBY LANE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	631	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	TEVERSAL 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	1	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	TEVERSAL 33 11kV S STN	Other Generation	Aggregate of HV & LV	4	-	-	-	-	-
CHESTERFIELD 132kV S STN	MANSFIELD 33kV S STN	TEVERSAL 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	526	-	2,000	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 132kV S STN	To be confirmed	Other Generation	33kV, 66kV or 132kV	-	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	33kV connection	Mixed	33kV	4,500	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	33kV connection	Photovoltaic	33kV	4,250	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	CLOWNE 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	800	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	CLOWNE 33 11kV S STN	Other Generation	Aggregate of HV & LV	3	-	-	-	-	4,500



CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	CLOWNE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	925	6	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	CRAGGS LANE 33 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	2,350	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	CRAGGS LANE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	10,946	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	HALFWAY 33 11kV S STN	Medium CHP (>5MW, <50MW)	Aggregate of HV & LV	5,850	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	HALFWAY 33 11kV S STN	Other Generation	Aggregate of HV & LV	3	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	HALFWAY 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	321	4	-	-	-	23
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	HOLME CARR 33 11kV S STN	Other Generation	33kV, 66kV or 132kV	-	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	HOLME CARR 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	466	9	-	-	5	5
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	SHIREBROOK 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	1	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	SHIREBROOK 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	468	-	-	-	-	-
CHESTERFIELD 132kV S STN	WHITWELL 33kV S STN	WESTHORPE 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	582	-	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	33kV or 66kV connection	Storage (Battery)	33kV or 66kV	-	-	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	KILTON RD 33 11kV S STN	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	-	-	-	-	4,000	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	KILTON RD 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	-	2,021	-	-	-	7
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	MANTON 33 11kV S STN	Biomass & Energy Crops (not CHP)	Aggregate of HV & LV	-	800	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	MANTON 33 11kV S STN	Onshore Wind	Aggregate of HV & LV	-	2,000	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	MANTON 33 11kV S STN	Photovoltaic	Aggregate of HV & LV	-	593	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	To be confirmed	Storage (Battery)	33kV, 66kV or 132kV	-	-	-	-	-	10,000
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	WORKSOP WEST 33/11kV	Landfill Gas, Sewage Gas, Biogas (not CHP)	Aggregate of HV & LV	-	-	-	-	6,000	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	WORKSOP WEST 33/11kV	Onshore Wind	Aggregate of HV & LV	-	1	-	-	-	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	WORKSOP WEST 33/11kV	Other Generation	Aggregate of HV & LV	-	-	-	-	7,000	-
STAYTHORPE C 132kV S STN	WORKSOP 33kV S STN	WORKSOP WEST 33/11kV	Photovoltaic	Aggregate of HV & LV	-	502	-	-	-	-

3.4.33 There are currently no Combined Heat and Power schemes registered in the Mansfield area on the Department for Energy & Climate Change database. The image below shows the heat demands for the Mansfield District.

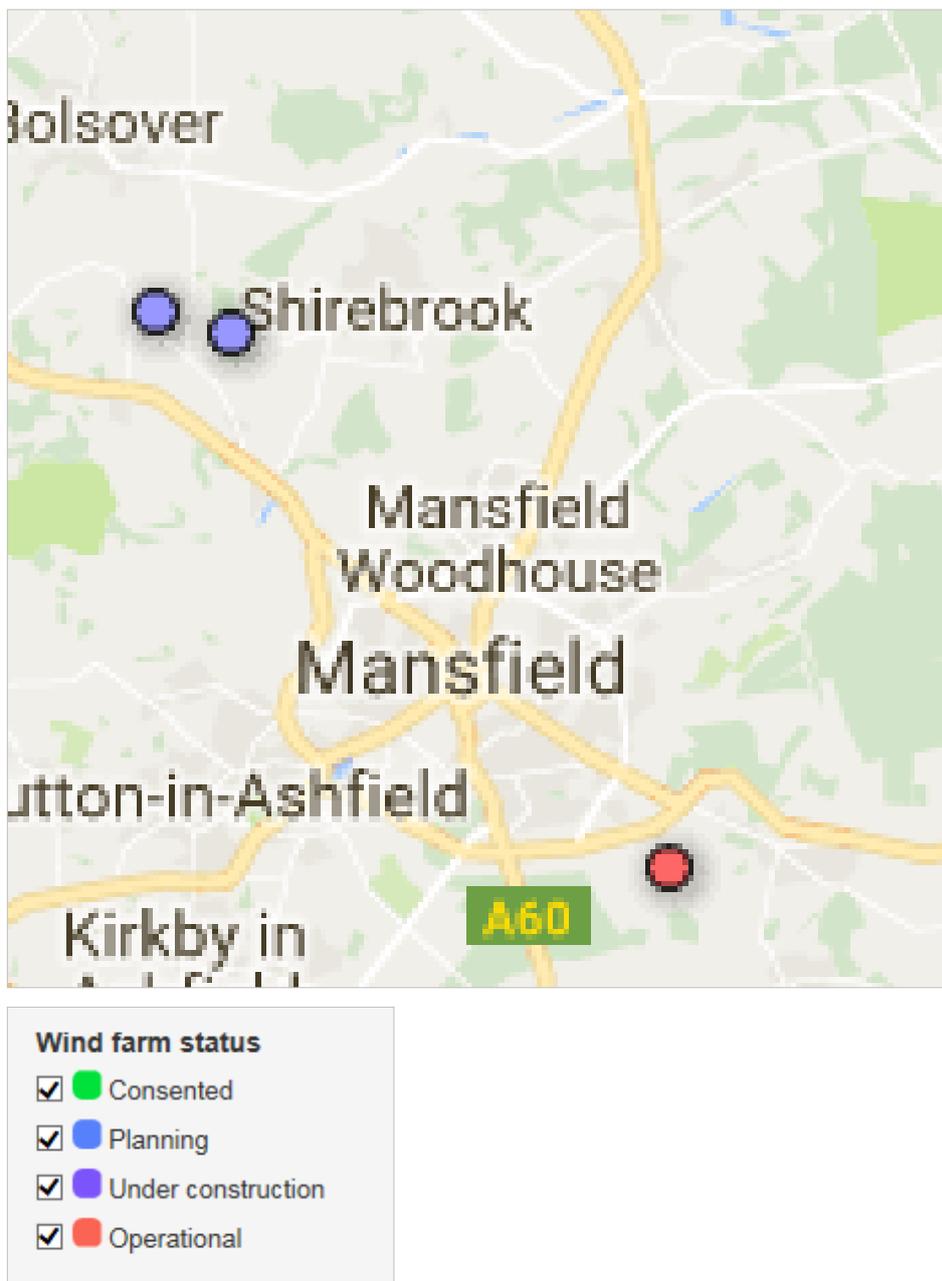
Image 34 – UK CHP Development Map



Source: Department of Energy & Climate Change

3.4.34 In terms of wind energy, the District has some locations with good average wind speeds. The image below shows locations of wind farms both operational and in planning within the District. Areas suitable for future wind turbines are identified in a low carbon energy mapping study which can be found here: <http://www.mansfield.gov.uk/article/7928/Water-and-energy>

Image 35 – Wind Farm Locations





3.4.35 A summary of the key issues relating to utilities infrastructure is shown in Table 19.

Table 19 – Baseline Conditions Summary - Utilities

Mansfield Urban Area					
Water & Sewerage	Wastewater	Gas	Electricity	Telecoms	Renewables
<p>Severn Trent Water are the statutory water undertaker for the Mansfield area.</p> <p>Mansfield District is located within the Nottinghamshire Water Resource Zone.</p> <p>The 2014 WRMP highlights that the Nottinghamshire zone will require new sources of supply in the long term to sustain growth and climate change.</p> <p>STW have raised no concerns relating to current water supply in the area.</p>	<p>Severn Trent Water are the statutory sewer undertaker for the Mansfield area.</p> <p>Mansfield is serviced by the Bath Lane STW. Parts of Forest Town drain into Edwinstowe and Berry Hill and Lindhurst drain to Rainworth STW.</p> <p>There are currently no capacity issues reported.</p>	<p>Cadent Gas, formerly National Grid are the public gas transporter for the area.</p> <p>Mansfield has a robust low-pressure network linked to strategic gas infrastructure.</p> <p>There are currently no known capacity issues identified.</p>	<p>Western Power Distribution Ltd are the distribution network operator in the Mansfield area.</p> <p>The Mansfield Urban area is primarily supplied from the Mansfield, Crown Farm, Lime Tree Place and Skegby Lane primary substations.</p> <p>There are currently no capacity issues but some of the primaries are nearing capacity.</p>	<p>Openreach are the licensed open access telecommunications provider.</p> <p>Virgin Media also operate in the Mansfield area.</p> <p>The majority of Mansfield is served through the Mansfield exchange, enabled with superfast broadband through <b>Openreach's FTTC</b> programme.</p>	<p>The current scale of renewable, decentralised and low carbon energy generation in the District is currently limited with the area being predominantly reliant on mains electricity and gas.</p> <p>The existing electricity network is near capacity for generation connections.</p> <p>There are no combined heat and power schemes registered in the Mansfield area.</p>
Market Warsop Urban Area and the Villages					
Water & Sewerage	Wastewater	Gas	Electricity	Telecoms	Renewables
<p>STW have raised no concerns relating to current water supply in the area.</p>	<p>Market Warsop and the villages are serviced largely by the Broomhall Lane, Church Warsop STW.</p> <p>There are currently no capacity issues reported.</p>	<p>The area has a robust low-pressure network linked to strategic gas infrastructure.</p> <p>There are currently no known capacity issues identified.</p>	<p>The Market Warsop area is primarily supplied from the Warsop, Acreage Lane and Shirebrook primary substations.</p> <p>There are currently no capacity issues but Shirebrook primary is close to being at full</p>	<p>The majority of Mansfield is served through the Warsop and Shirebrook exchanges, enabled with superfast broadband through <b>Openreach's FTTC</b> programme.</p>	<p>The current scale of renewable, decentralised and low carbon energy generation in the District is currently limited with the area being predominantly reliant on mains electricity and gas.</p>



			capacity.		<p>The existing electricity network is near capacity for generation connections.</p> <p>There are no combined heat and power schemes registered in the Market Warsop area.</p>
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### 3.5 FLOOD RISK

#### Introduction

3.5.1 Flood risk arises when development and its supporting infrastructure are in areas where the drainage of the land, permanently or occasionally, results in standing and/or flowing flood water. Flood risk is defined as the combined probability and the potential consequence of flooding from all sources, including from: rivers, sea, groundwater, sewers, reservoirs, surface water, etc. Flood risk can be further increased by climate change, level of soil and geology permeability, land management and urbanisation. **'Residual' flood risks arise when flood risk infrastructure fails due to a variety of mechanisms such as blockage of culverts or overtopping or breaching of raised defences.**

3.5.2 Planning authorities and developers are expected to assess flood risk and address ways in which to avoid and mitigate risk where new development is planned for and proposed. It is **also important that flood risk isn't increased or transferred elsewhere.** In decision-taking this involves applying the Sequential Test for specific development proposals and, if needed, the Exception Test for specific development proposals, to steer development to areas with the lowest probability of flooding. Sustainable Drainage Systems (SuDS) are often used to manage and mitigate the risk of flooding and pollution to water courses. SuDS can also provide enhancements to open space, place shaping and the natural environment.

#### Baseline Conditions

3.5.3 In assessing the baseline situation, it is necessary to briefly review the natural drainage characteristics of the area. The Mansfield district lies on the headwaters of the River Meden in the north and the River Maun in the south. Both rivers are part of the Sherwood sub



catchment of the River Trent Catchment which drains into the River Humber. The Meden and **Maun are the only 'main rivers' in the district.** The Environment Agency (EA) has administrative responsibility for 'main rivers' whereas 'ordinary watercourses', which constitute all other watercourses other than 'main rivers' fall within the remit of the Lead Local Flood Authority (LLFA) which is Nottinghamshire County Council (NCC). Other tributaries of the River Maun include: Cauldwell Brook (south east), Vica Water (east) and Rainworth Water and Foul Evil Brook (south east). A tributary of the River Meden, Lees Brook, flows north of Mansfield Woodhouse. The entirety of the District lies in the Sherwood sub-catchment of the December 2010 River Trent Catchment Flood Management Plan<sup>11</sup> (CFMP) produced by the Environment Agency and is part of the larger Humber River Basin District.

3.5.4 Overall, the risk from main rivers in the district is low to moderate. This assessment of risk is supported by the CFMP. Additionally, according to the Nottinghamshire Preliminary Flood Risk Assessment<sup>12</sup> (PFRA) dated June 2011, Mansfield district does not fall within a nationally significant Flood Risk Area (neither for surface water or ordinary water course). This means that there are no areas of national concern related to any recognised significant impacts from flood risk. Rather, the district is affected by localised areas of flooding as recognised in the Mansfield District Strategic Flood Risk Assessment (2008) and its subsequent Addendum, and Nottinghamshire Local Flood Risk Management Plan (2016-2021).

3.5.5 **The Nottinghamshire County Council (NCC)'s** Local Flood Risk Management Plan (LFRMP) 2016-2021<sup>13</sup> identifies that parts of the Mansfield District are both heavily urbanised and steep sloping in areas which is likely to result in rapid surface water run-off with complicated interactions with sewers, highway drains and culverted watercourses. During 2014-2015, Mansfield, Hucknall and Retford were areas identified as having the greatest number of reported flooding events (2014-2015) from blocked manhole covers and highway drains, based on NCC customer service centre records (Highways Assessment Management System). Most properties affected by surface water flooding (those falling within national flood surface water flood risk mapping) fall within low risk (73.1%), followed by 20.2% in areas of medium surface water flood risk and 6.7% within high surface water flood risk. NCC identifies that all districts in the County have significant numbers of properties at high risk of surface water flooding.

<sup>11</sup>

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/289105/River\\_Trent\\_Catchment\\_Management\\_Plan.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289105/River_Trent_Catchment_Management_Plan.pdf)

<sup>12</sup> <http://site.nottinghamshire.gov.uk/enjoying/countryside/flooding/lead-local-flood-authority/pfra/>

<sup>13</sup> <http://www.nottinghamshire.gov.uk/planning-and-environment/flooding/the-councils-role>



- 3.5.6 The overall flood risk within the district is low. However, there are some localised areas where flooding is a concern including where there are clear pressures on urban drainage systems and in areas of low soil permeability. The Addendum to the SFRA<sup>14</sup> identifies that there are localised areas of fluvial flooding in Pleasley and Pleasley Vale, north of Market Warsop, Sookholme, Spion Kop, some areas of Church Warsop and Meden Vale. Localised surface water flooding is identified in the general areas of Kings Mill Reservoir to Hermitage Ponds, Old Mill Lane to Snake Hill, West Mansfield, Mansfield Town Centre, Crown Farm Industrial Estate/Newlands Farm, Ravensdale to Oak Tree, Berry Hill to Lindhurst, Land South of West Notts College/Cauldwell Road. The SFRA recommends that new development should avoid a few areas at high risk of localised flooding but that in most cases new development should incorporate appropriate Sustainable Drainage Systems (SUDS) to mitigate flood risk (see Appendix 1 of the SFRA addendum for further details).
- 3.5.7 A hydrological assessment of the Mansfield central area was conducted in 2017 to assess flood risk and addresses potential mitigation, especially with reference to regeneration areas. This covers a section of the River Maun from the historic railway viaduct at Quarry Lane to Sandy Lane near Carr Bank Park. It includes the Mansfield town centre and regeneration areas in and around the following areas: White Hart Street/Bridge Street, the former Mansfield Brewery and Riverside (a culverted section of the River Maun between the A60 ring road, Littleworth and Great Central Road and the A6191). The study shows fluvial and surface water flooding are key issues for the Mansfield central urban area that could be addressed through avoidance and mitigation measures. Key regeneration areas also provide opportunities to provide enhancements to the natural environment, whilst addressing flood risk. Site specific flood risk assessments would be needed to address flood risk on submission of planning applications.
- 3.5.8 In summary, the MDC SFRA and Addendum considers that, due to the low risk from river flooding, development can be reasonably prioritised outside flood zones 2 and 3. Generally, flood risk does not present a major constraint to development if policies support the delivery of enhancements to the river environment, especially within regeneration areas, and ensure reductions in surface water run-off and ensure that post development run-off is restricted to greenfield rates. Typically, the use of SuDS elements in new development can achieve this

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<sup>14</sup> <http://www.mansfield.gov.uk/CHttpHandler.ashx?id=8496&p=0>



objective with interventions reserved to resolve any clearly identified existing local flood hotspots identified by the LLFA.

Table 20 – Baseline Conditions Summary – Flood Risk

Type of Flood Risk		Responsible Authority	Issues
Fluvial	Main Rivers (Medan and Maun)	Environment Agency	Avoidance of development in flood plain footprint and localised areas at risk of flooding. Due account to be taken of climate change impacts. Site specific assessments required at the planning application stage. Development to incorporate appropriate SuDS to mitigate risks.
	Ordinary Watercourses	Nottinghamshire County Council (LLFA)	
Surface Water	Run off from greenfield land	Nottinghamshire County Council (LLFA)	No identified specific significant issues
	Urban Drainage Systems	Nottinghamshire County Council (LLFA)	Local flooding hotspots at various locations within the district including Mansfield urban area (see text for details). Site specific assessments required at the planning application stage. Development to incorporate appropriate SuDS to mitigate risks.
Groundwater	Springs	Nottinghamshire County Council (LLFA)	No identified specific significant issues

### 3.6 TRANSPORT

#### Highways

- 3.6.1 There are no trunk roads or motorways within the District and all roads are the responsibility of the local highway authority, Nottinghamshire County Council. Figure 1 shows roads within the District.
- 3.6.2 The key radial routes to/from Mansfield town centre are the A38, A60 and A6191. In addition, the A617 provides an orbital route to the west of the town although part of this route is within Ashfield District. The A6009 and A60 form part of a town centre inner ring road.
- 3.6.3 The A38 is aligned approximately east to west and provides a route between Mansfield town centre and the M1 at Junction 28. Within Mansfield District the A38 is a predominantly single carriageway road with one lane in each direction.



3.6.4 The A60 provides a route to Nottingham in the south and Worksop in the north (via Warsop). Within Mansfield District the A60 is a single carriageway road with one lane in each direction.

3.6.5 The A6191 is aligned approximately north-west to south-east and provides a route between Mansfield town centre and the A617. The A6191 is a single carriageway road.

3.6.6 Within Mansfield District the A617 forms an orbital route to the west of the town. In a wider context, the A617 forms an east to west route between Chesterfield in the west and Newark in the east. The A617 also provides a route to the M1 at Junction 29. In recent years there has been significant investment in the A617 with completion of the Rainworth Bypass and the Mansfield Ashfield Regeneration Route (MARR).

3.6.7 Transport modelling work undertaken in support of the Local Plan Preferred Options Consultation published in August 2017 included a 2016 Base Year Scenario. This indicated that the following junctions within the district are approaching capacity and thus causing delays and congestion at 2016 with no Local Plan development in place:

- Chesterfield Road / Debdale Lane
- A60 Nottingham Road / Berry Hill Lane
- Carter Lane / Southwell Road / Windsor Road
- A617 MARR / A6191 Southwell Road
- A60 Leeming Lane / Peafield Lane
- A60 Leeming Lane / A6075 Warsop Road
- Kings Mill Road / Beck Lane / B6014 Skegby Lane / Mansfield Road
- A6191 Ratcliffe Gate / A60 St. Peters Way
- A6117 Old Mill Lane / B6030 Clipstone Road West
- A38 Sutton Road / B6014 Skegby Lane / Sheepbridge Lane

3.6.8 Forecast traffic conditions at the end of the Plan period (2033) without any Local Plan development in place (i.e. the 2033 Reference Case) are discussed in Section 5 of this report.



## Rail

- 3.6.9 Existing rail infrastructure within the District is shown on Figure 6. The District is served by the Robin Hood Line which runs between Nottingham to the south and Worksop to the north. Mansfield District has two stations; one in Mansfield and one in Mansfield Woodhouse.
- 3.6.10 During weekdays and Saturdays services to/from Nottingham typically operate every 30 minutes throughout the day and every hour in the evening. On Sundays services typically operate every 2 hours.
- 3.6.11 During weekdays and Saturdays services to/from Worksop typically operate every hour throughout the day and in the evening. On Sundays, there are no direct services between Mansfield or Mansfield Woodhouse and Worksop.
- 3.6.12 During weekdays, a direct service operates from Mansfield to Norwich departing at 07:11 AM Monday to Friday. There is no direct return service.
- 3.6.13 Mansfield and Mansfield Woodhouse train stations are both operated by East Midlands Trains Table 21 shows the number of passenger entries and exits estimated by the Office of Rail and Road (ORR) at each station over the last 5 years.

Table 21 – Train Station Passenger Entries and Exits

Year	Station (Passenger Numbers)	
	Mansfield	Mansfield Woodhouse
2010/11	366k	146k
2011/12	367k	160k
2012/13	349k	156k
2013/14	314k	140k
2014/15	367k	159k

- 3.6.14 As shown in Table 21 passenger numbers at Mansfield and Mansfield Woodhouse stations have fluctuated over the 5-year period shown. Overall, annual passenger numbers at Mansfield Station were very similar in 2014/15 to 2010/11 whereas annual passenger numbers at Mansfield Woodhouse Station have increased by approximately 13,000.
- 3.6.15 Car parking is provided at Mansfield and Mansfield Woodhouse Stations with 103 and 40 car parking spaces provided respectively.



3.6.16 Network Rail in its role as developer and manager of the national rail infrastructure prepares **Route Utilisation Strategies (RUS's)** for the rail network. These strategies provide detail about existing capacity of the network and provide the basis for investment to improve the rail infrastructure through five yearly control periods (CP's). The current period, CP5, covers investment by Network Rail for the period 2014-2019.

3.6.17 The strategy covering Mansfield is the East Midlands RUS. It highlights that there is evidence of peak crowding and passenger growth along the Nottingham – Worksop line passing through Mansfield. The result is passengers standing above accepted standing allowances on peak train services into and out of Nottingham to Mansfield Woodhouse. To address this problem, the RUS recommends the lengthening of trains from 2 to 3 cars on peak services which serve Mansfield during CP5 2014 – 2019, subject to the availability of rolling stock.

3.6.18 Investment in the improvement of rail infrastructure is a matter for Network Rail and train operators. As a key stakeholder, the Council will seek to continue to engage with the rail industry regarding the Local Plan preferred growth scenario so that full opportunity is taken to factor in the implications of planned growth into future Network Rail RUS control periods.

3.6.19 In terms of long-term rail aspirations, the County Council in its role as transport authority is currently investigating the feasibility of improvements to the Dukeries Line involving the possibility of re-opening to passenger trains the freight line from Shirebrook to Ollerton, and linking it to the Robin Hood Line Service. The scheme would also involve the re-opening of the former railway stations at Market Warsop, Edwinstowe and Ollerton and a potential new station at Thoresby.

#### Bus

3.6.20 Mansfield is generally well served by bus routes with a good coverage of local services and frequency levels across the urban area. Existing bus routes are shown on Figure 7 and bus stop locations are shown on Figure 6. There are also regular longer distance service **connections from Mansfield to the District's closest towns and cities such as** Nottingham, Sutton-in-Ashfield, Chesterfield and Derby.

3.6.21 In Mansfield town centre, a new bus station linked to the railway station opened in 2013. NCC estimate the new facility will further increase the 5 million existing passengers that used the former bus station by 5-10%. Stagecoach has found that passenger numbers boarding their



buses in Mansfield bus station increased 3.7% in the first year since the opening of the new facility.

3.6.22 The County Council constructed the bus station to complement the investment made by commercial bus operators in modern accessible buses for the Mansfield bus fleet. The County Council and commercial bus operators have elevated the established voluntary partnership for Mansfield to meet the definition of a Statutory Quality Bus Partnership (SQBP) as defined in the Transport Act 2000.

3.6.23 The SQBP area covers the Mansfield central area and includes the bus station together with a further 25 bus stops within the town. The SQBP reflects the quality standards offered by Mansfield's current main commercial bus operators and ensures that all bus companies registering local bus services in the area must meet similar terms and requirements.

3.6.24 Using the bus station as the catalyst for qualitative improvements the scheme aims to mark a step change in the public transport highway infrastructure, vehicle profile and age, bus service reliability, and integrated ticketing and information over the next 10 years in Mansfield. The main purpose and objectives of the SQBP are to:

- facilitate an increase in the modal share of the bus as part of the Local Transport Plan objectives;
- improve the overall image of bus services to grow bus patronage;
- increase mobility and reduce barriers to make bus use easier;
- contribute to economic regeneration and social inclusion policies;
- ensure safety and security throughout the whole journey;
- ensure interchange between modes of transport is not a major barrier to travel;
- provide additional Mansfield town centre bus infrastructure to accommodate more bus services/higher frequencies in-line with modal share targets;
- provide information and reassurance to customers already on a journey, or to help customers plan a journey in the future. Key information will be provided at all bus stops and bus shelters, from timetable information to mapping and journey planning information;
- achieve better environmental conditions and improve pedestrian and cycling amenities on bus priority streets;



- reduce pressure on congested bus priority streets and bus stops to help improve journey reliability and reduce delays; and
- manage bus stop use to maximise capacity within a quality framework whilst maintaining high environmental standards.

3.6.25 Prior to the introduction of SQBP the main Mansfield bus operator, Stagecoach East Midlands, upgraded on-board ticket machines to provide technical platforms for the introduction of smartcards and real-time bus information. Concessionary travel has been moved to smartcard transactions and commercial Stagecoach multi-journey smartcards can be purchased through the SQBP. NCC and the commercial operators will be exploring the opportunities for integrated ticketing, bus service enhancements, and fleet investment. The partnership will continue to make appropriate submissions for funding from external sources including the Department for Transport to support the regeneration and development of the District.

3.6.26 The preferred growth scenario adopts an urban concentration approach which will support and **enhance the District's existing bus network and services. The Plan will provide the support for** the development of public transport services through the implementation of the identified LTP3 bus priority schemes on the key public transport routes in the District including where necessary the protection of land for safeguarded schemes.

3.6.27 In addition, if changes in journey times arising from growth lead to greater bus passenger volumes the commercial bus operators will adjust timetables, routes and resources to meet the demand. Where growth leads to increased traffic volumes creating longer journey times the County Council and the commercial bus operators will work through the SQBP to devise measures to improve access for buses, which could include a range of bus priority measures designed to keep bus journey times to a minimum.

#### Park & Ride

3.6.28 There are no existing park and ride sites within the District.

#### Walking and Cycling

3.6.29 Providing the opportunity for people to walk or cycle as part of everyday journeys to work, shop or school is an important part of promoting sustainable forms of transport and reducing congestion levels within the District. Walking and cycling also has positive benefits in



promoting healthy lifestyles and creating opportunities to use the area's green infrastructure which may lead to enhancements to the network.

3.6.30 Primary pedestrian routes within Mansfield are identified within the main shopping area of the town centre as well as routes on some of the immediate approaches to the town centre. High Street in Mansfield Woodhouse and High Street/Sherwood Street (part of) in Warsop are also identified as primary pedestrian routes.

3.6.31 The District has a network of existing green infrastructure including several long-distance trails in which most (or sections) are multi-user routes supporting both walkers and cyclists. These include: the Mansfield Way, Timberland Trail, Maun Valley Trail, Dukeries, Sustrans Route 6, and the Meden Trail. The Clipstone to Warsop long-distance trail is primarily for walking only. The location of these routes is shown on Figure 8. These link to other public rights of way cycle routes within and outside the District.

3.6.32 Whilst the infrastructure mentioned above, for the most part, provides good opportunity for recreation, it is not so well used for commuting where sections are un-surfaced, unlit<sup>15</sup> and do not necessarily follow a direct path between key workplaces. Further improvements to provide multi-user surfacing, lighting, new access points and improved accessibility, signage, and grading of the strategic trails should help encourage increased use of this resource for both recreation and commuting. Some sections of these trails pass through Local Nature Reserves (e.g. Maun Valley LNR) and any upgrades would require sensitive planning to avoid any adverse environmental impacts.

3.6.33 The multi-user routes are supplemented by a local network of other footpaths, bridleways and dedicated on and off-road cycle lanes. Within the District there are 1.41km of on-road cycle lane, 48.1km of off-road shared use and 24.62km of off-road cycle track<sup>16</sup>.

3.6.34 Walking and cycling infrastructure is shown on Figure 9. In general, the existing local walking and cycling network is generally better provided for within the central and southern areas of the Mansfield urban area and along the Mansfield-Ashfield Regeneration Route (MARR / A617) than other areas of the District. Gaps in provision exist within Mansfield Woodhouse (e.g.

<sup>15</sup> No data exists for the length of lit routes within the District however, as a guide the Nottinghamshire Cycling Strategy Delivery Plan 2016 identifies that only 17% of the 400km of cycle routes within Nottinghamshire are lit.

<sup>16</sup> Source: Nottinghamshire Cycling Strategy Delivery Plan 2016



along the A60), Ravensdale, parts of Forest Town and Oak Tree, and eastern areas (e.g. Ladybrook, Penniment, Bull Farm). New provision to fill gaps in the walking and cycling network along 'A'-roads would improve sustainable transport linkages to main employment areas and local centres.

3.6.35 In the north of the District, new cycle infrastructure is needed to better link the villages in the Warsop Parish and between these areas and the Mansfield urban area.

3.6.36 Nottinghamshire County Council (NCC) in partnership with MDC has developed a new strategic cycle network for Mansfield and in Summer 2017, NCC put forward plans for public consultation to improve strategic cycle routes within the district. These included five new routes:

- Leeming Lane North to New Mill Lane
- Woodhouse/ Bull Farm
- Maun Valley Trail
- Oak Tree Lane
- Pump Hollow Road to the town centre

3.6.37 The proposals also included 20mph schemes at:

- Ladybrook
- Mansfield Woodhouse.

3.6.38 These represent key improvement opportunity areas in the district. NCC is in the process of prioritising and developing schemes to deliver improvements.

3.6.39 NCC is also currently developing a Local Cycling and Walking Infrastructure Plan (LCWIP) for the D2N2 LEP area. LCWIPs, **as set out in the Government's Cycling and Walking Investment Strategy**, are a new, strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a **10-year period, and form a vital part of the Government's** strategy to increase the number of trips made on foot or by cycle. The LCWIP will identify priority walking and cycling routes for future development/delivery across the whole D2N2 area including Mansfield.



3.6.40 Mansfield is located at the western end of the East-West Growth Corridor (North) as defined in **NCC's Place Departmental Plan. This document is one of four strategies setting out how each NCC department will support the delivery of the Council Plan.** Each of the strategies outlines the priorities and programmes of activity that will be pursued in the coming year to achieve **this. Commissioning Programme 1 'Investing in place and community' sets out how NCC will invest in protecting and enhancing quality of life across Nottinghamshire.** Key activities to Invest in Communities and Place include:

- Develop and deliver different transport solutions to improve transport accessibility, particularly in rural areas.
- Invest in management of public rights of way, promoting the network and the associated health benefits.

3.6.41 Across the District there is scope for improvement of the existing walking and cycling network by adding new routes or enhancing the quality of existing routes in combination with new development. General trail improvements (e.g. bridging gaps in the walking and cycling network) are highlighted through the emerging Green Infrastructure evidence base (GI Technical Paper 2018).

3.6.42 The draft Local Plan promotes access to existing walking and cycling routes and facilitates, as well as encouraging new routes through its policies and allocation of development. Where new routes are proposed as part of development sites these requirements are set out in the relevant policies and any accompanying development briefs.



## Summary

3.6.43 A summary of the key issues relating to transport and highway infrastructure is shown in Table 22.

Table 22 – Baseline Conditions Summary – Transport and Highways

Mansfield Urban Area			
Walking/Cycling	Bus	Rail	Road
<p>The urban area has a network of existing footways and cycle routes within the highway corridor and also off-road routes located mainly within green corridors following former mineral railway lines and river corridors.</p> <p>This existing cycling infrastructure is better developed within the central and southern areas of the district and along the MARR. Gaps exist within Mansfield Woodhouse, Ravensdale, parts of Forest Town and Oak Tree, and eastern area (e.g. Ladybrook Penniment, Bull Farm).</p> <p>The District has a network of existing green infrastructure including several long-distance multi-user routes used by walkers and cyclists including The Mansfield Way, Timberland Trail and Meden Trail.</p> <p>Overall, off-road routes are generally un-lit and less direct and more suited to recreation use than for as commuter routes.</p>	<p>There is good coverage of bus services across the urban area.</p> <p>Increase in public transport patronage is expected in the years following opening of the Mansfield Bus Station. Some bus operators report delays at peak times on the main public transport corridors especially within and around Mansfield town centre. It is predicted that this is likely to get marginally worse with committed growth and development. The recently introduced Mansfield SOBP and the bus priority measures earmarked through the LTP3 will be important public transport schemes that aim to improve the quality of bus services in Mansfield.</p>	<p>Access to the rail network is provided by Mansfield station adjacent to the bus station on the edge of the town centre, and Mansfield Woodhouse station to the north of the town. Trains run half hourly along the Robin Hood Line from Nottingham to Worksop during the daytime except on Sundays when a more limited service operates. Network Rail identifies peak growth and crowding on the line and recommends subject to the availability of rolling stock, train lengthening to cater for additional demand at peak times.</p>	<p>There are hotspots on the network where increased traffic volumes will cause further congestion and delay at localised areas within Mansfield. The County Council is currently safeguarding schemes for the A60 bus priority, A6191 bus priority during the LTP3 period up to 2026.<sup>17</sup></p> <p>The County Council will investigate further before deciding whether to safeguard the scheme for carriageway widening on the A6075 Abbott Road.</p>
Market Warsop Urban Area and the Villages			
Walking/Cycling	Bus	Rail	Road
<p>In the north of the District both off and on-road cycle routes combine to provide links between Market Warsop, Church Warsop and Warsop Vale. Overall, off-road routes are generally un-lit and less direct and more suited to recreation use than for as commuter routes.</p>	<p>Whilst there is reasonably levels of bus services along the A60 between Mansfield and Market Warsop the number and frequency of services in the villages of Church Warsop, Warsop Vale, and Meden Vale is more limited.</p>	<p>Long term aspirations are to re-open to passenger trains on the Dukeries Line which links Shirebrook to Ollerton and passes to the south of Market Warsop.</p>	<p>Any additional traffic arising from planned development is likely to put pressure on local junctions and could create junction capacity issues.</p>

<sup>17</sup> Source: <http://www.nottinghamshire.gov.uk/media/123052/second-implementation-plan.pdf>



### 3.7 GREEN INFRASTRUCTURE

3.7.1 This part of the infrastructure delivery plan considers strategic green infrastructure (GI) and **the District's supply of community open space, allotments and** outdoor sports provision resource.

3.7.2 Placing GI within the context of the local planning system provides an excellent opportunity to plan for a healthier environment and communities alongside other infrastructure. It also seeks to ensure that the delivery, protection, enhancement and creation of recreational and environmental resources, e.g. green corridors, landscape features and habitat networks, are central to local planning decisions.

3.7.3 **Green infrastructure (GI) is defined in the National Planning Policy Guidance as 'a network of multifunctional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities'. This national definition reflects MDC's approach to strategic GI which considers how various types of green space, both within and outside the urban areas, fit together to provide combined benefits for people and wildlife.**

3.7.4 Areas of strategic GI have been identified by MDC as part of the Local Plan evidence base work, as set out in a Green Infrastructure Technical Paper (December 2015). This technical paper is also currently being revised following consultation on the draft Local Plan (2016) and to ensure it is kept up-to-date. The Green Infrastructure Technical Paper sets out how the areas of strategic GI have been identified within the District. The strategic areas are made up of geographically and/or functionally connected smaller areas of green space and countryside. They have been included based on existing benefits or identified opportunities for enhancement that support healthy communities and the natural environment. These functions (key components) include:

1. Recreation – ability to support health and well-being through a combined resource of publicly accessible green/open space, green corridors (long distance and local walking and cycling routes). These can also help provide access to natural green space and the countryside;
2. Nature conservation – **includes the District's ecological** network consisting of nationally and locally designated ecological and geological sites, key habitats and biodiversity



opportunity areas (providing habitat linkages to existing habitats, buffering of existing sensitive sites and other enhancements);

3. Climate change – ability to support the mitigation and adaptation of climate change and flooding, identifying sustainable transport routes, and areas important for urban cooling and wildlife corridors;
4. Historical importance – areas with known archaeological significance, conservation areas, heritage assets, industrial heritage and important landscape features; and
5. Visual and landscape character – ability to support open breaks between settlements, important views and vistas and landscape policy zone actions informed by the Landscape Character Assessment.

3.7.5 Combined, these green spaces form strategic networks or core areas providing multi-functional benefits for the District.

3.7.6 The Green Infrastructure Technical Paper identified 13 areas of strategic green infrastructure as detailed in Table 23.

Table 23 – Areas of Strategic GI

Strategic Green Infrastructure Areas	
GI Area 1	Warsop and Meden Vale
GI Area 2	Oxclose Woods
GI Area 3	Woodhouse
GI Area 4	Meden Vale
GI Area 5	Timberland Trail
GI Area 6	Sherwood
GI Area 7	Cauldwell
GI Area 8	Mansfield Way
GI Area 9	Berry Hill
GI Area 10	Vicar Water
GI Area 11	Clipstone to Warsop
GI Area 12	Maun Valley
GI Area 13	Warsop Vale

3.7.7 The 13 areas of strategic green infrastructure are illustrated on Figure 10 along with the other existing green infrastructure provision within the District including: natural and semi-



natural green space, amenity green space, parks and recreation grounds, sports pitches, play areas and allotments.

### Open Space Provision

3.7.8 Also of relevance, is the MDC Community Open Space Assessment (2018) which forms further evidence base underpinning the new Local Plan to cover the period up to 2033. The overall role of the document is to provide a Mansfield District Green Space Standard for informing the creation of new green spaces and the improvement of existing spaces, through development and investment. The document also includes an assessment of quantity, accessibility and quality of the existing open space provision within the District and the degree to which it **meets the District's green space standards, including identifying where there are gaps or deficiencies in provision.** Where there are recognised gaps in provision, it is considered that improvements to open space provision are likely to need to come from a variety of sources, for example where new development can improve an area, through partnership working, or by seeking external funding or sponsorship.

3.7.9 The types of open and green space considered in the MDC Community Open Space Assessment are defined as follows:

- Parks (including District parks and local parks), and recreation grounds;
- Amenity space, including sites of informal recreation that are greater than 0.4 hectares, and also smaller areas (0.4 hectares and less). These spaces may include sitting areas or areas of informal play with or without landscaping. Some are open areas of grass.
- Natural and semi-natural green space; and
- Provision for children and teenagers, including play areas.

3.7.10 The aim of the Mansfield District Green Space Standard is to identify a suitable minimum level of green space and play provision for the people of Mansfield. The standard is based on review of national guidance, research and examples of best practice. The standard defines walking times and distances that people may reasonably travel to access different types of green space, as set out in Table 24 and Table 25 on the next page.



Table 24 – Mansfield District Green Space Standard, Recommended Walking Journey Times

Type of Green Space	Maximum Expected Walking Times
Any type of formal or informal recreational green space, including: local and District park / recreation grounds, amenity space, incidental open space and natural green space	5 mins
<b>Children's play space</b>	5 mins
Natural green space	10 mins
Additional needs based on locally dependent gaps in provision	
District park/recreation ground	15 mins
Teenager play space	15 mins

3.7.11 The associated straight line and pedestrian walking distance equivalents is set out below in Table 25.

Table 25 – Walking Times and Distance Equivalents

Time	Pedestrian Route	Straight Line Distance 'as-the-crow-flies'
One minute	100 metres	60 metres
Five minutes	400 metres	240 metres
10 minutes	700 metres	400 metres
15 minutes	1 kilometre	600 metres

3.7.12 Overall the MDC Community Open Space Assessment identifies that most residents have access to some form of green or open space and play provision within a 5-minute walk from **their home. There are some localised areas where this isn't the** case, and the assessment highlights that these areas are likely to benefit from the creation of new green space and/or access improvements, where opportunities exist.

3.7.13 The MDC Community Open Space Assessment also identifies that residents mostly have good access to areas of natural green space within a 10-minute walking journey. The assessment recommends that lack of access to natural green space could be addressed by improving the **'naturalness' of nearby parks and amenity spaces.**

3.7.14 The MDC Community Open Space Assessment findings state that improvements are necessary **to enhance resident's access to** district-level parks in some areas. These are parks that typically support a range of informal and formal recreational activities, are supported by friends groups, host events and include areas of natural green space (e.g. Titchfield Park, Carr Bank Park, Manor Park). They are typically larger in size. Access to district-level parks is particularly important for residents whose access to green space is limited to small amenity space



(0.4hectares or less). The assessment highlights that residents living on the far eastern and western areas of the **District don't have access to a district-level park.**

3.7.15 Gaps in access to play spaces within a 5-minute walking journey are also identified within the assessment. Areas within the District that lack play provision include, but are not limited to: southern Market Warsop, south western Mansfield, northern Mansfield Woodhouse and eastern Mansfield.

#### Outdoor Sports Provision

3.7.16 The Mansfield District Green Space Standard addresses access to play space in relation to formal recreation provision although does not include outdoor sport/playing pitches. The provision for outdoor sport/playing pitches is assessed separately within the Mansfield District Council Final Playing Pitch Strategy Assessment Report, January 2016. The document sets out the strategy for the ten-year period 2015 to 2025 for sports pitches within the District, working in partnership with Sport England and the National Governing Bodies of Sport. The strategy covers the sports of football, cricket, rugby (league and union), hockey, tennis, bowls and athletics, and the existing provision for each sport is identified within the assessment report and summarised as follows:

- Football: There are 67 individual formal grass football pitches available for community use across the Mansfield District, with 58% of pitches catering for adult or youth age groups and the remainder catering for younger age groups;
- Cricket: There are five sites containing grass facilities for cricket and a total of six grass pitches provided, all of which are available for community use. There are two disused grass cricket pitches at The Racecourse and Forest Road and an unusable non-turf wicket at Manor Sports Complex;
- Rugby League: There is one rugby league pitch in the Mansfield District at Debdale Park Sports and Recreation Club;
- Rugby Union: There are ten rugby union pitches in the Mansfield District, including eight in the Mansfield area and two in the parish of Warsop;
- Hockey: There is one full sized artificial grass hockey pitch in the Mansfield District located at Manor Sports and Recreation Complex in Mansfield Woodhouse;



- Tennis: There are 33 active courts with community use. These courts are split between public (park) sites, schools and private clubs. There are no courts with public use available in the Warsop area;
- Outdoor Bowls: There are nine active greens on eight sites across Mansfield, two located in Warsop and the rest in the greater Mansfield urban area; and
- Athletics: There is one athletics track in Mansfield located in Berry Hill Park.

3.7.17 Overall the Final Playing Pitch Strategy Assessment Report identifies a need to improve quality of playing pitch provision and a need to improve community access to school sites.

#### Allotment Provision

3.7.18 An Allotment Strategy for Mansfield District Council 2014, sets out a strategy for providing Mansfield District Council owned allotments, although it needs updating to align with national guidance on statutory allotments (Department for Communities and Local Government (DCLG) guidance, Allotment disposal guidance: Safeguards and alternatives – January 2014 and the National Allotment Society). As of December 2016, Mansfield District Council provides 564 individual plots spread across 15 actively used allotment sites within the District. A further 24 actively used allotment sites are provided in the District by other owners including, Trustees for the labouring poor of Mansfield, Fitzherbert Estates, Welbeck Estates and ASRA Housing Group. Most allotment sites are within the greater Mansfield urban area including Mansfield Woodhouse. Other sites are in the north of the District in Market Warsop and Meden Vale. All statutory allotments are located within the greater Mansfield urban area.

3.7.19 For sites owned by Mansfield District Council, allotment occupancy rates are 80% for sites in Mansfield and 87% for sites in Mansfield Woodhouse.

3.7.20 The 2014 DCLG guidance sets out a maximum distance for which adequate alternative provision should ideally be provided – within 1.2 kilometres of the existing allotment site and be easily accessible. The MDC Allotment Strategy includes a distance of access standard of 15 minutes walking distance (or 600m) which is within the 1.2 km distance. The National Allotment Association Ltd (NSALG) suggests a national standard plot size of 250 sqm and 20



plots per 1,000 households. Based on mid 2016 population figures<sup>18</sup> and an average of 2.3<sup>19</sup> persons per household this equates to 20 plots per 2,300 people or 1 plot per 115 people.

3.7.21 It is important to keep in mind, that while an area may be well provided for, in terms of allotment plots per 1,000 head of population, if demand is particularly high in that area, a simple standard based on plots per population may not provide sufficient plots to meet the local demand.

3.7.22 In the absence of an up-to-date district standard the above approach (i.e. combined assessment of quantity, distance and demand) is used further in this report (refer to Section 5, Future Conditions) to identify gaps in provision of allotments in relation to the future growth in the District during the Local Plan period. It is important to keep in mind that this is a broad assessment of allotment provision and is likely to need closer consideration in the future.

3.7.23 Combining both council and privately-run allotments, the total plot provision in the District as of mid-2016 stood at 1 plot per 50 population. Council owned (statutory) allotments account for 26% of this provision and non-MDC owned allotments account for 74% of this provision. Council owned (statutory) allotments alone provide 1 plot per 190 population and non-MDC owned allotments alone provide 1 plot per 68 population.

3.7.24 Based on assessment of provision at mid-2016 using the NSALG population/quantity standard the following wards or areas of the District have the greatest allotment provision: Broomhill, Ladybrook, and Bull Farm and Pleasley Hill wards in the western part of the District; Market Warsop in the north; Peafields in Mansfield Woodhouse; and Racecourse in the south-eastern extent of the greater Mansfield urban area. Those wards or areas with the lowest allotment provision, include (but are not limited to): Brick Kiln, Grange Farm and Penniment on the south-western extent of the District; Berry Hill, Newlands, Oak Tree and Ransom Wood on the south-eastern extent of the District; Kings Walk and Portland in the southern extent of the greater Mansfield urban area; Holly and Maun Valley in the north-eastern extent of the greater Mansfield urban area; and Hornby in Mansfield Woodhouse.

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<sup>18</sup> Taken from the Office for National Statistics, Ward Level Mid-Year Population Estimates (Experimental Statistics)

<sup>19</sup> Taken as an average of 2.3 persons per household for the District at 2014, from the Department for Communities and Local Government 2014-Based Household Projections in England, 2014 to 2029 (July 2016)



3.7.25 The Green Infrastructure evidence base for the Mansfield District is provided in the documents as summarised in Table 26.

Table 26 – Green Infrastructure Key Evidence Summary Table

Green Infrastructure: Key Evidence Summary Table	
Existing GI Evidence Base	
1	MDC Interim Planning Guidance Note 11: Green Infrastructure (April 2009), which provides a strategic framework for the MDC GI Action Plan.
2	MDC Local Plan Consultation Draft, Green Infrastructure Technical Paper (2018) which identifies strategic areas of green infrastructure in the MDC Local Plan.
3	DCLG and NSALG guidance.
4	MDC Local Plan Consultation Draft, Infrastructure Study and Delivery Plan Draft Report (January 2016) <b>which explains the council's position in relation to infrastructure planning, including GI.</b>
5	Mansfield District Council Final Playing Pitch Strategy Assessment Report, (January 2016) which sets out the strategy for sports pitches within the District, working in partnership with Sport England and the National Governing Bodies of Sport.
6	MDC Community Open Space Assessment (2018) provides a Mansfield local green and open space standard for informing the creation of new green spaces and the improvement of existing spaces, through new development and investment.
7	MDC Parks and Green Space Strategy (September 2017) which incorporates the Mansfield Green Space Standard.
Strategic Areas of GI	
Areas of strategic GI within the District have been identified based on the combination of 5 key elements including, recreation; nature conservation; climate change; historical importance and visual and landscape character. Thirteen areas of strategic GI have been identified within the District as illustrated on Figure 10, along with existing green infrastructure provision within the District including: natural and semi-natural green space, amenity green space, parks and recreation grounds, sports pitches, play areas and allotments.	

3.7.26 Table 27 on the following page summarises the provision of community open space and playing pitch resource within the District as documented within the Mansfield District Council GI evidence base. The existing allotment provision within the District is also summarised, based on information provided by MDC and analysis work undertaken for this IDP.



Table 27 – Baseline Conditions Summary – Green Infrastructure

Strategic GI Areas	Community Open Space	Playing Pitches	Allotments
<p>Thirteen areas of strategic GI have been identified by MDC as part of the Local Plan evidence base work, as set out in a Green Infrastructure Technical Paper (2018) and illustrated on Figure 10 of this report. The strategic areas are made up of geographically and/or functionally connected smaller areas of green space and countryside. They have been included based on existing benefits or identified opportunities for enhancement that support healthy communities and the natural environment. Functions of the strategic areas of GI include: recreation, nature conservation, climate change, historical importance and landscape and visual character.</p>	<p>Community open space within the District includes, parks (District parks and local parks), amenity space, natural and semi-natural green space and provision for children and teenagers, as illustrated on Figure 10.</p> <p>The MDC Community Open Space Assessment (2018) provides a Mansfield District Green Space Standard to identify a suitable minimum level of green space and play provision for the people of Mansfield. The assessment identifies that in general residents have access to some form of green or open space within a 5-minute walk from their home, although there are some localised <b>areas where this isn't</b> the case, and are likely to benefit from the creation of new green space and/or access improvements, where opportunities exist. Noticeable gaps in the distribution of play provision within the District have been identified.</p>	<p>Provision of outdoor sport/playing pitches is informed by the Mansfield District Council Final Playing Pitch Strategy Assessment Report, January 2016.</p> <p>Overall no significant shortfalls of outdoor sport/playing pitches are identified within the District however there is an overall need to improve quality of playing pitch provision (which can impact on quantity) and a need to improve community access to school pitches.</p>	<p>An Allotment Strategy for Mansfield District Council 2014, sets out a strategy for providing Mansfield District Council owned allotments, although it needs updating to align with national guidance on statutory allotments. National guidance on statutory allotments is provided in DCLG, Allotment disposal guidance: Safeguards and alternatives – January 2014. Further guidance is provided by NSALG.</p> <p>A distance standard of 15 minutes walking journey time from an allotment site is provided within the MDC Allotment Strategy. This standard is in line with DCLG guidance. NSALG provides a standard based on population/quantity, and suggests a standard allotment plot size of 250 sqm and 20 plots per 1,000 households.</p> <p>As of December 2016, Mansfield District Council provides 564 individual plots spread across 15 actively used allotment sites within the District. A further 24 actively used allotment sites are provided in the District by other owners including, Trustees for</p>



			<p>the labouring poor of Mansfield, Fitzherbert Estates, Welbeck Estates and ASRA Housing Group. Most allotment sites are within the greater Mansfield urban area including Mansfield Woodhouse. Other sites are in the north of the District in Market Warsop and Meden Vale. All statutory allotments are located within the greater Mansfield urban area. Combining both council and privately-run allotments, the total plot provision in the District as of mid-2016 stood at 1 plot per 50 population.</p>
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## 4 GROWTH PROPOSALS

### Introduction

4.1.1 As part of preparing the Local Plan, Mansfield District Council has commissioned a Strategic Housing Market Assessment (SHMA). The SHMA uses a range of sources, including population trends and forecasts, to establish the number of homes needed during the plan period. The SHMA for Mansfield District identifies a need for 376 homes a year; this equates to a total of 7,520 homes over the plan period (2013-2033) and is known as the Objectively Assessed Housing Need (OAN).

4.1.2 The District Council are proposing to add a buffer to the Objectively Assessed Housing Need. This buffer will provide flexibility if some of the sites expected to contribute are not delivered for any reason; this helps to ensure that the Objectively Assessed Housing Need is delivered. For the Preferred Option a buffer of 23.16% has been added to the Objectively Assessed Housing Need figure of 7,520 to give a total required supply of 9,262 homes during the plan period (this may be subject to change for the final Local Plan).

4.1.3 In terms of distribution within the District, several different options were considered looking at the information in the SHMA, benefit to the rural communities and availability of sites. It is proposed to distribute 89% of the homes required in the Mansfield Urban Area and 11% to the settlements in Warsop Parish. With the 23% buffer, this results in:

- Mansfield Urban Area – 8,286 homes
- Warsop Parish – 976 homes

4.1.4 Further details about the Objectively Assessed Housing Need and required housing supply can be found in the Housing Technical Paper.

4.1.5 Once account is taken of homes that have been completed during the plan period, windfall and deliverable planning permissions there would remain around 4,645 homes to deliver. Mansfield District Council propose to allocate sites within existing settlement boundaries in the first instance. Sites within boundaries:

- would not lead to the loss of open countryside or extend the urban boundary;
- already have reasonable access to services and facilities;
- are smaller scale with fewer upfront infrastructure requirements;



- are likely to be attractive to smaller or medium home builders; and
- geographically spread reducing the impact on any one area.

4.1.6 As the sites within settlements, together with the existing supply, would not deliver sufficient homes to meet the required supply the District Council are considering sites outside settlement boundaries. Decisions about which sites have been taken based on several different factors:

- Highways and Sustainable Transport;
- Green Infrastructure and Environmental;
- Ability to contribute to meeting infrastructure requirement;
- Economic Benefit; and
- Deliverability.

4.1.7 Further details about the sites contributing to the housing target can be found in the Site Selection Document.

4.1.8 A summary of the Local Plan growth proposals is provided in Table 28 below. More detailed breakdowns are provided in Table 29, Table 30 and Table 31 on the following pages. Site locations are depicted in Figure 11.

Table 28 – Housing Summary (Dwellings)

Location	Description	Plan Period	Post Plan	Total
Warsop	Sites with Planning Permission	240	0	240
Warsop	Sites without Planning Permission	595	0	595
Warsop	Completions and Windfalls	141	0	141
Warsop Total		976	0	976
Mansfield	Sites with Planning Permission	3,253	425	3,678
Mansfield	Sites without Planning Permission	4,050	200	4,250
Mansfield	Completions and Windfalls	983	0	983
Mansfield Total		8,286	625	8,911
District Total		9,262	625	9,887



Table 29 – Housing with Planning Permission

Ref	Location	Name	Plan Period	Post Plan	Total
87	Warsop	Welbeck Farm	32	0	32
112	Warsop	Land at Moorfield Farm	8	0	8
152	Warsop	Land off Birch Street	30	0	30
153	Warsop	The Royal Estate	103	0	103
154	Warsop	Land at West St and King St	67	0	67
Warsop Total			240	0	240
2	Mansfield	Former Mansfield General Hospital	54	0	54
13	Mansfield	Clipstone Road East / Crown Farm Way (Newlands r'bout)	190	0	190
27b	Mansfield	Land off Sherwood Oaks Close	46	0	46
80	Mansfield	Land North of Skegby Lane	150	0	150
81	Mansfield	Penniment Farm (Housing)	430	0	430
85	Mansfield	Land off Quarry Lane	17	0	17
86	Mansfield	Land at the corner of Quarry Lane, Mansfield.	21	0	21
90	Mansfield	Lindhurst	1,275	425	1,700
92	Mansfield	Pleasley Hill Regeneration Area	151	0	151
95	Mansfield	Vauxhall Garage	41	0	41
96	Mansfield	Land at Hermitage Lane	25	0	25
97	Mansfield	Land to the rear of 183 Clipstone Road West	12	0	12
103	Mansfield	Park Hall Farm	130	0	130
106	Mansfield	Former Mansfield Sand Co	107	0	107
107	Mansfield	20 Abbott Road	8	0	8
109	Mansfield	Land off Sutton Road	10	0	10
110	Mansfield	Land to the rear of 5 Welbeck Road	10	0	10
111	Mansfield	22 St John Street	8	0	8
113	Mansfield	284 Berry Hill Lane	5	0	5
155	Mansfield	Berry Hill Hall	38	0	38
156	Mansfield	Former Miners Offices	18	0	18
157	Mansfield	The Ridge	43	0	43
158	Mansfield	Land off Sandlands Way	251	0	251
159	Mansfield	Birchlands/Old Mill Lane	9	0	9
160	Mansfield	32 Warsop Road	5	0	5
163	Mansfield	Development off Debdale Lane	90	0	90
164	Mansfield	Former garage site Alexandra Avenue	5	0	5
166	Mansfield	Land off Portland Street (West)	32	0	32
167	Mansfield	Poppy Fields	64	0	64
168	Mansfield	10A Montague Street	8	0	8
Mansfield Total			3,253	425	3,678
Overall Total			3,493	425	3,918



Table 30 – Housing without Planning Permission

Ref	Location	Name	Plan Period	Post Plan	Total
33	Warsop	Wood Lane (Miners Welfare)	31	0	31
35	Warsop	Stonebridge Lane / Sookholme Lane	200	0	200
36	Warsop	Sookholme Lane / Sookholme Drive	200	0	200
51	Warsop	Land off Netherfield Lane	120	0	120
57	Warsop	Land off Mansfield Road, Spion Kop (adj The Gables)	8	0	8
100	Warsop	Land at the rear of Cherry Paddocks	19	0	19
122	Warsop	Moorfield Farm	17	0	17
Warsop Total			595	0	595
1	Mansfield	Former Mansfield Brewery (part B)	23	0	23
4	Mansfield	Land astride Victoria Street	63	0	63
6	Mansfield	Centenary Lane (phase 3)	93	0	93
11	Mansfield	Bellamy Road Recreation Ground	64	0	64
12	Mansfield	Broomhill Lane Allotments (part)	35	0	35
14	Mansfield	Land at Cox's Lane	20	0	20
19	Mansfield	Allotment site at Pump Hollow Road	64	0	64
23	Mansfield	Sandy Lane	63	0	63
24	Mansfield	Sherwood Close	32	0	32
26	Mansfield	Land at Windmill Lane (former nursery)	37	0	37
27a	Mansfield	Land at Redruth Drive	99	0	99
28	Mansfield	Debdale Lane / Emerald Close	32	0	32
29	Mansfield	Sherwood Rise (adjacent Queen Elizabeth Academy)	87	0	87
30	Mansfield	Land at Old Mill Lane / Stinting Lane	86	0	86
31	Mansfield	Land at New Mill Lane	100	0	100
52	Mansfield	Pleasley Hill Farm	660	0	660
53	Mansfield	Land between Old Mill Lane & New Mill Lane	230	0	230
54	Mansfield	Former Evans Halshaw site	66	0	66
55	Mansfield	Tall Trees mobile homes Old Mill Lane	100	0	100
58	Mansfield	Fields Farm, Abbott Road	200	0	200
59	Mansfield	Land to the rear of High Oakham Hill	39	0	39
60	Mansfield	Land of Ley Lane	15	0	15
64	Mansfield	Pheasant Hill and Highfield Close	98	0	98
66	Mansfield	Harrop White Road Allotments	10	0	10
68	Mansfield	Kirkland Avenue Industrial Park	20	0	20
73	Mansfield	Three Thorn Hollow Farm	188	0	188
74c	Mansfield	Water Lane	139	0	139
75	Mansfield	Former Mansfield Hosiery Mill Car Park	29	0	29
76	Mansfield	Elmsley Heath	600	200	800
79	Mansfield	Land of Rosemary Street	10	0	10
89	Mansfield	Land off Skegby Lane	215	0	215
91	Mansfield	Strip of land off Cauldwell Road (opposite the College)	42	0	42
98	Mansfield	Land to the rear of 66-70 Clipstone Road West	14	0	14
99	Mansfield	18 Burns Street	12	0	12
101	Mansfield	Land south of Clipstone Road East	313	0	313
104	Mansfield	Park Hall Farm	10	0	10
105	Mansfield	Land at 7 Oxclose Lane	17	0	17
170	Mansfield	Land off Wharmby Avenue	125	0	125
Mansfield Total			4,050	200	4,250
Overall Total			4,645	200	4,845



Table 31 – Housing Completions and Windfalls

Ref	Location	Name	Plan Period	Post Plan	Total
-	Warsop	Large site completions	69	0	69
-	Mansfield	Large site completions	225	0	225
-	Warsop	Small site completions	39	0	39
-	Mansfield	Small site completions	324	0	324
-	Warsop	Windfall Allowance	33	0	33
-	Mansfield	Windfall Allowance	437	0	437
-	Warsop	Losses	0	0	0
-	Mansfield	Losses	-3	0	-3
Overall Total			1,124	0	1,124

4.1.9 Planned employment growth within the District is summarised in Table 32 below.

Table 32 – Employment Growth

Ref	Planning Consent	Location	Name	Convenience Retail (sqm)	Comparison Retail (sqm)	Leisure (sqm)	Offices (sqm)	Industrial (Ha)
132	No	Warsop	Former Strand cinema	800	0	0	0	0.00
120	Yes	Mansfield	Land at Old Peggs	1,700	0	0	0	0.00
123	Yes	Mansfield	Land Off Kestral Road	0	0	0	0	0.15
135	Yes	Mansfield	190 Ladybrook Lane	400	0	0	0	0.00
140	Yes	Mansfield	Hermitage Lane Industrial Estate (Site A)	0	0	0	0	0.40
169	Yes	Mansfield	Land Adjacent Unit 3, Sherwood Oaks Close	0	0	0	627	0.00
82	Yes	Mansfield	Penniment Farm (employment)	84	0	0	3,300	11.04
90	Yes	Mansfield	Lindhurst	600	400	0	60,000	10.00
137	Yes	Mansfield	Plot 17	0	0	0	0	0.25
134	Yes	Mansfield	Land at Belvedere Street	816	0	0	1,020	0.00
144	No	Mansfield	Land off Sherwood Street	0	0	0	0	0.23
40	No	Mansfield	Land at Ratcher Hill Quarry (south west)	0	0	0	0	0.75
71a	No	Mansfield	Site A, Long Stoop Way	0	0	0	4,560	1.14
71c	No	Mansfield	Site C, Long Stoop Way	0	0	0	1,200	0.30
127	No	Mansfield	Former bus station site	15,000	0	775	0	0.00
139	No	Mansfield	Frontage to Ransom Wood Business Park	750	0	1,000	0	0.00
150	No	Mansfield	Ratcher Hill Quarry	0	0	18,460	0	1.79
151	No	Mansfield	Carpark opposite Birch House	0	0	0	880	0.00
52	No	Mansfield	Pleasley Hill Farm	7,140	3,060	10,200	10,200	2.55
74b	No	Mansfield	Water Lane	0	0	0	3,400	0.00
74c	No	Mansfield	Water Lane	0	0	0	2,336	0.58
76	No	Mansfield	Elmsley Heath	0	0	0	0	6.76
-	-	Mansfield	Large site completions	0	0	0	4,563	2.32
District Totals				27,290	3,460	30,435	92,086	38.26



## 5 FUTURE CONDITIONS

### 5.1 INTRODUCTION

5.1.1 This section of the report describes the forecast situation within the District for each category of infrastructure once the planned growth has been delivered.

### 5.2 SOCIO-ECONOMIC INFRASTRUCTURE

5.2.1 The increase in demand for socio-economic related infrastructure is directly linked to increase in population. The assumed increase in population by 2033 is derived from the projected number of dwellings multiplied by the average persons per household for the District<sup>20</sup>. The planned increase in dwellings is estimated to result in a population increase of 21,554 people over the plan period.

#### Primary Healthcare

5.2.2 The ratio of full time equivalent (FTE) GPs to registered patients has been applied as an indicator of the capacity of GP Practices within the District. The NHS Choices website states<sup>21</sup>:

*"There is no recommended number of FTE GPs per 1,000 patients per practice, recognising the differing needs of the registered patients of GP practices. GP practices plan and utilise their workforce to best meet the needs of their patients.*

*It can be noted for comparison, that the average number of FTE GPs per 1,000 patients per practice in England is 0.58."*

5.2.3 However, guidance issued by the Town and Country Planning Association (TCPA) in their **'Practical Guides for Creating Successful New Communities – Guide 8: Creating Health-Promoting Environments'**, dated December 2017 states *"the current requirement for primary care is one GP per 1,500 -2,000 new population or patients"*<sup>22</sup>

5.2.4 Registered patient numbers and numbers of FTE GPs for each Practice within the District have been taken from Table 4a of the *"General Practice Provisional Tables"* published by the NHS for September 2017. This is the most up to date information available at the time of writing.

<sup>20</sup> Taken as an average of 2.18 persons per household for the District at 2034, from the Department for Communities and Local Government 2014-Based Household Projections in England, 2014 to 2029 (July 2016)

<sup>21</sup> Source: NHS Choices website (<http://www.nhs.uk/Scorecard/Pages/IndicatorFacts.aspx?MetricId=100063>)

<sup>22</sup> See page 21: <https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=e120cac7-c8df-45a5-8879-bb830df3fc77>



However, it should be noted that this data represents a 'snap shot' of existing conditions at the date of publication and patient and FTE GP numbers will fluctuate regularly.

- 5.2.5 Consultation with the NHS confirms that rural practices could be expected to have lower ratios of GPs to patients than practices in built-up areas. The modern health care workforce now includes other health professionals who have prescribing (limited) rights, so it is difficult to make a judgement on capacity by looking at GP to patient ratios alone. However, generally the provision of 0.50 to 0.33 FTE GPs per 1,000 registered patients is regarded as being satisfactory provision. This equates to approximately one GP per 2,000 to 3,000 registered patients.
- 5.2.6 For the purposes of this study a ratio of up to 0.5 FTE GPs per 1,000 registered patients has been applied as an indicator of acceptable provision. This is equivalent to up to 2,000 patients per GP and is consistent with the upper end of the range recommended by the TCPA. For comparison, the national average of 0.58 FTE GPs per 1,000 registered patients is equivalent to 1,724 patients per GP.
- 5.2.7 Across the District the average number of GPs per 1,000 registered patients is 0.48 (see Table 33 on the following page) which is 0.1 less than the national average. On this basis, it could be concluded that the aggregate GP provision across the District is just about sufficient to serve the number of existing registered patients, which would be supported by the fact that all Practices within the District are currently accepting new patients. However, there are localised discrepancies with some surgeries being over-subscribed whilst others are under-subscribed. Those which are over-subscribed are generally single GP practices which are less likely to be able to absorb patient number fluctuations.
- 5.2.8 However, aggregate figures do not consider local circumstances such as the spatial distribution of the local population, the popularity of individual Practices, Practice accessibility, socio-economic factors (e.g. areas with a higher percentage of elderly patients or very young children could generate a greater demand for healthcare provision), or other local contributory factors.
- 5.2.9 From Table 33 on the next page most Practices across the District currently have less than 2,000 registered patients per FTE GP. For ease of reference a Red/Amber/Green colour coding has been applied in Table 33 for the number of registered patients served by each FTE GP where:



Green: less than 2,000 = Spare capacity  
 Amber: between 2,000 and 3,000 = Just about acceptable level of capacity  
 Red: more than 3,000 = Over capacity

Table 33 – Existing Registered Patients per FTE GP by Practice

GP Practices	Settlement	Patients	FTE GP's	Patients/FTE GP's
Acorn Medical Practice	Mansfield West	2,908	1.00	2,908
Bull Farm Primary Care Resource Centre	Mansfield Woodhouse	2,733	1.56	1,752
Churchside Medical Practice	Mansfield West	6,117	3.87	1,582
Sherwood Medical Partnership	Clipstone	15,575	5.87	2,653
Forest Medical - Oak Tree Lane Surgery	Forest Town	14,823	5.07	2,926
Forest Medical - Rosemary Street Medical Centre	Mansfield West			
Meden Medical Services	Meden Vale	6,120	3.07	1,996
Millview Surgery	Mansfield West	8,368	4.80	1,743
Oakwood Surgery	Mansfield Woodhouse	13,291	7.63	1,743
Orchard Medical Practice	Mansfield West	19,190	10.77	1,781
Pleasley Surgery	Pleasley	3,383	1.00	3,383
Rainworth Health Centre	Rainworth	6,010	2.77	2,167
Riverbank Medical Services	Church Warsop	4,465	2.27	1,970
Roundwood Surgery	Forest Town	13,244	5.87	2,257
Sandy Lane Surgery	Mansfield East	5,955	2.53	2,351
Shires Healthcare	Shirebrook	15,916	8.51	1,871
St Peters Medical Practice	Mansfield East	2,749	0.77	3,555

Note: Patient and FTE GP numbers taken from NHS GP level data for September 2017

5.2.10 As can be seen from Table 33 all 15 practices within the District exceed the national average ratio of registered patients to FTE GPs (equivalent to 1,724 registered patients per FTE GP). However, eight of these are still considered to have spare capacity (i.e. less than 2,000 registered patients per FTE GP) and six of these are within an acceptable range (i.e. less than 3,000 registered patients per FTE GP).

5.2.11 There are two practices with more than 3,000 registered patients per FTE GP (Pleasley, and St Peters) and two practices with nearly 3,000 registered patients per FTE GP (Acorn and Forest Medical).



5.2.12 Table 34 below summarises the future demand expected due to Local Plan development and the number of additional FTE GPs that are likely to be required to meet the additional demand.

Table 34 – Forecast FTE GP Requirement

GP Practices	Location	Population Increase (Note 1)	Total Patient Demand	FTE GPs Required (Note 4)	No. of New FTE GPs Required
Meden Medical Services	Church Warsop, Meden Vale	706	22,742	11.4	nil
Shires Healthcare					
Riverbank Medical Services	Warsop	1,421	5,886	2.9	0.7
Oakwood Surgery	Mansfield Woodhouse	2,172	15,463	7.7	0.1
Bull Farm Primary Care Resource Centre	Mansfield Urban Area (north), Pleasley	3,381	9,497	4.7	2.2
Pleasley Surgery					
Sherwood Medical Partnership	Forest Town, Clipstone	1,944	17,519	8.8	2.9
Acorn Medical Practice	Mansfield Town Centre	2,989	62,976	31.5	1.9
Churchside Medical Practice					
Forest Medical - Rosemary Street Medical Centre					
Millview Surgery					
Orchard Medical Practice					
Roundwood Surgery					
St Peters Medical Practice					
Sandy Lane Surgery	Mansfield Town Centre	382	6,337	3.2	0.6
Forest Medical - Oak Tree Lane Surgery	Mansfield Urban Area and Rainworth	8,559	21,981	11.0	5.7
Rainworth Health Centre					
Totals		21,554	162,401	81.2	13.9

Notes:

1. Taken as an average of 2.18 persons per household for the District at 2034, from the Department for Communities and Local Government 2014-Based Household Projections in England, 2014 to 2029 (July 2016).
2. All new residents assumed to register with a local GP.
3. Estimated on a basis of 2,000 registered patients per GP.
4. Figures represent Full Time Equivalent (FTE) GPs.

5.2.13 There is a requirement for 13.9 additional FTE GPs across the District with the key demands located throughout the Mansfield urban area. For the purposes of calculating the above estimate a ratio of 2,000 patients per GP has been applied as an indicator of acceptable provision.

5.2.14 The scale of planned development in Mansfield is forecast to require the equivalent of at least two new GP Practices. The NHS has confirmed that they must prioritise the use of existing estate before new healthcare infrastructure is built. Therefore, ongoing liaison will be required **between MDC and the NHS's Clinical Commissioning Group** to agree how increased demand



can be best met as development comes forward through the planning application process. **Where it isn't possible to meet increased demand by enhancing** existing services and facilities new infrastructure will be required. New GP practices could potentially be provided as an integral part of planned development on sites to the east and west of the town centre.

Table 35 – Healthcare Summary

Mansfield Urban Area			
GPs	Pharmacies	Dentists	Hospitals
Thirteen additional GPs will be required. These could be provided through a combination of expanding existing practices where possible, or through the provision of new practices, subject to CCG requirements.	No identified issues.	Additional dentists will be required but this is expected to be resolved by practitioners expanding provision to meet demands in response to market forces. Additional NHS dentists would be desirable.	King's Mill Hospital is located within Ashfield District and has no known capacity issues and is expected to be able to accommodate additional demands.
Market Warsop Urban Area and the Villages			
GPs	Pharmacies	Dentists	Hospitals
The equivalent of approximately one additional GP will be required in this area. This should be able to be accommodated within existing practices.	No identified issues.	Additional dentists in this area would be desirable due to limited availability at present.	King's Mill Hospital is located within Ashfield District and has no known capacity issues and is expected to be able to accommodate additional demands. Bassetlaw Hospital is also available in Bassetlaw District.

### Primary Education

5.2.15 The County Council, as the Local Education Authority allows for primary school places based on 21 school places per 100 dwellings. Using this ratio, it is estimated that an additional 2,076 primary school places would be required to 2033 to meet the additional demands of Local Plan development.

5.2.16 Within the district there is presently (December 2017) spare capacity for 558 pupils (based upon the present number of students), see Table 36 on the next page. For ease of reference a Red/Amber/Green colour coding has been applied to the table for the spare capacity of the school:

**Green** - sufficient spare capacity and unlikely to require additional school places in short-term

**Amber** - present spare capacity but growth will require additional places

**Red** - insufficient capacity at present so will require expansion



Table 36 – Primary School Capacity (Pupil Places)

School Name	Net Capacity	Number on Role	Ave' 5 Year Projection*	Spare Capacity
Abbey Primary School	412	361	417	-5
Asquith Primary School	315	313	313	2
Berry Hill Primary School	420	408	407	13
Birklands Primary School	235	170	195	40
Church Vale Primary School and Foundation Unit	195	192	187	8
Crescent Primary School	405	337	348	57
Eastlands Junior School	160	141	151	9
Farmilo Primary School and Nursery	315	206	248	67
Forest Town Primary School	360	353	390	-30
Heatherley Primary School	243	239	275	-32
Heathlands Primary School	189	172	186	3
Hetts Lane Infant and Nursery School	180	168	164	16
High Oakham Primary School	428	419	419	9
Holly Primary School	280	294	313	-33
Intake Farm Primary School	210	202	213	-3
John T Rice Infant and Nursery School	135	138	145	-10
King Edward Primary School	619	413	407	212
Leas Park Junior School	280	276	272	8
Mansfield Primary Academy	210	195	202	8
Netherfield Infant School	120	100	92	28
Nettleworth Infant and Nursery School	210	210	212	-2
Newlands Junior School	189	170	178	11
Northfield Primary and Nursery School	420	339	385	35
Oak Tree Primary School	297	268	280	17
Peafield Lane Academy	315	313	315	0
Samuel Barlow Primary Academy**	283	243	290	-7
Sherwood Junior School	240	220	214	26
St Edmund's CofE (C) Primary School	210	205	224	-14
St Patrick's Catholic Primary School Academy	210	212	206	4
St Peter's CofE Primary Academy, Mansfield	315	249	271	44
St Philip Neri With St Bede Catholic Voluntary Academy	420	423	451	-31
Sutton Road Primary School	558	428	511	47
The Bramble Academy	243	201	224	19
The Flying High Academy	431	357	439	-8
Wainwright Primary Academy	420	351	367	53
Wynndale Primary School	210	212	213	-3
Totals	10,472	9,286	9,911	558

Notes: \*Excludes demand due to Local Plan development

\*\* Adjacent to and serving the District, but situated in Newark & Sherwood District.

(For primary schools a capacity threshold of 14 places has been applied which assumes an average of 2 places per school year. Which for a primary with a reception/foundation year would be  $2 \times 7 = 14$  spaces).



Table 37 – Future Requirements for Primary School Places

Location	Primary School Spaces Available	Primary School Places Required
Mansfield Urban Area	-582	876
Pleasley	0	248
Mansfield Woodhouse	998	159
Forest Town	90	143
Warsop	529	104
Church Warsop, Meden Vale	0	52
Total	1,035	1,582 <sup>23</sup>

5.2.17 From Table 37 it is evident that Mansfield Woodhouse, Warsop, Church Warsop and Meden Vale currently have some spare primary school capacity. However, with the addition of Local Plan development all areas of the District will require additional primary school capacity. It may be possible to accommodate smaller increases (e.g. in Church Warsop, Meden Vale) through extensions to existing schools, where this is feasible.

#### Secondary Education

5.2.18 The County Council allows for secondary school places based on 16 school places per 100 dwellings. Using this assumption, it is estimated that an additional 1,582 school places would be required to 2033.

5.2.19 Available data suggests that there is considerable excess secondary education capacity in Mansfield with places for an additional 1,035 students across the District. However as can be seen from Table 38 on the following page, this excess capacity is located at three schools in Mansfield Woodhouse, Forest Town and Warsop. Whereas across the three secondary schools in the Mansfield Urban Area there is a shortfall of 582 places.

5.2.20 In certain localities, there are therefore shortages of secondary school places and in others **there are surpluses. These “hotspots” are not fixed, they can occur at short notice in response** to local circumstances such as Ofsted outcomes, economic factors such as employment opportunities and short-term demographic changes such as migration. NCC should therefore be consulted as new development comes forward through the planning application process to determine the availability of school places at that time.

<sup>23</sup> This figure represents the new primary school places required to meet the demand of Local Plan development and does not address any existing shortfalls within the District



Table 38 – Secondary School Capacity (Pupil Places)

School Name	Location	Net Capacity	Number on Role	Ave' 5 Year Projection*	Spare Capacity
All Saints Catholic Voluntary Academy	Mansfield Town Centre	1,096	1,088	1,269	-173
Garibaldi College	Forest Town, Clipstone	1,024	726	934	90
Meden School	Warsop	1,291	688	762	529
Queen Elizabeth Academy	Mansfield Woodhouse	1,145	513	636	509
Samworth Church Academy	Mansfield Town Centre	1,180	1,174	1,333	-153
The Brunts Academy	Mansfield Town Centre	1,552	1,522	1,808	-256
The Manor Academy	Mansfield Woodhouse	1,429	816	940	489
Totals		8,717	6,527	7,682	1,035

\*Excludes demand due to Local plan development

Note: For secondary schools a capacity threshold of 10 places has been applied which assumes an average of 2 places per school year (2 x 5 = 10)

Table 39 – Education Summary

Mansfield Urban Area			
Early years	Primary	Secondary	Further and Higher
Provision is likely to be required in any new primary schools.	Growth is likely to require the provision of additional primary schools equivalent to five or six new Single Form Entry schools.	There is a shortfall in secondary school places that will need to be addressed as development comes forward.	No known capacity issues at West Nottinghamshire College.
Market Warsop Urban Area and the Villages			
Early years	Primary	Secondary	Further and Higher
Provision is likely to be required in any new primary schools.	Growth is likely to result in an increase in demand that will require the provision of one new Single Form Entry school.	There is a surplus of available secondary school places that should meet forecast demand.	There is no local provision for further education and this is delivered from Mansfield.

## Libraries

5.2.21 Nottinghamshire County Council has confirmed that library provision is currently adequate to serve the existing population and that the Council is not proposing to extend existing or build any new libraries within the District. Developer contributions towards new library stock is discussed in Section 6.



## 5.3 WASTE MANAGEMENT

### Waste Management Capacity

5.3.1 The capacity of waste management facilities in Nottinghamshire and Mansfield was compiled **using information from the Environment Agency's WDI on permitted sites, the Councils' records on sites with existing planning permission for waste management use and Nottinghamshire's Minerals and Waste Annual Monitoring Report, 2013/14. Since the adoption of the Waste Core Strategy, the revised National Planning policy for waste amended the assessment of future capacity requirements to be based on only those facilities that are operational at the time of the assessment as being the more reliable measure of available capacity. Therefore, for purposes of this report, only facilities that are already operational have been considered for analysis. These include the following main facility types:**

- Landfill;
- Incineration with energy recovery (EfW);
- Waste Transfer Stations (WTS);
- Materials Recovery Facilities (MRFs); and
- Composting and other organic recycling plants (e.g. anaerobic digestion).
- Recycling facilities

5.3.2 Note that facilities of waste recycle reprocessors such as glass recyclers, paper recyclers (i.e. B1 users from a planning perspective), which are also exempt from waste licensing, are not included in this analysis.

### Nottinghamshire County and Mansfield Capacities

#### Landfill

5.3.3 Table 40 shows the landfill capacities in Mansfield and Nottinghamshire based on the most recent data and information received from the AMR 2014/2015 and most recent Environment Agency data (2015). Unless otherwise stated, all capacities shown are based on operator waste permit returns to the Environment Agency and estimated as at 31<sup>st</sup> December 2015. The capacities of landfills are expressed in cubic metres and these were converted to tonnages using figures recommended by the PPS10 Compaction guide; i.e. a conversion factor of 1.5 tonnes per cubic metre for inert waste and 0.85 tonnes per cubic metre for mixed municipal and similar wastes to estimate remaining void based on waste inputs to the landfills.



Table 40 - Total Landfill Capacities for Mansfield and Notts

Landfill Type/Name	Capacities (m <sup>3</sup> )*		Type of waste received	Planning Permission End Date
	Mansfield	Nottinghamshire		
Landfill (Non-Hazardous)				
Staple Quarry and Landfill	-	270,000	HIC**	31/10/2024
Daneshill	-	720,000	HIC	N/A
Non-hazardous total capacity	-	990,000	-	N/A
Landfill (Inert)				
Vale Road Quarry	1,880,000	1,880,000	Inert	N/A
Serlby Quarry	-	1,350,000	Inert	N/A
Inert landfill total capacity	1,880,000	3,230,000	-	N/A
Landfill (Inert - Restricted User)				
Coneygre Farm	-	Unknown	Inert	01/06/2019
Borrow Pits Landfill	-	450,000	Inert	N/A
Cromwell Quarry	-	Unknown	Inert	31/12/2020
Inert-restricted landfill total capacity	-	450,000	-	N/A
Landfill (Ash Disposal)				
Bole Ings	-	960,000	Pulverised fuel ash	N/A
Cottam Power Station	-	1,240,000	Pulverised fuel ash	N/A
Winking Hill	-	330,000	Pulverised fuel ash	N/A
Landfill (ash-disposal) total capacity	-	2,530,000	-	N/A

Notes:

\* Contains Environment Agency information © Environment Agency and database right.

\*\* Household/industrial/commercial

Data correct at December 2015

- 5.3.4 There is a County-wide non-hazardous landfill capacity of some 990,000 cubic metres (equivalent to approximately 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre).
- 5.3.5 It is reported in the Minerals and Waste Annual Monitoring Report (AMR), 2014/15) that approximately 23% (i.e. approximately 129,000 tonnes) of LACW produced in Nottinghamshire and Nottingham was sent to landfill. In 2013/2014, approximately 240,000 tonnes of C&I waste was sent to landfill in Nottinghamshire (AMR, 2013/14). Based on these landfill input rates and the capacity of non-hazardous landfill in Nottinghamshire shown in Table 40, the available void in the County would be filled in approximately 2-3 years, hence the need to find alternative methods of managing residual waste (AMR, 2014/15).
- 5.3.6 However, MDC already has arrangements in place to treat residual municipal waste collected within the District to produce Refuse Derived Fuel for use at Energy from Waste over the



period of the Plan (to 2033). There is therefore no requirement for new infrastructure within the District to address the forecast landfill shortfall within the Plan period.

- 5.3.7 There is currently very limited capacity for landfill in the County as towards the end of 2014 significant permitted disposal capacity was lost when two of the County's remaining non-hazardous landfill sites, at Dorket Head Landfill near Arnold and Carton Forest Landfill near Worksop, closed, leaving only two remaining non-hazardous landfill sites near Newark and Retford. Taking account of these losses, remaining non-hazardous capacity is now estimated to be less than 1 million cubic metres.

#### Energy from Waste

- 5.3.8 Thermal treatment of waste can consist of simple incineration, typically used for clinical or hazardous wastes or incineration with energy recovery, which has become increasingly prevalent in the recovery of non-hazardous wastes, with the steam produced by the combustion process driving turbines to produce electricity. Advanced technologies are also starting to appear, such as gasification and pyrolysis, which aim to break down residual waste into fuels for either on-site electricity generation or for energy use off site. The move away from landfilling residual waste in recent years, driven by significant increases in landfill tax, has seen a considerable increase in the amount of available Energy from Waste capacity, and in volumes of waste recovered using this technology both nationally and regionally.
- 5.3.9 There is currently one EfW facility in Nottinghamshire, the Eastcroft Incinerator in Nottingham, with a permitted energy recovery capacity of 260,000 tonnes. However, this capacity includes 100,000 tonnes per annum that is not yet been built. The facility can take both commercial and municipal waste.
- 5.3.10 LACW residual waste from Mansfield District is currently delivered to FCC Alfreton WTS whereupon FCC produce RDF (which is sent to Europe) through a shredding and sorting processes or is sent to landfill. This arrangement remained in place until the end of March 2017. For the next three years (to April 2020) residual waste will be sent to the new Veolia Welshcroft Close WTS where it will be treated and sent as RDF to Europe. From 2020 to 2033, residual waste will continue to be delivered to the Veolia Welshcroft Close WTS and be treated and used as RDF in the UK.
- 5.3.11 Outside of the County, there are other facilities that potentially could be used by the County such as the 120,000 tonnes per annum facility under construction in Doncaster, the 150,000



tonnes per annum fully operational facility in Lincolnshire, and the 300,000 tonne (proposed 180,000 tonnes municipal, 120,000 tonnes East Midlands C&I) EfW facility at Shepshed in Leicestershire. The Leicestershire facility was granted planning permission in 2012 and permission for increased capacity of 350,000 tonnes per annum approved in October 2014. It is expected to be operational by 2018/19 and there is also another 190,000 tonnes per annum facility in Derby, currently under construction.

### Organic Waste Recycling (Composting, Anaerobic Digestion)

5.3.12 Various types of organic waste recycling facilities exist including windrow composting, in-vessel composting and anaerobic digestion. Windrow composting is used primarily for the biodegradation of garden and crop waste and other vegetable based materials, whilst in-vessel composting and anaerobic digestion facilities can take kitchen and commercial food waste if the facility process meet the requirements of the Animal By-Products regulations.

Table 41 - Organic Waste Processing Capacity in Mansfield and Notts

Site Name	Facility Type	Waste Type	Permitted Annual Capacity (Tonnes)	Location
Grange Farm, Oxton	Composting	Municipal green waste	55,000	Nottinghamshire
Recycling Ollerton and Boughton	Composting	Commercial dry recyclables and green waste	4,400	Nottinghamshire
Stragglethorpe Road, Holme Pierrepont	Composting	Municipal/Commercial green waste	3,500	Nottinghamshire
John Brooks Sawmills	Composting	Commercial green waste	20,000	Nottinghamshire
Total Composting			82,900	
Stud Farm, Rufford	Anaerobic digestion	Poultry waste, vegetable waste and purpose grown energy crops	16,000	Nottinghamshire
Stoke Bardolph STW	Anaerobic digestion	C&I	55,200	Nottinghamshire
Biodynamics	Anaerobic digestion	C&I	150,000	Nottinghamshire
Total Anaerobic Digestion			221,200	

Notes: Data correct at December 2015

5.3.13 The figures in Table 41 demonstrate a total composting capacity (for both C&I and municipal waste) of 82,900 tonnes and 221,200 tonnes of anaerobic digestion capacity in Nottinghamshire, with no composting and anaerobic digestion capacity in Mansfield. Of the



82,900 tonnes of composting capacity in Nottinghamshire, 58,000 tonnes per annum is available for municipal waste.

### Material Recovery Facilities (MRFs)

5.3.14 Where recyclates such as plastics, metals, paper, cardboard, glass are collected as mixed streams, or “co-mingled”, MRFs are required to separate the individual material streams so they can be reprocessed and/or reused. Similarly, “dirty MRFs” can be used to separate recyclates from residual waste streams. The provision of MRFs for the separation of recyclates for recycling operations elsewhere in Nottinghamshire and Mansfield is summarised below.

Table 42 - MRF Capacity in Nottinghamshire

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location
Bunny Transfer Station	C&I	209,000	Nottinghamshire
Colwick	Construction/industrial/commercial	119,000	Nottinghamshire
Mansfield MRF	Municipal/commercial/industrial	80,000	Mansfield
Sandy Lane	Construction/industrial/commercial	22,000	Nottinghamshire
Wastecycle Limited	Commercial/industrial/municipal	314,000	Nottinghamshire
Total		744,000	

Notes: Data correct at December 2015

5.3.15 Mansfield District Council is fortunate to have a MRF based in its District. The Council currently sends its dry mixed recyclates to this MRF in Mansfield, as do all other WCAs in Nottinghamshire. There is no end date on the planning permission for the MRF, however, the PFI contract runs until 2033, after which there could be different contractual arrangements. The total available MRF capacity in Nottinghamshire is approximately 744,000 tonnes.

### Transfer Stations

5.3.16 Nottinghamshire has considerable provision for transfer and bulking stations as summarised in Table 43 on the next page including facilities for hazardous, clinical, LACW and C&I wastes. Most transfer stations handle C&I and municipal waste. The total available capacity for transfer station in Nottinghamshire is approximately 390,000 tonnes, of which approximately 74,000 tonnes is in the Mansfield District. Of the total transfer station capacity in Nottinghamshire, approximately 280,000 tonnes is for C&I and/or municipal waste, of which 73,700 tonnes is located in Mansfield District.

5.3.17 According to the Waste Core Strategy, four sites in Nottinghamshire are used to bulk up waste from HWRCs and kerbside collections and manage an estimated 50,000 tonnes of municipal



waste. A new municipal waste transfer station in Newark that became operational in 2015 addresses any short fall in this part of the County.

Table 43 - Transfer Station Capacity in Mansfield and Notts

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
Mansfield D C Transfer Station	Municipal	4,700	Nottinghamshire
AB Waste Disposal	C&I	25,000	Nottinghamshire
ICS Bleakhill Sidings	C&I and construction and demolition	44,000	Nottinghamshire
<b>Mansfield Total</b>		<b>73,700</b>	
Jessop Close	C&I Hazardous and non-hazardous	20,000	Nottinghamshire
Mr Terry Price	C&I Non-hazardous/scrap metal	3,100	Nottinghamshire
Quarry Farm 2	C&I and construction and demolition	1,200	Nottinghamshire
Wallrudding Farm	Construction and demolition	5,000	Nottinghamshire
Brunel Drive	Municipal and C&I	60,000	Nottinghamshire
PHS	Clinical	500	Nottinghamshire
Eurotech - Global Environmental Services	Liquid/sludges	30,000	Nottinghamshire
Specialised Waste Services	Hazardous	900	Nottinghamshire
East Midlands Waste	Unknown	3,200	Nottinghamshire
Charles Lawrence International Ltd	C&I	19,500	Nottinghamshire
15b Wigwam Lane	Construction and demolition	9,700	Nottinghamshire
Abbey Road Depot	Municipal	2,900	Nottinghamshire
Environmental Health & Housing Services	Municipal	1,700	Nottinghamshire
Gamston Depot	Municipal	1,100	Nottinghamshire
Giltbrook	Municipal	10,000	Nottinghamshire
Kimberley Depot	Municipal	13,700	Nottinghamshire
Nottingham Sleeper Company	C&I	3,600	Nottinghamshire
Plot 4b, 14 and 15 Wigwam Lane	Construction and demolition	33,000	Nottinghamshire
5 Plots 8 and 9 Wigwam Lane, Hucknall	Construction and demolition	1,200	Nottinghamshire
Tarmac	Construction and demolition	700	Nottinghamshire
V and K Premises	Hazardous	100	Nottinghamshire
Maun Valley Waste Transfer Station	Construction and demolition	5,200	Nottinghamshire
Land at Shireoaks Road	Municipal and C&I	75,000	Nottinghamshire
Oakwood Fuels Ltd, Brailwood Road	Commercial/industrial/hazardous	19,000	Nottinghamshire
<b>Nottinghamshire Total</b>		<b>394,000</b>	

Notes: Data correct at December 2015

### Recycling Capacity

5.3.18 Table 44 on the next page shows the recycling capacity in Nottinghamshire and in Mansfield for glass, wood, metal and aggregate, with a total capacity of approximately 1.9 million tonnes



in Nottinghamshire, of which approximately 28,000 tonnes is in Mansfield. Most this capacity is for C&I and construction and demolition waste, with approximately 40,000 tonnes per annum of capacity currently available for municipal waste.

Table 44 - Recycling Capacity in Mansfield and Notts

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
<b>Glass</b>			
Recresco	C&I	30,000	Nottinghamshire
Total glass		30,000	
<b>Wood</b>			
R M Wright Wood Recycle	Commercial timber	18,000	Nottinghamshire
R Plevin & Sons Ltd	C&I	58,000	Nottinghamshire
Total Wood		76,000	
<b>Aggregate</b>			
Windmill House Farm	Construction and demolition	20,000	Mansfield
Bunny Materials Recycling Facility	Aggregate/IBA	270,000	Nottinghamshire
Chris Allsop Business Park	Aggregate	25,000	Nottinghamshire
Coneygre Farm	Inert	17,000	Nottinghamshire
North Midland Construction	Construction and demolition	18,000	Nottinghamshire
Plot 4b, Bakerbrook Industrial Estate	Construction and demolition	45,000	Nottinghamshire
Plot 7a Park Lane Business Park	Construction and demolition	150,000	Nottinghamshire
Plots 10,11,12,13,14, and 16 Wigwam Lane	Aggregate/Soil/ Construction /Demolition	150,000	Nottinghamshire
Plots 7, 8, 9, 15a and 15b Wigwam Lane	Construction and demolition	45,000	Nottinghamshire
Scrooby Top Quarry	Construction and demolition	20,000	Nottinghamshire
Toton Railway Sidings	Construction and demolition	315,000	Nottinghamshire
Colwick Industrial Estate	Construction and demolition	200,000	Nottinghamshire
Oakfield Construction	Construction and demolition	400,000	Nottinghamshire
Total Aggregate		1,675,000	
<b>Metal</b>			
Woodhouse Vehicle Dismantlers	Vehicles	600	Mansfield
S R Payne Scrap Metals Ltd	Vehicles & scrap metal	6,500	Mansfield
Mansfield Woodhouse Dismantlers	Vehicles	900	Mansfield
B D Motor Spares	Vehicles	400	Nottinghamshire
Bradford Moor	Vehicles & scrap metal	25,000	Nottinghamshire
Briggs Metals	Municipal and C&I	34,000	Nottinghamshire
HBC Vehicles	C&I Hazardous	8,000	Nottinghamshire
Hutchinson Engineering Services Ltd	Municipal and C&I	600	Nottinghamshire
Lakeside, Clifton	C&I Hazardous	100	Nottinghamshire
Reclamations Ollerton Ltd	C&I Hazardous	700	Nottinghamshire
T W Crowden & Daughter Ltd	Municipal and C&I	1,900	Nottinghamshire
French Spares, Ranskill	C&I	200	Nottinghamshire
Lodge On The Wolds Farm	C&I	500	Nottinghamshire
Phoenix Auto Salvage	C&I	2,200	Nottinghamshire
Charles Trent Limited	C&I	2,800	Nottinghamshire
Mega Vaux	C&I	5,000	Nottinghamshire
Glen Barry Metals Limited	C&I	5,600	Nottinghamshire
Total Metal		95,000	
Nottinghamshire Total Recycling		1,876,000	
Mansfield Total Recycling		28,000	

Notes: Data correct at December 2015



## HWRC Capacity

5.3.19 Table 45 below shows the available operating capacity of HWRCs in Mansfield and Nottinghamshire as of December 2015, with a total of approximately 110,000 tonnes per annum existing in Nottinghamshire, of which 11,000 tonnes per annum is in Mansfield. The County completed a long-term programme of improvements to its network of HWRCs, including the development of the new sites at Worksop and Newark.

Table 45 - HWRC Capacity in Mansfield and Notts

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
Mansfield HWRC	Municipal	11,000	Mansfield
Bilthorpe HWRC	Municipal	3,500	Nottinghamshire
Newark HWRC	Municipal	9,000	Nottinghamshire
Beeston HWRC	Municipal	9,000	Nottinghamshire
Calverton Colliery HWRC	Municipal	10,000	Nottinghamshire
Langar HWRC	Municipal	3,500	Nottinghamshire
Lenton HWRC	Municipal	8,000	Nottinghamshire
West Bridgford HWRC	Municipal	9,000	Nottinghamshire
Giltbrook HWRC	Municipal	10,000	Nottinghamshire
Retford HWRC	Municipal	6,000	Nottinghamshire
Hucknall HWRC	Municipal	7,000	Nottinghamshire
Kirkby HWRC	Municipal	6,000	Nottinghamshire
Worksop HWRC	Municipal	9,000	Nottinghamshire
Warsop HWRC	Municipal	8,000	Nottinghamshire
Nottinghamshire Total HWRC		109,000	
Newark and Sherwood Total HWRC		11,000	

Notes: Data correct at December 2015

5.3.20 Table 46 on the following page provides a summary of the waste management capacity available within the Nottinghamshire and Mansfield as of December 2015.



Table 46 - Available Waste Management Capacity in Mansfield and Notts

Waste Management Method	Available Capacity (m <sup>3</sup> )	
	Nottinghamshire	Mansfield
Landfill (non-hazardous)	990,000	-
Landfill (inert)	3,230,000	1,880,000
Landfill (inert - restricted user)	450,000	-
Landfill (ash disposal)	2,530,000	-
Composting	82,900	-
Anaerobic Digestion	221,200	-
MRFs	664,000	80,000
Transfer stations	394,000	73,700
Recycling – glass	30,000	-
Recycling – wood	76,000	-
Recycling - aggregates	1,675,000	20,000
Recycling – metal	95,000	8,000
HWRCs	109,500	11,000

Notes: Data correct at December 2015

## 5.4 UTILITIES

### Water

5.4.1 Severn Trent Water have a statutory obligation to provide water for domestic purposes and to meet growth in the District. They have produced a 25-year plan (Water Resource Management Plan) to maintain a secure balance between water supply and demand.

5.4.2 For providing water to specific developments, the requirements are more localised and subject to network modelling. It is usual that the infrastructure is identified on a site-by-site basis. Any constraints identified will need to be overcome before development can proceed.

5.4.3 Severn Trent have commented that their Water Resources Management Plan has not identified any issues with accommodating planned development and whilst localised improvements may be required to the distribution system, Severn Trent Water do not envisage any water supply issues.

### Gas

5.4.4 There are robust gas networks within the proximity of all the development settlements. The capacity of gas infrastructure is therefore not considered to be a barrier to growth.



- 5.4.5 Cadent Gas provide a standard comment response to all Local Authority Plan requests. This is due to the changing nature of the gas network whereby capacity available today may potentially not be there tomorrow, and due to the long-term nature of this development plan, the information that would be provided would be out of date by the time development details were finalised.
- 5.4.6 Cadent Gas have commented that over the long-term plan of the proposed developments, **there should be no 'show stoppers', as anything can be managed and completed with the right timing.** The accumulative effect of many loads may well overload the upstream systems and reinforcements would then be necessary.
- 5.4.7 If a new connection to the Cadent Gas network, triggers a requirement to reinforce the Cadent Gas network, an economic test is carried out to calculate whether a customer contribution is required and to what level. This is undertaken on a case-by-case basis at the planning application stage and depends on the available network capacity and the additional load placed on the network by the development. However, contributions typically only apply to larger developments (e.g. more than 100 dwellings, as an approximate guide).

#### Electricity

- 5.4.8 There are 9 primary sub-stations which currently supply the Mansfield area. WPD have identified which of these primary sub-stations would ideally supply each of the HELAA sites and commented on their ability to provide the required capacity. See Appendix D for details.
- 5.4.9 WPD have confirmed that Acreage Lane, Annesley, and Warsop have spare capacity to deal with the proposed growth.
- 5.4.10 Capacity currently exists to cover all the domestic load elements for the proposed sites as per the delivery plan set out by Mansfield District Council.
- 5.4.11 The employment aspects of the loading would put the following primary substations over capacity: Crown Farm, Lime Tree Place, Mansfield, Rufford, Shirebrook and Skegby Lane. Mansfield bulk supply point would also be stretched by the proposed growth.
- 5.4.12 WPD have suggested that as capacity is taken up at Lime Tree Place, proposed growth would trigger the requirements for a new primary substation.
- 5.4.13 At Mansfield, growth would likely be accommodated for by making connections to other local primaries with capacity.



- 5.4.14 At Crown Farm and Skegby Lane, growth would trigger a transformer change and reinforcement to the 33kV network. At Shirebrook, growth would trigger the need for a second transformer to be installed.
- 5.4.15 The timing of how employment growth fits into the overall growth would determine what would trigger the above works on the primary substations. Connections would therefore be more expensive and/or timebound until the reinforcement has taken place. This could be in excess of two years after application for a large transformer upgrade or provision of a new primary substation.
- 5.4.16 WPD are obliged to publish a Long-Term Development Statement. This statement contains information on all strategic assets, capacity and forecast demands and is a good indicator of whether works are planned that will benefit developers. Forecast demands do not actively capture new development projects allocated in local plans or local development frameworks unless developers have already agreed new network connections with WPD thus reserving capacity. WPD has an obligation to connect new customers to the network by constructing new assets and upgrading the existing network as required to provide customers with the capacity they need. However, WPD will not forward fund network reinforcement attributable to new development until a formal application has been received and approved. This application is made by the developer, typically at the development planning stage.

#### Telecoms

- 5.4.17 There are Openreach networks within the proximity of all the development settlements. The capacity of the Openreach infrastructure is therefore not considered to be a barrier to growth.
- 5.4.18 Openreach are rolling out a programme to bring fibre to each of their cabinets, FTTC for superfast broadband. All the exchanges in the District are FTTC enabled. Openreach will deploy Fibre to the Premises, FTTP, free of charge, into all new housing developments of 30 or more homes, registered after November 2016.

#### Renewables

- 5.4.19 In the District, the key local renewable and low carbon energy opportunities relate to potential for micro-generation including heat pumps, solar thermal and solar PV on new buildings.



- 5.4.20 Connection to the local electricity grid may pose problems as the electricity grid is currently near capacity for generation connections and would require reinforcement for this to happen. Timescales and cost may make this a prohibitive option for some sites.
- 5.4.21 Alternate connections are being offered by WPD which can be helpful for projects which are prepared to have their export capacity temporarily reduced to allow connection ahead of any required reinforcement to the network.
- 5.4.22 Whilst potential for CHP technology arises mainly in areas where there is existing and potential heat demand densities such as within the Mansfield central area, there are some established industrial areas on the west side of Mansfield which may provide potential growth areas for future District heating networks.
- 5.4.23 In terms of wind energy, the District has some locations with good average wind speeds which may provide some opportunities for small scale wind turbines in appropriate locations. The potential for large scale commercial wind energy development is limited by existing development and environmental constraints.

#### Wastewater

- 5.4.24 Severn Trent have provided a summary of the potential impact of the development proposals on their existing sewerage infrastructure.
- 5.4.25 A R.A.G. system has been used to identify the potential impact for each development. There are no proposed development sites which Severn Trent have flagged as having a high risk. Most are low risk sites with a few identified with a higher risk to cause sewer flooding. See RAG sheet in Appendix E.
- 5.4.26 The Mansfield District Council Water Cycle Strategy – Scoping Study Report dated June 2009 notes that the Mansfield Bath Lane, Church Warsop and Rainworth STWs have been identified as being fully, or nearly fully, committed to meeting existing developments and such will be under pressure if new developments were to occur.
- 5.4.27 No significant improvement works are identified as being required by STW. Local reinforcement will be required to service some of the sites. These works will be identified fully on application by the developer.
- 5.4.28 Other development areas will be assessed on application and once flow rates and connection points are confirmed.



5.4.29 For most new developments, it is assumed that surface water is managed using sustainable drainage systems (SuDS).

5.4.30 Where detailed modelling indicates capacity improvements are required, such works will be phased to align with development occupancy with capacity improvement works funded by Severn Trent Water. However, whilst Severn Trent Water have a duty to provide additional capacity to accommodate planned development, Severn Trent Water will not commit investment until there is a certainty that a development is due to commence.

### Summary

5.4.31 A summary of the key issues relating to utilities infrastructure is shown in Table 47 overleaf.

Table 47 – Future Conditions Summary - Utilities

Mansfield Urban Area					
Water	Wastewater	Gas	Electricity	Telecommunications	Renewables
STW have raised no concerns relating to water supply or capacity to deal with future growth in the area.	Bath Lane STW, Rainworth STW may require some upgrade to accommodate full plan growth.  Local improvements to the sewer network may be required to accommodate some of the larger sites.	No capacity issues are expected to deal with the proposed growth in the area.	Mansfield, Crown Farm, Lime Tree Place and Skegby Lane primary substations have limited spare capacity and significant development in the area would likely trigger reinforcement works to be required	No capacity issues are expected to deal with the proposed growth in the area.	Key renewable and low carbon energy opportunities are likely to be for micro generation including heat pumps, solar thermal, and solar PV on new buildings.  Reinforcements to the electricity network would be required for electricity generation connections.
Market Warsop Urban Area and the Villages					
Water & Sewerage	Wastewater	Gas	Electricity	Telecommunications	Renewables
STW have raised no concerns relating to water supply or capacity to deal with future growth in the area.	Broomhall Lane, Church Warsop, STW may require some upgrade to accommodate full plan growth.  Local improvements	No capacity issues are expected to deal with the proposed growth in the area.	Significant development around Shirebrook primary would trigger reinforcement works to be required.	No capacity issues are expected to deal with the proposed growth in the area.	Key renewable and low carbon energy opportunities are likely to be for micro generation including heat pumps, solar thermal, and solar PV on new buildings.



	to the sewer network may be required to accommodate some of the larger sites.				Reinforcements would be required to the electricity network for electricity generation connections.
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## 5.5 FLOOD RISK

5.5.1 As noted in the section covering baseline conditions, the risk from fluvial flooding is generally low, with some specific localised areas at risk from river and surface water flooding. However, to logically consider the future conditions that will arise on implementation of the development plan, assuming all such developments are constructed in accordance with the requirements of the NPPF and relevant PPG, a catchment based approach has been adopted.

5.5.2 The Mansfield District Council administrative area lies on the headwaters of the River Meden in the north and the River Maun in the south. Both rivers are part of the Sherwood sub-catchment of the River Trent Catchment which drains into the River Humber. The Meden and **Maun are the only 'main rivers' in the** District. A small part of the southern fringe of the administrative area drains into Rainworth Water which is a tributary of the River Maun. In view of the above, the following three local sub catchments are considered: (i) The River Meden (in the north of the District); (ii) the River Maun (in the centre of the District) and (iii) Rainworth Water in the south of the District.

5.5.3 The NPPF and NPPG requires that new development is implemented with mitigating measures such that the new development either does not exacerbate existing flood risks or, where possible reduces downstream flood risk. As a result, implementation of the development plan should not result in an increase in the downstream flood risks on the Meden, Maun, Rainworth Water and any tributary watercourses. However, unless careful development control is successfully applied, proposed downstream development could be adversely impacted by upstream urbanisation.

5.5.4 The District Council has commissioned a Mansfield Central Area Flood Risk Review, which is still being finalised. This is being prepared in consultation with the Environment Agency (EA) and seeks to accurately identify and refine the flood risks to three key regeneration sites in the centre of Mansfield. The supporting report identifies and promotes the need for a holistic approach to managing flood risk across the town centre to ensure that flood risk to the sites, and third parties, will not be increased due to planned development.

5.5.5 In the River Meden catchment the following development references are adjacent to the river (or its tributaries) and the associated flood plains: 35 (Stonebridge Lane/Sookholme Lane), 36 (Sookholme Lane/Sookholme Drive) 87 (Welbeck Farm, Warsop) and 153 (The Royal Estate,



Warsop)<sup>24</sup>. It will be important that these developments take due account of the flood risk posed by the river when establishing masterplans and the increasing flood risk due to climate change over the lifetime of the development (100 years for residential<sup>25</sup>) is considered using the allowances published by the EA. Site specific flood risk assessments will need to take into account the EA's **climate change allowances** to establish the extent and level of the 1 in 100 year flood on the River Meden with 20%, 30% and 50% climate change allowances applied.

5.5.6 In the River Maun catchment, the following development references are adjacent to the river (or its tributaries) and the associated flood plains: 19 (Oakham); 31 (Land at New Mill Lane, Mansfield); 53 (Land between Old Mill Lane and New Mill Lane, Mansfield); 55 (Tall Trees Mobile Homes Old Mill Lane); 86 (Land at the corner of Quarry Lane, Mansfield) and 101 (Clipstone Drive)<sup>26</sup>. It will also be important that these developments take due account of the flood risk posed by the river when establishing masterplans.

5.5.7 The EA has confirmed that it is planning to undertake updated modelling for both the River Meden and River Maun at some point during the next two years, and so developers may only be required to undertake detailed modelling as part of site-specific flood risk assessments where updated EA modelling does not yet exist.

5.5.8 Regeneration areas within the Mansfield central area are at risk of flooding from the River Maun and surface water flooding. It is recognised that flooding could be avoided by addressing avoidance and mitigation measures through the design and layout of development and by delivering environmental enhancements of the River Maun.

5.5.9 Flood risks from all sources should be controlled by ensuring compliance with the NPPF and NPPG which includes the need for new development to utilise SuDS where possible and comply with the Defra Non-Statutory Technical Standards for Sustainable Drainage Systems<sup>27</sup>, unless it is not reasonably practical to do so.

5.5.10 The Environment Agency (EA) published guidance<sup>28</sup> on climate change allowances should be considered when determining individual planning applications. Correct application of these allowances in individual planning decisions and their supporting conditions should ensure that

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<sup>24</sup> Sites 87 and 153 already have planning permission and site 153 is substantially developed

<sup>25</sup> Residential development should be considered for a minimum of 100 years, unless there is specific justification for considering a shorter period (<https://www.gov.uk/guidance/flood-risk-and-coastal-change>)

<sup>26</sup> Sites 19 and 101 have planning permission but development has yet to commence. Site 86 has planning permission and development has commenced.

<sup>27</sup> <https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>

<sup>28</sup> <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>



local sources of flood risk and further downstream exacerbations of fluvial flood risk do not occur.

5.5.11 In conclusion, the proposed development plan can be implemented without placing new development at an unacceptable risk from flooding and without exacerbation of downstream flood risk provided that appropriate measures are put in place (e.g. the recommendations from the Mansfield Central Area Flood Risk Review). The overall effect could be to achieve a marginal reduction in both fluvial flood risk and local sources of flood risk.

## 5.6 TRANSPORT

5.6.1 Transport modelling work undertaken in support of the Local Plan Preferred Options Consultation published in August 2017 identified the junctions forecast to be at, or over capacity by the end of the Plan period (2033) without any Local Plan development in place (i.e. the 2033 Reference Case, which includes development with extant planning permission). These junctions are summarised as follows:

- Chesterfield Road / Debdale Lane
- A60 Nottingham Road / Berry Hill Lane
- Carter Lane / Southwell Road / Windsor Road
- A617 MARR / A6191 Southwell Road
- A60 Leeming Lane / Peafield Lane
- A60 Leeming Lane / A6075 Warsop Road
- Kings Mill Road / Beck Lane / B6014 Skegby Lane / Mansfield Road
- A6191 Ratcliffe Gate / A60 St. Peters Way
- A6117 Old Mill Lane / B6030 Clipstone Road West
- A38 Sutton Road / B6014 Skegby Lane / Sheepbridge Lane
- A60 / Old Mill Lane / Butt Lane
- A6191 Adams Way / Oak Tree Lane
- A60 / New Mill Lane
- A60 Church Street/Wood Street

5.6.2 The Local Plan Preferred Options Consultation Site Selection Technical Paper (August 2017) noted that:

*"These junctions identified as operating over capacity or near capacity in the Reference Case may require improvements for them to operate without excessive queueing and*



*delays. Some junctions require modest improvements to the operation of the signals whilst others are likely to require a more complete solution to reduce queuing and delays.”*

5.6.3 Figures extracted from the Local Plan Preferred Options Consultation Site Selection Technical Paper (August 2016) have been reproduced on the following pages. These depict the forecast highway network conditions in the 2033 Reference Case (i.e. at the end of the Local Plan period without any Local Plan development in place).

5.6.4 The figures depict the Volume / Capacity (V/C) ratio of roads and junctions which is a measure of the traffic at the junction in relation to its ability to accommodate such flow. The V/C ratio is calculated by summing all the approach flows into a junction and dividing by the total available capacity on all approaches to the junction. A V/C value above 0.85 (or 85%) is likely to produce queues on some occasions during the peak hours. Above a V/C value of 1.0 (or 100%), a junction is more than likely to be at capacity (with resulting larger increases in queue length) during the peak hours.

5.6.5 In the figures on the following pages the V/C values are grouped in coloured bands; junctions that are modelled to have over 50% V/C are shown in yellow, junctions that are over 75% loading are plotted orange and junctions that are over 85% V/C loading are red or dark red.

Image 36 – 2033 Reference Case AM Peak Hour – Volume /Capacity

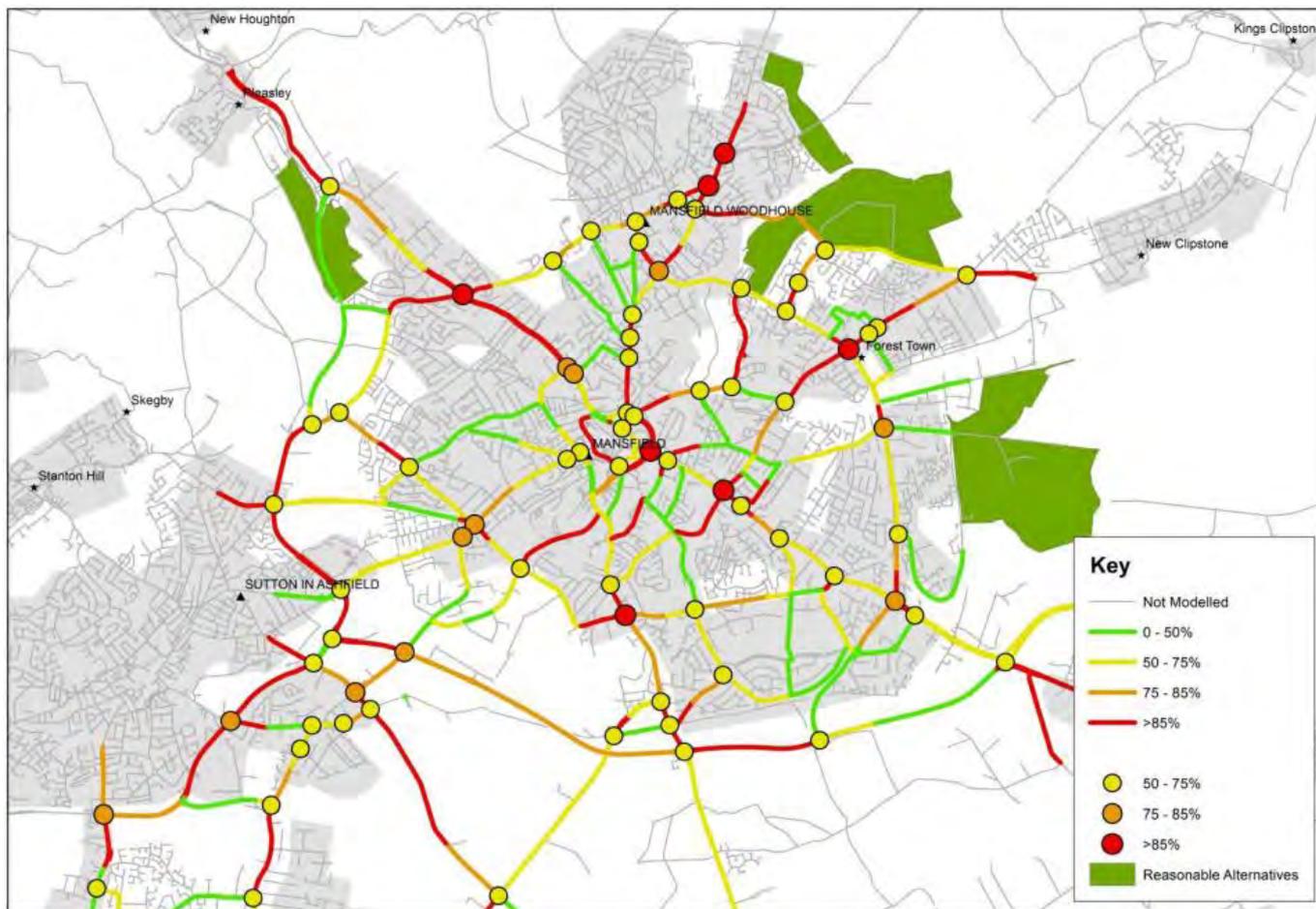
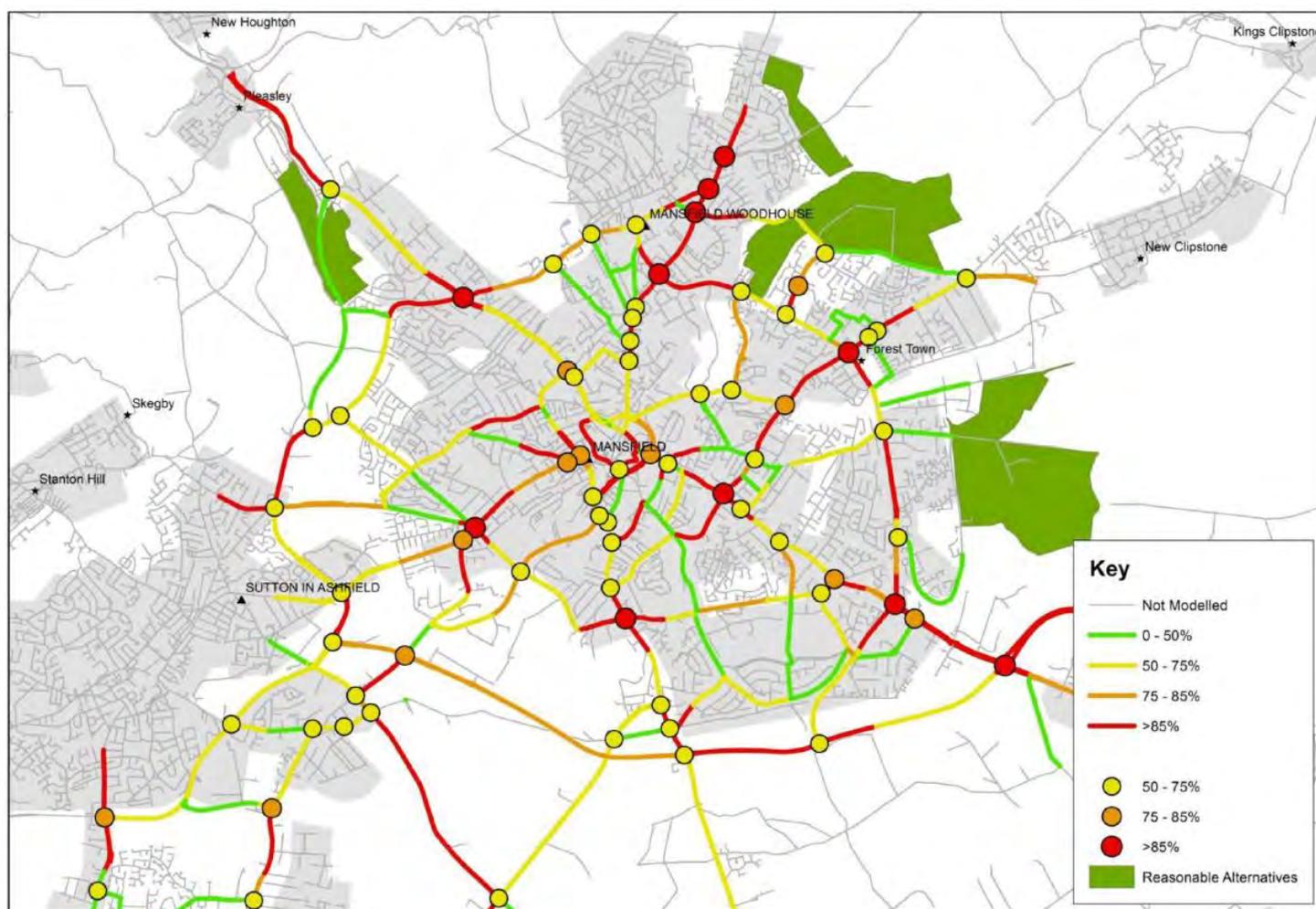


Image 37 – 2033 Reference Case PM Peak Hour – Volume /Capacity



5.6.6 In addition to the above, Bolsover District Council in their response to the January 2016 consultation draft Mansfield Local Plan, identified M1 Junction 28 (M1J28) as a key congestion hotspot within Bolsover District. Whilst this junction is outside of Mansfield and is the responsibility of Highways England, Bolsover District Council considers this to be a cross-boundary strategic issue of national significance. Highways England has accepted previous evidence prepared in 2015 relating to future growth and M1J28. Nevertheless, Bolsover District Council would like an update on the transport evidence and the view of Highways England to reflect the revised growth scenario.

5.6.7 In response to the Local Plan Preferred Option consultation Bolsover District Council commented that it will be important to ensure that road infrastructure in the wider area is not



adversely affected by development at Pleasley Hill and noted that the site would need to come forwards through a comprehensive master planning approach which should involve input from both the Nottinghamshire and Derbyshire County highway authorities.

5.6.8 In response to the same consultation Derbyshire County Council requested that they, as an adjacent highway authority, should be consulted about the scope of any transport assessment work supporting future development of the Pleasley Hill site. Whilst Highways England also considered that the extent of any traffic impacts from future development at Pleasley Hill should also be assessed at M1 J29 to the west as part of any Transport Assessment work.

### Cycling, Walking and Public Transport

5.6.9 The increase in walking, cycling and public transport trips due to the preferred growth scenario has been estimated using trip rates for residential, convenience retail, leisure, office and industrial land uses. Details of the calculation can be found in Appendix G.

5.6.10 Using this methodology, the forecast increase in trips by walking, cycling and public transport due to the future growth scenario is as summarised in Table 48 below.

Table 48 – Increase in Weekday Peak Hour Walking, Cycling and Public Transport Trips

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Cyclists	115	195	310	194	157	351
Pedestrians	976	1,926	2,902	1,465	1,198	2,663
Public Transport Users	479	113	592	213	420	634

5.6.11 As demonstrated in Table 48 a larger increase in walking is forecast than the increase in public transport use and cycling. The impact of these increases is as follows:

- Bus – Across the District it is anticipated that forecast demands would be largely accommodated by existing services. However, developers may be required to provide S106 funding to improve existing bus services, for example extending existing bus routes to serve new developments and/or funding additional buses to increase service frequencies to help mitigate the direct transport impacts of developments. Details will need to be agreed with NCC as part of the planning application process.
- Rail - The anticipated increased demand for rail travel should be accommodated on existing services and would be insufficient to itself justify any improvements to rail



infrastructure or services. However, there may be additional demand for car parking at train stations which may require additional car parking capacity to be provided.

- **Cycling** – Developers will be required to deliver new/improved cycle infrastructure to provide improved cycle access to employment, schools and local/district centres and to provide safe connections to the existing cycle network, including the provision of new crossing facilities, capacity enhancements and other appropriate cycle infrastructure, where necessary. Enhancements should also be prioritised to the strategic green infrastructure network, including providing links where gaps are present and improving the quality and accessibility to existing routes. Where appropriate, development should provide adequate facilities for cyclists, such as secure and covered cycle parking, changing facilities and internal access roads which give priority to cycles and pedestrians wherever possible. New infrastructure connections from developments onto the existing cycle network will be required, including new controlled crossings at locations where major roads create barriers for cyclists and pedestrians. It is expected that developers will fund the provision of new/improved cycle infrastructure (via S106 Agreements) to help mitigate the direct transport impacts of developments. Details will need to be determined as part of the planning application process.
- **Walking** - Overall, new development should be designed to provide new pedestrian friendly routes and new links to existing routes, especially to key nearby destinations (e.g. employment, schools, open space and local centres) and within new green corridors. Developer-funded enhancements would be provided on a site-by-site basis, as appropriate. Facilities should be included to connect developments to existing footways and where appropriate provide additional crossing facilities (including on the existing network to enable pedestrian access between the new development and local jobs/services). Enhancements should also be prioritised to the strategic green infrastructure network, including providing links where gaps are present and improving the quality and accessibility to existing routes. Consideration of gradients for wheelchair users and pushchair users should be made. Personal security and street lighting is also of importance for pedestrian trips, as well as ensuring that footways are wide enough to accommodate the increased levels of usage, particularly at bus stops. At sites where there may be high levels of visitors, direction signing to bus and train interchanges may be appropriate to encourage walking to these locations ahead of the use of private car.



Forecast walking trips in rural settlements are low and would be accommodated on existing infrastructure with suitable developer funded enhancements, as appropriate.



## 5.7 GREEN INFRASTRUCTURE

### Assessment Methodology

- 5.7.1 To identify the green infrastructure required to facilitate growth within the District to the end of the plan period, the existing green infrastructure provision and proposed housing growth for the District has been measured against the Mansfield Green Space Standards, the distance standard provided in the MDC Allotment Strategy and the quantity standard suggested in National Society of Allotment and Leisure Gardeners Ltd (NSALG) guidance, as set out within the Baseline Conditions section of this report. For consistency with MDC green infrastructure evidence base, the types of open and green space considered are those defined in the MDC Community Open Space Assessment, i.e. parks and recreation grounds, amenity space, natural and semi-natural green space and provision for children and teenagers, including play areas. In addition, allotment sites are also considered so that any requirements for future provision due to the planned growth within the District can be identified. Consultation has also been carried out with key stakeholders<sup>29</sup> including neighbouring local authorities, infrastructure providers and partnership groups to assist in the assessment of green infrastructure requirements in the District, specifically within the 13 areas of strategic green infrastructure.
- 5.7.2 Using the straight-line distance equivalents included within the Baseline Conditions of this report appropriately sized buffers have been created around the areas of open and green space types to assess compliance of green space against the Mansfield District Green Space Standard. **It should be noted that children’s** play space provision buffers are based on a 240m buffer from the park containing play provision rather than the play provision itself for consistency with the approach used in the MDC Community Open Space Assessment.
- 5.7.3 To determine requirements for allotments during the plan period the distance standard provided in the MDC Allotment Strategy and the quantity standard suggested in National Society of Allotment and Leisure Gardeners Ltd (NSALG) guidance have been used to assess future allotment provision in the District, as included within Table 49.

Table 49 –Provision Standards for Allotments

Standard	Maximum Expected Walking Time	Straight Line Distance Equivalent ('as-the-crow-flies')
Distance provision	15 mins	600 metres

<sup>29</sup> See Appendix F for details of stakeholder feedback



Standard	Plot size	Quantity
Quantity provision	250sqm	20 plots per 1,000 households

5.7.4 It should be noted that the provision for outdoor sport/playing pitches is not assessed within this IDP study and is considered separately within the Mansfield District Council Final Playing Pitch Strategy Assessment Report (January 2016)<sup>30</sup>.

#### Assessment Assumptions and Limitations

5.7.5 The green infrastructure assessment has involved using green infrastructure datasets held by MDC for the range of open space types referred to within the assessment methodology above for analysis within Geographic Information System (GIS) software.

5.7.6 For assessment of compliance of green infrastructure provision with the Mansfield District Green Space Standard and in the case of allotments, compliance with the provision standards set out in Table 49 above, the datasets used for analysis within Geographic Information System (GIS) software are detailed below in Table 50.

Table 50 – Datasets used for Analysis of Open and Green Space Provision

Type of Green Space	Shapefile and Dataset Included
Any type of formal or informal recreational green space	Parks and Green Space shapefile including, Parks and Recreation Ground, Amenity Green Space and Natural and Semi-Natural Green Space datasets
District park / recreation ground	Parks and Recreation Ground dataset from the Parks and Green Space shapefile
Natural green space	Natural and Semi-Natural Green Space dataset from the Parks and Green Space shapefile
Teenage play space	Parks and Green Space shapefile where a site within the Teenage Area dataset falls within the overall site.
<b>Children’s play space</b>	Parks and Green Space shapefile where a <b>site within the Children’s Play Area dataset</b> falls within the overall site.
Allotments	Allotments shapefile

<sup>30</sup> <http://www.mansfield.gov.uk/CHttpHandler.ashx?id=9629&p=0>



## Assessment

- 5.7.7 The findings of the assessment of green infrastructure provision in relation to open space and allotments, for growth within the District to the end of the Local Plan period (as measured against compliance with the Mansfield District Green Space Standard and compliance with the distance provision standard for allotments) are reported within the Green Infrastructure matrix (Mansfield District Council Local Plan housing growth – assessment results for Green Infrastructure provision (using distance standards) in Appendix F In addition, the matrix also reports which growth sites are situated in or within 400m of an area of strategic green infrastructure, to assist with identifying existing provision and potential enhancement needs. A further matrix (Mansfield District Council Local Plan housing growth – assessment results for allotment provision (using quantity standard) is provided in Appendix F which reports on the findings of the baseline and future allotment provision within the District to the end of the Local Plan period, as measured against compliance with the quantity provision standard for allotments, i.e. 20 plots per 1,000 households.
- 5.7.8 Within the Green Infrastructure matrix, assessment results are reported against each of the proposed housing development/growth sites using the development references illustrated and listed within Figure 11, Proposed Development Sites. For assessment of allotment provision using the quantity standard, results are reported for each of the wards within the District. A colour system is used within each matrix to indicate the following:
- **Green** – green infrastructure provision meets the standard required for that green infrastructure feature; the site is situated in or within 400m of a strategic Green Infrastructure area; and
  - **Amber** – the provision of this type of green infrastructure does not meet the standard required; the site is not situated in or within 400m of a strategic Green Infrastructure area.
- 5.7.9 In general, compliance with the standards show that **provision of the 'any type of formal or informal recreational green space', is largely sufficient for the proposed growth in the District** during the plan period with a small number of growth sites identified as having insufficient provision, i.e. situated more than 240m from any type of formal or informal recreational green space. Also of note are a number of growth sites where only a small proportion of the site is situated within 240m of **'any type of formal or informal recreational green space'**. **These sites**



are, Lindhurst (ref. 90), Penniment Farm (ref. 81), Sherwood Close (ref. 24), Former Mansfield Hosiery Mill Car Park & Electricity Board workshops & social club (ref. 75), Land of Netherfield Lane (ref. 51), Sandy Lane (ref. 23), Land south of Clipstone Road East (ref. 101), Land at Moorfield Farm (ref. 112) and Former Mansfield General Hospital, (ref. 2). Sites situated more than 240m from any type of formal or informal recreational green space are: Land to the rear of 183 Clipstone Road West (ref. 97) and the nearby Clipstone Road East/Crown Farm Way (ref. 13) on the eastern edge of Mansfield; Park Hall Farm (refs. 103 and 104) on the northern edge of Mansfield; Land off Birch Street (ref. 152) at Warsop Carrs on the northern edge of Church Warsop; Land at the rear of Cherry Paddocks (ref. 100) on the eastern edge of Market Warsop; and Land astride Victoria Street (ref. 4) within central Mansfield. It should be noted however that although the above sites are identified as being situated more than 240m from (or only a small proportion of the site is located within 240m of) any type of formal or informal recreational green space, all have natural green space provided within 400m of the growth site and are situated within 400m of a strategic area of Green Infrastructure, except for growth sites, Land at the rear of Cherry Paddocks and Penniment Farm which are situated more than 400m from an area of strategic Green Infrastructure.

5.7.10 The assessment of provision of district parks/recreation grounds within 600m of the growth sites shows insufficient provision for a larger number of sites in the District with the most notable shortfalls identified within the western and south-western part of Mansfield including within the wards of Brick Kiln and Grange Farm, respectively where access to open space is generally restricted to small amenity spaces (less than 0.4 hectares).

5.7.11 The assessment identifies that there will be a shortfall in provision of play space for many of the proposed growth sites in the District during the plan period. This includes a shortfall in **provision of children’s play space within the town of Mansfield including at**, but not limited to: Grange Farm ward within the western part of the town, and at Maun Valley ward on the **north-eastern side of the town, along with a shortfall of both teenage play space and children’s play space** at the northern edge of the town at Park Hall Farm and at Brick Kiln ward **on the town’s** western edge.

5.7.12 The assessment has identified a shortfall in provision of allotment sites (as assessed using the allotment distance standard) for several growth sites largely within Mansfield including, but not limited to: within the western side of the town in Brick Kiln ward; within the eastern side of the town in Newlands ward; at the northern edge of the town at the Park Hall Farm growth



site; and at Ransom Wood and Berry Hill wards within the south-eastern part of the town. Beyond Mansfield, shortfalls in allotment provision (as assessed using the allotment distance standard) are shown for the Welbeck Farm growth site on the southern edge of Meden Vale and for the growth site at land off Mansfield Road, Spion Kop to the south of Market Warsop.

5.7.13 In addition to the above assessment of allotment provision using the distance standard, assessment of allotment provision using the quantity standard has been carried out and identifies sufficient allotment provision within the whole District, during the Local Plan period, with the total allotment provision (combining council and privately-run allotments) standing at 55 plots per 1,000 households (at 2034). This provision is more than twice the number of plots required under the quantity standard of 20 plots per 1,000 households suggested in the NSALG guidance. Further analysis of the future allotment provision as assessed using the quantity standard identifies several wards providing the greatest number of allotment plots during the Local Plan period including: Broomhill, Ladybrook, and Bull Farm and Pleasley Hill wards in the western part of the District; Market Warsop in the north; Peafields in Mansfield Woodhouse; and Racecourse in the south-eastern extent of the greater Mansfield urban area. Several wards are identified as having the lowest allotment provision including, wards with growth sites present but with no allotment provision to support the growth, e.g. Berry Hill in the southern extent of the District; Brick Kiln and Grange Farm in the south-western extent of the District; Maun Valley on the north-eastern edge of the greater Mansfield urban area; and Newlands, Oak Tree and Ransom Wood on the south-eastern extent of the District.

5.7.14 It should be noted that the increase in households associated with the housing growth during the Local Plan period will not result in a change in allotment provision within the District, i.e. wards where existing allotment provision currently meets the quantity standard of 20 plots per household will continue to meet the quantity standard and provide sufficient allotments plot numbers under the planned growth during the Local Plan period. Further to the above, analysis of the combined results for assessment against the distance and quantity standards for allotment provision identifies a number of wards within the District which provide the greatest number of allotment plots as well as providing plots within 600m of a growth site during the Local Plan period including (but not limited to): Broomhill, Bull Farm and Pleasley Hill and Ladybrook in the south-western part of the District; and Netherfield and Warsop Carrs in the northern extent of the District. Analysis of assessment results also identifies a number of wards containing growth sites which do not fall within 600m of an allotment site and which fail



to meet the quantity standard of 20 plots per 1,000 household and therefore have a shortfall in allotment provision during the Local Plan period including (but not limited to): Berry Hill in the southern extent of the District; Brick Kiln and Grange Farm in the District's south-western extent; and Newlands, Oak Tree and Ransom Wood on the south-eastern extent of the District.

5.7.15 Analysis of growth sites which fall within or beyond 400m of the strategic Green Infrastructure areas identifies that most growth sites are in or fall within 400m of a strategic area of Green Infrastructure, except for several **sites including those on Mansfield's western edge** and the western side of the town and a number of smaller growth sites situated towards the north of the District including at Spion Kop and Market Warsop.

5.7.16 The assessment work carried out in relation to the provision of Green Infrastructure within this IDP and reported within Appendix F should be read alongside the Mansfield District Community Open Space Assessment which provides a more detailed assessment of the open space and proposed housing sites for the Local Plan period along with suggested actions for improving access to green and open space. In addition, specific green infrastructure aspirations for growth sites yet to receive planning permission are provided by Mansfield District Council and included within Appendix F and should be taken into consideration by developers during development of proposals for the appropriate growth site, along with the other requirements for green infrastructure set out within this report. It is also likely that larger development sites will need to provide on-site open space as part of development proposals, including those that are identified as having insufficient provision of any type of formal or informal recreational green space or where a small proportion of the growth site falls within any type of formal or informal recreational green space, as identified above.

5.7.17 Where shortfalls in provision have been identified for growth sites situated on or close to the edge of the District, e.g. (but not limited to) district park/recreation ground, teenage play space, children's play space and allotments within Brick Kiln ward on the western edge of the District, any type of formal or informal recreational green space, amenity space, teenage and children's play space at the Park Hall Farm growth site close to the western edge of the District, any type of formal or informal recreational green space at the Penniment growth site at the south western edge of the District, and amenity space, district park/recreation ground, teenage play space and children's play space at sites by Church Warsop close to the northern



edge of the District, further analysis should be carried out to identify whether shortfalls in provision could be provided within neighbouring authority areas.

5.7.18 Consideration of provision of outdoor sport/playing pitches is considered within the Mansfield District Council Final Playing Pitch Strategy Assessment Report.

Stakeholder consultation and feedback

5.7.19 As part of the assessment of green infrastructure requirements to provide for the proposed growth during the Local Plan period, consultation was carried out with key stakeholders including neighbouring local authorities, infrastructure providers and partnership groups. The consultation was carried out to understand any existing and future green infrastructure needs, aspirations or proposals identified by stakeholders, along with any identified funding commitments, to help inform this IDP study and ongoing assessment of green infrastructure provision within the Mansfield District.

5.7.20 Stakeholders provided general comments regarding existing and future green infrastructure of relevance to the Mansfield District, along with comments relating to the 13 areas of strategic **GI including areas adjoining the District’s strategic GI areas. Comments and information** provided by stakeholders are included in Appendix F. These have been incorporated into the Mansfield District Council Strategic Green Infrastructure Technical Paper (2018) which provides recommended actions for protecting and enhancing GI, including the creation of new linkages in the strategic GI network.

Assessment Summary

5.7.21 Table 37 below summarises the future provision of community open space, playing pitch and allotment resource for the growth sites within the District during the Local Plan period.

Table 37 – Future Conditions Summary – Green Infrastructure

Strategic GI Areas	Community Open Space	Playing Pitches	Allotments
Most growth sites are located in, or fall within 400m (straight line) of a strategic area of Green Infrastructure, with the exception of a number of sites including those on <b>Mansfield’s western edge</b> and the western side of the town and a number	Community open space within the District includes: parks (District parks and local parks), amenity space, natural and semi-natural green space and provision for children and teenagers, as	Provision of outdoor sport/playing pitches is informed by the Mansfield District Council Final Playing Pitch Strategy Assessment Report, January 2016. No additional assessment of provision has been	Based on assessment of provision against the quantity standard of 20 plots per 1,000 households there is sufficient allotment provision within the whole District, during the Local Plan period, with the total allotment



<p>of smaller growth sites situated towards the north of the District including at Spion Kop and Market Warsop.</p>	<p>illustrated on Figure 10.</p> <p>In general, the assessment identifies that there is sufficient provision of any type of formal or informal recreational green space and natural green space to provide for growth within the District with some shortfalls in provision identified in localised areas and for major development sites. Shortfalls in the provision of District parks/recreation grounds as well as <b>teenage and children's</b> play space however have been identified, largely for growth sites within Mansfield including, for example but not limited to the western and south-western side of the Mansfield urban area at Brick Kiln and Grange Farm wards respectively.</p>	<p>carried out as part of this IDP study.</p> <p>Overall, the Mansfield District Council Final Playing Pitch Strategy Assessment Report, January 2016 identifies no significant shortfalls of outdoor sport/playing pitches within the District however the report identifies an overall need to improve quality of playing pitch provision and its facilities (which can impact on quantity) and a need to improve community access to school pitches. New provision should generally be prioritised in and around existing outdoor sports pitches. There is also need to increase the provision of artificial grass pitches for multi-sport use.</p>	<p>provision (combining council and privately-run allotments) standing at 55 plots per 1,000 households (at 2034). Analysis of allotment provision at ward and growth site level identifies several wards providing the greatest number of allotment plots as well as providing plots within 600m of a growth site during the Local Plan period including wards within the western and northern part of the District. Analysis of assessment results at ward and growth site level also identifies several wards within the District (generally <b>within the District's</b> south-western, southern and south-eastern extent) which do not fall within 600m of an allotment site and fail to meet the quantity standard of 20 plots per 1,000 household and therefore have a shortfall in allotment provision during the Local Plan.</p>
<p>Stakeholder Comment</p>			
<p>Consultation has been carried out with key stakeholders to assist in the assessment of green infrastructure requirements in the District and inform proposals for the 13 areas of strategic green infrastructure. Stakeholder comments are provided in Appendix F and set out existing and future green infrastructure needs along with aspirations or proposals of relevance to the Mansfield District, as well as any identified funding commitments.</p>			



## 6 DELIVERY PLAN

### 6.1 INTRODUCTION

6.1.1 This section of the report summarises the infrastructure required to support the planned Local Plan development and identifies costs, delivery responsibilities, delivery priorities and potential funding opportunities for each category of infrastructure. Infrastructure requirements are summarised in a schedule that can be found in Appendix A.

### 6.2 SOCIAL INFRASTRUCTURE

#### Primary Healthcare

6.2.1 Where new development places extra demand on the local healthcare provision contributions may be sought for the following:

- New health facilities (these may be co-located with other health or social care providers)
- Construction costs for additional facilities / extensions, adaptations or alterations

6.2.2 The NHS prioritises their core estate (i.e. Lift & PFI sites) and financial contributions may be used to re-configure these sites as well as others, pending locality. When all available core estate and supporting estate is full, it is at this point developers working jointly with the health system will be expected to provide additional infrastructure to match need.

6.2.3 The highest levels of residential development are proposed in the Mansfield urban area. Demand for healthcare is therefore correspondingly highest in this area of the District. Planned residential development in Mansfield Woodhouse, Market Warsop, Church Warsop and Meden Vale is significantly lower.

6.2.4 Across the District approximately fourteen (13.9) new full-time equivalent (FTE) GPs will be required to meet the additional demand of planned housing growth. Of these, the majority will be required within the Mansfield urban area. This may be accommodated within existing practices through intensification or extension or through new specialist accommodation to meet the requirements of the Clinical Commissioning Group (CCG). Ongoing dialogue will therefore be necessary with the CCG to determine the most appropriate method as developments come forward through the planning process.



- 6.2.5 It is understood that workforce issues are a growing national challenge for NHS primary care and that ongoing liaison with the District Council will be required to ensure that new health facilities to meet the demands created by new development are adequately resourced.
- 6.2.6 The scale of planned development in the Mansfield urban area is expected to generate the need for approximately 8.2 new FTE GPs for which financial contributions should be sought from developers towards new or extended facilities to meet this increased need.
- 6.2.7 In Pleasley, housing growth is expected to generate the need for approximately 2.2 new FTE GPs to meet additional demand. It is expected that a new GP practice will be required to supplement the existing practice in this area.
- 6.2.8 In Forest Town, housing growth is expected to generate the need for approximately 2.9 new FTE GPs to meet additional demand. It is expected that a new GP practice will be required to meet this demand as the existing practice is close to capacity.
- 6.2.9 In Mansfield Woodhouse, housing growth is expected to generate the need for approximately 0.1 new FTE GPs to meet additional demand. It is expected that the existing practice could meet this additional demand.
- 6.2.10 In Market Warsop, Church Warsop and Meden Vale a net increase of 0.5 FTE GPs is estimated to be required to meet future demand and it is expected that this could be accommodated by increasing staffing levels across the three existing practices in this area.
- 6.2.11 The cost of expanding existing Practices has been estimated based on a contribution of £950<sup>31</sup> per dwelling for the locations where the new development is proposed and the calculations are summarised in Table 51 on the next page.

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<sup>31</sup> Contribution cost of £950 per dwelling towards new/improved GP Practices provided by NHS England.



Table 51 – Estimated Developer Contribution Costs towards Healthcare

Location	Proposed Number of Dwellings	Developer Contribution Cost (£950 per dwelling)
Mansfield urban area	5,472	£5,198,570
Pleasley	1,551	£1,473,280
Mansfield Woodhouse	996	£946,345
Forest Town, Clipstone	892	£847,255
Warsop	652	£619,400
Church Warsop, Meden Vale	324	£307,800
<b>Total</b>	<b>9,887</b>	<b>£9,392,650</b>

### Education

6.2.12 As discussed in Section 5 of this study, the Education Authority determines future pupil numbers generated by new development based on:

- 21 primary places per 100 dwellings
- 16 secondary places per 100 dwellings

Thus 1,000 new dwellings would generate the need for the equivalent of a new One Form Entry (1FE) primary school with capacity for 210 pupils, and 8,000 new dwellings would generate the need for a new 1,280 pupil secondary school. Applying these ratios gives the primary school requirement in Table 52 on the next page.

6.2.13 It should be noted that the estimates of existing available school capacity presented in Section 5 are based on the number of enrolled pupils at December 2017. These figures will vary with each new school intake and do not consider existing demand by pupil age group. This data therefore only provides a general indication of capacity at that point in time.

6.2.14 The estimates of education capacity and demand therefore provide a useful strategic overview but must be interpreted in the context of these shortfalls. Some schools have flexibility to accommodate some annual variation in pupil numbers and an estimated modest shortfall in capacity may therefore not necessarily indicate that the school is over capacity. Each case will therefore need to be assessed on its own merits as planning applications for new development are submitted.



## Primary Education

6.2.15 Nottinghamshire County Council estimates the costs of providing the extra room necessary at **local catchment schools based on “cost per pupil place” cost multipliers** provided to the County Council by the Department for Education (DfE). These reflect the actual costs of building extensions to schools and are adjusted to account for regional cost variations. For primary education, the costs are as follows:<sup>32</sup>

- £11,455 for each new primary school place
- £13,333 per place where a new classroom is required
- £19,048 per place where a new 1FE (210 pupil) school is required
- £19,048 per place where a new 1.5FE (315 pupil) school is required
- £17,857 per place where a new 2FE (420 pupil) school is required

6.2.16 The estimated capital costs to provide the additional primary school places required to meet the additional demand due to Local Plan development are summarised in Table 52 below.

Table 52 – Additional Primary Schools Required

Location	Additional Primary Spaces Required	Capital Cost Estimates
Mansfield Urban Area	1,149	£16,897,587
Pleasley	326	£4,333,225
Mansfield Woodhouse	209	£3,358,097
Forest Town	187	£3,581,024
Warsop	137	£1,772,159
Church Warsop, Meden Vale	68	£919,977
<b>Total</b>	<b>2,076</b>	<b>£30,862,069</b>

6.2.17 Based on the figures summarised above NCC has confirmed that the equivalent new primary school provision summarised below will be required to meet future demand:

- Mansfield urban area – new 2FE (420 pupil) primary school on the Lindhurst development and a new 1FE (210 pupil) primary school on the Elmsley Heath development.
- Pleasley – create 210 places at the Crescent Primary school (subject to feasibility).
- Mansfield Woodhouse – a two classroom extension at Leas Park Infants/Nettleworth Junior. New 1FE (210 pupil) primary school at Old Mill Lane.

<sup>32</sup> Current estimated costs at time of writing. Costs will vary depending on local factors. Costs are subject to inflation and exclude land costs. NCC will expect full cost recovery from developers including land costs. Where a new or extended school is required costs are based on actual costs.



- Forest Town – new 1.5FE (315 pupil) primary school.
- Warsop, Church Warsop, Meden Vale – three additional classrooms required at Birklands primary school.

6.2.18 The final provision in each area will be subject to detailed discussions with the Local Education Authority (NCC) at the planning application stage.

### Secondary Education

6.2.19 There are seven secondary schools within the District. Due to the ability of older children to travel these are much more sparsely distributed than primary schools and their catchment areas will typically extend beyond the most immediate settlement boundaries. The additional places required due to Local Plan development are shown in Table 53 below.

6.2.20 Nottinghamshire County Council estimates the costs of providing the extra room necessary at **the local catchment schools based on “cost per pupil place” cost multipliers provided to the** County Council by the Department for Education (DfE). They reflect the actual costs of building extensions to schools and are adjusted to account for regional cost variations. For secondary education, the cost is £17,260 for each new secondary school place<sup>33</sup>.

Table 53 - Additional Secondary School Places Required

Location	Additional Secondary School Demand	Capital Cost Estimates <sup>34</sup>
Mansfield Urban Area	876	£15,154,280
Pleasley	248	£4,280,480
Mansfield Woodhouse	159	£2,761,600
Forest Town	143	£2,433,660
Warsop	104	£1,777,780
Church Warsop, Meden Vale	52	£897,520
Totals	1,582	£27,305,320

6.2.21 Within the Mansfield urban area there is a shortfall of available secondary school places at the three existing secondary schools (All Saints Catholic Voluntary Academy, Samworth Church

<sup>33</sup> Current cost at time of writing. Costs are subject to inflation. Costs could increase depending on whether new schools or extended classrooms are required. Costs exclude land costs. NCC will expect full cost recovery from developers including land costs.

<sup>34</sup> These costs are based on the total additional demand and make no allowance for available capacity in existing secondary schools.



Academy and The Brunts Academy) and the assessment identifies the need for 1,582 places to meet the additional demand due to Local Plan development.

6.2.22 However, based on the number of enrolled pupils at December 2017 there is significant spare secondary school capacity within the District (1,035 spaces), as summarised in Table 38 in Section 5.

6.2.23 The December 2017 school census data suggests that the two existing secondary schools in Mansfield Woodhouse (Queen Elizabeth Academy and the Manor Academy) have significant spare capacity (998 spaces) which could help to meet future demand within Mansfield Town Centre.

6.2.24 Within Pleasley there is no existing secondary school and the assessment identifies the need for 248 new secondary school places to meet future demand. However, it is assumed that this demand would also be met by the two existing secondary schools in Mansfield Woodhouse (Queen Elizabeth Academy and the Manor Academy).

6.2.25 At Forest Town, available capacity at the Garibaldi College (in Clipstone) is likely to meet forecast demand, whereas the Meden School in Warsop has spare capacity to address forecast additional demands in Warsop, Church Warsop and Meden Vale.

#### Libraries

6.2.26 **Based on guidance contained within the 'Museums, Libraries and Archives (MLA) Council's report Public Libraries, Archives and new development: a standard approach (2008)' Nottinghamshire County Council assumes 1,532 library stock items per 1,000 head of population and a level of library floor space provision equating to 30 square metres per 1,000 per head of population. This equates to 3.38 stock items per new dwelling or 66 square metres of floor space per 1,000 dwellings.**

6.2.27 The County Council has not identified any shortfalls in library floor space and currently has no proposals to extend existing, or build new libraries within the District.

6.2.28 The impact of each new Local Plan development will be considered on a case-by-case basis upon the library located nearest to the new development. Where library stock levels already meet the MLA standard of 1,532 items per 1000 population, a financial contribution will be



sought from the developer to ensure the library continues to meet the required standard. Financial contributions will not be sought to correct an existing stock deficit. Likewise, where library stock levels currently exceed the MLA standard the County Council will only require financial contributions to ensure the library continues to meet the minimum MLA standard.

6.2.29 Where existing library buildings have limited capacity to accommodate additional demand, additional stock may be accommodated by the internal reconfiguration of the library concerned. This would be subject to confirmation at the time of the planning application.

6.2.30 Where new development places additional demands on existing libraries that do not have capacity to accommodate the increased demand Nottinghamshire County Council may seek developer financial contributions towards the provision of new library buildings (either as an extension or new premises).

6.2.31 **If Nottinghamshire County Council’s approach to new or extended libraries changes during the plan period the cost is estimated based on £ per square metre which includes for new stock provision.**

6.2.32 Contributions will therefore be required towards increased library stock. Where libraries have limited capacity, this will be accommodated by internal reconfiguration. Financial contributions are calculated based on an average cost of £12.50 per stock item with a recommended stock level of 1,532 items per 1,000 head of population. This equates to a cost of £45.96 per dwelling assuming an average occupancy of 2.4<sup>35</sup> persons per dwelling. Applying the costs mentioned above gives the estimated library stock costs in Table 54.

Table 54 – Estimated Library Stock Costs

Location	Dwellings	Stock Cost
Mansfield Urban Area	5,472	£251,501
Pleasley	1,551	£71,276
Mansfield Woodhouse	996	£45,783
Forest Town	892	£40,989
Warsop	652	£29,966
Church Warsop, Meden Vale	324	£14,891
<b>Total</b>	<b>9,887</b>	<b>£454,407</b>

<sup>35</sup> Standard occupancy applied by NCC for purposes of calculating library requirements



6.2.33 Across the district a total cost of £0.454m is therefore estimated to be required towards the provision of new library stock items to meet the additional demand of Local Plan development.

## 6.3 WASTE MANAGEMENT

### Capacity Gap Analysis

6.3.1 Based on the analysis of LACW arisings produced, the forecast of these arisings and the current operational waste management capacity within Nottinghamshire and Mansfield, a capacity gap analysis has been undertaken to identify future requirements of facilities to manage future waste arisings while meeting future recycling and recovery targets.

#### Landfill

6.3.2 **With significant permitted disposal capacity lost when two of the County's remaining non-hazardous landfill sites, at Dorket Head Landfill near Arnold and Carton Forest Landfill near Worksop, closed towards the end of 2014, leaving only two operational landfill sites, the available operational landfill capacity for municipal waste in Nottinghamshire based on the capacity analysis is 990,000 cubic metres (equivalent to 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre), with no landfill capacity in Mansfield.**

6.3.3 The forecast of LACW by waste management method indicates a reduction in municipal waste sent to landfill of approximately 39% during the plan period based on the countywide recycling targets (i.e. from 228,000 tonnes in 2014/15 tonnes to 139,000 tonnes in 2032/33). Based on this forecast and on the current available non-hazardous landfill capacity and considering approximately 240,000 tonnes of C&I waste sent to landfill, the available void is estimated to be filled by 2018/19.

6.3.4 However, MDC already has arrangements in place to treat residual municipal waste collected within the District to produce Refuse Derived Fuel for use at Energy from Waste over the period of the Plan (to 2033). There is therefore no requirement for new infrastructure within the District to address the forecast landfill shortfall within the Plan period.

6.3.5 It is mentioned in the Waste Core Strategy that some municipal waste from Derby is sent to landfills in Nottinghamshire, which means that there is currently very limited landfill capacity to **meet Nottinghamshire's future landfill requirements even with the significant reduction in**



municipal waste sent to landfill over the plan period. The Waste Core Strategy estimates that approximately 3.6 million cubic metres of landfill void space (equivalent to approximately 3.0 million tonnes at an average bulk density of 0.85 tonnes/cubic metre) is required to meet the **County's future landfill needs.**

#### Energy from Waste

- 6.3.6 There is currently approximately 260,000 tonnes of permitted EfW capacity available within Nottinghamshire, at the Eastcroft Incinerator, with 100,000 tonnes of this capacity not yet available. The facility is permitted to take both LACW and C&I waste due to variations made to its operating permit. As in the Waste Core Strategy, it is assumed that 160,000 tonnes of EfW capacity is currently available for municipal waste, which means that there is enough capacity for municipal waste based on the forecast municipal waste recovery tonnages of approximately 40,000 tonnes per annum.
- 6.3.7 The Waste Core Strategy estimates that approximately 200,000 tonnes of EfW capacity is required to meet future C&I waste management needs.

#### Municipal Recycling and Composting

- 6.3.8 Based on the analysis of available operational capacity, there is currently approximately 40,000 tonnes per annum recycling capacity and 58,000 tonnes per annum composting capacity for municipal waste in Nottinghamshire (i.e. a total capacity of approximately 98,000 tonnes per annum for municipal recycling and composting). With recycling and composting tonnages forecast to increase to approximately 280,000 tonnes by the end of the Plan period, an estimated 182,000 tonnes per annum of municipal composting and recycling capacity is required in Nottinghamshire.

#### Conclusion

- 6.3.9 Quantities of LACW produced in Nottinghamshire show a slight reduction, of approximately 3% (from 423,000 tonnes to 412,000 tonnes over the period 2010/11 to 2014/15). Quantities of LACW produced in Mansfield show an increase of approximately 5% in 2015/2016 in comparison to the waste produced in 2010/11.



- 6.3.10 The LACW composting and recycling rate for Nottinghamshire reduced slightly from 37.4% in 2010/11 to 34.6% in 2014/15 but was relatively similar (i.e. on a plateau) year on year. The LACW composting and recycling rate in Mansfield also decreased from 41.5% in 2010/11 to 31.4% in 2015/16.
- 6.3.11 All kerbside collected DMR and recyclates from the two HWRCs in Mansfield District is sent to a MRF in Mansfield for sorting into their constituent materials and then sent for subsequent recycling. The green/garden waste collected by the District is taken to a composting facility in Oxtou. Residual waste is currently being processed into RDF and sent to Europe or is landfilled. The plan is to continue with this arrangement until 2020 whereupon a new Waste Transfer Station (WTS) will come on-line and residual waste will still be processed into RDF but for use in the UK until the end of the PFI contract with Veolia in 2033.
- 6.3.12 Based on the forecast of LACW over the plan period, taking into account the recycling and recovery targets of the County and District, and the assessment of the existing and operational waste management capacity within Nottinghamshire and Mansfield, the results of this analysis show that there is insufficient non-hazardous landfill capacity available within the County to **meet the County's future landfill requirements even with the significant reduction in LACW sent to landfill over the plan period.** The available operational landfill void (i.e. 990,000 million cubic metres, equivalent to approximately 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre) is likely to be filled by 2018/19. It is estimated in the Waste Core Strategy that approximately 3.6 million cubic metres of landfill void (equivalent to approximately 3.0 million tonnes at an average bulk density of 0.85 tonnes/cubic metre) is required to meet the **County's future** landfill requirements.
- 6.3.13 There is currently enough EfW capacity available for LACW within Nottinghamshire, with approximately 200,000 tonnes of EfW capacity required to meet future C&I waste management needs.
- 6.3.14 With recycling and composting tonnages forecast to increase to approximately 280,000 tonnes by 2033, there is need for an estimated 182,000 tonnes per annum recycling and composting capacity to meet the future recycling and composting requirements of the County. This is particularly important in the **context of the County's and EU recycling and composting targets.**



These targets may be met through a combination of improved collection methods for both household and business waste as well as by using MRFs to mechanically sort recyclable waste.

6.3.15 Mansfield District is already well served by dry material recycling infrastructure with a local MRF with 80,000 tonnes per annum capacity (MDC currently sends approx. 8,000 tonnes per annum to this facility). Garden waste is currently sent outside of the district for composting and although this arrangement is satisfactory there may be benefits in providing infrastructure within the district to meet these needs.

## 6.4 UTILITIES

### Water

6.4.1 Severn Trent Water have not identified the need for any strategic infrastructure works to support proposed Local Plan development. Any off-site works will therefore be limited to providing connections between individual development sites and the local distribution network. Details would need to be identified and agreed at the planning application stage.

6.4.2 The funding of water supply infrastructure is provided by the Water Industry Act 1991. It is usual that the costs of local connections are met by developers through Severn Trent Waters requisitioning procedure and scheme of charges (refer to the RAG sheet provided by Severn Trent Water as set out in Appendix E).

### Gas

6.4.3 **Cadent Gas have confirmed that over the Plan period there should be no 'show stoppers' as network reinforcements can be delivered to meet increased demand with appropriate forward planning.** The cumulative effects of many additional new loads could overload upstream systems and reinforcements would then be necessary.

6.4.4 If a new connection to the Cadent Gas network triggers a need for network reinforcements an economic test is carried out to calculate whether a customer contribution is required, if a contribution is required at all.

6.4.5 Any off-site works are therefore likely to be limited to providing connections between individual development sites and the local distribution network.



6.4.6 Contestable infrastructure works downstream of the point of connection, can be installed by an independent gas transporter (IGT) or accredited contractor. An IGT may contribute to the cost of the connection based on the revenue stream generated by the proposed masterplan based on the rate of occupation for the site.

#### Electricity

6.4.7 Western Power Distribution (WPD) has confirmed that existing primary sub-stations will have adequate capacity to meet the additional domestic demands of planned housing growth within the District to the end of the Plan period. However, planned employment growth is forecast to put the following primary substations over capacity: Crown Farm, Lime Tree Place, Mansfield, Rufford, Shirebrook and Skegby Lane. Mansfield bulk supply point would also be stretched by the proposed growth.

6.4.8 WPD has suggested that as capacity is taken up at Lime Tree Place, development would trigger the requirements for a new primary substation. At Mansfield, new development could be accommodated by making connections to other local primary sub-stations with spare capacity.

6.4.9 At Crown Farm and Skegby Lane, development would trigger a transformer change and reinforcement to the 33kV network. Whilst at Shirebrook, development would trigger the need for a second transformer to be installed.

6.4.10 The timing of how employment development is delivered will determine the exact nature of any improvements required and connections could therefore be more expensive and/or delayed until the required reinforcement has taken place. Timescales for a large transformer upgrade or provision of a new primary substation could be more than two years after application. WPD will not forward fund network reinforcement attributable to new development until triggered by a formal new connection application. Early dialogue is therefore recommended as employment proposals come forwards through the planning process.

#### Telecoms

6.4.11 There are Openreach networks within the proximity of all areas where Local Plan development is proposed and the capacity of Openreach infrastructure is not considered to be a barrier to future development.



6.4.12 Openreach are rolling out a programme to bring fibre to each of their cabinets, FTTC for superfast broadband. All the exchanges in the District are FTTC enabled. Openreach will deploy Fibre to the Premises, FTTP, free of charge, into all new housing developments of 30 or more homes, registered after November 2016.

#### Renewables

6.4.13 In the District, the key local renewable and low carbon energy opportunities relate to potential for micro-generation including heat pumps, solar thermal and solar PV on new buildings.

6.4.14 Connection to the local electricity grid may pose problems as the electricity grid is currently near capacity for generation connections and would require reinforcement for this to happen. Timescales and cost may make this a prohibitive option for some sites.

6.4.15 Alternate connections are being offered by WPD which can be helpful for projects which are prepared to have their export capacity temporarily reduced to allow connection ahead of any required reinforcement to the network.

6.4.16 Whilst potential for CHP technology arises mainly in areas where there is existing and potential heat demand densities such as within the Mansfield central area, there are some established industrial areas on the west side of Mansfield which may provide potential growth areas for future District heating networks.

6.4.17 In terms of wind energy, the District has some locations with good average wind speeds which may provide some opportunities for small scale wind turbines in appropriate locations. The potential for large scale commercial wind energy development is limited by existing development and environmental constraints.

#### Wastewater

6.4.1 Severn Trent Water has confirmed that there are no Local Plan development locations identified as having a high risk of potential impact on existing sewerage infrastructure. The majority of Local Plan development sites are identified as low risk.

6.4.2 The Mansfield District Council Water Cycle Strategy – Scoping Study Report, dated June 2009 notes that the Mansfield Bath Lane, Church Warsop and Rainworth sewage treatment works are identified as being fully, or close to fully, committed to meeting existing development proposals and as such will be under pressure from future development.



6.4.3 No significant improvement works are identified as being required by Severn Trent Water. Local reinforcement will be required to service some of the sites. These works will be identified fully on application by the developer. Other development areas will be assessed on application once flow rates and connection points are confirmed.

6.4.4 For most new developments, it is assumed that surface water will be managed using sustainable drainage systems (SuDS). Where detailed drainage modelling indicates capacity improvements are required, the works will be phased to align with development occupancy with capacity improvement works funded by Severn Trent Water. However, whilst Severn Trent Water has a duty to provide additional capacity to accommodate planned development, they do not commit investment until there is a certainty that a development is due to commence. Early dialogue is therefore recommended as development proposals come forwards through the planning process.

## 6.5 FLOOD PROTECTION

6.5.1 Flood risk from rivers is generally low with a slightly greater potential for flooding within some existing areas in and around the Mansfield central area and Market Warsop. Overall, development can be feasibly located outside flood zones 2 and 3. Surface water and flooding from sewers is a key issue for the district due to, for example: urbanisation, culverted water courses, low permeability of soils, former mining sites and topography.

6.5.2 The NPPF and NPPG requires that new development is implemented with mitigating measures such that the new development either does not exacerbate existing flood risks or, where possible reduces downstream flood risk. Local sources of flood risk should be controlled by ensuring compliance with the NPPG which includes the need for new development to utilise SuDS where possible and comply with the Defra Non-Statutory Technical Standards for Sustainable Drainage Systems (March 2015)<sup>36</sup>.

6.5.3 The Environment Agency (EA) published guidance on climate change allowances (February 2016) should also be considered when determining individual planning applications. Correct application of these allowances in individual planning decisions and their supporting conditions should ensure that local sources of flood risk and further downstream exacerbations of fluvial flood risk do not occur.

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<sup>36</sup> <https://www.gov.uk/government/publications/sustainable-drainage-systems-non-statutory-technical-standards>



- 6.5.4 The Mansfield Central Area Flood Risk Review, that is currently being completed, recommends several options for reducing flood risk to both brownfield sites, and existing areas, within Mansfield Town Centre. For example, identifying areas where the removal of existing structures such as culverts would reduce flood risk to existing areas. The final review will make recommendations for future improvements within the town.
- 6.5.5 In conclusion, with appropriate location and design of development, implementation site-specific mitigation measures and effective development control, the proposed Local Plan development can be implemented without placing new development at an unacceptable risk from flooding and without exacerbation of downstream flood risk. Any infrastructure necessary to facilitate development would be funded by the developer. Early engagement with Mansfield District Council and Nottinghamshire County Council as the lead local flood authority is recommended within areas affected or likely to be affected by surface water flooding and other sources outside flood zones 2 and 3. Additionally, Severn Trent Water may also need consulting where flooding from sewers is an issue.
- 6.5.6 The EA has confirmed agreement with the conclusions of this chapter, as things currently stand, but note that at some point over the next two years they will be undertaking updated flood risk modelling for both the River Maun and the River Meden, to take account of new climate change allowances. The new information will need to be reviewed once it is published to establish whether there is a need for future flood risk projects.



## 6.6 TRANSPORT

### Highway Impacts

6.6.1 As discussed in Section 5.6 transport modelling work undertaken in support of the Local Plan Preferred Options Consultation published in August 2017 identified the junctions forecast to be at, or over capacity by the end of the Plan period (2033) without any Local Plan development in place (i.e. the 2033 Reference Case). The following 13 junctions were identified:

- Chesterfield Road / Debdale Lane, Mansfield
- A60 Nottingham Road / Berry Hill Lane, Mansfield
- Carter Lane / Southwell Road / Windsor Road, Mansfield
- A617 MARR / A6191 Southwell Road, Mansfield
- A60 Leeming Lane / Peafield Lane, Mansfield Woodhouse
- A60 Leeming Lane / A6075 Warsop Road, Mansfield Woodhouse
- Kings Mill Road / Beck Lane / B6014 Skegby Lane / Mansfield Road<sup>37</sup>
- A6191 Ratcliffe Gate / A60 St. Peters Way, Mansfield
- A6117 Old Mill Lane / B6030 Clipstone Road West, Forest Town
- A38 Sutton Road / B6014 Skegby Lane / Sheepbridge Lane, Mansfield
- A60 / Old Mill Lane / Butt Lane, Mansfield Woodhouse
- A6191 Southwell Road / Oak Tree Lane / Adamsway, Mansfield
- A60 Leeming Lane / New Mill Lane, Mansfield Woodhouse
- A60 Church Street/Wood Street, Warsop

6.6.2 The results of transport modelling examining the effects of adding Local Plan development traffic to the 2033 Reference Case are presented in the report 'Mansfield Transport Study – Stage 2: Local Transport Growth' dated March 2018 (referred to as 'the study' for the remainder of this chapter). The study identifies that with the addition of Local Plan development traffic the following further nine junctions are forecast to be at, or over capacity by the end of the Plan period (2033):

- A6117 Oak Tree Lane/ Eakring Road, Mansfield
- Southwell Road/Berry Hill Lane, Mansfield

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<sup>37</sup> Although not mentioned in the study, the Kings Mill Road / Beck Lane / B6014 Skegby Lane / Mansfield Road junction is within Ashfield District and the study notes that a Reference Case development site includes plans to upgrade the junction.



- Southwell Road/Bellamy Road, Mansfield
- A38 Stockwell Gate/A6009 Rosemary Street, Mansfield
- Coxmoor Road/Hamilton Road<sup>38</sup>
- A6075 Debdale Lane/ Priory Road, Mansfield Woodhouse
- A60 Nottingham Road/ A611 Derby Road, Mansfield
- A6191 Chesterfield Road/ A617 MARR, Mansfield
- A60 Nottingham Road/Baums Lane/Park Lane, Mansfield

6.6.3 Figures extracted from the study have been reproduced on the following pages. These depict the forecast highway network conditions at the 2033 assessment year with the addition of Local Plan traffic (i.e. at the end of the Local Plan period with Reference Case and Local Plan development in place).

6.6.4 The figures depict the Volume / Capacity (V/C) ratio of roads and junctions which is a measure of the traffic at the junction in relation to its ability to accommodate such flow. The V/C ratio is calculated by summing all the approach flows into a junction and dividing by the total available capacity on all approaches to the junction. A V/C value above 0.85 (or 85%) is likely to produce queues on some occasions during the peak hours. Above a V/C value of 1.0 (or 100%), a junction is more than likely to be at capacity (with resulting larger increases in queue length) during the peak hours.

6.6.5 In the figures on the following pages the V/C values are grouped in coloured bands; junctions that are modelled to have over 50% V/C are shown in yellow, junctions that are over 75% loading are plotted orange and junctions that are over 85% V/C loading are red or dark red.

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<sup>38</sup> The Coxmoor Road/Hamilton Road junction is within Ashfield District and the study notes that traffic capacity improvements have already been identified for the junction as part of a planning application for development of a Local Plan allocation site. The junction has therefore not been assessed further.

Image 38 – 2033 Design Year (Local Plan) AM Peak Hour – Volume /Capacity

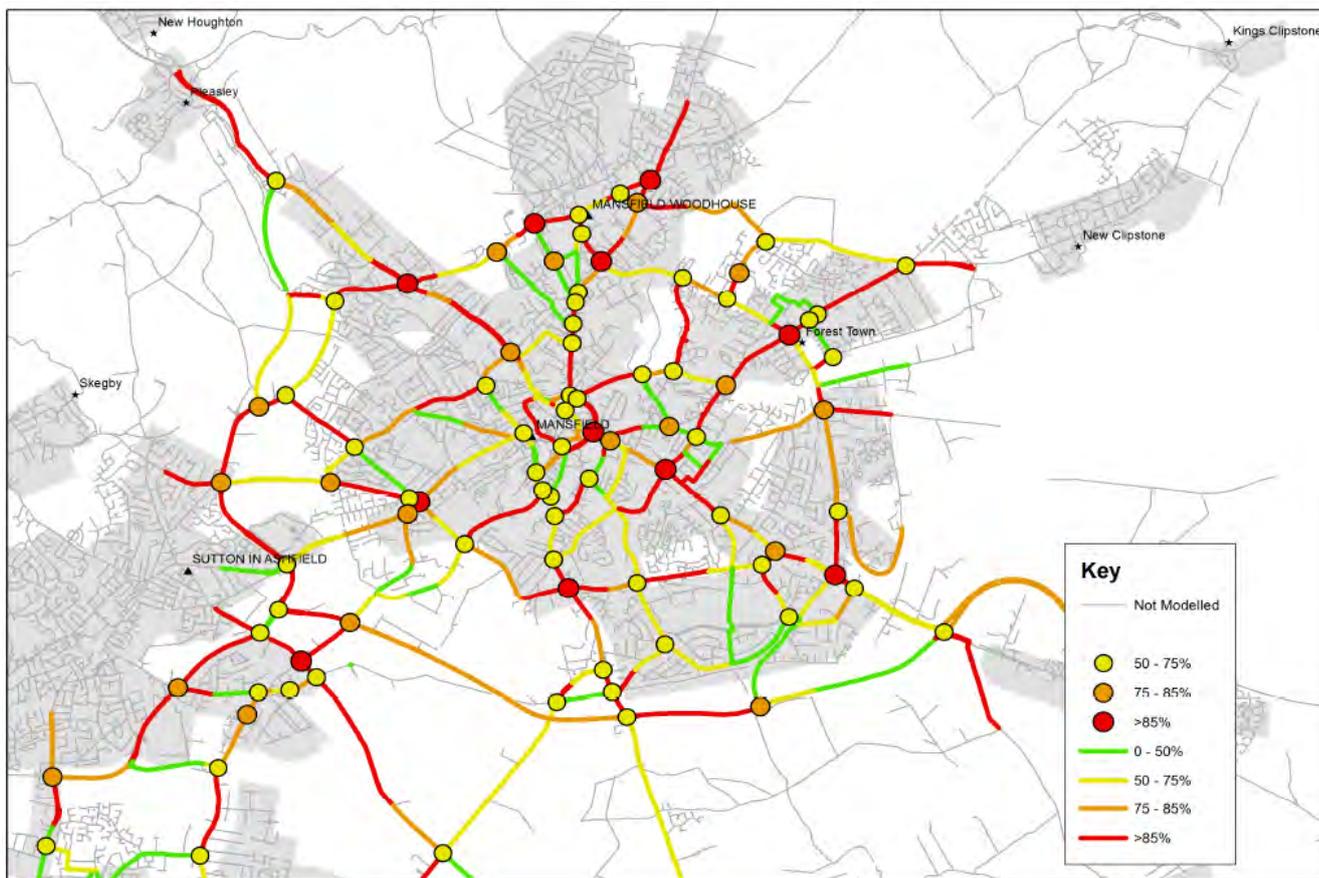
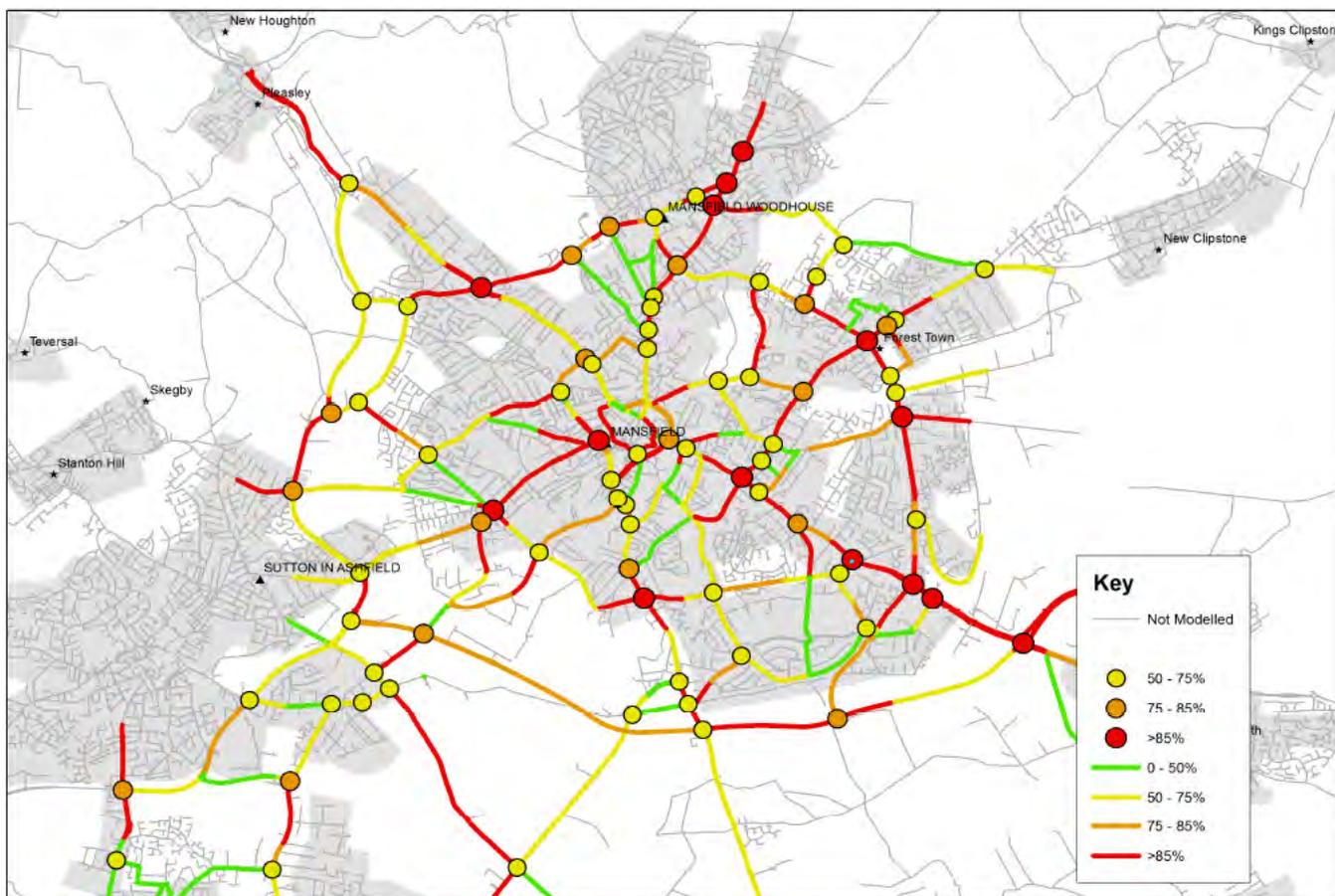


Image 39 – 2033 Design Year (Local Plan) PM Peak Hour – Volume /Capacity



6.6.6 The study also examines the forecast change in traffic flows on the Strategic Road Network (SRN) due to Local Plan development (i.e. the Motorway and Trunk Road network). There are no strategic roads within the district and the nearest strategic road is the M1 Motorway to the west. The study identifies that forecast traffic flow changes at M1 Junctions 27 and 28 due to Local Plan development will be minimal in the peak hours. No mitigation is therefore required on the SRN.

6.6.7 Other major (non-SRN) routes that pass through the district are the A617 and the A60. The study identifies two-way traffic flow increases due to Local Plan development of up to 2,017 Passenger Car Units (PCU) on the A60 (Leeming Lane) in the PM peak. Forecast two-way flow increases on the A617 due to Local Plan development are more modest at up to 250 PCU in the PM peak. The study identifies that the significant forecast increase in traffic flows on the



A60 Leeming Lane is due to Local Plan development sites located close to the A60, which include the Old Mill Lane strategic sites and multiple developments in Warsop.

6.6.8 Traffic impacts at junctions outside of the district have also been identified at the following locations:

- A617 MARR/Prologis Park
- A617 MARR/Hamilton Road
- A38/Kings Mill Road East/Mansfield Road
- B6139 Coxmoor Road/Hamilton Road
- A38 Kings Mill Road East/B6022 Station Road
- A38 Kings Mill Road East/B6018 Sutton Road/Kirkby Road

6.6.9 The study identifies that at all the above locations (except for the B6139 Coxmoor Road/Hamilton Road junction) the existing junctions are expected to continue to operate within capacity with the addition of Local Plan traffic. As noted earlier it is understood that an improvement has already been identified for the B6139 Coxmoor Road/Hamilton Road junction as part of a planning application for a Local Plan development within Ashfield District. No mitigation is therefore required at junctions outside of Mansfield District.

#### Sustainable Modes

6.6.10 The study also considers network journey time increases in terms of likely impacts on key public transport routes within the district. The impact of Local Plan development compared against the 2033 Reference Case varies across the study area with some routes expected to see journey time reductions and other routes with increases. The largest forecast increase is 317 seconds (5.3 minutes) on the A60 Leeming Lane (outbound) in the PM peak. The study notes that:

*"In response to longer travel times, bus operators may need to adjust their timetables or add extra buses to the service in order to compensate for the extra time that buses spend in travelling."*

6.6.11 Generally, it is anticipated that forecast public transport travel demands will be accommodated by existing bus and rail services. However, developers may be required to fund improvements to existing bus services (via S106 Agreements) to help mitigate the direct transport impacts of developments. Details will need to be determined as part of the planning application process.



6.6.12 Developers will also be required to deliver new/improved walking and cycling infrastructure to provide access within developments and to nearby employment areas, schools and local/district centres and to provide safe connections to existing networks, including new cycle lanes within the highway network, the provision of new crossing facilities, capacity enhancements and other appropriate infrastructure, where necessary. It is expected that developers will fund the provision of new/improved walking and cycling infrastructure (via S106 Agreements) to help mitigate the direct transport impacts of developments. Details will need to be determined as part of the planning application process.

#### Transport Mitigation

6.6.13 The study identifies a suggested mitigation package including:

- junction widening where appropriate to improve capacity
- linking traffic signals to an urban traffic control centre using CCTV
- optimising the layout and operation of traffic signal junctions to maximise capacity
- the installation of bus priority measures to help promote modal shift
- maximise sustainable travel take-up; and
- technology upgrades (such as traffic signal priority systems for buses)

6.6.14 With regards mitigation for public transport corridors the report notes:

*“Increases in journey times for bus operators can be mitigated against with the provision of bus priority corridors, such as that proposed for the A60. Additionally, GPS based systems can be used to track bus positions and used by traffic signal controllers to optimise green signals in favour of the bus demands on the approaches to signalled **junctions.**”*

6.6.15 The potential to introduce new bus corridors, which prioritise bus movements over other traffic with the introduction of bus detection at key junctions is also discussed as potential mitigation and the following routes are identified as potential strategic bus corridors:

- A6191 Chesterfield Road between MARR and Mansfield town centre
- A60 Leeming Lane between Peafield Lane and Mansfield town centre
- A617 Southwell Road between Rainworth bypass and Mansfield town centre
- A60 Nottingham Road between MARR and Mansfield town centre
- A38 Sutton Road between Kings Mill Road East and Mansfield town centre



6.6.16 The installation of CCTV at junctions along key corridors is identified as a potential mitigation measure to assist public transport and general traffic movements. CCTV linked to an Urban Traffic Control (UTC) centre would allow network performance to be monitored and signal timings adjusted in real time in response to delays or other network events thereby optimising network operation and helping queues to clear faster. No further details are presented in the study for potential public transport improvements.

6.6.17 Potential mitigation options have been summarised in the study for those junctions identified as being over capacity at the end of the plan period. The table below is a summary of the mitigation presented.

6.6.18 Delivery priority has been summarised and colour coded based on the junction performance indicated in the study where:

**High Priority** – junction already over capacity in the Base Year

**Medium Capacity** – junction will be over capacity at 2033 with Reference Case traffic

**Low Priority** – junction will be over capacity at 2033 with Reference Case & Local Plan traffic

Table 55 – Potential Highway Mitigation

Junction (Location)	Mitigation Measures	Delivery Priority
Chesterfield Road / Debdale Lane (Mansfield)	<ul style="list-style-type: none"> <li>Nearside crossing detection (low cost).</li> <li>Likely to require additional land take, funding could be sourced from identified developments.</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> </ul>	High
A60 Nottingham Road / Berry Hill Lane (Mansfield)	<ul style="list-style-type: none"> <li>To improve overall efficiency MOVA control can be installed (£40k-100k).</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Larger scale widening not feasible without third-party land take.</li> </ul>	High
Carter Lane / Southwell Road / Windsor Road (Mansfield)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Nearside crossing detection (low cost).</li> <li>Larger scale widening not feasible due to topography and third-party land take.</li> </ul>	Medium
A617 MARR / A6191 Southwell Road (Mansfield)	<ul style="list-style-type: none"> <li>Reference case development site includes plans to upgrade junction.</li> </ul>	Low
A60 Leeming Lane / A6075 Peafield Lane (Mansfield Woodhouse)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k)</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Nearside crossing detection (low cost).</li> <li>Localised widening of the A60 northbound approach; funding would be required from identified development sites.</li> </ul>	Medium



A60 Leeming Lane / A6075 Warsop Road (Mansfield Woodhouse)	<ul style="list-style-type: none"> <li>Nottinghamshire County Council plan for a traffic signal junction with provision for the wider A60 bus priority scheme.</li> </ul>	High
Kings Mill Road / Beck Lane / B6014 Skegby Lane / Mansfield Road (Ashfield District)	<ul style="list-style-type: none"> <li>Reference case development site includes plans to upgrade junction.</li> </ul>	High
A6191 Ratcliffe Gate / A60 St Peters Way (Mansfield)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>High cost widening option</li> </ul>	High
A6117 Old Mill Lane / B6030 Clipstone Road West (Forest Town)	<ul style="list-style-type: none"> <li>CCTV links to Urban Traffic Control Centre</li> <li>Larger scale widening not feasible without third-party land take.</li> </ul>	High
Sutton Road / Skegby Lane / Sheepbridge Lane (Mansfield)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Larger scale widening not feasible without significant third-party land take.</li> </ul>	High
A60 Leeming Lane / Old Mill Lane / Butt Lane (Mansfield Woodhouse)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>High cost/long term options include further widening with significant third-party land take or the provision of a bypass.</li> </ul>	Low
A6191 Southwell Road / Oak Tree Lane / Adamsway (Mansfield)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Larger scale widening not feasible without significant third-party land take.</li> </ul>	Medium
A60 Leeming Lane / New Mill Lane (Mansfield Woodhouse)	<ul style="list-style-type: none"> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Widen new Mill Lane to provide additional flares, significant funding would be required from identified development sites.</li> </ul>	Medium
A6075 Debdale Lane / Priory Road (Mansfield Woodhouse)	<ul style="list-style-type: none"> <li>Signal optimisation</li> <li>Nearside crossing detection (low cost)</li> <li>Larger scale widening not feasible due to topography and third-party land take.</li> </ul>	Medium
A6117 Oak Tree Lane / Eakring Road (Mansfield)	<ul style="list-style-type: none"> <li>Localised widening of Oak Tree Lane South</li> <li>CCTV links to Urban Traffic Control Centre</li> </ul>	Medium
A60 Nottingham Road / A611 Derby Road (Mansfield)	<ul style="list-style-type: none"> <li>Localised widening of Derby Road and Nottingham Road (south)</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> </ul>	Medium
A6191 Chesterfield Road / A617 MARR (Mansfield)	<ul style="list-style-type: none"> <li>Localised widening of A6117 – A6191</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> </ul>	Medium
A60 Nottingham Road / Baums Lane / Park Lane (Mansfield)	<ul style="list-style-type: none"> <li>Larger scale widening not feasible due to topography and third-party land take.</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> </ul>	Medium
A6191 Southwell Road / Berry Hill Lane (Mansfield)	<ul style="list-style-type: none"> <li>Signal optimisation</li> <li>Option to widening Berry Hill road</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> </ul>	Low
A6191 / Bellamy Road (Mansfield)	<ul style="list-style-type: none"> <li>Larger scale widening not feasible due to topography and third-party land take.</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> </ul>	Medium
A6009 Rosemary Street / A38 Stockwell Gate (Mansfield)	<ul style="list-style-type: none"> <li>To improve overall efficiency MOVA control can be installed (£40k-100k).</li> <li>A GPS based system for additional improvements for public service vehicles (£4k-5k).</li> <li>CCTV links to Urban Traffic Control Centre</li> <li>Larger scale widening not feasible without third-party land take.</li> </ul>	Low
A60 Church Street / Wood Street (Warsop)	<ul style="list-style-type: none"> <li>To improve overall efficiency MOVA control can be installed (£40k-100k).</li> <li>Larger scale widening not feasible due to topography and third-party land take.</li> </ul>	Medium



## 6.7 GREEN INFRASTRUCTURE

6.7.1 The Green Infrastructure assessment results within Section 5 and included within Appendix F identify the green infrastructure required to facilitate growth within the District during the Local Plan period. In relation to future provision of open space, the assessment identifies that generally there is sufficient provision of any type of formal or informal recreational space and natural green space to provide for growth within the District, but with some shortfalls in provision identified in localised areas and within most major growth sites. Shortfalls in the **provision of district parks/recreation grounds as well as teenage and children's play space** however have been identified, largely for growth sites within Mansfield including, for example but not limited within, the western and south-western areas of the district at Brick Kiln and Grange Farm wards, respectively.

6.7.2 To address the shortfalls in provision of open space, it is recommended that open space, and specifically the types of open space identified as lacking to meet future provision, (e.g. play space, local and district park/recreation ground) be considered for inclusion as on-site green and open space within growth sites where appropriate or provided as a financial contribution to improve existing open and green space provision. For larger sites, on-site open space and/or green corridors may be required to ensure new residents have adequate access to green infrastructure as informed through the Mansfield Green Space Standard and relevant policies. In addition, where shortfalls in provision have been identified for growth sites situated on or close to the edge of the District, further analysis should be carried out to identify whether shortfalls in provision could be provided within neighbouring authority areas.

6.7.3 The provision of additional open space green infrastructure requirements should be considered alongside the Mansfield District Community Open Space Assessment which provides a more detailed assessment of the open space required for housing growth during the Local Plan period along with suggested actions for improving access to green and open space. Specific green infrastructure aspirations for growth sites yet to receive planning permission are provided by Mansfield District Council (Mansfield District Council Local Plan housing growth - specific green infrastructure comments and Mansfield District Council Local Plan employment growth - specific green infrastructure comments) and included within Appendix F. These comments and should be taken into consideration by developers during development of proposals for the appropriate growth site, along with the other requirements for green infrastructure set out within this report.



6.7.4 In relation to the future provision of allotment sites, the assessment identifies that for the District as a whole there is sufficient provision to meet the quantity standard of 20 plots per 1,000 households. Analysis of assessment results however at ward and growth site level using results from both the distance and quantity standard based assessments identifies a number of wards containing growth sites which do not fall within 600m of an allotment site and which fail to meet the quantity standard of 20 plots per 1,000 household including (but not limited to): **Berry Hill in the southern extent of the District; Brick Kiln and Grange Farm in the District's south-western extent;** and Newlands, Oak Tree and Ransom Wood on the south-eastern extent of the District. It is recommended that shortfalls in allotment provision are addressed as part of development proposals for the growth sites within the identified wards where appropriate with ownership and management of the sites agreed through Section 106 agreements. It is also important to keep in mind, that while an area may be well provided for, in terms of allotment plots per 1,000 head of population, if demand is particularly high in that area, this should be addressed also as part of development proposals for the growth sites.

6.7.5 Consideration of provision of outdoor sport/playing pitches is included within the Mansfield District Council Final Playing Pitch Strategy Assessment Report and identifies the key issues to be addressed in relation to the sporting facilities within the District. It should be noted that the provision for outdoor sport/playing pitches is not assessed within this IDP study however the Mansfield District Council Final Playing Pitch Strategy Assessment Report and Strategy should be referred to in addition to this study and the other MDC green infrastructure evidence base, to inform ongoing green infrastructure requirements and improvements in the District.

6.7.6 The assessment of green infrastructure requirements to provide for the proposed growth during the Local Plan period has involved consultation with key stakeholders. The consultation and information provided by stakeholders identifies existing and future green infrastructure needs, aspirations and proposals relevant to the Mansfield District and the wider landscape context. In addition, the consultation has identified funding opportunities from partnership organisations including Greenwood Community Forest Partnership, and the Miner2Major (landscape partnership scheme in Sherwood Forest) which should be considered for the development and delivery of the strategic green infrastructure within the District in association with partnership working and potential grant funding.

To conclude, this report has identified the green infrastructure required to facilitate planned growth within the District to the end of the plan period. This green infrastructure includes



community open space (including district parks and local parks, amenity space, natural and semi-natural green space and provision for children and teenagers) along with allotment sites. The study has also referred to the provision of playing pitches/outdoor sports facilities within the District. The study has identified a shortfall in provision of several open space types as well as allotment sites to support growth within the District. The study makes recommendations for the identified shortfalls in provision to be considered for inclusion within development proposals for the identified growth sites where appropriate or provided as a financial contribution to improve existing provision for the benefit of the **District's community**. The study also considers the 13 strategic Green Infrastructure areas within the District, which are combined green spaces forming strategic networks or core areas providing multi-functional benefits for the District. The strategic GI areas are considered in relation to their proximity to the growth sites in the District to assist with identifying existing provision and potential enhancement needs within the strategic areas. The stakeholder consultation carried out as part of this study provides further comment to inform development and delivery of the green infrastructure within the strategic GI areas and wider District.



## 7 NEXT STEPS

### 7.1 INTRODUCTION

7.1.1 This section sets out some recommendations on how to keep information on infrastructure up to date and ensure the delivery in a timely manner to facilitate Local Plan development.

### 7.2 RECOMENDATIONS

#### Regular IDP Updates

7.2.1 We recommend **the District Council maintains the IDP Report as a 'live' document with regular reviews and updates** as Local Plan development and infrastructure is delivered and as new data becomes available.

7.2.2 We would recommend updating the underlying data supporting the social infrastructure assumptions of the IDP on an annual basis as up to date information becomes available (e.g. annual school census data).

7.2.3 Planning for other infrastructure categories (e.g. Utilities, Waste, Flood, Transport and Green Infrastructure) typically considers longer timescales. For example, utility company Asset Management Plans (AMP), rail Control Periods and Water Resource Management Plans all operate on five-year cycles.

7.2.4 We therefore recommend a more thorough review and update of the IDP report every five years consistent with any interim reviews of the Local Plan.

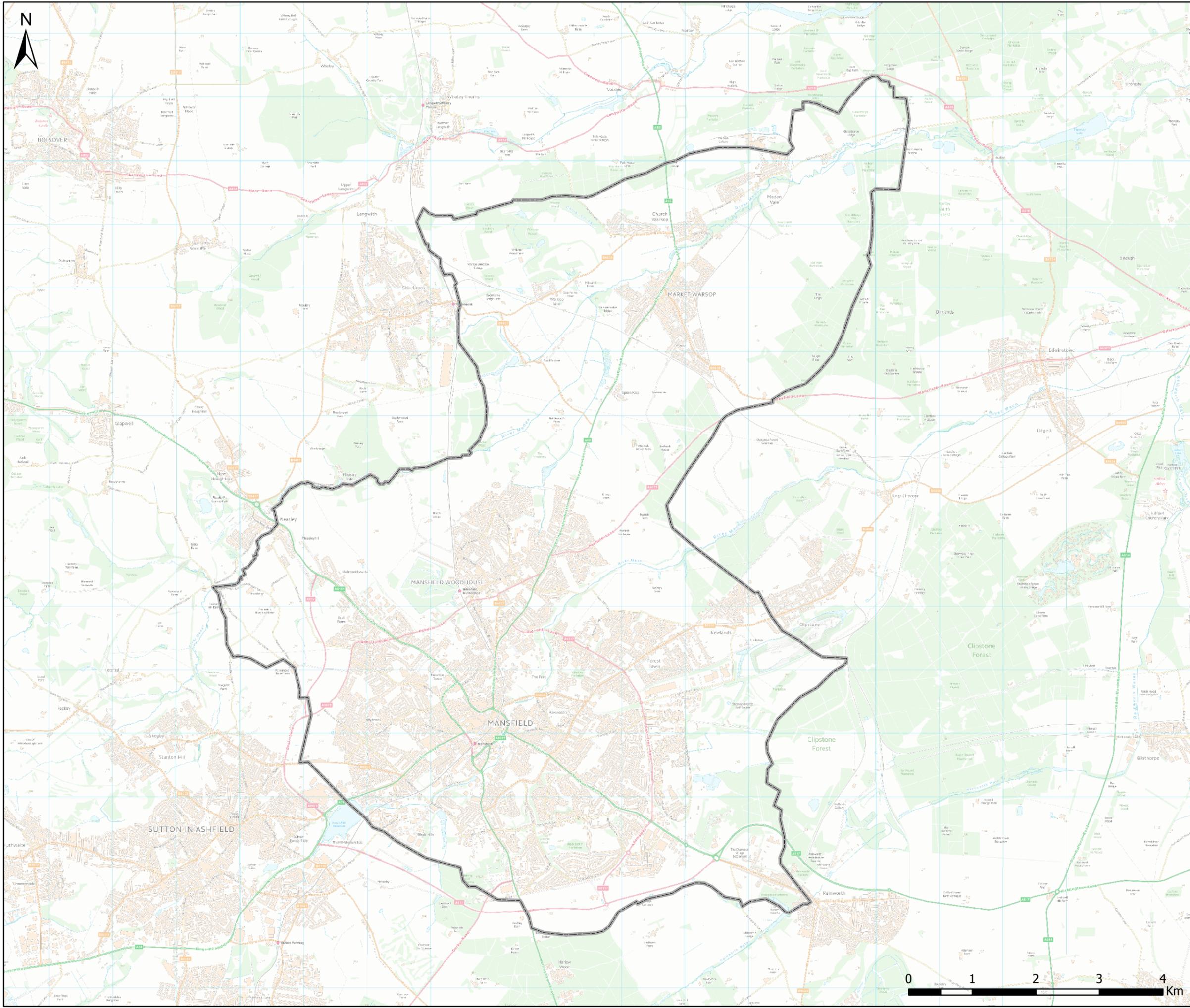
#### Infrastructure Working Group

7.2.5 To assist with ongoing monitoring and reviewing of the IDP we recommend that a high-level Infrastructure Working Group is established comprising representatives from all relevant infrastructure providers. The Working Group should meet at least twice annually to share information, review the delivery of Local Plan development and infrastructure performance.

7.2.6 Establishing a regular review forum will assist with the production of annual Infrastructure Funding Statements setting out how the Council anticipates using funds from developer contributions, how these contributions have been used and priorities for infrastructure delivery.



## Figures



# Legend

 Mansfield District

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REV	DESCRIPTION	BY	CHK	APP	DATE
-----	-------------	----	-----	-----	------

Client:  
Mansfield District Council

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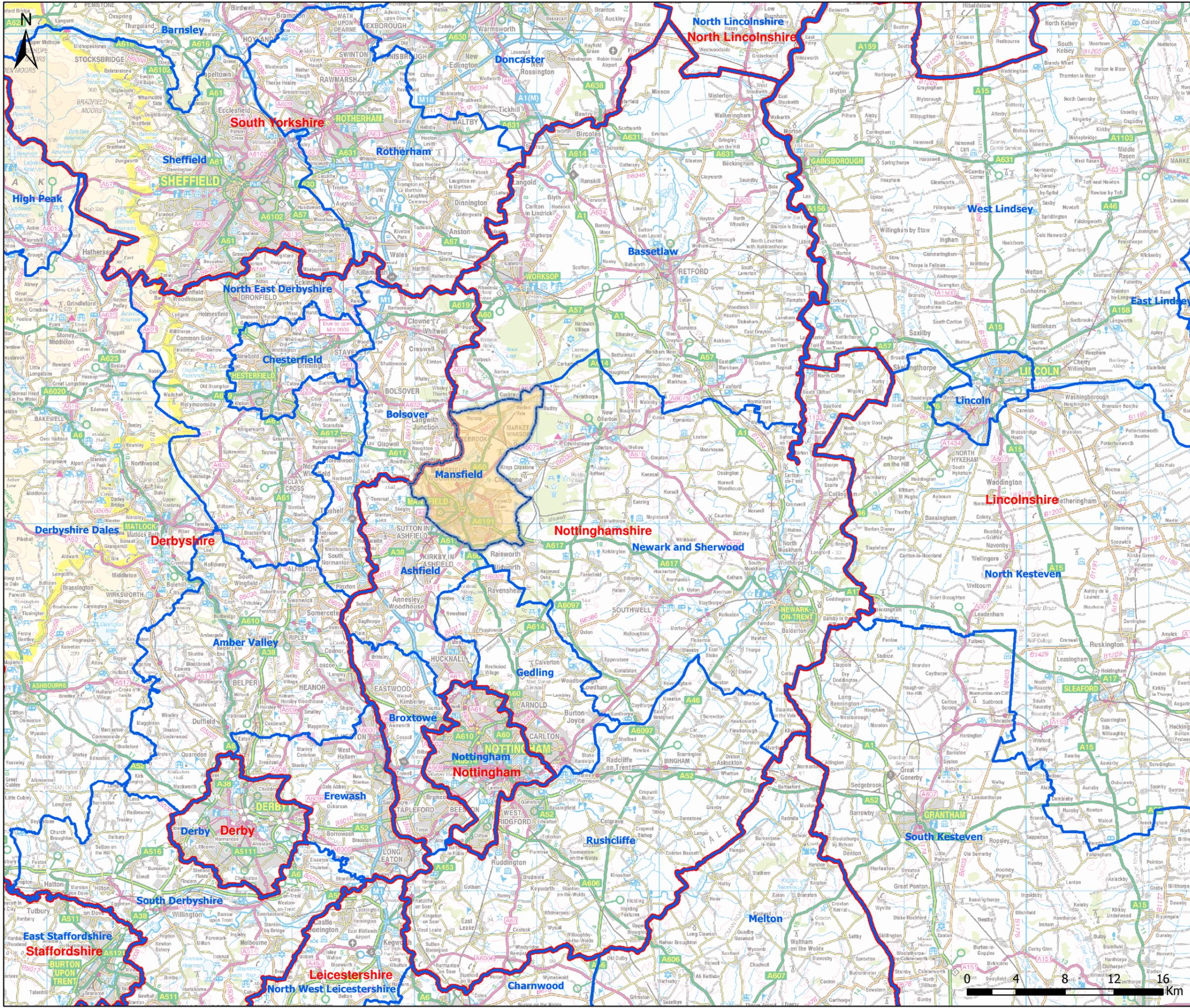


Project:  
Mansfield DC IDP

Drawing Title:  
Figure 1  
Study Area

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	001	-		





### Legend

- Mansfield District
- District
- County / Unitary

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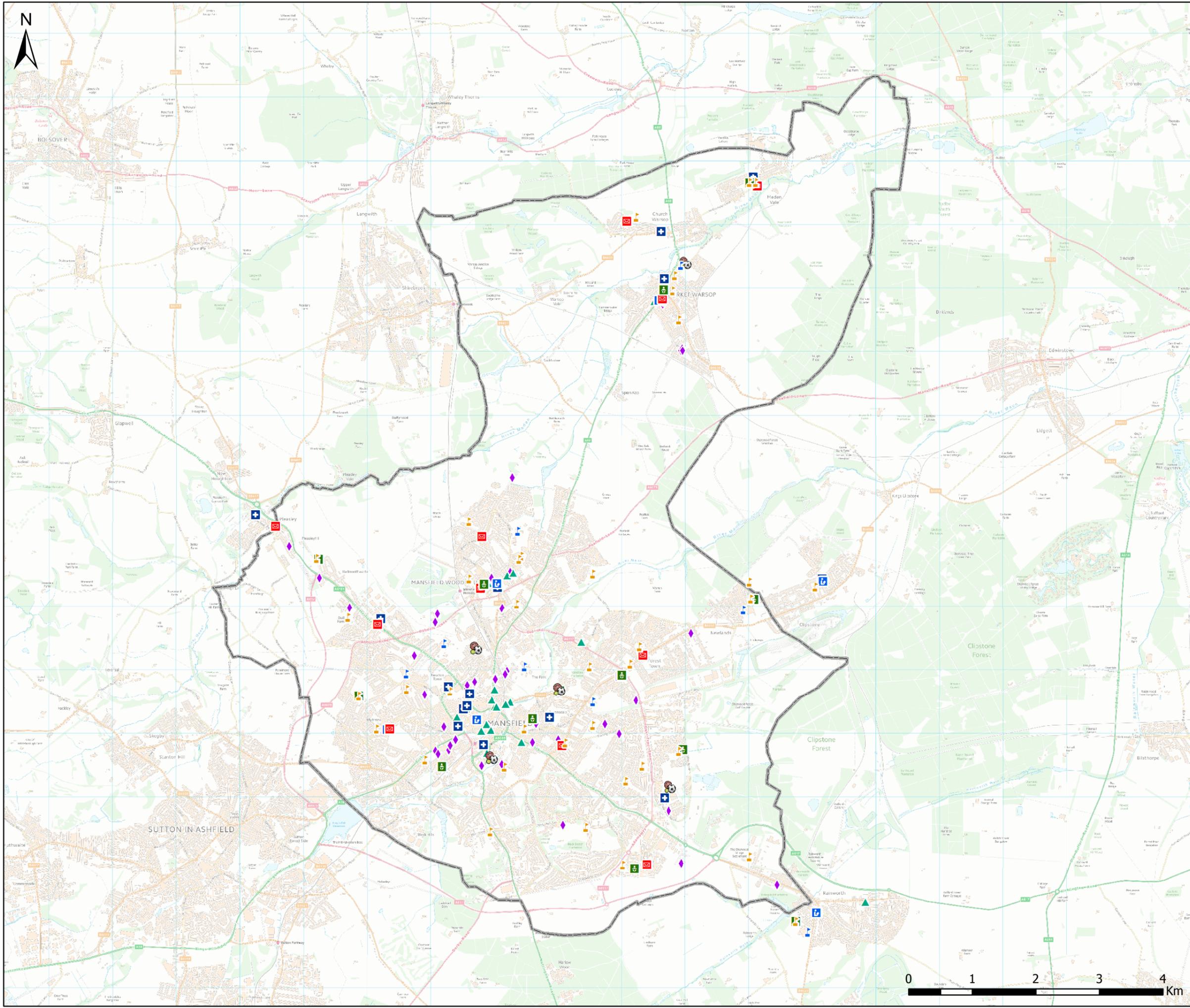
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Project:  
Mansfield DC IDP

Drawing Title:  
Figure 2  
Surrounding Authorities

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	009	-		



- ### Legend
-  Mansfield District
  -  Primary School
  -  Secondary School
  -  Leisure Centre
  -  Childrens Centre
  -  Post Office
  -  Library
  -  Doctors Surgery
  -  Dentist
  -  Adult Social Care

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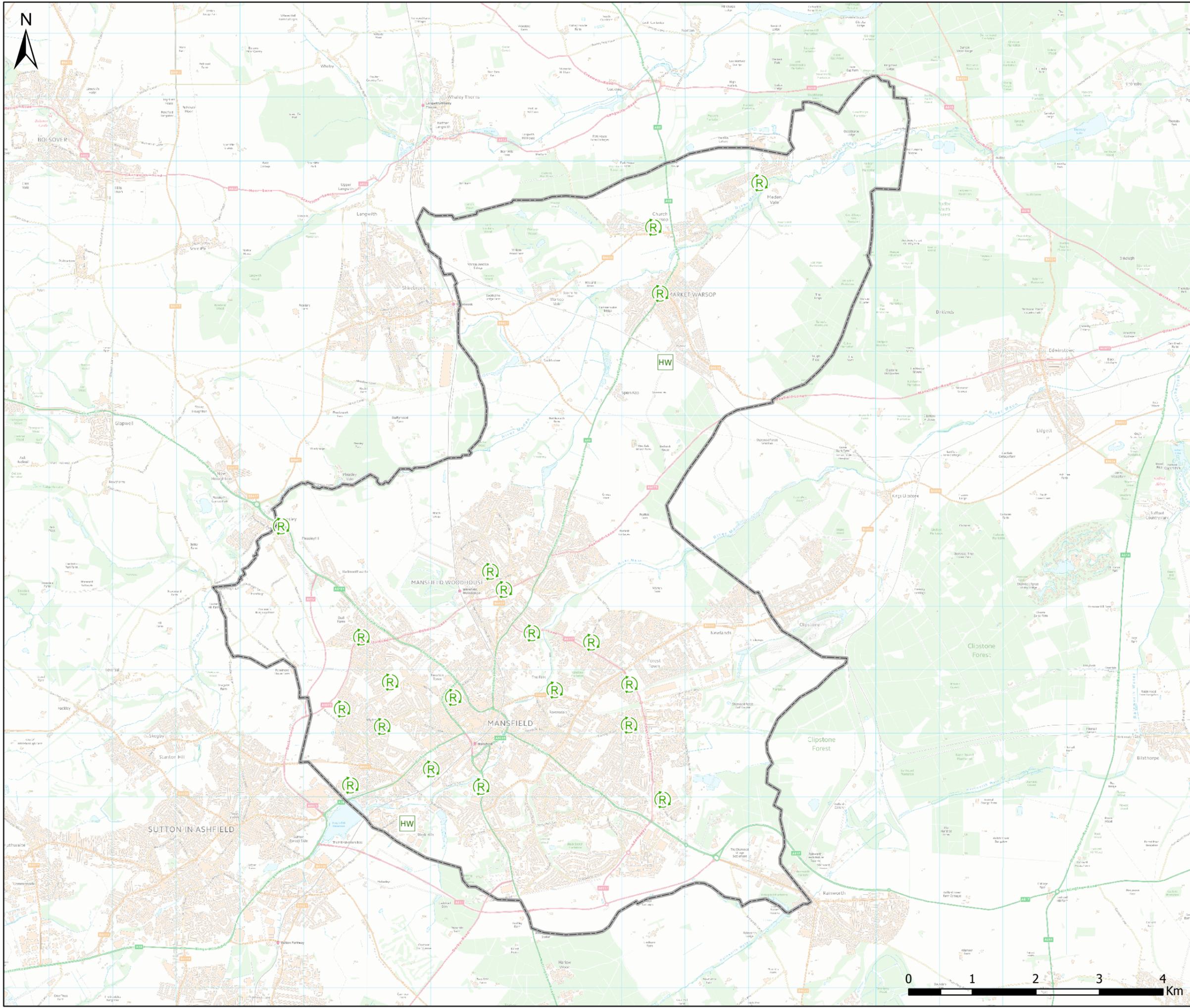
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Project:  
Mansfield DC IDP

Drawing Title:  
 Figure 3  
 Local Amenities

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	002	-		



### Legend

-  Mansfield District
-  Household Waste Recycling Centre (HWRC)
-  Recycling Sites

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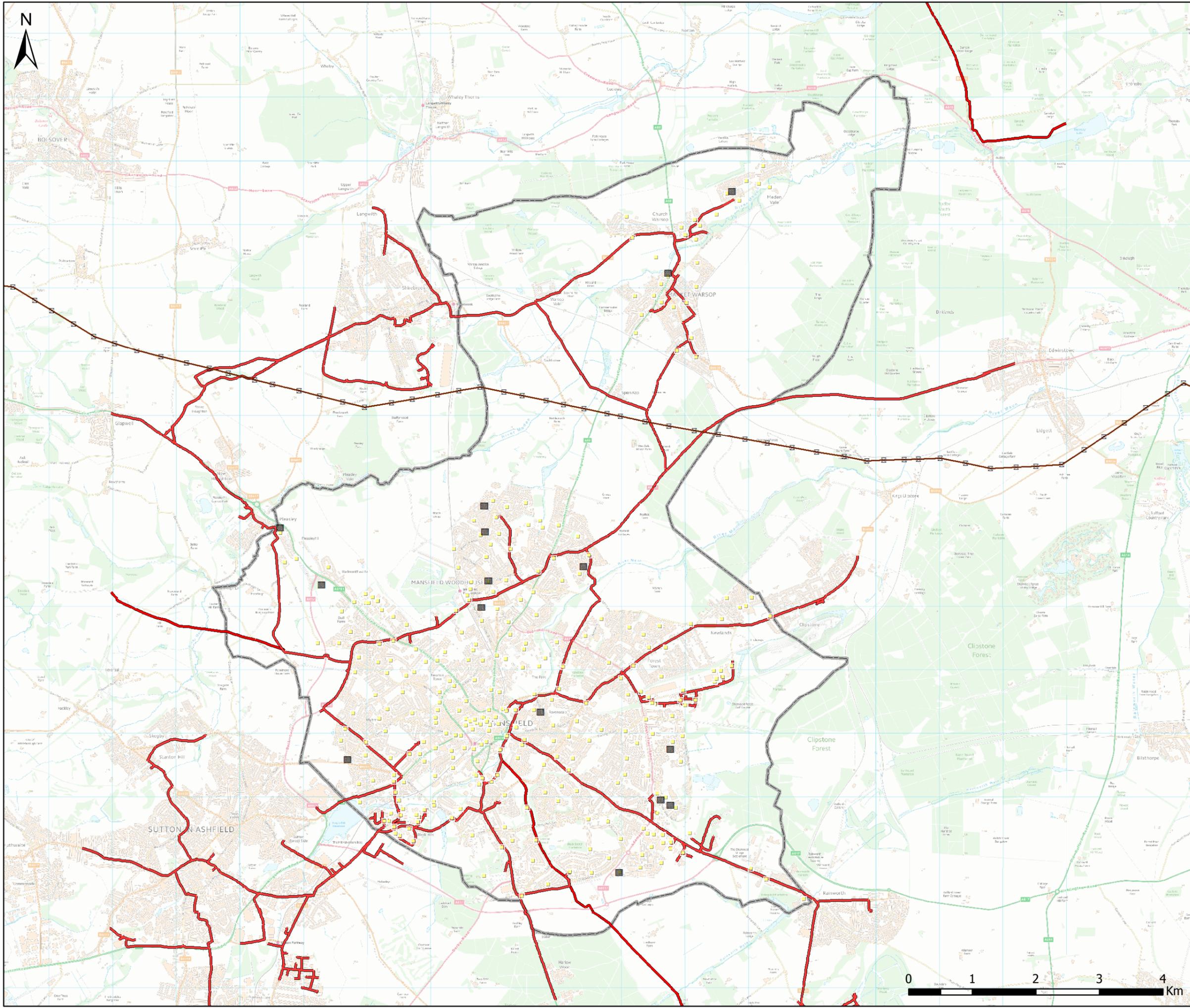


Project:  
Mansfield DC IDP

Drawing Title:  
**Figure 4**  
 Waste and Recycling Sites

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	003	-		





- ### Legend
-  Mansfield District
  -  District Heating Boiler House
  -  Electricity Sub Station
  -  Electricity Pylon
  -  High Voltage Electricity Line
  -  Gas Pipeline

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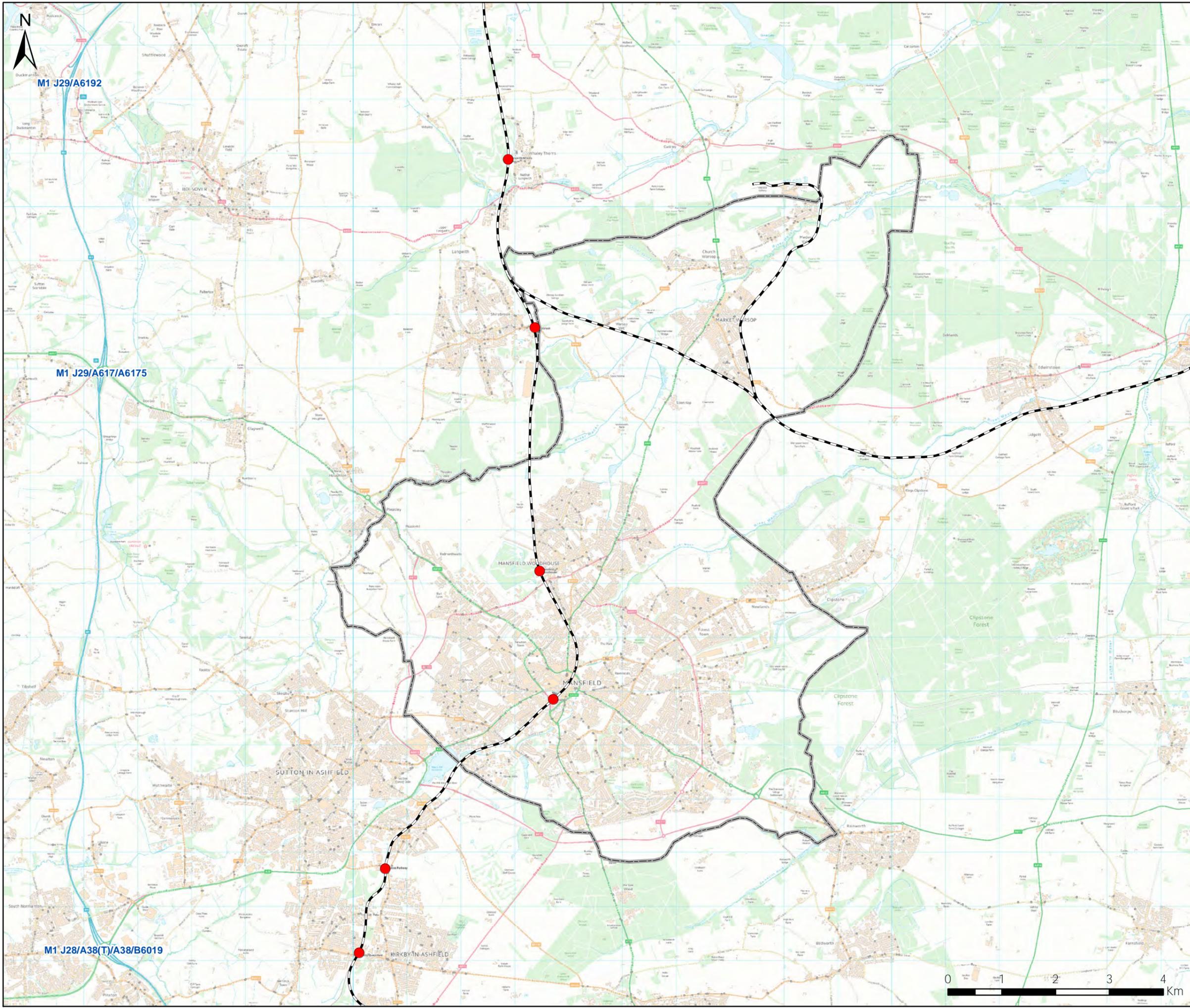


Project:  
Mansfield DC IDP

Drawing Title:  
Figure 5  
Energy Infrastructure

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	004	-		





### Legend

-  Mansfield District
-  Bus Stop
-  Railway Station
-  Rail Line

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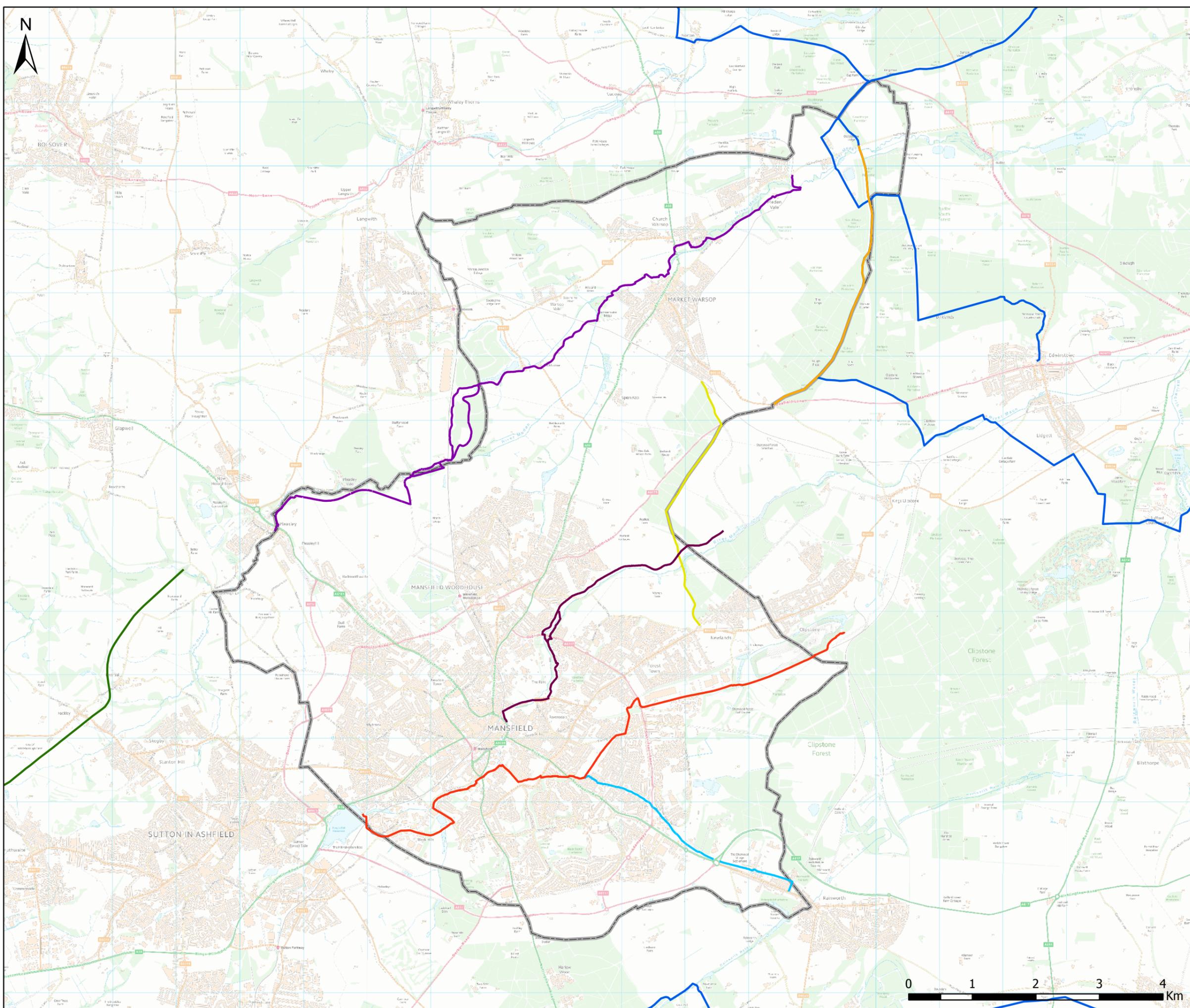
Project:  
Mansfield DC IDP

Drawing Title:  
**Figure 6**  
Public Transport Infrastructure

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	008	-		







- ### Legend
- Mansfield District
  - Timberland Trail
  - Thynghowe Trail
  - Teversal Trail
  - Robin Hood Way Trail
  - Meden Trail
  - Maun Valley Trail
  - Mansfield Way
  - Clipstone to Warsop Trail

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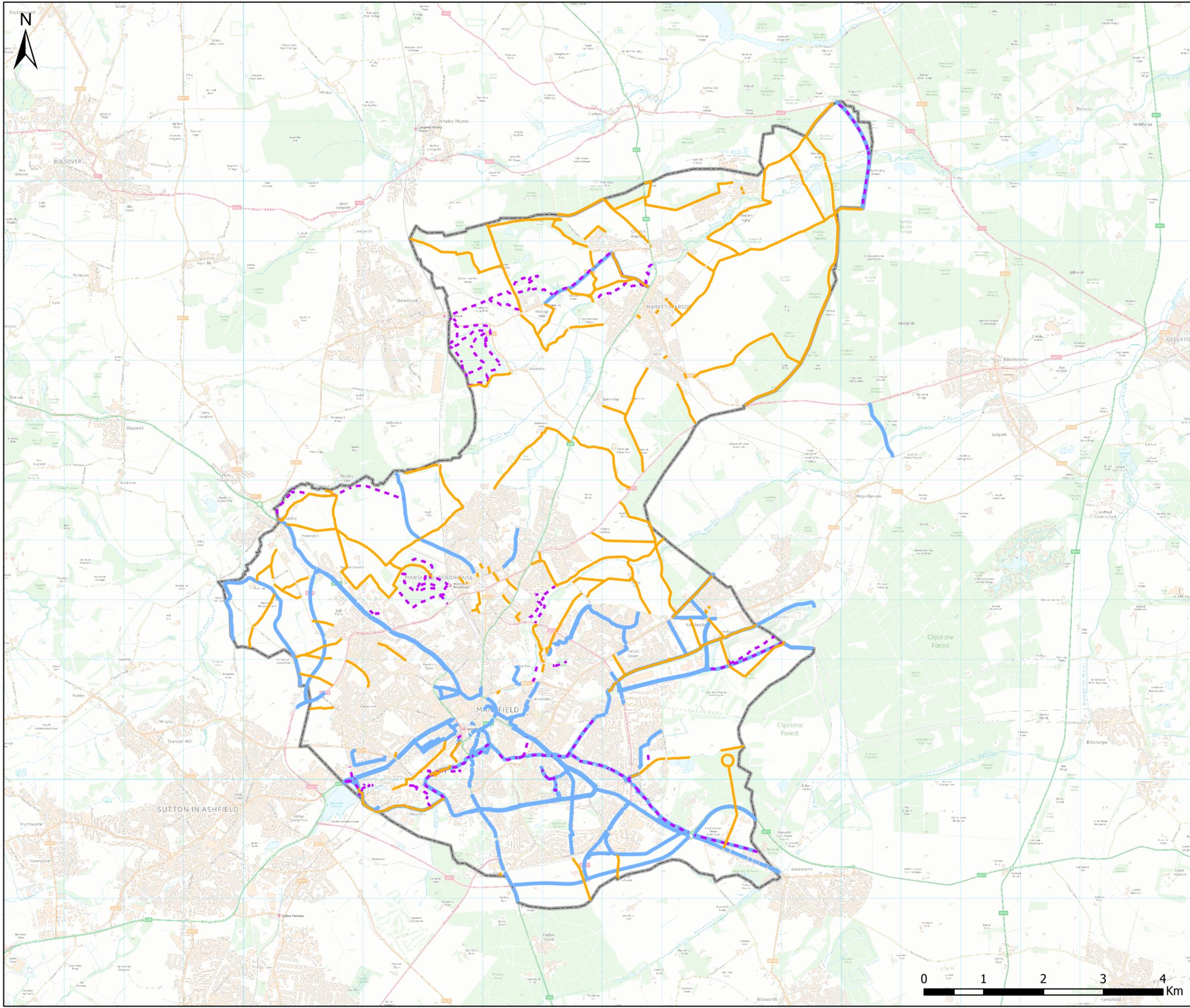


Project:  
Mansfield DC IDP

Drawing Title:  
Figure 8  
Defined Trails

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	005	-		





### Legend

-  Mansfield District
-  Public Rights of Way
-  Cycle Infrastructure
-  Non Definitive Access

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A	Layers updated	PT	JJC	ASG	05/05/17
REV	DESCRIPTION	BY	CHK	APP	DATE

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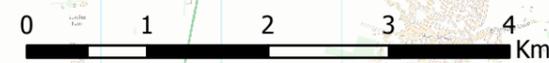
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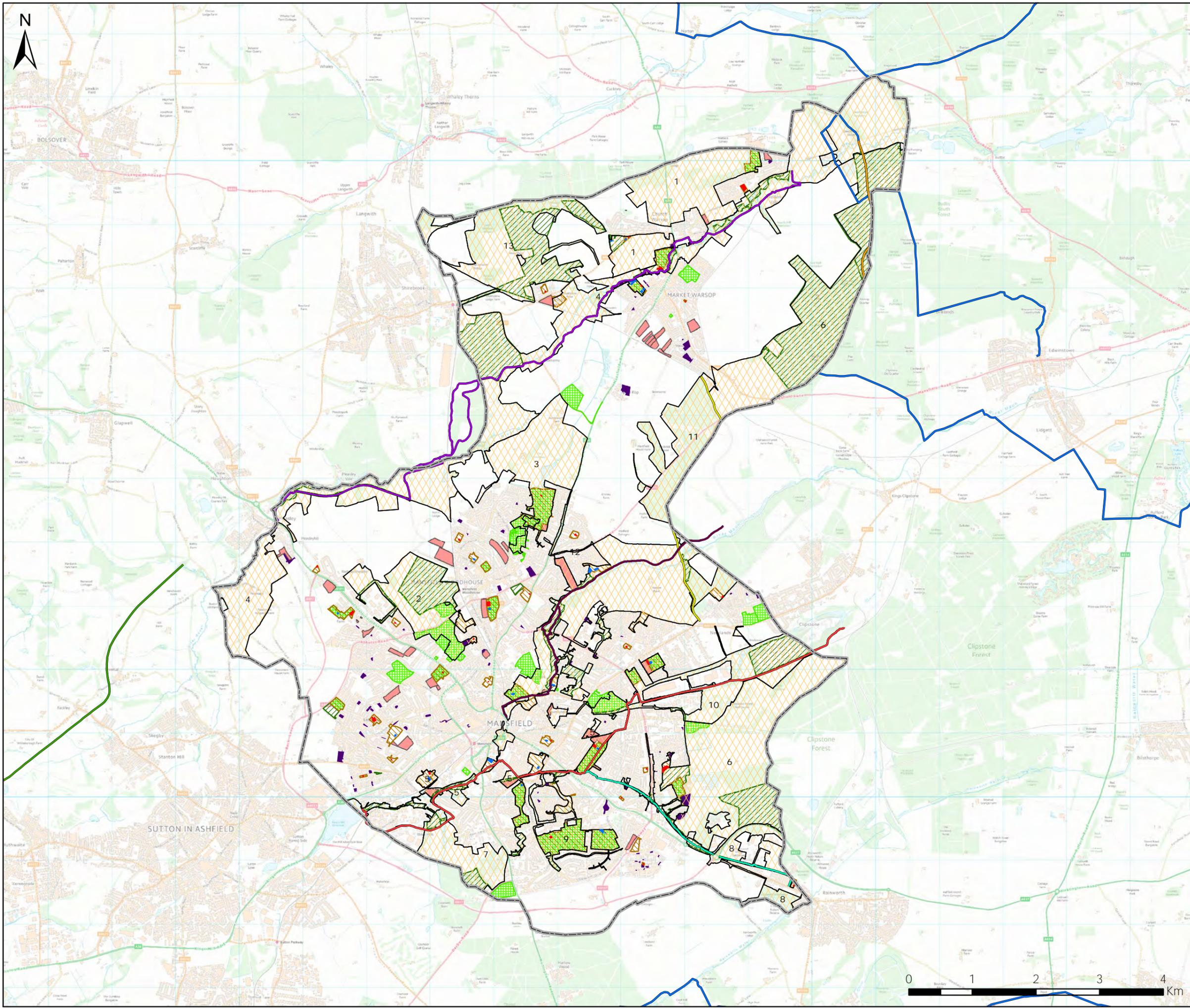


Project:  
Mansfield DC IDP

Drawing Title:  
Figure 9  
Walking and Cycling Infrastructure

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	09/09/16	RJH	09/09/16	ASG	12/09/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	006	A		





- Legend**
-  Mansfield District
  -  Sites Supporting Sports Pitches
  -  Allotments
  -  Children's Play Space
  -  Teenage Play Space
  -  Amenity Green Space
  -  Natural/Semi-Natural Green Space
  -  Parks and Recreation Grounds
  -  Timberland Trail
  -  Thynghowe Trail
  -  Teversal Trail
  -  Robin Hood Way Trail
  -  Meden Trail
  -  Maun Valley Trail
  -  Mansfield Way
  -  Clipstone to Warsop Trail
  -  **Strategic Green Infrastructure Areas**

- Site 1: Warsop and Meden Vale
- Site 2: Oxclose Woods
- Site 3: Woodhouse
- Site 4: Meden Vale
- Site 5: Timberland Trail
- Site 6: Sherwood
- Site 7: Cauldwell
- Site 8: Mansfield Way
- Site 9: Berry Hill
- Site 10: Vicar Water
- Site 11: Clipstone to Warsop
- Site 12: Maun Valley
- Site 13: Warsop Vale

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C	GI areas/ parks & green space update	JJC	RJH	ASG	23/03/18
B	Legend update	JJC	RJH	ASG	27/11/17
A	New layers added in	PT	RJH	RJH	05/05/17
REV	DESCRIPTION	BY	CHK	APP	DATE

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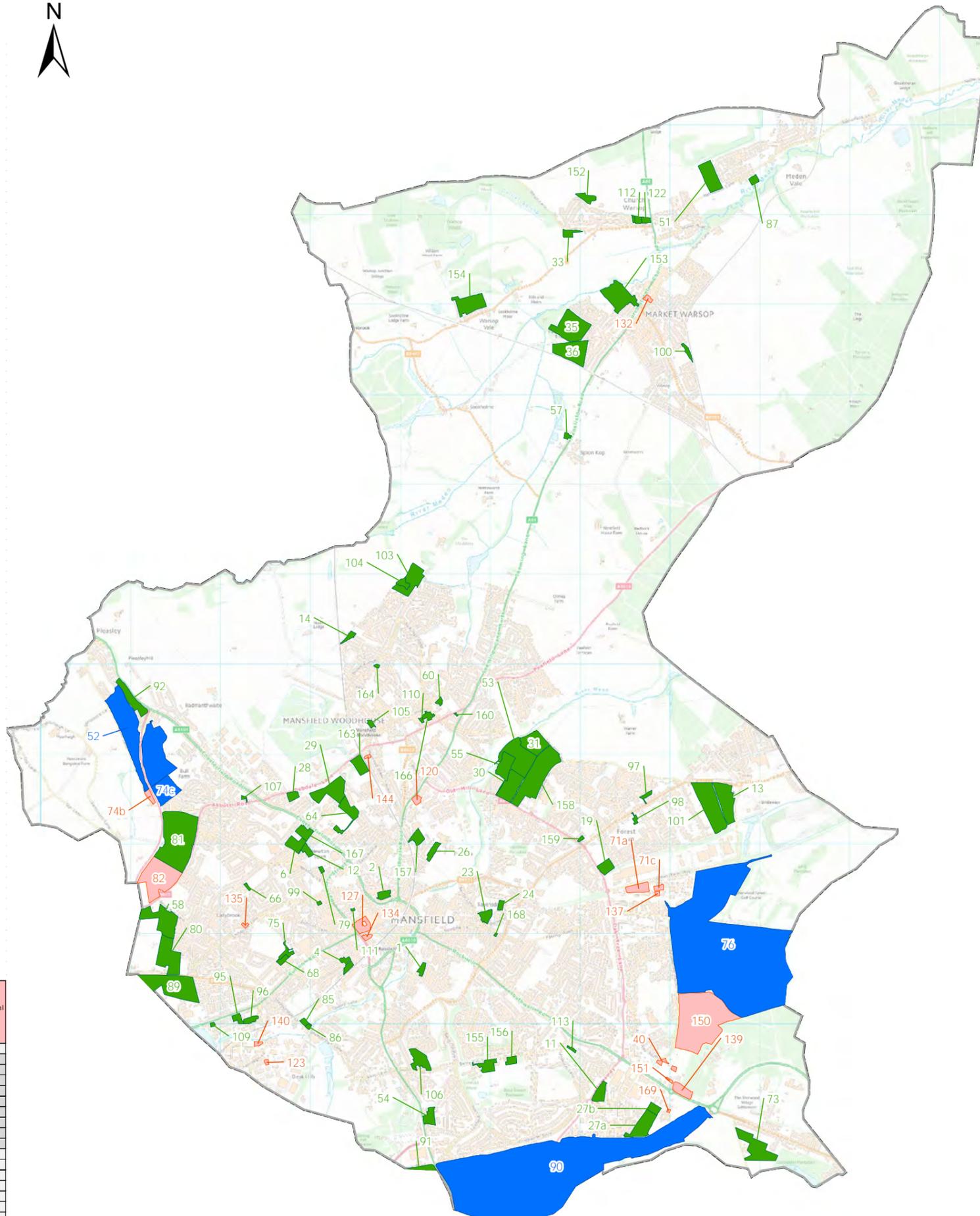
Project:  
Mansfield DC IDP

Drawing Title:  
Figure 10  
Open Space and Green Infrastructure

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	26/10/16	RJH	26/10/16	ASG	26/10/16
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	011	C		

Mansfield District Local Plan - Housing Growth

HELAA Site Ref	PP= Planning Permission WPP = Without Planning Permission	Location	Name	Total (Plan Period)	Post Plan	Overall Total
87	PP	Warsop	Welbeck Farm	32	0	32
112	PP	Warsop	Land at Moorfield Farm	8	0	8
152	PP	Warsop	Land off Birch Street	30	0	30
153	PP	Warsop	The Royal Estate	103	0	103
154	PP	Warsop	Land at West St and King St	67	0	67
33	WPP	Warsop	Wood Lane (Miners Welfare)	31	0	31
35	WPP	Warsop	Stonebridge Lane / Sookholme Lane	200	0	200
36	WPP	Warsop	Sookholme Lane / Sookholme Drive	200	0	200
51	WPP	Warsop	Land off Netherfield Lane	120	0	120
57	WPP	Warsop	Land off Mansfield Road, Spion Kop (adj) The Gables	8	0	8
100	WPP	Warsop	Land at the rear of Cherry Paddocks	19	0	19
122	WPP	Warsop	Moorfield Farm	17	0	17
1	PP	Mansfield	Former Mansfield Brewery (part B)	23	0	23
2	PP	Mansfield	Former Mansfield General Hospital	54	0	54
13	PP	Mansfield	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)	190	0	190
27b	PP	Mansfield	Land off Sherwood Oaks Close	46	0	46
80	PP	Mansfield	Land North of Skogby Lane	150	0	150
81	PP	Mansfield	Pennin Farm (Housing)	430	0	430
85	PP	Mansfield	Land off Quarry Lane	17	0	17
86	PP	Mansfield	Land at the corner of Quarry Lane, Mansfield	21	0	21
90	PP	Mansfield	Lindhurst	1,275	425	1,700
92	PP	Mansfield	Pleasley Hill Regeneration Area	151	0	151
95	PP	Mansfield	Vauxhall Garage	41	0	41
96	PP	Mansfield	Land at Hermitage Lane	25	0	25
97	PP	Mansfield	Land to the rear of 183 Clipstone Road West	12	0	12
103	PP	Mansfield	Park Hall Farm	130	0	130
106	PP	Mansfield	Former Mansfield Sand Co	107	0	107
107	PP	Mansfield	20 Abbott Road	8	0	8
109	PP	Mansfield	Land off Sutton Road	10	0	10
110	PP	Mansfield	Land to the rear of 5 Welbeck Road	10	0	10
111	PP	Mansfield	22 St John Street	8	0	8
113	PP	Mansfield	284 Berry Hill Lane	5	0	5
155	PP	Mansfield	Berry Hill Hall	38	0	38
156	PP	Mansfield	Former Miners Offices	18	0	18
157	PP	Mansfield	The Ridge	43	0	43
158	PP	Mansfield	Land off Sandlands Way	251	0	251
159	PP	Mansfield	Birchlands/Old Mill Lane	9	0	9
160	PP	Mansfield	32 Warsop Road	5	0	5
163	PP	Mansfield	Development off Dbdale Lane	90	0	90
164	PP	Mansfield	Former garage site Alexandra Avenue	5	0	5
166	PP	Mansfield	Land off Portland Street (West)	32	0	32
167	PP	Mansfield	Poppy Fields	64	0	64
168	PP	Mansfield	10A Montague Street	8	0	8
4	WPP	Mansfield	Land astride Victoria Street	63	0	63
6	WPP	Mansfield	Centenary Lane (phase 3)	93	0	93
11	WPP	Mansfield	Bellamy Road Recreation Ground	64	0	64
12	WPP	Mansfield	Broomhill Lane Allotments (part)	35	0	35
14	WPP	Mansfield	Land at Cox's Lane	20	0	20
19	WPP	Mansfield	Allotment site at Pump Hollow Road	64	0	64
23	WPP	Mansfield	Sandy Lane	63	0	63
24	WPP	Mansfield	Sherwood Close	32	0	32
26	WPP	Mansfield	Land at Windmill Lane (former nursery)	37	0	37
27a	WPP	Mansfield	Land at Redruth Drive	99	0	99
28	WPP	Mansfield	Dbdale Lane / Emerald Close	32	0	32
29	WPP	Mansfield	Sherwood Rise (adjacent Queen Elizabeth Academy)	87	0	87
30	WPP	Mansfield	Land at Old Mill Lane / Stirling Lane	86	0	86
31	WPP	Mansfield	Land at New Mill Lane	100	0	100
52	WPP	Mansfield	Pleasley Hill Farm	660	0	660
53	WPP	Mansfield	Land between Old Mill Lane & New Mill Lane	230	0	230
54	WPP	Mansfield	Former Evans Hatched site	66	0	66
55	WPP	Mansfield	Tall Trees mobile homes Old Mill Lane	100	0	100
58	WPP	Mansfield	Fields Farm, Abbott Road	200	0	200
60	WPP	Mansfield	Land of Lay Lane	15	0	15
64	WPP	Mansfield	Pheasant Hill and Highfield Close	98	0	98
66	WPP	Mansfield	Herrop White Road Allotments	10	0	10
68	WPP	Mansfield	Kirkland Avenue Industrial Park	20	0	20
73	WPP	Mansfield	Three Thorn Hollow Farm	188	0	188
74c	WPP	Mansfield	Water Lane	139	0	139
75	WPP	Mansfield	Former Mansfield Hosiery Mill Car Park & Electricity Board workshops & social club	29	0	29
76	WPP	Mansfield	Emsley Heath	600	200	800
79	WPP	Mansfield	Land of Rosemary Street	10	0	10
89	WPP	Mansfield	Land off Skogby Lane	215	0	215
91	WPP	Mansfield	Strip of land off Cauldwell Road (opposite the College)	42	0	42
98	WPP	Mansfield	Land to the rear of 66-70 Clipstone Road West	14	0	14
99	WPP	Mansfield	18 Burns Street	12	0	12
101	WPP	Mansfield	Land south of Clipstone Road East	313	0	313
104	WPP	Mansfield	Park Hall Farm	10	0	10
105	WPP	Mansfield	Land at 7 Ocloose Lane	17	0	17
-	-	Warsop	Large site completions	69	0	69
-	-	Mansfield	Large site completions	225	0	225
-	-	Warsop	Small site completions	43	0	43
-	-	Mansfield	Small site completions	328	0	328
-	-	Warsop	Windfall Allowance	33	0	33
-	-	Mansfield	Windfall Allowance	437	0	437
-	-	Warsop	Losses	0	0	0
-	-	Mansfield	Losses	-3	0	-3
				9,106	625	9,731



Legend

- Mansfield District
- Proposed Site Usage**
- Housing
- Economic
- Mixed

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Client:



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 AVALON WAY  
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Project:  
 Mansfield DC IDP

Drawing Title:  
 Figure 11  
 Proposed Development Sites

Scale @ A3	Drawn	Date	Checked	Date	Approved Date
NTS	PJ	31/03/17	ASG	31/03/17	ASG 31/03/17
Project No.	Office	Type	Drawing No.	Revision	
A098331	35	18	013	-	

Mansfield District Local Plan - Employment Growth

HELAA Site Ref	PP= Planning Permission WPP = Without Planning Permission	Location	Name	Convenience Retail (sqm)	Comparison Retail (sqm)	Leisure (sqm)	Offices (sqm)	Industrial (Ha)
132	WPP	Warsop	Former Strand cinema	800	0	0	0	0.00
82	PP	Mansfield	Pennin Farm (employment)	84	0	0	3,300	11.04
90	PP	Mansfield	Lindhurst	25,654	0	0	24,255	12.13
120	PP	Mansfield	Land at Old Peggs	1,700	0	0	0	0.00
123	PP	Mansfield	Land Off Kestral Road	0	0	0	0	0.15
134	PP	Mansfield	Land at Belvedere Street	816	0	0	1,020	0.00
135	PP	Mansfield	190 Ladybrook Lane	400	0	0	0	0.00
137	PP	Mansfield	Plot 17	0	0	0	0	0.25
140	PP	Mansfield	Hermitage Lane Industrial Estate (Site A)	0	0	0	0	0.40
169	PP	Mansfield	Land Adjacent Unit 3, Sherwood Oaks Close	0	0	0	627	0.00
40	WPP	Mansfield	Land at Ratcher Hill Quarry (south west)	0	0	0	0	0.75
52	WPP	Mansfield	Pleasley Hill Farm	10,200	0	10,200	2,550	2.55
71a	WPP	Mansfield	Site A, Long Stoop Way	0	0	0	4,560	1.14
71c	WPP	Mansfield	Site C, Long Stoop Way	0	0	0	1,200	0.30
74b	WPP	Mansfield	Water Lane	0	0	0	3,400	0.00
74c	WPP	Mansfield	Water Lane	0	0	0	2,336	0.58
76	WPP	Mansfield	Emsley Heath	0	0	0	0	6.76
127	WPP	Mansfield	Former bus station site	15,000	0	775	0	0.00
139	WPP	Mansfield	Frontage to Ransom Wood Business Park	750	0	1,000	0	0.00
144	WPP	Mansfield	Land off Sherwood Street	0	0	0	0	0.23
150	WPP	Mansfield	Ratcher Hill Quarry	0	0	18,460	0	1.79
151	WPP	Mansfield	Carpark opposite Birch House	0	0	0	880	0.00
-	-	Mansfield	Large site completions	0	0	0	4,563	2.32
				55,404	0	30,435	56,341	40.38



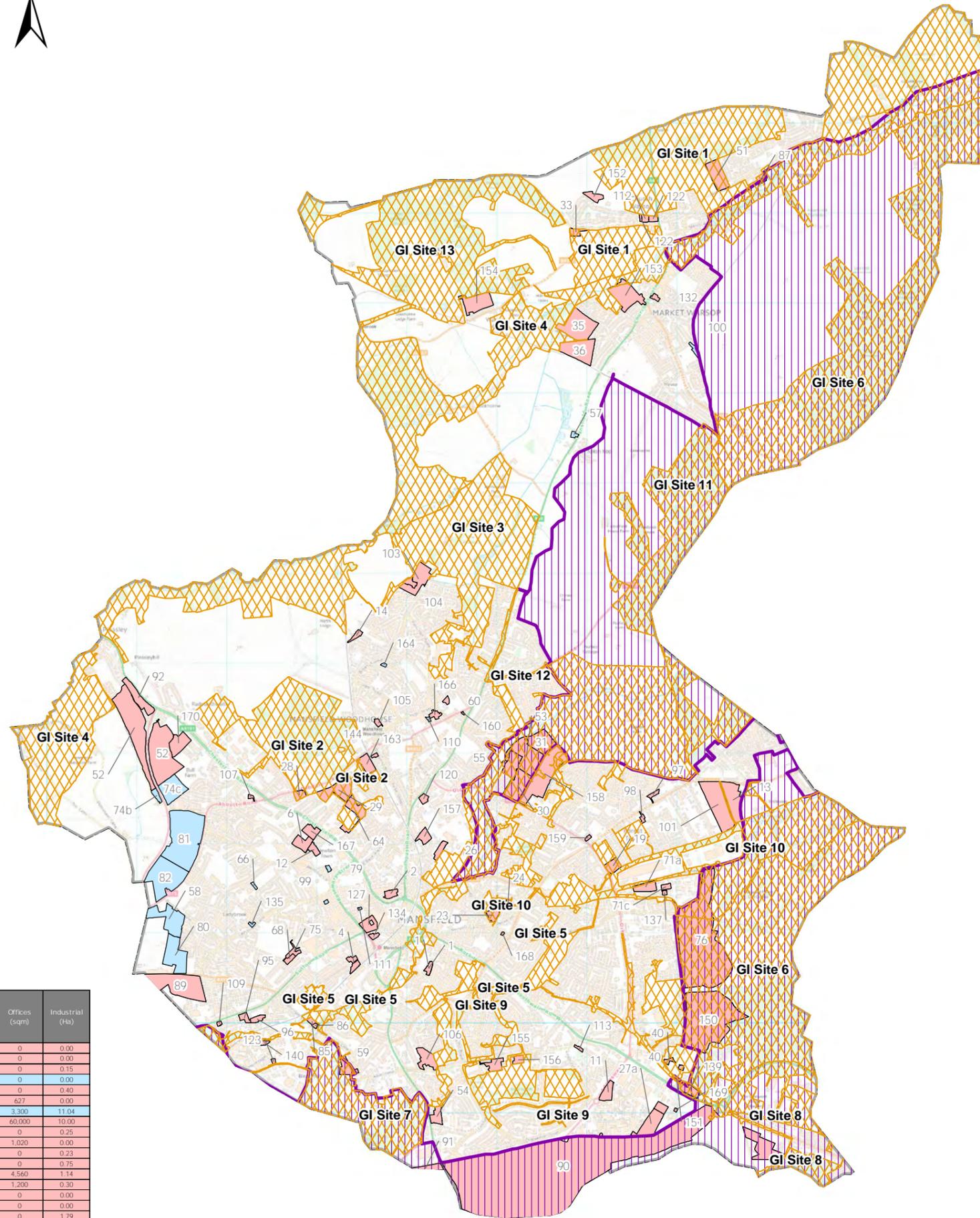
Mansfield District Local Plan - Housing Growth

HELA A Site Ref	PP= Planning Permission WPP= Without Planning Permission	Location	Name	Total (Plan Period)	Post Plan	Overall Total
87	PP	Worsop	Welbeck Farm	32	0	32
112	PP	Worsop	Land at Moorfield Farm	8	0	8
152	PP	Worsop	Land off Birch Street	30	0	30
153	PP	Worsop	The Royal Estate	103	0	103
154	PP	Worsop	Land at West St and King St	67	0	67
33	WPP	Worsop	Wood Lane (Miners Welfare)	31	0	31
35	WPP	Worsop	Stonebridge Lane / Sookholme Lane	200	0	200
36	WPP	Worsop	Sookholme Lane / Sookholme Drive	200	0	200
51	WPP	Worsop	Land off Hetherfield Lane	120	0	120
57	WPP	Worsop	Land off Mansfield Road, Spion Kop (adj. The Gables)	8	0	8
100	WPP	Worsop	Land at the rear of Cherry Paddocks	19	0	19
122	WPP	Worsop	Moorfield Farm	17	0	17
1	PP	Mansfield	Former Mansfield Brewery (part B)	54	0	54
2	PP	Mansfield	Former Mansfield General Hospital	190	0	190
13	PP	Mansfield	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)	46	0	46
27b	PP	Mansfield	Land off Sherwood Oaks Close	46	0	46
80	PP	Mansfield	Land North of Slegby Lane	150	0	150
81	PP	Mansfield	Pennington Farm (Housing)	430	0	430
85	PP	Mansfield	Land off Quarry Lane	17	0	17
86	PP	Mansfield	Land at the corner of Quarry Lane, Mansfield.	21	0	21
90	PP	Mansfield	Lindhurst	1,275	425	1,700
92	PP	Mansfield	Pleasley Hill Regeneration Area	151	0	151
95	PP	Mansfield	Vaudhall Garage	41	0	41
96	PP	Mansfield	Land at Hermitage Lane	25	0	25
97	PP	Mansfield	Land to the rear of 183 Clipstone Road West	12	0	12
103	PP	Mansfield	Park Hill Farm	130	0	130
106	PP	Mansfield	Former Mansfield Sand Co	107	0	107
107	PP	Mansfield	20 Abbott Road	8	0	8
109	PP	Mansfield	Land off Sutton Road	10	0	10
110	PP	Mansfield	Land to the rear of 5 Welbeck Road	10	0	10
111	PP	Mansfield	22 St John Street	8	0	8
113	PP	Mansfield	284 Berry Hill Lane	5	0	5
155	PP	Mansfield	Berry Hill Hall	38	0	38
156	PP	Mansfield	Former Miners Offices	18	0	18
157	PP	Mansfield	The Ridge	43	0	43
158	PP	Mansfield	Land off Sandlands Way	251	0	251
159	PP	Mansfield	Birchlands/Old Mill Lane	9	0	9
160	PP	Mansfield	32 Worsop Road	5	0	5
163	PP	Mansfield	Development off Debdale Lane	90	0	90
164	PP	Mansfield	Former garage site Alexandra Avenue	5	0	5
166	PP	Mansfield	Land off Portland Street (West)	32	0	32
167	PP	Mansfield	Poppy Fields	64	0	64
168	PP	Mansfield	10A Montague Street	8	0	8
1	WPP	Mansfield	Former Mansfield Brewery (part B)	23	0	23
4	WPP	Mansfield	Land astride Victoria Street	63	0	63
6	WPP	Mansfield	Centenary Lane (phase 3)	93	0	93
11	WPP	Mansfield	Bellamy Road Recreation Ground	64	0	64
12	WPP	Mansfield	Broomhill Lane Allotments (part)	35	0	35
14	WPP	Mansfield	Land at Cox's Lane	20	0	20
19	WPP	Mansfield	Allotment site at Pump Hollow Road	64	0	64
23	WPP	Mansfield	Sandy Lane	63	0	63
24	WPP	Mansfield	Sherwood Close	32	0	32
26	WPP	Mansfield	Land at Windmill Lane (former nursery)	37	0	37
27a	WPP	Mansfield	Land at Redruth Drive	99	0	99
28	WPP	Mansfield	Debdale Lane / Emerald Close	32	0	32
29	WPP	Mansfield	Sherwood Rise (adjacent Queen Elizabeth Academy)	87	0	87
30	WPP	Mansfield	Land at Old Mill Lane / Strating Lane	86	0	86
31	WPP	Mansfield	Land at New Mill Lane	100	0	100
52	WPP	Mansfield	Pleasley Hill Farm	660	0	660
53	WPP	Mansfield	Land between Old Mill Lane & New Mill Lane	230	0	230
54	WPP	Mansfield	Former Evans Halshaw site	66	0	66
55	WPP	Mansfield	Tall Trees mobile homes Old Mill Lane	100	0	100
58	WPP	Mansfield	Fields Farm, Abbott Road	200	0	200
59	WPP	Mansfield	Land to the rear of High Oakham Hill	39	0	39
60	WPP	Mansfield	Land of Ley Lane	15	0	15
64	WPP	Mansfield	Pheasant Hill and Highfield Close	98	0	98
66	WPP	Mansfield	Harrap White Road Allotments	10	0	10
68	WPP	Mansfield	Kirland Avenue Industrial Park	20	0	20
73	WPP	Mansfield	Three Thorn Hollow Farm	188	0	188
74c	WPP	Mansfield	Water Lane	139	0	139
75	WPP	Mansfield	Former Mansfield Hosiery Mill Car Park & Electricity Board workshops & social club	29	0	29
76	WPP	Mansfield	Elmsley Heath	600	200	800
79	WPP	Mansfield	Land of Rosemary Street	10	0	10
89	WPP	Mansfield	Land off Slegby Lane	215	0	215
91	WPP	Mansfield	Strip of land off Cauldwell Road (opposite the College)	42	0	42
98	WPP	Mansfield	Land to the rear of 66-70 Clipstone Road West	14	0	14
99	WPP	Mansfield	18 Burns Street	12	0	12
101	WPP	Mansfield	Land south of Clipstone Road East	313	0	313
104	WPP	Mansfield	Park Hill Farm	10	0	10
105	WPP	Mansfield	Land at 7 Oxclose Lane	17	0	17
170	WPP	Mansfield	Land off Warmby Avenue	125	0	125
-	-	Worsop	Large site completions	69	0	69
-	-	Mansfield	Large site completions	225	0	225
-	-	Worsop	Small site completions	39	0	39
-	-	Mansfield	Small site completions	324	0	324
-	-	Worsop	Windfall Allowance	33	0	33
-	-	Mansfield	Windfall Allowance	437	0	437
-	-	Worsop	Losses	0	0	0
-	-	Mansfield	Losses	-3	0	-3
				<b>9,262</b>	<b>625</b>	<b>9,887</b>



Mansfield District Local Plan - Employment Growth

HELA A Site Ref	PP= Planning Permission WPP= Without Planning Permission	Location	Name	Convenience Retail (sqm)	Comparison Retail (sqm)	Leisure (sqm)	Offices (sqm)	Industrial (Ha)
132	WPP	Worsop	Former Strand cinema	800	0	0	0	0.00
120	PP	Mansfield	Land at Old Piggs	1,700	0	0	0	0.00
123	PP	Mansfield	Land off Kestral Road	0	0	0	0	0.15
135	PP	Mansfield	190 Ladybrook Lane	400	0	0	0	0.00
140	PP	Mansfield	Hermitage Lane Industrial Estate (Site A)	0	0	0	0	0.40
169	PP	Mansfield	Land Adjacent Unit 3, Sherwood Oaks Close	0	0	0	627	0.00
82	PP	Mansfield	Pennington Farm (employment)	84	0	0	3,300	11.04
90	PP	Mansfield	Lindhurst	600	400	0	60,000	10.00
137	PP	Mansfield	Plot 17	0	0	0	0	0.25
134	PP	Mansfield	Land at Belvedere Street	816	0	0	1,020	0.00
144	WPP	Mansfield	Land off Sherwood Street	0	0	0	0	0.23
40	WPP	Mansfield	Land at Ratchler Hill Quarry (south west)	0	0	0	0	0.75
71a	WPP	Mansfield	Site A, Long Stoop Way	0	0	0	4,560	1.14
71c	WPP	Mansfield	Site C, Long Stoop Way	0	0	0	1,200	0.30
127	WPP	Mansfield	Former bus station site	15,000	0	775	0	0.00
139	WPP	Mansfield	Frontage to Ransom Wood Business Park	750	0	1,000	0	0.00
150	WPP	Mansfield	Ratchler Hill Quarry	0	0	18,460	0	1.79
151	WPP	Mansfield	Car park opposite Birch House	0	0	0	880	0.00
52	WPP	Mansfield	Pleasley Hill Farm	7,140	3,060	10,200	10,200	2.55
74b	WPP	Mansfield	Water Lane	0	0	0	3,400	0.00
74c	WPP	Mansfield	Water Lane	0	0	0	2,336	0.58
76	WPP	Mansfield	Elmsley Heath	0	0	0	0	6.76
-	-	Mansfield	Large site completions	0	0	0	4,563	2.32
				<b>27,290</b>	<b>3,460</b>	<b>30,435</b>	<b>92,086</b>	<b>38.26</b>



Legend

- Mansfield District
- Strategic Green Infrastructure Areas
- Miner2Major Project Boundary
- Within 400m of Strategic GI
- More than 400m from Strategic GI

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REV	DESCRIPTION	BY	CHK	APP	DATE
A	Updated GI areas	JJC	SP	ASG	26.03.18

Client:



EXECUTIVE PARK  
 AVALON WAY  
 ANSTEY  
 LEICESTER  
 LE7 7GR  
 TEL: +44 (0)116 234 8000  
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 e-mail: leicester@wyg.com



Project:  
 Mansfield DC IDP

Drawing Title:  
 Figure 12  
 Proposed Development Sites Proximity  
 To Strategic Green Infrastructure

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
NTS	JJC	28/11/17	SP	28/11/17	ASG	28/11/17
Project No.	Office	Type	Drawing No.	Revision		
A098331	35	18	015	A		





## Appendices



## Appendix A – Infrastructure Schedule

# Summary Infrastructure Schedule

Infrastructure Schedule									
Location	Category	Infrastructure Required	Cost Estimate	Funding Mechanism	Delivery Responsibility	Existing Provision	Requirement/ Additional Demand	Priority	Comments
Location Specific									
Mansfield Urban Area	GP Practices	Contribution towards facilities to meet additional demand (8.2 FTE GPs)	£5,198,570	S106/Developer	NHS MACCG	37.5 FTE GPs	45.6 FTE GPs	High	New/expanded GP Practices
	Primary Schools	Additional demand of 1,149 primary school places	£16,897,587	S106/Developer	NCC	Satisfactory	1,149 New Places	High	New 2FE (420 pupil) and 1FE(210) primary schools. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs. Costs could be higher if a new classroom or new school is required.
	Secondary Schools	Additional demand of 876 secondary school places	£15,154,280	S106/Developer	NCC	Significant Shortfall	876 New Places	High	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£251,501	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
	Electricity	Significant development likely to require upgrades to the Skegby Lane and Rufford transformers and associated circuit reinforcement	N/A	Developer funded	Western Power Distribution	N/A	N/A	Medium	Delivered as part of development
	Transport Improvements	Chesterfield Road / Debdale Lane	£1,860,000	S106/Developer	Developer/ NCC	N/A	N/A	High	Junction capacity improvement. Cost estimate supplied by NCC.
		A60 Nottingham Road / Berry Hill Lane	£10,000	S106/Developer	Developer/ NCC	N/A	N/A	High	Junction capacity improvement. Cost estimate supplied by NCC.
		Carter Lane / Southwell Road / Windsor Road	£40,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
		A6191 Ratcliffe Gate / A60 St Peters Way	£5,000	S106/Developer	Developer/ NCC	N/A	N/A	High	Junction capacity improvement. Cost estimate supplied by NCC.
		Sutton Road / Skegby Lane / Sheepbridge Lane	£50,000	S106/Developer	Developer/ NCC	N/A	N/A	High	Junction capacity improvement. Details yet to be determined. Cost estimate indicative at this stage.
		A6191 Southwell Road / Oak Tree Lane / Adamsway	£40,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
		A6117 Oak Tree Lane / Eakring Road	£3,210,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
		A60 Nottingham Road / A611 Derby Road	£0	Developer	Developer	N/A	N/A	Medium	Junction capacity improvement. Improvement to be delivered as part of development.
		A6191 Chesterfield Road / A617 MARR	£3,340,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
		A60 Nottingham Road / Baums Lane / Park Lane	£2,010,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
A6191 Southwell Road / Berry Hill Lane	£5,000	S106/Developer	Developer/ NCC	N/A	N/A	Low	Junction capacity improvement. Cost estimate supplied by NCC.		
A6191 / Bellamy Road	£5,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.		
A6009 Rosemary Street / A38 Stockwell Gate	£50,000	S106/Developer	Developer/ NCC	N/A	N/A	Low	Junction capacity improvement. Details yet to be determined. Cost estimate indicative at this stage.		
Pleasley	GP Practices	Contribution towards facilities to meet additional demand (2.2 FTE GPs)	£1,473,280	S106/Developer	NHS MACCG	2.6 FTE GPs	4.7 FTE GPs	High	New/expanded GP Practices
	Primary Schools	Additional demand of 326 primary school places	£4,333,225	S106/Developer	NCC	Satisfactory	326 New Places	High	Creation of 210 new places at Crescent Primary School (subject to feasibility). Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs. Costs could be higher if a new classroom or new school is required.
	Secondary Schools	Additional demand of 248 secondary school places	£4,280,480	S106/Developer	NCC	Zero Spare Places	248 New Places	High	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£71,284	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
	Flood Defences	Property-specific level improvement to flood defences	N/A	S106/Developer/ EA Grant in Aid Funding	EA	N/A	N/A	By 2027	Environment Agency (EA) planned project in FORM pipeline programme which will reduce flood risk to existing properties in the Pleasley Vale area
Mansfield Woodhouse	GP Practices	Contribution towards facilities to meet additional demand (0.1 FTE GPs)	£946,345	S106/Developer	NHS MACCG	7.6 FTE GPs	7.7 FTE GPs	Low	Additional FTE GPs at existing Practices
	Primary Schools	Additional demand of 209 primary school places	£3,358,097	S106/Developer	NCC	Satisfactory	209 New Places	High	Two classroom extension at Leas park Infants/Nettleworth Junior and new 1FE (210) Primary School. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Secondary Schools	Additional demand of 159 secondary school places	£2,761,600	S106/Developer	NCC	Satisfactory	159 New Places	Low	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£45,776	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
	Transport Improvements	A60 Leeming Lane / Peafield Lane	£3,310,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
		A60 Leeming Lane / A6075 Warsop Road	£500,000	NCC	NCC	N/A	N/A	High	NCC plan for a traffic signal junction with provision for the wider A60 bus priority scheme.
		A60 Leeming Lane / Old Mill Lane / Butt Lane	£10,000	S106/Developer	Developer/ NCC	N/A	N/A	Low	Junction capacity improvement. Cost estimate supplied by NCC.
A60 Leeming Lane / New Mill Lane		£1,760,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.	
A6075 Debdale Lane / Priory Road	£50,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Details yet to be determined. Cost estimate indicative at this stage.		
Forest Town	GP Practices	Contribution towards facilities to meet additional demand (2.9 FTE GPs)	£847,255	S106/Developer	NHS MACCG	5.9 FTE GPs	8.8 FTE GPs	High	New/expanded GP Practices
	Primary Schools	Additional demand of 187 primary school places	£3,581,024	S106/Developer	NCC	Shortfall	187 New Places	High	New 1.5FE (315 pupil) Primary School. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Secondary Schools	Additional demand of 143 secondary school places	£2,433,660	S106/Developer	NCC	Satisfactory	143 New Places	Low	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£40,996	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
	Transport Improvements	A6117 Old Mill Lane / B6030 Clipstone Road West	£260,000	S106/Developer	Developer/ NCC	N/A	N/A	High	Junction capacity improvement. Cost estimate supplied by NCC.
Warsop	GP Practices	Contribution towards facilities to meet additional demand	£619,400	S106/Developer	NHS MACCG	2.3 FTE GPs	2.6 FTE GPs	Medium	Additional FTE GPs at existing Practices
	Primary Schools	Additional demand of 137 primary school places	£1,772,159	S106/Developer	NCC	Satisfactory	137 New Places	High	Three additional classrooms required at Birklands Primary School (subject to feasibility). Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Secondary Schools	Additional demand of 104 secondary school places	£1,777,780	S106/Developer	NCC	Satisfactory	104 New Places	Low	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£29,966	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
	Transport Improvements	A60 Church Street / Wood Street, Warsop	£100,000	S106/Developer	Developer/ NCC	N/A	N/A	Medium	Junction capacity improvement. Cost estimate supplied by NCC.
Church Warsop, Meden Vale	GP Practices	Contribution towards facilities to meet additional demand	£307,800	S106/Developer	NHS MACCG	11.6 FTE GPs	11.4 FTE GPs	Low	Additional FTE GPs at existing Practices
	Primary Schools	Additional demand of 68 primary school places	£919,977	S106/Developer	NCC	Satisfactory	68 New Places	High	As per Warsop
	Secondary Schools	Additional demand of 52 secondary school places	£897,520	S106/Developer	NCC	Satisfactory	52 New Places	High	Costs could be higher if a new classroom or new school is required. Cost estimate excludes land costs. NCC expect full cost recovery from developers including land costs.
	Libraries	Provision of additional library stock	£14,891	S106/Developer	NCC	Satisfactory	New Stock per Dwelling	Low	Funding towards library stock items only
District-Wide									
District-Wide	Landfill	3.6 million cubic metres non-hazardous Landfill capacity required within County to meet future demands that the District will contribute towards	N/A	NCC	NCC	N/A	N/A	By 2032/33	Landfill space is running out. Recycling and composting rates are increasing but new landfill capacity will need to be found.
	Energy from Waste (EFW)	200,000 tonnes of extra EFW capacity is required within the County to meet future Commercial and Industrial needs that the District will contribute towards	N/A	NCC	NCC	N/A	N/A	By 2033	Enough capacity for Local Authority Collected Waste within County but a shortfall of approx' 200,000 tonnes to meet future C&I waste management needs
	Municipal Recycling and Composting	182,000 tonnes per annum extra recycling and composting capacity required within the County to meet future demands that the District will contribute towards	N/A	NCC	NCC	N/A	N/A	By 2033	Recycling and composting increasing to meet targets to help reduce demand for landfill.
	Water Supply	Water company charges for: connecting to the existing networks, requisitioning new assets and contributing to wider network reinforcement (where required)	N/A	Developer funded	Severn Trent Water	N/A	N/A	Consistent with development	Delivered as part of development
	Gas	Local connections to strategic infrastructure	N/A	Developer funded	Cadent Gas	N/A	N/A	Consistent with development	Delivered as part of development
	Electricity	Local connections to strategic infrastructure, potential upgrades to primary substations to accommodate employment growth	N/A	Developer funded	Western Power Distribution	N/A	N/A	Consistent with development	Delivered as part of development
	Telecommunications	FTTP for all developments of 30+ dwellings	N/A	N/A	Openreach	N/A	N/A	Consistent with development	Openreach provide free of charge
	Waste Water	Water company charges for: connecting to the existing networks, requisitioning new assets and contributing to wider network reinforcement (where required)	N/A	Developer funded	Severn Trent Water	N/A	N/A	Consistent with development	Delivered as part of development
	Flood Defences	Local measures to reduce the causes and impacts of flooding. Identified and delivered as part of individual developments	N/A	Developer funded	Developer	N/A	N/A	Consistent with development	Delivered as part of development
Community open space, allotments, playing pitches/outdoor sport	Green Infrastructure required where shortfalls in provision have been identified. Green Infrastructure to be provided through developer funding along with partner and grant funding where appropriate for wider strategic Green Infrastructure areas.	N/A	Developer funded, along with partner and grant funding where appropriate for strategic Green Infrastructure areas.	Developer (for provision required in connection to growth sites)	N/A	N/A	Consistent with development	Delivered as part of development	

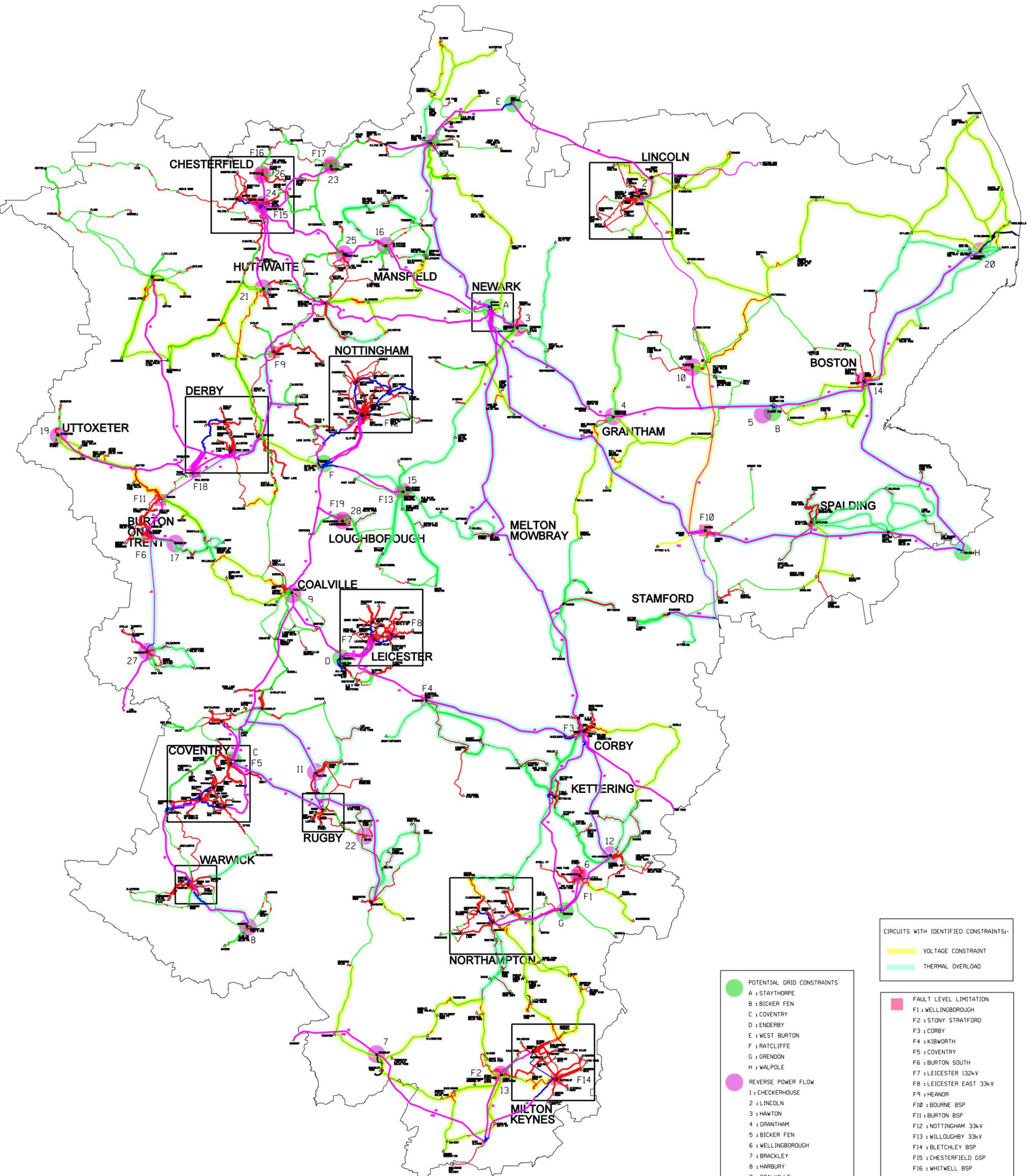
# Site-by-Site Infrastructure Schedule





## Appendix B – Utilities Baseline Plans

# EAST MIDLANDS DISTRIBUTED GENERATION CONSTRAINT MAP



CIRCUITS WITH IDENTIFIED CONSTRAINTS:-

- VOLTAGE CONSTRAINT
- THERMAL OVERLOAD

**POTENTIAL GRID CONSTRAINTS**

- A : STAYTHORPE
- B : BICKER FEN
- C : COVENTRY
- D : ENDERBY
- E : WEST BURTON
- F : RATCLIFFE
- G : GRENDDON
- H : WALPOLE

**REVERSE POWER FLOW**

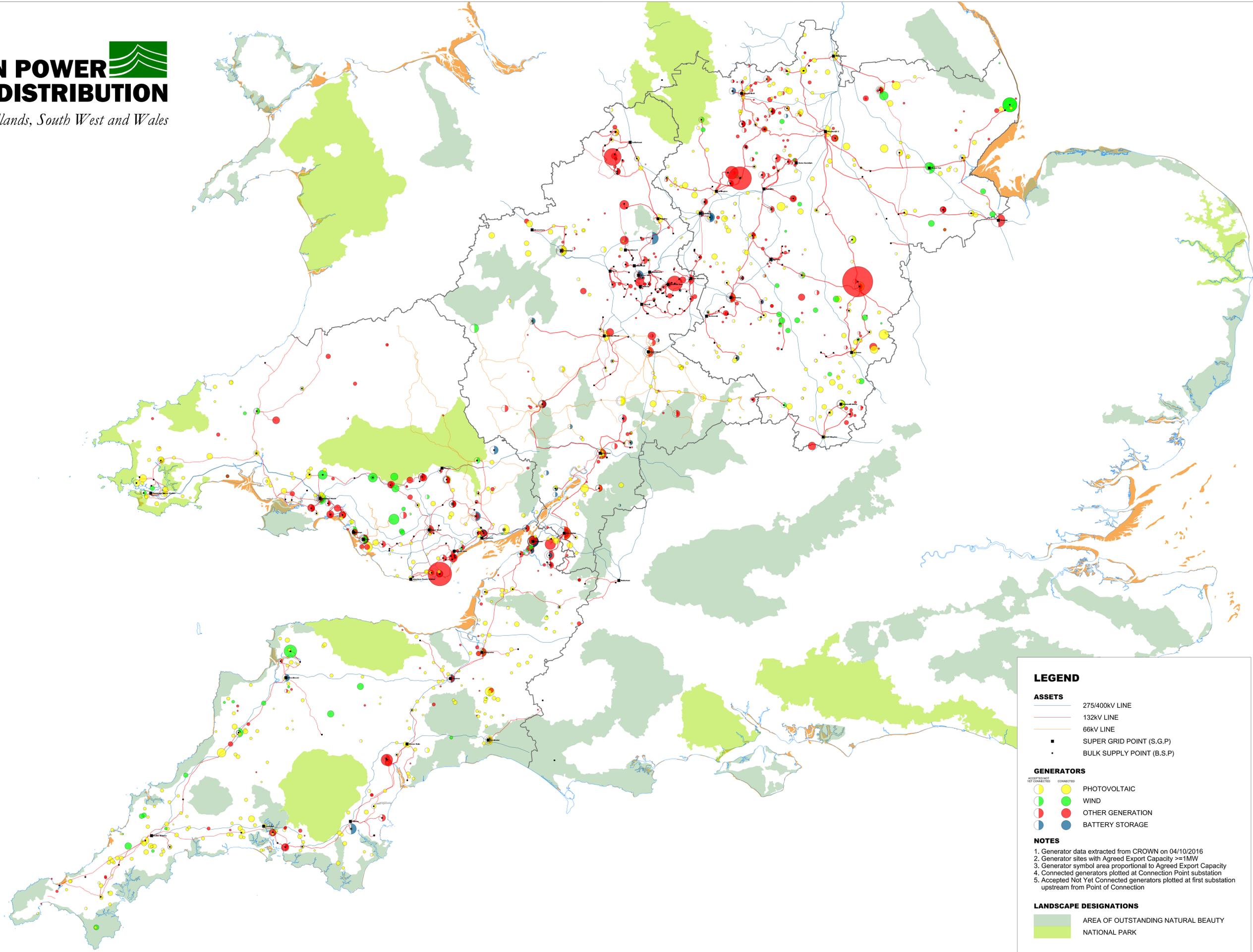
- 1 : CHECKERHOUSE
- 2 : LINCOLN
- 3 : HAWTON
- 4 : GRANTHAM
- 5 : BICKER FEN
- 6 : WELLINGBOROUGH
- 7 : BRACKLEY
- 8 : HARBURY
- 9 : COALVILLE
- 10 : SLEAFORD
- 11 : PAILTON
- 12 : IRTHLINGBOROUGH
- 13 : STONY STRATFORD
- 14 : BOSTON
- 15 : WILLLOUGHBY
- 16 : CLIPSTONE
- 17 : GRESLEY
- 19 : UTTOXETER
- 20 : SKEGNESS
- 21 : ALFRETON
- 22 : CRICK
- 23 : WHITWELL
- 24 : CHESTERFIELD
- 25 : MANSFIELD
- 26 : STAVELEY
- 27 : TAMWORTH BSP
- 28 : LOUGHBOROUGH

**FAULT LEVEL LIMITATION**

- F1 : WELLINGBOROUGH
- F2 : STONY STRATFORD
- F3 : CORBY
- F4 : KIBWORTH
- F5 : COVENTRY
- F6 : BURTON SOUTH
- F7 : LEICESTER 132kV
- F8 : LEICESTER EAST 33kV
- F9 : HEANOR
- F10 : BOURNE BSP
- F11 : BURTON BSP
- F12 : NOTTINGHAM 33kV
- F13 : WILLLOUGHBY 33kV
- F14 : BLETCHLEY BSP
- F15 : CHESTERFIELD GSP
- F16 : WHITWELL BSP
- F17 : STAVELEY BSP
- F18 : WILLINGTON GSP
- F19 : LOUGHBOROUGH

**KEY**

- N.G.C. GRID SUPPLY POINT
- 132kV/66kV OR 25kV SUBSTATION
- 132kV/11kV OR 25kV SUBSTATION
- ▲ 66kV SUBSTATION
- △ 33kV SUBSTATION
- 33kV SWITCHING SUBSTATION
- ◇ 66kV SWITCHING SUBSTATION
- ◆ 132kV SWITCHING SUBSTATION
- ▲ 25kV TRACKSIDE SUBSTATION (BR)
- 132kV OVERHEAD LINE
- 132kV UNDERGROUND CABLE
- 66kV OVERHEAD LINE
- 66kV UNDERGROUND CABLE
- 33kV OVERHEAD LINE
- 33kV UNDERGROUND CABLE
- OTHER NETWORK OPERATORS' CIRCUITS
- 25kV CIRCUITS



**LEGEND**

**ASSETS**

- 275/400kV LINE
- 132kV LINE
- 66kV LINE
- SUPER GRID POINT (S.G.P)
- BULK SUPPLY POINT (B.S.P)

**GENERATORS**

NOT YET CONNECTED	CONNECTED	TYPE
(Yellow circle)	(Yellow circle)	PHOTOVOLTAIC
(Green circle)	(Green circle)	WIND
(Red circle)	(Red circle)	OTHER GENERATION
(Blue circle)	(Blue circle)	BATTERY STORAGE

**NOTES**

- Generator data extracted from CROWN on 04/10/2016
- Generator sites with Agreed Export Capacity >=1MW
- Generator symbol area proportional to Agreed Export Capacity
- Connected generators plotted at Connection Point substation
- Accepted Not Yet Connected generators plotted at first substation upstream from Point of Connection

**LANDSCAPE DESIGNATIONS**

- AREA OF OUTSTANDING NATURAL BEAUTY
- NATIONAL PARK

PLEASE NOTE: This plan ONLY shows assets owned by Western Power Distribution. Electricity assets owned by DNOs (Independent National Operators) MAY be present in this area. Information is given as a guide only and it's accuracy cannot be guaranteed. Based upon the Ordnance Survey map with the permission of the Controller of Her Majesty's Stationary Office. Crown Copyright Reserved. Western Power Distribution. Authorised. Power Factor: 0.95. BS: 578. Licence No. 10002488. 10002487. 10001807. CARE SHOULD BE EXERCISED TO ENSURE THE PRECISE POSITION OF THE WPD APPARATUS IF WORK IS TO BE EXECUTED IN ITS VICINITY. If in doubt, contact your local WPD office. WPD Copyright. This copy has been made by or with the authority of Western Power Distribution (WPD) pursuant to Section 47 of the Copyright Designs and Patents Act 1988 unless the Act provides a relevant exception to copyright the copy must not be copied without the permission of the copyright owner.

**LARGE GENERATOR CONNECTION MAP**

DATE: 18/10/2016  
 SCALE 1: N.T.S  
 DRAWN BY: A.M.P



## Appendix C – Social Infrastructure Supporting Information

## GP Provision Calculations

Analysis of September 2017 GP Practice Data

Existing GP Practices:

GP Practices	MSOA	Location	Patients	FTE GPs	Patients/FTE GP's
Acorn Medical Practice	Mansfield 008	Mansfield Town Centre	2,908	1.00	2,908
Bull Farm Primary Care Resource Centre	Mansfield 006	Mansfield Urban Area (north), Pleasley	2,733	1.56	1,752
Churchside Medical Practice	Mansfield 008	Mansfield Town Centre	6,117	3.87	1,582
Sherwood Medical Partnership	Mansfield 007	Forest Town, Clipstone	15,575	5.87	2,653
Forest Medical - Oak Tree Lane Surgery	Mansfield 012	Mansfield Urban Area (east), Rainworth	14,823	5.07	2,926
Forest Medical - Rosemary Street Medical Centre	Mansfield 008	Mansfield Town Centre			
Meden Medical Services	Mansfield 001	Church Warsop, Meden Vale	6,120	3.07	1,996
Millview Surgery	Mansfield 008	Mansfield Town Centre	8,368	4.80	1,743
Oakwood Surgery	Mansfield 005	Mansfield Woodhouse	13,291	7.63	1,743
Orchard Medical Practice	Mansfield 008	Mansfield Town Centre	19,190	10.77	1,781
Pleasley Surgery	Mansfield 006	Mansfield Urban Area (north), Pleasley	3,383	1.00	3,383
Rainworth Health Centre	Mansfield 012	Mansfield Urban Area (east), Rainworth	6,010	2.77	2,167
Riverbank Medical Services	Mansfield 002	Warsop	4,465	2.27	1,970
Roundwood Surgery	Mansfield 008	Mansfield Town Centre	13,244	5.87	2,257
Sandy Lane Surgery	Mansfield 009	Mansfield Town Centre	5,955	2.53	2,351
Shires Healthcare	Mansfield 001	Church Warsop, Meden Vale	15,916	8.51	1,871
St Peters Medical Practice	Mansfield 008	Mansfield Town Centre	2,749	0.77	3,555
Totals			140,847	67.35	-
Average per Practice			8,803	4.21	2,091

Bolsover 007 These Practices are actually outside of Mansfield but serve the District.  
 N&S 006 Allocated to the closest adjacent Mansfield MSOA for the purposes of this analysis

Average 0.48 FTE GPs per 1000 patients

The average number of patients per surgery is 8,803 with an average of 0.48 FTE GPs per 1,000 patients (which is less than the national average of 0.58 FTE GPs per 1,000 patients).

Forecast GP Requirement:

GP Practices	MSOA	Location	Existing Patients	Existing FTE GP's	Local Plan Increase in Dwellings	Population Increase Based on 2.18 Persons per Household	Total Patient Demand	FTE GPs Required (Note 4)	No. of New FTE GPs Required
Meden Medical Services	Mansfield 001	Church Warsop, Meden Vale	22,036	11.6	324	706	22,742	11.4	-0.2
Shires Healthcare									
Riverbank Medical Services	Mansfield 002	Warsop	4,465	2.3	652	1,421	5,886	2.9	0.7
Oakwood Surgery	Mansfield 005	Mansfield Woodhouse	13,291	7.6	996	2,172	15,463	7.7	0.1
Bull Farm Primary Care Resource Centre	Mansfield 006	Mansfield Urban Area (north), Pleasley	6,116	2.6	1,551	3,381	9,497	4.7	2.2
Pleasley Surgery									
Sherwood Medical Partnership	Mansfield 007	Forest Town, Clipstone	15,575	5.9	892	1,944	17,519	8.8	2.9
Acorn Medical Practice									
Churchside Medical Practice									
Forest Medical - Rosemary Street Medical Centre (Note 1)									
Millview Surgery	Mansfield 008	Mansfield Town Centre	59,988	29.6	1,371	2,989	62,976	31.5	1.9
Orchard Medical Practice									
Roundwood Surgery									
St Peters Medical Practice									
Sandy Lane Surgery	Mansfield 009	Mansfield Town Centre	5,955	2.5	175	382	6,337	3.2	0.6
Forest Medical - Oak Tree Lane Surgery (Note 1)									
Rainworth Health Centre	Mansfield 012	Mansfield Urban Area and Rainworth	13,422	5.3	3,926	8,559	21,981	11.0	5.7
Totals			140,847	67.35	9,887	21,554	162,401	81.2	13.9

Average 0.50 FTE GPs per 1000 patients

Notes:

1. GP and patient numbers assumed to be split equally between the Oak Tree Lane and Rosmary Street practices for the purposes of this calculation
2. Population uplift taken as an average of 2.18 persons per household for the District at 2034, from the Department for Communities and Local Government 2014-Based Household Projections in England, 2014 to 2029 (July 2016)
3. All new residents assumed to register with a local GP.
4. Estimated on a basis of 2,000 registered patients per GP as an indicator of acceptable provision.

Explanation of MSOA Aggregation:

MSOA	Location Description	Dwellings	GP MSOA	Dwellings
Mansfield 001	Church Warsop, Meden Vale	324	Mansfield 001	324
Mansfield 002	Warsop	652	Mansfield 002	652
Mansfield 003	Mansfield Woodhouse	106		
Mansfield 004	Mansfield Woodhouse	351	Mansfield 005	996
Mansfield 005	Mansfield Woodhouse	539		
Mansfield 006	Mansfield Urban Area (north), Pleasley	1,551	Mansfield 006	1,551
Mansfield 007	Forest Town, Clipstone	892	Mansfield 007	892
Mansfield 008	Mansfield Town Centre	1,371	Mansfield 008	1,371
Mansfield 009	Mansfield Town Centre	175	Mansfield 009	175
Mansfield 010	Mansfield Urban Area (west)	706		
Mansfield 011	Mansfield Urban Area (east)	8		
Mansfield 012	Mansfield Urban Area (east), Rainworth	1,663	Mansfield 012	3,926
Mansfield 013	Mansfield Urban Area (south)	1,549		
Overall Total Dwellings		9,887		9,887

Aggregated MSOAs for purposes of GP calculation

Summary:

Location	Additional GPs Required
Mansfield Urban Area	8.2
Pleasley	2.2
Forest Town	2.9
Mansfield Woodhouse	0.1
Market Warsop	0.7
Church Warsop, Meden Vale	-0.2
Total	13.9

# School Place Calculations

Analysis of December 2017 School Data

Existing Primary School Capacity:

School Name	Location	MSOA	Net Capacity	Number on Role	Ave' 5 Year Projection*	Spare Capacity
Abbey Primary School	Forest Town, Clipstone	Mansfield 007	412	361	417	-5
Asquith Primary School	Mansfield Urban Area (east)	Mansfield 011	315	313	313	2
Berry Hill Primary School	Mansfield Urban Area (south)	Mansfield 013	420	408	407	13
Birklands Primary School	Warsop	Mansfield 002	235	170	195	40
Church Vale Primary School and Foundation Unit	Church Warsop, Meden Vale	Mansfield 001	195	192	187	8
Crescent Primary School	Mansfield Urban Area (north), Pleasley	Mansfield 006	405	337	348	57
Eastlands Junior School	Church Warsop, Meden Vale	Mansfield 001	160	141	151	9
Farmilo Primary School and Nursery	Mansfield Urban Area (north), Pleasley	Mansfield 006	315	206	248	67
Forest Town Primary School	Forest Town, Clipstone	Mansfield 007	360	353	390	-30
Heatherley Primary School	Forest Town, Clipstone	Mansfield 007	243	239	275	-32
Heathlands Primary School	Mansfield Urban Area (east), Rainworth	Mansfield 012	189	172	186	3
Hetts Lane Infant and Nursery School	Warsop	Mansfield 002	180	168	164	16
High Oakham Primary School	Mansfield Urban Area (south)	Mansfield 013	428	419	419	9
Holly Primary School	Forest Town, Clipstone	Mansfield 007	280	294	313	-33
Intake Farm Primary School	Mansfield Urban Area (west)	Mansfield 010	210	202	213	-3
John T Rice Infant and Nursery School	Forest Town, Clipstone	Mansfield 007	135	138	145	-10
King Edward Primary School	Mansfield Urban Area (south)	Mansfield 013	619	413	407	212
Leas Park Junior School	Mansfield Woodhouse	Mansfield 005	280	276	272	8
Mansfield Primary Academy	Mansfield Town Centre	Mansfield 009	210	195	202	8
Netherfield Infant School	Church Warsop, Meden Vale	Mansfield 001	120	100	92	28
Nettleworth Infant and Nursery School	Mansfield Woodhouse	Mansfield 005	210	210	212	-2
Newlands Junior School	Forest Town, Clipstone	Mansfield 007	189	170	178	11
Northfield Primary and Nursery School	Mansfield Woodhouse	Mansfield 004	420	339	385	35
Oak Tree Primary School	Mansfield Urban Area (east), Rainworth	Mansfield 012	297	268	280	17
Peafield Lane Academy	Mansfield Woodhouse	Mansfield 003	315	313	315	0
Samuel Barlow Primary Academy**	Clipstone	Newark and Sherwood 002	283	243	290	-7
Sherwood Junior School	Warsop	Mansfield 002	240	220	214	26
St Edmund's CofE (C) Primary School	Mansfield Woodhouse	Mansfield 005	210	205	224	-14
St Patrick's Catholic Primary School, A Voluntary Academy	Mansfield Urban Area (east)	Mansfield 011	210	212	206	4
St Peter's CofE Primary Academy, Mansfield	Mansfield Urban Area (east), Rainworth	Mansfield 012	315	249	271	44
St Philip Neri With St Bede Catholic Voluntary Academy	Mansfield Town Centre	Mansfield 008	420	423	451	-31
Sutton Road Primary School	Mansfield Town Centre	Mansfield 008	558	428	511	47
The Bramble Academy	Mansfield Woodhouse	Mansfield 004	243	201	224	19
The Flying High Academy	Mansfield Urban Area (north), Pleasley	Mansfield 006	431	357	439	-8
Wainwright Primary Academy	Mansfield Town Centre	Mansfield 008	420	351	367	53
Wynndale Primary School	Mansfield Urban Area (east)	Mansfield 011	210	212	213	-3
<b>Totals</b>			<b>10,472</b>	<b>9,286</b>	<b>9,911</b>	<b>568</b>

\*Excludes demand due to Local Plan development  
 \*\*Adjacent to and serving the District, but situated in Newark & Sherwood District

Existing Secondary School Capacity:

School Name	Location	MSOA	Net Capacity	Number on Role	Ave' 5 Year Projection*	Spare Capacity	Sixth Form?
All Saints Catholic Voluntary Academy	Mansfield Town Centre	Mansfield 008	1,096	1,088	1,269	-173	Yes
Garibaldi College	Forest Town, Clipstone	Mansfield 007	1,024	726	934	90	Yes
Meden School	Warsop	Mansfield 002	1,291	688	762	529	Yes
Queen Elizabeth Academy	Mansfield Woodhouse	Mansfield 004	1,145	513	636	509	Yes
Samworth Church Academy	Mansfield Town Centre	Mansfield 009	1,180	1,174	1,333	-153	Yes
The Brunts Academy	Mansfield Town Centre	Mansfield 009	1,552	1,522	1,808	-256	Yes
The Manor Academy	Mansfield Woodhouse	Mansfield 003	1,429	816	940	489	Yes
<b>Totals</b>			<b>8,717</b>	<b>6,527</b>	<b>7,682</b>	<b>1,035</b>	

\*Excludes demand due to Local Plan development

Location Description	MSOA	Dwellings (Overall Total)	Existing Primary School Capacity	Additional Primary School Demand	Net Primary School Spaces Required	Existing Secondary School Capacity	Additional Secondary School Demand	Net Secondary School Spaces Required
Church Warsop, Meden Vale	Mansfield 001	324	45	68	23	0	52	52
Warsop	Mansfield 002	652	82	137	55	529	104	-425
Mansfield Woodhouse	Mansfield 003	106	0	22	22	489	17	-472
Mansfield Woodhouse	Mansfield 004	351	54	74	20	509	56	-453
Mansfield Woodhouse	Mansfield 005	539	-8	113	121	0	86	86
Mansfield Urban Area (north), Pleasley	Mansfield 006	1,551	116	326	210	0	248	248
Forest Town, Clipstone	Mansfield 007	892	-99	187	286	90	143	53
Mansfield Town Centre	Mansfield 008	1,371	69	288	219	-173	219	392
Mansfield Town Centre	Mansfield 009	175	8	37	29	-409	28	437
Mansfield Urban Area (west)	Mansfield 010	706	-3	148	151	0	113	113
Mansfield Urban Area (east)	Mansfield 011	8	3	2	-1	0	1	1
Mansfield Urban Area (east), Rainworth	Mansfield 012	1,663	64	349	285	0	266	266
Mansfield Urban Area (south)	Mansfield 013	1,549	234	325	91	0	248	248
<b>Totals</b>		<b>9,887</b>	<b>565</b>	<b>2,076</b>	<b>1,511</b>	<b>1,035</b>	<b>1,582</b>	<b>547</b>

Notes:  
 The County Council, as the Local Education Authority allows for primary school places on the basis of 21 school places per 100 dwellings.  
 The County Council allows for secondary school places based on 16 school places per 100 dwellings.

Primary School Summary:

Location	Dwellings (Overall Total)	Existing Primary School Capacity	Additional Primary School Demand	Net Primary School Spaces Required	Cost Based on Additional Demand*
Mansfield Urban Area	5,472	375	1,149	774	£16,897,587
Pleasley	1,551	116	326	210	£4,333,225
Mansfield Woodhouse	996	46	209	163	£3,358,097
Forest Town	892	-99	187	286	£3,581,024
Warsop	652	82	137	55	£1,772,159
Church Warsop, Meden Vale	324	45	68	23	£919,977
<b>Total</b>	<b>9,887</b>	<b>565</b>	<b>2,076</b>	<b>1,511</b>	<b>£30,862,069</b>

\*Costs could increase depending on whether new schools or extended classrooms are required  
 \*Excludes land costs where new schools are required

Secondary School Summary:

Catchments and Settlements Served	Dwellings (Overall Total)	Existing Secondary School Capacity	Additional Secondary School Demand	Net Secondary School Spaces Required	Cost Based on Additional Demand*
Mansfield Urban Area	5,472	-582	876	1,458	£15,154,280
Pleasley	1,551	0	248	248	£4,280,480
Mansfield Woodhouse	996	998	159	-839	£2,761,600
Forest Town	892	90	143	53	£2,433,660
Warsop	652	529	104	-425	£1,777,780
Church Warsop, Meden Vale	324	0	52	52	£897,520
<b>Totals</b>	<b>1,581</b>	<b>1,035</b>	<b>1,582</b>	<b>547</b>	<b>£27,305,320</b>

\*Costs could increase depending on whether new schools or extended classrooms are required  
 \*Excludes land costs where new schools are required

# Library Stock Calculations

## Library Floorspace and Stock Calculation

Location	Dwellings	Floor Space (sqm)	Library Stock Items	Stock Cost
Mansfield Urban Area	5,472	361	20,120	£251,493
Pleasley	1,551	102	5,703	£71,284
Mansfield Woodhouse	996	66	3,663	£45,776
Forest Town	892	59	3,280	£40,996
Warsop	652	43	2,398	£29,966
Church Warsop, Meden Vale	324	21	1,192	£14,891
Total	9,887	653	36,356	£454,407

Stock items per 1,000 head of population	1,532
Stock items per person	1.532
Population per dwelling	2.4
Stock items per dwelling	3.6768
Stock cost per item	£12.50
Stock cost per dwelling	£45.96



## Appendix D – Waste Supporting Information



Mansfield District Council

Mansfield Infrastructure Delivery Plan

Prepared on behalf of WYG Group Limited.

Registered in England & Wales Number: 06595608



## Document control

Document:	Waste Infrastructure Needs Report	
Project:	Mansfield District Council Infrastructure Delivery Plan	
Client:		
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Revision:		
Date:		
Prepared by	Checked by	Approved By
Description of Revision		



# 1. Waste Infrastructure Needs Assessment

## 1.1 Background

All Waste Planning Authorities (WPAs) in the UK have an obligation to plan for sustainable waste management. Nottinghamshire County is therefore expected to produce a Waste Plan in accordance with the EU revised Waste Framework Directive 2008/98/EC. The existing waste policies under which applications for planning permission are currently determined are contained in national policy and the saved policies in the Nottinghamshire Replacement Waste Local Plan, adopted in January 2002 and partly replaced by the Waste Core Strategy (first part of a two part replacement Waste Local Plan for Nottinghamshire), adopted in December 2013.

Planning for waste management is a strategic issue and all WPAs must look beyond their own boundaries to understand the flows of waste between authorities and identify sites that are most appropriate for waste management uses. Following the abolition of regional planning in the Localism Act of 2011, strategic planning must be carried out through liaison between WPAs. This involves each WPA identifying their own needs for housing, transport and all types of infrastructure, and working in conjunction with other authorities to ensure that this is delivered in a coherent fashion. This is confirmed by the **"National Planning Policy for Waste" published on 16th October 2014**, which states that in preparing Local Plans, WPAs should:

- take into account any need for waste management, including for disposal of the residues from treated wastes, arising in more than one WPA area but where only a limited number of facilities would be required;
- work collaboratively in groups with other WPAs, and in two-tier areas with district authorities, through the statutory duty to cooperate, to provide a suitable network of facilities to deliver sustainable waste management;
- consider the extent to which the capacity of existing operational facilities would satisfy any identified need; and
- plan for the disposal of waste and the recovery of mixed municipal waste in line with the proximity principle, recognising that new facilities will need to serve catchment areas large enough to secure their economic viability.

## 1.2 Policy Context

To manage waste in a safe and compliant way, clear strategies, policies and actions are required. Regional planning was abolished by the Localism Act 2011 with the aim of making local spatial plans the basis for local planning decisions, drawn up in conformity with national policy. Municipal Waste



Management Strategies produced by Nottinghamshire County and Nottingham City Council coordinate how municipal waste is collected and the facilities needed for treatment and disposal of this waste. To understand the current and future position of allocation of waste infrastructure within Nottinghamshire County, the following sections provide an overview of the local waste management policy set out in the Nottinghamshire Replacement Waste Local Plan and the Waste Reduction, Re-use, Recycling and Composting Plan.

### **1.2.1 Nottinghamshire Waste Local Plan**

The existing Nottinghamshire Waste Local Plan, covering Mansfield and adopted in January 2002, is to be replaced by the Replacement Waste Local Plan, which is being prepared in two parts; the Waste Core Strategy (Part One) and the Waste Sites and Policies Document (Part Two). The Waste Core Strategy was adopted by the Nottinghamshire Councils and Nottingham City Council in December 2013 and sets out **Nottinghamshire's** approach to future management of waste, estimates of how much waste capacity needs to be provided over the next 20 years, until 2031, what types of sites are suitable and where new or extended waste management sites should be located. The Waste Core Strategy partly replaces the saved policies in the existing Waste Local Plan (saved by Direction of the Secretary of State in 2007). The remaining saved policies remain in force until part two of the **Replacement Waste Local Plan, the Waste Sites and Policies Document ("the document")**, is prepared and adopted by the Councils.

While the Waste Core Strategy sets out agreed broad locations where new facilities are likely to be accepted, the document will identify and decide, where possible, the suitable sites for future waste management so as to meet the requirements and objectives set out in the Waste Core Strategy. The document will also set out policies for controlling development of waste facilities and ensuring that environmental standards are met.

### **1.2.2 Nottinghamshire Waste Reduction, Re-use, Recycling and Composting Plan**

The County's Waste Reduction, Re-use, Recycling and Composting Plan ("Recycling and Compositing Plan") is prepared annually and the current 2016/17 plan is the second annual plan following the 2015/16 version. In line with the EU revised Waste Framework Directive (rWFD), targets of achieving 50% and 65% recycling and composting of household waste by 2020 and 2030 respectively, the Recycling and Composting Plan sets out the **County's** approach to achieving the Private Finance Initiative (PFI) target of recycling and composting 52% of household waste by 2020 alongside reducing the overall waste generated. The current 2016/17 Recycling and Composting Plan focuses on



the major actions, initiatives and investments that are likely to take place during 2016/17 and what their respective impacts will be.

The 2016/17 Recycling and Composting Plan document states that all 7 Waste Collection Authorities (WCAs) currently collect dry mixed recyclables (DMR) including paper, card, tins, plastic bottles as well as yogurt pots and margarine tubs. These are taken to the Materials Recovery Facility (MRF) at Mansfield, where the waste is sorted, separated, baled and sent for recycling. It also indicates that recycling rates for all WCAs, like the County and national rates, have remained constant over the last 5 years, with several WCAs seeing a slight decline in their recycling rates.

A subsidiary Recycling and Composting Plan document will be published in autumn 2016, which will provide an analysis of the success and impact of the 2015/2016 plan as well as provide information on tonnages of waste (for all elements of household waste) generated within the County and the recycling rates for 2015/2016.

### **1.3 Scope**

In developing a waste infrastructure needs assessment for Mansfield District, the first key stage is to gain an understanding of how much waste, both current and in the future, requires management in Mansfield and Nottinghamshire and the source of this waste. Understanding how much waste is currently generated relies on a variety of data sources of varying quality. Forecasting how much waste is likely to be generated in the future is a process that involves estimating future behaviour of individuals and businesses and the markets within which they operate. Baseline waste arisings and forecast arisings for the plan period to 2033 are presented in this report for Local Authority Collected Waste (LACW). This report does not provide a detailed analysis of Commercial and Industrial waste (C&I) waste arisings estimates due limited readily available data and information and resources available. The C&I estimates provided are based on published literature.

The second key stage is to understand what waste management capacity is available within Nottinghamshire and Mansfield to deal with these wastes. This report therefore provides an indication of the existing operational waste management capacity in Nottinghamshire and Mansfield. The additional capacity required to meet future waste management needs is estimated and this information can then be used to support the identification of appropriate locations for the development of additional facilities.



The waste infrastructure needs assessment therefore involved the following key stages, which are presented in detail in the following sections:

- Waste arisings estimates;
- Forecast of LACW arisings to 2033;
- Assessment of waste management facilities and capacities within Nottinghamshire and Mansfield; and
- Capacity gap analysis.

## **1.4 Waste Arisings Estimates**

The term 'municipal waste' has historically been used in waste policy to describe all waste which is managed by or on behalf of a local authority. However, the Landfill Directive defines municipal waste as waste from households as well as other waste that, because of its nature or composition, is similar to waste from households. This includes a significant amount of waste that is generated by businesses and which is not collected by local authorities.

For planning purposes, it is important to know how much waste in total requires management. Local authorities have established systems for measuring the quantities of waste that they manage and this is reported to Defra through the WasteDataFlow reporting system, which has been established since 2004. Data from this source is therefore the basis of much of the municipal waste figures presented in this report. To ensure consistency with the terminology used by National Government, the term 'Local Authority Collected Waste' (LACW) will be used for the waste recorded by WasteDataFlow and the remainder of the non-hazardous waste, which is collected from business will be referred to as Commercial and Industrial (C&I) waste.

The remainder of waste arisings, i.e. C&I waste, whether similar to household waste or more homogeneous, is not measured through a systematic or robust system, but in periodic surveys that have been carried out to understand the quantities arising.

### **1.4.1 Local Authority Collected Waste (LACW)**

LACW consists of waste, which comes into the possession of, or under the control of, the local authority, with the exception of municipal construction and demolition waste. It can be subdivided into a number of components:

- Household waste (the main component), which consists primarily of waste collected directly from households;



- Household waste (with the exception of inert construction waste), which is accepted and collected at Household Waste Recycling Centres/Civic Amenity sites;
- Other household waste (smaller components) such as litter and street cleaning waste; and Non-household waste; the main components of LACW classified as non-household include commercial waste collected by local authorities (commonly termed “trade waste”) and inert construction materials accepted at household waste recycling centres. For purposes of this analysis, this aspect of LACW has not been included in estimating LACW to avoid ‘double counting’ as this waste is accounted for in the C&I waste estimates provided.

Local authorities are required to make detailed returns to Defra (via WasteDataFlow) concerning the quantity of waste arisings and how the materials are subsequently managed.

#### 1.4.1.1 How much LACW is produced?

Data on LACW produced was obtained from WasteDataFlow as well as information directly from the councils.

LACW tonnages in Nottinghamshire for the period 2010/11 to June 2015 are presented in Table 1. The tonnages presented include all kerbside collections, waste collected at bring sites, Household Waste Recycling Centres (HWRCs), street cleansing etc. Overall, there is a slight reduction (i.e. approximately 3% reduction) in the waste produced in 2014/15 compared to waste produced in 2010/11 although the tonnages are relatively similar year on year. The recycling and composting rate reduced slightly from 37.4% in 2010/11 to 34.6% in 2014/15 but is relatively similar year on year i.e. on a plateau, which is similar to the situation for England as a whole over the past few years.

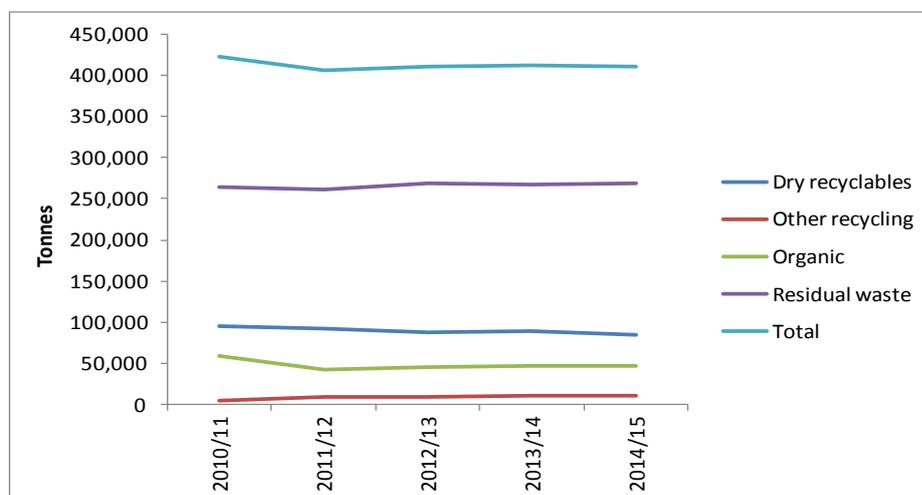
**Table 1 LACW in Nottinghamshire, 2010/11 – June 2015**

Waste Type	2010/11	2011/12	2012/13	2013/14	2014/15	Apr – June 2015
Dry recyclables	94,806	92,815	87,809	88,327	84,804	20,610
Other recycling*	4,536	9,695	8,456	10,345	10,506	1,106
Organic waste	59,006	42,048	44,738	46,420	47,066	18,484
Residual waste	264,698	261,613	269,243	266,750	268,773	71,048
<b>Total</b>	<b>423,046</b>	<b>406,172</b>	<b>410,246</b>	<b>411,842</b>	<b>411,148</b>	<b>111,248</b>
<b>% recycling &amp; composting</b>	<b>37.4%</b>	<b>35.6%</b>	<b>34.4%</b>	<b>35.2%</b>	<b>34.6%</b>	<b>36.1%</b>

Source: Wastedataflow

\* Includes batteries, furniture, textiles, WEEE, wood, other materials

**Figure 1 Trend of LACW tonnages in Nottinghamshire, 2010/11-2014/15**



Mansfield District Council (MDC) collects waste from its residents using:

- Green wheeled bins for the collection of residual (non-recyclable) household waste;
- Blue wheeled bins for the collection of dry mixed recyclable household waste including mixed paper; cardboard; plastic bottles and plastic tubs and trays; and cans. Glass bottles are not collected at kerbside using the blue bin; and
- Brown wheeled bins for the collection of garden waste (on a chargeable basis).

Residents are encouraged to take their glass to one of the local bring sites – there are 23 such facilities that currently accept glass in the MDC area.

MDC also offers a trade waste service for businesses in the district and collects both recyclable and non-recyclable waste. This is a chargeable service and the Council operates with a menu of services including a range of bins sizes and frequency of collection.

MDC also operates a clinical waste collection service for its residents that is free of charge providing a duly completed and authorised Healthcare Waste Referral Form has been submitted by the resident(s) requiring this service. Infectious waste is collected directly but clinical waste classified as non-infectious can be bagged and placed in the green residual wheeled bin for standard kerbside collection.

The Council also provides a bulky waste collection service for its residents for which it makes a small charge, but encourages residents, in the first instance, to consider donation of suitable items to charity

for reuse or to take items direct to one of the Household Waste Recycling Centres (HWRCs) operated by Nottinghamshire County Council.

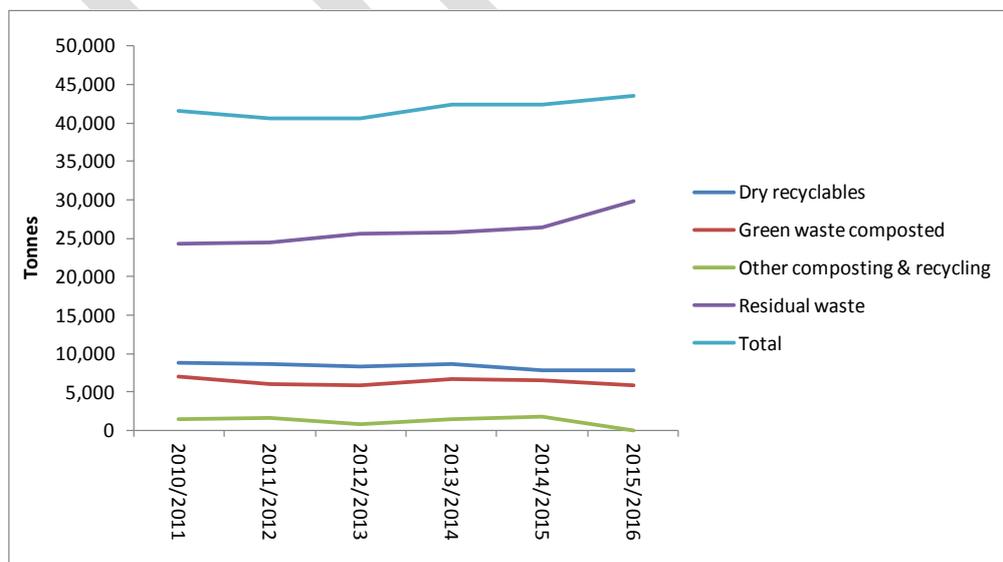
Reported collection volumes from 2010/2011 to 2015/2016 for Mansfield are presented in Table 2, these include all kerbside collections, recycling collected at bring sites and recycling/ composting collected through other recycling schemes. As at the County level, overall, the trend shows relatively similar tonnages of waste collected year on year, with however, a slight increase (i.e. 4.6% increase) in 2015/16 compared to tonnages produced in 2010/11. The recycling and composting rate decreased over this period, from 41.5% in 2010/11 to 31.4% in 2015/16.

**Table 2 LACW tonnages in Mansfield 2010/11 – 2015/16**

Waste Type	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Dry recyclables	8,843	8,553	8,294	8,543	7,750	7,771
Garden waste	7,002	5,975	5,861	6,741	6,424	5,827
Other composting & recycling	1,405	1,572	820	1,396	1,769	52
Residual waste	24,341	24,415	25,595	25,693	26,453	29,856
<b>Total</b>	<b>41,591</b>	<b>40,515</b>	<b>40,570</b>	<b>42,373</b>	<b>42,396</b>	<b>43,505</b>
<b>% recycled &amp; composted</b>	<b>41.5%</b>	<b>39.7%</b>	<b>36.9%</b>	<b>39.4%</b>	<b>37.6%</b>	<b>31.4%</b>

Source: Wastedataflow

**Figure 2 Historic trend of Local Authority Collected Waste, Mansfield District Council**





### 1.4.1.2 What happens to this waste?

The destination of LACW in Mansfield for 2014/15 is summarised in Table 3 below. All kerbside dry mixed recycling (DMR) collected by the Council is taken to a Materials Recovery Facility (MRF) in Mansfield where it is sorted and separated into its constituent materials before being sent for recycling by various operators. The green/garden waste collected by the Council is sent for composting at a facility in Oxtun. Between 2010/11 and August 2014, residual waste was taken to FCC Alfreton Waste Transfer Station (WTS) and FCC Dorket Head landfill. From September 2014, all residual waste was delivered to Alfreton WTS and is either treated and sent as Refuse Derived Fuel (RDF) to Europe or is landfilled. This arrangement will remain in place until the end of March 2017 after which it will be sent, for the next three years (to April 2020), to the new Veolia Welshcroft Close WTS where it will be treated and sent as RDF to Europe. And from 2020 to 2033, residual waste will continue to be delivered to the Veolia Welshcroft Close WTS and be treated and used as RDF in the UK.

**Table 3 Destination of the LACW in Mansfield**

Kerbside dry mixed recycling
MRF, Crown Farm Industrial Estate, Mansfield
UPM Kymmene (UK) Ltd (paper and pulp mill), Deeside
Morris & Co Handlers Ltd, Rossington, Doncaster
Veolia E S Cleanaway (UK), Rainham, Essex
Garden/green waste
Simpro Ltd (composting), Ollerton Road, Oxtun, Southwell
Residual
Energy from Waste facility (Veolia), Bernard Road, Sheffield
Staple quarry and landfill, Newark

In 2014/2015, approximately 44.6% of the LACW in Nottinghamshire was recycled or recovered, i.e. 34.6% recycled/composted, 10% was sent for energy recovery, and 55.4% was sent to landfill. Overall, countywide recycling rates for LACW have slowed significantly in line with regional and national trends.

### 1.4.1.3 Forecast of LACW

Estimating future waste arisings is difficult due to several factors that can influence the amount of future waste generated. In the past, forecasting of future household waste arisings mainly focused on factors likely to have a direct impact, such as population and number of households. However, as demonstrated by recent history, increases nationally and locally in both population and number of



households have not been directly reflected in the year on year reductions in the total amount of LACW. Even though both population and the number of households nationally and locally have increased since 2009, actual volumes of household waste collected have significantly decreased. This reduction coincided with a significant economic downturn and there has been a clear link established between waste growth and GDP (i.e. in a recession growth is negative) but may also be due to increased environmental awareness amongst waste producers.

**The Defra publications “Forecasting 2020 Waste Arisings and Treatment Capacity” (February 2013), revised in October 2013, and the related “Review of Methodology for Forecasting Waste Infrastructure Requirements” prepared for Defra by NERA, December 2012,** reviewed a number of methods of forecasting future LACW arisings and recommend the analysis of historical time series data. This approach has some value because it is likely that there are other factors such as waste minimisation initiatives, government legislation and taxes, performance of the local economy that would impact on the rate of change of LACW produced in the future.

Forecasting of LACW in Nottinghamshire and Mansfield was based on the forecast of the number of households in the County and District and on the assumption that the amount of LACW generated is directly proportional to the number of households in the area. This approach was used because of the limited resources and data available to allow for an in-depth forecast of waste arisings based on historical data. In addition, although historic data shows a reduction in waste volumes year on year, it is important that waste growth is taken into account due to economic recovery and the planned new housing and employment development plans across the County.

The household forecasts for Nottinghamshire and Mansfield were obtained from the Neighbourhood Analysis Division, DCLG’s **“Household projections for England and local authority districts” (2012 – based and published in February 2015)**<sup>1</sup>. Table 4 shows the results of the forecasts of the LACW produced in Nottinghamshire and Mansfield based on these household forecasts. The LACW forecasts show a gradual increase in waste arisings, with LACW in Nottinghamshire forecast to increase by approximately 54,000 tonnes (i.e. 13%) and by approximately 5,000 tonnes (i.e. 12%) in Mansfield over the plan period.

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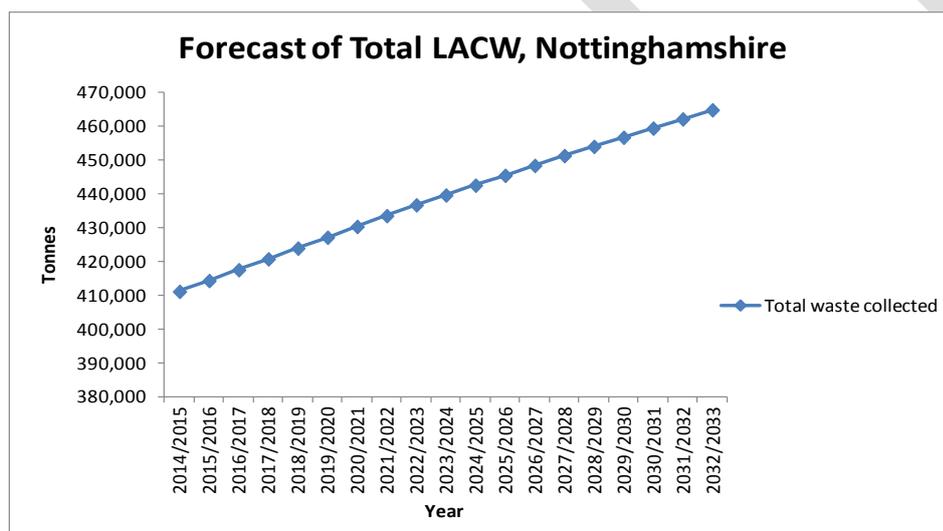
<sup>1</sup> <https://www.gov.uk/government/statistical-data-sets/live-tables-on-household-projections>

**Table 4 Nottinghamshire LACW Forecasts, 2014/15 to 2032/2033**

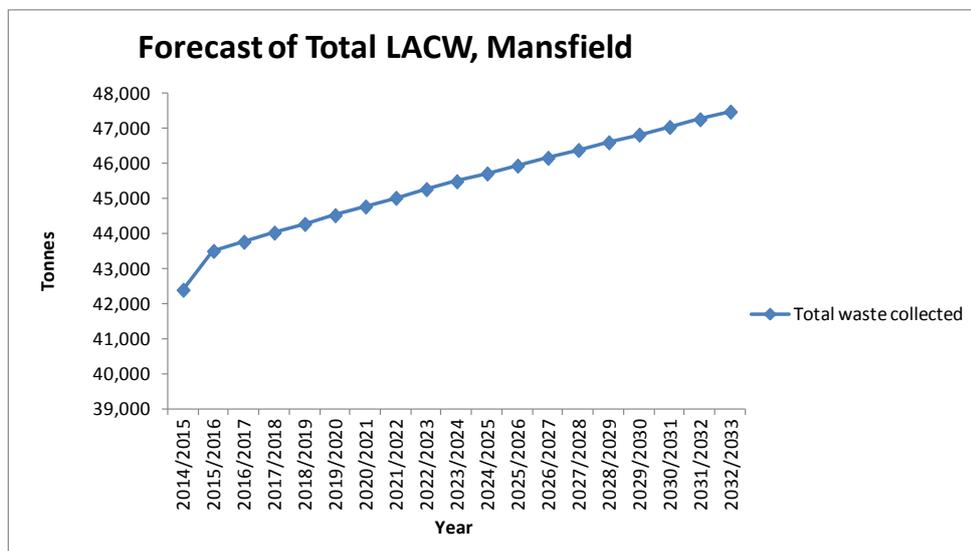
Year	LACW Tonnes	
	Nottinghamshire	Mansfield
2014/2015	411,148	42,396
2019/2020	427,184	44,525
2024/2025	442,620	45,717
2029/2030	456,800	46,826
2032/2033	464,937	47,483

Figure 3 and Figure 4 illustrate the forecast trend of LACW in Nottinghamshire and Mansfield respectively.

**Figure 3 Forecast of LACW in Nottinghamshire, 2014/15 - 2032/33**



**Figure 4 Forecast of LACW in Mansfield, 2014/15 - 2032/33**



Policy WCS3 of the Waste Core Strategy sets out Nottinghamshire’s targets to recycle and recover 60% and 70% of all LACW by 2020 and 2025 respectively, with a recycling and composting target of 52% by 2020. In the Recycling and Composting Plan document 2015/2016, the suggested target recycling level for Mansfield is 45% by 2020 to enable the County achieve its target of 52% by 2020. Based on these targets, the following recycling and recovery targets for Mansfield and Nottinghamshire were used to provide the LACW forecast by waste management method/destination.

**Table 5 LACW Recycling targets for Nottinghamshire and Mansfield**

	2020		2025	
	Nottinghamshire	Mansfield	Nottinghamshire	Mansfield
Recycling and composting	52%	45%	61%	53%
Energy recovery rate	8%	7%	9%	8%
Landfill	40%	48%	30%	39%
<b>Overall recycling rate</b>	<b>60%</b>	<b>52%</b>	<b>70%</b>	<b>61%</b>

By applying these targets to the breakdown of the LACW in Mansfield and Nottinghamshire by waste management destination of the waste, the following forecasts of LACW tonnages by waste management method were produced.

**Table 6 Forecast of LACW arisings by waste management method in Nottinghamshire**

Waste Management Method	2014/15	2019/20	2024/25	2029/30	2032/33
Recycling and composting	142,257	222,136	268,523	277,125	282,062
Energy recovery	41,115	34,175	41,311	42,635	43,394
Landfill	227,776	170,874	132,786	137,040	139,481
<b>Total waste</b>	<b>411,148</b>	<b>427,184</b>	<b>442,620</b>	<b>456,800</b>	<b>464,937</b>
<b>Overall recycling rate</b>	<b>45%</b>	<b>60%</b>	<b>70%</b>	<b>70%</b>	<b>70%</b>

**Table 7 Forecast of LACW arisings by waste management method in Mansfield**

Waste Management Method	2014/15	2019/20	2024/25	2029/30	2032/33
Recycling and composting	15,943	20,036	24,001	24,584	24,929
Energy recovery	0	3,082	3,693	3,782	3,835
Landfill	26,453	21,406	18,023	18,460	18,719
<b>Total waste</b>	<b>42,396</b>	<b>44,525</b>	<b>45,717</b>	<b>46,826</b>	<b>47,483</b>
<b>Overall recycling rate</b>	<b>38%</b>	<b>52%</b>	<b>61%</b>	<b>61%</b>	<b>61%</b>

### 1.4.2 Commercial and Industrial Waste (C&I)

Unlike LACW, there is no regular reporting done for the C&I and Construction and Demolition (C&D) waste arisings and therefore data on these wastes is not readily available. Although local authorities do provide waste collection services to businesses, the majority of the C&I waste is collected by private waste management companies and therefore not reported to local authorities. The Environment Agency, through the Waste Data Interrogator (WDI), provides data from annual returns made by private waste operators about the waste handled at their facilities. However, this data is not reliable for obtaining C&I waste estimates because the waste can pass through several facilities where it is sorted, bulked up and sent for treatment leading to double counting and overestimation of the arisings. It does, however, provide an indication of the operational waste management capacity available for this waste.

To estimate C&I waste generated by businesses, there have been regional and national surveys undertaken in previous years. The most recent national survey of C&I waste was undertaken by Defra in 2009/10, which provides C&I waste estimates at both national and regional levels. Based on the assumption that C&I arisings in Nottinghamshire declined in line with the national average, it is estimated that businesses in Nottinghamshire and Nottingham City generate approximately 900,000 tonnes of C&I waste per annum<sup>2</sup>.

<sup>2</sup>Estimate derived from Survey of Commercial and Industrial Waste Arisings, Defra, 2010



As with data on estimates of C&I waste generated by businesses, there is limited local data and **information on how this waste is managed. The Environment Agency's WDI reports approximately 387,000 tonnes of Nottinghamshire's municipal and C&I waste was sent to landfill in 2013/2014.** To provide an estimate of what proportion of this was from commercial and industrial sources, 150,000 tonnes of LACW in the County that is estimated to have been landfilled in 2013/14 was deducted from 387,000 tonnes, giving approximately 237,000 tonnes of C&I sent to landfill by Nottinghamshire in 2013/14. This estimate should however be taken with caution as some of the waste might have originated from outside the County and the waste produced within the County might have been sent outside of the County and there could also be some double counting due to waste passing through other facilities before its final destination.

## **1.5 Waste Management Capacity**

### **1.5.1 Introduction**

The capacity of waste management facilities in Nottinghamshire and Mansfield was compiled using information from the Environment **Agency's WDI** on permitted sites, the Councils' records on sites with existing planning permission for waste management use **and Nottinghamshire's Minerals and Waste Annual Monitoring Report, 2013/14.** Since the adoption of the Waste Core Strategy, the revised National Planning policy for waste amended the assessment of future capacity requirements to be based on only those facilities that are actually operational at the time of the assessment as being the more reliable measure of available capacity. Therefore, for purposes of this report, only facilities that are already operational have been considered for analysis. These include the following main facility types:

- Landfill;
- Incineration with energy recovery (EfW);
- Waste Transfer Stations (WTS);
- Materials Recovery Facilities (MRFs); and
- Composting and other organic recycling plants (e.g. anaerobic digestion).
- Recycling facilities

Note that facilities of waste recycle reprocessors such as glass recyclers, paper recyclers (i.e. B1 users from a planning perspective), which are also exempt from waste licensing, are not included in this analysis.

## 1.5.2 Nottinghamshire County and Mansfield Capacities

### 1.5.2.1 Landfill

Table 8 shows the landfill capacities in Mansfield and Nottinghamshire based on the most recent data and information received from the AMR 2014/2015 and most recent Environment Agency data (2015). Unless otherwise stated, all capacities shown are based on operator waste permit returns to the Environment Agency and estimated as at 31<sup>st</sup> December 2015. The capacities of landfills are expressed in cubic metres and these were converted to tonnages using figures recommended by the PPS10 Compaction guide; i.e. a conversion factor of 1.5 tonnes per cubic metre for inert waste and 0.85 tonnes per cubic metre for mixed municipal and similar wastes to estimate remaining void based on waste inputs to the landfills.

**Table 8 Total Landfill Capacities (in cubic metres) for Mansfield and Nottinghamshire as at 31<sup>st</sup> December 2015**

Landfill Type/Name	Capacities (m <sup>3</sup> )*		Type of waste received	Planning permission end date (if applicable)
	Mansfield	Nottinghamshire		
<b>Landfill (non-hazardous)</b>				
Staple Quarry and Landfill		270,000	HIC	31/10/2024
Daneshill		720,000	HIC	
Non-hazardous total capacity		<b>990,000</b>		
<b>Landfill (inert)</b>				
Vale Road Quarry	1,880,000	1,880,000	Inert	
Serlby Quarry		1,350,000	Inert	
Inert landfill total capacity	<b>1,880,000</b>	<b>3,230,000</b>		
<b>Landfill (inert - restricted user)</b>				
Coneygre Farm		Unknown	Inert	01/06/2019
Borrow Pits Landfill		450,000	Inert	
Cromwell Quarry		Unknown	Inert	31/12/2020
Inert-restricted landfill total capacity		<b>450,000</b>		
<b>Landfill (ash disposal)</b>				
Bole Ings		960,000	Pulverised fuel ash	
Cottam Power Station		1,240,000	Pulverised fuel ash	
Winking Hill		330,000	Pulverised fuel ash	
Landfill (ash-disposal) total capacity		<b>2,530,000</b>		

\* Contains Environment Agency information © Environment Agency and database right.  
HIC - Household/industrial/commercial



There is a County-wide non-hazardous landfill capacity of some 990,000 cubic metres (equivalent to approximately 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre).

It is reported in the Minerals and Waste Annual Monitoring Report (AMR), 2014/15) that approximately 23% (i.e. approximately 129,000 tonnes) of LACW produced in Nottinghamshire and Nottingham was sent to landfill. In 2013/2014, approximately 240,000 tonnes of C&I waste was sent to landfill in Nottinghamshire (AMR, 2013/14). Based on these landfill input rates and the capacity of non-hazardous landfill in Nottinghamshire shown in Table 8, the available void in the County would be filled in approximately 2-3 years, hence the need to find alternative methods of managing residual waste (AMR, 2014/15).

There is currently very limited capacity for landfill in the County as towards the end of 2014 significant **permitted disposal capacity was lost when two of the County's remaining non-hazardous** landfill sites, at Dorket Head Landfill near Arnold and Carton Forest Landfill near Worksop, closed, leaving only two remaining non-hazardous landfill sites near Newark and Retford. Taking account of these losses, remaining non-hazardous capacity is now estimated to be less than 1 million m<sup>3</sup>.

### **1.5.2.2 Energy from Waste**

Thermal treatment of waste can consist of simple incineration, typically used for clinical or hazardous wastes or incineration with energy recovery, which has become increasingly prevalent in the recovery of non-hazardous wastes, with the steam produced by the combustion process driving turbines to produce electricity. Advanced technologies are also starting to appear, such as gasification and pyrolysis, which aim to break down residual waste into fuels for either on-site electricity generation or for energy use off site. The move away from landfilling residual waste in recent years, driven by significant increases in landfill tax, has seen a considerable increase in the amount of available Energy from Waste capacity, and in volumes of waste recovered using this technology both nationally and regionally.

There is currently one EfW facility in Nottinghamshire, the Eastcroft Incinerator in Nottingham, with a permitted energy recovery capacity of 260,000 tonnes. However, this capacity includes 100,000 tonnes per annum that is not yet been built. The facility is able to take both commercial and municipal waste.

LACW residual waste from Mansfield District is currently delivered to FCC Alfreton WTS whereupon FCC produce RDF (which is sent to Europe) through a shredding and sorting processes or is sent to landfill. This arrangement will remain in place until the end of March 2017 after which residual waste



will be sent for the next three years (to April 2020) to the new Veolia Welshcroft Close WTS where it will be treated and sent as RDF to Europe. And from 2020 to 2033, residual waste will continue to be delivered to the Veolia Welshcroft Close WTS and be treated and used as RDF in the UK.

Outside of the County, there are other facilities that potentially could be used by the County such as the 120,000 tonnes per annum facility under construction in Doncaster, the 150,000 tonnes per annum fully operational facility in Lincolnshire, and the 300,000 tonne (proposed 180,000 tonnes municipal, 120,000 tonnes East Midlands C&I) EfW facility at Shepshed in Leicestershire. The Leicestershire facility was granted planning permission in 2012 and permission for increased capacity of 350,000 tonnes per annum approved in October 2014. It is expected to be operational by 2018/19 and there is also another 190,000 tonnes per annum facility in Derby, currently under construction.

### 1.5.2.3 Organic Waste Recycling (Composting, Anaerobic Digestion)

Various types of organic waste recycling facilities exist including windrow composting, in-vessel composting and anaerobic digestion. Windrow composting is used primarily for the biodegradation of garden and crop waste and other vegetable based materials, whilst in-vessel composting and anaerobic digestion facilities can take kitchen and commercial food waste as long as the facility process meet the requirements of the Animal By-Products regulations.

**Table 9 Organic Waste Processing Capacity in Nottinghamshire and Mansfield DC area, December 2015**

Site Name	Facility Type	Waste Type	Permitted annual capacity (Tonnes)	Location
Grange Farm, Oxtun	Composting	Municipal green waste	55,000	Nottinghamshire
Recycling Ollerton and Boughton	Composting	Commercial dry recyclables and green waste	4,400	Nottinghamshire
Stragglethorpe Road, Holme Pierrepont	Composting	Municipal/Commercial green waste	3,500	Nottinghamshire
John Brooks Sawmills	Composting	Commercial green waste	20,000	Nottinghamshire
<b>Total Composting</b>			<b>82,900</b>	
Stud Farm, Rufford	Anaerobic digestion	Poultry waste, vegetable waste and purpose grown energy crops	16,000	Nottinghamshire
Stoke Bardolph STW	Anaerobic digestion	C&I	55,200	Nottinghamshire
Biodynamics	Anaerobic digestion	C&I	150,000	Nottinghamshire
<b>Total Anaerobic Digestion</b>			<b>221,200</b>	



The figures in Table 9 demonstrate a total composting capacity (for both C&I and municipal waste) of 82,900 tonnes and 221,200 tonnes of anaerobic digestion capacity in Nottinghamshire, with no composting and anaerobic digestion capacity in Mansfield. Of the 82,900 tonnes of composting capacity in Nottinghamshire, 58,000 tonnes per annum is available for municipal waste.

#### 1.5.2.4 Material Recovery Facilities (MRFs)

Where recyclates such as plastics, metals, paper, cardboard, glass are collected as mixed streams, or “co-mingled”, MRFs are required to separate the individual material streams so they can be reprocessed and/or reused. Similarly “dirty MRFs” can be used to separate recyclates from residual waste streams. The provision of MRFs for the separation of recyclates for recycling operations elsewhere in Nottinghamshire and Mansfield is summarised in the Table 10.

**Table 10 MRF Capacity in Nottinghamshire as of December 2015**

Site Name	Waste Type	Permitted annual capacity (Tonnes)	Location
Bunny Transfer Station	C&I	209,000	Nottinghamshire
Colwick	Construction/industrial/commercial	119,000	Nottinghamshire
Mansfield MRF	Municipal/commercial/industrial	80,000	Mansfield
Sandy Lane	Construction/industrial/commercial	22,000	Nottinghamshire
Wastecycle Limited	Commercial/industrial/municipal	314,000	Nottinghamshire
<b>Total</b>		<b>744,000</b>	

Mansfield District Council is fortunate to have a MRF based in its district. The Council currently sends its dry mixed recyclates to this MRF in Mansfield, as do all other WCAs in Nottinghamshire. There is no end date on the planning permission for the MRF, however, the PFI contract runs until 2033, after which there could be different contractual arrangements. The total available MRF capacity in Nottinghamshire is approximately 744,000 tonnes.

#### 1.5.2.5 Transfer Stations

Nottinghamshire has considerable provision for transfer and bulking stations as summarised in the Table 11, including facilities for hazardous, clinical, LACW and C&I wastes. The majority of transfer stations handle C&I and municipal waste. The total available capacity for transfer station in Nottinghamshire is approximately 390,000 tonnes, of which approximately 74,000 tonnes is in the Mansfield District. Of the total transfer station capacity in Nottinghamshire, approximately 280,000 tonnes is for C&I and/or municipal waste, of which 73,700 tonnes is located in Mansfield District. According to the Waste Core Strategy, four sites in Nottinghamshire are used to bulk up waste from HWRCs and kerbside collections and manage an estimated 50,000 tonnes of municipal waste. A new

municipal waste transfer station in Newark that became operational in 2015 addresses any short fall in this part of the County.

**Table 11 Transfer Stations Capacity, Nottinghamshire and Mansfield, December 2015**

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
Mansfield D C Transfer Station	Municipal	4,700	Nottinghamshire
AB Waste Disposal	C&I	25,000	Nottinghamshire
ICS Bleakhill Sidings	C&I and construction and demolition	44,000	Nottinghamshire
<b>Mansfield Total</b>		<b>73,700</b>	
Jessop Close	C&I Hazardous and non-hazardous	20,000	Nottinghamshire
Mr Terry Price	C&I Non-hazardous/scrap metal	3,100	Nottinghamshire
Quarry Farm 2	C&I and construction and demolition	1,200	Nottinghamshire
Wallrudding Farm	Construction and demolition	5,000	Nottinghamshire
Brunel Drive	Municipal and C&I	60,000	Nottinghamshire
PHS	Clinical	500	Nottinghamshire
Eurotech - Global Environmental Services	Liquid/sludges	30,000	Nottinghamshire
Specialised Waste Services	Hazardous	900	Nottinghamshire
East Midlands Waste	Unknown	3,200	Nottinghamshire
Charles Lawrence International Ltd	C&I	19,500	Nottinghamshire
15b Wigwam Lane	Construction and demolition	9,700	Nottinghamshire
Abbey Road Depot	Municipal	2,900	Nottinghamshire
Environmental Health & Housing Services	Municipal	1,700	Nottinghamshire
Gamston Depot	Municipal	1,100	Nottinghamshire
Giltbrook	Municipal	10,000	Nottinghamshire
Kimberley Depot	Municipal	13,700	Nottinghamshire
Nottingham Sleeper Company	C&I	3,600	Nottinghamshire
Plot 4b, 14 and 15 Wigwam Lane	Construction and demolition	33,000	Nottinghamshire
5 Plots 8 and 9 Wigwam Lane, Hucknall	Construction and demolition	1,200	Nottinghamshire
Tarmac	Construction and demolition	700	Nottinghamshire
V and K Premises	Hazardous	100	Nottinghamshire
Maun Valley Waste Transfer Station	Construction and demolition	5,200	Nottinghamshire
Land at Shireoaks Road	Municipal and C&I	75,000	Nottinghamshire
Oakwood Fuels Ltd, Brailwood Road	Commercial/industrial/hazardous	19,000	Nottinghamshire
<b>Nottinghamshire Total</b>		<b>394,000</b>	

### 1.5.2.6 Recycling capacity

Table 12 shows the recycling capacity in Nottinghamshire and in Mansfield for glass, wood, metal and aggregate, with a total capacity of approximately 1.9 million tonnes in Nottinghamshire, of which



approximately 28,000 tonnes is in Mansfield. The majority of this capacity is for C&I and construction and demolition waste, with approximately 40,000 tonnes per annum of capacity currently available for municipal waste.

**Table 12 Recycling Capacity in Nottinghamshire and Mansfield as of December 2015**

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
<b>Glass</b>			
Recresco	C&I	30,000	Nottinghamshire
<b>Total glass</b>		<b>30,000</b>	
<b>Wood</b>			
R M Wright Wood Recycle	Commercial timber	18,000	Nottinghamshire
R Plevin & Sons Ltd	C&I	58,000	Nottinghamshire
<b>Total Wood</b>		<b>76,000</b>	
<b>Aggregate</b>			
Windmill House Farm	Construction and demolition	20,000	Mansfield
Bunny Materials Recycling Facility	Aggregate/IBA	270,000	Nottinghamshire
Chris Allsop Business Park	Aggregate	25,000	Nottinghamshire
Coneygre Farm	Inert	17,000	Nottinghamshire
North Midland Construction	Construction and demolition	18,000	Nottinghamshire
Plot 4b, Bakerbrook Industrial Estate	Construction and demolition	45,000	Nottinghamshire
Plot 7a Park Lane Business Park	Construction and demolition	150,000	Nottinghamshire
Plots 10,11,12,13,14, and 16 Wigwam Lane	Aggregate/Soil/ Construction /Demolition	150,000	Nottinghamshire
Plots 7, 8, 9, 15a and 15b Wigwam Lane	Construction and demolition	45,000	Nottinghamshire
Scroby Top Quarry	Construction and demolition	20,000	Nottinghamshire
Toton Railway Sidings	Construction and demolition	315,000	Nottinghamshire
Colwick Industrial Estate	Construction and demolition	200,000	Nottinghamshire
Oakfield Construction	Construction and demolition	400,000	Nottinghamshire
<b>Total Aggregate</b>		<b>1,675,000</b>	
<b>Metal</b>			
Woodhouse Vehicle Dismantlers	Vehicles	600	Mansfield
S R Payne Scrap metals Ltd		6,500	Mansfield
Mansfield Woodhouse Dismantlers		900	Mansfield
B D Motor Spares	Vehicles	400	Nottinghamshire
Bradford Moor	Vehicles & scrap metal	25,000	Nottinghamshire
Briggs Metals	Municipal and C&I	34,000	Nottinghamshire
HBC Vehicles	C&I Hazardous	8,000	Nottinghamshire
Hutchinson Engineering Services Ltd	Municipal and C&I	600	Nottinghamshire
Lakeside, Clifton	C&I Hazardous	100	Nottinghamshire
Reclamations Ollerton Ltd	C&I Hazardous	700	Nottinghamshire
T W Crowden & Daughter Ltd	Municipal and C&I	1,900	Nottinghamshire
French Spares, Ranskill	C&I	200	Nottinghamshire

Lodge On The Wolds Farm	C&I	500	Nottinghamshire
Phoenix Auto Salvage	C&I	2,200	Nottinghamshire
Charles Trent Limited	C&I	2,800	Nottinghamshire
Mega Vaux	C&I	5,000	Nottinghamshire
Glen Barry Metals Limited	C&I	5,600	Nottinghamshire
<b>Total Metal</b>		<b>95,000</b>	
<b>Nottinghamshire Total Recycling</b>		<b>1,876,000</b>	
<b>Mansfield Total Recycling</b>		<b>28,000</b>	

### 1.5.2.7 HWRC Capacity

Table 13 shows the available operating capacity of HWRCs in Mansfield and Nottinghamshire as of December 2015, with a total of approximately 110,000 tonnes per annum existing in Nottinghamshire, of which 11,000 tonnes per annum is in Mansfield. The County completed a long term programme of improvements to its network of HWRCs, including the development of the new sites at Worksop and Newark.

**Table 13 HWRC Capacity in Nottinghamshire and Mansfield, 2015**

Site Name	Waste Type	Permitted Annual Capacity (Tonnes)	Location of Site
Mansfield HWRC	Municipal	11,000	Mansfield
Bilsthorpe HWRC	Municipal	3,500	Nottinghamshire
Newark HWRC	Municipal	9,000	Nottinghamshire
Beeston HWRC	Municipal	9,000	Nottinghamshire
Calverton Colliery HWRC	Municipal	10,000	Nottinghamshire
Langar HWRC	Municipal	3,500	Nottinghamshire
Lenton HWRC	Municipal	8,000	Nottinghamshire
West Bridgford HWRC	Municipal	9,000	Nottinghamshire
Giltbrook HWRC	Municipal	10,000	Nottinghamshire
Retford HWRC	Municipal	6,000	Nottinghamshire
Hucknall HWRC	Municipal	7,000	Nottinghamshire
Kirkby HWRC	Municipal	6,000	Nottinghamshire
Worksop HWRC	Municipal	9,000	Nottinghamshire
Warsop HWRC	Municipal	8,000	Nottinghamshire
<b>Nottinghamshire Total HWRC</b>		<b>109,000</b>	
<b>Newark and Sherwood Total HWRC</b>		<b>11,000</b>	

Table 14 provides a summary of the waste management capacity available within the Nottinghamshire and Mansfield as of December 2015.

**Table 14 Summary of available waste management capacity as of December 2015, Nottinghamshire and Mansfield**

Waste Management Method	Available Capacity*	
	Nottinghamshire	Mansfield
Landfill (non-hazardous)	990,000	-
Landfill (inert)	3,230,000	1,880,000
Landfill (inert - restricted user)	450,000	-
Landfill (ash disposal)	2,530,000	-
Composting	82,900	-
Anaerobic Digestion	221,200	-
MRFs	664,000	80,000
Transfer stations	394,000	73,700
Recycling – glass	30,000	-
Recycling – wood	76,000	-
Recycling - aggregates	1,675,000	20,000
Recycling – metal	95,000	8,000
HWRCs	109,500	11,000

\*All landfill capacity is in m<sup>3</sup>

## 1.6 Capacity Gap Analysis

Based on the analysis of LACW arisings produced, the forecast of these arisings and the current operational waste management capacity within Nottinghamshire and Mansfield, a capacity gap analysis was undertaken to identify future requirements of facilities to manage future waste arisings while meeting future recycling and recovery targets.

### 1.6.1 Landfill

With significant permitted disposal capacity **lost when two of the County's remaining non-hazardous** landfill sites, at Dorket Head Landfill near Arnold and Carton Forest Landfill near Worksop, closed towards the end of 2014, leaving only two operational landfill sites, the available operational landfill capacity for municipal waste in Nottinghamshire based on the capacity analysis is 990,000 cubic metres (equivalent to 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre), with no landfill capacity in Mansfield.

The forecast of LACW by waste management method indicates a reduction in municipal waste sent to landfill of approximately 39% during the plan period based on the countywide recycling targets, i.e. from 228,000 tonnes in 2014/15 to 139,000 tonnes in 2032/33. Based on this forecast and on the current available non-hazardous landfill capacity and taking into account approximately 240,000 tonnes of C&I waste sent to landfill, the available void is estimated to be filled by 2018/19. It is mentioned in the Waste Core Strategy that some municipal waste from Derby is sent to landfills in Nottinghamshire, which means that there is currently very limited landfill capacity to meet



Nottinghamshire's future landfill requirements even with the significant reduction in municipal waste sent to landfill over the plan period. The Waste Core Strategy estimates that approximately 3.6 million m<sup>3</sup> of landfill void space (equivalent to approximately 3.0 million tonnes at an average bulk density of 0.85 tonnes/cubic metre) is required **to meet the County's future landfill needs.**

### **1.6.2 Energy from Waste**

There is currently approximately 260,000 tonnes of permitted EfW capacity available within Nottinghamshire, at the Eastcroft Incinerator, with 100,000 tonnes of this capacity not yet available. The facility is permitted to take both LACW and C&I waste due to variations made to its operating permit. As in the Waste Core Strategy, it is assumed that 160,000 tonnes of EfW capacity is currently available for municipal waste, which means that there is enough capacity for municipal waste based on the forecast municipal waste recovery tonnages of approximately 40,000 tonnes per annum. The Waste Core Strategy estimates that approximately 200,000 tonnes of EfW capacity is required to meet future C&I waste management needs.

### **1.6.3 Municipal Recycling and Composting**

Based on the analysis of available operational capacity, there is currently approximately 40,000 tonnes per annum recycling capacity and 58,000 tonnes per annum composting capacity for municipal waste in Nottinghamshire, i.e. a total capacity of approximately 98,000 tonnes per annum for municipal recycling and composting. With recycling and composting tonnages forecast to increase to approximately 280,000 tonnes by 2033, the end of the plan period, an estimated 182,000 tonnes per annum of municipal composting and recycling capacity is required in Nottinghamshire.

## **1.7 Conclusion**

Quantities of LACW produced in Nottinghamshire show a slight reduction, of approximately 3%, from 423,000 tonnes to 412,000 tonne over the period 2010/11 to 2014/15. Quantities of LACW produced in Mansfield show an increase of approximately 5% in 2015/2016 in comparison to the waste produced in 2010/11.

The LACW composting and recycling rate for Nottinghamshire reduced slightly from 37.4% in 2010/11 to 34.6% in 2014/15 but was relatively similar (i.e. on a plateau) year on year. The LACW composting and recycling rate in Mansfield also decreased from 41.5% in 2010/11 to 31.4% in 2015/16.

All kerbside collected DMR and recyclates from the two HWRCs in Mansfield District is sent to a MRF in Mansfield for sorting into their constituent materials and then sent for subsequent recycling. The



green/garden waste collected by the District is taken to a composting facility in Oxton. Residual waste is currently being processed into RDF and sent to Europe or is landfilled. The plan is to continue with this arrangement until 2020 whereupon a new WTS will come on-line and residual waste will still be processed into RDF but for use in the UK until the end of the PFI contract with Veolia in 2033.

Based on the forecast of LACW over the plan period, taking into account the recycling and recovery targets of the County and District, and the assessment of the existing and operational waste management capacity within Nottinghamshire and Mansfield, the results of this analysis show that there is insufficient non-hazardous landfill capacity available within the County to meet **the County's** future landfill requirements even with the significant reduction in LACW sent to landfill over the plan period. The available operational landfill void, i.e. 990,000 million cubic metres (equivalent to approximately 840,000 tonnes at an average bulk density of 0.85 tonnes/cubic metre) is likely to be filled by 2018/19. It is estimated in the Waste Core Strategy that approximately 3.6 million m<sup>3</sup> of landfill void (equivalent to approximately 3.0 million tonnes at an average bulk density of 0.85 **tonnes/cubic metre**) is required to meet the County's future landfill requirements.

There is currently enough EfW capacity available for LACW within Nottinghamshire, with approximately 200,000 tonnes of EfW capacity required to meet future C&I waste management needs.

With recycling and composting tonnages forecast to increase to approximately 280,000 tonnes by 2033, there is need for an estimated 182,000 tonnes per annum recycling and composting capacity to meet future recycling and composting requirements of the County. This is particularly important in the context of the County's **and EU recycling and composting targets. These targets may be met through a** combination of improved collection methods for both household and business waste as well as by using MRFs to mechanically sort recyclable waste.



## Appendix E – Utilities Supporting Information

Red Amber Green (RAG) Assessment  
by Western Power Distribution

HELAA Site Reference	Site Description	Location	Primary Supply	kVA Totals	Housing Trajectory													Total Dwellings 2016/2017-2032/2033	Post Plan	
					2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2028/29	2029/30	2030/31	2031/32	2032/33				
152	Land off Birch Street	Warsop	Acreage Lane	44	20														20	0
154	Land at West St and King St	Warsop	Acreage Lane	31	14														14	0
33	Wood Lane (Miners Welfare)	Warsop	Acreage Lane	68								15							31	0
57	Land off Mansfield Road, Spinn Kop (adj The Gables)	Warsop	Acreage Lane	18							8								8	0
100	Land at the rear of Cherry Paddocks	Warsop	Acreage Lane	42						10	9								19	0
			Acreage Lane kVA	202	74.8	0	0	0	0	22	37.4	33	0	0	0	0	0	0	202.4	0
91	Strip of land off Cauldwell Road (opposite the College)	Mansfield	Annesley	92						30	12								42	0
			Annesley kVA	92	0	0	0	0	0	66	26.4	0	0	0	0	0	0	0	92	0
13	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)	Mansfield	Crown Farm	418				60	60	60	60	10							190	0
97	Land to the rear of 183 Clipstone Road West	Mansfield	Crown Farm	26	6	6													12	0
158	Land off Sandlands Way	Mansfield	Crown Farm	46	21														21	0
159	Birchlands/Old Mill Lane	Mansfield	Crown Farm	18	6	2													8	0
19	Allotment site at Pump Hollow Road	Mansfield	Crown Farm	141				10	10	14	30								64	0
31	Land at New Mill Lane	Mansfield	Crown Farm	220															100	0
53	Land between Old Mill Lane & New Mill Lane	Mansfield	Crown Farm	506									30	30	30	30	20		230	0
74	Bimsley Heath	Mansfield	Crown Farm	1390									60	60	60	60	60		600	200
98	Land to the rear of 66-70 Clipstone Road West	Mansfield	Crown Farm	31			7	7											14	0
101	Land south of Clipstone Road East	Mansfield	Crown Farm	689					15	30	45								313	0
			Crown Farm kVA	3414	72.6	17.6	15.4	169.4	187	228.8	187	198	198	198	198	198	176		3414.4	440
1	Former Mansfield Brewery (part B)	Mansfield	Lime Tree Place	51							5								23	0
59	Land to the rear of High Oakham Hill	Mansfield	Lime Tree Place	86	39														39	0
90	Lindhurst	Mansfield	Lime Tree Place	2805		15	30	60	90	90	90	90	90	90	90	90	90		1275	425
106	Former Mansfield Sand Co	Mansfield	Lime Tree Place	235			10	30	30	30	7								107	0
113	284 Berry Hill Lane	Mansfield	Lime Tree Place	11		5													5	0
155	Berry Hill Hall	Mansfield	Lime Tree Place	84	38														38	0
156	Former Miners Offices	Mansfield	Lime Tree Place	31	14														14	0
171	High Oakham Farm	Mansfield	Lime Tree Place	605	80	80	80	35											275	0
168	10A Montague Street	Mansfield	Lime Tree Place	15	3	4													7	0
11	Bellamy Road Recreation Ground	Mansfield	Lime Tree Place	141															64	0
23	Sandy Lane	Mansfield	Lime Tree Place	139						30	30								63	0
24	Sherwood Close	Mansfield	Lime Tree Place	70															32	0
54	Former Evans Halshaw site	Mansfield	Lime Tree Place	145			10	15	15	15	11								66	0
			Lime Tree Place kVA	4418	174	104	130	140	135	165	143	90	90	90	90	90			4418	935
107	20 Abbott Road	Mansfield	Mansfield	18				8											8	0
2	Former Mansfield General Hospital	Mansfield	Mansfield	119	9	36	9												54	0
81	Peminent Farm (Housing)	Mansfield	Mansfield	946			10	20	40	40	40	40	40						430	0
92	Pleasley Hill Regeneration Area	Mansfield	Mansfield	319	36	36	36	37											145	0
110	Land to the rear of 5 Welbeck Road	Mansfield	Mansfield	22				5	5										10	0
157	The Ridge	Mansfield	Mansfield	37	17														17	0
160	32 Warsop Road	Mansfield	Mansfield	11	3	2													5	0
163	Development off Debdale Lane	Mansfield	Mansfield	29	13														13	0
164	Former garage site Alexandra Avenue	Mansfield	Mansfield	11	5														5	0
166	Land off Portland Street (West)	Mansfield	Mansfield	13	6														6	0
167	Poppy Fields	Mansfield	Mansfield	88	40														40	0
170	Land off Wharmby Avenue	Mansfield	Mansfield	275	65	60													125	0
6	Centenary Lane (phase 3)	Mansfield	Mansfield	205															93	0
12	Broomhill Lane Allotments (part)	Mansfield	Mansfield	77						5	5								35	0
14	Land at Cox's Lane	Mansfield	Mansfield	44						20									20	0
26	Land at Windmill Lane (former nursery)	Mansfield	Mansfield	81						15	15								37	0
28	Debdale Lane / Emerald Close	Mansfield	Mansfield	70						10	15								32	0
29	Sherwood Rise (adjacent Queen Elizabeth Academy)	Mansfield	Mansfield	191								25	12						87	0
30	Land at Old Mill Lane / Stirling Lane	Mansfield	Mansfield	189								20	20	6					86	0
52	Pleasley Hill Farm	Mansfield	Mansfield	1452						30	30	60	60	60	60	60	60		660	0
55	Tall Trees mobile homes Old Mill Lane	Mansfield	Mansfield	220								10							100	0
60	Land of Ley Lane	Mansfield	Mansfield	33						15									15	0
64	Pheasant Hill and Highfield Close	Mansfield	Mansfield	216						20	20								98	0
66	Harrop White Road Allotments	Mansfield	Mansfield	22							5								10	0
74c	Water Lane	Mansfield	Mansfield	306								30	30	30	30	19			139	0
79	Land of Rosemary Street	Mansfield	Mansfield	22							10								10	0
99	18 Burns Street	Mansfield	Mansfield	26			6	6											12	0
105	Land at 7 Oxclose Lane	Mansfield	Mansfield	37		6	6	5											17	0
			Mansfield kVA	5080	426.8	308	147.4	178.2	99	341	308	407	356.4	211.2	198	41.8			5080	0
27b	Land off Sherwood Oaks Close	Mansfield	Rufford	101							10								46	0
27a	Land at Redruth Drive	Mansfield	Rufford	284						15	30								129	0
73	Three Thorn Hollow Farm	Mansfield	Rufford	414							20	28							188	0
			Rufford kVA	799	0	0	0	0	0	33	132	61.6	0	0	0	0	0	0	798.6	0
103	Park Hall Farm	Mansfield	Shirebrook	286			10	30	30	30	30								130	0
104	Park Hall Farm	Mansfield	Shirebrook	22			10												10	0
			Shirebrook kVA	308	0	0	22	88	66	66	66	0	0	0	0	0	0	0	308	0
80	Land North of Skegby Lane	Mansfield	Skegby Lane	330			15	30	30	30	30								150	0
85	Land off Quarry Lane	Mansfield	Skegby Lane	37	5	5	7												17	0
86	Land at the corner of Quarry Lane, Mansfield	Mansfield	Skegby Lane	46		10	11												21	0
95	Vauxhall Garage	Mansfield	Skegby Lane	90				11	15	15									41	0
96	Land at Hermitage Lane	Mansfield	Skegby Lane	55		10	15												25	0
111	22 St John Street	Mansfield	Skegby Lane	18	4	4													8	0
109	Land off Sutton Road	Mansfield	Skegby Lane	22			5	5											10	0
4	Land astride Victoria Street	Mansfield	Skegby Lane	139								13							63	0
58	Fields Farm, Abbott Road	Mansfield	Skegby Lane	440								30	30	30	30	30			200	0
68	Kirkland Avenue Industrial Park	Mansfield	Skegby Lane	44						5	15								20	0
75	Former Mansfield Hosiers Mill Car Park & Electricity Board workshops & social club	Mansfield	Skegby Lane	64						14	15	30							29	0
89	Land off Skegby Lane	Mansfield	Skegby Lane	473							15	30	20						215	0
			Skegby Lane kVA	1758	19.8	63.8	116.6	101.2	99	140.8	165	160.6	110	66	66	66				

HELAA Site Reference	Site Description		Primary Supply	kVA Totals	Convenience Retail (sqm)	kVA	Comparison Retail (sqm)	kVA	Leisure (sqm)	kVA	Offices (sqm)	kVA	Industrial (Ha)	kVA
137	Plot 17	Mansfield	Crown Farm	487	0	0	0	0	0	0	0	0	0.25	487
71a	Site A, Long Stoop Way	Mansfield	Crown Farm	2098	0	0	0	0	0	0	4,560	418	1.14	1,680
71c	Site C, Long Stoop Way	Mansfield	Crown Farm	694	0	0	0	0	0	0	1,200	110	0.30	584
76	Elmsley Heath	Mansfield	Crown Farm	4983	0	0	0	0	0	0	0	0	6.76	4,983
90	Lindhurst	Mansfield	Lime Tree Place	16153	25,654	4,996	0	0	0	0	24,255	2,221	12.13	8,936
134	Land at Belvedere Street	Mansfield	Lime Tree Place	252	816	159	0	0	0	0	1,020	93	0.00	0
127	Former bus station site	Mansfield	Lime Tree Place	3072	15,000	2,921	0	0	775	151	0	0	0.00	0
120	Land at Old Peggs	Mansfield	Mansfield	331	1,700	331	0	0	0	0	0	0	0.00	0
144	Land off Sherwood Street	Mansfield	Mansfield	448	0	0	0	0	0	0	0	0	0.23	448
74b	Water Lane	Mansfield	Mansfield	311	0	0	0	0	0	0	3,400	311	0.00	0
74c	Water Lane	Mansfield	Mansfield	1351	0	0	0	0	0	0	2,336	214	0.58	1,137
169	Land Adjacent Unit 3, Sherwood Oaks Close	Mansfield	Rufford	57	0	0	0	0	0	0	627	57	0.00	0
40	Land at Ratcher Hill Quarry (south west)	Mansfield	Rufford	1461	0	0	0	0	0	0	0	0	0.75	1,461
139	Frontage to Ransom Wood Business Park	Mansfield	Rufford	341	750	146	0	0	1,000	195	0	0	0.00	0
150	Ratcher Hill Quarry	Mansfield	Rufford	7071	0	0	0	0	18,460	3,595	0	0	1.79	3,476
151	Carpark opposite Birch House	Mansfield	Rufford	81	0	0	0	0	0	0	880	81	0.00	0
52	Pleasley Hill Farm	Mansfield	Shirebrook	6786	10,200	1,986	0	0	10,200	1,986	10,200	934	2.55	1,879
123	Land Off Kestral Road	Mansfield	Skegby Lane	283	0	0	0	0	0	0	0	0	0.15	283
135	190 Ladybrook Lane	Mansfield	Skegby Lane	78	400	78	0	0	0	0	0	0	0.00	0
140	Hermitage Lane Industrial Estate (Site A)	Mansfield	Skegby Lane	779	0	0	0	0	0	0	0	0	0.40	779
82	Penniment Farm (employment)	Mansfield	Skegby Lane	8453	84	16	0	0	0	0	3,300	302	11.04	8,135
-	Large site completions	Mansfield	undefined	4936	0	0	0	0	0	0	4,563	418	2.32	4,518
132	Former Strand cinema	Warsop	Warsop	156	800	156	0	0	0	0	0	0	0.00	0
			<b>Totals</b>	<b>60660</b>	<b>55,404</b>	<b>10,789</b>	<b>0</b>	<b>0</b>	<b>30,435</b>	<b>5,927</b>	<b>56,341</b>	<b>5,160</b>	<b>40</b>	<b>38,785</b>

**Summary of Estimated Electricity Requirements - Housing**

Primary Supply	kVA Totals	Housing Trajectory												Total Dwellings 2016/2017- 2032/2033	Post Plan
		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2028/29	2029/30	2030/31	2031/32	2032/33		
Acreage Lane kVA	352	0	0	22	88	66	110	66	0	0	0	0	0	352	0
Blidworth kVA	3311	0	33	66	132	264	224.4	242	259.6	198	198	198	198	3311	935
Crown Farm kVA	2728	0	0	15.4	15.4	33	66	99	22	0	0	0	0	2728	0
Lime Tree Place kVA	715	30.8	0	22	33	33	33	46.2	0	0	0	0	0	715	0
Mansfield kVA	1140	0	13.2	13.2	11	0	77	44	0	0	0	0	0	1140	0
Rufford kVA	1846	0	0	0	0	0	33	66	132	132	132	132	132	1846	440
Shirebrook kVA	2077	79.2	79.2	79.2	81.4	0	66	66	198	198	198	198	173.8	2077	0
Skegby Lane kVA	2735	0	0	13.2	13.2	0	30.8	66	66	44	0	0	0	2735	0
Warsop kVA	1701	15.4	15.4	17.6	17.6	17.6	0	0	6.6	6.6	8.8	8.8	8.8	1701	0
Undefined kVA	1432	92.4	94.6	94.6	94.6	94.6	0	0	96.8	96.8	96.8	96.8	96.8	1432	0
<b>Total kVA</b>	<b>18036</b>	<b>723.8</b>	<b>448.8</b>	<b>578.6</b>	<b>994.4</b>	<b>1018.6</b>	<b>1386</b>	<b>1337.6</b>	<b>1194.6</b>	<b>1009.8</b>	<b>778.8</b>	<b>765.6</b>	<b>719.4</b>	<b>18036</b>	<b>1375</b>
<b>Total Houses</b>		<b>329</b>	<b>204</b>	<b>263</b>	<b>452</b>	<b>463</b>	<b>630</b>	<b>608</b>	<b>543</b>	<b>459</b>	<b>354</b>	<b>348</b>	<b>327</b>	<b>8,198</b>	<b>625</b>

Primary	BSP	Domestic kVA	Commercial kVA	Total kVA	Comments
<b>Acreage Lane kVA</b>	<b>Mansfield</b>	202	0	<b>202</b>	No reinforcement required
<b>Annesley kVA</b>	<b>Annesley</b>	92	0	<b>92</b>	No reinforcement required
<b>Crown Farm kVA</b>	<b>Clipstone</b>	3414	8261	<b>11675</b>	Capacity currently exists for the domestic load element, however the commercial aspect would trigger a transformer change and 33kV circuit reinforcement
<b>Lime Tree Place kVA</b>	<b>Mansfield</b>	4418	19477	<b>23895</b>	Capacity currently exists for the domestic load element, however the commercial aspect would trigger a new primary sub-station.
<b>Mansfield kVA</b>	<b>Mansfield</b>	5080	2442	<b>7522</b>	Capacity currently exists for the domestic load element, and the majority of the commercial aspect. The remainder could be accommodated by utilising capacity in other local primaries
Rufford kVA	Clipstone	799	9010	<b>9809</b>	Available capacity has been reduced following the connection of a battery storage scheme. An 33/11kV Tx change and 33kV circuit reinforcement could be required to support full extent of future load
Shirebrook kVA	Whitwell	308	6786	<b>7094</b>	Capacity currently exists for the domestic load element, however the commercial aspect would trigger a second transformer at Shirebrook
Skegby Lane kVA	Mansfield	1758	9593	<b>11351</b>	Very limited capacity exists at this Primary, any significant development is likely to trigger a 33/11kV transformer upgrade and 33kV circuit reinforcement
Warsop kVA	Clipstone	618	156	<b>774</b>	No reinforcement required

Severn Trent Water RAG  
on Water and Waste Water

# Mansfield IDP Water & Waste Comments

## Potential impact of proposed developments on sewerage infrastructure assets

Date: 08/12/2017

**NOTE:** The purpose of these desktop based assessments are to indicate where proposed development **MAY** have a detrimental impact on the performance of the existing public sewerage network taking into account the size of the development proposals.

For most new development provided the surface water in managed sustainably through use of a SuDS the additional foul only flows will have a negligible impact on existing sewer performance but where there are pre-existing capacity constraints additional capacity improvements may be required.

Where subsequent detailed modelling indicates capacity improvements are required such work will be phased to align with development occupancy with capacity improvement works will be funded by Severn Trent Water. However, whilst Severn Trent have a duty to provide additional capacity to accommodate planned development, we also have a requirement to manage our assets efficiently to minimise our customers' bills. Consequently to avoid potential inefficient investment we generally do not provide additional capacity until there is certainty that the development is due to commence. Where development proposals are likely to require additional capacity upgrades to accommodate new development flows it is highly recommended that potential developers contact Severn Trent as early as possible to confirm flow rates and intended connection points. This will ensure provision of additional capacity can be planned into our investment programme to ensure development is not delayed.

**Note:** These are desktop assessments using readily available information and have not been subjected to detailed hydraulic modelling

Site Ref	Site Name	Size	Units	Sewage Treatment Works Catchment	Sewerage Comment	Potential impact on sewerage infrastructure
<b>Town A: Mansfield</b>						
1	Former Mansfield Brewery (part B)			23 Bath Lane STW	Small development, is not expected to impact the sewerage infrastructure. Surface water can drain to the existing Surface water network nearby	Low
2	Former Mansfield General Hospital		54		SW expected to join combined system, due to the size of the Dev this is unlikely to have a significant impact. If Dev drains to West Hill Drive as expected there are no capacity issues.	Low
80	Land North of Skegby Lane		150		SW can join the existing local SW network. Will join either a 150 mm or 225 mm dia pipe. Reported flooding D/S.	Low
58	Fields Farm, Abbott Road		200		SW can join the existing local SW network. Will join either a 150 mm or 225 mm dia pipe. Reported flooding D/S.	Low
81	Penniment Farm (Housing)		430		Assumed SW will be dealt with on site or drained to local watercourse. Site will drain to a 525 mm dia pipe on the combined system. Some capacity issues D/S with reported flooding and RPA predicting flooding on low RPs.	Med
82	Penniment Farm (employment)	11.5ha				
85	Land off Quarry Lane		17		Small dev, no significant impact expected	Low
86	Land at the corner of Quarry Lane, Mansfield.		21		Small dev, no significant impact expected	Low
92	Pleasley Hill Regeneration Area		145		SW can join the existing local SW network. Flooding D/S of dev. Reported H2S issues D/S.	Med
95	Vauxhall Garage		41		Assumed SW will be dealt with on site or drained to local watercourse. No known constraints in the area	Low
96	Land at Hermitage Lane		25			
97	Land to the rear of 183 Clipstone Road West		12		Small dev, no significant impact expected	Low
103	Park Hall Farm		130		SW can join the existing local SW network. RPA predicts flooding on a 5 yr RP on the SW system D/S of the development. No other capacity issues.	Med
104	Park Hall Farm		10		Small dev, no significant impact expected	Low
106	Former Mansfield Sand Co		107		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on a low RP. FA scheme completed D/S in 2006.	Med
107	20 Abbott Road		8		Small dev, no significant impact expected	Low
109	Land off Sutton Road		10		Small dev, no significant impact expected	Low
110	Land to the rear of 5 Welbeck Road		10		Small dev, no significant impact expected	Low
111	22 St John Street		8		Small dev, no significant impact expected	Low
113	284 Berry Hill Lane		5		Small dev, no significant impact expected	Low
155	Berry Hill Hall		38		No SW system or local watercourse. Assumed SW will be dealt with on site. RPA predicts flooding on low RPs D/S. Reported flooding incidents D/S. Small dev unlikely to impact flooding significantly.	Low
156	Former Miners Offices		14		Small dev, no significant impact expected	Low
157	The Ridge		17		Small dev, no significant impact expected	Low
158	Land off Sandlands Way		21		Small dev, no significant impact expected	Low
159	Birchlands/Old Mill Lane		8		Small dev, no significant impact expected	Low
160	32 Warsop Road		5		Small dev, no significant impact expected	Low
163	Development off Debdale Lane		13		Small dev, no significant impact expected	Low
164	Former garage site Alexandra Avenue		5		Small dev, no significant impact expected	Low
166	Land off Portland Street (West)		6		Small dev, no significant impact expected	Low
167	Poppy Fields		40		No SW system or local watercourse. Assumed will be dealt with on site. One flooding incident reported.	Low
6	Centenary Lane (phase 3)		93			
168	10A Montague Street		7		Small dev, no significant impact expected	Low
4	Land astride Victoria Street		63		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on low RPs on Dallas St.	Low
12	Broomhill Lane Allotments (part)		35		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on low RPs D/S of dev.	Low
14	Land at Cox's Lane		20		Small dev, no significant impact expected	Low
19	Allotment site at Pump Hollow Road		64		No known capacity issues. SW can join the existing local SW network	Low
23	Sandy Lane		63		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on low RPs D/S of dev. Also, reported flooding D/S.	Low
24	Sherwood Close		32		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on low RPs D/S of dev	Low
26	Land at Windmill Lane (former nursery)		37		No SW system or local watercourse. Assumed will be dealt with on site. RPA predicts flooding on low RPs D/S of dev. Also, reported flooding D/S.	Low
28	Debdale Lane / Emerald Close		32		No SW system or local watercourse. Assumed will be dealt with on site. No known constraints.	Low
29	Sherwood Rise (adjacent Queen Elizabeth Academy)		87		SW can join the existing local SW network. No known constraints.	Low
30	Land at Old Mill Lane / Stinting Lane		86		SW can join the existing local SW network. No known constraints.	Low
31	Land at New Mill Lane		100		SW can join the existing local SW network. Pollution D/S at Maun Valley SPS.	Low
52	Pleasley Hill Farm	5.61ha			SW can join the existing local SW network. Flooding reported D/S. A pumped connection may be required. Reported H2S issues. Foul flows are likely to join the combined system on Rushkin Rd. D/S, flooding is predicted in low RPs.	Med
53	Land between Old Mill Lane & New Mill Lane		230		No sewer network in the area	UNK
54	Former Evans Halshaw site		66		SW can join the existing local SW network. Pollution recorded at site of the dev, Low RPs D/S of the dev	Low
55	Tall Trees mobile homes Old Mill Lane		100		No sewer network in the area	UNK
60	Land of Ley Lane		15		Small dev, no significant impact expected	Low
64	Pheasant Hill and Highfield Close		98		No SW system or local watercourse. Assumed will be dealt with on site. No known constraints.	Low
66	Harrop White Road Allotments		10		Small dev, no significant impact expected	Low
68	Kirkland Avenue Industrial Park		20		Small dev, no significant impact expected	Low
74b	Water Lane	0.34ha			Assumed SW will be drained to a local watercourse or dealt with on site. D/S of the site RPA predicts flooding on a low RP	Low
74c	Water Lane	0.816ha	139		Assumed SW will be drained to a local watercourse or dealt with on site. D/S of the site RPA predicts flooding on a low RP	Low
75	Former Mansfield Hosiery Mill Car Park & Electricity Board workshops & social club		29		Assumed SW will be dealt with on site. D/S of the site RPA predicts flooding on a low RP.	Low
76	Elmsley Heath		600		SW can join the existing local SW network. Surface water flooding D/S at Jubilee Way SPS. RPA doesn't predict flooding in low RPs on the foul system however it does on the surface water system. One pollution incident recorded.	Med
150	Ratcliff Hill Quarry	3.6ha				
79	Land of Rosemary Street		10		Small dev, no significant impact expected	Low
89	Land off Skegby Lane		215		SW can join the existing local SW network. No known constraints.	Low
91	Strip of land off Cauldwell Road (opposite the College)		42		Small dev, no significant impact expected	Low
98	Land to the rear of 66-70 Clipstone Road West		14		Small dev, no significant impact expected	Low
99	18 Burns Street		12		Small dev, no significant impact expected	Low
105	Land at 7 Oxclose Lane		17		Small dev, no significant impact expected	Low
135	190 Ladybrook Lane	0.04ha			RPA predicts flooding on low RPs. There's also reported flooding in the area. However it is a small dev and it is unlikely to have a significant impact.	Low
123	Land Off Kestral Road	0.15ha			Small dev, no significant impact expected	Low
140	Hermitage Lane Industrial Estate (Site A)	0.04ha			Small dev, no significant impact expected	Low
189	Land Adjacent Unit 3, Sherwood Oaks Close	0.4ha			Small dev, no significant impact expected	Low
137	Plot 17	0.0626ha			Small dev, no significant impact expected	Low
134	Land at Belvedere Street	0.18ha			Small dev, no significant impact expected	Low
144	Land off Sherwood Street	0.23ha			Small dev, no significant impact expected	Low
120	Land at Old Peggs	0.17 ha			Small dev, no significant impact expected	Low
127	Former bus station site	1.5 ha			No SW system or nearby watercourse. Assumed SW dealt with on site. RPA predicts flooding on low return periods. There is reported flooding D/S. Dev will join a 1.05 mm dia pipe on the combined system.	Low
59	Land to the rear of High Oakham Hill		39		Small development and no reported local flooding. Surface water can join the watercourse behind the development	Low
170	Land off Wharmby Avenue		125		Flows from the development will join combined 225 dia mm sewer on Wharmby Ave. No predicted or reported flooding. Surface water will be able to drain to local watercourse.	Low
171	High Oakham Farm		275		Foul flows from the development can join Paddock Cl. Further D/S on Nottingham Rd there is flooding predicted in low RPs. Surface water from the development can drain to Cauldwell Brook. Due to topography foul flows may have to be pumped.	Low
<b>Town B: Edwinstowe</b>						
13	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)			190 Edwinstowe STW	SW can join the existing local SW network. D/S of Newlands Farm CSO RPA predicts flooding on low return periods. There is also reported flooding and pollutions D/S of the development.	Med
101	Land south of Clipstone Road East		313			
137	Plot 17	0.0626ha			Small dev, no significant impact expected	Low
71a	Site A, Long Stoop Way	0.5ha			SW can join the existing local SW network. No known constraints.	Low
71c	Site C, Long Stoop Way	0.312ha			SW can join the existing local SW network. No known constraints.	Low
<b>Town C: Rainworth</b>						
27a	Land at Redruth Drive			Rainworth STW	SW can join the existing local SW network. However there are multiple flooding incidents reported to originate from the SW network. RPA does not predict flooding until a high RP. There is a reported pollution D/S.	Med
27b	Land off Sherwood Oaks Close		129			
90	Lindhurst	16.1ha			SW can join the existing local SW network. Dev will join a 375 mm dia pipe. There is a capital scheme for extending the network in the area. Foul flooding on Old Newark Rd. RPA predicts flooding on low RPs. Further D/S of this location there are no capacity issues.	Med
11	Bellamy Road Recreation Ground		64			
73	Three Thorn Hollow Farm		188		SW can join the existing local SW network. No known capacity issues	Low
139	Frontage to Ransom Wood Business Park	0.175ha			SW can join the existing local SW network. RPA does not indicate flooding in low RPs. Reported flooding and pollution D/S	Low
151	Carpark opposite Birch House	0.088ha			No sewage network in the area	UNK
40	Land at Ratcher Hill Quarry (south west)	0.75ha				
<b>Town D: Warsop</b>						
132	Former Strand cinema	0.08 ha		WARSOP STW	Small dev, no significant impact expected	Low
87	Welbeck Farm		32		SW can join the existing local SW network. No known constraints.	Low
112	Land at Moorfield Farm		8		Small dev, no significant impact expected	Low
152	Land off Birch Street		20		Small dev, no significant impact expected	Low
153	The Royal Estate		33		SW can join the existing local SW network. No known constraints.	Low
154	Land at West St and King St		14		Small dev, no significant impact expected	Low
33	Wood Lane (Miners Welfare)		31		SW can join the existing local SW network. RPA predicts flooding D/S on a 10 yr return period.	Low
51	Land off Netherfield Lane		120		SW can join the existing local SW network. RPA predicts flooding D/S on a 5 yr return period. There are a number of pollutions D/S.	Low
57	Land off Mansfield Road, Spion Kop (adj The Gables)		8		Small dev, no significant impact expected	Low
100	Land at the rear of Cherry Paddocks		19		Small dev, no significant impact expected	Low
122	Moorfield Farm		17		Small dev, no significant impact expected	Low



## Appendix F – Green Infrastructure Supporting Information

Appendix F-1: Mansfield District Council Local Plan housing growth – assessment results for Green Infrastructure provision (using distance standards)

HELAA Site Ref	Ward(s)	Type	PP=Planning Permission WPP = Without Planning Permission	Location	Name	Total Dwellings (Plan Period)	Post Plan Dwellings	Overall Total Dwellings	Convenience Retail (sqm)	Comparison Retail (sqm)	Leisure (sqm)	Offices (sqm)	Industrial (Ha)	Any type of formal or informal recreational green space	Natural Green Spaces		District park/ recreation ground		Teenage play space		Children's play space		Allotments		Within 400m of Strategic Areas of Green Infrastructure	
															240m	400m	600m	600m	600m	240m	600m	600m				
107	Abbott	Housing	PP	Mansfield	20 Abbott Road	8	0	8						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
6	Abbott, Broomhill	Housing	WPP	Mansfield	Centenary Lane (phase 3)	93	0	93						Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
54	Berry Hill	Housing	WPP	Mansfield	Former Evans Halshaw site	66	0	66						Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes	
155	Berry Hill	Housing	PP	Mansfield	Berry Hill Hall	38	0	38						Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	
156	Berry Hill	Housing	PP	Mansfield	Former Miners Offices	18	0	18						Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	
90	Berry Hill, Blidworth	Mixed	PP	Mansfield	Lindhurst	1,275	425	1,700	600	400	0	60,000	10.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
58	Brick Kiln	Housing	WPP	Mansfield	Fields Farm, Abbott Road	200	0	200						Yes	Yes	No	No	No	No	No	No	No	No	No	No	
80	Brick Kiln	Housing	PP	Mansfield	Land North of Skegby Lane	150	0	150						Yes	Yes	No	No	No	No	No	No	No	No	No	No	
89	Brick Kiln, Grange Farm, Sutton in Ashfield North	Housing	WPP	Mansfield	Land off Skegby Lane	215	0	215						Yes	Yes	No	No	No	Yes	Yes	No	No	No	No	Yes	
12	Broomhill	Housing	WPP	Mansfield	Broomhill Lane Allotments (part)	35	0	35						Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
66	Broomhill	Housing	WPP	Mansfield	Harrop White Road Allotments	10	0	10						Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	
79	Broomhill	Housing	WPP	Mansfield	Land off Rosemary Street	10	0	10						Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
167	Broomhill	Housing	PP	Mansfield	Poppy Fields	64	0	64						Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
52	Bull Farm and Pleasley Hill	Mixed	WPP	Mansfield	Pleasley Hill Farm	660	0	660	7,140	3,060	10,200	10,200	2.55	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
92	Bull Farm and Pleasley Hill	Housing	PP	Mansfield	Pleasley Hill Regeneration Area	151	0	151						Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
74c	Bull Farm and Pleasley Hill	Mixed	WPP	Mansfield	Water Lane	139	0	139	0	0	0	2,336	0.58	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
170	Bull Farm and Pleasley Hill Ward	Housing	WPP	Mansfield	Land off Wharmby Avenue	125	0	125						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
81	Bull Farm and Pleasley Hill, Penniment	Housing	PP	Mansfield	Penniment Farm (Housing)	430	0	430						Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	
24	Carr Bank	Housing	WPP	Mansfield	Shenwood Close	32	0	32						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
26	Carr Bank	Housing	WPP	Mansfield	Land at Windmill Lane (former nursery)	37	0	37						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
157	Carr Bank, Yeoman Hill	Housing	PP	Mansfield	The Ridge	43	0	43						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
68	Grange Farm	Housing	WPP	Mansfield	Kirkland Avenue Industrial Park	20	0	20						Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
95	Grange Farm	Housing	PP	Mansfield	Vauxhall Garage	41	0	41						Yes	Yes	No	Yes	No	No	No	No	No	No	No	Yes	
96	Grange Farm	Housing	PP	Mansfield	Land at Hermitage Lane	25	0	25						Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	
109	Grange Farm	Housing	PP	Mansfield	Land off Sutton Road	10	0	10						Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	
75	Grange Farm, Ladybrook	Housing	WPP	Mansfield	Former Mansfield Hosliery Mill Car Park & Electricity Board workshops & social club	29	0	29						Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
97	Holly	Housing	PP	Mansfield	Land to the rear of 183 Clipstone Road West	12	0	12						No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
19	Kingsway	Housing	WPP	Mansfield	Allotment site at Pump Hollow Road	64	0	64						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
98	Kingsway	Housing	WPP	Mansfield	Land to the rear of 66-70 Clipstone Road West	14	0	14						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
99	Ladybrook	Housing	WPP	Mansfield	18 Burns Street	12	0	12						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	
113	Lindhurst	Housing	PP	Mansfield	284 Berry Hill Lane	5	0	5						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
11	Lindhurst, Ransom Wood	Housing	WPP	Mansfield	Bellamy Road Recreation Ground	64	0	64						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
76	Ling Forest, Oak Tree	Mixed	WPP	Mansfield	Elmsley Heath	600	200	800	0	0	0	0	6.76	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	
60	Manor	Housing	WPP	Mansfield	Land of Ley Lane	15	0	15						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
36	Market Warsop	Housing	WPP	Warsop	Sookholme Lane / Sookholme Drive	200	0	200						Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
57	Market Warsop	Housing	WPP	Warsop	Land off Mansfield Road, Spion Kop (adj The Gables)	8	0	8						Yes	No	No	No	No	No	No	No	No	No	No	No	No
35	Market Warsop, Warsop Carrs	Housing	WPP	Warsop	Stonebridge Lane / Sookholme Lane	200	0	200						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	Maun Valley	Housing	WPP	Mansfield	Land at Old Mill Lane / Stinting Lane	86	0	86						Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
31	Maun Valley	Housing	WPP	Mansfield	Land at New Mill Lane	100	0	100						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
55	Maun Valley	Housing	WPP	Mansfield	Tall Trees mobile homes Old Mill Lane	100	0	100						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
158	Maun Valley	Housing	PP	Mansfield	Land off Sandlands Way	251	0	251						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
159	Maun Valley	Housing	PP	Mansfield	Birchlands/Old Mill Lane	9	0	9						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
53	Maun Valley, Maun Valley	Housing	WPP	Mansfield	Land between Old Mill Lane & New Mill Lane	230	0	230						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
100	Meden	Housing	WPP	Warsop	Land at the rear of Cherry Paddocks	19	0	19						No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	
51	Netherfield	Housing	WPP	Warsop	Land off Netherfield Lane	120	0	120						Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
87	Netherfield	Housing	PP	Warsop	Welbeck Farm	32	0	32						Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	Yes	
23	Newgate	Housing	WPP	Mansfield	Sandy Lane	63	0	63						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
168	Newgate	Housing	PP	Mansfield	10A Montague Street	8	0	8						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
1	Newgate, Sandhurst	Housing	WPP	Mansfield	Former Mansfield Brewery (part B)	23	0	23						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
13	Newlands	Housing	PP	Mansfield	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)	190	0	190						No	Yes	No	No	No	No	No	No	No	No	No	Yes	
101	Newlands	Housing	WPP	Mansfield	Land south of Clipstone Road East	313	0	313						Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
85	Oakham	Housing	PP	Mansfield	Land off Quarry Lane	17	0	17						Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
86	Oakham	Housing	PP	Mansfield	Land at the corner of Quarry Lane, Mansfield.	21	0	21						Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
59	Oakham	Housing	WPP	Mansfield	Land to the rear of High Oakham Hill	39	0	39						Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
106	Oakham, Sandhurst	Housing	PP	Mansfield	Former Mansfield Sand Co	107	0	107						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
91	Oakham, Sutton in Ashfield East	Housing	WPP	Mansfield	Strip of land off Cauldwell Road (opposite the College)	42	0	42						Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	
103	Park Hall	Housing	PP	Mansfield	Park Hall Farm	130	0	130						No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	
104	Park Hall	Housing	WPP	Mansfield	Park Hall Farm	10	0	10						No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	
110	Park Hall	Housing	PP	Mansfield	Land to the rear of 5 Welbeck Road	10	0	10						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	
166	Park Hall	Housing	PP	Mansfield	Land off Portland Street (West)	32	0	32						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
160	Peafields	Housing	PP	Mansfield	32 Warsop Road	5	0	5						Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
4	Portland	Housing	WPP	Mansfield	Land astride Victoria Street	63	0	63						No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
73	Ransom Wood	Housing	WPP	Mansfield	Three Thorn Hollow Farm	188	0	188						Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	
27a	Ransom Wood	Housing	WPP	Mansfield	Land at Redruth Drive	99	0	99						Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
27b	Ransom Wood	Housing	PP	Mansfield	Land off Sherwood Oaks Close	46	0	46						Yes	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
28	Sherwood	Housing	WPP	Mansfield	Debdale Lane / Emerald Close	32	0	32						Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	
29	Sherwood	Housing	WPP	Mansfield	Sherwood Rise (adjacent Queen Elizabeth Academy)	87	0	87						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
64	Sherwood	Housing	WPP	Mansfield	Pheasant Hill and Highfield Close	98	0	98						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
163	Sherwood	Housing	PP	Mansfield	Development off Debdale Lane	90	0	90						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
33	Warsop Carrs	Housing	WPP	Warsop	Wood Lane (Miners Welfare)	31	0	31						Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
112	Warsop Carrs	Housing	PP	Warsop	Land at Moorfield Farm	8	0	8						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
122	Warsop Carrs	Housing	WPP	Warsop	Moorfield Farm	17	0	17						Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	
152	Warsop Carrs	Housing	PP	Warsop	Land off Birch Street	30	0	30						No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	
153	Warsop Carrs																									

Appendix F-2: Mansfield District Council Local Plan housing growth – assessment results for allotment provision (using quantity standard)

Ward Code	Ward Name	Local Authority	Mid2016 Population	2016 Est Households (2.3 per household)	2034 Est Households	Allotment Area (Ha)	Allotment Plots	Base Allotment Requirement	2034 Allotment Requirement	Base Allotment Requirement Met?	2034 Allotment Requirement Met?
E05008857	Abbott	Mansfield	2,328	1,012	1,020	2.95	118	21	21	Yes	Yes
E05008858	Berry Hill	Mansfield	2,228	969	2,366	0	0	20	48	No	No
E05008859	Brick Kiln	Mansfield	3,017	1,312	1,662	0	0	27	34	No	No
E05008860	Broomhill	Mansfield	3,292	1,431	1,643	4.54	182	29	33	Yes	Yes
E05008861	Bull Farm and Pleasley Hill	Mansfield	3,544	1,541	3,046	5.02	163	31	61	Yes	Yes
E05008862	Carr Bank	Mansfield	3,505	1,524	1,636	0.38	15	31	33	No	No
E05008863	Eakring	Mansfield	2,729	1,187	1,187	0.43	17	24	24	No	No
E05008864	Grange Farm	Mansfield	2,790	1,213	1,524	0	0	25	31	No	No
E05008865	Holly	Mansfield	3,270	1,422	1,434	0	0	29	29	No	No
E05008866	Hornby	Mansfield	2,645	1,150	1,150	0	0	23	23	No	No
E05008867	Kings Walk	Mansfield	3,142	1,366	1,366	0	0	28	28	No	No
E05008868	Kingsway	Mansfield	3,021	1,313	1,391	2.17	87	27	28	Yes	Yes
E05008869	Ladybrook	Mansfield	3,621	1,574	1,615	3.26	130	32	33	Yes	Yes
E05008870	Lindhurst	Mansfield	2,791	1,213	1,218	1.45	34	25	25	Yes	Yes
E05008871	Ling Forest	Mansfield	2,617	1,138	1,138	0	0	23	23	No	No
E05008872	Manor	Mansfield	2,531	1,100	1,115	0.84	25	22	23	Yes	Yes
E05008873	Market Warsop	Mansfield	3,432	1,492	1,700	8.78	351	30	34	Yes	Yes
E05008874	Maun Valley	Mansfield	2,964	1,289	2,065	0	0	26	42	No	No
E05008875	Meden	Mansfield	2,637	1,147	1,166	2.35	94	23	24	Yes	Yes
E05008876	Netherfield	Mansfield	2,752	1,197	1,349	2.06	82	24	27	Yes	Yes
E05008877	Newgate	Mansfield	3,056	1,329	1,400	0.83	42	27	28	Yes	Yes
E05008878	Newlands	Mansfield	3,235	1,407	1,910	0	0	29	39	No	No
E05008879	Oak Tree	Mansfield	2,917	1,268	1,868	0	0	26	38	No	No
E05008880	Oakham	Mansfield	2,719	1,182	1,301	1.56	62	24	27	Yes	Yes
E05008881	Park Hall	Mansfield	3,164	1,376	1,558	4.46	129	28	32	Yes	Yes
E05008882	Peafields	Mansfield	2,755	1,198	1,203	6.53	138	24	25	Yes	Yes
E05008883	Penniment	Mansfield	2,913	1,267	1,267	0	0	26	26	No	No
E05008884	Portland	Mansfield	2,555	1,111	1,174	0	0	23	24	No	No
E05008885	Racecourse	Mansfield	3,105	1,350	1,350	4.79	192	27	27	Yes	Yes
E05008886	Ransom Wood	Mansfield	2,872	1,249	1,646	0	0	25	33	No	No
E05008887	Sandhurst	Mansfield	3,104	1,350	1,480	1.99	52	27	30	Yes	Yes
E05008888	Sherwood	Mansfield	3,081	1,340	1,647	0.12	3	27	33	No	No
E05008889	Warsop Carrs	Mansfield	3,559	1,547	2,003	2.07	83	31	41	Yes	Yes
E05008890	Woodhouse	Mansfield	3,428	1,490	1,532	6.92	96	30	31	Yes	Yes
E05008891	Woodlands	Mansfield	2,506	1,090	1,152	1.04	21	22	24	No	No
E05008892	Yeoman Hill	Mansfield	3,610	1,570	1,570	2.48	38	32	32	Yes	Yes

Appendix F-3: Mansfield District Council Local Plan housing growth - specific green infrastructure comments

HELAA Site Ref	PP=Planning Permission WPP = Without Planning Permission	Preferred site	Location	Name	Total (Plan Period)	Post Plan	Overall Total	Within 400m of Strategic Areas of Green Infrastructure	GI Comments	Provision for open space and/or play provision	Relevant strategic GI network the site falls within or is related to
87	PP	No	Warsop	Welbeck Farm	32	0	32	Yes			
112	PP	No	Warsop	Land at Moorfield Farm	8	0	8	Yes			
152	PP	No	Warsop	Land off Birch Street	30	0	30	Yes			
153	PP	No	Warsop	The Royal Estate	103	0	103	Yes			
154	PP	No	Warsop	Land at West St and King St	67	0	67	Yes			
33	WPP	Yes	Warsop	Wood Lane (Miners Welfare)	31	0	31	Yes	1) Off-site contributions are needed to improve the quality of recreational linkages and nearby open space/play provision, especially to the south (Church Warsop Doorstep Green). 2) where feasible, seek off-site contributions to enhance walking linkages to Market Warsop from Bishops Walk/Carter Lane.	Seek off-site contributions	Strategic GI improvements (Warsop and Meden Vale Ref 1)
35	WPP	Yes	Warsop	Stonebridge Lane / Sookholme Lane	200	0	200	Yes	1) Incorporate woodland and hedgrows as part of design of the development and conserving views across the landscape through careful siting of woodland. 2) provide a habitat buffer between new homes and the SSSI / water course. 3) Enhancements to the watercourse could be explored as potential mitigation/compensation for any proposed developments in this area (e.g.Green SuDS Priority area. 4) create new habitat linkages adjacent to/between existing designated sites, facilitating a bigger and better connected ecological network. 5) Create on-site open space and play provision. 6) Protect and enhance existing recreational linkages (Sookholme Lane to south and north) and create new green corridors within the development to link with the strategic GI network (Meden Trail). 7) Address appropriate access management needs to avoid and mitigate recreational impacts on the SSSI.	Create on-site open space and play provision	Strategic GI improvements (Meden Vale Ref 4) and new local linkages
36	WPP	Yes	Warsop	Sookholme Lane / Sookholme Drive	200	0	200	Yes	See comments on HELAA Site Reference 35.	Create on-site open space and play provision	Strategic GI improvements (Meden Vale Ref 4) and new local linkages
51	WPP	Yes	Warsop	Land off Netherfield Lane	120	0	120	Yes	1) Reinforce field boundaries through hedgerow and woodland planting. 2) Create new habitat links to the restored colliery, including woodland and open habitats such as heathland and acid and neutral grassland. 3) Create new recreational links to existing PROW and other walking trails. 4) Create on-site open space and play provision.	Create on-site open space and play provision.	Strategic GI improvements (Warsop and Meden Vale Ref 1) and new local linkages
57	WPP	Yes	Warsop	Land off Mansfield Road, Spion Kop (adj The Gables)	8	0	8	-	No specific GI infrastructure needs.	None	
100	WPP	Yes	Warsop	Land at the rear of Cherry Paddocks	19	0	19	-	1) Create open space and play provision 2) Improve recreational linkages to open countryside (e.g. existing public rights of way) through e.g. improved access points, signage and surfacing.	Create on-site open space and play provision.	Local GI linkages
122	PP	Yes	Warsop	Moorfield Farm	17	0	17	Yes	This site has planning permission. Improvements are subject to approved Section 106 agreements - Application reference 2014/0654/NT.	See notes to left.	Strategic GI improvements (Warsop and Meden Vale Ref 1) and new local linkages
2	PP	No	Mansfield	Former Mansfield General Hospital	54	0	54	Yes			
13	PP	Yes	Mansfield	Clipstone Road East / Crown Farm Way (Next to Newlands roundabout)	190	0	190	Yes			
27b	PP	No	Mansfield	Land off Sherwood Oaks Close	46	0	46	Yes			
80	PP	No	Mansfield	Land North of Skegby Lane	150	0	150	-			
81	PP	No	Mansfield	Penniment Farm (Housing)	430	0	430	-			
85	PP	No	Mansfield	Land off Quarry Lane	17	0	17	Yes			
86	PP	No	Mansfield	Land at the corner of Quarry Lane, Mansfield.	21	0	21	Yes			
90	PP	No	Mansfield	Lindhurst	1,275	425	1,700	Yes			
92	PP	No	Mansfield	Pleasley Hill Regeneration Area	151	0	151	Yes			
95	PP	No	Mansfield	Vauxhall Garage	41	0	41	Yes			
96	PP	No	Mansfield	Land at Hermitage Lane	25	0	25	Yes			
97	PP	No	Mansfield	Land to the rear of 183 Clipstone Road West	12	0	12	Yes			
103	PP		Mansfield	Park Hall Farm	130	0	130	Yes			
106	PP		Mansfield	Former Mansfield Sand Co	107	0	107	Yes			
107	PP		Mansfield	20 Abbott Road	8	0	8	Yes			
109	PP		Mansfield	Land off Sutton Road	10	0	10	Yes			
110	PP		Mansfield	Land to the rear of 5 Welbeck Road	10	0	10	-			
111	PP		Mansfield	22 St John Street	8	0	8	-			
113	PP		Mansfield	284 Berry Hill Lane	5	0	5	Yes			
155	PP		Mansfield	Berry Hill Hall	38	0	38	Yes			
156	PP		Mansfield	Former Miners Offices	18	0	18	Yes			
157	PP		Mansfield	The Ridge	43	0	43	Yes			
158	PP		Mansfield	Land off Sandlands Way	251	0	251	Yes			
159	PP		Mansfield	Birchlands/Old Mill Lane	9	0	9	Yes			
160	PP		Mansfield	32 Warsop Road	5	0	5	Yes			
163	PP		Mansfield	Development off Debdale Lane	90	0	90	Yes			
164	PP		Mansfield	Former garage site Alexandra Avenue	5	0	5	-			
166	PP		Mansfield	Land off Portland Street (West)	32	0	32	Yes			
167	PP		Mansfield	Poppy Fields	64	0	64	Yes			
168	PP		Mansfield	10A Montague Street	8	0	8	Yes			

1	WPP	Yes	Mansfield	Former Mansfield Brewery (part B)	23	0	23	Yes	Seek off-site contributions to open space and the River Maun green corridor (recreational enhancements) and/or along the Timberland Trail green corridor to the south (Fisher Lane Park), as new residents likely to put extra demands these resources.  Potential contributions for enhancements to the River Maun. The river should be protected from future development; need to ensure that a buffer strip is implemented and maintained. Enhancements to the watercourse could be explored with the Environment Agency as potential mitigation/compensation for any proposed developments in this area. Potential enhancement areas may include the stretch from Fields Mill Pond, through Titchfield Park to Rock Valley e.g. Field Mill Pond outfall culvert, Rock Valley culvert.	Seek off-site contributions	Strategic GI improvements (Timberland Trail Ref 5)
4	WPP	Yes	Mansfield	Land astride Victoria Street	63	0	63	Yes	Site would benefit from the creation of on-site open space, but if not feasible, off-site contributions to the next nearest open space should be expected (i.e. Moor Lane Park).  Enhancements to railway crossing (pedestrian bridge) and public rights of way need addressing as part of the site. This will allow for better quality access route to nearby retail park and access to the Timberland Trail green corridor (GI network 5) and Quarry Lane LNR.	Create on-site and/or off-site contributions	Local GI improvements
6	WPP	Yes	Mansfield	Centenary Lane (phase 3)	93	0	93	Yes	Opportunity to provide off-site contributions to Chesterfield Road Park. Seek improvements to local green infrastructure linkages by incorporating as part of design and layout. This would improve the safety of local jitty (connecting Broomhill Lane with Albion Street) that currently attracts anti-social behaviour and facilitate effective access to nearby open space (Chesterfield Rd). If feasible, would benefit from coordinated design plan with adjacent site (HELAA ref 12).	Off-site contributions	Local GI improvements
11	WPP	Yes	Mansfield	Bellamy Road Recreation Ground	64	0	64	Yes	Retain on-site open space and seek off-site contributions for access improvements for existing play provision, open space and play pitch provision (Epperstone Court play area, amenity space near to Bellamy Road local centre and King George V Park football pitches) and will also need improved road crossings to facilitate safe and easy access to King George V Park. Retain and enhance the existing landscape buffer along Bellamy Rd and Adams Way.	Retain on-site open space (although reduced in size) and seek off-site contributions	Local GI improvements
12	WPP	Yes	Mansfield	Broomhill Lane Allotments (part)	35	0	35	Yes	Seek improvements to local green infrastructure linkages by incorporating as part of design and layout. This would improve the safety of local jitty (connecting Broomhill Lane with Albion Street) that currently attracts anti-social behaviour and facilitate effective access to nearby open space (Chesterfield Rd). If feasible, would benefit from coordinated design plan with adjacent site (HELAA ref 6).	Off-site contributions	Local GI improvements
14	WPP	Yes	Mansfield	Land at Cox's Lane	20	0	20	Yes	Seek off-site contributions to improve place shaping and play provision facilities for a wider age range at 'The Green'. Ensure the existing public rights of way is protected and integrated as part of the development as this will ensure continued (and enhanced) access to strategic GI network (Meden Valley ref 4).	Off-site contributions	Local GI improvements and linkages to Strategic GI (Meden Valley Ref 4)
19	WPP	Yes	Mansfield	Allotment site at Pump Hollow Road	64	0	64	Yes	<b>This site has planning permission. Improvements are subject to approved Section 106 agreements - Application reference 2016/0038/NT.</b>	See notes to left.	Strategic GI improvements (Vicar Water Ref 10)
23	WPP	Yes	Mansfield	Sandy Lane	63	0	63	Yes	Seek creation of a local green corridor along the former mineral railway line to the north (running east-west). This new local GI link will enable walking/cycling connections to the Maun Valley Way (Strategic GI ref 12). There is a need to provide on-site open space and play space. Needs should be considered together with see Site Ref 24 (Sherwood Close).	Create on-site open space and play provision	Local GI improvements and linkages to Strategic GI (Maun Valley ref 12)
24	WPP	Yes	Mansfield	Sherwood Close	32	0	32	Yes	Seek creation of a local green corridor along the former mineral railway line to the south (running east-west). This new local GI link will enable walking/cycling connections to the Maun Valley Way (Strategic GI ref 12). There is a need to provide on-site open space and play space. Needs should be considered together with see Site Ref 23 (Sandy Lane).	Create on-site open space and play provision	Local GI improvements and linkages to Strategic GI (Maun Valley ref 12)
26	WPP	Yes	Mansfield	Land at Windmill Lane (former nursery)	37	0	37	Yes	Provide off-site contributions for nearby open space and the Maun Valley green corridor, as new residents likely to put extra demands these resources.	Off-site contributions	Strategic GI improvements (Maun Valley Ref 12)
27a	WPP	Yes	Mansfield	Land at Redruth Drive	99	0	99	Yes	Creation of on-site open space and play provision, including local green corridors on-site in order to provide recreational opportunities outside the ppSPA. Improve linkages to (e.g. along Sherwood Ave. and Old Newark Rd) and along the Mansfield Way Green Corridor (GI ref 8), including safe access across Southwell Road West. Opportunity to enhance the Sherwood habitat ecological network (GI ref 6) through on-site habitat creation (e.g. heathland, woodland).	Create on-site open space and play provision	Local GI improvements and Strategic GI improvements (Maun Valley Ref 8 and Sherwood Ref 6)

28	WPP	Yes	Mansfield	Debdale Lane / Emerald Close	32	0	32	Yes	Site is located within GI area 2 (Oxclose Woods). 1) Create and/or enhance and maintain an appropriate complementary habitat buffer to adjacent local wildlife site, such that ecological networks are strengthened. 2) Provide and maintain a landscape buffer along Debdale Rd to address air quality issues and to tie in with the existing wooded visual amenity strip along Debdale Lane. 3) Ensure that the existing public rights of way is protected and enhanced as a green corridor such that it is integrated within the layout of the development and also enhanced as part of the wider Strategic GI network (ref 2). It should continue to connect with the existing PROW and enhance provision (i.e. safety, accessibility and address impact on LWS). 4) Where feasible, provide enhancements to and improve access to nearby open space and play provision at Burlington Drive, such that crossings are safer across Debdale Lane.	Off-site contributions	Strategic GI improvements (Oxclose Woods Ref 2)
29	WPP	Yes	Mansfield	Sherwood Rise (adjacent Queen Elizabeth Academy)	87	0	87	Yes	Site is located within GI area 2 (Oxclose Woods). Create and/or enhance and maintain existing complementary habitat (parkland, calcareous or neutral grassland) to buffer adjacent local wildlife, such that existing ecological networks are strengthened. Create new linear open space incorporating green corridors such that they connect to new and existing open spaces and recreational linkages (existing public rights of way and access points) to the northwest and southeast of the site. Where feasible, improve pedestrian crossings across Debdale Road such that access to the green infrastructure corridor to the north is safer and better connected.		Strategic GI improvements (Oxclose Woods Ref 2) and new GI linkages
30	WPP	Yes	Mansfield	Land at Old Mill Lane / Stinting Lane	86	0	86	Yes	1) Restore and create landscape features in keeping with the landscape character policy zone, including woodland creation and other habitats to enhance the adjacent local wildlife site and Maun Valley ecological corridor. 2) Enhance the ecological quality of the river environment by facilitating enhancements such as linking fragmented habitats through the creation of green SuDS. 3) Create and maintain habitat buffer to the Maun Valley Local Nature Reserve and local wildlife sites. 4) Create on-site play provision required to improve access to play provision for future and existing residents. Coordination with adjacent sites is also required (HELAA refs 31, 53, 55). 5) Improve recreational links to and through the Maun Valley LNR from surrounding areas including safer cycle and pedestrian links along Old Mill Lane and New Mill Lane (e.g. new pathways crossings, and, where feasible, access points). 6) Integrate Stinting Lane as a local green corridor as an integral part of any new development. Improve the pedestrian crossing at Old Mill and New Mill Lane in order to improve its safety for pedestrians and cyclists.	Create on-site open space and play provision	Strategic GI improvements (Maun Valley Ref 12) and new GI linkages
31	WPP	Yes	Mansfield	Land at New Mill Lane	100	0	100	Yes	See Site 30 (part of strategic site)	Create on-site open space and play provision	Strategic GI improvements (Maun Valley Ref 12) and new GI linkages
52	WPP	Yes	Mansfield	Pleasley Hill Farm	660	0	660	Yes	1) Enhance ecological linkages to existing LWS through habitat creation and SuDS. 2) Provide habitat creation along new green corridors within the development (e.g. neutral grasslands, woodland and orchards). 3) Create local green infrastructure connections via new local green ways along existing PROW connecting with the wider strategic GI network to the west and north and to Bull Farm Park to the southeast. 4) Create new open space and play provision within this area of the district: this could be through linear parks and exercise trails. 5) Create local green infrastructure connections via new local green ways along existing PROW connecting with the wider strategic GI network to the west and north and to Bull Farm Park to the southeast. 6) Create new open space and play provision within this area of the district: this could be through linear parks and exercise trails. 7) Improve pedestrian and cycle trails and crossings along A617 (MARR route) and Chesterfield Road North: 4) maintain and enhance landscape buffer adjacent to A617 and Chesterfield Road North to enhance air quality and 5) ensure that local links to existing open space are protected, integrated and enhanced as part of wider strategic site (i.e. Bull Farm, Teveral Ave open space, access from Ruskin Rd, Bagshaw St and Hillmore St).	Create on-site open space and play provision	New GI linkages and improvements (Strategic GI -Maun Valley Ref 4 and Oxclose Woods Ref 2)
53	WPP	Yes	Mansfield	Land between Old Mill Lane & New Mill Lane	230	0	230	Yes	See Site 30 (part of strategic site)	Create on-site open space and play provision	Strategic GI improvements (Maun Valley Ref 12) and new GI linkages
54	WPP	Yes	Mansfield	Former Evans Halshaw site	66	0	66	Yes	Site currently being developed.	See notes to left.	
55	WPP	Yes	Mansfield	Tall Trees mobile homes Old Mill Lane	100	0	100	Yes	See Site 30 (part of strategic site)	Create on-site open space and play provision	Strategic GI improvements (Maun Valley Ref 12) and new GI linkages
58	WPP	Yes	Mansfield	Fields Farm, Abbott Road	200	0	200	-	1) create on-site green infrastructure green corridors (walking and cycling) along existing PROW and new ones linking MARR, Brick Kiln Lane and nearby open spaces 2) provide play provision on-site 3) create ecological linkages through grassland, woodland planting and green SuDS (especially near to Fish Pond, southeastern corner) 4) address coalescence through incorporation of an open break including habitat/woodland creation along western edge.	Create on-site play provision	Local GI linkages
59	PP	Yes	Mansfield	Land to the rear of High Oakham Hill	39	0	39	Yes	This site has planning permission. Improvements are subject to approved Section 106 agreement.	See notes to left.	Strategic GI improvements (Cauldwell Ref 7)

60	WPP	Yes	Mansfield	Land of Ley Lane	15	0	15	Yes	No specific GI infrastructure needs. Off-site contributions for open space and play provision enhancements required.	Off-site contributions for open space and play provision	N/A
64	WPP	Yes	Mansfield	Pheasant Hill and Highfield Close	98	0	98	Yes	1) Enhance new habitat connections linking with the existing ecological network (e.g. incorporating existing or creating new habitats such as neutral grassland and open parkland). 2) Create a local green corridor extending from HELAA site to the north (HELAA ref 29), existing open space to east and existing green corridor pathways to the west (Pheasant Hill). Greenways to include links with open space and to improve habitat connectivity with LWS to northwest. 3) Protect, maintain and enhance existing connections to neighbouring areas and access points to this Strategic GI Area (incl. Pheasant Hill, Highfield Close, local pathways linking to Sherwood Rise). 4) Improve pedestrian crossings across Chesterfield Rd North (A6191) such that access to nearby open space is safer and better connected.	Create on-site open space	Strategic GI improvements (Oxclose Woods Ref 2) and new GI linkages
66	WPP	Yes	Mansfield	Harrop White Road Allotments	10	0	10	-	No specific GI comments. Below threshold for Section 106 contributions.	None	N/A
68	WPP	Yes	Mansfield	Kirkland Avenue Industrial Park	20	0	20	-	Integrate with Site 75. 1) Create on-site open space and 2) protect and integrate existing and new walking linkages through the site.	Create on-site open space	Local GI improvements.
73	WPP	Yes	Mansfield	Three Thorn Hollow Farm	188	0	188	Yes	1) Create new wetland (suDS) and wooded habitat corridors along the south-eastern and southern sides of the development site - this will provide an opportunity to create new biodiversity linkages and enhance ecological linkages. Access management measures are needed to ensure that access to the SSSI to the south is prevented and, where relevant, sensitively managed. 2) create/improve walking and cycling provision along Blidworth Lane such that residents' access to the Mansfield Way is facilitated and enhanced; 3) off-site contributions to Mansfield Way improvements and 4) on-site open space and play provision is needed.	Create on-site open space and play provision	Strategic GI improvements (Mansfield Way Ref 8) and new GI linkages
74c	WPP	Yes	Mansfield	Water Lane	139	0	139	-	See comments on HELAA Site Reference 52.	Create on-site open space and play provision	New GI linkages and improvements (Strategic GI -Maun Valley Ref 4 and Oxclose Woods Ref 2)
75	WPP	Yes	Mansfield	Former Mansfield Hosiery Mill Car Park & Electricity Board workshops & social club	29	0	29	-	Integrate with site 68. 1) Create on-site open space and 2) protect and integrate existing and new walking linkages through the site.	Create on-site open space	Local GI improvements.
76	WPP	Yes	Mansfield	Elmsley Heath	600	200	800	Yes	1) Create habitat buffer and provide habitat linkages adjacent to the SSSIs/LWS which also integrates natural access management barriers. 2) Restore habitat on the former Mansfield Colliery. 3) provide sensitively managed and improved recreational provision which integrates with the surrounding area, providing linkages with Oak Tree LNR, the restored Mansfield colliery and Vicar Water (strategic GI area #9) and the wider Sherwood Forest. 4) Create landscape buffering adjacent to the employment/industrial estate area and highway network. 5) Create on-site open space/green corridors. 6) Potential off-site contributions to Oak Tree Heath LNR. 6) positively contribute to improving low flows and water quality of Vicar Water WFD water body by directing appropriately balanced uncontaminated surface water to watercourse. 6) Protect and enhance recreational access linkage between Crown Farm to Eakring Road and the restored Mansfield Colliery. Enhancements include, for example: improving safety, signage, and multi-user surfaces (walking and cycling).	Create on-site open space	Strategic GI improvements (Sherwood Ref 6 and ) and new GI linkages
79	WPP	Yes	Mansfield	Land of Rosemary Street	10	0	10	-	No specific GI infrastructure needs. Off-site contributions for open space and play provision enhancements required.	Off-site contributions for open space and play provision	N/A
89	WPP	Yes	Mansfield	Land off Skegby Lane	215	0	215	Yes	1) Incorporate walking and cycling enhancements within a local green corridor linking Millennium Green (north of site) with Kings Mill Reservoir, Kings Mill Hospital, Superstore and the Timberland Trail network. 2) incorporate landscape character/visual buffering between Ashfield District Council and along Skegby Lane, a busy road. 3) Create new wildlife areas along green corridors and buffers. 4) create on-site open space and play provision (e.g. east-west and north-south linear parks). 5) Improve pedestrian crossings at Skegby Lane and Sutton Road. 6) Create SuDS to address issues of low soil permeability and surface water flood risk.	Off-site contributions for open space and play provision	Local GI improvements and enhanced linkages to Strategic GI (Timberland Trail Ref 5)
91	WPP	Yes	Mansfield	Strip of land off Cauldwell Road (opposite the College)	42	0	42	Yes	Please note: this site is part of a wider site allocated in Ashfield District Council's local plan, so the site needs to be looked at in this wider context. 1) incorporate and connect to nearby green infrastructure corridor(s) (i.e. recreational green corridor), such that it directs people towards alternative green infrastructure, lessening the impact on nearby plantation woodlands (west and south), for example with planned green corridors within the approved neighbouring Lindhurst development to the east across the A60. 2) where feasible, improve the cycle provision along Cauldwell Road and the A60. 3) Create on-site open space and play provision as part of wider development site needs as provision within this area of the district is lacking and major roads limit access.	Off-site contributions for open space and play provision	Local GI improvements.

98	WPP	Yes	Mansfield	Land to the rear of 66-70 Clipstone Road West	14	0	14	Yes	This site has planning permission. Improvements are subject to approved Section 106 agreements - Application reference 2016/003/NT.	See notes to left.	Local GI Improvements.
99	WPP	Yes	Mansfield	18 Burns Street	12	0	12	-	Provide off-site contributions for nearby open space.	Off-site contributions	Local GI Improvements.
101	PP	Yes	Mansfield	Land south of Clipstone Road East	313	0	313	Yes	This site has planning permission. Improvements are subject to approved Section 106 agreement - Application reference 2014/0248/NT and awaiting S106 sign off.	See notes to left.	Local GI Improvements and enhanced linkages to Strategic GI (Vicar Water Ref 10).
104	WPP	Yes	Mansfield	Park Hall Farm	10	0	10	Yes	Please note: this site has planning permission (awaiting s106 sign off (2015/0032/NT). No specific GI comments.	See notes to left.	N/A
105	PP	Yes	Mansfield	Land at 7 Oxclose Lane	17	0	17	Yes	This site has planning permission. Improvements are subject to approved Section 106 agreements - Application reference 2015/0334/NT.	See notes to left.	N/A
170	WPP	Yes	Mansfield	Land off Wharmby Avenue	125	0	125	Yes	See Site 52 (part of strategic site)	Create on-site open space and play provision	New GI linkages and improvements (Strategic GI -Maun Valley Ref 4 and Oxclose Woods Ref 2)
-	-	-	Warsop	Large site completions	69	0	69	-			
-	-	-	Mansfield	Large site completions	225	0	225	-			
-	-	-	Warsop	Small site completions	39	0	39	-			
-	-	-	Mansfield	Small site completions	324	0	324	-			
-	-	-	Warsop	Windfall Allowance	33	0	33	-			
-	-	-	Mansfield	Windfall Allowance	437	0	437	-			
-	-	-	Warsop	Losses	0	0	0	-			
-	-	-	Mansfield	Losses	-3	0	-3	-			
					9,262	625	9,887				

Appendix F-4: Mansfield District Council Local Plan employment growth - specific green infrastructure comments

HELAA Site Ref	PP=Planning Permission WPP = Without Planning Permission	Location	Name	Convenience Retail (sqm)	Comparison Retail (sqm)	Leisure (sqm)	Offices (sqm)	Industrial (Ha)	Within 400m of Strategic Areas of Green Infrastructure	GI Comments	Strategic GI network	Area within strategic GI network
132	WPP	Warsop	Former Strand cinema	800	0	0	0	0.00	Yes	No specific GI comments.		
144	WPP	Mansfield	Land off Sherwood Street	0	0	0	0	0.23	Yes	No specific GI comments.		
40	WPP	Mansfield	Land at Ratcher Hill Quarry (south west)	0	0	0	0	0.75	Yes	1) contribute to ecological and landscape character enhancements within the Sherwood Area. 2) potential SuDS creation to address foul water drainage. 3) Create new landscaped areas to enhance amenity spaces and to help screen employment use and enhance overall amenity of area in keeping with the Sherwood landscape character and ecological function. 4) Enhance walking and cycling linkages with the Mansfield Way.	Strategic GI improvements (Sherwood Ref 6)	D
71a	WPP	Mansfield	Site A, Long Stoop Way	0	0	0	4,560	1.14	Yes	1) Protect and enhance the ecological connectivity of the existing landscaped buffer areas parallel to Crown Farm Way and adjacent to / north of residential area to the south. 2) Explore the opportunity to provide contributions towards enhancing the existing cycle and walking routes along Crown Farm Way and along pathway leading to Eakring Road as it relates to the site in order to reinforce strategic GI network (Vicar Water Ref 10)	Strategic GI improvements (Vicar Water Ref 10)	E and I
71c	WPP	Mansfield	Site C, Long Stoop Way	0	0	0	1,200	0.30	Yes	See 71a.	Strategic GI improvements (Vicar Water Ref 10)	E and I
127	WPP	Mansfield	Former bus station site	15,000	0	775	0	0.00	Yes	No specific GI comments, although re-development of this site needs to consider impacts on adjacent local green space designation (Unitarian Church green space area).	Local GI improvements	N/A
139	WPP	Mansfield	Frontage to Ransom Wood Business Park	750	0	1,000	0	0.00	Yes	1) enhance recreational function of the Mansfield Way trail (walking and cycling) 2) provide amenity and character landscape enhancements and 3) create and enhance ecological connections with adjacent local wildlife sites as part of the wider Sherwood Area. 3) Site located in area identified for prioritising discharge to low flow areas. Area offers opportunity to enhance flows to Rainworth Water and L-Lakes SSSI.	Strategic GI improvements (Mansfield Way Ref 8)	A
150	WPP	Mansfield	Ratcher Hill Quarry	0	0	18,460	0	1.79	Yes	1) Restore quarry in accordance with minerals restoration plan. Protect and create new key habitat linkages, especially the sides of the quarry and adjoining areas. 2) Ensure that management of the site is secured such that plans are in place to sustain good quality habitats and ecological linkages with the surrounding area. 3) Enhance walking and cycling linkages with the Mansfield Way. 4) Site located in area identified for prioritising discharge to low flow areas. Area offers opportunity to enhance flows to Rainworth Water and L-Lakes SSSI.	Strategic GI improvements (Sherwood Ref 6 and Mansfield Way Ref 8)	6 - D and 8 - A
151	WPP	Mansfield	Carpark opposite Birch House	0	0	0	880	0.00	Yes	See site 139.	Strategic GI improvements (Mansfield Way Ref 8)	A
52	WPP	Mansfield	Pleasley Hill Farm	7,140	3,060	10,200	10,200	2.55	Yes	See comment on housing site 52.	New GI linkages and improvements (Strategic GI - Maun Valley Ref 4 and Oxclose Woods Ref 2)	4 - A, B and C, 2 - A
74b	WPP	Mansfield	Water Lane	0	0	0	3,400	0.00	-	See comment on housing site 52.	New GI linkages and improvements (Strategic GI - Maun Valley Ref 4 and Oxclose Woods Ref 2)	4 - A, B and C, 2 - A
74c	WPP	Mansfield	Water Lane	0	0	0	2,336	0.58	-	See comment on housing site 52.	New GI linkages and improvements (Strategic GI - Maun Valley Ref 4 and Oxclose Woods Ref 2)	4 - A, B and C, 2 - A
76	WPP	Mansfield	Elmsley Heath	0	0	0	0	6.76	Yes	See comments on housing site 76.	Strategic GI improvements (Sherwood Ref 6 and ) and new GI linkages	6 - E, K, G & 10 - E, F

Appendix F-5: Green Infrastructure Stakeholder Comment

Strategic Green Infrastructure (GI) Area	Stakeholder comment
GI Area 1: Warsop and Meden Vale	<p>Miner2Major (a landscape partnership scheme in Sherwood Forest) aims for strategic GI area 1 is to re-connect areas of woodland and heathland from the iconic heart of Sherwood Forest with restored colliery sites to build connectivity for wildlife, and promote access links with the surrounding communities who feel disconnected from the landscape.</p> <p>Natural England welcomes the protection of Hills and Holes SSSI within this area through proposals to address access management.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that it may be appropriate to acknowledge in proposals that the Dukeries Trail long distance multi-user route passes through this area. The countryside and friends group are also looking into management of Church Warsop Doorstep Green with a view to community involvement with aspects of the management.</p> <p>The group also welcome improvements for recreation and commuting, to the paths between Church Warsop and Market Warsop and comment that improvements would increase accessibility for mobility buggies and children in pushchairs.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that more regular management of pathside vegetation would improve safety and encourage increased use of the Carter Lane cycle and walking route which is part of the Dukeries Trail.</p>
GI Area 2: Oxclose Woods	<p>Nottinghamshire County Council (Nature Conservation Officer) advises that Oxclose Woods in this area is owned/managed by Nottinghamshire County Council and the Forestry Commission and would benefit from additional funding for habitat improvements.</p>
GI Area 3 - Woodhouse	<p>Greenwood Community Forest Partnership commented that there are opportunities for further tree planting on the A60 Leeming Lane North in the area south of Kingsley Avenue to extend the existing line of trees along this route. In addition, recommendations are made in relation to the protection of the woodland group on the northern side of Kingsley Avenue by the junction with Leeming Lane North.</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
GI Area 4 – Meden Vale	<p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe highlight that the stretch of the River Meden between Pleasley and Gleadthorpe marked the northern boundary of Sherwood Forest for many centuries, and that this significant part of our heritage warrants increased recognition.</p> <p>Miner2Major recommend consulting Derbyshire County Council regarding cross boundary recreational access into Derbyshire. Miner2Major will look to be able to provide information about links to the wider network of trails in relation to this.</p> <p>Greenwood Community Forest Partnership recommend seeking opportunities for further tree and hedgerow planting to improve linkages between the habitats along the River Meden between Pleasley and Pleasley Vale.</p> <p>Natural England welcome the protection and enhancement of the stretch of strategic GI corridor from the area to the southwest of the restored Shirebrook Colliery towards the mineral railway line south of Warsop Vale, as an ecological corridor and the creation of a wider ecological network.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advises that development around Spring Farm at Sookholme alongside Sookholme Brook and Shire Brook risks degrading the ecological value of these wildlife corridors.</p> <p>Greenwood Community Forest Partnership suggest seeking opportunities to improve bridleway/cycle access routes from Market Warsop and Mansfield Woodhouse to the restored Shirebrook Colliery.</p> <p>Miner2Major supports the preservation and awareness of the special landscape of the wider Sherwood Forest.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that the disused mineral railway line and Local Wildlife Site by the restored Shirebrook Colliery is owned and managed on an ad hoc basis by Nottinghamshire County Council and work focuses on scrub control to maintain calcareous grassland. Funding would enable more regular management regime. The county council also advise that Shirebrook Pit Wood is managed by Nottinghamshire County Council and Forestry Commission and would also benefit from additional funding.</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the restored Shirebrook Colliery is now named Shirebrook Wood. The stakeholder also advises that improved safety measures are required along the part of the Meden Trail between Bath Lane and Sookholme Lane where no footway is present and involves users walking along a section of Sookholme Road. They also highlight that a link to the Shirebrook Wood car park on Longster Lane to the Meden Trail is also required.</p> <p>Greenwood Community Forest Partnership has promoted a route around The Carrs Local Nature Reserve as one of a number of easy access walks, due to it being flat and smooth. Promotion of the route could be re-assessed and previous promotional materials now out of print could be re-published.</p> <p>Natural England also welcome the protection of the Hills and Holes SSSI in this area through the management of recreational impacts, and welcome ecological connectivity improvements for water voles. Natural England also highlight that they are pleased that the importance of nightjar and woodlark habitat is included as part of enhancement proposals within this area of strategic GI.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the wetland habitats between the Carr Lane Park and The Carrs Recreation Ground have been degraded by unauthorised depositing of silt and they are not aware of any plans to restore this habitat. The stakeholder also comments that management of Himalayan balsam has greatly reduced the impact of this non-native invasive plant along Sookholme Brook.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the section of the River Meden extending east from Meden Vale to the district boundary with Newark and Sherwood has heritage significance as it is the site of the 4<sup>th</sup> Duke of Portland's water meadow scheme.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the responsibility for the management of the recreational routes that are not public rights of way are not clear in the Meden Vale area.</p>
GI Area 5 – Timberland Trail	<p>Greenwood Community Forest Partnership advise that there is a relatively well-surfaced and flat walking route around Kings Mill Reservoir which is wheelchair accessible from the site car park and from the north-eastern perimeter. The route has been promoted in the past as one of Greenwood Community Forest's easy access routes – currently out</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>of print, but there is an opportunity to refresh survey information and to better publicise this route.</p> <p>The partnership also highlight that access to the reservoir from Kings Mill Hospital which is situated directly opposite the site, could offer health benefits to staff, recuperating patients and visitors. Access across the dual carriageway is poor however and improvements to this would yield better public benefit.</p> <p>Greenwood Community Forest Partnership advise that an active volunteer group – Maun Conservation Group – helps to look after, improve and promote green space along the River Maun in the Field Mill Pond area and have successfully raised funds for works like access improvements along with organising activities for school groups to make more use of this natural corridor.</p> <p>Greenwood Community Forest Partnership advise that the Greenwood Community Forest team is looking for opportunities to create further urban woodlands and to assist in planting of street trees so would be interested in supporting landscape regeneration in the Riverside area where green infrastructure proposals include restoring the section of the River Maun in this area to more natural conditions.</p> <p>Greenwood Community Forest Partnership highlight that Fisher Lane Park has an active friends group that supports MDC Parks in looking after, improving and promoting the park. The group has successfully applied to Greenwood Community Forest to carry out some tree planting on the site. The partnership highlight that there may be further opportunities for planting on the site.</p> <p>Greenwood Community Forest Partnership note that west of Fisher Lane Park is King Edward's Primary School, which has worked with the Maun Conservation Group and Greenwood Community Forest Partnership, to plant more trees in its school grounds.</p> <p>Greenwood Community Forest Partnership advise that the Greenwood Community Forest team would be interested in support for further tree planting as part of habitat enhancement at Forest Recreation Ground.</p>
GI Area 6 - Sherwood	<p>Miner2Major's aim for strategic GI area 6 is to: to re-connect areas of woodland and heathland from the iconic heart of the ancient Sherwood Forest with restored colliery sites to build connectivity for wildlife; to promote access links with the surrounding communities who feel disconnected from the landscape; and to revitalize traditional techniques used in</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>the forest to care for ancient buildings, woodlands and heaths.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that no Nottinghamshire County Council owned/managed land is in this area, but it does provide a very important transition zone between the urban area of Mansfield, and heathland/forestry to the east (including significant heathland re-creation occurring on the former Rufford Pit Tip). The area may benefit from increased/improved recreation to facilitate access into this area, but also to provide recreational opportunities in an area of lower ecological sensitivity. The area provides a well-defined boundary to the developed part of Mansfield, and should be protected to avoid the encroachment of development into this area.</p> <p>Natural England advise that they welcome the creation of habitat linkages in the recreation grounds and amenity spaces between Oak Tree Heath Local Nature Reserve/SSSI and the Local Wildlife Site parallel to Jubilee Way South, particularly between the two sections of the Strawberry Hill Heaths SSSI.</p> <p>Miner2Major support proposals for landscape connectivity and highlights that this will be a key objective of Miner2Major.</p> <p>Natural England welcome sensitive management of the Strawberry Hills Heath and Clipstone Forest areas and proposals for the protection and enhancement of the function of the accessible route linking the areas. Miner2Major highlight in relation to the nature conservation objectives for the large open area which includes Mansfield Golf Course and Rugby Club in this GI area, that habitat connectivity improved to strengthen the resilience of the landscape scale ecological network (conserve and re-connect areas of heathland within Sherwood Forest to link key heath and woodland areas as habitats that support key species). Natural England also welcome the protection and enhancement of habitat linkages in this location and welcome sensitive management of these areas (creation of habitats and their management is sensitive to Nightjar and Woodland).</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises the Nottinghamshire County Council do not own/manage land in the large open area which includes Mansfield Golf Course and Rugby Club, but highlights that the area does provide a very important transition zone between the urban area of Mansfield, and heathland/forestry to the east (including significant heathland re-creation occurring on the former Rufford Pit Tip). The area may benefit from increased/improved recreation to facilitate access into this area, but also to provide recreational opportunities in an area of lower ecological sensitivity. The area provides a well-defined boundary to the developed part of Mansfield, and should be protected to avoid the encroachment of development into this area.</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>Greenwood Community Forest Partnership advise that they would be supportive of creating or gapping up hedgerows in the large area of arable land between Peafield Plantation and Blakeley Hill Plantation. Miner2Major also support nature conservation objectives for this area and highlight that habitat connectivity improved to strengthen the resilience of the landscape scale ecological network (conserve and re-connect areas of heathland within Sherwood Forest to link key heath and woodland areas as habitats that support key species). Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe also advise that heritage is of significance in this area as the boundary of the historic Clipstone Park borders the south-east edge of this area.</p> <p>Miner2Major provide comment on the Thynghowe Trail network and archaeological area stating 'research and investigation using LIDAR in key areas of Sherwood Forest to increase knowledge of the extent of archaeological heritage.' Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe also advise that recent archaeological investigations in this area have highlighted the significance of the landscape of Thynghowe.</p> <p>Miner2Major provide comment on other area of coniferous woodland and priority habitat areas within the Sherwood strategic GI area stating that 'habitat connectivity improved to strengthen the resilience of the landscape scale ecological network (conserve and re-connect areas of heathland within Sherwood Forest to link key heath and woodland areas as habitats that support key species).'</p>
GI Area 7 - Cauldwell	<p>Nottinghamshire County Council (Nature Conservation Officer): GI associated with the Lindhurst development should be identified to link GI Area 7 with GI Area 8</p> <p>Ashfield District Council advise that they have provided their Green Infrastructure and Biodiversity, Technical Paper, September 2017. Following review of the technical paper it is noted that GI Area 7 adjoins an area of accessible public green space at Cauldwell Wood within the Ashfield district and the Ashfield District Council District Strategic Corridor no. 20 links with the adjoining cycle infrastructure route and GI Area 7 within the Mansfield district.</p> <p>Miner2Major: In relation to recreation and community green infrastructure objectives for this area Miner2Major provide the following comment, 'Information on wider network.'</p>
GI Area 8 – Mansfield Way	<p>Greenwood Community Forest Partnership comment that there is a need to recognise the significant changes that are represented by the Lindhurst development to either side of A617 and running down to Thieves Wood. Extra houses and residents will increase demand for good quality green space in the vicinity – some of which may be met by</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>spaces associated by the development itself, but also an increased need to ensure good walking links between Berry Hill and Bellamy Road estates, and open spaces to the south (in Ashfield). The development may also facilitate changes to Foul Evil Brook.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) states that GI associated with the Lindhurst development should be identified to link GI Area 8 with GI Area 7.</p> <p>Miner2Major advise improving signage and interpretation on the Mansfield long-distance trail and at gateways within this area.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that much of the Mansfield Way is owned/managed by Nottinghamshire County Council, with management occurring on an ad hoc basis. The site would benefit from more consistent management and funding to maintain areas of heathland.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that the heathland verges along the A617 in this area are the responsibility of Nottinghamshire County Council Highways/Via and work has been carried out in the last few years to remove encroaching pine saplings, and will be required periodically on an ongoing basis. However, there is no specific funding available for this management.</p> <p>Miner2Major comments in relation to nature conservation proposals in the area between Rainworth village and the A617 and recommends enhancing awareness of Sherwood Landscape and its extent in this area.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that Local Wildlife Site heathland (Ransom Heath) in this area is owned by Nottinghamshire County Council (strategic property) and subject to ad hoc management to retain heathland habitat. The site would benefit from more consistent, funded management.</p> <p>Natural England: Welcome sensitive management of Rainworth Lakes SSSI in relation to recreation objectives for the area.</p>
GI Area 9 – Berry Hill	<p>Greenwood Community Forest Partnership provide comment in relation to the nature conservation GI objectives to link the wooded quarry edge to the north of Berry Hill residential area with Berry Hill Park woodlands and to the woodlands along the Timberland Trail (GI Area 5). The partnership recommend looking for opportunities to further extend this linear woodland belt e.g. extend it north near the junction of North Park and Black Scotch Lane to link with</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	a small isolated area of woodland adjacent to Berry Hill Primary School.
GI Area 10 – Vicar Water	<p>Miner2Major aim for this area is to give people opportunities to find out, explore and care for Sherwood Forest.</p> <p>Miner2Major refer to green infrastructure objectives for the former mineral railway line adjacent to Samworth Academy forming a connection to the Timberland Trail from Abbey Road to Pump Hollow Lane/Princess Avenue and recommend management along key sections for enhancing specific Sherwood habitats.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) recommends adding 'Nature Conservation' to the green infrastructure objectives for the section of the Timberland Trail leading to Vicar Water Country Park as it requires habitat management to maintain open acid grassland habitat.</p> <p>Miner2Major recommend improving signage and interpretation as part of protection and enhancement proposals at the restored Mansfield Colliery site with habitat connectivity improved to strengthen the resilience of the landscape scale ecological network (conserve and re-connect areas of heathland within Sherwood Forest to link key heath and woodland areas as habitats that support key species). Natural England welcome the potential for habitat linkages in this location has been recognised.</p> <p>Greenwood Community Forest Partnership comments in relation to recreation and nature conservation green infrastructures objectives for Vicar Water Country Park stating that the country park provides an important recreational resource to local residents (Clipstone, Forest Town) and people from farther afield, as it offers car parking, a visitor centre, refreshments and good pathways. Important therefore for family groups and health.</p> <p>Greenwood Community Forest Partnership also provide comment that it has promoted walks here as offering relatively easy access for all, with quite gentle slopes and quite smooth pathways. There are opportunities to refresh survey work and update out of print publication to promote more widely.</p>
GI Area 11 – Clipstone to Warsop	<p>Miner2Major aim for this area is to:</p> <ul style="list-style-type: none"> <li>• Promote the identity of Sherwood Forest bringing together nature and heritage as a force for community action and pride.</li> <li>• To give people opportunities to find out, explore and care for Sherwood Forest.</li> </ul>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<ul style="list-style-type: none"> <li>• To revitalize traditional techniques used in the forest to care for ancient buildings, woodlands and heaths.</li> </ul> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the section of the route through Peafield Plantation is not a PROW. It is signed as a permissive path and is not managed to ensure easy access.</p> <p>Miner2Major provide comment in relation to the gateway to Spa Ponds and the long distance trail leading north to Warsop, east west along the Maun Valley and east to the Kings Clipstone recommending interpretation to learn more about the heritage hidden and protected by the forest using new technologies revealing the ancient landscape, people and places.</p> <p>Greenwood Community Forest Partnership comment in relation to the Spa Ponds and Beeston Lodge area and advise that an active friends group helps to conserve this site with the local community. Miner2Major recommend investigations, enhancements to habitats and conservation management training in relation to this area and state their aim for area is to learn more about the heritage hidden and protected by the forest using new technologies revealing the ancient landscape, people and places.</p> <p>Miner2Major recommend in relation to nature conservation objectives for the oak birch woodlands and hedgerows connecting with surrounding plantation woodlands and woodland along the River Maun, habitat connectivity improved to strengthen the resilience of the landscape scale ecological network (conserve and re-connect areas of heathland within Sherwood Forest to link key heath and woodland areas as habitats that support key species).</p> <p>Miner2Major recommends providing interpretation as part of heritage and recreation green infrastructure proposals along Packman's Road Trail.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise in relation to Packman's Road trail and its connection to the Clipstone to Warsop Trail that it is unclear which sections of Packman's Road form the 'Packman's Road Trail', and unfortunately the two bridleways can only be linked by walking alongside the busy Peafield Lane.</p> <p>Miner2Major note in relation to Parliament Oak and recreation access point along the Clipstone to Warsop Trail at</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	Peafold Lane, 'interpretation and cultural landscape connections.'
GI Area 12 – Maun Valley	<p>Greenwood Community Forest Partnership advise in relation to green infrastructure recreation and nature conservation objectives for Carr Bank Park in this area that the site has an active friends group helping to look after the site, and there is opportunity to use this site as a location to promote links to wider countryside via Maun Valley.</p> <p>Greenwood Community Forest Partnership advise in relation to recreation objectives to link the north and south sections of the Maun Valley Local Nature Reserve at Old Mill Lane that the paths through Maun Valley Park, between Old Mill Lane and New Mill Lane, are relatively flat and have been promoted as one of Greenwood Community Forest's "easy access" walks. The partnership go on to advise that whilst publication on this area is currently out of print, there would be value in refreshing the condition survey of paths in this area and better promoting them for public benefit.</p>
GI Area 13 – Warsop Vale	<p>Miner2Major aim for this area is to promote access links with the surrounding communities who feel disconnected from the landscape.</p> <p>Nottinghamshire County Council (Nature Conservation Officer) advises that some land within this area is owned/managed by Nottinghamshire County Council and there are no particular plans or aspirations for this area that the officer is aware of.</p> <p>Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe advise that the significance of the Dukeries Trail should be acknowledged along with the recent changes to the Archaeological Trail that provide connections near Shirebrook Station. The track of the dismantled railway along the northern edge of this area has been identified as a potential new bridleway that could form a connection with the northern section of Derbyshire's Archaeological Trail.</p> <p>Natural England welcome ecological connections in the Warsop Junction sidings and woodland linking other woodland and Hills and Holes SSSI. Warsop Footpaths &amp; Countryside Group and The Friends of Thynghowe state that there is one small remaining remnant of the valuable post-industrial landscape adjacent to the railway line in this area that provides a rare and valuable habitat, particularly for butterflies including the Dingy Skipper.</p>
Stakeholder	Comments relevant to the Mansfield District

Strategic Green Infrastructure (GI) Area	Stakeholder comment
Greenwood Community Forest Partnership	<p>Greenwood Community Forest Partnership, of which Mansfield District Council is a member, has an aspiration to increase the area of woodland cover to 30%. Greenwood will be pleased to discuss any opportunities to support further tree and hedge planting within the district, whether in the wider countryside or in the built-up areas. We are particularly keen to investigate the potential for street trees and others in the urban areas, as these provide benefits where people live, e.g. reducing air pollution, helping to mitigate against climate change by providing cooling. We offer small grants to encourage tree planting by community groups and have some further funding to support tree planting that involves local schools. For larger schemes, we would be interested in developing partnership working and potentially grant funding, to enable activities to go ahead.</p> <p>We have identified in a number of local community and “Friends” groups in the comments above relating to the strategic GI areas – each of these will help to engage local people in caring for, improving and promoting their local site. They may help to deliver environmental education activities with local schools, and they may also raise funds to help support activities. Greenwood supports a number of these groups and can help to develop new groups where partners identify the need for a particular site.</p> <p>Further general comments about green infrastructure:</p> <ul style="list-style-type: none"> <li>• The table above refers to GI’s benefits in terms of recreation, biodiversity and flood protection. There is also a need to bear in mind some of its other public benefits, for example: <ul style="list-style-type: none"> <li>○ Health – which suggests a need for good quality accessible spaces close to where people live or work.</li> <li>○ Air pollution – which suggests a need for further tree planting, particularly close to major roads</li> <li>○ Other climate change issues – increases in temperature and exposure to sun will make the provision of shade more beneficial, suggesting more tree planting around schools and public open spaces.</li> </ul> </li> <li>• The long list of proposals in the table above is worthy but leaves the question of how this might be carried forward or prioritised. One suggestion must be to consider which locations offer GI within easy access where people live – it may be worth assessing proposals against Natural England’s ANGST (Access to Natural Greenspace Standards).</li> </ul>
Miner2Major	<p>The Miner2Major Landscape Partnership has secured development funding for a two-stage scheme from the Heritage Lottery Fund (HLF). Our Delivery Stage application for a five-year programme of activities is due to be submitted during 2017. The County Council, in partnership, and supported by HLF, hopes to connect people with knowledge, skills and</p>

Strategic Green Infrastructure (GI) Area	Stakeholder comment
	<p>community pride to care for the nature and heritage of Sherwood Forest with a £3.5million programme of activities.</p> <p>We will work from the northern edge of Nottingham, to Sutton- and Kirkby-in-Ashfield and Mansfield to the National Nature Reserve near Edwinstowe. Our boundary will largely fall along the eastern boundary of Mansfield District Council, and our audiences will include local people to help them make the most of the countryside and heritage on their doorstep. Landscape partnerships “put heritage conservation at the heart of rural and peri-urban regeneration” (HLF). The importance landscape of Sherwood Forest has become hidden, and we hope to bring this back to people’s attention and to play an important part in their lives.</p> <p>Our strategic objectives are to:</p> <ul style="list-style-type: none"> <li>• Conserve and re-connect woodland and heath in Sherwood Forest to help support the range of wildlife species of this landscape and the semi-natural fragments of distinctive Sherwood Forest habitats.</li> <li>• Provide mechanisms to bring together communities, organisations and businesses to integrate, teach, record and communicate.</li> <li>• Increase the commitment of local people to appreciate and safeguard the heritage of Sherwood Forest, and attract new and wider audiences to engage with it through a programme of targeted activities.</li> <li>• Promote Sherwood Forest as an historic part of the East Midlands region, and as a distinctive, recognisable and appreciated landscape in its own right linking facilities and activities for all abilities.</li> </ul>
Ashfield District Council	Ashfield District Council advise that it would welcome any opportunity to develop joint working. The main focus at present is developing and promoting run/walk/cycle routes.



## Appendix G – Transport Supporting Information

# Estimation of Trips by Mode

Estimation of Increase in Trips by Mode

Number Houses	9,887 dwellings
Convenience Retail	27,290 sqm
Comparison Retail	3,460 sqm
Leisure	30,435 sqm
Office	92,086 sqm
Industrial	38.26 ha

TRIP Rates:

Residential

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	0.140	0.356	0.496	0.313	0.174	0.487
Taxis	0.004	0.004	0.008	0.003	0.004	0.007
OGVs	0.004	0.003	0.007	0.001	0.001	0.002
PSVs	0.000	0.000	0.000	0.000	0.000	0.000
Cyclists	0.003	0.017	0.020	0.016	0.006	0.022
Vehicle Occupants	0.172	0.511	0.683	0.413	0.225	0.638
Pedestrians	0.044	0.176	0.220	0.100	0.046	0.146
Public Transport Users	0.001	0.009	0.010	0.011	0.002	0.013
Total People	0.220	0.714	0.934	0.540	0.278	0.818

Food Superstore

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	2.579	1.959	4.538	5.035	5.275	10.310
Taxis	0.021	0.013	0.034	0.049	0.039	0.088
OGVs	0.024	0.023	0.047	0.010	0.012	0.022
PSVs	0.002	0.003	0.005	0.004	0.004	0.008
Cyclists	0.027	0.015	0.042	0.033	0.043	0.076
Vehicle Occupants	3.169	2.357	5.526	7.113	7.375	14.488
Pedestrians	0.380	0.338	0.718	0.588	0.650	1.238
Public Transport Users	0.023	0.016	0.039	0.030	0.035	0.065
Total People	3.600	2.725	6.325	7.765	8.103	15.868

Non-Food Superstore

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	0.150	0.035	0.185	0.138	0.127	0.265
Taxis	0.000	0.000	0.000	0.000	0.000	0.000
OGVs	0.023	0.035	0.058	0.000	0.000	0.000
PSVs	0.000	0.000	0.000	0.000	0.000	0.000
Cyclists	0.069	0.000	0.069	0.046	0.081	0.127
Vehicle Occupants	0.288	0.069	0.357	0.253	0.207	0.460
Pedestrians	0.599	0.610	1.209	0.150	0.196	0.346
Public Transport Users	0.000	0.000	0.000	0.000	0.000	0.000
Total People	0.955	0.679	1.634	0.449	0.483	0.932

Leisure Centre

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	0.435	0.369	0.804	1.280	1.199	2.479
Taxis	0.000	0.009	0.009	0.006	0.006	0.012
OGVs	0.003	0.003	0.006	0.000	0.003	0.003
PSVs	0.009	0.000	0.009	0.000	0.000	0.000
Cyclists	0.056	0.050	0.106	0.072	0.078	0.150
Vehicle Occupants	0.438	0.385	0.823	2.282	2.354	4.636
Pedestrians	0.357	0.103	0.460	0.886	0.886	1.772
Public Transport Users	0.285	0.041	0.326	0.254	0.200	0.454
Total People	1.136	0.579	1.715	3.493	3.518	7.011

Office

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	1.576	0.275	1.851	0.192	1.374	1.566
Taxis	0.013	0.014	0.027	0.009	0.009	0.018
OGVs	0.006	0.004	0.010	0.001	0.002	0.003
PSVs	0.004	0.003	0.007	0.002	0.002	0.004
Cyclists	0.041	0.002	0.043	0.002	0.039	0.041
Vehicle Occupants	1.737	0.255	1.992	0.193	1.527	1.720
Pedestrians	0.280	0.026	0.306	0.034	0.266	0.300
Public Transport Users	0.388	0.008	0.396	0.012	0.319	0.331
Total People	2.445	0.292	2.737	0.241	2.152	2.393

Industrial Estate

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	19.089	9.788	28.877	5.402	16.314	21.716
Taxis	0.063	0.063	0.126	0.063	0.063	0.126
OGVs	0.823	0.826	1.649	0.381	0.423	0.804
PSVs	0.148	0.065	0.213	0.021	0.021	0.042
Cyclists	0.551	0.148	0.699	0.042	0.614	0.656
Vehicle Occupants	23.114	12.627	35.741	7.246	19.872	27.118
Pedestrians	1.313	0.444	1.757	0.254	1.165	1.419
Public Transport Users	0.487	0.000	0.487	0.212	0.953	1.165
Total People	25.466	13.221	38.687	7.755	22.606	30.361

Trip Generation:

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	1,384	3,520	4,904	3,095	1,720	4,815
Taxis	40	40	79	30	40	69
OGVs	40	30	69	10	10	20
PSVs	0	0	0	0	0	0
Cyclists	30	168	198	158	59	218
Vehicle Occupants	1,701	5,052	6,753	4,083	2,225	6,308
Pedestrians	435	1,740	2,175	989	455	1,444
Public Transport Users	10	89	99	109	20	129
Total People	2,175	7,059	9,234	5,339	2,749	8,088

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	704	535	1,238	1,374	1,440	2,814
Taxis	6	4	9	13	11	24
OGVs	7	6	13	3	3	6
PSVs	1	1	1	1	1	2
Cyclists	7	4	11	9	12	21
Vehicle Occupants	865	643	1,508	1,941	2,013	3,954
Pedestrians	104	92	196	160	177	338
Public Transport Users	6	4	11	8	10	18
Total People	982	744	1,726	2,119	2,211	4,330

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	5	1	6	5	4	9
Taxis	0	0	0	0	0	0
OGVs	1	1	2	0	0	0
PSVs	0	0	0	0	0	0
Cyclists	2	0	2	2	3	4
Vehicle Occupants	10	2	12	9	7	16
Pedestrians	21	21	42	5	7	12
Public Transport Users	0	0	0	0	0	0
Total People	33	23	57	16	17	32

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	132	112	245	390	365	754
Taxis	0	3	3	2	2	4
OGVs	1	1	2	0	1	1
PSVs	3	0	3	0	0	0
Cyclists	17	15	32	22	24	46
Vehicle Occupants	133	117	250	695	716	1,411
Pedestrians	109	31	140	270	270	539
Public Transport Users	87	12	99	77	61	138
Total People	346	176	522	1,063	1,071	2,134

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	1,451	253	1,705	177	1,265	1,442
Taxis	12	13	25	8	8	17
OGVs	6	4	9	1	2	3
PSVs	4	3	6	2	2	4
Cyclists	38	2	40	2	36	38
Vehicle Occupants	1,600	235	1,834	178	1,406	1,584
Pedestrians	258	24	282	31	245	276
Public Transport Users	357	7	365	11	294	305
Total People	2,252	269	2,520	222	1,982	2,204

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	730	374	1,105	207	624	831
Taxis	2	2	5	2	2	5
OGVs	31	32	63	15	16	31
PSVs	6	2	8	1	1	2
Cyclists	21	6	27	2	23	25
Vehicle Occupants	884	483	1,367	277	760	1,038
Pedestrians	50	17	67	10	45	54
Public Transport Users	19	0	19	8	36	45
Total People	974	506	1,480	297	865	1,162

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	4,407	4,796	9,203	5,247	5,419	10,665
Taxis	60	61	121	56	63	118
OGVs	85	73	158	28	32	60
PSVs	13	6	19	4	4	7
Cyclists	115	195	310	194	157	351
Vehicle Occupants	5,193	6,533	11,726	7,183	7,127	14,310
Pedestrians	976	1,926	2,902	1,465	1,198	2,663
Public Transport Users	479	113	592	213	420	634
Total People	6,762	8,777	15,540	9,055	8,894	17,949

Mode	AM			PM		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Cyclists	115	195	310	194	157	351
Pedestrians	976	1,926	2,902	1,465	1,198	2,663
Public Transport Users	479	113	592	213	420	634