

Site at Woodville, Swadlincote

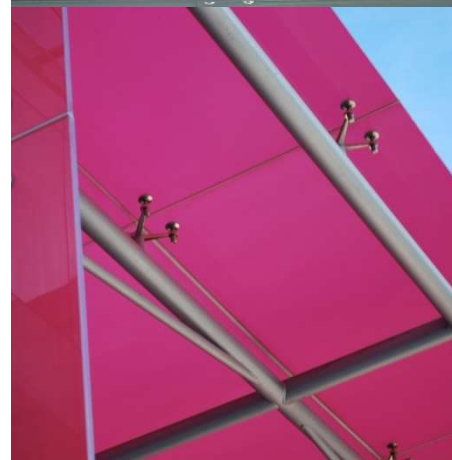
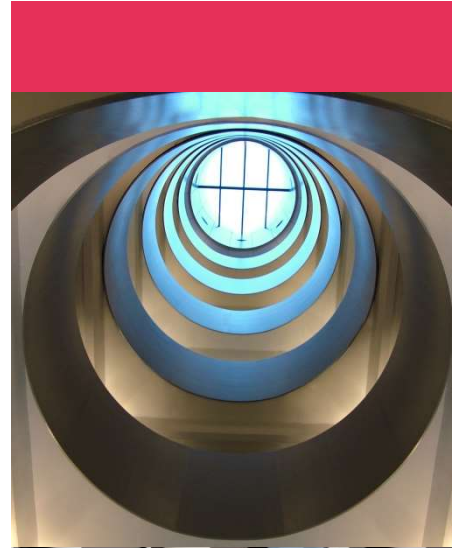
Transport Assessment

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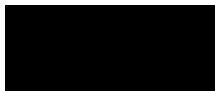
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1.0 Introduction

1.1 Background

- 1.1.1 Curtins has been appointed on behalf of Harworth Group to provide traffic and transportation advice in relation to an outline planning application for a mixed-use development in Woodville, Derbyshire.
- 1.1.2 The site is situated in Woodville, Derbyshire, approximately 20km south-west of Derby and 2km east of Swadlincote. The site is bisected by land safeguarded for an approved forthcoming link road 'The Regeneration Link Road'. The Regeneration Link Road will be progressed separately by Derbyshire County Council (DCC).
- 1.1.3 The client wishes to phase the residential development in a way that allows the units served from Moira Road to be built out first, without the need for the full operation of the Regeneration Link Road. Phase 1 would comprise 75 dwellings.
- 1.1.4 The second phase (Phase 2) would include the full build out of the proposed development (225 additional dwellings and circa 17,000 sqm GFA of A1, A3, A4, B1, B2 and B8 land uses). The approved Regeneration Link Road would need to be delivered in order to serve the site.

1.2 Purpose of this Report

- 1.2.1 This Transport Assessment (TA) has been prepared to inform Highways Officers at Derbyshire County Council (DCC) of all traffic and transportation matters associated with the application, including the development proposals and their potential impact on the surrounding area, in their role as the Local Highway Authority (LHA). The Local Planning Authority (LPA) is South Derbyshire District Council (SDDC).

1.3 Scope of the Report

- 1.3.1 Curtins' attended a Public Consultation event on Tuesday 28th of May 2019 to discuss the development proposals with local stakeholders.
- 1.3.2 In light of feedback received from the Public Consultation and following a number of discussions with DCC via email and phone, the following scope of assessment for this TA has been agreed with DCC:
 - Provide an audit of the accessibility of the site by sustainable modes of travel;
 - Undertake a review of highway safety within the vicinity of the site for the most recent five years;
 - Provide details of the proposed access arrangement including scale drawings and vehicle tracking;
 - Provide full details of the traffic generation associated with the proposals, which has been calculated using Curtins' updated TRICS assessments;

- Use agreed trip distribution percentages calculated using 'Journey to Work' data from the 2011 Census to assign the proposed development traffic to the surrounding network;
- Consider the Butt Lane and Broomy Farm sites as committed development;
- Commission weekday traffic counts for the seven existing junctions to be assessed (see list below), which were undertaken before the school holidays;
- Undertake capacity assessments at local junctions to include:
 - o The Clock Roundabout;
 - o Hepworth Rd/Ashby Rd/High St Signalised Junction;
 - o Hepworth Rd/Forest Rd Roundabout;
 - o Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads;
 - o Moira Rd/Hepworth Rd Roundabout;
 - o Moira Rd Phase 1 Access Rd;
 - o Occupation Ln/Hepworth Rd/Regeneration Link Roundabout;
 - o Regeneration Link Phase 2 Access Roundabouts;
 - o Swadlincote Rd/Regeneration Link/Derby Rd Existing Junction; and
 - o Swadlincote Rd/Regeneration Link/Derby Rd Proposed Roundabout.
- Consider traffic growth for year of application (2019) and year of application + 2 and + 5 (2021 and 2024). It was agreed with DCC that although traffic figures would be provided for 2019, 2021 and 2024 scenarios, capacity assessments need to be provided for 2021 and 2024 only;
- For Phase 2, assume the two scenarios of 25% and 50% of traffic respectively being reassigned from The Clock to the Regeneration Link (via Hepworth Road), which is consistent with the approved Regeneration Link Road TA produced by AECOM.
- Comment on the likely highway impact associated with the development proposals;
- Identify any mitigation measures required (where necessary) to accommodate the development; and
- Review the relevant local and national transport planning policy.

1.4 Structure of the Report

- 1.4.1 Following this introduction, **Section 2** of the report provides a comprehensive description of the existing site and its location. This includes the local highway network and facilities for pedestrians, cyclists and public transport users.
- 1.4.2 **Section 2** also reviews the local area in terms of highways safety by way of obtaining records of accidents adjacent to the site over the most recent five-year period available.
- 1.4.3 The development proposals summarised in **Section 3**, including the proposed access arrangements.
- 1.4.4 The accessibility of the site by sustainable modes of travel is assessed in **Section 4**.

- 1.4.5 **Section 5** outlines the traffic forecasting methodology used to establish the likely traffic generation associated with the development proposals, with **Section 6** providing details of the capacity assessments undertaken at seven off-site junctions and the site access point.
- 1.4.6 Relevant local and national transport policy is summarised in **Section 7**, and the report is summarised and concluded in **Section 8**.

2.0 Site Context

2.1 Site Location

- 2.1.1 The proposed development site is located in Woodville, Derbyshire, approximately 20km south-west of Derby and 2km east of Swadlincote.
- 2.1.2 The site is bounded on its south eastern side by Moira Road (which later connects with the A514 via The Clock Roundabout in Woodville Town Centre). Residential properties are situated along Moira Road, in addition to nearby Vicarage Road and Occupation Lane. Industrial units bound the site to the north, west and south west. **Figure 2.1** shows the site location, and more detailed plans are contained within **67895-CUR-00-XX-DR-TP-06001-P01** in **Appendix A**.

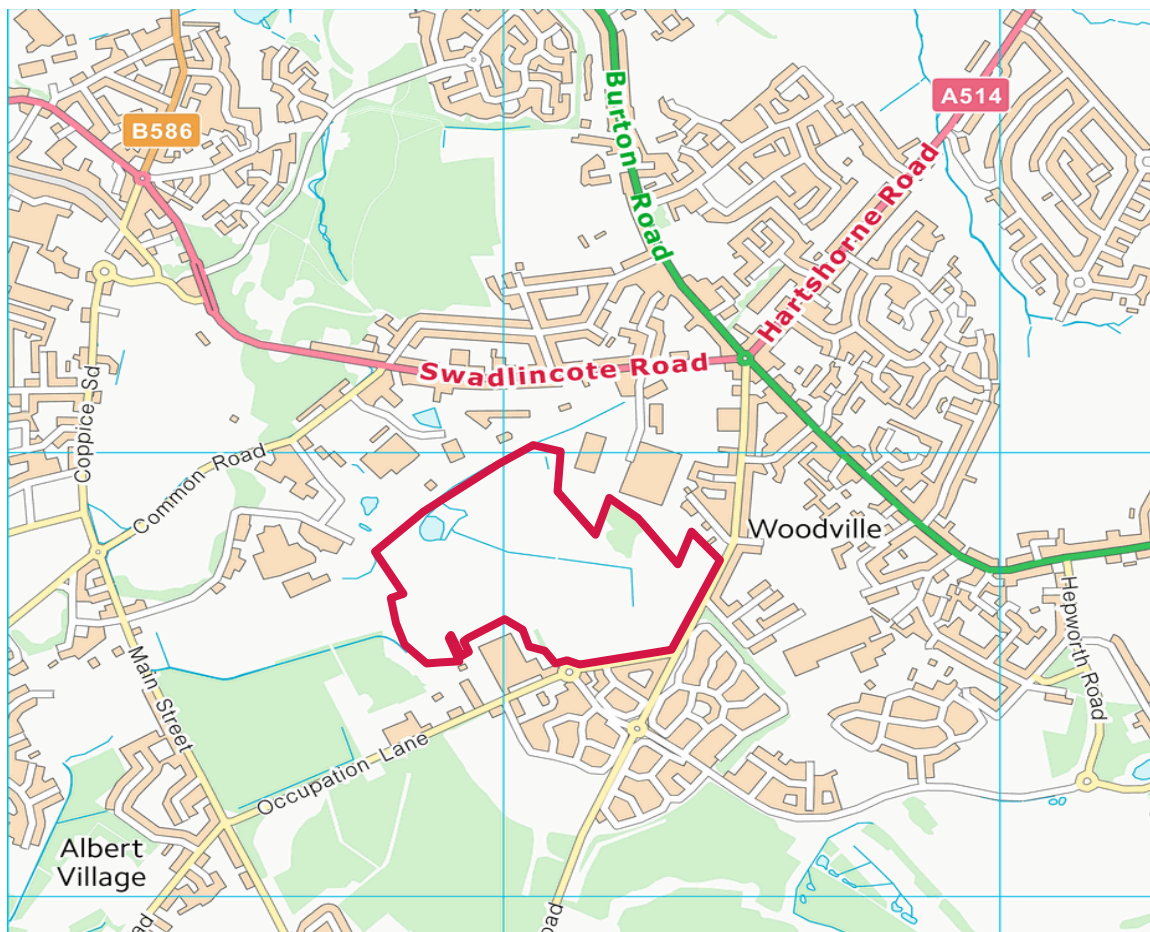


Figure 2.1 – Site Location

2.2 Existing Use

- 2.2.1 The application site is currently vacant. It is a brownfield site due to its former uses associated with the clay industry. More recent uses have been associated with agriculture. Public Right of Way (PRoW) pass through the site at various points, as show in in **Figure 2.2**:

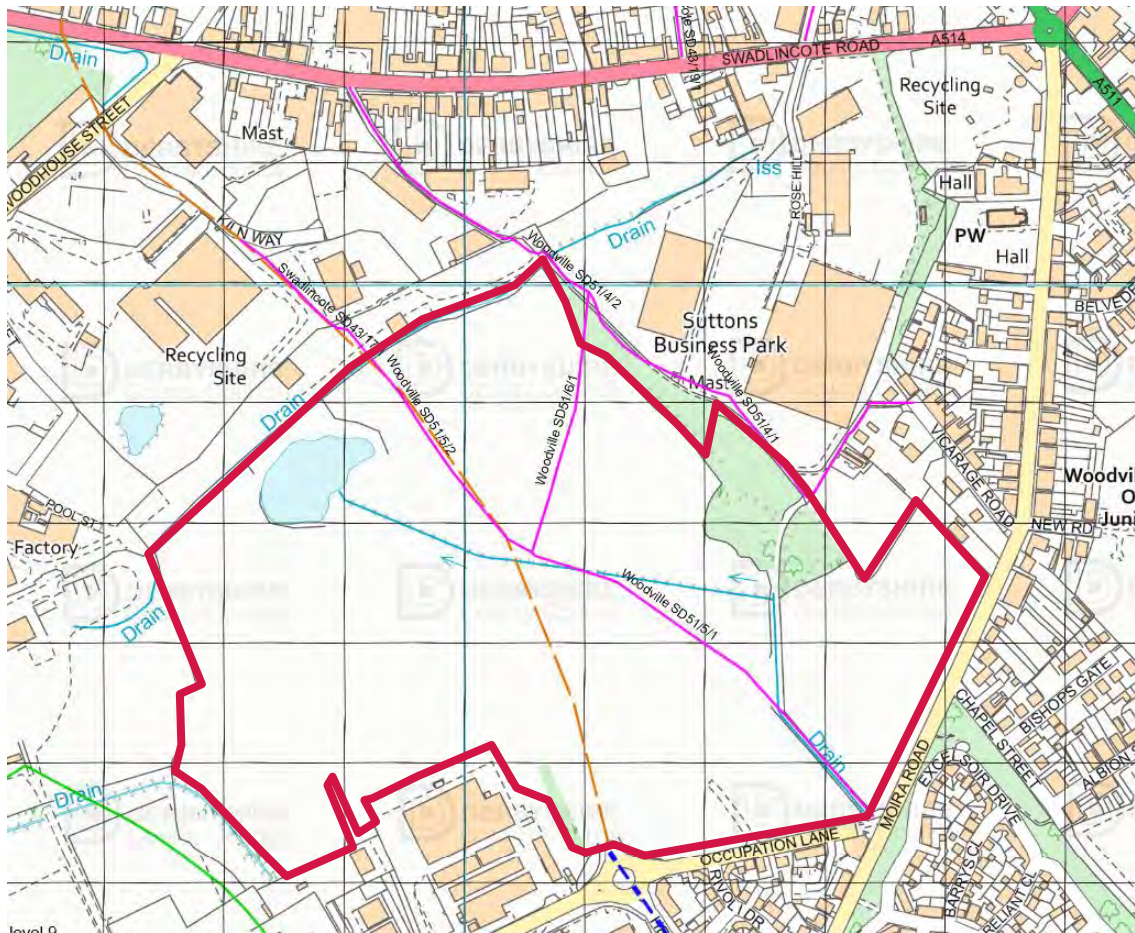


Figure 2.2 – Existing PRoW

2.3 Existing Access Arrangements

- 2.3.1 A gated access point is currently available on Occupation Lane, at the approximate mid-point of the section between the Moira Road and the Hepworth Road roundabout. It is envisaged that this access would be closed once the development is completed. Proposed access arrangements are detailed in **Section 4.1**.
- 2.3.2 The Occupation Lane / Hepworth Road roundabout is provided with an arm leading to the site, which is currently closed to traffic. This arm was built for the purpose of serving the proposed Regeneration Link Road, and will grant access to the development site. Further details of the proposed link can be found in **Section 4.1**.
- 2.3.3 Pedestrians can currently access the site via the existing PRoW although with the construction of the development, this path would be realigned and new pedestrian and cycle access points and shared cycling-pedestrian infrastructure along the Regeneration Link would be provided.

2.4 Surrounding Highway Network

Occupation Lane and Hepworth Road

- 2.4.1 The Occupation Lane / Hepworth Road roundabout would provide access to the south of the site. It is a standard roundabout with four arms (northern arm currently an access stub), two traffic lanes and a road width of around 6m.
- 2.4.2 Both Occupation Lane and Hepworth Road are two-way single carriageways on which the speed limit is 30mph. The former links the development site with Mushroom Lane to the west and a residential estate to the east, while Hepworth Road is part of the wider Regeneration Link Road route, connecting the site with the A511 Ashby Road to the east.
- 2.4.3 Hepworth Road is also provided with right turn lanes at junctions with minor roads.
- 2.4.4 On-street parking is permitted along Occupation Lane. Whilst vehicles associated with the residential properties to the east of the roundabout can be observed to park on the carriageway, the industrial units off the western section of the road have on-site parking premises and so no on-street parking associated with these uses was observed.
- 2.4.5 Along Hepworth Road, parking is confined to within the various residential estates and therefore vehicles were not observed to be parked on the main carriageway, although there is not any formal restriction.
- 2.4.6 Occupation Lane, Hepworth Road and the aforementioned roundabout are provided with footways with additional space at specific locations such as crossings points. Off road cycle provision is also present. The pedestrian infrastructure is in good condition; staggered crossing points are available at the roundabout arms, and lowered kerbs and tactile paving can be found at crossing points. The roads are lit with street lighting.
- 2.4.7 The eastern end of Occupation Lane is now stopped-up to motor vehicles, having previously formed a priority junction with Moira Road. Pedestrians and cyclists are still able to travel between both roads.

Moira Road

- 2.4.8 Moira Road extends along the south eastern edge of the site for approximately 400m, continuing to the Clock Roundabout in the centre of Woodville towards the north east and to a junction with Mushroom Lane to the south west.
- 2.4.9 Moira Road comprises a two-way, single carriageway road. It is subject to a speed limit of 30mph south of The Clock to a point approximately 85m north of Occupation Lane. Here, the road continues southwards to Mushroom Lane at a speed limit of 40mph.

2.4.10 There are no parking restrictions present on the section between the development site and the junction with Mushroom Lane, while towards the north double yellow lines are present on either side of the carriageway.

2.4.11 Moira Road has suitable footways with lowered kerbs and tactile paving at the majority of its crossings and junctions. It is lit along the sections where residential properties are present at any side.

A511 (High Street and Burton Road)

2.4.12 The A511 links Moira Road (through the Clock roundabout) and Hepworth Road with Ashby-de-la-Zouch, the A42 and the M1 to the east and with Midway, Burton-upon-Trent and the A38 to the west. Through Woodville, the road has a speed limit of 30mph due to the urban nature of the surroundings.

2.4.13 In the vicinity of the Town Centre, the A511 comprises a two-way single carriageway with a width of approximately 7m.

2.4.14 The A511 features pedestrian footways and facilities either side of the road with tactile paving and lowered kerbs at all informal and signalised crossings as well as junctions. Bus services run along the A511 and therefore multiple bus stops (some of them sheltered) are available along its length.

A514 (Hartshorne Road and Swadlincote Road)

2.4.15 The A514 links the Clock roundabout with residential properties and eventually Derby to the north east, and with industrial estates and the A444 towards the west.

2.4.16 The north eastern section of the A514 forms a relatively wide carriageway of approximately 10m, with a 30mph speed limit. This section is provided with wide footways either side, complete with lowered kerbs and tactile paving at all crossings and junctions. No parking restrictions are present, and there is streetlighting along its length.

2.4.17 Along the A514 towards Swadlincote, the road is approximately 7m in width and maintains the same standards of pedestrian facilities. Parking is permitted on both sides of the road.

2.4.18 To the west of the development site, there are multiple cycling trails and bicycle-friendly roads around Swadlincote and through places such as Church Gresley, Maurice Lea Memorial Park and Albert Village.

2.5 Regeneration Link Road

2.5.1 Before the proposal for this development, DCC had approved the construction of a link road through the bounds of development site (the Regeneration Link Road) in order to relieve the traffic congestion at the five-arm Clock Roundabout north of the site and provide a more suitable route away from the centre of Woodville for through-traffic. The approved Regeneration Link Road is provided for reference in **Appendix C**.

2.5.2 A summary of the Transport Assessment prepared by AECOM in 2014 for the business case of the construction of this link road is provided below.

- Phase 1 of this road has already been built (Hepworth Road), currently connecting the A511 High Street-Ashby Road with Occupation Lane.
- Phase 2 of the Regeneration Link Road, running through the site, would connect the Occupation Lane / Hepworth Road roundabout with the A514 Swadlincote Road (via Woodhouse Street). A priority junction would be built on Woodhouse Street, with the movements between Regeneration Link (southbound) and Woodhouse Street not being permitted. A three-arm roundabout would be built to connect Woodhouse Street with the A514 Swadlincote Road, replacing the existing crossroads and leaving the junction between the A514 and Bernard Street as a separate priority junction.
- Two additional roundabouts would be built within the Regeneration Link Phase 2 section to grant access to the proposed residential, employment and retail elements of the Phase 2 of the development.
- Traffic surveys were undertaken at the junctions around the site to calculate the highway capacity in the surrounding study area. These surveys showed that the Clock Roundabout experienced capacity stress during peak periods and therefore the new link road would provide, apart from access to the development Phase 2, an alternative route for vehicles travelling east-west (A511-A514) and vice versa, reducing the number of vehicles using the Clock junction.
- A 3m shared footway and cycling path is proposed along the link road in order to increase the number of trips done by sustainable modes of transport.
- The link road development is compliant with the policy elements in the National Planning Policy Framework (NPPF) and the overall scheme is contained within the latest version of the Local Transport Plan and Local Plan.

2.6 Highway Safety

2.6.1 Road safety data has been obtained from the Police and Crime Commissioner for Derbyshire (Derbyshire Constabulary) to provide baseline data to assess existing conditions in the vicinity of the development site. This data includes all collisions where a Personal Injury Accident has occurred (where Police attended) for the last five years available (from April 2014 to March 2019).

2.6.2 The search area plan and details of the all the 39 accidents registered within it are shown in **Appendix B**, while a summary of the location of these accidents is contained in **Table 2.3**:

Junction/Link	Slight	Serious	Fatal	Totals
Occupation Ln	0	0	0	0
Occupation Ln / Hepworth Rd Roundabout	0	0	0	0
Hepworth Rd and Excelsior Dr	2	0	0	2

Junction/Link	Slight	Serious	Fatal	Totals
The Clock Roundabout	7	1	0	8
A511 Burton Road / Box Close Junction	0	1	0	1
A514 Hartshorne Road / Swallow Road Junction	1	0	0	1
A514 Hartshorne Road (not at junctions)	1	0	0	1
A511 High Street / Viking Tyre Access	1	1	0	2
A511 High Street / Blacksmith's Lane Junction	2	0	0	2
A511 High Street (not at junctions)	2	0	0	2
Moirs Road (not at junctions)	2	0	0	2
Occupation Ln / Hepworth Rd Roundabout	1	0	0	1
Hepworth Rd / Excelsior Drive Junction	1	0	0	1
Excelsior Drive / Tooth Street Junction	1	0	0	1
John Street / Bridge Street Junction	3	0	0	3
Bridge Street / Bridge Close Junction	1	0	0	1
Common Road (western section, not at junctions)	1	1	0	2
Common Road (eastern section, not at junctions)	3	0	0	3
Pool Street	1	0	0	1
A514 Swadlincote Road / Woodhouse Street / Bernard Street junction	2	2	0	4
A514 Derby Road (not at junctions)	1	0	0	1
A514 Swadlincote Road (not at junctions)	2	0	0	2
Totals	33	6	0	39

Table 2.3 – Personal Injury Accident Data Summary

- 2.6.3 As shown in **Table 2.3**, a total of 8 incidents occurred at the Clock Roundabout as well as 3 more in close proximity of the roundabout. This is not considered to be high, considering the volume of traffic passing through the junction and its 5-arm layout.
- 2.6.4 4 accidents took place at the A514 Swadlincote Road / Woodhouse Street / Bernard Street junction, which registers also high volumes of traffic and is potentially turned into a roundabout as part of the construction of the Phase 2 of the Regeneration Link.
- 2.6.5 The remaining junctions or road sections in the area registered between 0 and 3 accidents during the assessed period.

- 2.6.6 There has been a total of 39 accidents in the latest five-year period available, involving 76 vehicles, of which 58 were cars, 9 were motorcycles, 5 were bicycles, 3 were good vehicles and the remaining one was a taxi.
- 2.6.7 46 casualties were recorded in these accidents, of which 25 were car drivers, 3 were car passengers, 9 were motorcycle riders, 5 were pedestrians and the remaining 4 were riding a bicycle. 40 of these casualties had injuries with 'slight' severity, while the other 6 were catalogued as seriously injured (3 pedestrians, 2 motorcycle riders and a car passenger). No fatalities have been recorded in the search area and period.
- 2.6.8 Following a thorough review of the records, it is not considered that there is an existing safety issue that is likely to be exacerbated by the proposed development.
- 2.6.9 Notwithstanding this, it is expected that the number of collisions would be expected to reduce along the A514 and its junctions, as the proposed Regeneration Link Road opens and traffic is diverted away from the A514.

3.0 Development Proposals

3.1 Introduction

- 3.1.1 This Transport Assessment is part of an outline planning application for the development of a mixed-use development on a brownfield site in Woodville, Derbyshire.
- 3.1.2 It is proposed that Phase 1 would include the construction of 75 dwellings in the eastern sector of the site, accessed from Moira Road; while Phase 2 would involve the construction of 225 additional residences as well as employment and retail units, accessed from the forthcoming Regeneration Link Road.
- 3.1.3 Further details of the proposals are described within this section, while an illustrative masterplan can be found in **Appendix D** at the rear of the report.
- 3.1.4 The full schedule of accommodation proposed for the development site include:
- A total of up to 300 C3 residential units:
 - o 75 to be built for Phase 1; and
 - o 225 to be erect as part of Phase 2.
 - Employment floorspace consisting of:
 - o 2,000sqm GFA of B1 Office units;
 - o 4,000sqm GFA of B2 Industrial units; and
 - o 8,000sqm GFA of B8 Warehouse units.
 - A local centre with general amenities comprising:
 - o 1,600sqm GFA of A1 Food store;
 - o 700sqm GFA of A3 Restaurant; and
 - o 550sqm GFA of A4 Pub.
 - A public open space including drainage basins (circa 5.27Ha).

3.2 Proposed Access

Vehicular Access

- 3.2.1 Vehicular access to the development site is proposed at three different entry/exit points:
1. An access road to the proposed Phase 1 residential properties would on Moira Road, which would be the only vehicular access to these units as they would not be linked with Phase 2, in order to avoid rat-running to/from Moira Road and the Clock roundabout instead of using Hepworth Road (Phase 1 of the Regeneration Link). The proposed access junction is described in detail in **Section 3.3**;

2. The northern arm of the Occupation Lane/Hepworth Road Roundabout, which is currently closed, would be used to access the development, as part of the Regeneration Link Phase 2, already approved by Derbyshire County Council;
3. The Regeneration Link Phase 2 and therefore the development, would also be connected to the A514 via Woodhouse Street; providing an additional access point into the site from northern and western destinations.

3.2.2 **Section 3.4** summarises the Regeneration Link features.

Pedestrian and Cycle Access

- 3.2.3 Currently, the existing brownfield site provides access to pedestrians via PRow. These PRow will need to undergo some realignment as shown in the concept masterplan, in order to accommodate the new residential and commercial buildings of the development. It is envisaged that this would be undertaken under an application separate to this planning application upon any forthcoming approval.
- 3.2.4 The vehicular access to Phase 1 off Moira Road would be provided with footways on both sides as explained in **Section 3.3**.
- 3.2.5 Furthermore, the Regeneration Link would include a 3m shared footway and cycleway to improve access for cyclists, connecting to the existing available pedestrian and cycling infrastructure in the wider area.

3.3 Proposed Access on Moira Road (for Phase 1)

Design Guidelines

- 3.3.1 Manual for Streets (MfS) sets out an integrated approach to design philosophy from first principles, considers some of the key factors and recommends the use of certain geometric features that will result in street design suitable for all road users. The 6C's Design Guide is also considered to have relevance within Derbyshire.
- 3.3.2 Therefore, MfS and the 6C's have been followed to design the site access junction from the public highway.

Proposed Junction Form, Location and Geometry

- 3.3.3 Given the relatively low numbers of development vehicular traffic that would be turning into and out of the proposed access junction (see the development trip generation figures for Phase 1 in **Section 5**) and the relatively low existing two-way traffic flow on Moira Road (as shown from the ATCs commissioned, with the results shown in **Section 6**), a priority junction is considered to be the most

suitable form of junction. The proposed access is provided in **drawing 067895-CUR-00-00-DR-TP-05001-P01** within **Appendix E**.

- 3.3.4 This is validated by previous performance of the existing priority junction access on Occupation Lane, serving the former clay working premises on site (handling larger numbers of vehicles than will be resulting and also heavy vehicle movements) and is in keeping with the local area which has a number of other residential access priority junctions.
- 3.3.5 The most suitable location for the site access junction is at the approximate mid-point of the Moira Road section between the junctions with Chapel Street and Occupation Lane (pedestrian/cycle access only).
- 3.3.6 The minimum required visibility splays for left and right turners from the site access road into Moira Road would be achieved in line with MfS requirements. Considering the recorded 85th percentile speeds of 39.2mph for southbound traffic (northern survey) and 41.0mph for northbound traffic (southern survey) as shown in **Table 4.1**, it is deemed appropriate to provide splays of 2.4m x 63.5m to the left and 2.4m x 68m to the right in accordance with the MfS requirements as existing for information. These splays have been shown in **drawing 067895-CUR-00-00-DR-TP-05001-P01** in **Appendix E**.
- 3.3.7 However, it is proposed to extend the existing 30mph zone along Moira Road approximately 100m to the south (see **drawing 067895-CUR-00-00-DR-TP-05002-P01** in **Appendix E**) in order to encompass the access junction and provide a more suitable environment for pedestrians and cyclists associated with the development. This would alter the visibility requirements.
- 3.3.8 On this basis, visibility splays for a 30mph design have been shown in **drawing 067895-CUR-00-00-DR-TP-05001-P01** in **Appendix E**.

3.4 Proposed Access from the Regeneration Link Road (for Phase 2)

- 3.4.1 The approved Regeneration Link Road would provide access to all elements contained within Phase 2. The link does not form part of this application.
- 3.4.2 The Regeneration Link Road would include two 4-arm roundabout junctions along its length within the proposed development site bounds, as shown in **Appendix C**.

3.5 Parking Provision

Car Parking

- 3.5.1 The Draft South Derbyshire Design Guide (Design Supplementary Planning Document, May 2017) strongly encourages developers to provide at least two spaces per dwelling. For homes of four bedrooms or more, it is recommended that three spaces are provided. These spaces should ideally be in addition to any garage provision.

- 3.5.2 This document refers to the latest version of the 6C's Design Guide for further guidance on parking provision, particularly in respect of non-domestic properties.
- 3.5.3 The 6C's Design Guide includes the maximum parking standards for 'rest of rural town' locations for the remaining land uses on site.
- 3.5.4 Furthermore, the 6C's Design Guide also states the minimum number of spaces that have to be installed for disabled users, which should be in addition to general parking provision. Parking for disabled people should be located as close as possible to the main entrance of a building.
- 3.5.5 **Table 3.1** below shows the recommended minimum (residential) and maximum (non-domestic land uses) regular car parking spaces as well as the minimum number of disabled car parking bays (non-domestic land uses) to be provided on site.

Land Use >	A1	A3	A4	B1	B2	B8	C3
<i>Regular Car Parking Spaces</i>							
Standards	1 per 14sqm	1 per 20sqm	1 per 20sqm	1 per 30sqm	1 per 65sqm	1 per 50sqm	2 or 3 per dwelling
Spaces	114	35	28	67	62	53	600 to 900
<i>Disabled Car Parking Spaces</i>							
Standards	3 bays or 6%			1 per disabled employee or 5%			N/A
Spaces	7	2	2	3	3	3	N/A

Figure 3.1 – Recommended Regular and Disabled Car Parking Provision on Site

- 3.5.6 The above car parking guidance will be considered in detail as part of any future reserved matters applications, should the outline proposals be granted planning consent.

Servicing Parking

- 3.5.7 Servicing provision for the various types of land uses within the development site are also shown within the 6C's Design Guide. **Table 3.2** shows the recommended minimum spaces for this purpose.

Land Use >	A1	A3	A4	B1	B2	B8	C3
Standards	1 per 750sqm	1	1	1 per 500sqm	1 per 400sqm	1 per 400sqm	N/A
Spaces	2	1	1	4	10	20	N/A

Figure 3.2 – Recommended Servicing Parking Provision on Site

- 3.5.8 The above servicing parking guidance will be considered in detail as part of any future reserved matters applications, should the outline proposals be granted planning consent.

Cycle Parking

- 3.5.9 With regards to cycle parking provision, the 6C's Design Guide also includes the normal minimum requirements for the land uses on site. **Table 3.3** below includes these standards and the provision to be installed on site per land use.

Land Use >	A1	A3	A4	B1	B2	B8	C3
Standards	1 per 500sqm for staff and 1 per 1,000 for customers			1 per 400sqm for staff, case-by-case for customers			1
Spaces	5	2	2	5	10	20	300

Figure 3.3 – Recommended Cycle Parking Provision on Site

- 3.5.10 The above cycle parking guidance will be considered in detail as part of any future reserved matters applications, should the outline proposals be granted planning consent.

4.0 Accessibility by Sustainable Modes of Travel

4.1 Introduction

4.1.1 A key element of national, regional and local policy is to ensure that new developments are located in areas where alternative modes of travel are available. It is important to ensure that developments are not isolated but are located close to complementary land uses. This supports the aims of integrating planning and transport, providing more sustainable transport choices, and reducing overall travel and car use.

4.1.2 The accessibility of the proposed development is considered in this context for the following modes of travel:

- Pedestrian Accessibility;
- Accessibility by Cycle; and
- Accessibility by Public Transport.

4.2 Pedestrian Accessibility

4.2.1 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution for Highways and Transportation (CIHT) document entitled '*Providing for Journeys on Foot*' suggests walking distances which are relevant to this planning application. These are reproduced in **Table 4.1**.

	Town Centres (m)	Commuting/School/ Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

Table 4.1 – CIHT Suggested Acceptable Walking Distances

4.2.2 To assist in summarising the accessibility of the site by foot, indicative pedestrian catchment plans have been produced for the different sectors of the development. **Plans 67895-CUR-00-XX-DR-TP-06002-P01, 012-P01, 022-P01 and 032-P01** in **Appendix A** show distances of 500m, 1,000m and 2,000m which are termed '*Desirable*', '*Acceptable*' and the '*Preferred Maximum*' by the CIHT for commuting trips, from the centre of the Phase 1 site, the northern and the southern residential sectors of Phase 2 and the employment and retail area of Phase 2 respectively.

4.2.3 **Plan 067895_002** shows that the 500m catchment from the centre of the Phase 1 site includes principally the development site and the adjacent residential units along Moira Road and Occupation

Lane and other minor roads to the north, east and south. Tyre and motorcycle dealers and a media business can also be found within this range.

- 4.2.4 Within a 1km walk from the site, the A511 section between the junctions with Box Close and Station Road, (including the Clock roundabout) can be reached, which has a number of amenities including a petrol station, a library, pubs and restaurants, hairdressers, a car service centre, a supermarket, schools and nurseries, a religious building, a post office, as well as other shops. The closest bus stops to site, around the Clock roundabout, are therefore included within this range.
- 4.2.5 Road sections of Moira Road to the north east and south west of the development are also within 1km from the site, where additional education facilities, another religious building, sports and play areas and a pet shop are available. Car dealers and office and roof suppliers' business along Occupation Lane can also be found within this catchment, as well as additional residential units and a beauty salon along Hepworth Road.
- 4.2.6 Phase 2 of the development site and the PRoW paths that currently pass through the northern areas of this site are also within 1km from the centre of the Phase 1 site.
- 4.2.7 The 2km isochrone reaches the Granville Academy to the north, residential areas to the north east, the A511 Ashby Road / Beech Drive junction to the east, industrial units and further residential areas to the south west and south, a forest area and Albert Village to the south east, industrial areas to the west and the Swadlincote Woodlands and Park to the north west.
- 4.2.8 Further amenities for residents are included within this area, including a medical centre and care home on the A511 Burton Road, additional pubs, restaurants and shops on the A511 Ashby Road, educational facilities in Albert Village and DIY, florist and convenience stores, a gym and the Swadlincote Snowsports Centre along the A514 Swadlincote Road.
- 4.2.9 **Drawing 67895-CUR-00-XX-DR-TP-06012-P01** shows that the Phase 2 southern residential units would have the employment and retail units also part of Phase 2 and the residential units on Phase 1, Moira Road and Occupation Lane less than 500m away.
- 4.2.10 Residents can walk 1km to reach the Clock roundabout and the A511 Ashby Road, as well as sections of Moira Road, Hepworth Road and Occupation Lane, including the amenities described in **paragraphs 4.2.4 and 4.2.5**.
- 4.2.11 The 2km catchment would cover practically the same areas as the Phase 1 catchment, including the amenities described in **paragraphs 4.2.7 and 4.2.8** although as Phase 2 is closer to Swadlincote Town Centre, residents could access a wider offer of amenities through a 2km walk, including the supermarkets, café and restaurants, cinema halls and other shops at the Hepworth Retail Park and banks, shops and chemists along High Street.

- 4.2.12 **Drawing 67895-CUR-00-XX-DR-TP-06022-P01** shows that the Phase 2 northern residential units would have the remaining residential units and the employment and retail units of Phase 2 less than 500m away.
- 4.2.13 In this instance, the 1km walk catchment encompasses the residences between Moira Road, Occupation Lane and Hepworth Road, the commercial units along the latter, the industrial area to the north of the development site, the A514 section between the Morrisons petrol station and the Frederick Street junction and part of the Swadlincote Woodlands and Park.
- 4.2.14 The A511 and its associated amenities fall within the 2km isochrone, which also includes further areas of Swadlincote as the Hepworth Retail Park, Swadlincote town centre, Salts Meadow or the Eureka Park, which have additional amenities around.
- 4.2.15 Meanwhile, **Drawing 67895-CUR-00-XX-DR-TP-06032-P01** shows that the commercial units of the development would have potential employees and customers from the residential units from Phase 2 less than 500m away, from the Phase 1 units and the residences between Moira Road, Occupation Lane and Hepworth Road and around the Occupation Lane / Mushroom Lane less than 1km, and from Church Gresley, Swadlincote town centre, and the residential roads feeding the A511 and the A514 at 2km or less.

Pedestrian Accessibility Summary

- 4.2.16 The surrounding roads have footways available for pedestrian use, and the carriageways are well lit. Furthermore, there are a variety of informal and signalised crossings along adjacent roads such as Moira Road, Occupation Lane, etc. All crossings and junctions include lowered kerbs and tactile paving. This provides a safer environment for pedestrians and it is therefore considered that users, staff and other visitors could walk to the site.

4.3 Accessibility by Cycle

- 4.3.1 In order to assist in assessing the accessibility of the site by cycle, **Drawings 67895-CUR-00-XX-DR-TP-06003-P01, 013-P01, 023-P01 and 033-P01** in **Appendix A** presents an 8km cycle catchment for Phase 1 site, the northern and the southern residential sectors of Phase 2 and the employment and retail area of Phase 2 respectively.
- 4.3.2 The 8km cycling distance refers to a recommendation by Cycling England in the document 'Integrating Cycling into Development Proposals' (2009).
- 4.3.3 In the four plans, the catchment extends as far as Foremark Reservoir in the north, Ashby-de-la-Zouch to the east, Measham, Donisthorpe and Oakthorpe in the south, Linton in the west and Winhill and Stapenhill to the north west. This area encompasses the entire settlement of Swadlincote.

- 4.3.4 There are examples of off-road provision along Occupation Lane, which would be supplemented by a 3m shared pedestrian/cycle way along the Regeneration Link Road.
- 4.3.5 As shown by **Figure 4.1**, the nearest off-road cycle routes are just north of Overseal, around Castle Gresley. Given the distance of these cycle routes from the development site, cyclists should make use of the road network in the local vicinity of the site – the new link road will feature a designated cycle lane.
- 4.3.6 As for regional cycle routes, there are both off road and on-road cycling routes established by the DCC. They connect Swadlincote with Burton-upon-Trent to the west and Derby to the north via the National Cycling Network (NCN) - routes 54, 68 and 548.

Cycle Accessibility Summary

- 4.3.7 There is existing cycle infrastructure/recommended routes within the vicinity of the site. It is therefore considered residents, employees and visitors could travel to and from the development by cycle.

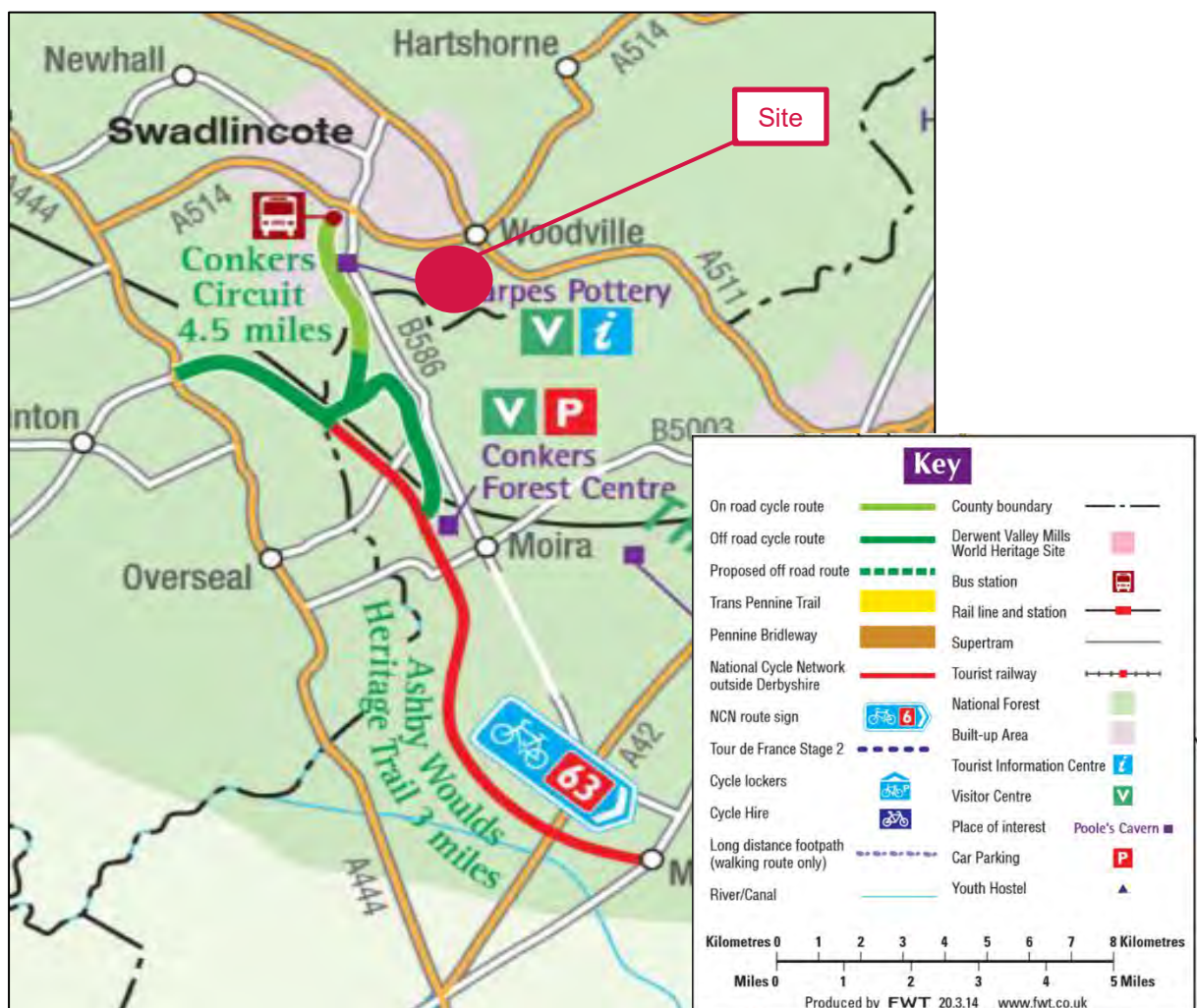


Figure 4.1 – Cycle Routes around the Development Site

4.4 Accessibility by Public Transport

4.4.1 Drawings 67895-CUR-00-XX-DR-TP-06004-P01, 014-P01, 024-P01 and 034-P01 in Appendix A demonstrates those areas accessible via public transport within 15, 30, 45 and 60-minute journey from the site. Accessibility by bus and rail are considered in further detail within the subsections below.

Bus Accessibility

4.4.2 Guidance from the Chartered Institution of Highways and Transportation (CIHT) document 'Guidelines for Planning for Public Transport in Development' indicates that ideally, a bus stop should be located within 400m from a new development.

4.4.3 Whilst there is no bus stops within this range, there is a number of bus stops still relatively close to Phase 1 site, around 800 from its centre, which are located along the A511 and A514 around the Clock roundabout. These stops are usually provided with a flag and a timetable board, with some of them also having a shelter and seating facilities.



Figure 4.2 – Local Bus Routes Through Woodville and Swadlincote

- 4.4.4 With regards to the Phase 2 residential and commercial units, once the Regeneration Link Road is completed, the bus stops around the A514 Swadlincote Road / Woodhouse Street junction would be around 700m to 1,000m from the different elements of the development. These stops are provided with a flag, a timetable board and raised kerbs to help passengers to board or alight the vehicles. In addition, the westbound stop has also a shelter and seating facilities.
- 4.4.5 The stops around the Clock roundabout would be at approximately 900m to 1,200m from Phase 2 units.
- 4.4.6 **Figure 4.2** on the previous page, shows the bus stops around the development site, while **Table 4.2** details the services available at the stops describe in previous paragraphs and their associated frequencies:

Bus Service	Route	Peak Hourly Frequency		
		Mon – Fri	Sat	Sun/Hols
2	Derby - Chellaston - Melbourne - Swadlincote	1h	1h	1h
4	Burton - Stanton - Newhall - Swadlincote - Midway	30min	1h	None
8 / 8H	Swadlincote - Burton - Queens Hospital	30min	1h	1h
9	Burton - Swadlincote - Ashby	1h	1h	None
29 / 29A	Burton - Swadlincote - Coalville - Leicester	30min	30min	No stop in Woodville (but once per hour in Swadlincote)

Table 4.2 – Summary of Bus Service Frequencies

- 4.4.7 **Table 4.2** demonstrates that there are a number of existing bus services around 800 to 1,200m to the development site during peak and off-peak times. The frequencies are considered suitable for a settlement comparable to Woodville, and the variety of service gives residents, employees and visitors of the development site the opportunity to travel by bus to multiple destinations in Derbyshire.
- 4.4.8 These five services offer combined frequencies of 10min and 20min to Swadlincote Bus Station and Burton-upon-Trent respectively, which is considered to be attractive for potential users.
- 4.4.9 Additionally, these bus services stop at key transport facilities such as Swadlincote Bus Station, Derby Bus Station, Leicester Bus Station and Burton-upon-Trent Bus and Rail Stations. Therefore, buses can be used as part of longer multi-modal trip to and from the development.
- 4.4.10 There are two bus stops on the A514, around the junction with Rose Hill, where a daily National Express coach service to London (8:10) and Derby (22:00) can be caught.

Bus Accessibility Summary

- 4.4.11 In conclusion, it is considered that the existing bus services are able to provide access to the proposed development site for some prospective users, as the frequency of services to Swadlincote Bus Station and Burton-upon-Trent is 10min and 20min respectively and the closest stops to site are between 800m to 1,200m away from the different elements of the development.

Rail Accessibility

- 4.4.12 The nearest train station is Burton-upon-Trent, located approximately 10km to the north-west of the site. It is classified by DfT as a 'D' station (Medium-staffed) and is managed by West Midlands Trains, although services stopping at this station are operated by Cross-country.
- 4.4.13 Services are available to Birmingham and Nottingham (every 30 minutes on weekdays), to Cardiff central (every hour) and to Bristol Temple Meads, Plymouth, Leeds, Newcastle and Edinburgh Waverley (every two hours).

Rail Accessibility Summary

- 4.4.14 The train station is accessible as part of a multi-modal journey from the proposed development site and provides future residents, employees and visitors the ability to travel to and from other areas in the region.

4.5 Summary

- 4.5.1 The National Planning Policy Framework (NPPF) supports a presumption in favour of sustainable development. Paragraph 103 of the NPPF indicates that:

"Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health."

- 4.5.2 The existing and proposed pedestrian and cycle infrastructure is high, and routes to different areas within Woodville, Swadlincote and Derbyshire are accessible a very short distance from the site.
- 4.5.3 It has been shown that there are bus services available around 800 to 1,200m to the development site. Additionally, these services stop at key regional transport nodes where other bus or rail services can be taken.
- 4.5.4 In conclusion the site is accessible by a variety of sustainable modes of transport, and can be considered a suitable location for the proposed development use.

5.0 Traffic Forecasting

5.1 Introduction

- 5.1.1 This section of the report details the methodology used to predict the demand associated with the proposed development and derive future year traffic flows in order to test the impact of the proposed development.
- 5.1.2 The site is currently vacant and does not generate any vehicular trips. Therefore, all the forecasted trips will be new to the surrounding highway network.

5.2 Baseline Data Collection

Moir Road ATC

- 5.2.1 As the proposed access point for the Phase 1 of the development site would be located on Moira Road, two Automatic Traffic Count (ATC) surveys were installed approximately 50m to the north east and to 50m to the south west of the proposed location, in order to calculate the current traffic flows and vehicular speeds through this road section, which are useful to establish the geometrical design parameters of the new access junction.
- 5.2.2 The ATC equipment was installed and in operation for a whole week commencing on Friday the 18th of May 2019.
- 5.2.3 The information was collected in hourly intervals and vehicles were classified into 13 classes, which can be grouped into 4 categories. Class 1 corresponds to cars and LGV, class 12 to buses and coaches, classes 2,3,5,6 and 7 to OGV1 and classes 4,8,9,10,11 and 13 to OGV2. The results are presented in the tables below:

Traffic Flows	Weekdays; Average Daily Vehicles	Mon-Sun; Average Daily Vehicles	Weekdays; AM Peak Vehicles	Weekdays; PM Peak Vehicles	Average Speed	85 th Percentile Speed
Northbound	2865	2651	209	276	31.7mph	37.4mph
Southbound	2450	2203	145	184	33.0mph	39.2mph

Table 5.1 – ATC Results for the Northern Survey

Traffic Flows	Weekdays; Average Daily Vehicles	Mon-Sun; Average Daily Vehicles	Weekdays; AM Peak Vehicles	Weekdays; PM Peak Vehicles	Average Speed	85 th Percentile Speed
Northbound	2869	2652	213	279	35.7mph	41.0mph
Southbound	2306	2206	142	182	36.9mph	41.8mph

Table 5.2 – ATC Results for the Southern Survey

- 5.2.4 **Tables 5.1** and **5.2** show that on average, the northbound lane registers more vehicles than the southern lane for either peak period, while in both cases the traffic levels are higher during the PM peak.
- 5.2.5 Additionally, the average and the 85th percentile shows a difference between of 5-6mph between both surveying locations, presumed to be a result of the 30mph to 40mph speed limit change.

Classified Traffic Counts for 7 Junctions

- 5.2.6 Traffic surveys were undertaken at all of the existing junctions between the hours of 07:00 – 10:00 and 16:00 – 19:00 on Tuesday 2nd July 2019, undertaken by a 3rd party and prior to the school holidays as agreed with DCC.
- 5.2.7 Fully classified traffic counts were undertaken using telescopically mounted video cameras to survey the junctions, from which recorded information was subsequently used to analyse and extract traffic flow, turn and queue length data.
- 5.2.8 The information was collected in 15-minute intervals and vehicles were classified into the following categories: Cars and taxis (CAR), Light Goods Vehicles (LGV), Other Goods Vehicle 1 and Other Goods Vehicle 2 (HGV), Public Service Vehicles (PSV) Motor Cycle (MCL) and Pedal Cycle (PCL).
- 5.2.9 Following analysis of the traffic survey data, it was determined that the AM peak period on the highway network occurred between 08:00 and 09:00, whilst the PM peak occurred between 17:00 and 18:00. These peak hours have therefore been used as the basis for this assessment.
- 5.2.10 **Figures 1** and **2** of **Appendix H** at the rear of the report show the observed traffic count data for the AM and PM peak periods.

5.3 Assessment Years and Traffic Growth

- 5.3.1 In order to undertake a robust assessment of the development impact considering background traffic growth, this report considers the application year plus two and five years (2021 and 2024) and any associated development traffic.
- 5.3.2 Growth factors have been obtained using the DfT's Trip End Model Presentation Programme (TEMPO) data for South Derbyshire Middle Super Output Areas 012 and 013. **Table 5.3** summarises the factors:

Scenario	South Derbyshire 2019-2021 Growth Factor	South Derbyshire 2019-2024 Growth Factor
AM Peak	1.0395	1.0827
PM Peak	1.0408	1.0847

Table 5.3 – Traffic Growth Factors

- 5.3.3 The factors listed have been applied to the 2019 Baseline traffic flows to derive the 2021 and 2024 Baseline (AM and PM peak) scenarios, which are shown on **Figure 22, 23, 38 and 39** of **Appendix H**.

5.4 Committed Developments

- 5.4.1 DCC Highways have requested that the proposed developments at Butt Lane and Broomy Farm have be considered as committed developments.
- 5.4.2 The Butt Lane site (c.91 dwellings) has been included within any future year scenarios as requested by DCC. However, the Broomy Farm site has not been included within the future year scenarios for the following reasons:
- The Broomy Lane development TA includes no assignment of development traffic to any junction other than The Clock Roundabout and Hepworth Road/High Street signals in the AM peak (34 and 21 vehicles respectively);
 - The Broomy Farm development TA includes no assignment of development traffic to any junction other than The Clock Roundabout in the PM peak (11 vehicles);
 - The Broomy Farm development would include a link road that effectively ‘by-passes’ The Clock Roundabout for movements between Hartshorne Road and Burton Road. It therefore assumes significant re-assignment of traffic away from The Clock Roundabout, and there would be an overall reduction in vehicle flows through the network assessed in this TA; and
 - The Broomy Farm development TA assumes a level of reassigned traffic from the A511/A514 to account for the installation of the Regeneration Link Road. To include this as well as the AECOM 25%/50% reassignment assumptions would result in an inaccurate double counting of this traffic reassignment.
- 5.4.3 By including the Butt Lane development flows and not including the Broomy Farm flows, the baseline traffic flows would be a worst-case scenario.

5.5 Trip Generation

- 5.5.1 In order to generate trip rates for the proposed residential development uses, the TRICS database was consulted.
- 5.5.2 TRICS is the industry recognised tool for calculating the anticipated future trip demand of a proposed development which has a vast database of traffic surveys of existing developments, across the UK and Ireland, sub categorised into particular land uses such as foodstore, restaurant, pub, residential, warehouse, industrial or office, which are those to be available on site.
- 5.5.3 For each of the seven proposed land uses on site, the average workday AM and PM peak trip rates of edge of town and ‘suburban location sites across the United Kingdom (excluding Northern Ireland and Greater London) have been used.

5.5.4 **Table 5.4** shows the AM and PM peak trip rates and the associated trip generation for the development site. These figures have been discussed with DCC during scoping. Full outputs from the TRICS assessments can be found in **Appendix F** at the rear of this report:

Phase	Land Use / Units	Average TRICS Trip Rates					
		AM Peak			PM Peak		
		Arrive	Depart	Total	Arrive	Depart	Total
	C3 Residential	0.127	0.367	0.494	0.330	0.142	0.472
1	75 units	10	28	37	25	11	35
2	225 units	29	83	111	74	32	106
	B1 Office	1.518	0.110	1.628	0.080	1.334	1.414
2	2000 sqm	30	2	33	2	27	28
	B2 Industrial Unit	0.242	0.054	0.296	0.064	0.176	0.252
2	4000 sqm	10	2	12	3	7	10
	B8 Warehouse	0.152	0.083	0.235	0.050	0.125	0.175
2	8000 sqm	12	7	19	4	10	14
	A1 Foodstore (50%)	2.22	1.725	3.945	3.843	3.953	7.796
2	1600 sqm	18	14	32	31	32	62
	A3 Restaurant (50%)	0.000	0.000	0.000	5.993	1.884	7.877
2	700 sqm	0	0	0	21	7	28
	A4 Pub (50%)	0.000	0.000	0.000	3.540	2.020	5.560
2	550 sqm	0	0	0	10	6	15
Totals							
1	Subtotal Phase	10	28	37	25	11	35
2	Subtotal Residential	29	83	111	74	32	106
2	Subtotal B1+B2+B8	52	11	63	8	44	52
2	Subtotal A1+A3+A4	18	14	32	61	44	105
2	Subtotal Phase	99	107	206	144	119	264
1 + 2	Total All Phases	108	135	243	169	130	299

Table 5.4 – TRICS Development Trip Rates and Trip Generation

5.5.5 The above figures have been used to inform all relevant traffic figures and undertake capacity assessments in **Section 6** of this Transport Assessment.

5.5.6 **Table 5.4** demonstrates that the proposed development is anticipated to generate in the region of 243 and 299 two-way trips in the AM and PM peak hour periods respectively.

5.5.7 A 50% reduction for non-primary (pass-by/diverted/linked) trips has already been applied to the retail uses in **Table 5.4**. This is considered a robust approach as some people may use these facilities on their way to or from the employment/residential areas of the site and therefore, they are not generating a 'new' vehicular trip.

5.5.8 No Saturday assessments are envisaged. The worst-case assessment of the surrounding highway network is throughout the week, when the residential uses and background traffic is at its peak.

5.6 Development Trip Distribution and Route Assignment

5.6.1 The forecasted development trips have been assigned and distributed using Origin-Destination ('Journey to Work') data from the 2011 Census.

5.6.2 For the residential trips, the origin points were set at the MSOA including the development site (South Derbyshire 007) and the three MSOAs adjacent (South Derbyshire 012, South Derbyshire 013 and North West Leicestershire 008). Data was then obtained for workers who travel to their workplaces within the four aforementioned MSOAs driving a car from the following areas:

- The 12 MSOAs within the boundaries of South Derbyshire;
- The 13 MSOAs within North-West Leicestershire;
- The 15 MSOAs within East Staffordshire; and
- The rest of the Local Unitary Authorities and Districts of Great Britain.

5.6.3 For the employment and retail trips, the origin points were set at all the MSOAs within South Derbyshire, North-West Leicestershire, East Staffordshire and the rest of the Local Unitary Authorities and Districts of Great Britain, while the MSOA including the development site (South Derbyshire 007) and the three MSOAs adjacent (South Derbyshire 012, South Derbyshire 013 and North West Leicestershire 008) were set as the destination for those trips.

5.6.4 To determine how the traffic will distribute across the surrounding network, the most attractive routes between the centre of the development site and the centre of each of the origin (residential) and destination (employment and retail) MSOAs, districts or unitary authorities during the traditional peak hour have been calculated using the 'Google Maps' journey planning software.

5.6.5 MSOAs, districts and unitary authorities have been arranged in nine groups (named from A to I) according to their location and then subdivided according to the routes that would be potentially used by vehicles travelling to/from them (e.g. B1 and B2, E1 and E2, etc.).

5.6.6 As some of the destinations had similar travel times and distances to/from the site across two different routes (as Origin/Destinations named B and E) equal assignment has been made in these cases. With regards to Origin/Destinations D, H and I, the split is more detailed, while for Origin/Destinations G (local), vehicular trips have been assumed to travel to/from the business units along the A514 section between the Clock roundabout and the junction with Woodhouse Street.

5.6.7 MSOAs South Derbyshire 011 and 012 have been assigned to different Origin/Destination groups for residential and employment and retail trips as the dwellings and industrial and commercial areas within these MSOAs would be accessed from the site via different routes.

5.6.8 **Appendix G** at the rear of this report shows the full Origin-Destination ('Journey to Work') data from the 2011 Census, including also the Origin/Destination groups, subgroups and route assigned to the vehicular trips to/from each MSOA, District or Unitary authority. The route assignment and trip distribution of the development trips have been agreed with DCC during scoping discussions.

5.6.9 **Table 5.5** shows a summary of this data, including only the percentage of residential and employment and retail development trips travelling to each destination:

Origin/Destination	Geographical Orientation	Percentage of Residential Car Trips	Percentage of Employment Car Trips
A	East	26.2%	14.9%
B1	North	3.7%	6.5%
B2	North	3.7%	6.5%
C	South	10.7%	4.7%
D1	West	13.0%	9.5%
D2	West	13.0%	9.5%
E1	North	3.8%	3.0%
E2	North	3.8%	3.0%
F	South	5.6%	10.5%
G (local)	A514	2.2%	8.0%
H1	West	2.3%	2.1%
H2	West	7.0%	6.2%
H3	West	1.6%	0.3%
I1	West	2.6%	11.7%
I2	West	0.9%	3.9%
Total	All	100%	100%

Table 5.5 – Employment Development Trips Route Assignment

5.6.10 **Table 5.5** provides a summary of the development traffic route assignments. The routing is illustrated in **Figures 10, 13, 16 and 19** in **Appendix H**, and the proposed development traffic has been assigned in **Figures 11, 12, 14, 15, 17, 18, 20 and 21**, also in **Appendix H**.

6.0 Highway Impact

6.1 Introduction

- 6.1.1 The forecasted trip generation of the proposed land uses on site, as well as the predicted traffic growth in two and five years, have been used to test impact of the proposed development onto the surrounding highway network.
- 6.1.2 The impact of the construction of Phase 2 of the Regeneration Link, connecting Moira Road with the A514, would also be taken into considerations within this assessment.

6.2 Scope of Assessment

- 6.2.1 Scoping studies have been undertaken with DCC and it was agreed the following junctions around the development site would require to be modelled as part of this Transport Assessment (with the modelling software used for each junction also included):
- The Clock Roundabout – ARCADY;
 - Hepworth Rd/Ashby Rd/High St Signalised Junction – LinSig;
 - Hepworth Rd/Forest Rd Roundabout – ARCADY;
 - Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads – PICADY;
 - Moira Rd/Hepworth Rd Roundabout – ARCADY;
 - Moira Rd Phase 1 Access Rd – PICADY;
 - Occupation Ln/Hepworth Rd/Regeneration Link Roundabout – ARCADY;
 - Regeneration Link Phase 2 Access Roundabouts (North and South) – ARCADY; and
 - Swadlincote Rd/Regeneration Link/Derby Rd Proposed Roundabout – ARCADY.
- 6.2.2 The development scenarios to be modelled are:
- 2021 Baseline (2019 + Background Growth);
 - 2021 with Development Phases 1+2 (2021 Baseline + Phase 2 Development Trips);
 - 2024 Baseline (2019 + Background Growth); and
 - 2024 with Development Phases 1+2 (2024 Baseline + Phase 2 Development Trips);
- 6.2.3 The Clock Roundabout has also been modelled for 2019 scenarios to quantify the benefit of the Regeneration Link Road in terms of traffic reassignment from the A514/A511 corridor.
- 6.2.4 Two alternatives have been modelled for the 'with Development Phases 1+2' scenarios, one assuming that the Regeneration Link when completed would reassign 25% of the A511-A514 traffic from The Clock roundabout, and the other assuming this would be 50% (in accordance with the approved Regeneration Link Road TA).

6.3 Methodology

- 6.3.1 The junctions have been modelled using software widely accepted in the sector for signalised junctions (LinSig), roundabouts (ARCADY-Junctions 8), priority junctions (PICADY-Junctions 8). Full modelling outputs are shown in **Appendix J** at the rear of this report.

LINSIG

- 6.3.2 The signal-controlled junction under consideration has been assessed using LinSig. LinSig results refer to the Degree of Saturation (DoS) and Mean Maximum Queue (MMQ) predicted in each lane of the junction. A DoS of 100% indicates that the lane in question is operating at its theoretical capacity (point of saturation), whilst a DoS of 90% or less indicates that the lane is operating within its Practical Reserve Capacity.

ARCADY and PICADY

- 6.3.3 ARCADY and PICADY are included in the Junctions 8 modelling package. Results refer to the Ratio of Flow to Capacity (RFC) and queue length predicted on each arm of the junction. An RFC of 1.00 indicates that the arm in question is operating at its theoretical capacity, whilst an RFC of 0.85 or less indicates that the arm is operating within its practical capacity.

6.4 Junction Modelling Results

Junction 1: The Clock Roundabout

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2019 Base No Reg Link								
1 - Burton Rd	49.06	257.00	1.15	F	48.18	252.78	1.15	F
2 - Hartshorne Rd	1.10	9.96	0.53	A	1.15	9.43	0.54	A
3 - Ashby Rd	2.57	12.14	0.72	B	6.29	26.26	0.88	D
4 - Moira Rd	0.46	5.35	0.31	A	0.53	6.24	0.35	A
5 - Swadlincote Rd	5.06	36.67	0.85	E	6.25	44.27	0.88	E
A1 - 2021 Base Reg Link 25%								
1 - Burton Rd	50.69	254.62	1.15	F	58.88	306.92	1.18	F
2 - Hartshorne Rd	1.11	9.73	0.53	A	1.20	9.47	0.55	A
3 - Ashby Rd	2.16	10.80	0.69	B	4.05	18.07	0.81	C
4 - Moira Rd	0.46	5.26	0.32	A	0.53	5.98	0.35	A
5 - Swadlincote Rd	3.14	25.43	0.77	D	4.80	36.32	0.84	E
A1 - 2021 Base Reg Link 25% with Dev								
1 - Burton Rd	57.25	291.85	1.17	F	67.25	366.60	1.21	F
2 - Hartshorne Rd	1.15	9.90	0.54	A	1.28	9.80	0.56	A
3 - Ashby Rd	2.20	11.03	0.69	B	4.28	19.15	0.82	C
4 - Moira Rd	0.49	5.39	0.33	A	0.55	6.12	0.36	A
5 - Swadlincote Rd	3.59	28.52	0.79	D	5.89	43.49	0.88	E

A1 - 2021 Base Reg Link 50%								
1 - Burton Rd	34.41	174.03	1.08	F	47.05	233.62	1.13	F
2 - Hartshorne Rd	1.04	9.06	0.51	A	1.14	9.01	0.54	A
3 - Ashby Rd	1.52	8.64	0.61	A	1.02	7.07	0.51	A
4 - Moira Rd	0.43	4.90	0.30	A	0.41	4.56	0.29	A
5 - Swadlincote Rd	1.64	15.95	0.63	C	1.79	14.74	0.65	B
A1 - 2021 Base Reg Link 50% with Dev								
1 - Burton Rd	40.24	199.44	1.10	F	54.85	269.90	1.16	F
2 - Hartshorne Rd	1.08	9.22	0.52	A	1.21	9.32	0.55	A
3 - Ashby Rd	1.55	8.80	0.61	A	2.35	12.00	0.71	B
4 - Moira Rd	0.46	5.01	0.31	A	0.50	5.48	0.33	A
5 - Swadlincote Rd	1.81	17.16	0.65	C	3.22	26.20	0.77	D
A1 - 2024 Base Reg Link 25%								
1 - Burton Rd	71.38	388.92	1.22	F	79.16	452.91	1.25	F
2 - Hartshorne Rd	1.24	10.34	0.56	B	1.32	10.02	0.57	B
3 - Ashby Rd	2.55	12.30	0.72	B	5.40	23.35	0.85	C
4 - Moira Rd	0.52	5.60	0.34	A	0.60	6.46	0.38	A
5 - Swadlincote Rd	4.27	33.65	0.82	D	7.41	54.14	0.91	F
A1 - 2024 Base Reg Link 25% with Dev								
1 - Burton Rd	78.71	441.67	1.25	F	88.96	524.94	1.28	F
2 - Hartshorne Rd	1.28	10.49	0.56	B	1.41	10.39	0.59	B
3 - Ashby Rd	2.61	12.58	0.73	B	5.81	25.20	0.86	D
4 - Moira Rd	0.54	5.74	0.35	A	0.62	6.61	0.38	A
5 - Swadlincote Rd	5.08	39.31	0.85	E	9.38	66.22	0.94	F
A1 - 2024 Base Reg Link 50%								
1 - Burton Rd	52.53	252.26	1.14	F	65.98	345.18	1.20	F
2 - Hartshorne Rd	1.15	9.59	0.54	A	1.26	9.50	0.56	A
3 - Ashby Rd	1.74	9.48	0.64	A	2.71	13.28	0.74	B
4 - Moira Rd	0.48	5.18	0.32	A	0.53	5.72	0.35	A
5 - Swadlincote Rd	1.99	18.71	0.67	C	3.70	30.01	0.80	D
A1 - 2024 Base Reg Link 50% with Dev								
1 - Burton Rd	59.44	293.80	1.17	F	75.68	411.36	1.23	F
2 - Hartshorne Rd	1.18	9.73	0.55	A	1.34	9.84	0.58	A
3 - Ashby Rd	1.77	9.65	0.64	A	2.83	13.90	0.74	B
4 - Moira Rd	0.50	5.30	0.34	A	0.55	5.83	0.36	A
5 - Swadlincote Rd	2.25	20.49	0.70	C	4.37	34.64	0.83	D

Table 6.1 – Junction 1 Capacity Assessment Results

- 6.4.1 The 2019 base scenario has been modelled at The Clock Roundabout junction in **Table 6.1** above to demonstrate, under existing conditions, that the junction is operates at/over capacity. The junction is forecast to operate at its practical capacity in all scenarios on the Burton Road arm, and approaches its practical capacity on the Ashby Road and Swadlincote Road arms.
- 6.4.2 The impact of the Regeneration Link Road is forecast to make significant improvements to the operation of the Ashby Road and Swadlincote Road arms in the future year scenarios. This is despite the addition of significant TEMPro traffic growth factors and committed development traffic. The net impact in terms of vehicle trips through the whole junction is as follows:

- 25% A514/511 reassignment AM/PM: -153/-155
- 50% A514/A511 reassignment AM/PM: -305/-311
- Development trips through the whole junction: +46/+68

- 6.4.3 Following the introduction of the Regeneration Link Road and development traffic to The Clock Roundabout, there would be a net reduction in vehicles passing through the junction. This reduction is expected to be in the region of 107 – 259 vehicles in the AM peak period, and 87 – 243 vehicles in the PM peak (depending on the actual level of traffic reassigned from the A514/A511).
- 6.4.4 The proposed development does not have a 'severe' impact on the current operation of the junction.
- 6.4.5 Whilst there are increases in RFC values and associated queuing, the introduction of the Regeneration Link Road will mitigate any development impact by reassigning traffic from the A514/A511 corridor through the development site. The inflation of RFC/Queuing values from 2019 levels are considered to be associated with background traffic growth, and not the link road and development proposals.
- 6.4.6 Furthermore, as noted in **Section 5.4**, the Broomy Farm development would provide a link road between Burton Road and Hartshorne Road that would reassign a significant number of vehicles away from the junction. This has not been accounted for within these assessments, and would further reduce the number of vehicles through the junction (and significantly improve the operation of Burton Road).

Junction 2: Hepworth Rd/Ashby Rd/High St Signalised Junction

Arm		AM Peak		PM Peak	
		DoS	MMQ	DoS	MMQ
2021 Base Reg Link 25%					
1/2 + 1/1	Ashby Rd IN Left Ahead	69.7%	12	81.4%	18
2/1	Hepworth Road IN Right Left	87.2%	16	82.5%	11
3/1	High Street IN Ahead Right	87.1%	18	50.2%	9
2021 Base Reg Link 25% with Dev					
1/2 + 1/1	Ashby Rd IN Left Ahead	72.6%	13	85.1%	20
2/1	Hepworth Road IN Right Left	89.6%	18	84.2%	12
3/1	High Street IN Ahead Right	89.9%	19	51.4%	9
2021 Base Reg Link 50%					
1/2 + 1/1	Ashby Rd IN Left Ahead	72.1%	11	83.4%	17
2/1	Hepworth Road IN Right Left	88.6%	18	80.7%	12
3/1	High Street IN Ahead Right	87.8%	17	49.4%	8
2021 Base Reg Link 50% with Dev					
1/2 + 1/1	Ashby Rd IN Left Ahead	75.1%	12	87.4%	20
2/1	Hepworth Road IN Right Left	90.6%	20	85.1%	14
3/1	High Street IN Ahead Right	91.1%	18	49.4%	8

Arm		AM Peak		PM Peak	
		DoS	MMQ	DoS	MMQ
2024 Base Reg Link 25%					
1/2 + 1/1	Ashby Rd IN Left Ahead	72.8%	13	85.2%	20
2/1	Hepworth Road IN Right Left	90.9%	18	86.2%	12
3/1	High Street IN Ahead Right	90.9%	20	52.4%	9
2024 Base Reg Link 25% with Dev					
1/2 + 1/1	Ashby Rd IN Left Ahead	75.8%	14	88.8%	23
2/1	Hepworth Road IN Right Left	93.1%	20	87.7%	14
3/1	High Street IN Ahead Right	93.9%	22	53.7%	10
2024 Base Reg Link 50%					
1/2 + 1/1	Ashby Rd IN Left Ahead	75.4%	12	87.2%	20
2/1	Hepworth Road IN Right Left	92.4%	21	84.4%	13
3/1	High Street IN Ahead Right	91.6%	19	51.5%	9
2024 Base Reg Link 50% with Dev					
1/2 + 1/1	Ashby Rd IN Left Ahead	78.3%	14	91.2%	24
2/1	Hepworth Road IN Right Left	94.4%	23	88.8%	15
3/1	High Street IN Ahead Right	95.0%	21	51.5%	9

Table 6.2 – Junction 2 Capacity Assessment Results

- 6.4.7 The above **Table 6.2** demonstrates that the Hepworth Road/Ashby Road/High Street Signalised Junction is forecast to operate at its practical reserve capacity in the AM peak period at base levels (2021 and 2024 scenarios), following the reassignment of traffic from the A514/A511 corridor to the Regeneration Link Road. The junction also approaches its practical reserve capacity in the PM peak for the 2024 50% Regeneration Link scenario.
- 6.4.8 The junction continues to operate at/above its point of practical reserve capacity once the development traffic is reassigned in the AM peak, with a minor increase in DoS and associated queuing as a result of the proposed development traffic. The junction does not approach its theoretical capacity (100% DoS).
- 6.4.9 With regard to the PM peak, the junction continues to operate within its practical reserve capacity for all 2021 scenarios. There is a minor increase in DoS and associated queuing as a result of the proposed development traffic for the 2024. The junction does not approach its theoretical capacity (100% DoS).
- 6.4.10 It is not considered that the proposed development impact constitutes a 'severe' impact on the Hepworth Road/Ashby Road/High Street Signalised Junction.

Junction 3: Hepworth Rd/Forest Rd Roundabout – ARCADY

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
1 - Hepworth N	0.31	3.27	0.24	A	0.68	4.27	0.41	A
2 - Forest Rd	0.12	3.23	0.11	A	0.28	4.04	0.22	A
3 - Hepworth Rd W	0.74	4.58	0.43	A	0.50	3.91	0.33	A
A1 - 2021 Base Reg Link 25% with Dev								
1 - Hepworth N	0.33	3.34	0.25	A	0.77	4.48	0.44	A
2 - Forest Rd	0.12	3.27	0.11	A	0.29	4.15	0.22	A
3 - Hepworth Rd W	0.83	4.80	0.45	A	0.54	4.03	0.35	A
A1 - 2021 Base Reg Link 50%								
1 - Hepworth N	0.42	3.56	0.30	A	0.96	4.97	0.49	A
2 - Forest Rd	0.13	3.39	0.11	A	0.30	4.39	0.23	A
3 - Hepworth Rd W	0.95	5.15	0.49	A	0.60	4.18	0.38	A
A1 - 2021 Base Reg Link 50% with Dev								
1 - Hepworth N	0.45	3.64	0.31	A	1.07	5.26	0.52	A
2 - Forest Rd	0.13	3.44	0.12	A	0.31	4.52	0.24	A
3 - Hepworth Rd W	1.06	5.42	0.52	A	0.65	4.32	0.40	A
A1 - 2024 Base Reg Link 25%								
1 - Hepworth N	0.32	3.32	0.25	A	0.74	4.41	0.43	A
2 - Forest Rd	0.13	3.26	0.11	A	0.30	4.15	0.23	A
3 - Hepworth Rd W	0.80	4.74	0.45	A	0.53	4.01	0.35	A
A1 - 2024 Base Reg Link 25% with Dev								
1 - Hepworth N	0.35	3.39	0.26	A	0.83	4.64	0.45	A
2 - Forest Rd	0.13	3.30	0.11	A	0.31	4.27	0.23	A
3 - Hepworth Rd W	0.89	4.98	0.47	A	0.58	4.13	0.37	A
A1 - 2024 Base Reg Link 50%								
1 - Hepworth N	0.45	3.63	0.31	A	1.05	5.24	0.51	A
2 - Forest Rd	0.13	3.44	0.12	A	0.32	4.54	0.25	A
3 - Hepworth Rd W	1.04	5.38	0.51	A	0.66	4.35	0.40	A
A1 - 2024 Base Reg Link 50% with Dev								
1 - Hepworth N	0.48	3.71	0.33	A	1.17	5.52	0.54	A
2 - Forest Rd	0.14	3.48	0.12	A	0.33	4.68	0.25	A
3 - Hepworth Rd W	1.16	5.68	0.54	A	0.70	4.45	0.41	A

Table 6.3 – Junction 3 Capacity Assessment Results

6.4.11 The above **Table 6.3** demonstrates that the Hepworth Road/Forest Road Roundabout is forecast to operate with significant spare capacity in all scenarios.

Junction 4: Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads – PICADY;

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
Stream B-CD	0.27	15.74	0.21	C	0.75	44.97	0.44	E
Stream B-AD	0.84	22.54	0.46	C	3.06	68.04	0.78	F
Stream A-BCD	1.00	4.89	0.32	A	2.40	7.27	0.52	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.58	12.96	0.37	B	0.68	15.64	0.41	C
Stream D-BC	0.38	14.90	0.28	B	0.26	21.22	0.21	C
Stream C-ABD	0.01	5.89	0.01	A	0.02	4.59	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2021 Base Reg Link 25% with Dev								
Stream B-CD	0.32	16.65	0.25	C	1.18	62.95	0.57	F
Stream B-AD	0.93	23.97	0.49	C	3.74	82.09	0.82	F
Stream A-BCD	1.00	4.88	0.32	A	2.42	7.28	0.52	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.62	13.52	0.39	B	0.80	17.73	0.45	C
Stream D-BC	0.41	15.29	0.29	C	0.31	22.33	0.24	C
Stream C-ABD	0.01	5.90	0.01	A	0.02	4.60	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2021 Base Reg Link 50%								
Stream B-CD	0.27	15.74	0.21	C	0.75	44.97	0.44	E
Stream B-AD	0.84	22.54	0.46	C	3.06	68.04	0.78	F
Stream A-BCD	1.00	4.89	0.32	A	2.40	7.27	0.52	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.58	12.96	0.37	B	0.68	15.64	0.41	C
Stream D-BC	0.38	14.90	0.28	B	0.26	21.22	0.21	C
Stream C-ABD	0.01	5.89	0.01	A	0.02	4.59	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2021 Base Reg Link 50% with Dev								
Stream B-CD	0.32	16.65	0.25	C	1.18	62.95	0.57	F
Stream B-AD	0.93	23.97	0.49	C	3.74	82.09	0.82	F
Stream A-BCD	1.00	4.88	0.32	A	2.42	7.28	0.52	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.62	13.52	0.39	B	0.80	17.73	0.45	C
Stream D-BC	0.41	15.29	0.29	C	0.31	22.33	0.24	C
Stream C-ABD	0.01	5.90	0.01	A	0.02	4.60	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-

A1 - 2024 Base Reg Link 25%								
Stream B-CD	0.31	17.31	0.24	C	2.16	121.04	0.76	F
Stream B-AD	0.98	25.50	0.50	D	4.92	108.43	0.88	F
Stream A-BCD	1.13	4.99	0.34	A	3.03	8.12	0.58	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.66	14.03	0.40	B	0.81	17.86	0.45	C
Stream D-BC	0.43	15.95	0.30	C	0.31	24.11	0.24	C
Stream C-ABD	0.01	5.89	0.01	A	0.03	4.55	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2024 Base Reg Link 25% with Dev								
Stream B-CD	0.37	18.40	0.28	C	4.08	184.22	0.94	F
Stream B-AD	1.07	27.08	0.52	D	6.55	138.09	0.94	F
Stream A-BCD	1.14	4.99	0.34	A	3.07	8.15	0.58	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.70	14.61	0.42	B	0.97	20.65	0.50	C
Stream D-BC	0.45	16.35	0.31	C	0.37	25.80	0.28	D
Stream C-ABD	0.01	5.89	0.01	A	0.03	4.55	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2024 Base Reg Link 50%								
Stream B-CD	0.31	17.31	0.24	C	2.16	121.04	0.76	F
Stream B-AD	0.98	25.50	0.50	D	4.92	108.43	0.88	F
Stream A-BCD	1.13	4.99	0.34	A	3.03	8.12	0.58	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.66	14.03	0.40	B	0.81	17.86	0.45	C
Stream D-BC	0.43	15.95	0.30	C	0.31	24.11	0.24	C
Stream C-ABD	0.01	5.89	0.01	A	0.03	4.55	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-
A1 - 2024 Base Reg Link 50% with Dev								
Stream B-CD	0.37	18.40	0.28	C	4.08	184.22	0.94	F
Stream B-AD	1.07	27.08	0.52	D	6.55	138.09	0.94	F
Stream A-BCD	1.14	4.99	0.34	A	3.07	8.15	0.58	A
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
Stream D-AB	0.70	14.61	0.42	B	0.97	20.65	0.50	C
Stream D-BC	0.45	16.35	0.31	C	0.37	25.80	0.28	D
Stream C-ABD	0.01	5.89	0.01	A	0.03	4.55	0.02	A
Stream C-D	-	-	-	-	-	-	-	-
Stream C-A	-	-	-	-	-	-	-	-

Table 6.4 – Junction 4 Capacity Assessment Results

6.4.12 The above **Table 6.4** demonstrates that the Main Street/Occupation Lane/Mushroom Lane/Occupation Road Crossroads are forecast to operate with significant spare capacity in all AM peak scenarios.

- 6.4.13 The addition of background traffic growth in the PM peak results the junction being forecast to operate at/over the point of practical capacity along the Mushroom Lane arm, and the inclusion of development traffic adds to this impact.
- 6.4.14 Notwithstanding this, no junction arm will operate over its theoretical capacity at any scenario, and increases in queuing are minor as a result of the proposed development.
- 6.4.15 It is not considered that the proposed development impact constitutes a 'severe' impact on the Main Street/Occupation Lane/Mushroom Lane/Occupation Road Crossroads.

Junction 5: Moira Rd/Hepworth Rd Roundabout – ARCADY

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
1 - Moira Rd N	0.20	3.61	0.16	A	0.24	3.73	0.19	A
2 - Hepworth Rd E	0.40	2.91	0.29	A	0.53	3.10	0.35	A
3 - Moira Rd S	0.20	3.29	0.17	A	0.39	3.96	0.28	A
4 - Hepworth Rd W	0.45	2.67	0.31	A	0.42	2.72	0.30	A
A1 - 2021 Base Reg Link 25% with Dev								
1 - Moira Rd N	0.24	3.82	0.19	A	0.27	3.90	0.21	A
2 - Hepworth Rd E	0.44	3.03	0.30	A	0.59	3.27	0.37	A
3 - Moira Rd S	0.23	3.42	0.19	A	0.45	4.23	0.31	A
4 - Hepworth Rd W	0.51	2.79	0.34	A	0.49	2.86	0.33	A
A1 - 2021 Base Reg Link 50%								
1 - Moira Rd N	0.21	3.79	0.17	A	0.25	3.89	0.20	A
2 - Hepworth Rd E	0.51	3.13	0.34	A	0.70	3.45	0.41	A
3 - Moira Rd S	0.21	3.46	0.18	A	0.42	4.29	0.30	A
4 - Hepworth Rd W	0.54	2.83	0.35	A	0.49	2.85	0.33	A
A1 - 2021 Base Reg Link 50% with Dev								
1 - Moira Rd N	0.25	4.02	0.20	A	0.28	4.06	0.22	A
2 - Hepworth Rd E	0.55	3.27	0.36	A	0.79	3.67	0.44	A
3 - Moira Rd S	0.24	3.60	0.19	A	0.49	4.62	0.33	A
4 - Hepworth Rd W	0.61	2.97	0.38	A	0.57	3.01	0.36	A
A1 - 2024 Base Reg Link 25%								
1 - Moira Rd N	0.21	3.70	0.17	A	0.26	3.84	0.20	A
2 - Hepworth Rd E	0.43	2.99	0.30	A	0.57	3.19	0.36	A
3 - Moira Rd S	0.22	3.35	0.18	A	0.42	4.08	0.30	A
4 - Hepworth Rd W	0.48	2.74	0.33	A	0.45	2.80	0.31	A
A1 - 2024 Base Reg Link 25% with Dev								
1 - Moira Rd N	0.25	3.93	0.20	A	0.28	4.02	0.22	A
2 - Hepworth Rd E	0.47	3.12	0.32	A	0.64	3.38	0.39	A
3 - Moira Rd S	0.24	3.48	0.20	A	0.49	4.38	0.33	A
4 - Hepworth Rd W	0.55	2.87	0.36	A	0.53	2.95	0.35	A
A1 - 2024 Base Reg Link 50%								
1 - Moira Rd N	0.22	3.90	0.18	A	0.27	4.01	0.21	A
2 - Hepworth Rd E	0.55	3.22	0.35	A	0.76	3.59	0.43	A
3 - Moira Rd S	0.23	3.53	0.19	A	0.46	4.46	0.31	A
4 - Hepworth Rd W	0.58	2.93	0.37	A	0.53	2.95	0.35	A

A1 - 2024 Base Reg Link 50% with Dev								
1 - Moira Rd N	0.27	4.16	0.21	A	0.30	4.20	0.23	A
2 - Hepworth Rd E	0.59	3.37	0.37	A	0.86	3.83	0.46	A
3 - Moira Rd S	0.26	3.68	0.21	A	0.53	4.81	0.35	A
4 - Hepworth Rd W	0.66	3.08	0.40	A	0.61	3.12	0.38	A

Table 6.5 – Junction 5 Capacity Assessment Results

6.4.16 The above **Table 6.5** demonstrates that the Hepworth Road/Moira Road Roundabout is forecast to operate with significant spare capacity in all scenarios.

6: Moira Rd Phase 1 Access Rd – PICADY

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25% with Dev								
Stream B-AC	0.05	6.29	0.05	A	0.02	6.09	0.02	A
Stream C-AB	0.00	4.98	0.00	A	0.01	5.02	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2021 Base Reg Link 50% with Dev								
Stream B-AC	0.05	6.29	0.05	A	0.02	6.09	0.02	A
Stream C-AB	0.00	4.98	0.00	A	0.01	5.02	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2024 Base Reg Link 25% with Dev								
Stream B-AC	0.05	6.30	0.05	A	0.02	6.10	0.02	A
Stream C-AB	0.00	4.97	0.00	A	0.01	5.02	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
A1 - 2024 Base Reg Link 50% with Dev								
Stream B-AC	0.05	6.30	0.05	A	0.02	6.10	0.02	A
Stream C-AB	0.00	4.97	0.00	A	0.01	5.02	0.01	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Table 6.6 – Junction 6 Capacity Assessment Results

6.4.17 The above **Table 6.6** demonstrates that the Phase 1 Access from Moira Road Roundabout is forecast to operate with significant spare capacity in all scenarios.

6.4.18 On the basis that development traffic to the north and south of the access is relatively evenly distributed, with a maximum impact of 30 vehicles heading to/from the south in the AM peak, it is considered these results demonstrate that Phase 1 can be delivered without any mitigation measures.

7: Occupation Ln/Hepworth Rd/Regeneration Link Roundabout – ARCADY

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
Occupation Ln E	0.04	5.01	0.04	A	0.02	5.09	0.02	A
Hepworth Rd	0.16	2.18	0.14	A	0.23	2.32	0.19	A
Occupation Ln W	0.36	3.47	0.27	A	0.47	3.82	0.32	A
Regeneration Link	0.33	3.58	0.25	A	0.34	3.77	0.25	A
A1 - 2021 Base Reg Link 25% with Dev								
Occupation Ln E	0.04	5.24	0.04	A	0.02	5.36	0.02	A
Hepworth Rd	0.20	2.26	0.17	A	0.29	2.44	0.23	A
Occupation Ln W	0.39	3.61	0.28	A	0.52	4.06	0.34	A
Regeneration Link	0.42	3.83	0.30	A	0.45	4.08	0.31	A
A1 - 2021 Base Reg Link 50%								
Occupation Ln E	0.04	5.27	0.04	A	0.02	5.19	0.02	A
Hepworth Rd	0.23	2.30	0.19	A	0.33	2.49	0.25	A
Occupation Ln W	0.38	3.65	0.28	A	0.51	4.12	0.34	A
Regeneration Link	0.43	3.87	0.30	A	0.38	3.88	0.28	A
A1 - 2021 Base Reg Link 50% with Dev								
Occupation Ln E	0.05	5.53	0.04	A	0.02	5.46	0.02	A
Hepworth Rd	0.27	2.39	0.21	A	0.40	2.63	0.29	A
Occupation Ln W	0.41	3.80	0.29	A	0.56	4.41	0.36	A
Regeneration Link	0.54	4.16	0.35	A	0.49	4.20	0.33	A
A1 - 2024 Base Reg Link 25%								
Occupation Ln E	0.04	5.12	0.04	A	0.02	5.23	0.02	A
Hepworth Rd	0.17	2.20	0.15	A	0.25	2.35	0.20	A
Occupation Ln W	0.39	3.53	0.28	A	0.51	3.92	0.34	A
Regeneration Link	0.35	3.67	0.26	A	0.37	3.89	0.27	A
A1 - 2024 Base Reg Link 25% with Dev								
Occupation Ln E	0.05	5.38	0.04	A	0.02	5.51	0.02	A
Hepworth Rd	0.21	2.29	0.18	A	0.31	2.47	0.24	A
Occupation Ln W	0.41	3.68	0.29	A	0.56	4.18	0.36	A
Regeneration Link	0.45	3.94	0.31	A	0.48	4.21	0.32	A
A1 - 2024 Base Reg Link 50%								
Occupation Ln E	0.05	5.41	0.04	A	0.02	5.33	0.02	A
Hepworth Rd	0.24	2.32	0.19	A	0.35	2.53	0.26	A
Occupation Ln W	0.41	3.73	0.29	A	0.55	4.26	0.36	A
Regeneration Link	0.46	3.99	0.32	A	0.41	4.00	0.29	A
A1 - 2024 Base Reg Link 50% with Dev								
Occupation Ln E	0.05	5.69	0.05	A	0.02	5.63	0.02	A
Hepworth Rd	0.29	2.42	0.22	A	0.42	2.67	0.30	A
Occupation Ln W	0.44	3.89	0.30	A	0.61	4.56	0.38	A
Regeneration Link	0.58	4.30	0.37	A	0.53	4.35	0.35	A

Table 6.7 – Junction 7 Capacity Assessment Results

6.4.19 The above **Table 6.7** demonstrates that the Occupation Lane/Hepworth Road/Regeneration Link Roundabout is forecast to operate with significant spare capacity in all scenarios.

8: Regeneration Link Phase 2 Access Roundabout (North)

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
1 - Regeneration Link N	0.19	2.11	0.16	A	0.19	2.10	0.16	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.05	1.85	0.04	A	0.06	1.87	0.06	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2021 Base Reg Link 25% with Dev								
1 - Regeneration Link N	0.24	2.20	0.19	A	0.25	2.24	0.20	A
2 - Phase 2 Access E	0.04	3.49	0.04	A	0.02	3.43	0.02	A
3 - Regeneration Link S	0.08	1.94	0.07	A	0.10	1.97	0.09	A
4 - Phase 2 Access W	0.01	3.02	0.01	A	0.04	3.16	0.04	A
A1 - 2021 Base Reg Link 50%								
1 - Regeneration Link N	0.24	2.20	0.20	A	0.21	2.14	0.17	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.10	1.93	0.09	A	0.13	2.00	0.12	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2021 Base Reg Link 50% with Dev								
1 - Regeneration Link N	0.30	2.30	0.23	A	0.27	2.28	0.21	A
2 - Phase 2 Access E	0.04	3.63	0.04	A	0.02	3.48	0.02	A
3 - Regeneration Link S	0.13	2.03	0.12	A	0.18	2.11	0.15	A
4 - Phase 2 Access W	0.01	3.15	0.01	A	0.04	3.35	0.04	A
A1 - 2024 Base Reg Link 25%								
1 - Regeneration Link N	0.20	2.12	0.17	A	0.20	2.12	0.17	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.05	1.85	0.05	A	0.06	1.88	0.06	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2024 Base Reg Link 25% with Dev								
1 - Regeneration Link N	0.25	2.22	0.20	A	0.26	2.26	0.21	A
2 - Phase 2 Access E	0.04	3.52	0.04	A	0.02	3.46	0.02	A
3 - Regeneration Link S	0.08	1.94	0.08	A	0.11	1.98	0.10	A
4 - Phase 2 Access W	0.01	3.03	0.01	A	0.04	3.17	0.04	A
A1 - 2024 Base Reg Link 50%								
1 - Regeneration Link N	0.26	2.22	0.21	A	0.22	2.16	0.18	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.10	1.94	0.09	A	0.14	2.01	0.12	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2024 Base Reg Link 50% with Dev								
1 - Regeneration Link N	0.31	2.33	0.24	A	0.29	2.30	0.22	A
2 - Phase 2 Access E	0.04	3.67	0.04	A	0.02	3.51	0.02	A
3 - Regeneration Link S	0.14	2.04	0.12	A	0.19	2.12	0.16	A
4 - Phase 2 Access W	0.01	3.16	0.01	A	0.04	3.36	0.04	A

Table 6.8 – Junction 8 Capacity Assessment Results

6.4.20 The above **Table 6.8** demonstrates that the Northern Regeneration Link Road Roundabout is forecast to operate with significant spare capacity in all scenarios.

9: Regeneration Link Phase 2 Access Roundabout (South)

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
1 - Regeneration Link N	0.21	2.27	0.17	A	0.20	2.26	0.17	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.05	1.97	0.05	A	0.07	2.00	0.06	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2021 Base Reg Link 25% with Dev								
1 - Regeneration Link N	0.26	2.38	0.21	A	0.26	2.41	0.21	A
2 - Phase 2 Access E	0.04	3.28	0.04	A	0.01	3.21	0.01	A
3 - Regeneration Link S	0.09	2.07	0.08	A	0.11	2.12	0.10	A
4 - Phase 2 Access W	0.01	2.84	0.01	A	0.04	2.97	0.04	A
A1 - 2021 Base Reg Link 50%								
1 - Regeneration Link N	0.26	2.38	0.21	A	0.23	2.30	0.18	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.10	2.07	0.09	A	0.14	2.14	0.12	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2021 Base Reg Link 50% with Dev								
1 - Regeneration Link N	0.32	2.50	0.24	A	0.29	2.45	0.22	A
2 - Phase 2 Access E	0.04	3.41	0.04	A	0.01	3.25	0.01	A
3 - Regeneration Link S	0.14	2.18	0.13	A	0.20	2.27	0.17	A
4 - Phase 2 Access W	0.01	2.96	0.01	A	0.04	3.14	0.04	A
A1 - 2024 Base Reg Link 25%								
1 - Regeneration Link N	0.22	2.29	0.18	A	0.22	2.29	0.18	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.05	1.97	0.05	A	0.07	2.01	0.06	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2024 Base Reg Link 25% with Dev								
1 - Regeneration Link N	0.27	2.40	0.21	A	0.28	2.44	0.22	A
2 - Phase 2 Access E	0.04	3.30	0.04	A	0.01	3.24	0.01	A
3 - Regeneration Link S	0.09	2.08	0.08	A	0.12	2.12	0.11	A
4 - Phase 2 Access W	0.01	2.85	0.01	A	0.04	2.97	0.04	A
A1 - 2024 Base Reg Link 50%								
1 - Regeneration Link N	0.28	2.41	0.22	A	0.24	2.33	0.19	A
2 - Phase 2 Access E	0.00	0.00	0.00	A	0.00	0.00	0.00	A
3 - Regeneration Link S	0.11	2.08	0.10	A	0.15	2.16	0.13	A
4 - Phase 2 Access W	0.00	0.00	0.00	A	0.00	0.00	0.00	A
A1 - 2024 Base Reg Link 50% with Dev								
1 - Regeneration Link N	0.34	2.53	0.25	A	0.30	2.48	0.23	A
2 - Phase 2 Access E	0.04	3.44	0.04	A	0.02	3.28	0.01	A
3 - Regeneration Link S	0.15	2.19	0.13	A	0.21	2.29	0.17	A
4 - Phase 2 Access W	0.01	2.97	0.01	A	0.04	3.16	0.04	A

Table 6.9 – Junction 9 Capacity Assessment Results

6.4.21 The above **Table 6.9** demonstrates that the Southern Regeneration Link Roundabout is forecast to operate with significant spare capacity in all scenarios.

10: Swadlincote Rd/Regeneration Link/Derby Rd Proposed Roundabout – ARCADY

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2021 Base Reg Link 25%								
1 - Swadlincote Rd	0.93	5.24	0.48	A	1.09	5.54	0.52	A
2 - Regeneration Link	0.37	4.07	0.27	A	0.51	4.51	0.34	A
3 - Derby Rd	0.44	3.51	0.30	A	0.50	3.65	0.33	A
A1 - 2021 Base Reg Link 25% with Dev								
1 - Swadlincote Rd	1.01	5.55	0.50	A	1.24	6.10	0.56	A
2 - Regeneration Link	0.44	4.28	0.31	A	0.64	4.91	0.39	A
3 - Derby Rd	0.49	3.68	0.33	A	0.59	3.94	0.37	A
A1 - 2021 Base Reg Link 50%								
1 - Swadlincote Rd	0.77	4.99	0.43	A	0.81	4.92	0.45	A
2 - Regeneration Link	0.48	4.24	0.32	A	0.73	4.97	0.42	A
3 - Derby Rd	0.44	3.52	0.30	A	0.50	3.67	0.34	A
A1 - 2021 Base Reg Link 50% with Dev								
1 - Swadlincote Rd	0.84	5.30	0.46	A	0.93	5.44	0.48	A
2 - Regeneration Link	0.56	4.47	0.36	A	0.89	5.44	0.47	A
3 - Derby Rd	0.49	3.70	0.33	A	0.63	4.03	0.39	A
A1 - 2024 Base Reg Link 25%								
1 - Swadlincote Rd	1.02	5.50	0.51	A	1.21	5.86	0.55	A
2 - Regeneration Link	0.40	4.20	0.29	A	0.56	4.70	0.36	A
3 - Derby Rd	0.47	3.60	0.32	A	0.54	3.76	0.35	A
A1 - 2024 Base Reg Link 25% with Dev								
1 - Swadlincote Rd	1.12	5.89	0.53	A	1.39	6.50	0.58	A
2 - Regeneration Link	0.48	4.43	0.32	A	0.70	5.14	0.41	A
3 - Derby Rd	0.52	3.78	0.34	A	0.64	4.07	0.39	A
A1 - 2024 Base Reg Link 50%								
1 - Swadlincote Rd	0.84	5.22	0.46	A	0.89	5.14	0.47	A
2 - Regeneration Link	0.52	4.39	0.34	A	0.80	5.22	0.45	A
3 - Derby Rd	0.47	3.62	0.32	A	0.54	3.77	0.35	A
A1 - 2024 Base Reg Link 50% with Dev								
1 - Swadlincote Rd	0.92	5.56	0.48	A	1.01	5.63	0.50	A
2 - Regeneration Link	0.60	4.64	0.38	A	0.99	5.77	0.50	A
3 - Derby Rd	0.53	3.80	0.35	A	0.64	4.08	0.39	A

Table 6.10 – Junction 10 Capacity Assessment Results

6.4.22 The above **Table 6.10** demonstrates that the Swadlincote Road/Regeneration Link/Derby Road Proposed Roundabout operates with significant spare capacity in all scenarios.

6.5 Summary

6.5.1 In summary, Phase 1 with an access from Moira Road can be developed with a negligible highway impact. It can also be concluded that the majority of junctions in the study area operate with significant spare capacity in all scenarios following the addition of Phase 2 traffic.

6.5.2 The following junctions operate close to/at capacity with the addition of Phase 2 traffic:

- Junction 1: The Clock Roundabout;
- Junction 2: Hepworth Rd/Ashby Rd/High St Signalised Junction; and
- Junction 4: Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads.

Junction 1: The Clock Roundabout

- 6.5.3 The proposed development does not have a 'severe' impact on the current operation of the junction. Whilst there are increases in RFC values and associated queuing, there would be a net reduction in vehicles passing through the junction following the development of the Regeneration Link Road and addition of the proposed development traffic. The increase in RFC/Queuing values is attributed to background traffic growth.
- 6.5.4 Furthermore, the Broomy Farm committed development would provide a link road between Burton Road and Hartshorne Road that would reassign a significant number of vehicles away from the junction. This has not been accounted for within these assessments, and would further reduce the number of vehicles through the junction (and significantly improve the operation of the Burton Road arm).
- 6.5.5 It is not considered that any mitigation is warranted as a result of the proposed development.

Junction 2: Hepworth Rd/Ashby Rd/High St Signalised Junction

- 6.5.6 The Hepworth Road/Ashby Road/High Street Signalised Junction is forecast to operate at its practical reserve capacity at base levels following the reassignment of traffic from the A514/A511 corridor to the Regeneration Link Road.
- 6.5.7 Whilst there are minor increases in DoS and associated queuing as a result of the proposed development traffic, it is not considered that the proposed development impact constitutes a 'severe' impact on the Hepworth Road/Ashby Road/High Street Signalised Junction.
- 6.5.8 It is not considered that any mitigation is warranted as a result of the proposed development.

Junction 4: Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads

- 6.5.9 The Main Street/Occupation Lane/Mushroom Lane/ Occupation Road Crossroads is forecast to operate with approximately 50% of spare capacity during the AM at all scenarios, while during the PM peak the RFC values are closer to practical capacity.
- 6.5.10 In 2021, the maximum RFC values are below 0.85 both at the baseline and with development scenarios. It is in 2024 when the RFC values are over this figure (but below 0.95), an increase that can solely be input to the calculated TEMPro growth in the background traffic. For this reason, it is not considered that the proposed development impact constitutes a 'severe' impact on the assessed junction.
- 6.5.11 It is not considered that any mitigation is warranted as a result of the proposed development.

7.0 Transport Planning Policy

7.1 Introduction

- 7.1.1 When developing the scheme proposals, it is important to understand the national and local transport related planning policies. This section aims to outline the key policies throughout relevant policy and guidance documents.

7.2 National Planning Policy Framework (NPPF)

- 7.2.1 Paragraph 10 of the NPOF (2019) states:

“So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.”

- 7.2.2 For decision making this means granting permission unless, as set out in paragraph 11:

“...any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies.”

- 7.2.3 Section 9 of the NPPF is entitled ‘Promoting Sustainable Transport’ and outlines the important role that transport policies have to play in facilitating sustainable development. The section states that transport issues should be considered from the earliest stages so that:

“opportunities to promote walking, cycling and public transport use are identified and pursued.”

- 7.2.4 The document emphasises the need for developments to offer a choice of sustainable modes of transport which *“help to reduce congestion and emissions and improve air quality and public health”* and provide *“safe and suitable”* access for all.

- 7.2.5 This Transport Assessment has demonstrated the accessibility to the site, outlining alternative ways to do so besides private car use. Bus services to Swadlincote town centre, Burton-upon-Trent or Derby are approximately 800m to 1,200m away from the different elements of the development, offering residents and employees the choice to travel further via multi-modal transport services.

- 7.2.6 Additionally, there is cycling infrastructure in the vicinity including national cycling routes within close distance of the site as well as proposed cycling facilities along the new link road passing through the site.

- 7.2.7 Paragraph 104 of the NPPF states that plans for new development should:

“...identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development.”

- 7.2.8 This Transport Assessment is in compliance with the NPPF in the instance of paragraph 104 as the new development will provide employment in its industrial units and estates and also provides a relief of traffic congestion through the Clock Roundabout due to the new Regeneration Link development.

7.3 National Planning Practice Guidance (NPPG)

- 7.3.1 In addition to the NPPF, a National Planning Practice Guidance (NPPG) document has also been developed by the government. Within this document there is a specific section that clarifies the overarching principles on Travel Plans, Transport Assessments and Transport Statements.
- 7.3.2 The guidance on Transport Assessments and Statements re-iterates the circumstances in which either document would usually be required. It is appropriate that a Transport Assessment is provided for a development of this scale, and a Framework Travel Plan would also be necessary, which would be upgraded to a Full Travel Plan once the occupiers of the different elements of the development were known. The NPPG has been considered in the production of this Transport Assessment.

7.4 South Derbyshire Local Plan

- 7.4.1 The South Derbyshire Local Plan Part 1 was adopted by the district council in June 2016. The Woodville/Swadlincote Link Road is identified within the document and states that its development is *“aimed at assisting in the delivery of development at Occupation Lane in Woodville, and other strategic connectivity interventions to bring forward employment land in the southern Derby area”*. Policy S1 also refers to providing “new infrastructure to support the growth across the District”.
- 7.4.2 Furthermore, Policy E6 which refers to the Woodville Regeneration Area, states that the site is: *“protected for employment-led redevelopment, supported by the Woodville – Swadlincote Regeneration Route, to enable the economic, social and environmental regeneration of Woodville and Swadlincote.”*
- 7.4.3 The proposed development in this Transport Assessment includes a large employment area of 4.61Ha adjacent to the new Woodville – Swadlincote Link Road as well as new housing and is therefore in compliance with Policy E6 of the local plan, as it further states that *“redevelopment of the site should incorporate 12Ha of employment development...”* and *“new dwellings”*.
- 7.4.4 Chapter 9 ‘Transport’ includes Policy 12 of the local plan, titled ‘Sustainable Transport’, which states that the council will: *“...seek to encourage modal shift away from the private-car... toward walking, cycling, public transport...”*

The proposed development facilitates new shared cycling and pedestrian infrastructure that accompanies the new link road through the site. Additionally, residents should take advantage of the local bus services examined in detail in **Section 5.4**.

7.5 Local Transport Plan (LTP)

7.5.1 The current LTP for Derbyshire (LTP 3) displays the motto *“a healthy future for local transport”*. Outlined in its executive summary, are the transport goals and key challenges for Derbyshire Transport that will *“drive the development and delivery of the LTP over the years to come”*. These goals are reproduced below:

- *“Supporting a resilient local economy.*
- *Tackling climate change.*
- *Contributing to better safety, security and health.*
- *Promoting equality of opportunity.*
- *Improving quality of life and promoting a healthy natural environment.”*

7.5.2 The LTP refers to the new link road development through the site as the “A514 Woodville – Swadlincote Regeneration Route Study”. The extract from this LTP is reproduced below:

“A514 Woodville-Swadlincote Regeneration Route Study: In order to help both the County Council and South Derbyshire District Council build a better understanding of this potential scheme and its links to land-use development, we have commissioned investigation work, including geotechnical and ecological surveys and preliminary design.”

7.6 Summary

7.6.1 In summary, the development proposals are considered to be broadly consistent with local and national transport planning policy.

8.0 Summary and Conclusions

8.1 Summary

- 8.1.1 Curtins has been appointed on behalf of Haworth Group to provide traffic and transportation advice in relation to an outline planning application for a mixed-use development in Woodville, Derbyshire.
- 8.1.2 The client wishes to phase the residential development in a way that allows the units served from Moira Road to be built out first, without the need for the full operation of the Regeneration Link. Phase 1 would comprise 75 dwellings.
- 8.1.3 The second phase (Phase 2) would include the full build out of the proposed development (225 additional dwellings and circa 17,000 sqm GFA of A1, A3, A4, B1, B2 and B8 land uses, as well as the aforementioned Regeneration Link, which will need to be delivered in order to serve the site.
- 8.1.4 The scope of this document has been agreed with DCC through email and phone conversations. The development proposals accord with national and local planning transport planning policy.
- 8.1.5 The site is in a sustainable location with good pedestrian access to local community facilities, goods and services. There is also access to local public transport services. It is anticipated that the sustainable aspects of the location will be enhanced through the Framework Travel Plan that accompanies this planning application and should be read in conjunction with this TA.
- 8.1.6 Three access points are proposed to serve the development; one on Moira Road would be built to access Phase 1 dwellings (which would be the only entry/egress points for these properties as Phase 1 and 2 would not be internally linked), and two on the proposed Regeneration Link (two new roundabouts).
- 8.1.7 The proposed development (Phases 1 and 2) is anticipated to generate in the region of 243 and 299 two-way trips in the AM and PM peak hour periods respectively.
- 8.1.8 A total of 10 junctions in the area, as well as the site access junctions, have been modelled in order to quantify the impact of the development trips on the surrounding network.
- 8.1.9 Phase 1 with an access from Moira Road can be developed with a negligible highway impact. It can also be concluded that the majority of junctions in the study area operate with significant spare capacity in all scenarios following the addition of Phase 2 traffic. The following three junctions have been identified as operating close to/at capacity with the addition of Phase 2 traffic:
- Junction 1: The Clock Roundabout;
 - Junction 2: Hepworth Rd/Ashby Rd/High St Signalised Junction; and
 - Junction 4: Main St/Occupation Ln/Mushroom Ln/ Occupation Rd Crossroads.

8.1.10 There are no improvement/mitigation schemes proposed as part of this development. Justification of this has been provided as appropriate throughout **Section 6**.

8.2 Conclusions

8.2.1 From a traffic and transportation perspective there are no reasons why the development proposals should not be granted planning approval.

Appendix A – Site Location and Accessibility Plans



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Project:
WOODVILLE, SWADLINCOTE

Drg Title:
LOCATION PLAN

Status:
PRELIMINARY

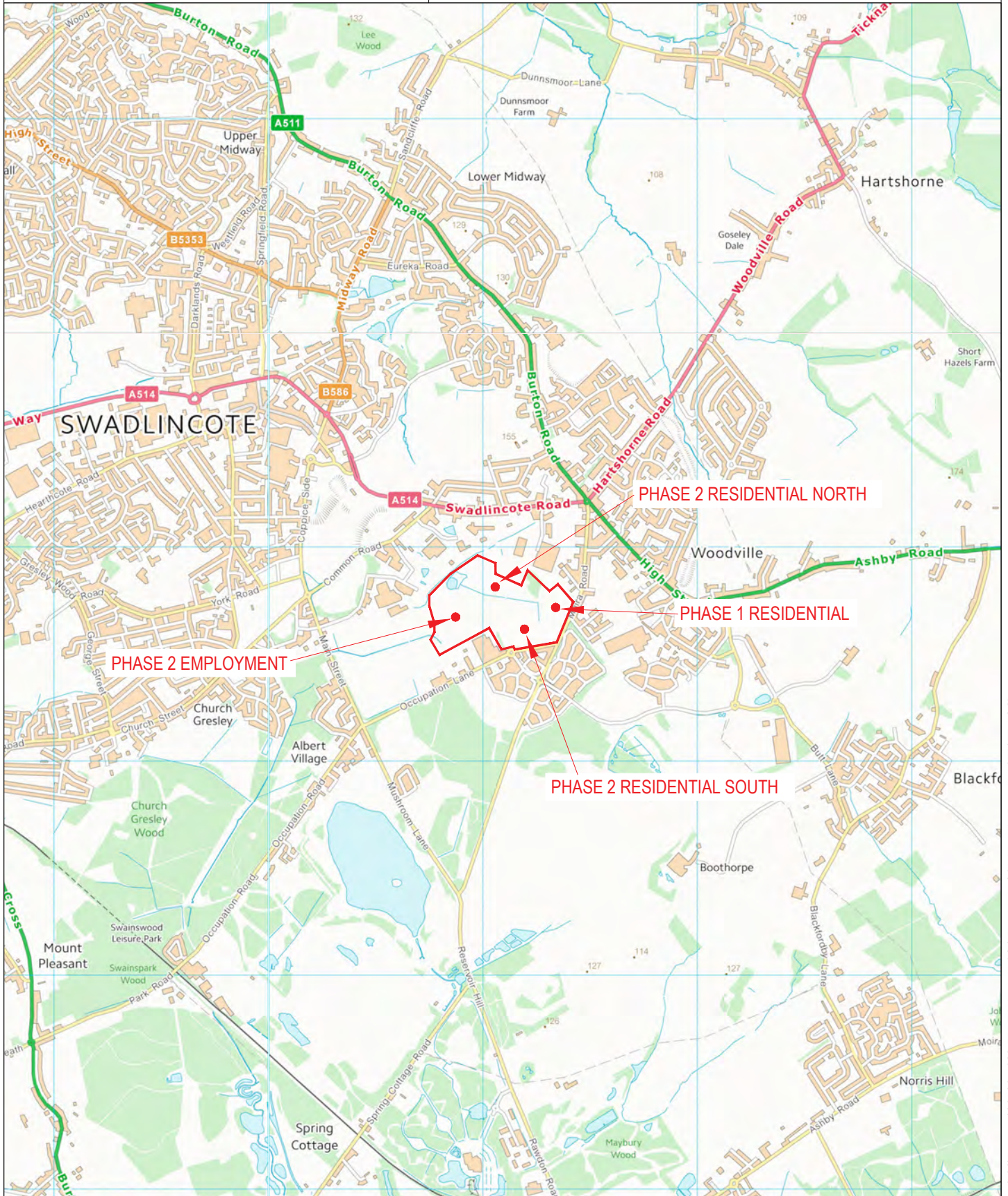
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Project: WOODVILLE, SWADLINCOTE

Drg Title: ACCESSIBILITY
INDICATIVE WALKING CATCHMENT
(PHASE 1 RESIDENTIAL)

Status: PRELIMINARY

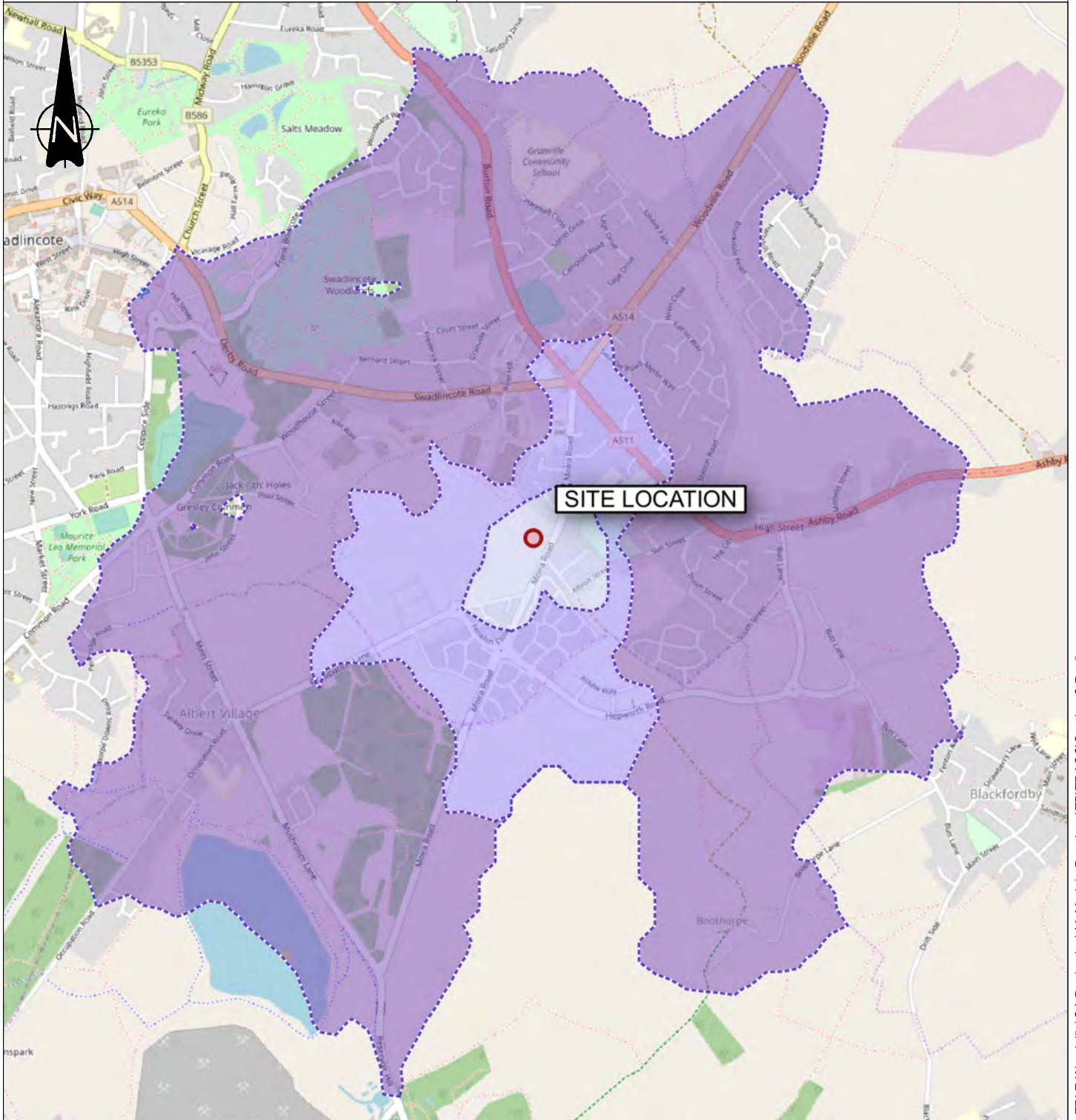
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Designed By: SG Date: 04/06/19

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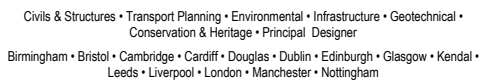
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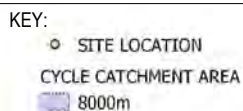
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- SITE LOCATION
- WALKING DISTANCES
- 2000m
- 1000m
- 500m



Status:	PRELIMINARY	
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Designed By: SG	Date: 04/06/19	
Scale: NTS		

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Project: WOODVILLE, SWADLINCOTE
Org Title: ACCESSIBILITY
INDICATIVE PUBLIC TRANSPORT
CATCHMENT
(PHASE 1 RESIDENTIAL)

Status: PRELIMINARY

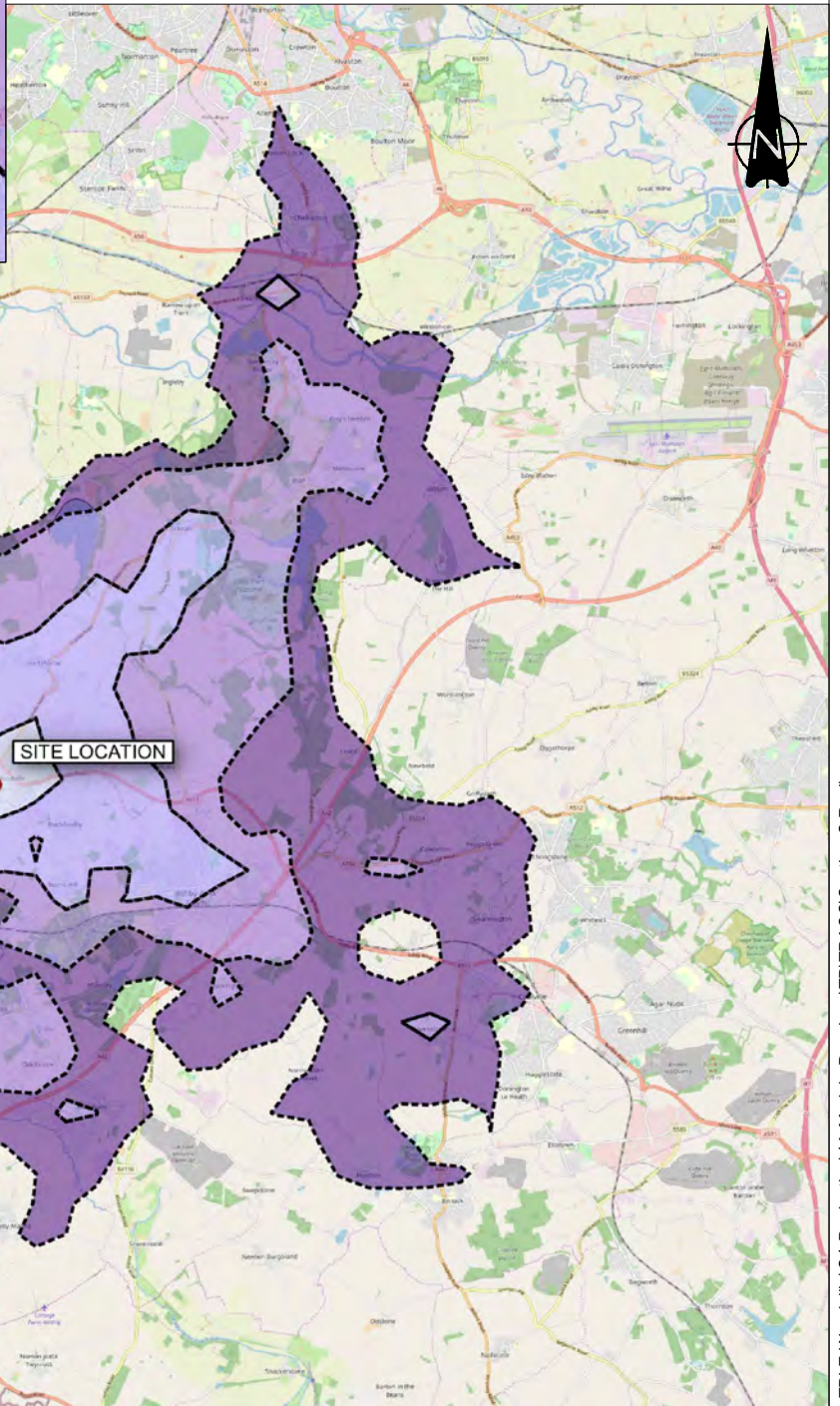
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Scale: NTS

Project No: Originator: Zone: Level: Type: Discipline: Category / Number: Rev:

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KEY:

• SITE LOCATION

JOURNEY TIMES

15

30

45

60



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Project:

WOODVILLE, SWADLINCOTE

Status:

PRELIMINARY

Drg Title:

ACCESSIBILITY
INDICATIVE WALKING CATCHMENT
(PHASE 2 RESIDENTIAL NORTH)

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Checked By: DJ

Designed By: SG

Date: 04/06/19

Scale: NTS

Project No:

Originator:

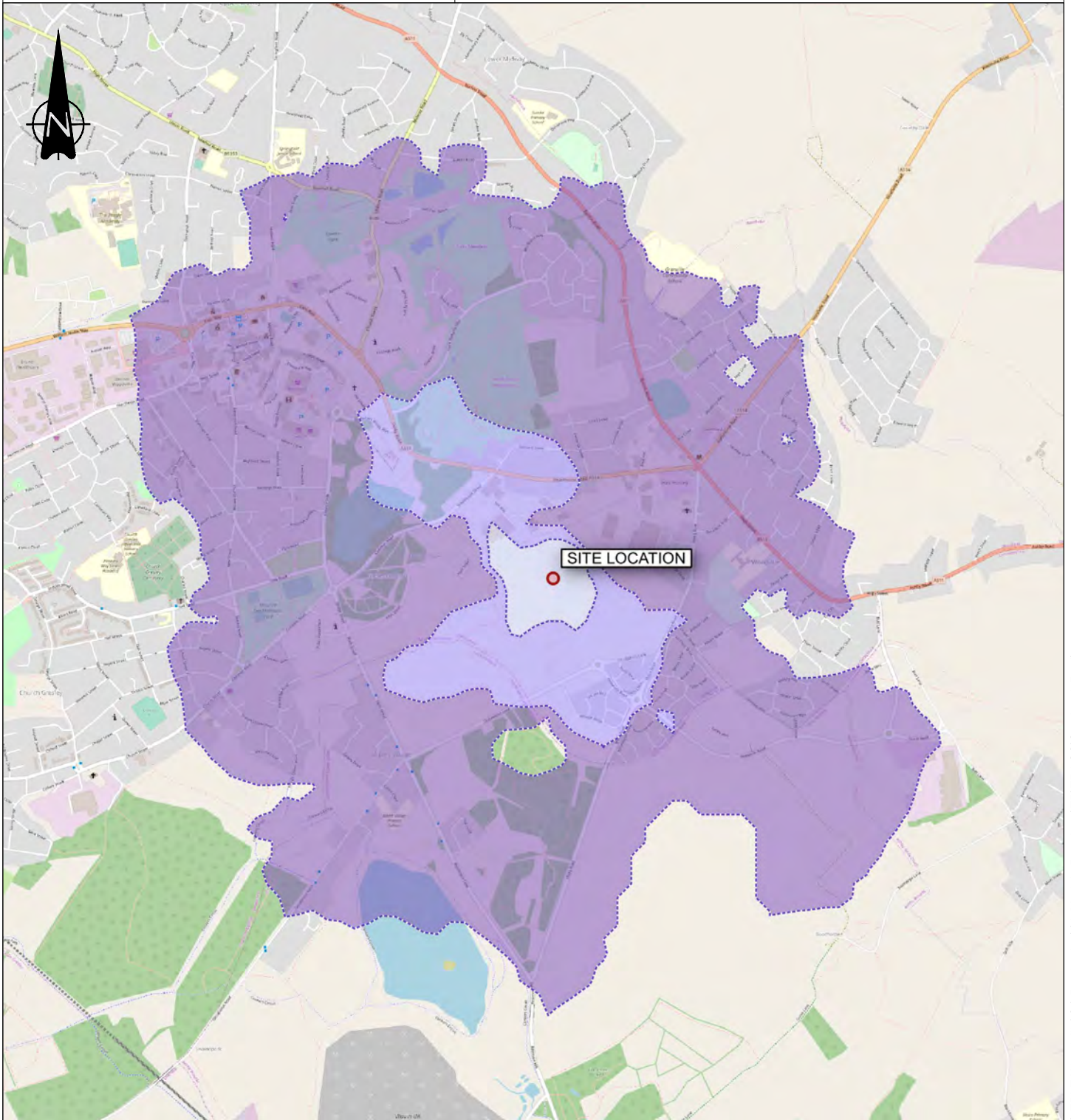
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Level:

Type:

Discipline: Category / Number: Rev:

67895 - CUR - 00 - XX - DR - TP - 06012 - P01



KEY:

○ SITE LOCATION

WALKING DISTANCES

2000m

1000m

500m



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Project: WOODVILLE, SWADLINCOTE

Drg Title: ACCESSIBILITY
INDICATIVE CYCLE CATCHMENT
(PHASE 2 RESIDENTIAL NORTH)

Status: PRELIMINARY

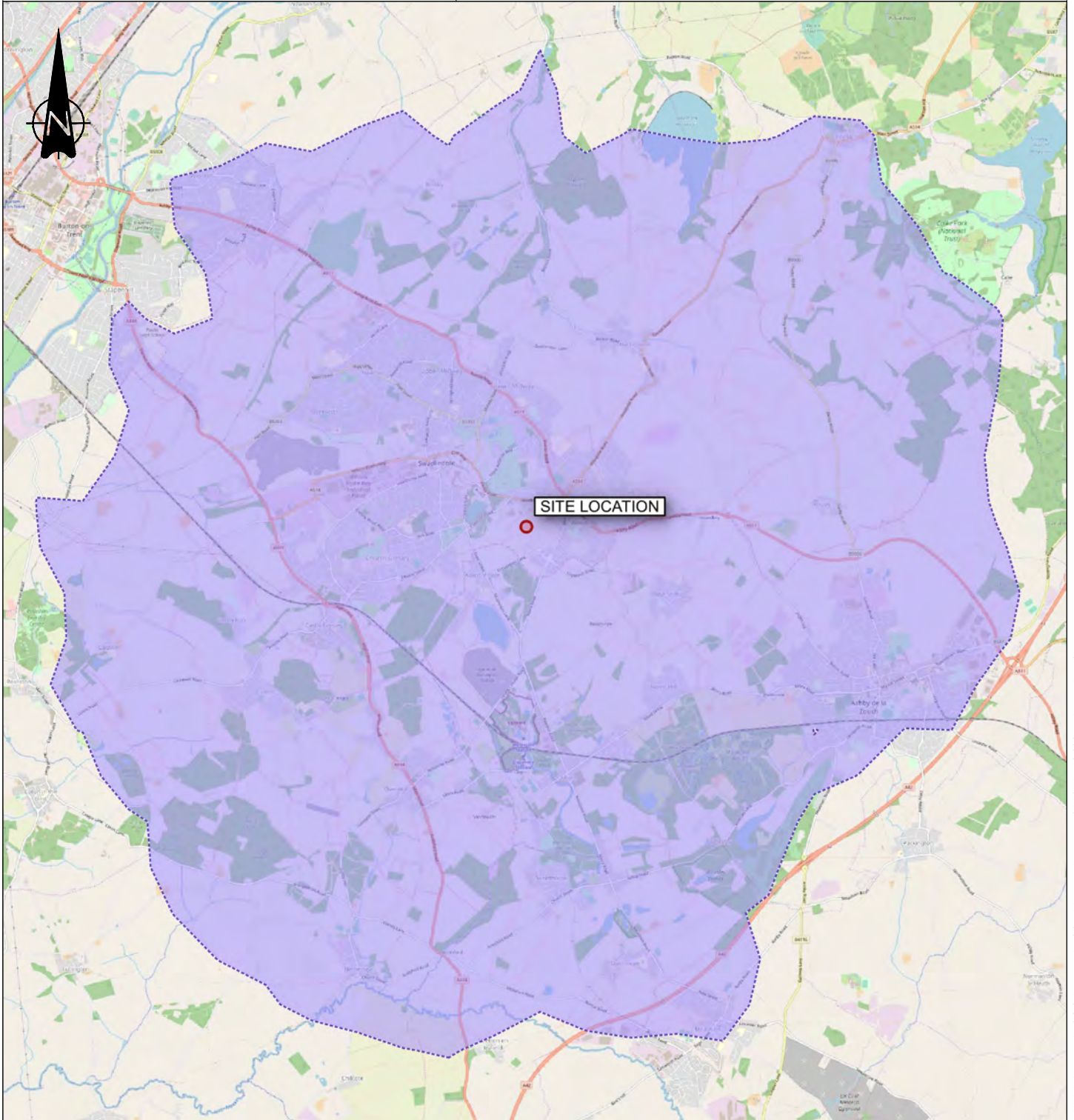
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Designed By: SG Date: 04/06/19

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Project No: Originator: Zone: Level: Type: Discipline: Category / Number: Rev:

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KEY:
○ SITE LOCATION
CYCLING CATCHMENT AREA
8000m



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Project: WOODVILLE, SWADLINCOTE
Drg Title: ACCESSIBILITY
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CATCHMENT
(PHASE 2 RESIDENTIAL NORTH)

Status: PRELIMINARY

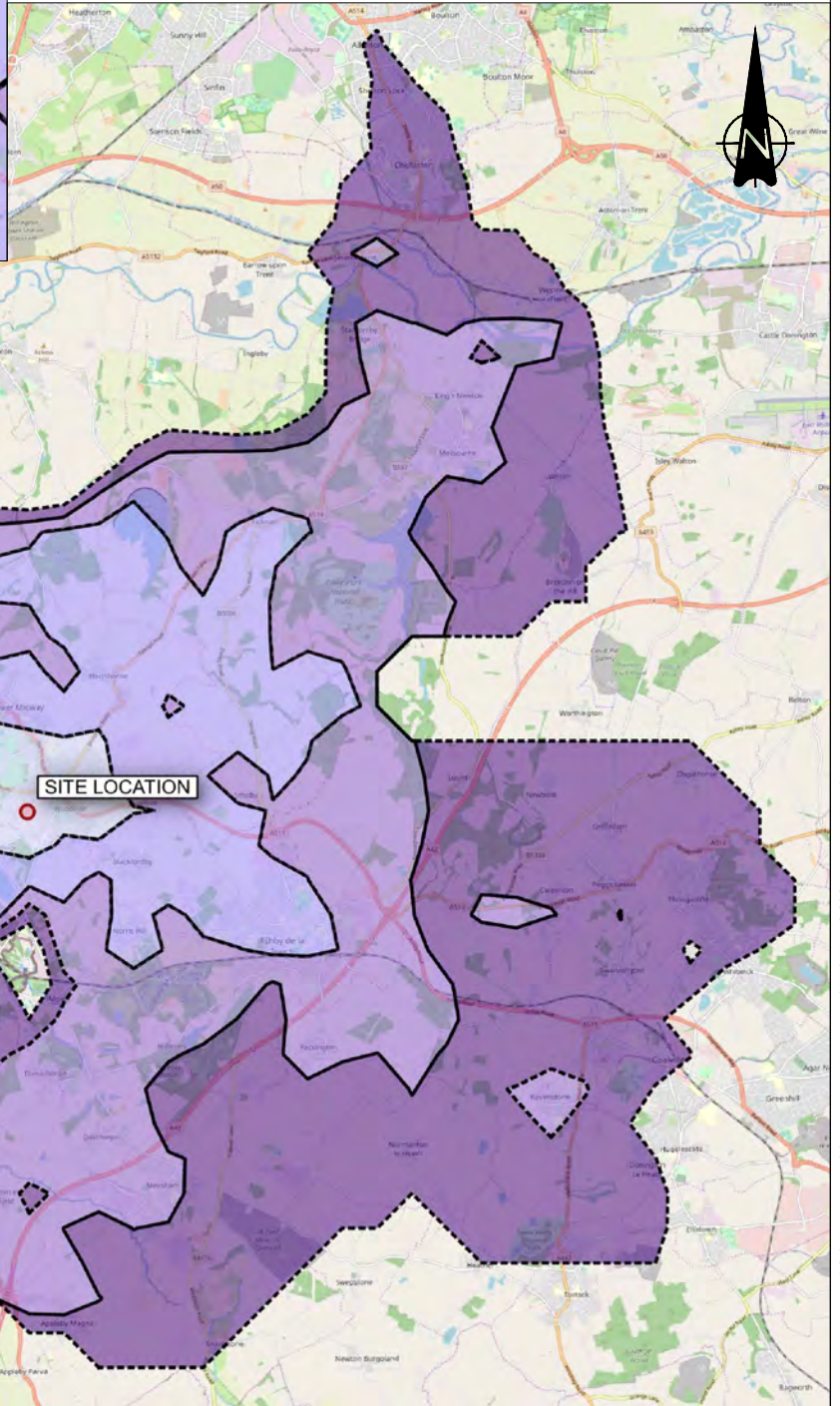
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KEY:

- SITE LOCATION
- JOURNEY TIMES
- 15
- 30
- 45
- 60



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Project:
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Drg Title:
ACCESSIBILITY
INDICATIVE WALKING CATCHMENT
(PHASE 2 RESIDENTIAL SOUTH)

Status:
PRELIMINARY

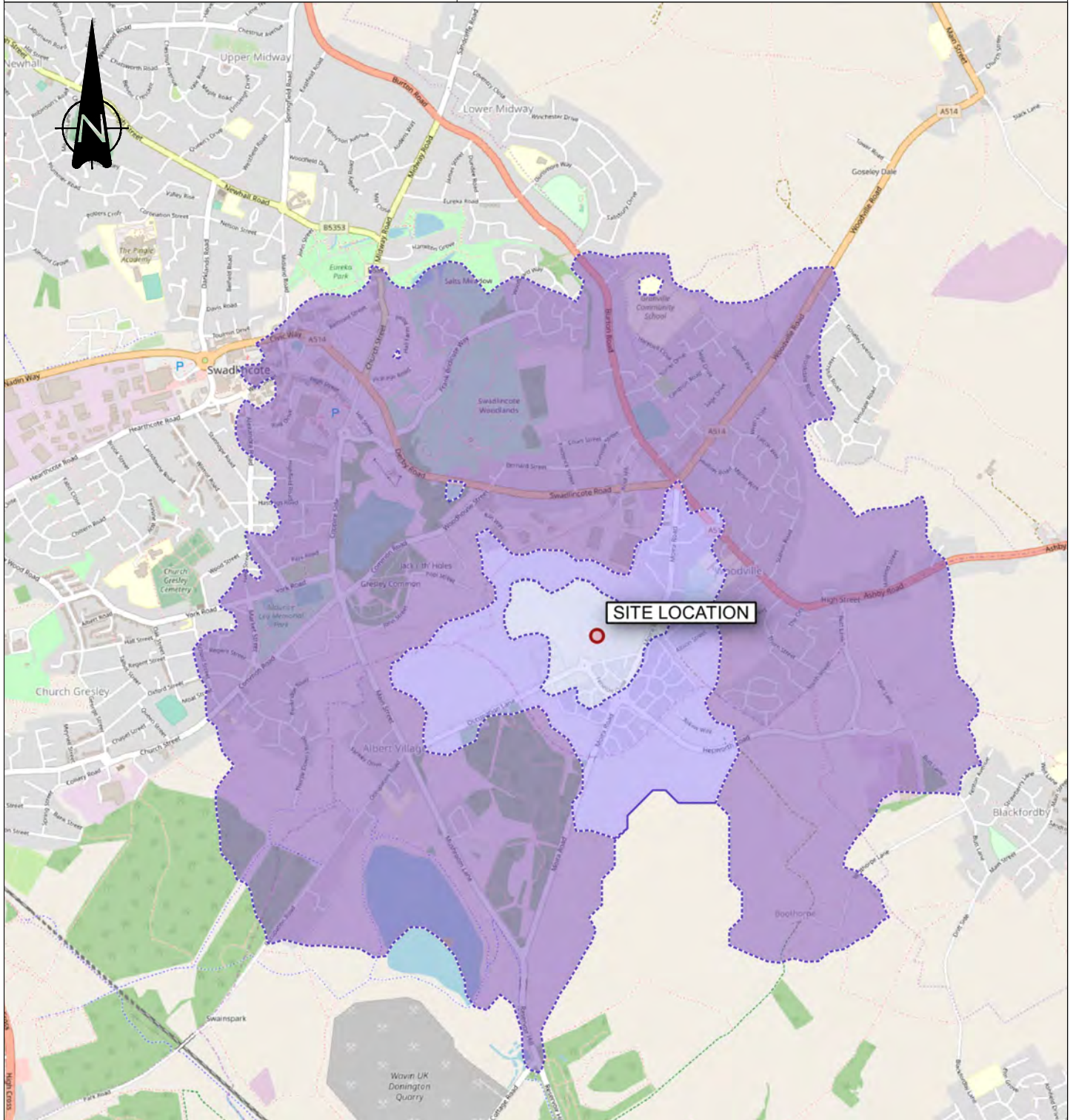
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Scale: NTS

Project No: Originator: Zone: Level: Type: Discipline: Category / Number: Rev:

67895 - CUR - 00 - XX - DR - TP - 06022 - P01



KEY:
● SITE LOCATION
WALKING DISTANCES
2000m
1000m
500m



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Project: WOODVILLE, SWADLINCOTE

Drg Title: ACCESSIBILITY
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Status: PRELIMINARY

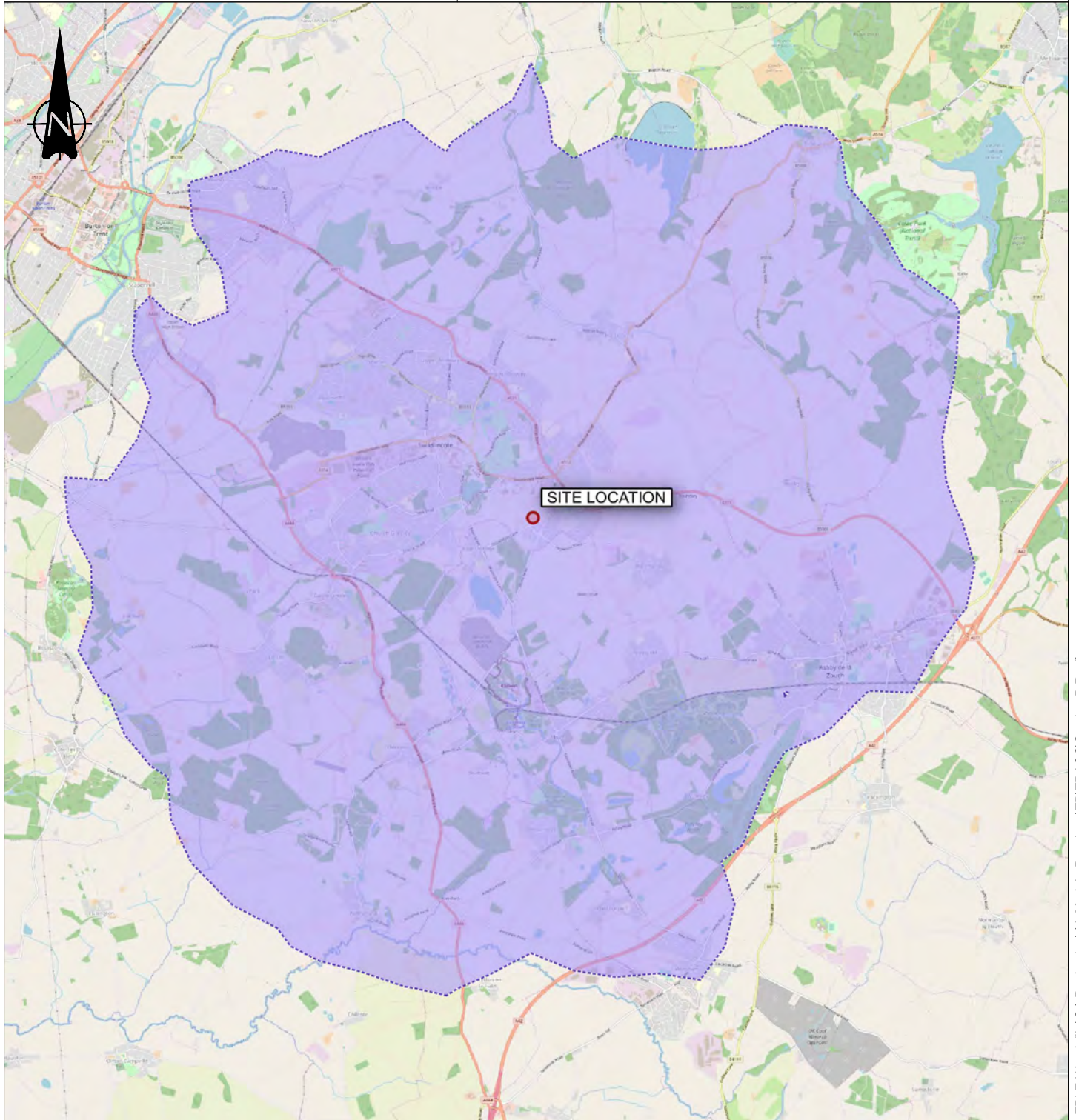
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KEY:

◉ SITE LOCATION

CYCLE CATCHMENT AREA

8000m



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Org Title: ACCESSIBILITY
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CATCHMENT
(PHASE 2 RESIDENTIAL SOUTH)

Status: PRELIMINARY

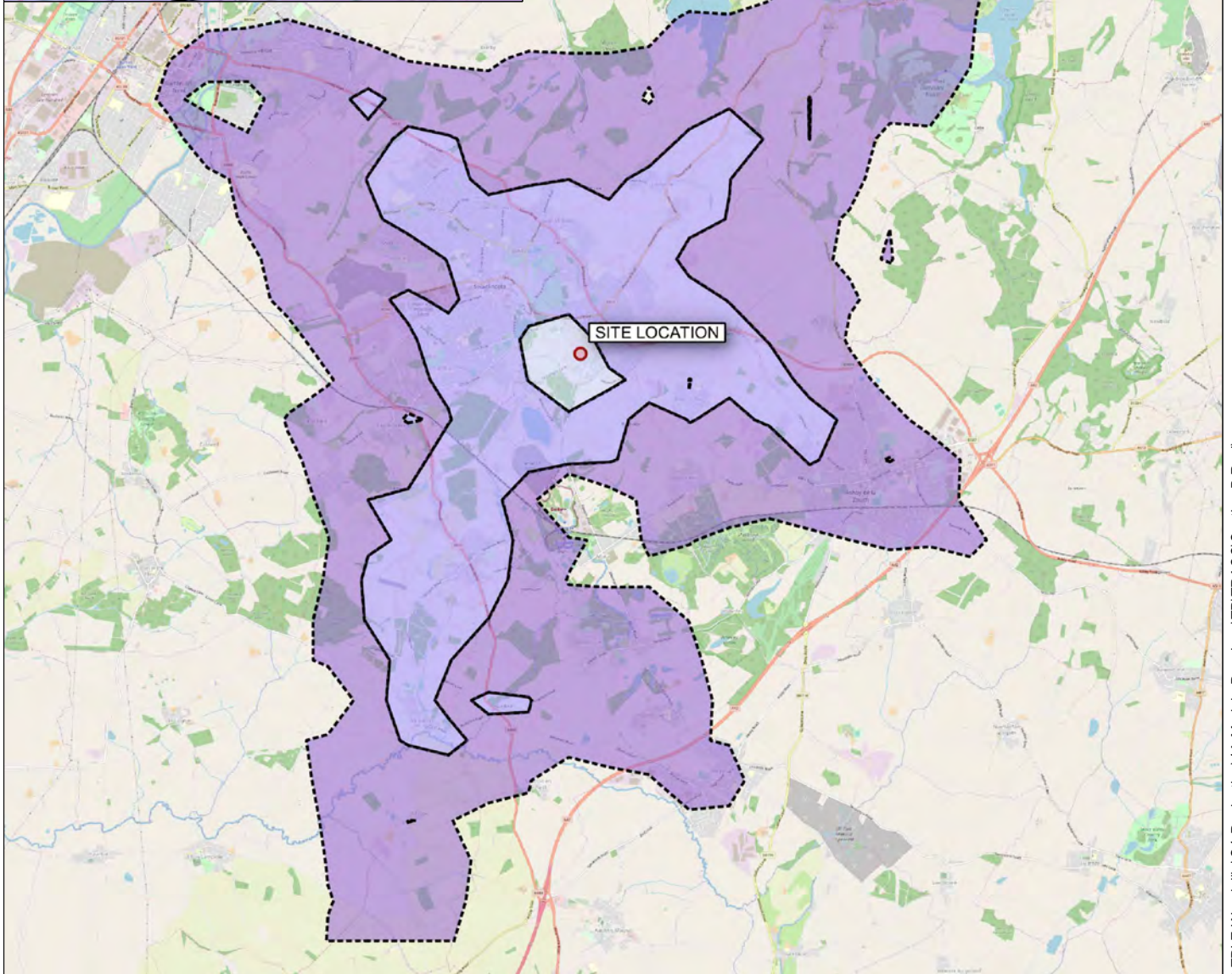
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KEY:

○ SITE LOCATION

JOURNEY TIMES

15

30

45

60



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Drg Title: ACCESSIBILITY
INDICATIVE WALKING CATCHMENT
(PHASE 2 EMPLOYMENT)

Status: PRELIMINARY

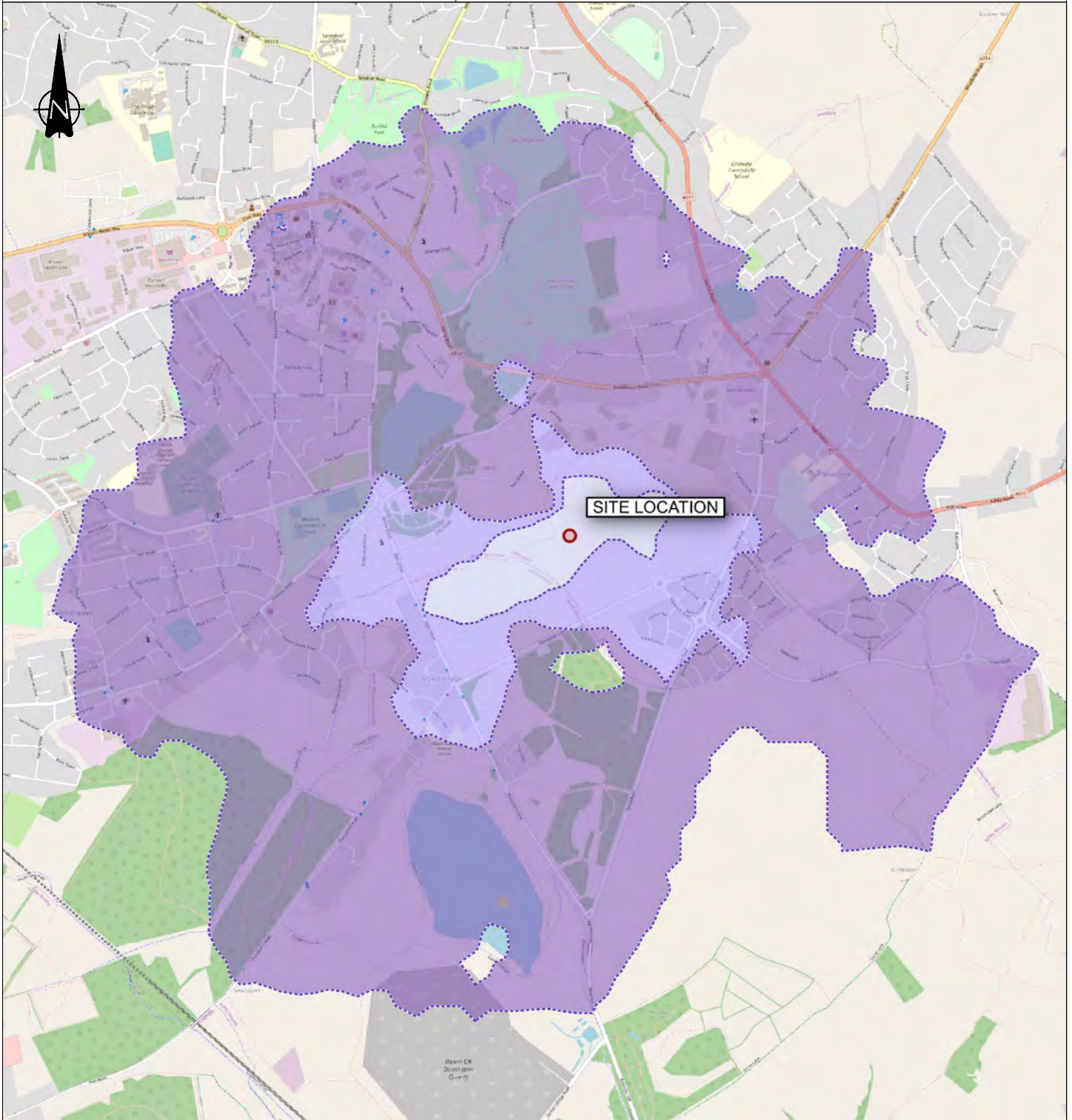
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KEY:

○ SITE LOCATION

WALKING DISTANCES

2000m

1000m

500m



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Project: WOODVILLE, SWADLINCOTE

Drg Title: ACCESSIBILITY
INDICATIVE CYCLE CATCHMENT
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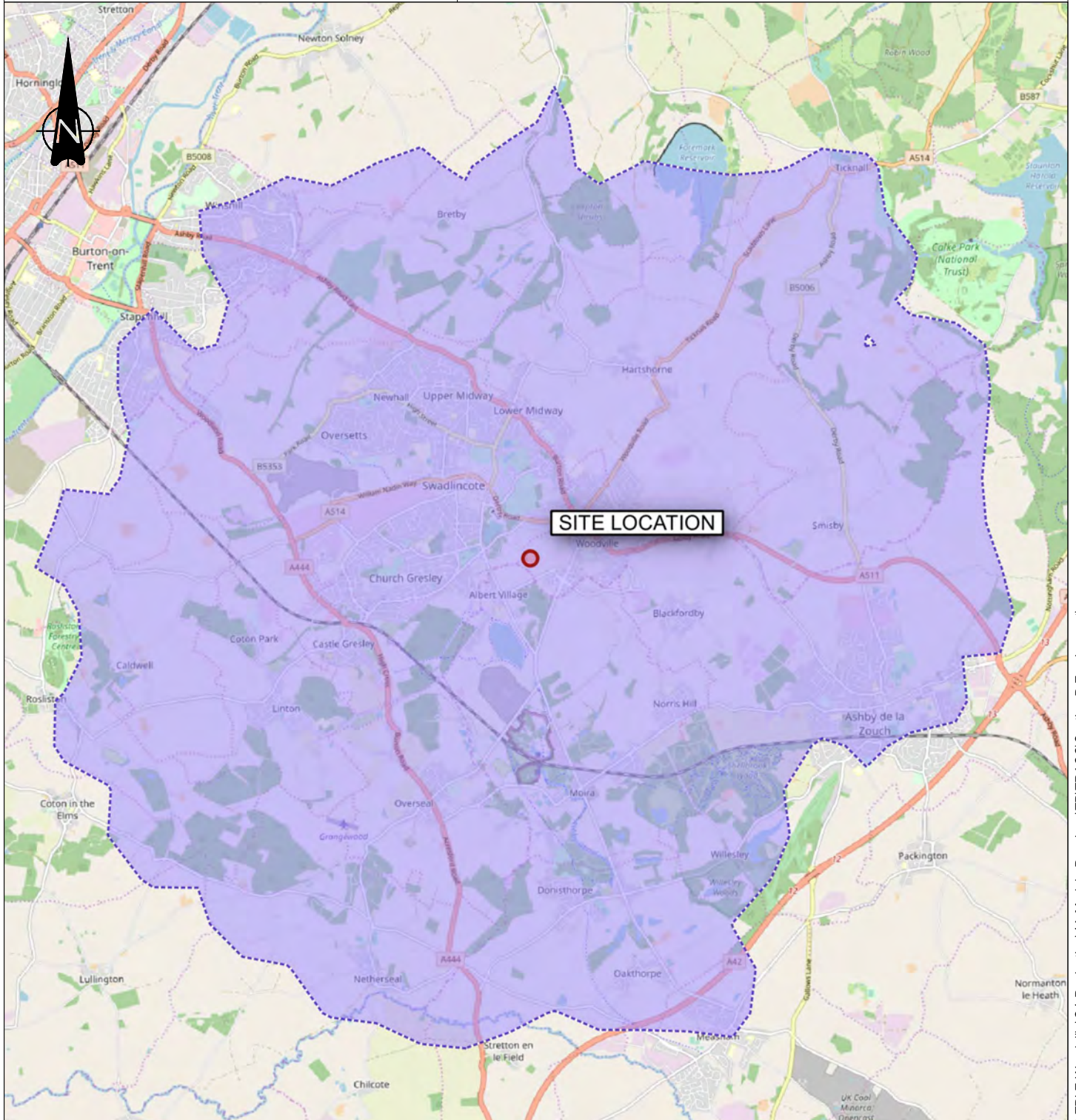
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KEY:

○ SITE LOCATION

CYCLE CATCHMENT AREA

8000m



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INDICATIVE PUBLIC TRANSPORT
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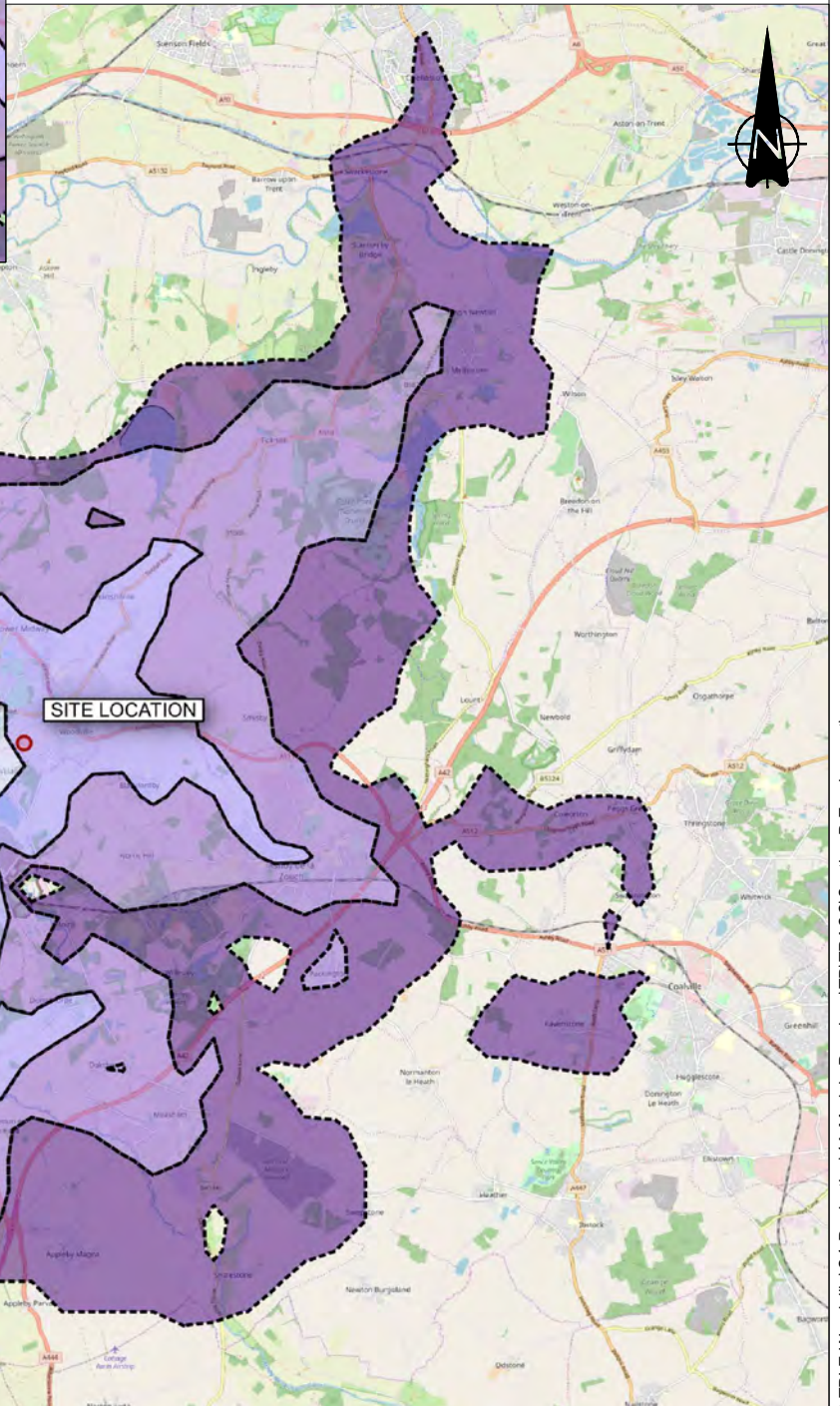
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KEY:

○ SITE LOCATION

JOURNEY TIMES

15

30

45

60