

Technical Note

Project: Lodge Farm, Rugby

Subject: Response to SALFV Transport Appraisal - OTH03

Client:	St Modwen Developments Ltd	Version:	001
Project No:	2202	Author:	MJE
Date:	26/01/18	Approved:	NSM

1 Introduction

1.1.1 This technical note has been prepared by Phil Jones Associates (PJA) to respond to document OTH 03, which has been added to the Rugby Borough Council (RBC) Local Plan library during the examination.

1.1.2 Document OTH 03 is a Transport Appraisal prepared by Walker Engineering on behalf of Stand Against Lodge Farm Village (SALFV), and this considers the traffic implications of the proposed allocation of land at Lodge Farm (Policy DS10).

1.1.3 Document OTH 03 focusses on four particular matters:

- Traffic Modelling;
- The A426/B4429 Dunchurch Crossroads;
- Public Transport; and
- Road Safety considerations.

1.1.4 The remainder of this notes provides a response to each of the matters raised.

2 Traffic Modelling

2.1.1 OTH 03 raises two issues in relation to the Strategic Transport Assessment (STA) prepared by Vectos on behalf of Warwickshire County Council (WCC) in June 2017 (examination doc LP20):

- **Issue 1:** The model area does not properly cover the impacts of Lodge Farm in Northamptonshire.
- **Issue 2:** The trip-end data used to support the trip distribution is not substantiated.

2.1.2 Paragraph 1.3 of Northamptonshire County Council’s Hearing Statement (3b LF 1447) is relevant to both these points and states:

“We are comfortable with the extent of the model and the assumptions used for traffic generation and distribution for Lodge Farm as outlined in the Strategic Transport Assessment (LP20 paragraphs 2.5 and 3.18, 3.20, 3.24) and following further clarifications from Rugby Borough Council”.

2.1.3 The trip generation and distribution estimates used within the STA (LP20) were prepared by PJA to ensure that demand to Daventry and areas to the east were not underestimated. The site-specific distribution was agreed with RBC, Daventry District Council (DDC), WCC and NCC, and is provided within the Lodge Farm, Rugby: Transport Strategy Report (September 2017) appended to this document.

3 The A426/B4429 Dunchurch Crossroads

3.1.1 OTH 03 raises a number of issues in relation to the Dunchurch Crossroads, and these are set out below alongside the relevant responses.

- **Issue 1:** WCC does not have a track record to guarantee that the SWLR will be delivered either on programme or within budget, so this must cast doubt as to the validity of relying upon in it within the Local Plan to mitigate Lodge Farm in phases between 2021 and 2031.

3.1.2 RBC’s Hearing Statement (3b – 000) paragraphs 1.43 to 1.54 identifies a number of safeguards that can be employed in order to secure the SWLR, this also includes a proposed amendment to Policy DS8 to include reference to the use of Compulsory Purchase Powers if necessary.

3.1.3 Paragraph 1.53 states that a submission to the Housing Infrastructure Fund (HIF) has already been made to accelerate site delivery of the SWLR.

3.1.4 Paragraph 1.66 references a road alignment for the Homestead Link which has been prepared by the site promoters, WCC and RBC and forms part of the SPD.

- **Issue 2:** The local improvement to the Dunchurch crossroads identified by VECTOS will not fit within the existing highway boundary or between the existing buildings and monuments. It cannot therefore be realistically delivered, nor again relied upon to mitigate Lodge Farm.

- 3.1.5 The deliverability of a junction improvement scheme at Dunchurch Crossroads has already been considered in detail by the Planning Inspectorate and the Secretary for State as part of the Ashlawn Road planning appeal. The appeal decision is provided in full as Appendix 2 of the Warwickshire Police and West Mercia Police Hearing Statement (General 1430).
- 3.1.6 Paragraphs 1.81 to 1.89 of that Decision set out the Inspector's conclusion on traffic and highway matters. This includes full consideration of the improvement scheme at Dunchurch crossroads, concluding that it an acceptable form of mitigation, and would not constitute a severe transport impact.
- **Issue 3:** Notwithstanding the unlikelihood of WCC delivering either the SWLR as required and a meaningful localised improvement at the Dunchurch Crossroads, the two schemes combined would still only provide a 'Nil- Detriment' solution when measured against any of the 2021, 2026 or 2031 Reference Cases. This means that at all stages of the evolution of Lodge Farm the traffic and AQ situation through Dunchurch must be markedly worse than it is today (2016).
- 3.1.7 Tables 40 and 41 of the STA (LP20) indicate that the best performing options for the SWLR (options 3 and 4), would both result in traffic levels for the 2031 Local Plan + SWLR scenario, that are less than the 2016 base situation.
- 3.1.8 Table 1 of the Air Quality Assessment prepared on behalf of RBC (OTH 07) indicates reductions in emissions when comparing the 2031 Local Plan scenario, to the 2016 Baseline conditions. Paragraphs 50 and 51 of the same report state that the results are likely to be worst case, as they do not take into account any potential for cleaner engines and associated technology which are likely to become commonplace by 2031.
- 3.1.9 **Issue 4:** Since this position is already intolerable and breaches statutory AQ limits, a 'Nil- Detriment' position is simply not a permissible yardstick against which to gauge the acceptability of the mitigation package. The yardstick cannot even be today's position (effectively the Vectos 2016 Base Case) as that still breaches statutory AQ limits. The cumulative impact of the allocation is thus severe, meaning that the development should be dismissed on traffic grounds in accordance with Para's 30 and 32 of the NPPF.
- 3.1.10 Paragraph 15 of the Secretary of State's letter in relation to the Ashlawn Road appeal (Appendix 2 - General 1430), states that it is satisfied that proposal and would not cause any significant harm to air quality in Dunchurch, and could result in minimal improvements.

3.1.11 Paragraphs 191 and 192 of the Inspector's Report (Appendix 2 – General 1430) states that the NO₂ levels for 2026 as a whole would be worse without the appeal development than with it and the proposed junction alterations.

- **Issue 5:** Traffic (and hence AQ impacts) due to Lodge Farm results in marked deterioration when measured against 2016 observed values.

3.1.12 Please refer to paragraphs 3.1.7, 3.1.8, 3.1.10, and 3.1.11 above which respond to this point.

4 Public Transport

4.1.1 OTH 03 states that providing even a 30-minute daytime frequency from the site to Rugby would not be viable commercially.

4.1.2 PJA has prepared an initial viability appraisal which demonstrates that Lodge Farm could be provided with a commercially viable bus service, even if the development proceeded in the absence of the wider South West Rugby draft allocation.

4.1.3 The appraisal is based on the onward projection of the existing service 4, which is to be extended to serve the Cawston Extension development (outline application R11/0114). The projected service 4 would provide at least four departures per hour during the daytime on weekdays and Saturdays. A service of two departures an hour would be provided early mornings, evenings and on Sundays.

4.1.4 The deployment of three additional buses would be required to provide this level of service. The patronage calculations indicate that fare revenue for the service extension would exceed operating costs prior to the completion of the development, and would therefore become commercially viable.

4.1.5 At this stage the patronage calculations don't include:

- Any development in South West Rugby (residential and employment).
- Proposed employment at Lodge Farm.
- Travel demand associated with HMP Onley (staff and visitors).
- No additional mode shift as part of the Travel Plan that would be implemented at Lodge Farm.

- 4.1.6 At this stage the operating costs are based on routing the bus on the current highway network, and therefore doesn't assume any potential savings associated with the proposed South West Rugby highway improvements.

5 Road Safety Considerations

- 5.1.1 OTH 03 raises issues in relation to road safety on the A45 referring to 41 accidents over the past five years that have occurred over a three-mile section spanning Lodge Farm, this includes reference to NCC being particularly concerned about the safety record to the east of Lodge Farm.
- 5.1.2 The EIP hearing statement from NCC (3b – LF1447) makes no reference to road safety related issues.
- 5.1.3 OTH 03 refers to accidents at a number of locations and this includes the Flore Hill crossroads east of Daventry, and the Dunchurch Crossroads. It should be noted that both these locations will be subject to infrastructure improvements to improve capacity/safety, thus considering current accident records is not relevant. Similarly the STA (LP20) sets out improvements at the M45 interchange to the north-west of Lodge Farm.
- 5.1.4 Policy DS10 does not refer to a need for the implementation of any site-specific road safety measures, however this does allow for the provision of any further off-site mitigation measures which are deemed necessary through the Transport Assessment process as part of discussions with WCC, NCC and Highways England. It is standard practice for the Transport Assessment process to include a detailed review of highway safety, with any concerns identified being resolved with the relevant highway authorities prior to the determination of the application – this would be the case with Lodge Farm.
- 5.1.5 As set out in the Statement of Common Ground with RBC (3b -000), highway access to the site can be provided in accordance with the relevant standards set out in the Design Manual for Roads and Bridges, thus safe highway access to the site can be provided.

6

TRANSPORT STRATEGY REPORT

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Lodge Farm, Rugby
Transport Strategy Report

September 2017

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Version Control and Approval

Version	Date	Main Contributors	Issued by	Approved by
A	06 March 2017	JW	NM	NM
B	28 July 2017	JW	NM	NM
C	16 August 2017	JW	NM	NM
D	15 September 2017	JW	ME	ME
E	19 September 2017	JW	ME	ME

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I Introduction

I.1 Overview

1.1.1 This report presents the Transport Strategy for the draft allocation of land at Lodge Farm, Rugby. This document demonstrates that a new village of up to 1,500 dwellings, employment land, local centre including retail, primary school and GP surgery can be delivered in accordance with the requirements of the NPPF and the objectives of the Rugby Borough Council Draft Local Plan.

I.2 Site Allocation

1.2.1 The proposed development site benefits from an allocation under Policy DS10 of the Local Plan, which was approved for submission to the Secretary of State for examination in June 2017. The policy states that the development will deliver a new Main Rural Settlement of Rugby Borough, comprising the following elements:

- Up to 1,500 dwellings; and
- Local centre including retail, primary school and GP surgery.

1.2.2 This document also considers an element of employment land that forms part of the emerging proposals presented with the masterplan framework within the Vision and Delivery document.

I.3 Strategy

1.3.1 Beyond an initial phase of development, the site will be enabled by highway infrastructure delivered as part of the South West Rugby development allocation (Policies DS8 and DS9). This includes provision of the South West Link Road (SWLR), which will release capacity elsewhere on the network including through Dunchurch. The proposed development will assist with delivery of the SWLR through the provision of a financial contribution.

1.3.2 This report draws upon the Strategic Transport Assessment (STA) prepared by Vectos Microsimulation (VM) to accompany the Local Plan evidence base. Key elements of the STA relating to the Lodge Farm site allocation followed dialogue between Phil Jones Associates on behalf of the developer and discussions with officers at Rugby Borough Council (RBC), Daventry District Council (DDC), Warwickshire County Council (WCC) and Northamptonshire County Council (NCC).

1.3.3 The purpose of this report is to demonstrate that the proposed development is deliverable in terms of transport, specifically that:

- A feasible access strategy can be delivered;
- The site can be made accessible by foot and cycle;
- A new bus service between Daventry and Rugby to serve the site is feasible and viable;



1. Introduction

- The analysis provided within the STA provides evidence which supports development at Lodge Farm; and
- The transport impacts of the full development will be fully mitigated through provision of the SWLR and other localised measures.

1.4 Structure of Report

1.4.1 This report follows the structure outlined below:

- Section 2 describes the vehicular access strategy;
- Section 3 details the public transport strategy;
- Section 4 considers access by foot and cycle;
- Section 5 provides an overview of the STA work undertaken in relation to the site;
- Section 6 assesses the traffic impact of the proposals, drawing upon evidence from the STA;
- Section 7 considers the potential impact of development on rural routes and in Northamptonshire;
- Section 8 considers the transport infrastructure requirements to support development; and
- Section 9 provides a summary and conclusion.



2 Vehicular Access Strategy

2.1 Context

2.1.1 The site abuts the public highway along its north-eastern and north-western boundaries (Figure 2-1). The north-eastern boundary is adjacent to the A45 Daventry Road, which runs between Daventry and the M45, whilst the north-western boundary is adjacent to an unclassified road which meets A45 Daventry Road at a priority junction to the north of the site.

2.1.2 The A45 Daventry Road offers the best opportunity to provide access to the site. The single carriageway road is approximately 9m in width, with a footway on the southern side of the carriageway. The road is subject to a 50mph speed limit, is unlit, and has a two-way flow of approximately 10,600 vehicles per day.

Figure 2-1: Highway Frontage





2.2 Access Design

2.2.1 Primary access to the site will be provided in the form of two three-arm roundabouts from the A45. A further separate access will be provided to the employment land in the form of a ghost right turn facility. Preliminary highway designs (**Appendix A**) have been prepared in accordance with the relevant standards set out in the Design Manual for Roads and Bridges. All three junctions can be provided entirely within the public highway, or land within the developer's control.

Figure 2-2: Movement Strategy (Promotional Document Extract)





- 2.2.2 The southern roundabout would be constructed first to provide access to the Phase 1 of the development (circa 265 dwellings). The northern roundabout would be provided as part of Phase 2, with the employment access also coming forward in Phase 2 of development (dependent on demand).



3 Public Transport Access Strategy

3.1 Overview

3.1.1 This section sets out how the site would be made accessible by public transport – principally via a new Rugby to Daventry bus service. Consideration is given to the existing services near the site, the potential for a new service based on precedents from other similar routes, and how the strategy would be delivered.

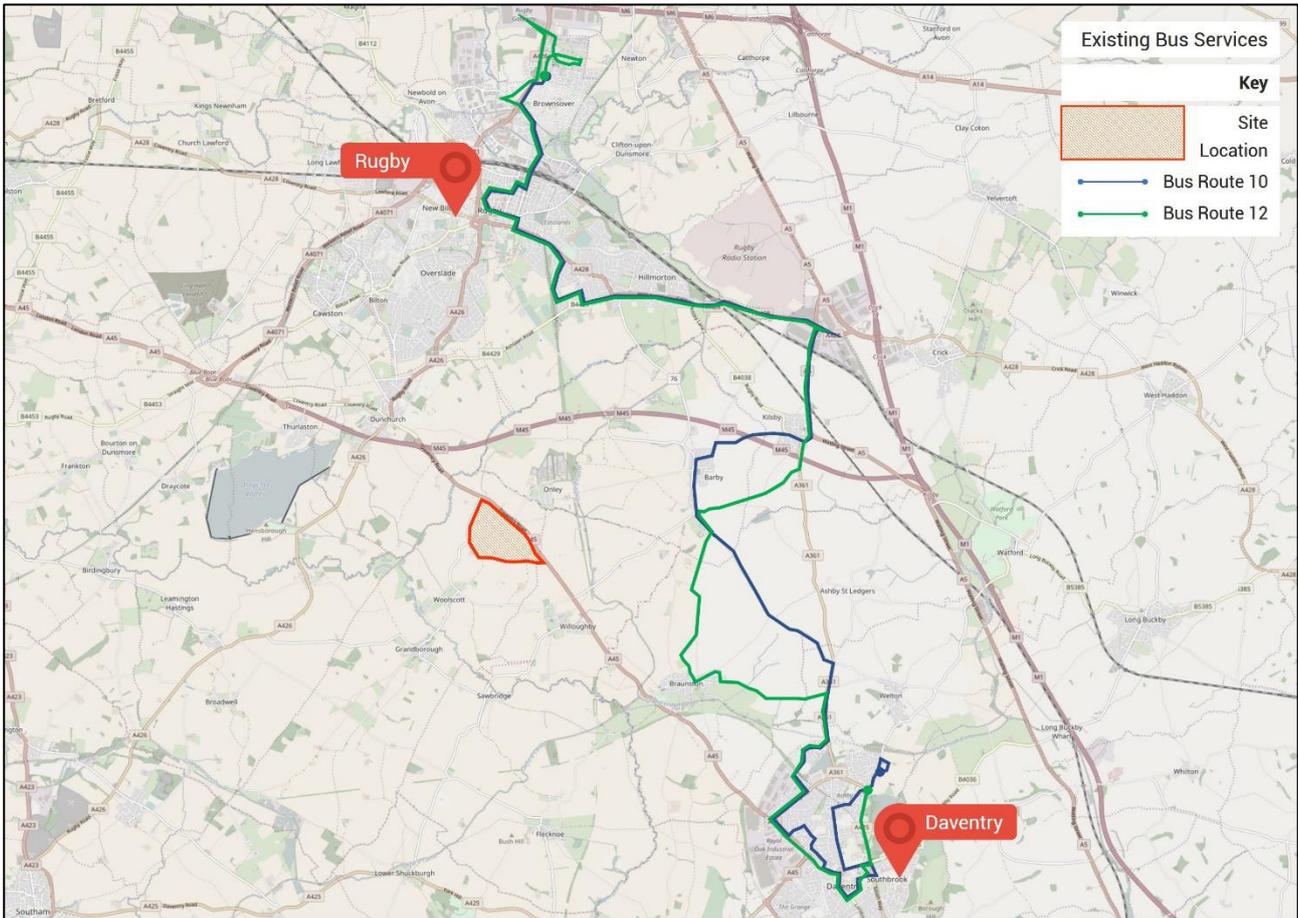
3.2 Existing Services

3.2.1 In the vicinity of the site, Service 203 operates between Princethorpe, Grandborough and Rugby once per day on Mondays and Fridays.

3.2.2 Existing services 10 and 12 do not pass via the site along the A45, but travel between Daventry and Rugby, providing two departures per hour in each direction during the Monday – Saturday daytime periods. These services are routed via DIRFT, Braunston, Barby and residential estates off the A428 through Rugby. Typical peak period travel time is around 55 minutes for a 15km journey, and whilst providing well for travel to and from intermediate points they do not offer an attractive proposition for journeys between Daventry and Rugby. The route of services 10 and 12 services are illustrated in Figure 3-1.



Figure 3-1: Existing Bus Services



3.2.3 It is also understood that a bus route previously served HMP Onley (less than 1km north of the site), but this has now ceased. The opportunity exists therefore for the prison to be accessed on foot via from any new bus route that would come forward as part of the site.

3.3 New Service Provision

3.3.1 There is currently unmet demand for a direct service between Daventry and Rugby, offering a more attractive journey time than current services. Viability potential has been established by comparing the catchment of a proposed Daventry – Rugby service to that of other similar established bus corridors (Table 3-1). Full details of the catchment populations and existing services are provided at **Appendix B**.



Table 3-1: Bus Corridor Comparison

Bus Service Corridor	Direct Distance Between End Towns	Catchment Population, 2011 Census		Bus Service Daytime Frequency
		Residential	Workplace	
Lichfield – Tamworth	10.4km	111,324	46,779	4 / hour
Atherstone – Nuneaton	7.7km	96,818	41,393	3 / hour
Evesham – Stratford	19.9km	68,019	35,042	2 / hour
<i>Daventry – A45 – Rugby</i>	<i>14.8km</i>	<i>101,942</i>	<i>45,277</i>	<i>2 / hour (via DIRFT)</i>

3.3.2 The data indicates that the comparator catchment areas have similar residential and workplace populations and support direct bus services with similar or greater frequencies. However, the only public transport link between Daventry and Rugby at present is the indirect bus service via DIRFT.

3.3.3 The Local Plans for Rugby and Daventry both make provision for substantial growth in resident population and employment over the plan period, therefore overall demand for bus travel will increase. This will in turn strengthen the commercial prospects for an improvement in bus service provision.

3.4 Bus Strategy

3.4.1 Lodge Farm would be served by a new bus route connecting Daventry to Rugby directly along the A45, passing through the site. The new service would be in addition to existing services, which indirectly travel between the two towns. The new service would provide an attractive opportunity to use public transport for end-to-end journeys between Daventry and Rugby, as well as for residents of the Lodge Farm development.

3.4.2 The service would run along the A45 from Daventry to Dunchurch and from there along the A426 to Rugby town centre. The service would be routed through the proposed development via the proposed access junctions at the northern and southern ends of the development. The proposed route is shown at **Appendix C**.

3.4.3 A limited bus service would start once Phase 1 of the development is occupied, this would access the site via the southern roundabout, with the internal layout designed to allow a bus to turn within the site. This would build up to a full service that would pass through the site via the two access roundabouts during Phase 2 of the development.

3.4.4 The bus service would be targeted to achieve modal shift from journeys by car, with the following key features:

- Limited stops to achieve fast journey times;
- Two departures per hour Monday – Saturday daytimes; and



- Hourly services during evenings and Sundays between Lodge Farm and Rugby.

- 3.4.5 It is anticipated that the evening and Sunday service would run through residential areas of Cawston and Overslade.
- 3.4.6 The bus strategy for the site, in tandem with the comprehensive Travel Plan that would be implemented for the site, will seek to achieve the 10% modal shift referenced within the STA.
- 3.4.7 Comparison of the residential and workplace catchment of the proposed services with other bus service corridors indicates that the proposed service could become viable at a daytime frequency of two departures per hour each way. Viability would be supported by Lodge Farm and other development that is planned in both Daventry and Rugby, which will substantially increase both the residential and workplace populations in the service corridor.
- 3.4.8 The service would facilitate planned development in Rugby and Daventry by providing an improvement in sustainable transport provision between the towns. The service could usefully form part of the overall transport package to support planned growth, and provide improved public transport for residents of Dunchurch and Braunston.
- 3.4.9 It is expected that current services 10 and 12 between Daventry and Rugby via DIRFT would continue to a similar timetable pattern as currently provided, as the new service is considered unlikely to result in abstraction from those services.
- 3.4.10 It is envisaged that the service would also offer a wider benefit by enabling modal shift for commuters between Daventry and Rugby. By providing a more direct and faster route between the two centres than is currently available by bus, this will offer a genuine alternative to travel by private car and will therefore to some extent offset the impact of the proposed allocation.
- 3.4.11 Policy DS10 states that the site will include provision of a direct, high quality public transport link between the site Rugby and Daventry. The proposed bus strategy therefore meets the draft policy requirements.
- 3.4.12 Initial discussions have taken place with Stagecoach regarding the proposed bus strategy and the following comments have been received from Nick Small, the Strategic Development Manager at Stagecoach:
- A 30-minute frequency bus service to Rugby would present a meaningful mode choice for the site;
 - Two additional buses would be required in the local operation to deliver a 30-minute frequency, and could be integrated with the services likely to be provided for the recently consented development at Ashlawn Road;
 - Stagecoach are currently carrying out running time tests on the ground to inform the proposals;



3. Public Transport Access Strategy

- Stagecoach note and agree that Lodge Farm offers an opportunity to align with the wider infrastructure provision supporting other strategic allocations to the south and southwest of Rugby. Once further details are known about how these allocations are likely to come forward, it may be possible to refine the public transport proposals such that a slightly higher level of service is possible, potentially a 20-minute frequency (subject to further assessment); and
- Revenue funding will be required to provide a link from Lodge Farm to Daventry until such time as that element of the route is commercially sustainable.

3.4.13 PJA will continue to work with Stagecoach to refine the proposals. The service would be fully funded by the developer through the build out of the site until a point whereby it becomes commercially sustainable.



4 Pedestrian / Cycle Access Strategy

4.1 Pedestrian Access

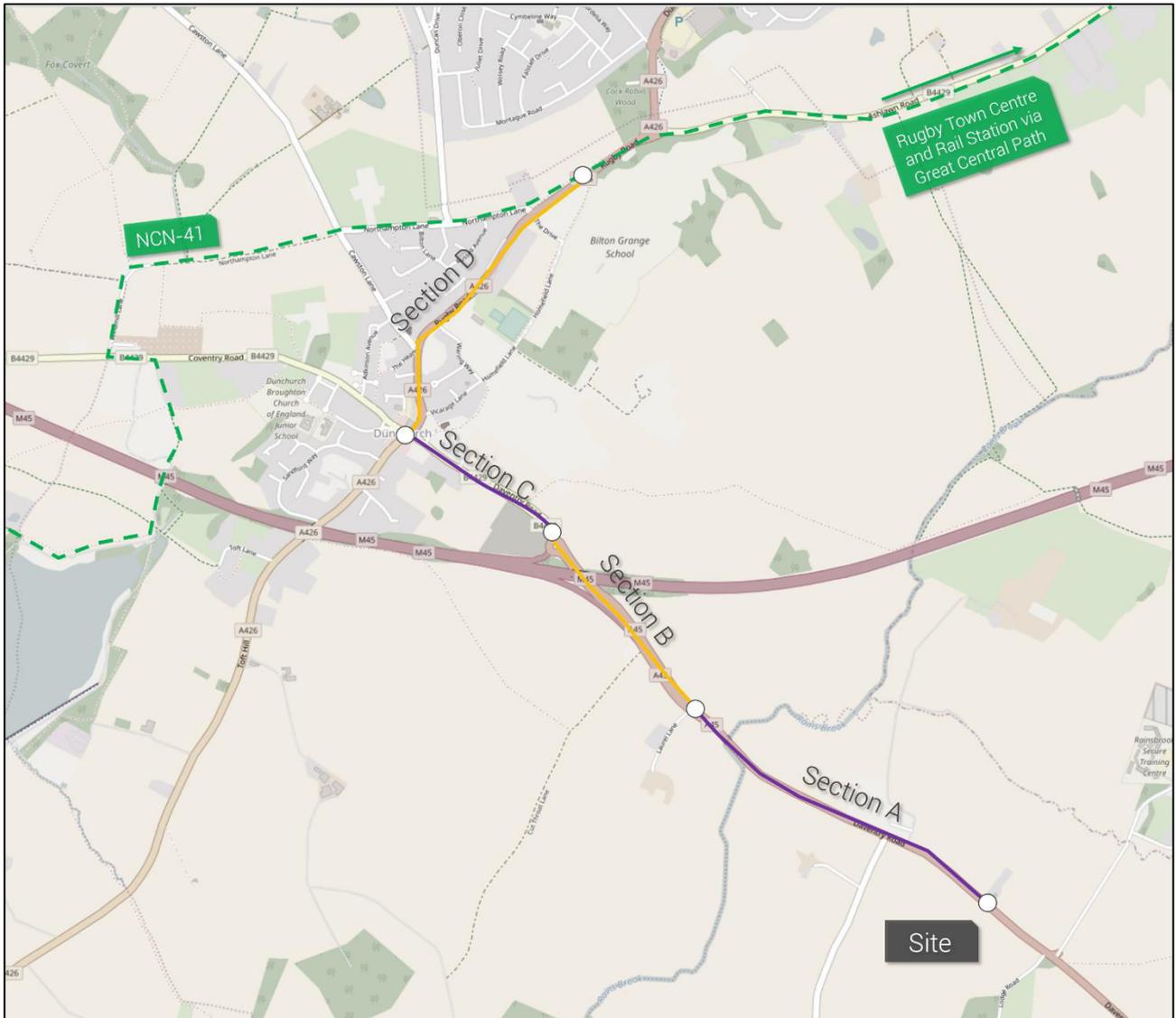
- 4.1.1 The development would provide pedestrian connections to the existing footways on the A45, allowing access on foot to the villages of Dunchurch and Braunston, which are approximately 2.3km and 3.0km respectively from the edge of the site.
- 4.1.2 A comprehensive network of pedestrian routes will be provided within the site to enable access to local facilities including the proposed primary school and local centre.

4.2 Cycle Access

- 4.2.1 The key destinations for cycling would be Dunchurch (approximately 3km or a 12-minute cycle) and Rugby (approximately 7km or a 25-minute cycle). To enable cycling to be a safe and attractive mode choice, the developer would fund a cycle route between the site and existing cycle facilities in Dunchurch. Within the development, a network of cycle routes will enable short journeys to the primary school and local centre facilities.
- 4.2.2 The remainder of this section sets out the details of the proposed cycle route between the site and Dunchurch. The scheme is split into four sections as illustrated in Figure 4-1.
- Section A: A45 – single carriageway section from site access to start of dual carriageway / M45 slip road;
 - Section B: A45 – dual carriageway section until M45 / B4429 roundabout;
 - Section C: B4429 Daventry Road to Dunchurch Crossroads; and
 - Section D: A426 Rugby Road to National Cycle Route 41.



Figure 4-1: Potential Cycling Infrastructure Improvements



Section A – A45 Single Carriageway

Context

- 4.2.3 A narrow footway is already provided on the south-western side of the carriageway. Where the A45 passes over a watercourse (Rainsbrook), a barrier is in place to protect the bridge. The road is subject to a 50mph speed limit, and the opposing carriageways are separated by an area of central hatching.



Proposal

- 4.2.4 The existing footway would be widened within the verge to provide a shared footway / cycleway. It may be appropriate to relocate the central hatching to the side of the road to provide a buffer between the footway / cycleway and oncoming traffic.
- 4.2.5 The location of the barrier will be reviewed to ensure a suitable footway / cycleway width can be provided as far as practicable.

Section B – A45 Dual Carriageway

Context

- 4.2.6 At this point the road widens to become a dual carriageway subject to the national speed limit. In the northbound direction, a slip road diverges to the M45 westbound. A narrow footway is provided on the south-western side of the carriageway, terminating at the field entrance at the start of the slip road.
- 4.2.7 There is a wide central reservation separating the north and southbound carriageway, although the available width narrows to accommodate a bridge pier supporting the M45 overhead.
- 4.2.8 At the northern end of this section the A45 terminates at a roundabout with the M45 eastbound off-slip and B4429. Both the A45 and B4429 entry/exit arms are dual carriageway (with a wide central reservation), the M45 is an entry arm only.

Proposal

- 4.2.9 An uncontrolled crossing point would be provided to the central reservation, south of the slip road. A cycleway would then be provided along the central reservation until the A45 / M45 / B4429 roundabout.
- 4.2.10 The cycle route would run adjacent to the northbound carriageway beneath the M45 alongside the bridge pier.
- 4.2.11 Crossing points would then be provided around all arms of the roundabout. Section C – B4429 Daventry Road

Section C – M45 to Dunchurch

Context

- 4.2.12 A short distance north of the M45, the road returns to a single carriageway, narrowed by hatching either side of a central reservation. The speed limit is 40mph.



4. Pedestrian / Cycle Access Strategy

- 4.2.13 Upon the entrance to Dunchurch village, the road narrows through removal of the central reservation and hatching, and the speed limit reduces to 30mph.
- 4.2.14 The route continues to the 'Dunchurch Crossroads' junction of the B4429 and A426. This is a four-arm signalised junction, for which an improvement scheme is proposed to provide additional space on the A426 Rugby Road (North) arm.

Proposal

- 4.2.15 From the A45 / M45 roundabout, nearside cycle lanes would be provided in both directions, accommodated by removing the central hatching.
- 4.2.16 At the entrance to the village, a gateway feature would be provided to reinforce low traffic speeds and provide a measure for cyclists to re-enter the main carriageway from the cycle lanes.
- 4.2.17 Through the village the restrained street layout and lower speed limit provides an appropriate environment for cyclists to mix with vehicular traffic.
- 4.2.18 At the Dunchurch Crossroads, a high proportion of vehicular and cycle traffic to and from B4429 Daventry Road would turn north to A426 Rugby Road, as the most direct route towards Rugby.
- 4.2.19 Although this is a busy and constrained junction, confident cyclists would assume a right turn position on B4429 Daventry Road, giving way to oncoming vehicles.
- 4.2.20 It is acknowledged that this junction has several conflicting movements and less confident cyclists may therefore prefer to adopt an alternative approach to turning right. An acceptable solution for cycle traffic would be a two-stage right turn, which is a technique recommended by the London Cycle Design standards. This could be accommodated by routing straight over the junction, turning left into School Street, and then left onto Southam Street to travel north across the junction. This arrangement allows cyclists to remain on the nearside of vehicles without having to weave or give way within the junction.

Section D – A426 Rugby Road

Context

- 4.2.21 To the north of the Dunchurch Crossroads, the A426 provides an off-carriageway shared footway / cycleway on the eastern side of the road.

Proposals

- 4.2.22 This route is considered to be satisfactory. This section would be reviewed as part of improvement to the other sections outlined, although it is unlikely that any further improvements would be required



4.2.23 All of the measures set out within the strategy can be delivered within the highway without the need for third party land.



5 Traffic Impact – STA Overview

5.1 Context

5.1.1 The site benefits from an allocation for up to 1,500 dwellings in the emerging Local Plan. The STA, which forms part of the Local Plan evidence base, assessed the impact of all site allocations, including Lodge Farm, on a phased basis. This section of the report considers the findings of the STA with relevance to the development site.

5.2 Model Overview

5.2.1 The Rugby Wide Area S-Paramics micro-simulation model was prepared by VM as the basis of the STA.

5.2.2 The STA report provides a substantial narrative which demonstrates how the model has been prepared and validated. The model provides detailed comparisons of network performance, at both wider and local levels for a forecast year of 2031 and at interim years of 2021 and 2026.

5.2.3 The model primarily compares a combination of the following scenarios

- ‘Reference Case’ – whereby none of the Local Plan allocations are delivered;
- ‘Do Nothing’ – whereby Local Plan allocations are fully or partly delivered, but without mitigation infrastructure schemes; and
- ‘Do Something’ – whereby identified infrastructure schemes are also delivered to mitigate the effects of development.

5.2.4 The principal STA document – ‘Modelling Analysis and Overview (June 2017)’ has been reviewed in detail by PJA. Based upon this review, it is considered that the work undertaken is sufficient to achieve the STA objectives which are as follows:

- *“To assess the likely impact on the highway network of the merging strategies concerning the delivery of housing and employment sites through the Rugby Borough Local Plan.*
- *To identify a mitigation package, to accompany the Local Plan proposals which seeks to minimise the residual impacts on the highway network which are predicted to occur as a result of the Local Plan proposals.*
- *To assess the impacts of the Local Plan at key stages of delivery in order that a phased infrastructure strategy can be determined.*
- *To assess the impacts of various alignment and indicative design options for the delivery of a South West Link Road.”*



5.2.5 The model has been constructed to a significant level of detail in comparison with its geographical scope, and the base model is shown to validate to a higher standard than is required by WebTAG guidance. PJA therefore support the conclusion that the model is suitable for testing the traffic impacts of the Local Plan allocations.

5.3 Site Allocations Assessment

5.3.1 The assessment models the effects of Local Plan allocated sites, which includes Policy DS8 (South West Rugby) and Policy DS10 (Lodge Farm).

5.3.2 Trip rates for the South West Rugby allocation and Lodge Farm were assessed using site-specific trip rates, which were agreed following discussions between PJA and WCC.

5.3.3 Previous testing undertaken as part of the STA utilised standard trip rates for all proposed residential developments, these are provided in Table 5-1.

Table 5-1: WCC Standard Trip Rates (per Dwelling)

Period	Arrival Rate	Departure Rate	Two-Way
07:00 – 08:00	0.08	0.33	0.41
08:00 – 09:00	0.12	0.48	0.60
09:00 – 10:00	0.12	0.22	0.34
16:00 – 17:00	0.35	0.11	0.46
17:00 – 18:00	0.48	0.12	0.60
18:00 – 19:00	0.36	0.11	0.48

5.3.4 It was agreed with WCC that trip rates which better relate to the proposed development site should be used to assess the traffic impact. Accordingly, it was agreed to use the rates recently agreed for development at Cawston Lane, Rugby which were based on surveys of local residential developments, as provided in Table 5-2.

Table 5-2: Agreed Lodge Farm Trip Rates

Period	Arrival Rate	Departure Rate	Two-Way
07:00 – 08:00	0.070	0.445	0.515
08:00 – 09:00	0.158	0.552	0.710
09:00 – 10:00	0.121	0.197	0.318
16:00 – 17:00	0.326	0.170	0.496
17:00 – 18:00	0.484	0.182	0.666
18:00 – 19:00	0.390	0.197	0.587

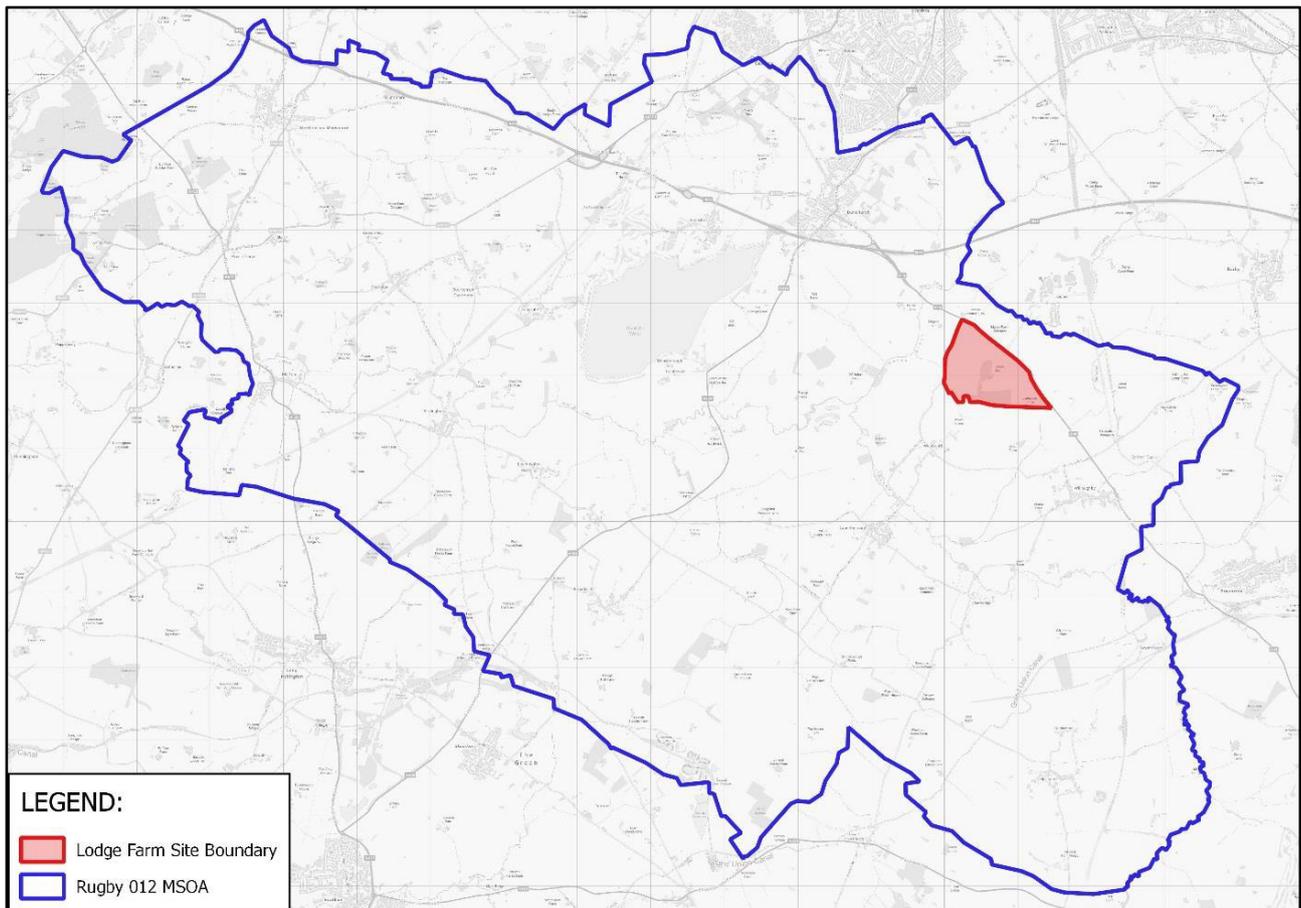
5.3.5 It is evident that the agreed trip rates are significantly higher than the WCC standard trip rates, therefore allowing for a robust assessment to be undertaken.



5.4 Lodge Farm Development Traffic Distribution

5.4.1 The distribution of development trips for Lodge Farm was originally based upon Journey to Work Census data for the Middle Layer Super Output Area (MSOA) in which the site is located. However, it was considered that the MSOA was not fully representative of the site’s location, at the eastern edge of Rugby Borough and only 6km to the north of Daventry (Figure 5-1).

Figure 5-1: Rugby 012 MSOA



5.4.2 It was therefore agreed with WCC to prepare a bespoke gravity model, based upon employment densities within a 45-minute drive time from the site and a deterrence factor relating to the distance from the site. This methodology was validated against a comparison exercise undertaken for the relevant MSOA, using an iterative approach to determine the best-matching deterrence factor.

5.4.3 Committed and allocated employment sites within Rugby, West Northamptonshire, Coventry, Harborough and Stratford were included within the gravity model to account for forthcoming employment opportunities that could vary travel patterns from the proposed development site.



- 5.4.4 This approach was agreed with the relevant local planning and highway authorities (RBC, DDC, WCC & NCC), with a copy of the relevant Technical Notes prepared to support this methodology provided at **Appendix D**.
- 5.4.5 The bespoke traffic distribution developed for Lodge Farm was incorporated within the latest iteration of the STA modelling work, and is summarised in Table 5-3.
- 5.4.6 It should further be acknowledged that the local facilities and primary school will reduce the need to travel externally from the site, and therefore a proportion of trips would be ‘internalised’ within the development.

Table 5-3: Agreed Gravity Model Distribution

Destination	Percentage of Trips
Rugby	32.4%
Coventry	15.1%
Daventry	14.8%
Warwick	8.5%
Northampton	5.3%
Leicester	4.1%
Stratford-on-Avon	3.1%
Harborough	2.8%
Blaby	2.3%
Nuneaton	2.1%
Solihull	2.0%
South Northamptonshire	2.0%
Hinckley	1.6%
Cherwell	1.4%
North Warwickshire	0.6%
Charnwood	0.6%
Oadby	0.5%
Kettering	0.4%
North West Leicestershire	0.2%
Birmingham	0.2%
Total	100%



5.5 Mitigation Schemes

Overview

- 5.5.1 As described later within this report, delivery of all the Local Plan allocations is dependent on several highway infrastructure schemes to mitigate the impact of development. Further consideration is given to the phasing of infrastructure later within this document.
- 5.5.2 Two key elements of infrastructure in relation to development at Lodge Farm are the Dunchurch Crossroads signalised junction and the South West Link Road (SWLR).

Dunchurch Crossroads

- 5.5.3 The key network constraint relating to the site is the four-arm signalised junction of the A426 and B4429. This junction is constrained by the surrounding listed buildings and conservation area, and suffers from queues and delays during the peak hours, particularly on the northern arm of the junction (A426 Rugby Road).
- 5.5.4 Improvements to this junction are included within the Local Plan Infrastructure Delivery Plan, and is included as a mitigation option within the STA modelling work. This mitigation scheme will be implemented as a requirement (secured by planning condition) to enable development of 860 dwellings at Ashlawn Road, which was recently granted planning consent. A copy of the mitigation scheme drawing is provided at **Appendix E**.

South West Link Road (SWLR)

- 5.5.5 A link road through the South West Rugby development site allocations was identified as a requirement to mitigate the effects of Local Plan traffic growth. The primary benefit of the SWLR is that it diverts traffic away from Dunchurch, and several route options have been tested as detailed in Chapters 8 and 9 of the Strategic Transport Assessment.



6 Traffic Impact - STA Modelling Results

6.1 Stage I - 2031 Local Plan Assessment Results

6.1.1 This stage of the assessment compares two scenarios:

- 2031 RWA Reference Case – the RWA model, excluding any Local Plan developments or mitigation schemes;
- 2031 RWA Local Plan – the RWA model, including all Local Plan developments and the full mitigation package, inclusive of Lodge Farm, the SWLR and Dunchurch Crossroads scheme.

6.1.2 The key network statistics are presented for the three-hour AM and PM modelled peaks (07:00 – 10:00 and 16:00 – 19:00) in Table 6-1.

Table 6-1: Network Results Summary

Parameter	AM Peak (07:00 – 10:00)			PM Peak (16:00 – 19:00)		
	2031 Reference Case	2031 Local Plan	Difference (%)	2031 Reference Case	2031 Local Plan	Difference (%)
Completed Trips	116970	133809	12.3%	124318	137018	10.2%
Average Speed (mph)	31	30	-2.0%	30	28	-7.0%
Average Delay (s)	360	386	7.2%	370	422	14.2%

6.1.3 The results indicate that the Local Plan allocations, even with the proposed mitigation schemes, would still result in a limited deterioration in overall network performance. However, the STA does repeatedly note that the schemes proposed are outline in detail and would be further optimised to maximise capacity through the planning process.

6.1.4 The principal network constraint in relation to the site allocation at Lodge Farm is the Dunchurch Crossroads.

6.1.5 The analysis provided within Chapter 5 of the STA demonstrates that at this junction, the maximum queue length would decrease by more than 5 vehicles compared to the Reference Case in both the AM and PM peak periods, and that there would be a greater than 15% reduction in journey times through the junction.

Stage 1 2031 Assessment Conclusions

6.1.6 The Local Plan allocations will have a residual impact on overall network performance, even after the outline mitigation schemes have been implemented.

6.1.7 However, in relation to the site allocation at Lodge Farm, the scheme at the Dunchurch Crossroads and delivery of the South West Link Road will improve traffic conditions at this key junction in



relation to the Reference Case. It should be noted that Lodge Farm will provide a commensurate financial contribution toward the SWLR.

6.2 Stage 2 – 2021 Phasing Assessment Results

6.2.1 This stage of the assessment compares three scenarios:

- 2021 RWA Reference Case – the RWA model for 2021, excluding any Local Plan developments or mitigation schemes;
- 2021 RWA Local Plan Do Nothing – the Reference Case model for 2021, plus partial delivery of the Local Plan allocations based upon the RBC housing trajectory; and
- 2021 RWA Local Plan Do Something – the previous scenario with identified mitigation schemes in response to the Do Nothing results.

6.2.2 The ‘Do Nothing’ and ‘Do Something’ scenarios include a total of 1,525 new dwellings as proposed in the housing trajectory by 2021. The assumed completions by this time includes partial build-out of a number of sites, but excludes any development at Lodge Farm.

6.2.3 The analysis finds that three mitigation schemes are required to mitigate the effects of the housing trajectory for 2021, including the Dunchurch Crossroads scheme. Furthermore, no part of the SWLR is required at this stage.

Stage 2 2021 Assessment Conclusions

6.2.4 The conclusions of the STA are supported in regard to this assessment. However, as is stated within the report “...it is intended that the schemes proposed are outline schemes which may change through further optimisation and detailed design that will precede the final delivery”.

6.2.5 Given the additional capacity benefits that may be realised through more detailed assessment work at a planning application stage, and the potential for slight variation in the phasing of other schemes, it is possible that an opportunity may arise for the earlier release of development at Lodge Farm.

6.3 Stage 3 – 2026 Phasing Assessment Results

6.3.1 This stage of the assessment compares three scenarios:

- 2026 RWA Reference Case – the RWA model for 2026, excluding any Local Plan developments or mitigation schemes;
- 2026 RWA Local Plan Do Nothing – the Reference Case model for 2026, plus partial delivery of the Local Plan allocations based upon the RBC housing trajectory (5,410 dwellings) and the mitigation schemes identified as required for the 2021 assessment; and

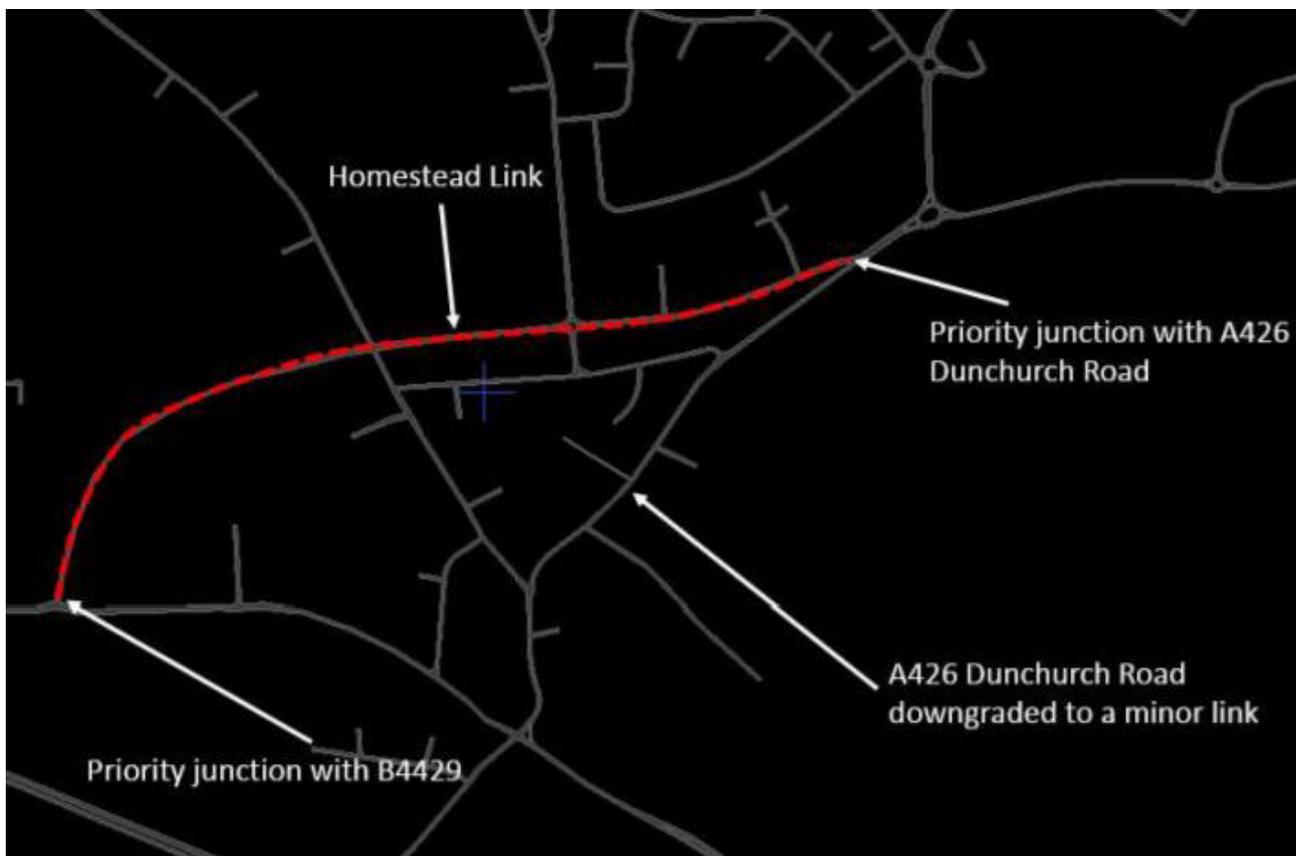


- 2026 RWA Local Plan Do Something – the previous scenario with identified mitigation schemes in response to the Do Nothing results.

6.3.2 The quantum of development in the Local Plan scenarios totals 5,410 dwellings and 203,000m² of employment development based upon the housing trajectory and employment land background paper. This comprises partial build-out of a number of sites, including 265 dwellings at Lodge Farm.

6.3.3 The analysis finds that several additional mitigation schemes are required to accommodate this quantum of development. The mitigation includes the 'Homestead Link', which is a critical section of the SWLR between the A426 and B4429, as illustrated in Figure 6-1.

Figure 6-1: Extract from 2017 Strategic Transport Assessment - Homestead Link



6.3.4 Detailed analysis at the Dunchurch Crossroads indicates that provision of the Homestead Link would reduce traffic flows through this junction significantly compared to both the 2026 Reference Case and the 2016 Base model.

Stage 3 2026 Assessment Conclusions

6.3.5 The conclusions of the STA are supported in regard to this assessment. However, as is stated within the report "...it is intended that the schemes proposed are outline schemes which may change through further optimisation and detailed design that will precede the final delivery".



6. Traffic Impact - STA Modelling Results

- 6.3.6 Given the additional capacity benefits that may be realised through more detailed assessment work at a planning application stage, and the potential for slight variation in the phasing of other schemes, it is possible that an opportunity may arise for the earlier release of additional dwellings (beyond the current trajectory of 265) at Lodge Farm.



7 Traffic Impact – Other Routes

7.1 Overview

7.1.1 The site benefits from direct access to the A45, continuing north towards Rugby, north-west towards Coventry and north-east towards the M1 via the M45. A proportion of development traffic would also travel south on the A45 towards Daventry (and onwards to Northampton), and to a lesser degree other rural routes that are available to the north-east and south-west.

7.2 Impact on Northamptonshire Highway Network

7.2.1 As detailed in Section 5, the gravity model distribution indicates that 22% of vehicles from Lodge Farm would travel towards destinations in Northamptonshire (14.8% Daventry, 5.3% Northampton and 2.0% South Northamptonshire).

7.2.2 Part of the Northamptonshire highway network is within the geographical scope of the STA Paramics model, however to consider the potential impact of the development in the area of Northamptonshire which falls outside of the STA, the agreed development traffic distribution for Lodge Farm has been extended.

7.2.3 Table 7-1 presents the additional development traffic at key junctions within Northamptonshire which are not included within the scope of the STA model, for the AM and PM peak hours. Also provided is the percentage of total trips from Lodge Farm at each junction, based upon full build-out of the development.

Table 7-1: Development Traffic at Key Northamptonshire Junctions

Ref	Junction	Lodge Farm Development Trips		
		AM Peak (08:00 – 09:00)	PM Peak (17:00 – 18:00)	% of Total Lodge Farm Trips
1	A45 / A361, Daventry	93	87	9%
2	A45 / Prospect Way, Daventry	76	71	7%
3	A45 / Leamington Way, Daventry	67	62	6%
4	Leamington Way / Yeomanry Way, Daventry	37	34	3%

7.2.4 The data above indicates that four additional junctions within Daventry would incur more than 30 additional trips during the AM and PM peak hours as a result of the proposed development.



7. Traffic Impact – Other Routes

- 7.2.5 The number of additional vehicles at these junctions has been considered in the relation to local traffic conditions and the Daventry Town Transport Strategy (2013) for context.
- 7.2.6 A review of the affected junctions has identified that if required, there would be a sufficient extent of adopted highway around each junction to provide either a suitable mitigation scheme to increase capacity, if necessary.
- 7.2.7 The traffic impact of the proposed development at these locations would be tested as part of a Transport Assessment accompanying a planning application. The scope of this assessment would be agreed with Northamptonshire County Council, and where necessary, physical mitigation measures proposed.

7.3 Impact on Rural Roads

- 7.3.1 It is acknowledged that some drivers may choose to travel via rural routes, either towards Rugby or as part of a longer journey via primary routes. The total number of additional journeys via rural routes would form a small proportion of total development traffic, and would be quantified as part of a Transport Assessment.

North-east towards Rugby via Barby to A428

- 7.3.2 Drivers may choose a route towards Rugby travelling north-east via Barby along Longdown Lane, Daventry Road and the A428.
- 7.3.3 This is a less direct route towards Rugby than the primary route through Dunchurch, which would be improved via the mitigation scheme. Overall traffic volumes through Dunchurch would be reduced through completion of the SWLR.
- 7.3.4 Traffic calming measures through Barby village may be necessary to deter use of this route for non-local traffic.

North-east towards the A5 / DIRFT

- 7.3.5 An additional route through Barby could also be taken towards the A5 and DIRFT.
- 7.3.6 This route is already considered as part of the STA, and a mitigation scheme at the A361 Daventry Road / The Ridgeway priority junction has been identified to increase the capacity for right-turning traffic. It is likely that this scheme would be implemented by the developers at Lodge Farm.

South-west towards Southam / A428 via Grandborough

- 7.3.7 A proportion of drivers may choose to travel towards Southam, Leamington and Warwick via rural routes through Grandborough to the A426 avoiding Dunchurch.



- 7.3.8 Part of this route is along a single-track lane with passing places and has limited capacity. A review of capacity, safety and the predicted volumes of traffic using this route would be undertaken, and necessary measures adopted and implemented where appropriate.
- 7.3.9 These measures are likely to include provision of additional passing places and speed reduction / traffic calming at identified key locations.



8 Infrastructure Requirements

8.1 Access

8.1.1 The southern roundabout would be constructed first to provide access to the Phase 1 of the development (circa 265 dwellings). The northern roundabout would be provided as part of Phase 2. The phasing strategy is detailed further within the Vision Document. The employment access would come forward in Phase 2 of development, but would be dependent on demand.

8.2 Public Transport Infrastructure

8.2.1 The development would enable implementation of a new high-quality bus route at twice hourly intervals between Daventry and Rugby via Lodge Farm. The developer would deliver new infrastructure as required to support this bus service, including suitable access to the site and bus stops.

8.3 Pedestrian / Cycle Infrastructure

8.3.1 The developer would provide pedestrian connections to the surrounding highway network and localised improvements to nearby destinations as required.

8.3.2 A new cycle route along the A45 between the site and Dunchurch would be provided, as described in detail in Section 4 of this document.

8.4 South West Link Road

8.4.1 It is identified within the Infrastructure Delivery Plan that the proposed development would be required to make financial contributions towards the SWLR. The phasing and timing of this contribution would be determined through discussions with WCC.

8.5 Dunchurch Crossroads

8.5.1 A mitigation scheme has been identified for this junction, which is marked for improvement within the Infrastructure Delivery Plan. In July 2017, the proposed development of 860 dwellings at Ashlawn Road was granted planning consent, and the developer is required under a planning condition to implement this scheme prior to first occupation.

8.6 STA Highway Mitigation Schemes

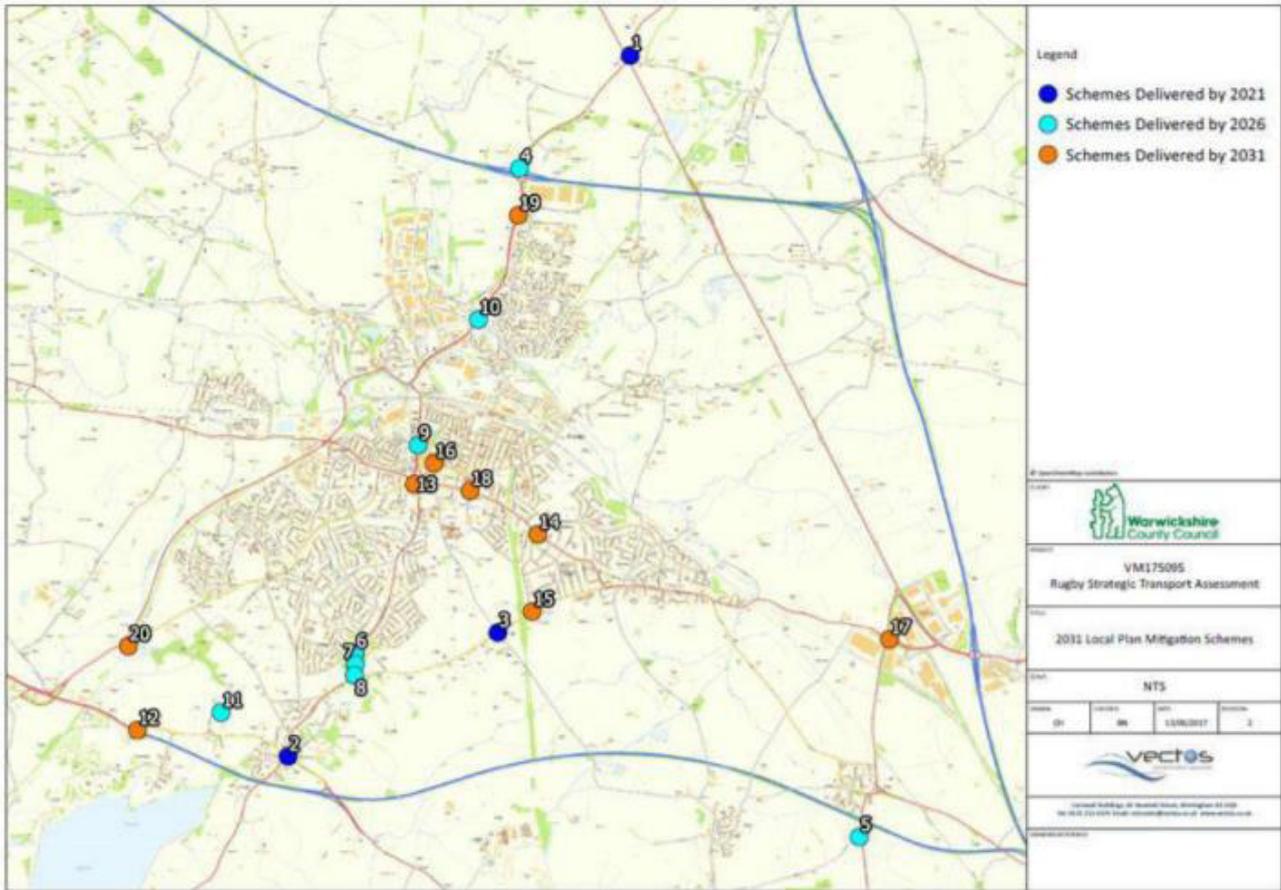
8.6.1 The highway mitigation schemes identified within the STA are set out in Table 8-1 and illustrated in Figure 8-1. It is acknowledged that this does not provide an exhaustive list, and the eventual requirements will be established in detail through the planning process.

**Table 8-1: STA Mitigation Schemes**

Ref	Scheme Locations	Delivery	Likely Development Area Trigger
1	Gibbet Hill Roundabout Signals Optimisation / Widening	2021	North
2	Dunchurch Crossroads – Signal optimisation / widening	2021	South West + Lodge Farm
3	Ashlawn Road – Barby Road – Right turn bays	2021	South West
4	M6 Junction 1 – Widening / lane allocations	2026	North
5	Daventry Road / The Ridgeway – Right turn bay	2026	Lodge Farm
6/7	A426 / Sainsbury's Rbt – Widening / dualling	2026	South West + Lodge Farm
8	A426 / Ashlawn Road – Widening	2026	South West + Lodge Farm
9	A426 / Evereux Way – Widening	2026	Cumulative
10	A426 / Brownsover Rbt – Widening and signalisation	2026	North
11	SWLR - Homestead Link	2026	South West + Lodge Farm
12	A45/M45 Rbt – partial signalisation	2031	South West + Lodge Farm
13	Rugby Gyrotory – alter signals	2031	Cumulative
14	Ashlawn Road/Percival Road – Right turn lane	2031	Cumulative
15	A428/Percival Road – Right turn lane	2031	Cumulative
16	B5414 – Downgrade to minor route	2031	Cumulative
17	A5/A428 Roundabout – part signalisation	2031	Lodge Farm
18	Hillmorton Road / Whitehall Road Rbt – Widening	2031	Cumulative
19	A426/Central Park Drive Rbt – Widening and partial signalisation	2031	North
20	Full SWLR – Homestead Link and A45 / A4071 Link	2031	South West + Lodge Farm



Figure 8-1: Strategic Transport Assessment Extract - Local Plan Mitigation Schemes



- 8.6.2 The STA identifies that the requirement for several of these schemes would be triggered either by development at Lodge Farm or a combination of Lodge Farm and the South West Rugby allocation.
- 8.6.3 The Dunchurch Crossroads scheme (Ref 2) will be delivered by the developer at Ashlawn Road following the recent planning consent gained at appeal.
- 8.6.4 It is considered likely that schemes with a 'South West + Lodge Farm' trigger would be delivered via pooled s106 contributions, to be determined through the planning process.
- 8.6.5 Schemes Ref. 5 and 17 are identified to have a potential trigger of Lodge Farm only. The requirement, or otherwise, for these schemes would be considered in detail through the planning process as part of a Transport Assessment in dialogue with WCC.
- 8.6.6 Scheme 5 would introduce a ghost-island right turn lane at the Daventry Road / Ridgeway priority junction, whilst Scheme 17 would introduce traffic signals on one arm of the A5 / A428 roundabout.
- 8.6.7 Both initial designs included within the STA modelling have been reviewed, and in principle are considered to be deliverable without the need for third party land



8.7 Northamptonshire Highway Mitigation Schemes

8.7.1 As previously described in Section 7, the additional traffic movements at key junctions within Northamptonshire which were not included within the STA have been calculated using the agreed distribution. This exercise identified that four junctions within Daventry would incur additional traffic movements:

- A45 / A361 roundabout;
- A45 / Prospect Way roundabout;
- A45 / Leamington Way roundabout; and
- Leamington Way / Yeomanry Way roundabout.

8.7.2 The impact of the proposed development at these junctions would be assessed in detail at the planning application stage. If mitigation is required to accommodate additional traffic, a review of the junction geometry and extent of adopted highway has indicated that a combination of the following measures would be sufficient to increase capacity:

- Revised road markings to improve lane utilisation;
- Enlargement of roundabout circulatory or entry arms;
- Part signalisation of key entry arms.

8.7.3 It is therefore considered that there would be potential to increase the capacity of these junctions if required, which would be examined in further detail during the planning application stage.

8.8 Rural Highway Mitigation Schemes

8.8.1 As discussed in Section 7 there are four rural routes that could be taken by traffic from Lodge Farm. The detailed impact and mitigation requirements would be assessed further at planning application stage; however, the likely infrastructure requirements would be as follows:

- Provision of a right turn lane at the Daventry Road / The Ridgeway priority junction;
- Additional passing places and traffic calming / speed reduction measures through Grandborough;
- Traffic calming measures through Barby.



9 Summary and Conclusions

9.1 Summary

- 9.1.1 This report has set out the transport strategy to support the allocation of land at Lodge Farm, Rugby. The proposed development would comprise delivery of a new Main Rural Settlement of Rugby Borough, and this document has considered the transport implications of the proposals.
- 9.1.2 Section 2 of this report demonstrated that access could be gained to the site via three new junctions off the A45.
- 9.1.3 Section 3 demonstrated that the site could be served by a new 30-minute interval bus service between Daventry and Rugby.
- 9.1.4 Section 4 considered the pedestrian and cycle infrastructure likely to be required to make the development accessible.
- 9.1.5 Section 5 considers the modelling work undertaken as part of the STA in relation to Lodge Farm;
- 9.1.6 Section 6 sets out key results extracted from the STA, which demonstrates that the site is deliverable with suitable key mitigation measures including improvements to the Dunchurch Crossroads and the SWLR;
- 9.1.7 Section 7 considers potential transport impacts on the Northamptonshire highway network and on rural roads leading from the site.
- 9.1.8 Section 8 considers the infrastructure required to support development, including the mitigation schemes included within the STA.

9.2 Conclusions

- 9.2.1 This report has demonstrated that the site allocation at Lodge Farm is deliverable in transport terms and has indicated the likely infrastructure requirements to support development.
- 9.2.2 It is therefore considered that Policy DS10 of the Draft Local Plan is justified in transport terms and should be retained.



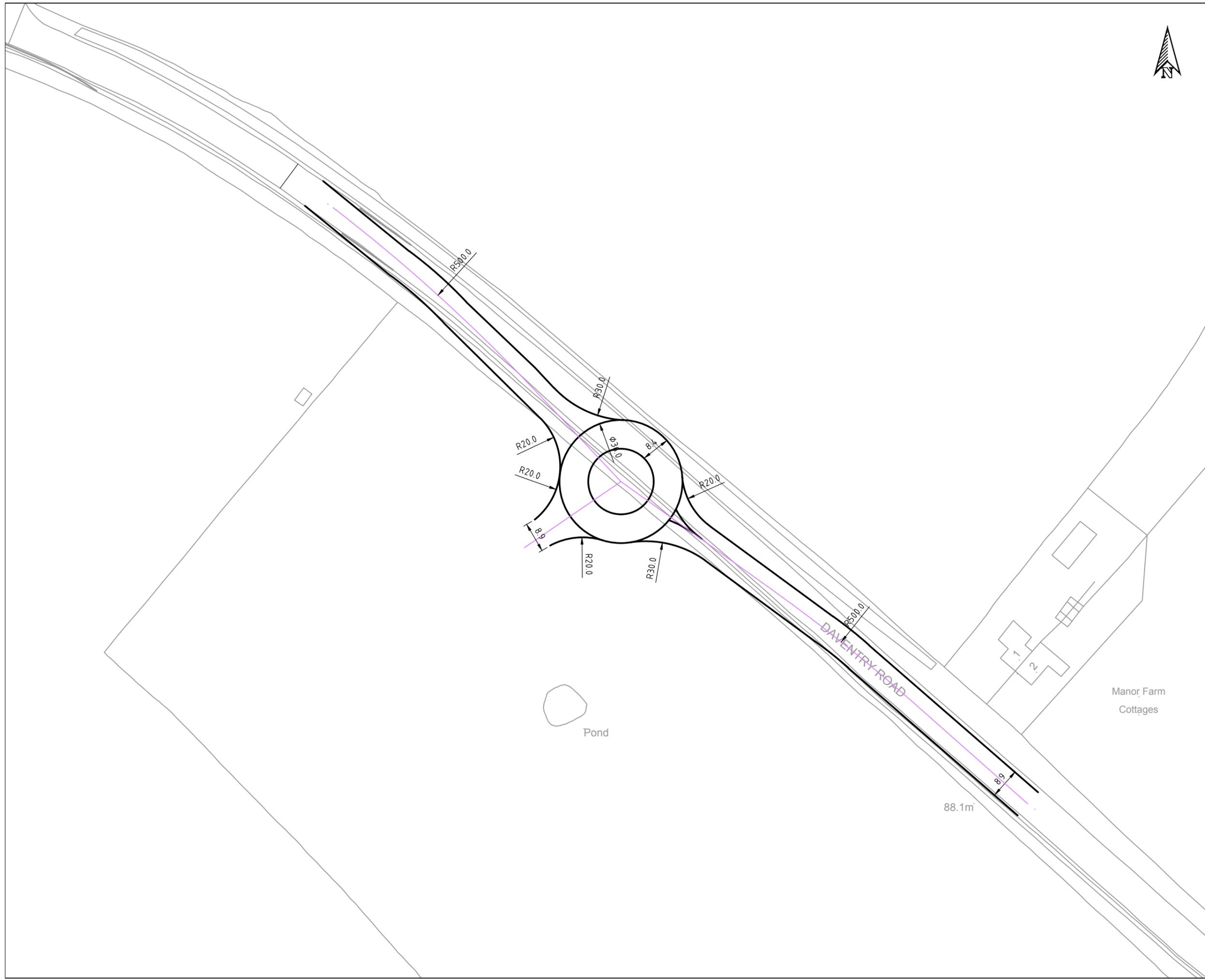
Appendix A Preliminary Access Designs



Drawing Status:
 These drawings have been produced with reference to the CDM Regulations 2015; Regulation 9.

These Drawings are not to be used for construction purposes. It is the responsibility of the contractor and client to identify risks associated with the construction stage and to design appropriate measures to mitigate. The risks identified on the PJA Scheme Design Risk Assessment are based on the information available at the time of the design (drawing date) Where shown on PJA Design Drawings, the position of services is based on information provided by other parties at the time of the design and is for guidance only. It is the responsibility of the Client and Contractor to verify the exact position of any services before commencing works on site.

Client Duties:
 The client is directed to Regulation 4 of the CDM 2015 Regulations: Client duties in relation to managing projects



Rev / Date	Description	Dm	Chkd
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Client
 St Modwen Developments Ltd

Project
 Lodge Farm, Rugby

Drawing
 Proposed Roundabout
 Northern

Drawn by: PAS 20/10/2016	Scale:
Checked by: NM 20/10/2016	1:1000 @ A3
Drawing No.	Revision
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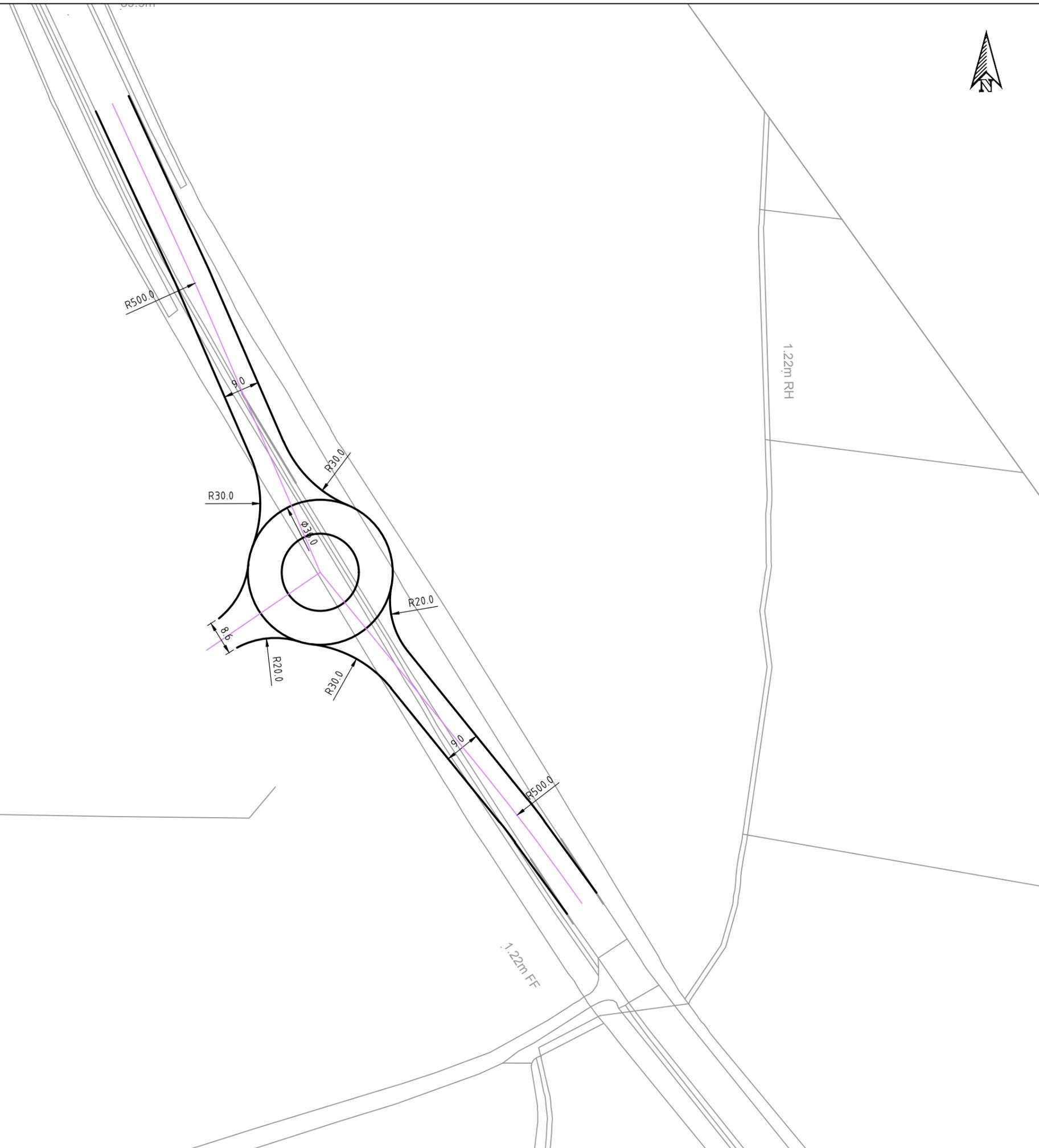
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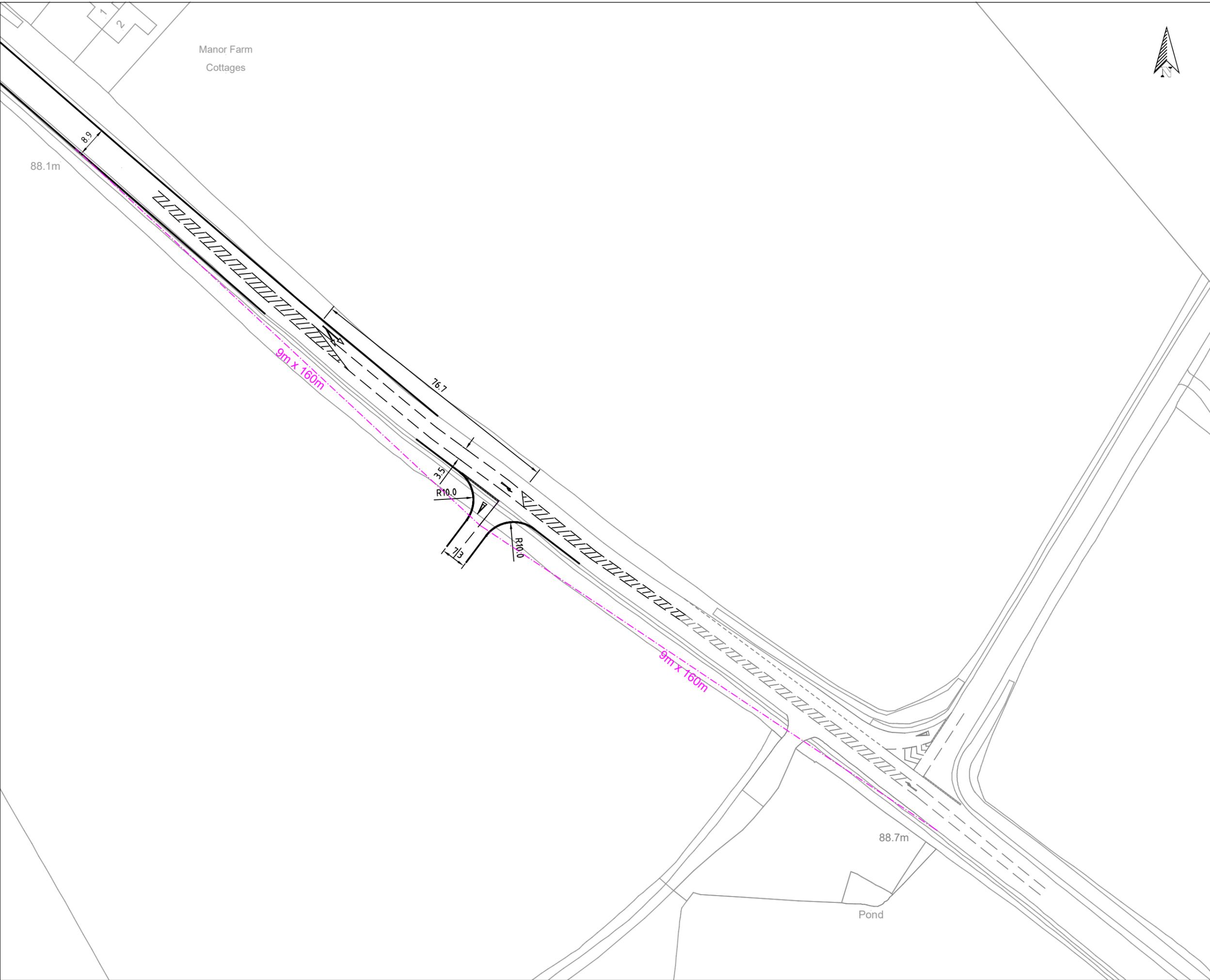
Client
 St Modwen Developments Ltd

Project
 Lodge Farm, Rugby

Drawing
 Proposed Roundabout
 Southern

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Checked by: NM 20/10/2016	1:1000 @ A3
Drawing No.	Revision
2202 - 03	-

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Client Duties:
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Client
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Project
 Lodge Farm, Rugby

Drawing
 Ghost Right Turn

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Client
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Project
 Lodge Farm, Rugby

Drawing
 Proposed Roundabout Access

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Appendix B Bus Catchment Analysis

MMTP for Phil Jones Associates Ltd

Lodge Farm, Rugby: Bus Service Catchment Analysis

Version: 0'3
 Date: 22/12/2016
 By: TKH

Corridor:	Daventry - Dunchurch - Rugby					
Length:	crow-fly: 14.8km		bus route: 17.4km		proposed via A45+A426	
Catchment:	Resident population			Workplace employees		
Daventry	25,026			13,671		
intermediate	3,489			963		
Rugby	73,427			30,643		
Combined	101,942			45,277		
Current Bus Service:	10,12					
based on town centre timings:	Weekday			Saturday		Sunday
Frequency	Peaks	Inter-peak	Evening	Daytime	Evening	Daytime
On-Bus Time	2/hr	2/hr	-	2/hr	-	-
Train Service:	None					

Corridor:	Lichfield - Tamworth					
Length/km:	crow-fly: 10.4km		bus route: 15.3km			
Catchment:	Resident population			Workplace employees		
Lichfield	32,219			15,494		
intermediate	2,292			970		
Tamworth	76,813			30,315		
Combined	111,324			46,779		
Current Bus Service:	X55 and X65					
based on town centre timings:	Weekday			Saturday		Sunday
Frequency	Peaks	Inter-peak	Evening	Daytime	Evening	Daytime
On-Bus Time	4/hr	4/hr	-	4/hr	-	-
Train Service:	Trains depart at typically hourly intervals in Weekdays peaks and inter-peak, simiarly on Saturday and on Sunday from late morning; all days have a service until mid-evening. On-train journey time is typically 6 or 7 minutes.					

MMTP for Phil Jones Associates Ltd

Lodge Farm, Rugby: Bus Service Catchment Analysis

Version: 0'3
 Date: 22/12/2016
 By: TKH

Corridor:	Atherstone - Nuneaton					
Length/km:	crow-fly: 7.7km		bus route: 10.1km			
Catchment:	Resident population			Workplace employees		
Atherstone&Man	11,003			8,115		
intermediate	3,738			1,136		
Nuneaton	81,877			32,142		
Combined	96,618			41,393		
Current Bus Service:	48					
based on town	Weekday			Saturday		Sunday
centre timings:	Peaks	Inter-peak	Evening	Daytime	Evening	Daytime
Frequency	2/hr	3/hr	0.5/hr	3/hr	0.5/hr	1/hr
On-Bus Time	35 mins	25 mins	22 mins	25 mins	22 mins	25 mins
Train Service:	Trains depart at typically hourly intervals in Weekdays peaks and inter-peak, simiarly on Saturday and on Sunday from late morning; all days have a service until mid-evening. On-train journey time is typically 7 or 8 minutes.					

Corridor:	Evesham - Stratford					
Length/km:	crow-fly: 19.9km		bus route: 25.8km			
Catchment:	Resident population			Workplace employees		
Evesham	27,445			18,308		
intermediate	17,146			5,978		
Stratford	23,428			10,756		
Combined	68,019			35,042		
Current Bus Service:	18/X18					
based on town	Weekday			Saturday		Sunday
centre timings:	Peaks	Inter-peak	Evening	Daytime	Evening	Daytime
Frequency	~2/hr	2/hr	-	2/hr	-	1/hr
On-Bus Time	49 mins	43 mins	-	43 mins	-	28-42 mins
Train Service:	None					



Appendix C Transport Strategy Plan



Appendix D Traffic Distribution Technical Notes

Technical Note 2

Project: Lodge Farm, Rugby

Subject: Trip Distribution

Client:	St Modwen	Version:	B
Code:	2202	Author:	NW
Date:	26 October 2016	Approved:	NM

I Introduction

1.1 This Technical Note has been prepared by Phil Jones Associates (PJA) on behalf of St Modwen in relation to comments received from Warwickshire County Council (WCC), Northamptonshire County Council (NCC) and Rugby Borough Council (RBC). The original note (to which this report refers) is included as **Appendix A**.

2 Gravity Model

2.1 Comments received from WCC related to the difference in the number of trips predicted to be attracted to Rugby in the gravity model set out in the original Technical Note, when compared to the existing 2011 Middle Super Output Area (MSOA) Journey to Work (JtW) census data. The original Technical Note set out that the concentration of higher population densities within the selected MSOA (Rugby 012) benefitting from quick, direct access to employment areas within Rugby via the A426 or A4071, skewed the overall distribution of the MSOA and hence why a gravity model approach was required. The concept of a more site-specific gravity model has been accepted by WCC, but further work was requested in order to validate that gravity model.

2.2 To validate the model against existing JtW data, two MSOAs in south Rugby were selected (Rugby 010 and 011) where it is likely that the trip patterns reflect census data across the entire MSOA (i.e. with a more even population density across the MSOA). The gravity model was then used to estimate trip distribution for the selected MSOAs. Table 2-1 details the resultant gravity model outputs, based on the original distance deterrence factor of 1.5.

Table 2-1: Gravity Model Calibration (Default 1.5 Deterrence Factor)

Destination	MSOA Rugby 010		MSOA Rugby 011	
	Gravity Model	Census Distribution	Gravity Model	Census Distribution
Rugby	43.98%	59.26%	45.27%	59.02%
Daventry	10.39%	13.78%	6.35%	11.76%
Coventry	11.69%	7.88%	14.54%	9.56%
Warwick	5.68%	5.03%	7.73%	7.11%
Harborough	4.58%	4.24%	3.24%	3.57%
Northampton	6.55%	2.49%	3.95%	1.60%
Stratford-on-Avon	2.35%	2.30%	3.36%	2.31%
Nuneaton	2.52%	1.23%	2.39%	1.34%
Hinckley	2.24%	1.19%	1.38%	0.63%
South Northamptonshire	0.87%	0.63%	0.32%	0.22%
Blaby	2.50%	0.40%	2.46%	0.71%
Leicester	3.66%	0.36%	3.64%	0.48%
Kettering	1.35%	0.36%	1.09%	0.19%
Solihull	1.00%	0.32%	1.23%	0.30%
Cherwell	0.73%	0.16%	1.26%	0.41%
North Warwickshire	0.69%	0.12%	1.31%	0.60%
North West Leicestershire	0.45%	0.12%	0.29%	0.11%
Charnwood	0.09%	0.08%	0.08%	0.04%
Oadby	0.32%	0.08%	0.00%	0.00%
Birmingham	0.00%	0.00%	0.11%	0.04%
Wellingborough	0.00%	0.00%	0.00	0.00%
Milton Keynes	0.00%	0.00%	0.00	0.00%
Total	100%	100%	100%	100%

2.3 To calibrate the model, the deterrence factor was then adjusted so that the distribution for Rugby replicated that of the census distribution. The deterrence factors presented in Table 2-2 were derived using that iterative process, with the average to be used going forward.

Table 2-2: Deterrence Factor Summary

MSOA Rugby 010	MSOA Rugby 011	Average
1.819	1.812	1.816

2.4 For information, the distribution based on the revised deterrence factors is provided in Table 2-3.

Table 2-3: Gravity Model Calibration (Adjusted Deterrence Factors)

Destination	MSOA Rugby 010 (1.819 Deterrence Factor)		MSOA Rugby 011 (1.812 Deterrence Factor)	
	Gravity Model	Census Distribution	Gravity Model	Census Distribution
Rugby	59.24%	59.26%	59.01%	59.02%
Daventry	9.19%	13.78%	5.52%	11.76%
Coventry	7.97%	7.88%	11.23%	9.56%
Warwick	3.72%	5.03%	5.88%	7.11%
Harborough	3.54%	4.24%	2.53%	3.57%
Northampton	4.23%	2.49%	2.67%	1.60%
Stratford-on-Avon	1.59%	2.30%	2.58%	2.31%
Nuneaton	1.66%	1.23%	1.70%	1.34%
Hinckley	1.53%	1.19%	0.99%	0.63%
South Northamptonshire	0.58%	0.63%	0.22%	0.22%
Blaby	1.65%	0.40%	1.71%	0.71%
Leicester	2.29%	0.36%	2.40%	0.48%
Kettering	0.82%	0.36%	0.72%	0.19%
Solihull	0.60%	0.32%	0.81%	0.30%
Cherwell	0.43%	0.16%	0.85%	0.41%
North Warwickshire	0.42%	0.12%	0.87%	0.60%
North West Leicestershire	0.27%	0.12%	0.19%	0.11%
Charnwood	0.06%	0.08%	0.05%	0.04%
Oadby	0.20%	0.08%	0.00%	0.00%
Birmingham	0.00%	0.00%	0.07%	0.04%
Wellingborough	0.00%	0.00%	0.00%	0.00%
Milton Keynes	0.00%	0.00%	0.00%	0.00%
Total	100%	100%	100%	100%

2.5 As indicated in the data above, the deterrence factors used provide a very close correlation between the gravity model and Census based distributions. Therefore, it is considered a valid methodology to utilise the average deterrence factor of 1.816.

3 Future Employment Opportunities

3.1 At the request WCC, NCC and RBC, a number of committed and allocated schemes likely to impact upon the trip distribution of the site have now been included within the model. These sites are detailed in Table 3-1:

Table 3-1: Local Plan Sites Included within Model

Local Plan Area	Site
Rugby	Rugby Radio Station
	South West Rugby
	Coton Park East
	Rugby Gateway
	Rugby Parkway Station
West Northamptonshire	DIRFT 3
	Daventry Town Centre
	Daventry North East SUE
	M1 Junction 16
Coventry	Coventry Gateway
	Coventry Friargate
Harborough	Magna Park
Stratford	Gaydon/ Lighthorne Heath

3.2 For sites where the number of jobs is currently unknown, the Government’s ‘Employment Densities Guide’ has been used to provide an indication of the likely employment levels on the site.

3.3 Note that the Rugby Parkway Station not yet a committed scheme and is considered unlikely to have a significant impact on the trip distribution for the site. Nevertheless, it has been included within the model at the request of NCC, using the number of spaces (300¹) available as a proxy for employment numbers.

4 Distribution Summary

4.1 Following adjustment of the deterrence factor and the inclusion of local plan commitments, the resultant residential trip distribution is summarised in Table 4-1, with the full gravity model details included as **Appendix B** to this note.

¹ Rugby Parkway: *A feasibility study into a new station to serve the Rugby Radio Station Sustainable Urban Extension*

Table 4-1: Gravity Model Summary

Destination	Percentage of Trips
Rugby	32.4%
Coventry	15.1%
Daventry	14.8%
Warwick	8.5%
Northampton	5.3%
Leicester	4.1%
Stratford-on-Avon	3.1%
Harborough	2.8%
Blaby	2.3%
Nuneaton	2.1%
Solihull	2.0%
South Northamptonshire	2.0%
Hinckley	1.6%
Cherwell	1.4%
North Warwickshire	0.6%
Charnwood	0.6%
Oadby	0.5%
Kettering	0.4%
North West Leicestershire	0.2%
Birmingham	0.2%
Total	100%

4.2 It is considered that this note now responds to all issues and comments raised by WCC, NCC and RBC. Approval of this revised distribution is now sought so that the revised PARAMICS modelling can be commenced.

Appendix A PJA Technical Note

Technical Note

Project: Lodge Farm, Rugby

Subject: Trip Distribution

Client:	St Modwen	Version:	A
Code:	2202	Author:	NW
Date:	12 October 2016	Approved:	NM

I Introduction

1.1 In order to inform representations on the Publication Draft of Rugby Borough Council's (RBC) Local Plan, Phil Jones Associates (PJA) has been commissioned by St Modwen to carry out detailed testing of the proposed allocation at Lodge Farm using Warwickshire County Council's (WCC's) Paramics Model. Given that this modelling work will be specific to Lodge Farm, it is considered appropriate to revisit the trip distribution assumptions for the site that are currently built into the model. The purpose of this note is therefore to review the trip distribution currently assumed in the model and to propose a more appropriate revised distribution.

2 Existing Trip Distribution

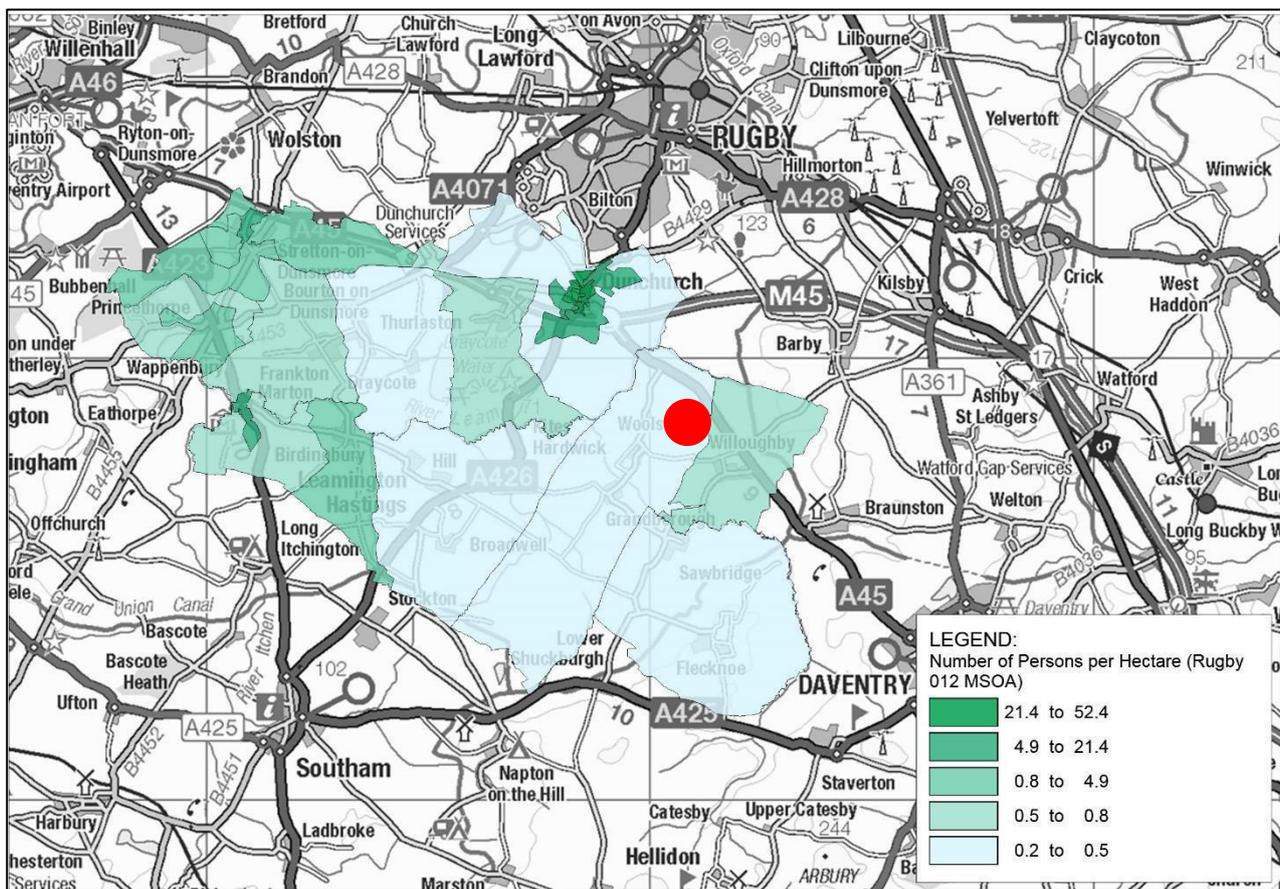
2.1 The Paramics model operated by Vectos on behalf of WCC assumes a trip distribution for Lodge Farm based on Journey to Work Origin/Destination (O/D) pairs extracted from the Census of Population for Middle Super Output Area (MSOA) Rugby 012. The resultant trip distribution is summarised in Table 2-1.

Table 2-1: Existing Model Distribution

End Destination	Vectos Trip Distribution
Rugby	42.86%
Warwick	21.88%
Coventry	14.29%
Stratford-upon-Avon	11.50%
Daventry	9.47%
Total	100%

- 2.2 This methodology is considered to be acceptable and fit for the purpose which it was intended i.e. area-wide testing of multiple potential local plan allocations. However, it is now considered appropriate to refine that methodology in order to consider the impact of Lodge Farm in detail.
- 2.3 Concern has been raised by both WCC and Northamptonshire County Council (NCC) that the current distribution for the site potentially over-estimates the proportion of trips to employment sites in Rugby, with a commensurate under-estimation of the trips towards Daventry.
- 2.4 Detailed interrogation of 2011 Census Population Density data at Output Area (OA) level has been undertaken to understand the population spread within MSOA Rugby 012. Figure 2-1 illustrates this data:

Figure 2-1: Rugby 012 Population Density



- 2.5 Figure 2-1 shows that the highest population densities are concentrated in the north and west of the MSOA, particularly around Dunchurch and the A45/A423 corridors. These areas benefit from quick, direct access to employment areas within Rugby via the A426 or A4071, and are located close to Warwick, hence why both locations draw a large proportion of the trips. It is therefore clear from this data why the Journey to Work data based on the MSOA produces the distribution set out in Table 2-1.

2.6 Given that the Lodge Farm site is located towards the eastern extremity of the MSOA, away from these main population centres, it therefore follows that a more site-specific distribution would be appropriate.

3 Proposed Distribution

3.1 In order to calculate a more realistic estimate of the likely trip distribution, a gravity model has been built based on employment areas within a 45-minute peak-hour drive time and a journey time deterrence factor of 1.5. This produces an estimate of trip distribution based on the assumption that people will travel to work in an area in proportion to the number of job opportunities available but in inverse proportion to the distance, in time, away.

3.2 The resultant residential trip distribution is summarised in Table 3-1, and the full gravity model details are included as Appendix A to this note.

Table 3-1: Gravity Model Summary

Destination	Percentage of Trips
Rugby	18.3%
Coventry	17.9%
Daventry	12.0%
Warwick	9.1%
Northampton	8.1%
Leicester	6.6%
Stratford-on-Avon	4.1%
Blaby	3.5%
Harborough	3.3%
Nuneaton	3.2%
Solihull	3.1%
Hinckley	2.4%
South Northamptonshire	2.4%
Cherwell	2.1%
North Warwickshire	1.0%
Charnwood	0.9%
Oadby	0.7%
Kettering	0.7%
North West Leicestershire	0.4%
Birmingham	0.3%
Total	100%

3.3 This approach is considered to provide a more accurate representation of the likely trip distribution from the site. Reduced trip proportions are predicted to Rugby and Warwick, with increased numbers of trips towards Daventry and Coventry, given the relative size and accessibility of these employment areas. Approval of this revised distribution is now sought from WCC and NCC so that it can be used in the revised PARAMICS modelling.

Appendix B Revised Gravity Model

To_LSOA_Name	To_LSOA_Name	Total_Min	To_Employ	With Factor	Percentage Distribution	Notes
Rugby 012A	Rugby 012A	4	5499	433	12.82%	Updated to Include SW Rugby Allocation Site
Daventry 003E	Daventry 003E	13	12002	116	3.43%	Updated to Include DIRFT 3
Rugby 001G	Rugby 001G	15	15250	108	3.19%	Updated to include Rugby Radio Station, Rugby Gateway and Coton Park East
Warwick 005G	Warwick 005G	19	19100	95	2.81%	Updated to Include Coventry/Warwick Gateway
Coventry 031A	Coventry 031A	22	18789	70	2.06%	Updated to Include Coventry Friargate
Coventry 031C	Coventry 031C	24	19567	62	1.83%	
Rugby 003C	Rugby 003C	10	4452	63	1.86%	
Rugby 012B	Rugby 012B	4	665	63	1.87%	
Daventry 007D	Daventry 007D	10	3647	54	1.60%	Updated to Include Daventry Town Centre Development
Daventry 003F	Daventry 003F	8	1743	44	1.29%	
Harborough 006D	Harborough 006D	26	15491	41	1.21%	Updated to Include Magna Park
Daventry 006C	Daventry 006C	9	2192	42	1.25%	
Daventry 003A	Daventry 003A	10	2492	41	1.20%	
Daventry 008C	Daventry 008C	10	2630	40	1.18%	
Rugby 009C	Rugby 009C	10	2160	33	0.98%	
Rugby 002E	Rugby 002E	15	4323	31	0.91%	
Daventry 007A	Daventry 007A	9	1698	29	0.85%	
Warwick 012A	Warwick 012A	30	12800	27	0.81%	
Rugby 006B	Rugby 006B	11	2122	28	0.83%	
Coventry 019A	Coventry 019A	26	9788	27	0.81%	
Rugby 012E	Rugby 012E	5	548	28	0.82%	
Northampton 028D	Northampton 028D	37	17656	26	0.76%	
Coventry 042C	Coventry 042C	23	7320	25	0.75%	
Leicester 041A	Leicester 041A	42	18154	20	0.60%	
Rugby 009A	Rugby 009A	7	687	19	0.57%	
Daventry 003D	Daventry 003D	6	462	19	0.57%	
Rugby 009B	Rugby 009B	11	1539	19	0.55%	
Northampton 025A	Northampton 025A	36	11491	17	0.50%	
Rugby 003A	Rugby 003A	13	1905	17	0.50%	
Stratford-on-Avon 004D	Stratford-on-Avon 004D	16	2362	16	0.47%	
Daventry 007C	Daventry 007C	11	1316	16	0.47%	
Rugby 003D	Rugby 003D	13	1545	15	0.44%	
Coventry 038A	Coventry 038A	20	3386	14	0.43%	
South Northamptonshire 001D	South Northamptonshire 001D	25	4940	14	0.41%	Updated to Include M1 Junction 16
Warwick 007H	Warwick 007H	23	4253	14	0.41%	
Coventry 038F	Coventry 038F	17	2446	14	0.41%	
Rugby 012C	Rugby 012C	10	855	14	0.41%	
Coventry 036G	Coventry 036G	28	5498	13	0.39%	
Daventry 008D	Daventry 008D	13	1432	13	0.39%	
Rugby 001C	Rugby 001C	20	3115	13	0.39%	
Rugby 005A	Rugby 005A	15	1710	13	0.38%	
Solihull 009A	Solihull 009A	45	12206	12	0.36%	
Blaby 006B	Blaby 006B	36	8261	12	0.37%	
Coventry 008B	Coventry 008B	25	4167	12	0.37%	
Coventry 033A	Coventry 033A	20	2816	12	0.35%	
Stratford-on-Avon 013D	Stratford-on-Avon 013D	30	5294	11	0.33%	
Coventry 035D	Coventry 035D	20	2426	11	0.32%	
Rugby 004E	Rugby 004E	11	855	11	0.33%	
Rugby 011C	Rugby 011C	9	573	11	0.33%	
Northampton 021F	Northampton 021F	33	5995	10	0.31%	
Leicester 040B	Leicester 040B	41	8428	10	0.30%	
Blaby 006C	Blaby 006C	35	6629	10	0.30%	
Rugby 011D	Rugby 011D	7	333	10	0.29%	
Blaby 004D	Blaby 004D	35	5846	9	0.27%	
Nuneaton and Bedworth 005A	Nuneaton and Bedworth 005A	37	6258	9	0.26%	

Leicester 004A	Leicester 004A	39	6691	9	0.26%	
Coventry 026D	Coventry 026D	26	3330	9	0.26%	
Northampton 002A	Northampton 002A	44	8206	9	0.25%	
Hinckley and Bosworth 011A	Hinckley and Bosworth 011A	34	4985	8	0.25%	
Harborough 010C	Harborough 010C	22	2344	8	0.25%	
Daventry 010A	Daventry 010A	13	888	8	0.25%	
Warwick 011C	Warwick 011C	29	3519	8	0.24%	
Rugby 006A	Rugby 006A	10	539	8	0.24%	
Solihull 011D	Solihull 011D	44	7633	8	0.23%	
Warwick 011D	Warwick 011D	29	3537	8	0.24%	
Rugby 010D	Rugby 010D	9	434	8	0.24%	
Coventry 038E	Coventry 038E	16	1263	8	0.23%	
Warwick 010A	Warwick 010A	24	2420	8	0.22%	
Rugby 008C	Rugby 008C	11	618	8	0.23%	
Harborough 010B	Harborough 010B	23	2175	7	0.22%	
Kettering 007F	Kettering 007F	44	7055	7	0.21%	
Coventry 036E	Coventry 036E	26	2667	7	0.22%	
Stratford-on-Avon 005F	Stratford-on-Avon 005F	14	957	7	0.22%	
Coventry 009B	Coventry 009B	27	2944	7	0.21%	
Rugby 010B	Rugby 010B	12	636	7	0.22%	Updated to Include Rugby Parkway Station
Leicester 040A	Leicester 040A	42	6159	7	0.20%	
Warwick 007I	Warwick 007I	24	2200	7	0.21%	
Cherwell 004A	Cherwell 004A	37	4744	7	0.20%	
Rugby 005C	Rugby 005C	12	654	7	0.21%	
Rugby 011A	Rugby 011A	8	274	7	0.21%	
Leicester 008B	Leicester 008B	43	6017	7	0.19%	
Northampton 029D	Northampton 029D	28	2783	7	0.19%	
Leicester 041B	Leicester 041B	42	5525	6	0.19%	
Rugby 004D	Rugby 004D	13	645	7	0.19%	
Leicester 030C	Leicester 030C	44	5956	6	0.18%	
Leicester 041D	Leicester 041D	44	6061	6	0.18%	
Harborough 010D	Harborough 010D	24	1960	6	0.19%	
Warwick 005B	Warwick 005B	19	1263	6	0.18%	
Northampton 024C	Northampton 024C	29	2739	6	0.17%	
Daventry 007E	Daventry 007E	9	357	6	0.18%	
Hinckley and Bosworth 010B	Hinckley and Bosworth 010B	35	3618	6	0.17%	
Nuneaton and Bedworth 008C	Nuneaton and Bedworth 008C	37	3961	6	0.17%	
Rugby 011B	Rugby 011B	7	197	6	0.18%	
Northampton 018D	Northampton 018D	32	3182	6	0.17%	
Nuneaton and Bedworth 008B	Nuneaton and Bedworth 008B	36	3759	6	0.17%	
Coventry 024C	Coventry 024C	25	1947	6	0.17%	
Warwick 008D	Warwick 008D	29	2479	6	0.17%	
Coventry 033D	Coventry 033D	20	1343	6	0.17%	
Stratford-on-Avon 009B	Stratford-on-Avon 009B	38	4040	5	0.16%	
Stratford-on-Avon 013B	Stratford-on-Avon 013B	34	3235	5	0.16%	Updated to Include JLR/AML Expansion
Rugby 009D	Rugby 009D	8	244	6	0.17%	
Rugby 007D	Rugby 007D	13	600	6	0.16%	
Daventry 004C	Daventry 004C	17	922	5	0.16%	
Rugby 001E	Rugby 001E	26	2045	5	0.16%	
North West Leicestershire 013B	North West Leicestershire 013B	44	5150	5	0.16%	
Rugby 011E	Rugby 011E	9	272	6	0.16%	
Rugby 007C	Rugby 007C	9	275	5	0.16%	
Solihull 009B	Solihull 009B	41	4426	5	0.15%	
Leicester 001B	Leicester 001B	40	4167	5	0.15%	
Daventry 004E	Daventry 004E	18	964	5	0.15%	
Rugby 007F	Rugby 007F	8	203	5	0.15%	

Coventry 042F	Coventry 042F	23	1498	5	0.15%	
Cherwell 004C	Cherwell 004C	38	3511	5	0.14%	
Northampton 025B	Northampton 025B	39	3772	5	0.14%	
Rugby 012D	Rugby 012D	9	287	5	0.15%	
Daventry 009A	Daventry 009A	20	1154	5	0.14%	Updated to Include Daventry North East SUE
Rugby 007H	Rugby 007H	10	302	5	0.15%	
Rugby 001F	Rugby 001F	17	803	5	0.14%	
Coventry 031B	Coventry 031B	24	1534	5	0.14%	
Daventry 009C	Daventry 009C	19	977	5	0.14%	
Blaby 013E	Blaby 013E	39	3524	5	0.14%	
Solihull 019D	Solihull 019D	44	4371	4	0.13%	
Warwick 011B	Warwick 011B	27	1825	4	0.13%	
Blaby 009A	Blaby 009A	32	2461	4	0.13%	
Warwick 009D	Warwick 009D	26	1604	4	0.13%	
Coventry 038D	Coventry 038D	21	1099	4	0.13%	
Cherwell 003A	Cherwell 003A	37	3054	4	0.13%	
Warwick 001E	Warwick 001E	26	1582	4	0.13%	
Nuneaton and Bedworth 015E	Nuneaton and Bedworth 015E	30	2116	4	0.13%	
Solihull 016B	Solihull 016B	43	3905	4	0.13%	
Daventry 006A	Daventry 006A	11	326	4	0.13%	
Coventry 017C	Coventry 017C	26	1502	4	0.12%	
Northampton 021C	Northampton 021C	34	2515	4	0.12%	
Coventry 039D	Coventry 039D	18	772	4	0.12%	
North Warwickshire 006B	North Warwickshire 006B	41	3372	4	0.12%	
Daventry 006E	Daventry 006E	12	352	4	0.12%	
Leicester 020A	Leicester 020A	36	2687	4	0.12%	
Northampton 024D	Northampton 024D	30	1941	4	0.12%	
Coventry 028C	Coventry 028C	23	1149	4	0.12%	
Rugby 010E	Rugby 010E	11	301	4	0.12%	
Daventry 006B	Daventry 006B	10	272	4	0.12%	
Coventry 011A	Coventry 011A	29	1711	4	0.11%	
Stratford-on-Avon 004F	Stratford-on-Avon 004F	14	456	4	0.12%	
Coventry 034B	Coventry 034B	25	1344	4	0.11%	
Warwick 013B	Warwick 013B	26	1399	4	0.11%	
Stratford-on-Avon 011C	Stratford-on-Avon 011C	40	3016	4	0.11%	
South Northamptonshire 010A	South Northamptonshire 010A	43	3392	4	0.11%	
Coventry 001A	Coventry 001A	30	1818	4	0.11%	
Rugby 006D	Rugby 006D	11	294	4	0.11%	
Coventry 007D	Coventry 007D	25	1253	4	0.11%	
Nuneaton and Bedworth 013C	Nuneaton and Bedworth 013C	33	2066	4	0.11%	
South Northamptonshire 006D	South Northamptonshire 006D	25	1282	4	0.11%	
Coventry 002A	Coventry 002A	33	2043	4	0.11%	
Warwick 005E	Warwick 005E	19	798	4	0.11%	
Coventry 039C	Coventry 039C	17	633	4	0.11%	
Rugby 008A	Rugby 008A	10	235	4	0.11%	
Coventry 015F	Coventry 015F	25	1262	4	0.11%	
Hinckley and Bosworth 014E	Hinckley and Bosworth 014E	31	1778	4	0.11%	
Northampton 030A	Northampton 030A	34	2028	3	0.10%	
Warwick 010G	Warwick 010G	23	1052	3	0.10%	
Rugby 010C	Rugby 010C	11	272	4	0.11%	
Stratford-on-Avon 004E	Stratford-on-Avon 004E	12	325	3	0.10%	
Leicester 040D	Leicester 040D	41	2803	3	0.10%	
Rugby 004C	Rugby 004C	13	347	3	0.10%	
Rugby 007G	Rugby 007G	9	182	3	0.10%	
Stratford-on-Avon 004B	Stratford-on-Avon 004B	14	403	3	0.10%	
Harborough 006B	Harborough 006B	22	889	3	0.10%	

Nuneaton and Bedworth 015D	Nuneaton and Bedworth 015D	32	1715	3	0.10%
Coventry 019B	Coventry 019B	23	915	3	0.09%
Stratford-on-Avon 005G	Stratford-on-Avon 005G	13	334	3	0.09%
Warwick 013F	Warwick 013F	26	1099	3	0.09%
Oadby and Wigston 005B	Oadby and Wigston 005B	41	2547	3	0.09%
Stratford-on-Avon 005C	Stratford-on-Avon 005C	22	822	3	0.09%
Coventry 028B	Coventry 028B	22	812	3	0.09%
Daventry 008A	Daventry 008A	12	291	3	0.09%
Rugby 011G	Rugby 011G	7	117	3	0.09%
Northampton 025D	Northampton 025D	37	2117	3	0.09%
Rugby 007E	Rugby 007E	12	281	3	0.09%
Blaby 007D	Blaby 007D	38	2142	3	0.09%
Cherwell 004G	Cherwell 004G	37	2058	3	0.08%
Coventry 010A	Coventry 010A	31	1508	3	0.09%
Leicester 039D	Leicester 039D	37	2046	3	0.08%
Stratford-on-Avon 009F	Stratford-on-Avon 009F	39	2246	3	0.08%
Nuneaton and Bedworth 009B	Nuneaton and Bedworth 009B	34	1669	3	0.08%
Stratford-on-Avon 009D	Stratford-on-Avon 009D	39	2094	3	0.08%
Northampton 023A	Northampton 023A	36	1804	3	0.08%
Blaby 008E	Blaby 008E	35	1754	3	0.08%
Nuneaton and Bedworth 011A	Nuneaton and Bedworth 011A	36	1830	3	0.08%
Coventry 009C	Coventry 009C	28	1177	3	0.08%
Daventry 001C	Daventry 001C	18	537	3	0.08%
Coventry 020A	Coventry 020A	27	1043	3	0.08%
Cherwell 004D	Cherwell 004D	38	1969	3	0.08%
Leicester 023C	Leicester 023C	39	2045	3	0.08%
Coventry 020D	Coventry 020D	24	888	3	0.08%
South Northamptonshire 004C	South Northamptonshire 004C	28	1136	3	0.08%
Coventry 021A	Coventry 021A	23	795	3	0.08%
South Northamptonshire 001E	South Northamptonshire 001E	22	700	3	0.08%
Rugby 006C	Rugby 006C	12	248	3	0.08%
Warwick 012E	Warwick 012E	28	1126	3	0.08%
Stratford-on-Avon 008B	Stratford-on-Avon 008B	36	1670	3	0.08%
Cherwell 006A	Cherwell 006A	37	1765	3	0.08%
Cherwell 004H	Cherwell 004H	37	1762	3	0.08%
Northampton 017C	Northampton 017C	33	1468	3	0.07%
Daventry 009B	Daventry 009B	17	460	3	0.08%
Northampton 008B	Northampton 008B	35	1608	2	0.07%
Coventry 015D	Coventry 015D	27	955	2	0.07%
Warwick 010F	Warwick 010F	24	806	2	0.07%
Nuneaton and Bedworth 018E	Nuneaton and Bedworth 018E	32	1304	2	0.07%
Warwick 005D	Warwick 005D	15	345	3	0.07%
Rugby 001D	Rugby 001D	27	944	2	0.07%
Rugby 004A	Rugby 004A	16	371	2	0.07%
Hinckley and Bosworth 005E	Hinckley and Bosworth 005E	41	2041	2	0.07%
Rugby 010A	Rugby 010A	12	217	2	0.07%
Coventry 034C	Coventry 034C	25	865	2	0.07%
Northampton 011A	Northampton 011A	40	1910	2	0.07%
Solihull 006A	Solihull 006A	41	2003	2	0.07%
Northampton 001D	Northampton 001D	38	1710	2	0.07%
Hinckley and Bosworth 009C	Hinckley and Bosworth 009C	39	1829	2	0.07%
Daventry 004D	Daventry 004D	23	692	2	0.07%
Leicester 031C	Leicester 031C	38	1719	2	0.07%
Stratford-on-Avon 013A	Stratford-on-Avon 013A	31	1181	2	0.07%
Charnwood 021B	Charnwood 021B	45	2260	2	0.07%
Warwick 002E	Warwick 002E	22	657	2	0.07%

Daventry 002C	Daventry 002C	42	1975	2	0.07%
Cherwell 007B	Cherwell 007B	37	1554	2	0.07%
Coventry 024F	Coventry 024F	24	714	2	0.07%
Daventry 004A	Daventry 004A	27	886	2	0.07%
Cherwell 003B	Cherwell 003B	36	1486	2	0.07%
Coventry 032D	Coventry 032D	25	779	2	0.07%
Warwick 011H	Warwick 011H	33	1234	2	0.07%
South Northamptonshire 004E	South Northamptonshire 004E	33	1276	2	0.07%
Warwick 009B	Warwick 009B	26	814	2	0.07%
Harborough 005A	Harborough 005A	28	953	2	0.07%
Warwick 001C	Warwick 001C	25	770	2	0.07%
Northampton 029G	Northampton 029G	29	977	2	0.06%
Warwick 004C	Warwick 004C	31	1107	2	0.06%
Harborough 008A	Harborough 008A	42	1868	2	0.06%
Coventry 041C	Coventry 041C	22	569	2	0.06%
Blaby 007B	Blaby 007B	36	1429	2	0.06%
Harborough 008B	Harborough 008B	43	1921	2	0.06%
South Northamptonshire 001B	South Northamptonshire 001B	25	722	2	0.06%
Warwick 014D	Warwick 014D	29	972	2	0.06%
Warwick 009E	Warwick 009E	23	642	2	0.06%
Daventry 010B	Daventry 010B	20	502	2	0.06%
Northampton 029E	Northampton 029E	29	947	2	0.06%
North Warwickshire 003D	North Warwickshire 003D	45	2097	2	0.06%
Northampton 028F	Northampton 028F	35	1285	2	0.06%
Rugby 005D	Rugby 005D	13	209	2	0.06%
Coventry 027A	Coventry 027A	23	610	2	0.06%
Warwick 007B	Warwick 007B	22	577	2	0.06%
Coventry 001H	Coventry 001H	31	1021	2	0.06%
Solihull 017C	Solihull 017C	34	1197	2	0.06%
Rugby 002F	Rugby 002F	16	306	2	0.06%
Northampton 007C	Northampton 007C	41	1704	2	0.06%
Hinckley and Bosworth 010C	Hinckley and Bosworth 010C	36	1335	2	0.06%
South Northamptonshire 005D	South Northamptonshire 005D	32	1095	2	0.06%
North Warwickshire 004A	North Warwickshire 004A	44	1868	2	0.06%
Northampton 002C	Northampton 002C	43	1821	2	0.06%
Stratford-on-Avon 005A	Stratford-on-Avon 005A	18	375	2	0.06%
Warwick 005A	Warwick 005A	19	421	2	0.06%
Daventry 006D	Daventry 006D	12	181	2	0.06%
Hinckley and Bosworth 012A	Hinckley and Bosworth 012A	32	1084	2	0.06%
Birmingham 081F	Birmingham 081F	41	1674	2	0.06%
Coventry 035E	Coventry 035E	21	483	2	0.06%
Oadby and Wigston 005A	Oadby and Wigston 005A	42	1697	2	0.06%
Daventry 009D	Daventry 009D	18	390	2	0.06%
Coventry 028A	Coventry 028A	21	491	2	0.06%
Rugby 008D	Rugby 008D	12	184	2	0.06%
Charnwood 017C	Charnwood 017C	43	1732	2	0.06%
Warwick 010B	Warwick 010B	23	589	2	0.06%
Warwick 010D	Warwick 010D	25	635	2	0.06%
Coventry 030B	Coventry 030B	26	685	2	0.06%
Stratford-on-Avon 008F	Stratford-on-Avon 008F	28	792	2	0.06%
Oadby and Wigston 006C	Oadby and Wigston 006C	40	1484	2	0.05%
Warwick 007F	Warwick 007F	20	446	2	0.06%
Hinckley and Bosworth 012B	Hinckley and Bosworth 012B	35	1165	2	0.05%
Daventry 008B	Daventry 008B	12	169	2	0.06%
Stratford-on-Avon 008D	Stratford-on-Avon 008D	36	1242	2	0.05%
Birmingham 081A	Birmingham 081A	43	1658	2	0.05%

Rugby 005B	Rugby 005B	13	207	2	0.06%
Leicester 038A	Leicester 038A	43	1629	2	0.05%
Warwick 004D	Warwick 004D	24	601	2	0.05%
Rugby 002A	Rugby 002A	17	301	2	0.05%
Rugby 001B	Rugby 001B	15	251	2	0.05%
Northampton 028B	Northampton 028B	33	1012	2	0.05%
Daventry 002E	Daventry 002E	29	815	2	0.05%
Harborough 008C	Harborough 008C	40	1402	2	0.05%
Coventry 035C	Coventry 035C	22	473	2	0.05%
Warwick 012C	Warwick 012C	32	947	2	0.05%
Leicester 004E	Leicester 004E	38	1312	2	0.05%
South Northamptonshire 004B	South Northamptonshire 004B	25	611	2	0.05%
North Warwickshire 007D	North Warwickshire 007D	39	1331	2	0.05%
Coventry 032A	Coventry 032A	26	634	2	0.05%
Daventry 007B	Daventry 007B	10	108	2	0.05%
Rugby 002C	Rugby 002C	16	265	2	0.05%
North Warwickshire 006C	North Warwickshire 006C	41	1425	2	0.05%
Harborough 006C	Harborough 006C	33	956	2	0.05%
Stratford-on-Avon 010C	Stratford-on-Avon 010C	41	1433	2	0.05%
Rugby 007A	Rugby 007A	10	109	2	0.05%
Blaby 003B	Blaby 003B	39	1323	2	0.05%
Stratford-on-Avon 004C	Stratford-on-Avon 004C	16	258	2	0.05%
Coventry 036F	Coventry 036F	29	772	2	0.05%
North Warwickshire 007C	North Warwickshire 007C	35	1029	2	0.05%
Coventry 010C	Coventry 010C	30	780	2	0.05%
Stratford-on-Avon 005B	Stratford-on-Avon 005B	25	561	2	0.05%
Warwick 006B	Warwick 006B	21	421	2	0.05%
Warwick 005C	Warwick 005C	18	329	2	0.05%
Northampton 023D	Northampton 023D	38	1183	2	0.05%
Hinckley and Bosworth 008B	Hinckley and Bosworth 008B	39	1244	2	0.05%
Coventry 039B	Coventry 039B	18	323	2	0.05%
Rugby 003B	Rugby 003B	13	183	2	0.05%
Daventry 010C	Daventry 010C	24	517	2	0.05%
South Northamptonshire 007B	South Northamptonshire 007B	36	1091	2	0.05%
Solihull 026A	Solihull 026A	42	1413	2	0.05%
Coventry 005B	Coventry 005B	30	769	2	0.05%
South Northamptonshire 004A	South Northamptonshire 004A	29	704	2	0.05%
Oadby and Wigston 006D	Oadby and Wigston 006D	40	1286	2	0.05%
Warwick 007C	Warwick 007C	22	429	2	0.05%
Harborough 006A	Harborough 006A	29	721	2	0.05%
Cherwell 006B	Cherwell 006B	37	1111	2	0.05%
South Northamptonshire 003F	South Northamptonshire 003F	35	959	2	0.05%
Solihull 017A	Solihull 017A	38	1158	2	0.05%
Coventry 034F	Coventry 034F	24	492	2	0.05%
Harborough 007A	Harborough 007A	36	1025	2	0.04%
Charnwood 017D	Charnwood 017D	44	1430	1	0.04%
Northampton 015B	Northampton 015B	37	1041	1	0.04%
Warwick 012F	Warwick 012F	29	690	2	0.04%
Coventry 007B	Coventry 007B	27	589	2	0.04%
Coventry 013A	Coventry 013A	27	595	1	0.04%
Oadby and Wigston 006E	Oadby and Wigston 006E	40	1170	1	0.04%
Hinckley and Bosworth 002C	Hinckley and Bosworth 002C	39	1135	1	0.04%
Warwick 009A	Warwick 009A	24	475	1	0.04%
North Warwickshire 007B	North Warwickshire 007B	42	1253	1	0.04%
Coventry 005A	Coventry 005A	29	663	1	0.04%
Harborough 009A	Harborough 009A	42	1265	1	0.04%

Leicester 008C	Leicester 008C	41	1227	1	0.04%
Charnwood 021F	Charnwood 021F	45	1392	1	0.04%
North Warwickshire 006A	North Warwickshire 006A	43	1283	1	0.04%
Coventry 010B	Coventry 010B	30	677	1	0.04%
Coventry 009D	Coventry 009D	29	657	1	0.04%
Charnwood 012D	Charnwood 012D	45	1365	1	0.04%
Northampton 004B	Northampton 004B	44	1340	1	0.04%
Warwick 008B	Warwick 008B	27	561	1	0.04%
Leicester 041C	Leicester 041C	44	1336	1	0.04%
Daventry 001B	Daventry 001B	28	602	1	0.04%
Coventry 021D	Coventry 021D	26	507	1	0.04%
Warwick 013A	Warwick 013A	26	498	1	0.04%
Blaby 010D	Blaby 010D	37	959	1	0.04%
Coventry 037C	Coventry 037C	22	361	1	0.04%
Daventry 001A	Daventry 001A	31	704	1	0.04%
Harborough 009E	Harborough 009E	38	1005	1	0.04%
Northampton 026B	Northampton 026B	30	649	1	0.04%
Solihull 016D	Solihull 016D	44	1253	1	0.04%
Leicester 003A	Leicester 003A	41	1107	1	0.04%
Blaby 013A	Blaby 013A	36	904	1	0.04%
North Warwickshire 003B	North Warwickshire 003B	45	1319	1	0.04%
Stratford-on-Avon 014A	Stratford-on-Avon 014A	38	993	1	0.04%
Coventry 028D	Coventry 028D	23	399	1	0.04%
Coventry 015B	Coventry 015B	27	537	1	0.04%
Northampton 027D	Northampton 027D	33	754	1	0.04%
Stratford-on-Avon 005E	Stratford-on-Avon 005E	23	392	1	0.04%
Rugby 011F	Rugby 011F	10	90	1	0.04%
Hinckley and Bosworth 008C	Hinckley and Bosworth 008C	37	930	1	0.04%
Solihull 017D	Solihull 017D	36	877	1	0.04%
Northampton 019D	Northampton 019D	29	604	1	0.04%
Nuneaton and Bedworth 003E	Nuneaton and Bedworth 003E	37	924	1	0.04%
Leicester 001D	Leicester 001D	40	1051	1	0.04%
Warwick 002C	Warwick 002C	24	420	1	0.04%
Coventry 019D	Coventry 019D	21	322	1	0.04%
Northampton 029F	Northampton 029F	27	500	1	0.04%
Coventry 020E	Coventry 020E	25	461	1	0.04%
Harborough 004C	Harborough 004C	32	675	1	0.04%
South Northamptonshire 001A	South Northamptonshire 001A	26	482	1	0.04%
Blaby 009B	Blaby 009B	35	793	1	0.04%
South Northamptonshire 003A	South Northamptonshire 003A	34	779	1	0.04%
Rugby 008B	Rugby 008B	12	125	1	0.04%
Coventry 037E	Coventry 037E	21	327	1	0.04%
South Northamptonshire 006E	South Northamptonshire 006E	32	698	1	0.04%
Coventry 016B	Coventry 016B	27	488	1	0.04%
Stratford-on-Avon 004A	Stratford-on-Avon 004A	15	179	1	0.04%
South Northamptonshire 004D	South Northamptonshire 004D	32	672	1	0.04%
Coventry 027C	Coventry 027C	22	350	1	0.04%
Coventry 008E	Coventry 008E	27	485	1	0.04%
Leicester 031D	Leicester 031D	40	979	1	0.04%
South Northamptonshire 005A	South Northamptonshire 005A	36	807	1	0.04%
Coventry 015E	Coventry 015E	25	437	1	0.04%
Coventry 025C	Coventry 025C	31	608	1	0.04%
Daventry 010D	Daventry 010D	24	384	1	0.04%
Coventry 020B	Coventry 020B	26	441	1	0.04%
Northampton 006C	Northampton 006C	41	989	1	0.04%
Daventry 005C	Daventry 005C	45	1160	1	0.03%

Leicester 026C	Leicester 026C	37	834	1	0.03%
Solihull 025C	Solihull 025C	34	707	1	0.03%
Northampton 022B	Northampton 022B	38	886	1	0.03%
Northampton 025C	Northampton 025C	37	821	1	0.03%
Warwick 009C	Warwick 009C	25	401	1	0.04%
Coventry 041D	Coventry 041D	20	275	1	0.04%
South Northamptonshire 003H	South Northamptonshire 003H	33	668	1	0.03%
Leicester 031B	Leicester 031B	38	829	1	0.03%
Kettering 002H	Kettering 002H	43	1073	1	0.03%
Northampton 008A	Northampton 008A	35	719	1	0.03%
Warwick 007E	Warwick 007E	19	252	1	0.03%
Warwick 010E	Warwick 010E	23	350	1	0.03%
Cherwell 008C	Cherwell 008C	42	990	1	0.03%
Stratford-on-Avon 002B	Stratford-on-Avon 002B	41	940	1	0.03%
Northampton 028C	Northampton 028C	35	695	1	0.03%
Coventry 029E	Coventry 029E	28	473	1	0.03%
Coventry 034E	Coventry 034E	24	370	1	0.03%
Coventry 029A	Coventry 029A	28	469	1	0.03%
Daventry 005A	Daventry 005A	41	922	1	0.03%
Blaby 008D	Blaby 008D	39	833	1	0.03%
Cherwell 008D	Cherwell 008D	43	996	1	0.03%
Coventry 001F	Coventry 001F	31	570	1	0.03%
Coventry 015A	Coventry 015A	28	456	1	0.03%
Nuneaton and Bedworth 009E	Nuneaton and Bedworth 009E	36	710	1	0.03%
Solihull 017B	Solihull 017B	30	539	1	0.03%
Northampton 022C	Northampton 022C	39	812	1	0.03%
Nuneaton and Bedworth 018B	Nuneaton and Bedworth 018B	34	641	1	0.03%
Nuneaton and Bedworth 014A	Nuneaton and Bedworth 014A	27	419	1	0.03%
Cherwell 001B	Cherwell 001B	32	562	1	0.03%
Harborough 004E	Harborough 004E	33	623	1	0.03%
Nuneaton and Bedworth 010B	Nuneaton and Bedworth 010B	36	714	1	0.03%
Coventry 006A	Coventry 006A	29	492	1	0.03%
South Northamptonshire 001C	South Northamptonshire 001C	27	421	1	0.03%
Coventry 041B	Coventry 041B	21	269	1	0.03%
Oadby and Wigston 006A	Oadby and Wigston 006A	40	831	1	0.03%
Coventry 040E	Coventry 040E	20	241	1	0.03%
Warwick 011A	Warwick 011A	29	484	1	0.03%
Leicester 034E	Leicester 034E	37	748	1	0.03%
Coventry 020C	Coventry 020C	26	388	1	0.03%
Warwick 001A	Warwick 001A	28	442	1	0.03%
Warwick 007G	Warwick 007G	21	257	1	0.03%
Northampton 015A	Northampton 015A	39	788	1	0.03%
Coventry 027E	Coventry 027E	22	288	1	0.03%
Solihull 025B	Solihull 025B	35	645	1	0.03%
Warwick 012B	Warwick 012B	28	443	1	0.03%
Blaby 011A	Blaby 011A	33	599	1	0.03%
South Northamptonshire 007C	South Northamptonshire 007C	32	564	1	0.03%
Leicester 031A	Leicester 031A	39	763	1	0.03%
Warwick 003E	Warwick 003E	26	368	1	0.03%
Nuneaton and Bedworth 003A	Nuneaton and Bedworth 003A	37	719	1	0.03%
South Northamptonshire 008D	South Northamptonshire 008D	40	794	1	0.03%
Coventry 016D	Coventry 016D	28	430	1	0.03%
Blaby 013C	Blaby 013C	37	686	1	0.03%
Charnwood 017A	Charnwood 017A	42	892	1	0.03%
Nuneaton and Bedworth 003C	Nuneaton and Bedworth 003C	38	742	1	0.03%
Leicester 029C	Leicester 029C	37	692	1	0.03%

Harborough 003D	Harborough 003D	41	812	1	0.03%
Stratford-on-Avon 005D	Stratford-on-Avon 005D	22	261	1	0.03%
Coventry 035G	Coventry 035G	19	218	1	0.03%
Harborough 009B	Harborough 009B	45	982	1	0.03%
South Northamptonshire 007A	South Northamptonshire 007A	40	765	1	0.03%
North Warwickshire 006D	North Warwickshire 006D	40	761	1	0.03%
Coventry 002C	Coventry 002C	31	500	1	0.03%
Stratford-on-Avon 002A	Stratford-on-Avon 002A	37	661	1	0.03%
Coventry 033E	Coventry 033E	21	245	1	0.03%
Northampton 031D	Northampton 031D	34	583	1	0.03%
Coventry 022D	Coventry 022D	28	415	1	0.03%
Stratford-on-Avon 011D	Stratford-on-Avon 011D	42	824	1	0.03%
Warwick 002B	Warwick 002B	23	280	1	0.03%
Cherwell 007D	Cherwell 007D	38	709	1	0.03%
Northampton 004D	Northampton 004D	41	813	1	0.03%
South Northamptonshire 006A	South Northamptonshire 006A	36	627	1	0.03%
Warwick 003D	Warwick 003D	25	328	1	0.03%
Warwick 003A	Warwick 003A	25	336	1	0.03%
Coventry 040D	Coventry 040D	20	226	1	0.03%
Coventry 018C	Coventry 018C	23	280	1	0.03%
Coventry 011D	Coventry 011D	29	422	1	0.03%
Stratford-on-Avon 011A	Stratford-on-Avon 011A	42	816	1	0.03%
Warwick 014E	Warwick 014E	31	468	1	0.03%
Warwick 014B	Warwick 014B	31	456	1	0.03%
Coventry 039A	Coventry 039A	19	203	1	0.03%
South Northamptonshire 011C	South Northamptonshire 011C	41	762	1	0.03%
Leicester 006B	Leicester 006B	44	854	1	0.03%
Cherwell 008A	Cherwell 008A	44	879	1	0.03%
Stratford-on-Avon 002C	Stratford-on-Avon 002C	40	741	1	0.03%
Coventry 011B	Coventry 011B	29	411	1	0.03%
Solihull 015C	Solihull 015C	41	759	1	0.03%
Nuneaton and Bedworth 005B	Nuneaton and Bedworth 005B	38	669	1	0.03%
Coventry 030A	Coventry 030A	26	339	1	0.03%
Coventry 021C	Coventry 021C	26	341	1	0.03%
Warwick 003C	Warwick 003C	23	276	1	0.03%
Coventry 024A	Coventry 024A	25	304	1	0.03%
South Northamptonshire 002B	South Northamptonshire 002B	40	708	1	0.03%
Warwick 012D	Warwick 012D	26	338	1	0.03%
Oadby and Wigston 008B	Oadby and Wigston 008B	43	821	1	0.03%
Charnwood 021E	Charnwood 021E	43	823	1	0.03%
Hinckley and Bosworth 007A	Hinckley and Bosworth 007A	41	749	1	0.03%
Stratford-on-Avon 009E	Stratford-on-Avon 009E	39	694	1	0.03%
Leicester 003F	Leicester 003F	42	787	1	0.03%
Coventry 013D	Coventry 013D	25	316	1	0.03%
Kettering 003B	Kettering 003B	40	700	1	0.03%
Harborough 005B	Harborough 005B	38	655	1	0.03%
South Northamptonshire 003I	South Northamptonshire 003I	35	551	1	0.03%
Coventry 027B	Coventry 027B	23	266	1	0.03%
Hinckley and Bosworth 014C	Hinckley and Bosworth 014C	31	447	1	0.03%
Coventry 022B	Coventry 022B	29	396	1	0.03%
Coventry 031D	Coventry 031D	25	296	1	0.03%
South Northamptonshire 008B	South Northamptonshire 008B	45	848	1	0.03%
Hinckley and Bosworth 007E	Hinckley and Bosworth 007E	42	747	1	0.03%
South Northamptonshire 008A	South Northamptonshire 008A	43	781	1	0.03%
Solihull 009E	Solihull 009E	42	758	1	0.03%
North Warwickshire 005F	North Warwickshire 005F	44	807	1	0.03%

Coventry 040C	Coventry 040C	20	196	1	0.03%
Northampton 004A	Northampton 004A	41	708	1	0.03%
Coventry 004C	Coventry 004C	28	359	1	0.03%
Coventry 012C	Coventry 012C	27	349	1	0.03%
Warwick 015C	Warwick 015C	26	317	1	0.03%
South Northamptonshire 010D	South Northamptonshire 010D	45	827	1	0.02%
Northampton 013A	Northampton 013A	39	651	1	0.02%
Northampton 021E	Northampton 021E	34	504	1	0.02%
Leicester 023B	Leicester 023B	36	570	1	0.02%
Leicester 038B	Leicester 038B	40	676	1	0.02%
Stratford-on-Avon 010E	Stratford-on-Avon 010E	42	720	1	0.02%
Leicester 016A	Leicester 016A	41	701	1	0.02%
Hinckley and Bosworth 014B	Hinckley and Bosworth 014B	30	405	1	0.02%
Coventry 034A	Coventry 034A	25	297	1	0.02%
North West Leicestershire 011E	North West Leicestershire 011E	45	801	1	0.02%
Coventry 032B	Coventry 032B	27	318	1	0.02%
Charnwood 016A	Charnwood 016A	41	687	1	0.02%
Hinckley and Bosworth 013D	Hinckley and Bosworth 013D	31	425	1	0.02%
Blaby 005E	Blaby 005E	34	486	1	0.02%
Solihull 012C	Solihull 012C	44	771	1	0.02%
Hinckley and Bosworth 001A	Hinckley and Bosworth 001A	41	667	1	0.02%
Hinckley and Bosworth 010A	Hinckley and Bosworth 010A	35	506	1	0.02%
Leicester 012D	Leicester 012D	40	638	1	0.02%
Stratford-on-Avon 013C	Stratford-on-Avon 013C	33	463	1	0.02%
Leicester 040C	Leicester 040C	38	592	1	0.02%
Hinckley and Bosworth 007D	Hinckley and Bosworth 007D	41	655	1	0.02%
Coventry 018E	Coventry 018E	23	238	1	0.02%
Blaby 006E	Blaby 006E	37	554	1	0.02%
Leicester 023A	Leicester 023A	37	560	1	0.02%
Coventry 019E	Coventry 019E	23	238	1	0.02%
Harborough 005C	Harborough 005C	38	572	1	0.02%
Charnwood 022B	Charnwood 022B	39	589	1	0.02%
Daventry 004B	Daventry 004B	18	150	1	0.02%
Hinckley and Bosworth 001D	Hinckley and Bosworth 001D	40	620	1	0.02%
Blaby 012B	Blaby 012B	34	468	1	0.02%
Northampton 013D	Northampton 013D	39	608	1	0.02%
Warwick 008A	Warwick 008A	27	306	1	0.02%
Coventry 005C	Coventry 005C	29	349	1	0.02%
Northampton 018A	Northampton 018A	32	409	1	0.02%
Warwick 001D	Warwick 001D	24	246	1	0.02%
Nuneaton and Bedworth 005C	Nuneaton and Bedworth 005C	37	532	1	0.02%
Coventry 017E	Coventry 017E	29	342	1	0.02%
Northampton 023C	Northampton 023C	36	506	1	0.02%
Cherwell 001A	Cherwell 001A	29	345	1	0.02%
Stratford-on-Avon 007A	Stratford-on-Avon 007A	40	597	1	0.02%
Northampton 027C	Northampton 027C	33	430	1	0.02%
Cherwell 001D	Cherwell 001D	38	549	1	0.02%
Northampton 019A	Northampton 019A	31	392	1	0.02%
Blaby 005C	Blaby 005C	32	417	1	0.02%
Northampton 017B	Northampton 017B	32	409	1	0.02%
Wellingborough 009D	Wellingborough 009D	43	691	1	0.02%
Coventry 025A	Coventry 025A	30	361	1	0.02%
Charnwood 020C	Charnwood 020C	42	660	1	0.02%
Blaby 012D	Blaby 012D	30	363	1	0.02%
Harborough 003F	Harborough 003F	41	624	1	0.02%
Leicester 028E	Leicester 028E	37	514	1	0.02%

Warwick 010C	Warwick 010C	24	235	1	0.02%
Nuneaton and Bedworth 018D	Nuneaton and Bedworth 018D	31	382	1	0.02%
South Northamptonshire 006B	South Northamptonshire 006B	36	501	1	0.02%
South Northamptonshire 003C	South Northamptonshire 003C	35	460	1	0.02%
Harborough 004D	Harborough 004D	35	472	1	0.02%
Leicester 018E	Leicester 018E	44	697	1	0.02%
Northampton 009B	Northampton 009B	36	495	1	0.02%
Charnwood 014E	Charnwood 014E	42	635	1	0.02%
Nuneaton and Bedworth 005D	Nuneaton and Bedworth 005D	36	499	1	0.02%
Coventry 012A	Coventry 012A	28	306	1	0.02%
Northampton 028E	Northampton 028E	35	465	1	0.02%
Warwick 015B	Warwick 015B	27	297	1	0.02%
Northampton 015C	Northampton 015C	37	511	1	0.02%
Northampton 030C	Northampton 030C	34	436	1	0.02%
South Northamptonshire 003D	South Northamptonshire 003D	41	602	1	0.02%
Warwick 014C	Warwick 014C	29	333	1	0.02%
Nuneaton and Bedworth 012A	Nuneaton and Bedworth 012A	32	382	1	0.02%
Nuneaton and Bedworth 010A	Nuneaton and Bedworth 010A	37	512	1	0.02%
Cherwell 006E	Cherwell 006E	39	556	1	0.02%
Blaby 012E	Blaby 012E	33	413	1	0.02%
Hinckley and Bosworth 006E	Hinckley and Bosworth 006E	43	653	1	0.02%
Harborough 010A	Harborough 010A	24	227	1	0.02%
Warwick 015E	Warwick 015E	26	272	1	0.02%
Coventry 015C	Coventry 015C	27	288	1	0.02%
Warwick 015D	Warwick 015D	26	272	1	0.02%
Hinckley and Bosworth 014D	Hinckley and Bosworth 014D	30	333	1	0.02%
Rugby 002D	Rugby 002D	16	112	1	0.02%
Leicester 023F	Leicester 023F	38	526	1	0.02%
Leicester 035A	Leicester 035A	38	509	1	0.02%
Northampton 022D	Northampton 022D	39	532	1	0.02%
Coventry 037B	Coventry 037B	22	192	1	0.02%
Coventry 035F	Coventry 035F	20	167	1	0.02%
Coventry 027D	Coventry 027D	22	197	1	0.02%
Coventry 010D	Coventry 010D	29	313	1	0.02%
Blaby 008A	Blaby 008A	34	420	1	0.02%
Kettering 004E	Kettering 004E	45	677	1	0.02%
Stratford-on-Avon 008G	Stratford-on-Avon 008G	36	453	1	0.02%
Northampton 017A	Northampton 017A	32	379	1	0.02%
Northampton 031C	Northampton 031C	35	439	1	0.02%
Blaby 010A	Blaby 010A	33	384	1	0.02%
Northampton 016C	Northampton 016C	39	523	1	0.02%
South Northamptonshire 005C	South Northamptonshire 005C	33	396	1	0.02%
Leicester 027D	Leicester 027D	44	644	1	0.02%
Stratford-on-Avon 011B	Stratford-on-Avon 011B	39	531	1	0.02%
Leicester 023D	Leicester 023D	38	494	1	0.02%
Hinckley and Bosworth 006A	Hinckley and Bosworth 006A	41	572	1	0.02%
Charnwood 022D	Charnwood 022D	37	477	1	0.02%
Coventry 029D	Coventry 029D	28	294	1	0.02%
Solihull 026D	Solihull 026D	41	551	1	0.02%
Warwick 004B	Warwick 004B	38	492	1	0.02%
Nuneaton and Bedworth 002F	Nuneaton and Bedworth 002F	42	593	1	0.02%
Harborough 005F	Harborough 005F	38	499	1	0.02%
Solihull 028F	Solihull 028F	42	572	1	0.02%
Stratford-on-Avon 009A	Stratford-on-Avon 009A	39	501	1	0.02%
Coventry 018D	Coventry 018D	25	223	1	0.02%
Hinckley and Bosworth 003A	Hinckley and Bosworth 003A	38	492	1	0.02%

Coventry 018A	Coventry 018A	23	201	1	0.02%
Daventry 002A	Daventry 002A	33	383	1	0.02%
Hinckley and Bosworth 003B	Hinckley and Bosworth 003B	38	484	1	0.02%
Blaby 002C	Blaby 002C	37	465	1	0.02%
Warwick 007D	Warwick 007D	22	185	1	0.02%
Coventry 040B	Coventry 040B	20	149	1	0.02%
Blaby 012A	Blaby 012A	39	494	1	0.02%
Daventry 005E	Daventry 005E	44	623	1	0.02%
Coventry 030D	Coventry 030D	25	226	1	0.02%
Stratford-on-Avon 002D	Stratford-on-Avon 002D	42	572	1	0.02%
Coventry 040A	Coventry 040A	21	169	1	0.02%
Blaby 012C	Blaby 012C	35	410	1	0.02%
Leicester 016D	Leicester 016D	40	525	1	0.02%
Warwick 002A	Warwick 002A	23	188	1	0.02%
South Northamptonshire 009B	South Northamptonshire 009B	43	586	1	0.02%
Coventry 008C	Coventry 008C	25	214	1	0.02%
Solihull 006C	Solihull 006C	41	533	1	0.02%
Nuneaton and Bedworth 013B	Nuneaton and Bedworth 013B	32	333	1	0.02%
Blaby 009C	Blaby 009C	35	393	1	0.02%
Blaby 003E	Blaby 003E	41	540	1	0.02%
Warwick 002D	Warwick 002D	25	212	1	0.02%
Northampton 022A	Northampton 022A	39	480	1	0.02%
Rugby 002B	Rugby 002B	17	108	1	0.02%
South Northamptonshire 005E	South Northamptonshire 005E	33	357	1	0.02%
Northampton 014A	Northampton 014A	26	233	1	0.02%
Stratford-on-Avon 010A	Stratford-on-Avon 010A	39	483	1	0.02%
Coventry 017A	Coventry 017A	27	244	1	0.02%
Blaby 003D	Blaby 003D	37	437	1	0.02%
North West Leicestershire 011B	North West Leicestershire 011B	44	602	1	0.02%
Coventry 002B	Coventry 002B	32	342	1	0.02%
Northampton 026D	Northampton 026D	30	301	1	0.02%
Solihull 029E	Solihull 029E	42	550	1	0.02%
Coventry 033B	Coventry 033B	21	163	1	0.02%
Coventry 008D	Coventry 008D	24	204	1	0.02%
Blaby 005B	Blaby 005B	32	342	1	0.02%
Nuneaton and Bedworth 015B	Nuneaton and Bedworth 015B	35	392	1	0.02%
Coventry 029B	Coventry 029B	27	253	1	0.02%
Blaby 011C	Blaby 011C	35	381	1	0.02%
Oadby and Wigston 005D	Oadby and Wigston 005D	42	542	1	0.02%
Leicester 030A	Leicester 030A	44	572	1	0.02%
Northampton 003D	Northampton 003D	37	424	1	0.02%
Northampton 003A	Northampton 003A	37	423	1	0.02%
Solihull 025A	Solihull 025A	32	332	1	0.02%
South Northamptonshire 002D	South Northamptonshire 002D	43	555	1	0.02%
Solihull 015A	Solihull 015A	41	491	1	0.02%
Coventry 037F	Coventry 037F	21	149	1	0.02%
Birmingham 081C	Birmingham 081C	43	540	1	0.02%
Warwick 013E	Warwick 013E	26	226	1	0.02%
Warwick 005F	Warwick 005F	20	145	1	0.02%
Leicester 030G	Leicester 030G	44	575	1	0.02%
Harborough 004A	Harborough 004A	32	319	1	0.02%
Coventry 033C	Coventry 033C	21	154	1	0.02%
Harborough 008D	Harborough 008D	39	463	1	0.02%
Charnwood 020B	Charnwood 020B	43	543	1	0.02%
Coventry 013C	Coventry 013C	24	196	1	0.02%
Kettering 002I	Kettering 002I	45	580	1	0.02%

Coventry 035H	Coventry 035H	20	142	1	0.02%
Hinckley and Bosworth 009D	Hinckley and Bosworth 009D	37	419	1	0.02%
Harborough 007B	Harborough 007B	43	534	1	0.02%
Kettering 003C	Kettering 003C	43	523	1	0.02%
Cherwell 002A	Cherwell 002A	37	406	1	0.02%
Coventry 024D	Coventry 024D	25	209	1	0.02%
Hinckley and Bosworth 009A	Hinckley and Bosworth 009A	35	372	1	0.02%
Leicester 038C	Leicester 038C	41	488	1	0.02%
Coventry 033F	Coventry 033F	22	163	1	0.02%
Rugby 004B	Rugby 004B	18	107	1	0.02%
Harborough 003E	Harborough 003E	42	491	1	0.02%
Coventry 042A	Coventry 042A	23	174	1	0.02%
Solihull 004C	Solihull 004C	43	515	1	0.02%
South Northamptonshire 003E	South Northamptonshire 003E	39	446	1	0.02%
Coventry 001G	Coventry 001G	31	296	1	0.02%
Warwick 003B	Warwick 003B	27	224	1	0.02%
Nuneaton and Bedworth 015A	Nuneaton and Bedworth 015A	35	364	1	0.02%
Coventry 017B	Coventry 017B	27	232	1	0.02%
Birmingham 081B	Birmingham 081B	44	532	1	0.02%
Blaby 007C	Blaby 007C	38	411	1	0.02%
Oadby and Wigston 005E	Oadby and Wigston 005E	41	476	1	0.02%
Coventry 002D	Coventry 002D	30	274	1	0.02%
Cherwell 001C	Cherwell 001C	40	448	1	0.02%
Northampton 024A	Northampton 024A	32	303	1	0.02%
Leicester 030E	Leicester 030E	42	490	1	0.02%
Coventry 027F	Coventry 027F	21	140	1	0.02%
Leicester 028C	Leicester 028C	37	386	1	0.02%
Warwick 004A	Warwick 004A	38	394	1	0.02%
Coventry 023B	Coventry 023B	29	241	1	0.02%
Northampton 006B	Northampton 006B	41	459	1	0.02%
Coventry 007F	Coventry 007F	26	202	1	0.02%
Cherwell 006C	Cherwell 006C	39	425	1	0.02%
Leicester 016C	Leicester 016C	39	424	1	0.02%
Solihull 007B	Solihull 007B	43	506	1	0.02%
Coventry 037G	Coventry 037G	20	131	1	0.02%
Cherwell 009A	Cherwell 009A	45	536	1	0.02%
Coventry 012D	Coventry 012D	27	215	1	0.02%
Warwick 008C	Warwick 008C	27	218	1	0.02%
Northampton 018C	Northampton 018C	31	266	1	0.02%
Charnwood 019A	Charnwood 019A	43	486	1	0.02%
Hinckley and Bosworth 013B	Hinckley and Bosworth 013B	33	305	1	0.02%
South Northamptonshire 002A	South Northamptonshire 002A	41	443	1	0.02%
Harborough 007F	Harborough 007F	38	391	1	0.02%
Northampton 014D	Northampton 014D	25	183	1	0.02%
Coventry 026E	Coventry 026E	27	215	1	0.02%
Kettering 003A	Kettering 003A	40	422	1	0.02%
South Northamptonshire 011A	South Northamptonshire 011A	43	480	1	0.02%
Northampton 012B	Northampton 012B	41	431	1	0.02%
Blaby 011B	Blaby 011B	37	361	1	0.02%
Solihull 026C	Solihull 026C	42	457	1	0.02%
Northampton 002B	Northampton 002B	43	469	1	0.02%
Kettering 002B	Kettering 002B	45	511	1	0.02%
Coventry 043D	Coventry 043D	30	248	1	0.02%
Warwick 006C	Warwick 006C	21	130	1	0.02%
Blaby 005F	Blaby 005F	34	310	1	0.02%
Leicester 008D	Leicester 008D	40	410	1	0.02%

Nuneaton and Bedworth 015C	Nuneaton and Bedworth 015C	34	310	1	0.02%
Coventry 014A	Coventry 014A	28	210	1	0.02%
Solihull 007C	Solihull 007C	44	478	1	0.01%
North Warwickshire 005A	North Warwickshire 005A	42	441	1	0.01%
Birmingham 069B	Birmingham 069B	44	477	1	0.01%
Coventry 011C	Coventry 011C	27	204	1	0.02%
Nuneaton and Bedworth 011D	Nuneaton and Bedworth 011D	30	241	1	0.01%
Coventry 034D	Coventry 034D	25	169	1	0.01%
Coventry 029C	Coventry 029C	29	227	0	0.01%
Stratford-on-Avon 008A	Stratford-on-Avon 008A	35	312	0	0.01%
Northampton 024B	Northampton 024B	33	280	0	0.01%
Leicester 029A	Leicester 029A	35	313	0	0.01%
Northampton 031B	Northampton 031B	34	303	0	0.01%
Coventry 041A	Coventry 041A	22	133	0	0.01%
Coventry 030C	Coventry 030C	25	173	0	0.01%
Coventry 024E	Coventry 024E	26	176	0	0.01%
Nuneaton and Bedworth 001A	Nuneaton and Bedworth 001A	39	366	0	0.01%
Hinckley and Bosworth 008A	Hinckley and Bosworth 008A	41	398	0	0.01%
Hinckley and Bosworth 002A	Hinckley and Bosworth 002A	36	327	0	0.01%
Blaby 009D	Blaby 009D	33	276	0	0.01%
Coventry 005D	Coventry 005D	29	211	0	0.01%
Nuneaton and Bedworth 016D	Nuneaton and Bedworth 016D	31	245	0	0.01%
Coventry 042B	Coventry 042B	21	125	0	0.01%
Nuneaton and Bedworth 001C	Nuneaton and Bedworth 001C	40	384	0	0.01%
Warwick 015A	Warwick 015A	27	192	0	0.01%
Coventry 006B	Coventry 006B	30	226	0	0.01%
Blaby 008C	Blaby 008C	35	293	0	0.01%
Leicester 034B	Leicester 034B	35	302	0	0.01%
Coventry 016C	Coventry 016C	26	174	0	0.01%
Blaby 004B	Blaby 004B	36	303	0	0.01%
Leicester 028B	Leicester 028B	35	286	0	0.01%
Solihull 026E	Solihull 026E	42	398	0	0.01%
South Northamptonshire 009E	South Northamptonshire 009E	43	422	0	0.01%
Leicester 029B	Leicester 029B	35	286	0	0.01%
Leicester 004C	Leicester 004C	40	366	0	0.01%
Nuneaton and Bedworth 014D	Nuneaton and Bedworth 014D	32	247	0	0.01%
Hinckley and Bosworth 013A	Hinckley and Bosworth 013A	33	263	0	0.01%
Warwick 014A	Warwick 014A	25	155	0	0.01%
Northampton 030D	Northampton 030D	34	267	0	0.01%
Leicester 028A	Leicester 028A	35	294	0	0.01%
Hinckley and Bosworth 012C	Hinckley and Bosworth 012C	34	268	0	0.01%
Nuneaton and Bedworth 006A	Nuneaton and Bedworth 006A	39	342	0	0.01%
Northampton 030F	Northampton 030F	33	259	0	0.01%
Nuneaton and Bedworth 016A	Nuneaton and Bedworth 016A	33	259	0	0.01%
Leicester 020E	Leicester 020E	38	330	0	0.01%
Coventry 018B	Coventry 018B	25	157	0	0.01%
Warwick 013C	Warwick 013C	26	163	0	0.01%
Leicester 022D	Leicester 022D	44	426	0	0.01%
Coventry 043A	Coventry 043A	30	215	0	0.01%
Nuneaton and Bedworth 009A	Nuneaton and Bedworth 009A	35	278	0	0.01%
Oadby and Wigston 007A	Oadby and Wigston 007A	43	406	0	0.01%
Northampton 021D	Northampton 021D	35	280	0	0.01%
Blaby 013B	Blaby 013B	37	303	0	0.01%
Leicester 032D	Leicester 032D	40	363	0	0.01%
Leicester 023E	Leicester 023E	39	332	0	0.01%
Hinckley and Bosworth 009B	Hinckley and Bosworth 009B	39	333	0	0.01%

Cherwell 002C	Cherwell 002C	36	292	0	0.01%
Solihull 005A	Solihull 005A	43	406	0	0.01%
South Northamptonshire 005B	South Northamptonshire 005B	33	252	0	0.01%
Blaby 010B	Blaby 010B	34	265	0	0.01%
Charnwood 014F	Charnwood 014F	43	401	0	0.01%
Coventry 023A	Coventry 023A	27	175	0	0.01%
Leicester 020B	Leicester 020B	38	312	0	0.01%
Hinckley and Bosworth 010D	Hinckley and Bosworth 010D	37	298	0	0.01%
Coventry 004E	Coventry 004E	28	187	0	0.01%
Hinckley and Bosworth 014A	Hinckley and Bosworth 014A	31	217	0	0.01%
Blaby 008B	Blaby 008B	34	253	0	0.01%
Coventry 019C	Coventry 019C	22	123	0	0.01%
Solihull 028E	Solihull 028E	45	435	0	0.01%
Daventry 002D	Daventry 002D	38	322	0	0.01%
Harborough 007C	Harborough 007C	45	426	0	0.01%
Hinckley and Bosworth 006B	Hinckley and Bosworth 006B	41	362	0	0.01%
Harborough 004B	Harborough 004B	30	210	0	0.01%
Warwick 001B	Warwick 001B	26	165	0	0.01%
Nuneaton and Bedworth 014B	Nuneaton and Bedworth 014B	24	143	0	0.01%
Nuneaton and Bedworth 016B	Nuneaton and Bedworth 016B	31	223	0	0.01%
Coventry 043C	Coventry 043C	31	220	0	0.01%
Coventry 014B	Coventry 014B	28	179	0	0.01%
Leicester 029D	Leicester 029D	36	277	0	0.01%
Nuneaton and Bedworth 006C	Nuneaton and Bedworth 006C	36	279	0	0.01%
Leicester 034C	Leicester 034C	36	286	0	0.01%
Coventry 022A	Coventry 022A	28	184	0	0.01%
Nuneaton and Bedworth 003D	Nuneaton and Bedworth 003D	37	299	0	0.01%
North Warwickshire 003G	North Warwickshire 003G	43	391	0	0.01%
Kettering 007E	Kettering 007E	45	416	0	0.01%
Warwick 013D	Warwick 013D	25	147	0	0.01%
Charnwood 014A	Charnwood 014A	43	373	0	0.01%
Blaby 003A	Blaby 003A	40	328	0	0.01%
Coventry 025B	Coventry 025B	29	186	0	0.01%
Warwick 009F	Warwick 009F	24	129	0	0.01%
Coventry 021B	Coventry 021B	26	156	0	0.01%
Daventry 005B	Daventry 005B	44	386	0	0.01%
Solihull 025D	Solihull 025D	36	267	0	0.01%
Coventry 008A	Coventry 008A	25	147	0	0.01%
Solihull 010D	Solihull 010D	44	389	0	0.01%
Coventry 026B	Coventry 026B	27	168	0	0.01%
Coventry 006C	Coventry 006C	29	184	0	0.01%
Nuneaton and Bedworth 009C	Nuneaton and Bedworth 009C	35	255	0	0.01%
Coventry 016A	Coventry 016A	27	163	0	0.01%
Northampton 021B	Northampton 021B	34	247	0	0.01%
Warwick 006D	Warwick 006D	23	117	0	0.01%
Birmingham 081E	Birmingham 081E	42	352	0	0.01%
Nuneaton and Bedworth 010E	Nuneaton and Bedworth 010E	34	239	0	0.01%
Northampton 013C	Northampton 013C	38	295	0	0.01%
South Northamptonshire 002C	South Northamptonshire 002C	43	354	0	0.01%
Leicester 026D	Leicester 026D	37	275	0	0.01%
Birmingham 069A	Birmingham 069A	44	378	0	0.01%
Stratford-on-Avon 009C	Stratford-on-Avon 009C	38	285	0	0.01%
Solihull 004A	Solihull 004A	43	361	0	0.01%
Coventry 023C	Coventry 023C	29	180	0	0.01%
Northampton 019C	Northampton 019C	26	150	0	0.01%
Solihull 015D	Solihull 015D	41	332	0	0.01%

Nuneaton and Bedworth 002E	Nuneaton and Bedworth 002E	41	322	0	0.01%
Blaby 007A	Blaby 007A	36	263	0	0.01%
Coventry 017D	Coventry 017D	26	143	0	0.01%
Cherwell 002E	Cherwell 002E	36	259	0	0.01%
Nuneaton and Bedworth 007C	Nuneaton and Bedworth 007C	39	300	0	0.01%
Northampton 003C	Northampton 003C	38	281	0	0.01%
Coventry 016E	Coventry 016E	27	155	0	0.01%
Hinckley and Bosworth 008D	Hinckley and Bosworth 008D	42	340	0	0.01%
South Northamptonshire 010B	South Northamptonshire 010B	45	375	0	0.01%
Nuneaton and Bedworth 003B	Nuneaton and Bedworth 003B	37	263	0	0.01%
Coventry 032C	Coventry 032C	27	147	0	0.01%
Coventry 025D	Coventry 025D	31	195	0	0.01%
Nuneaton and Bedworth 005E	Nuneaton and Bedworth 005E	37	271	0	0.01%
Blaby 011D	Blaby 011D	36	251	0	0.01%
Nuneaton and Bedworth 014C	Nuneaton and Bedworth 014C	32	199	0	0.01%
Harborough 007D	Harborough 007D	41	313	0	0.01%
North Warwickshire 006F	North Warwickshire 006F	44	359	0	0.01%
Hinckley and Bosworth 014F	Hinckley and Bosworth 014F	32	204	0	0.01%
Coventry 023D	Coventry 023D	29	168	0	0.01%
Stratford-on-Avon 014D	Stratford-on-Avon 014D	42	326	0	0.01%
Leicester 034A	Leicester 034A	37	254	0	0.01%
Charnwood 019C	Charnwood 019C	43	341	0	0.01%
Solihull 026B	Solihull 026B	43	336	0	0.01%
Northampton 017E	Northampton 017E	33	208	0	0.01%
Nuneaton and Bedworth 012E	Nuneaton and Bedworth 012E	33	209	0	0.01%
Leicester 020D	Leicester 020D	38	271	0	0.01%
Warwick 011G	Warwick 011G	32	196	0	0.01%
Leicester 012A	Leicester 012A	42	318	0	0.01%
Cherwell 004E	Cherwell 004E	36	243	0	0.01%
Blaby 003C	Blaby 003C	36	247	0	0.01%
Solihull 008E	Solihull 008E	40	292	0	0.01%
Nuneaton and Bedworth 004C	Nuneaton and Bedworth 004C	45	354	0	0.01%
Oadby and Wigston 008C	Oadby and Wigston 008C	44	341	0	0.01%
Coventry 026A	Coventry 026A	27	143	0	0.01%
Hinckley and Bosworth 001C	Hinckley and Bosworth 001C	40	284	0	0.01%
Coventry 004D	Coventry 004D	29	160	0	0.01%
Solihull 028D	Solihull 028D	43	331	0	0.01%
Charnwood 014B	Charnwood 014B	44	339	0	0.01%
Cherwell 006D	Cherwell 006D	41	292	0	0.01%
North Warwickshire 003E	North Warwickshire 003E	44	335	0	0.01%
Leicester 036A	Leicester 036A	36	238	0	0.01%
Northampton 029C	Northampton 029C	34	208	0	0.01%
Kettering 003D	Kettering 003D	42	304	0	0.01%
Leicester 034D	Leicester 034D	35	224	0	0.01%
Coventry 026C	Coventry 026C	28	147	0	0.01%
Coventry 013B	Coventry 013B	27	136	0	0.01%
North Warwickshire 003F	North Warwickshire 003F	43	314	0	0.01%
Leicester 018F	Leicester 018F	44	337	0	0.01%
Leicester 008A	Leicester 008A	42	298	0	0.01%
Northampton 014C	Northampton 014C	26	133	0	0.01%
Northampton 014B	Northampton 014B	25	119	0	0.01%
Northampton 030E	Northampton 030E	33	199	0	0.01%
Northampton 030B	Northampton 030B	34	207	0	0.01%
Nuneaton and Bedworth 016C	Nuneaton and Bedworth 016C	33	198	0	0.01%
Blaby 010C	Blaby 010C	36	230	0	0.01%
Blaby 005A	Blaby 005A	33	196	0	0.01%

Coventry 014D	Coventry 014D	27	140	0	0.01%
Hinckley and Bosworth 011D	Hinckley and Bosworth 011D	38	246	0	0.01%
Harborough 009D	Harborough 009D	39	265	0	0.01%
Daventry 002B	Daventry 002B	41	278	0	0.01%
Nuneaton and Bedworth 002C	Nuneaton and Bedworth 002C	41	284	0	0.01%
Coventry 017F	Coventry 017F	28	144	0	0.01%
North Warwickshire 005B	North Warwickshire 005B	44	325	0	0.01%
Leicester 020C	Leicester 020C	38	247	0	0.01%
Coventry 007C	Coventry 007C	26	123	0	0.01%
Northampton 001A	Northampton 001A	38	243	0	0.01%
Northampton 023B	Northampton 023B	37	234	0	0.01%
South Northamptonshire 003G	South Northamptonshire 003G	34	196	0	0.01%
Cherwell 003C	Cherwell 003C	36	224	0	0.01%
Northampton 016B	Northampton 016B	41	276	0	0.01%
Leicester 016B	Leicester 016B	41	275	0	0.01%
Leicester 032C	Leicester 032C	42	289	0	0.01%
Warwick 011E	Warwick 011E	31	168	0	0.01%
Leicester 032B	Leicester 032B	43	307	0	0.01%
Northampton 020B	Northampton 020B	40	263	0	0.01%
Northampton 010C	Northampton 010C	40	258	0	0.01%
Solihull 011B	Solihull 011B	42	284	0	0.01%
Northampton 031A	Northampton 031A	36	215	0	0.01%
Nuneaton and Bedworth 012D	Nuneaton and Bedworth 012D	32	178	0	0.01%
Northampton 006D	Northampton 006D	41	276	0	0.01%
Hinckley and Bosworth 006F	Hinckley and Bosworth 006F	43	302	0	0.01%
Leicester 012C	Leicester 012C	40	261	0	0.01%
Solihull 004B	Solihull 004B	43	300	0	0.01%
Northampton 009A	Northampton 009A	37	220	0	0.01%
Coventry 006D	Coventry 006D	31	166	0	0.01%
Charnwood 022C	Charnwood 022C	39	244	0	0.01%
Blaby 002D	Blaby 002D	38	235	0	0.01%
Nuneaton and Bedworth 007B	Nuneaton and Bedworth 007B	41	269	0	0.01%
Leicester 036D	Leicester 036D	38	229	0	0.01%
Coventry 043E	Coventry 043E	31	160	0	0.01%
Northampton 011C	Northampton 011C	41	261	0	0.01%
Coventry 024B	Coventry 024B	25	112	0	0.01%
Leicester 032E	Leicester 032E	45	311	0	0.01%
Nuneaton and Bedworth 001E	Nuneaton and Bedworth 001E	39	243	0	0.01%
Coventry 036C	Coventry 036C	25	105	0	0.01%
Blaby 004C	Blaby 004C	35	193	0	0.01%
Stratford-on-Avon 010F	Stratford-on-Avon 010F	40	253	0	0.01%
Blaby 013F	Blaby 013F	38	224	0	0.01%
Coventry 009A	Coventry 009A	29	141	0	0.01%
Solihull 028A	Solihull 028A	43	280	0	0.01%
Warwick 006A	Warwick 006A	23	89	0	0.01%
Leicester 028D	Leicester 028D	37	209	0	0.01%
Northampton 029A	Northampton 029A	32	167	0	0.01%
Hinckley and Bosworth 012D	Hinckley and Bosworth 012D	33	176	0	0.01%
Solihull 025E	Solihull 025E	36	197	0	0.01%
Kettering 011G	Kettering 011G	45	300	0	0.01%
Northampton 015D	Northampton 015D	38	220	0	0.01%
Oadby and Wigston 008A	Oadby and Wigston 008A	39	236	0	0.01%
Northampton 027B	Northampton 027B	34	182	0	0.01%
Northampton 003B	Northampton 003B	39	234	0	0.01%
Hinckley and Bosworth 013C	Hinckley and Bosworth 013C	32	158	0	0.01%
Leicester 030B	Leicester 030B	42	264	0	0.01%

Leicester 012B	Leicester 012B	40	233	0	0.01%
Hinckley and Bosworth 010E	Hinckley and Bosworth 010E	36	194	0	0.01%
Warwick 008E	Warwick 008E	29	130	0	0.01%
Hinckley and Bosworth 003D	Hinckley and Bosworth 003D	38	220	0	0.01%
Northampton 020A	Northampton 020A	39	224	0	0.01%
Leicester 039C	Leicester 039C	37	209	0	0.01%
Cherwell 003D	Cherwell 003D	37	202	0	0.01%
Northampton 012D	Northampton 012D	41	248	0	0.01%
Northampton 013B	Northampton 013B	40	233	0	0.01%
Coventry 004B	Coventry 004B	30	141	0	0.01%
South Northamptonshire 006C	South Northamptonshire 006C	38	215	0	0.01%
Leicester 036B	Leicester 036B	37	202	0	0.01%
Blaby 007E	Blaby 007E	39	220	0	0.01%
North West Leicestershire 011F	North West Leicestershire 011F	45	286	0	0.01%
Leicester 035B	Leicester 035B	38	208	0	0.01%
Harborough 007E	Harborough 007E	38	210	0	0.01%
Coventry 014C	Coventry 014C	29	129	0	0.01%
Cherwell 007C	Cherwell 007C	40	229	0	0.01%
Solihull 012B	Solihull 012B	45	282	0	0.01%
Charnwood 022A	Charnwood 022A	38	208	0	0.01%
Leicester 004B	Leicester 004B	41	228	0	0.01%
Charnwood 016C	Charnwood 016C	41	233	0	0.01%
Stratford-on-Avon 011E	Stratford-on-Avon 011E	38	206	0	0.01%
Coventry 007A	Coventry 007A	28	119	0	0.01%
Blaby 006F	Blaby 006F	36	185	0	0.01%
Nuneaton and Bedworth 013D	Nuneaton and Bedworth 013D	34	169	0	0.01%
Nuneaton and Bedworth 004D	Nuneaton and Bedworth 004D	43	249	0	0.01%
Nuneaton and Bedworth 018A	Nuneaton and Bedworth 018A	34	164	0	0.01%
Leicester 003C	Leicester 003C	41	228	0	0.01%
Northampton 009D	Northampton 009D	38	195	0	0.01%
North West Leicestershire 009C	North West Leicestershire 009C	44	257	0	0.01%
Solihull 005D	Solihull 005D	43	248	0	0.01%
Hinckley and Bosworth 001B	Hinckley and Bosworth 001B	41	228	0	0.01%
Solihull 008C	Solihull 008C	40	216	0	0.01%
Nuneaton and Bedworth 010C	Nuneaton and Bedworth 010C	36	177	0	0.01%
Coventry 022C	Coventry 022C	28	115	0	0.01%
Northampton 020D	Northampton 020D	38	198	0	0.01%
Solihull 007A	Solihull 007A	42	234	0	0.01%
Northampton 019B	Northampton 019B	30	131	0	0.01%
Blaby 006D	Blaby 006D	37	188	0	0.01%
Harborough 005D	Harborough 005D	40	211	0	0.01%
Daventry 005D	Daventry 005D	45	259	0	0.01%
Solihull 008F	Solihull 008F	40	212	0	0.01%
Northampton 001C	Northampton 001C	40	211	0	0.01%
Cherwell 009D	Cherwell 009D	41	224	0	0.01%
Nuneaton and Bedworth 012B	Nuneaton and Bedworth 012B	30	129	0	0.01%
Hinckley and Bosworth 011B	Hinckley and Bosworth 011B	37	180	0	0.01%
Northampton 026C	Northampton 026C	31	133	0	0.01%
Hinckley and Bosworth 007F	Hinckley and Bosworth 007F	43	231	0	0.01%
Nuneaton and Bedworth 006E	Nuneaton and Bedworth 006E	38	191	0	0.01%
Blaby 005G	Blaby 005G	33	150	0	0.01%
Oadby and Wigston 006B	Oadby and Wigston 006B	40	202	0	0.01%
Solihull 015B	Solihull 015B	42	219	0	0.01%
Oadby and Wigston 008D	Oadby and Wigston 008D	41	217	0	0.01%
Coventry 012B	Coventry 012B	29	114	0	0.01%
Northampton 008C	Northampton 008C	37	181	0	0.01%

Nuneaton and Bedworth 011E	Nuneaton and Bedworth 011E	34	155	0	0.01%
Stratford-on-Avon 008C	Stratford-on-Avon 008C	37	174	0	0.01%
Cherwell 002D	Cherwell 002D	37	175	0	0.01%
Northampton 027A	Northampton 027A	35	158	0	0.01%
Hinckley and Bosworth 011E	Hinckley and Bosworth 011E	37	172	0	0.01%
Charnwood 020A	Charnwood 020A	43	232	0	0.01%
Northampton 004E	Northampton 004E	42	216	0	0.01%
Northampton 016D	Northampton 016D	41	208	0	0.01%
Charnwood 018D	Charnwood 018D	44	237	0	0.01%
Leicester 002B	Leicester 002B	45	244	0	0.01%
Nuneaton and Bedworth 001D	Nuneaton and Bedworth 001D	40	198	0	0.01%
Blaby 005D	Blaby 005D	35	158	0	0.01%
Kettering 002D	Kettering 002D	45	241	0	0.01%
Nuneaton and Bedworth 011C	Nuneaton and Bedworth 011C	34	151	0	0.01%
Blaby 010E	Blaby 010E	39	187	0	0.01%
Leicester 003E	Leicester 003E	42	210	0	0.01%
Solihull 016F	Solihull 016F	43	222	0	0.01%
Warwick 008F	Warwick 008F	27	100	0	0.01%
Leicester 001A	Leicester 001A	42	215	0	0.01%
Blaby 006A	Blaby 006A	37	168	0	0.01%
Nuneaton and Bedworth 008D	Nuneaton and Bedworth 008D	36	160	0	0.01%
Hinckley and Bosworth 002B	Hinckley and Bosworth 002B	37	165	0	0.01%
Oadby and Wigston 007B	Oadby and Wigston 007B	42	208	0	0.01%
South Northamptonshire 009A	South Northamptonshire 009A	43	213	0	0.01%
Hinckley and Bosworth 007C	Hinckley and Bosworth 007C	42	205	0	0.01%
Kettering 007D	Kettering 007D	44	224	0	0.01%
Northampton 011D	Northampton 011D	40	184	0	0.01%
Blaby 013D	Blaby 013D	37	160	0	0.01%
Blaby 004A	Blaby 004A	38	167	0	0.01%
North Warwickshire 007A	North Warwickshire 007A	42	202	0	0.01%
Nuneaton and Bedworth 018C	Nuneaton and Bedworth 018C	31	119	0	0.01%
Leicester 026A	Leicester 026A	35	145	0	0.01%
Hinckley and Bosworth 005C	Hinckley and Bosworth 005C	43	209	0	0.01%
Northampton 006A	Northampton 006A	44	210	0	0.01%
Nuneaton and Bedworth 001B	Nuneaton and Bedworth 001B	38	163	0	0.01%
Solihull 005C	Solihull 005C	45	217	0	0.01%
Leicester 035D	Leicester 035D	38	167	0	0.01%
Northampton 018B	Northampton 018B	31	114	0	0.01%
Northampton 010A	Northampton 010A	42	190	0	0.01%
Leicester 030D	Leicester 030D	43	203	0	0.01%
Leicester 038E	Leicester 038E	40	178	0	0.01%
Cherwell 005D	Cherwell 005D	36	146	0	0.01%
Northampton 005E	Northampton 005E	43	198	0	0.01%
Leicester 023G	Leicester 023G	38	156	0	0.01%
Oadby and Wigston 005C	Oadby and Wigston 005C	40	170	0	0.01%
North Warwickshire 005E	North Warwickshire 005E	44	202	0	0.01%
Oadby and Wigston 007D	Oadby and Wigston 007D	41	178	0	0.01%
Blaby 002B	Blaby 002B	41	174	0	0.01%
Solihull 011C	Solihull 011C	41	173	0	0.01%
Northampton 011B	Northampton 011B	40	164	0	0.01%
Leicester 008E	Leicester 008E	41	176	0	0.01%
Hinckley and Bosworth 006C	Hinckley and Bosworth 006C	41	177	0	0.01%
Oadby and Wigston 008E	Oadby and Wigston 008E	42	178	0	0.01%
Cherwell 004F	Cherwell 004F	37	144	0	0.01%
Cherwell 005B	Cherwell 005B	39	156	0	0.01%
Solihull 028C	Solihull 028C	43	187	0	0.01%

Blaby 002A	Blaby 002A	39	158	0	0.01%
Solihull 026F	Solihull 026F	42	179	0	0.01%
South Northamptonshire 008C	South Northamptonshire 008C	45	200	0	0.01%
South Northamptonshire 009C	South Northamptonshire 009C	44	195	0	0.01%
Solihull 008A	Solihull 008A	42	177	0	0.01%
Solihull 028B	Solihull 028B	43	187	0	0.01%
Nuneaton and Bedworth 008A	Nuneaton and Bedworth 008A	37	143	0	0.01%
Nuneaton and Bedworth 010D	Nuneaton and Bedworth 010D	35	129	0	0.01%
Oadby and Wigston 007F	Oadby and Wigston 007F	41	169	0	0.01%
Northampton 026A	Northampton 026A	31	104	0	0.01%
Coventry 004A	Coventry 004A	31	100	0	0.01%
Kettering 002E	Kettering 002E	45	196	0	0.01%
Stratford-on-Avon 010D	Stratford-on-Avon 010D	41	166	0	0.01%
Northampton 005B	Northampton 005B	40	161	0	0.01%
Northampton 012A	Northampton 012A	42	175	0	0.01%
Solihull 009C	Solihull 009C	44	183	0	0.01%
Northampton 004C	Northampton 004C	43	177	0	0.01%
Nuneaton and Bedworth 006D	Nuneaton and Bedworth 006D	38	139	0	0.01%
Cherwell 002F	Cherwell 002F	36	129	0	0.01%
Stratford-on-Avon 008E	Stratford-on-Avon 008E	37	136	0	0.01%
Nuneaton and Bedworth 004A	Nuneaton and Bedworth 004A	42	164	0	0.01%
Northampton 005C	Northampton 005C	42	167	0	0.01%
Charnwood 019B	Charnwood 019B	43	173	0	0.01%
Leicester 003B	Leicester 003B	41	156	0	0.01%
Northampton 007A	Northampton 007A	41	159	0	0.01%
Northampton 016E	Northampton 016E	39	145	0	0.01%
Nuneaton and Bedworth 002D	Nuneaton and Bedworth 002D	43	167	0	0.01%
South Northamptonshire 010C	South Northamptonshire 010C	45	182	0	0.01%
Birmingham 081D	Birmingham 081D	41	154	0	0.01%
Northampton 007B	Northampton 007B	41	155	0	0.01%
Northampton 005A	Northampton 005A	41	152	0	0.01%
Solihull 011A	Solihull 011A	42	157	0	0.01%
Leicester 032A	Leicester 032A	42	156	0	0.01%
Solihull 008B	Solihull 008B	40	142	0	0.01%
Nuneaton and Bedworth 011B	Nuneaton and Bedworth 011B	35	113	0	0.01%
Northampton 017D	Northampton 017D	34	107	0	0.01%
Northampton 020C	Northampton 020C	39	137	0	0.01%
Solihull 015E	Solihull 015E	42	157	0	0.01%
South Northamptonshire 009D	South Northamptonshire 009D	45	176	0	0.01%
Leicester 039B	Leicester 039B	37	126	0	0.01%
Northampton 002D	Northampton 002D	43	163	0	0.01%
Charnwood 014C	Charnwood 014C	44	167	0	0.01%
Charnwood 017B	Charnwood 017B	42	151	0	0.01%
Harborough 009C	Harborough 009C	43	160	0	0.01%
Hinckley and Bosworth 011C	Hinckley and Bosworth 011C	35	107	0	0.01%
Solihull 004D	Solihull 004D	42	152	0	0.01%
Solihull 005B	Solihull 005B	44	163	0	0.00%
Cherwell 005E	Cherwell 005E	39	128	0	0.01%
Nuneaton and Bedworth 009D	Nuneaton and Bedworth 009D	35	104	0	0.00%
Leicester 039A	Leicester 039A	40	133	0	0.00%
Cherwell 005C	Cherwell 005C	38	123	0	0.00%
Solihull 012D	Solihull 012D	44	159	0	0.00%
Leicester 039E	Leicester 039E	39	125	0	0.00%
Northampton 008D	Northampton 008D	37	115	0	0.00%
Hinckley and Bosworth 003C	Hinckley and Bosworth 003C	40	130	0	0.00%
Solihull 011E	Solihull 011E	40	130	0	0.00%

Leicester 035C	Leicester 035C	38	120	0	0.00%
Leicester 001C	Leicester 001C	39	125	0	0.00%
Cherwell 005F	Cherwell 005F	37	113	0	0.00%
Coventry 043B	Coventry 043B	31	81	0	0.00%
Leicester 038D	Leicester 038D	40	128	0	0.00%
Leicester 026B	Leicester 026B	36	108	0	0.00%
Nuneaton and Bedworth 013A	Nuneaton and Bedworth 013A	31	84	0	0.00%
Northampton 001B	Northampton 001B	39	123	0	0.00%
Oadby and Wigston 007C	Oadby and Wigston 007C	41	134	0	0.00%
Cherwell 007A	Cherwell 007A	40	128	0	0.00%
Nuneaton and Bedworth 007A	Nuneaton and Bedworth 007A	42	134	0	0.00%
Leicester 004D	Leicester 004D	39	118	0	0.00%
Northampton 007D	Northampton 007D	43	137	0	0.00%
Leicester 036C	Leicester 036C	35	96	0	0.00%
Nuneaton and Bedworth 012C	Nuneaton and Bedworth 012C	33	83	0	0.00%
Hinckley and Bosworth 007B	Hinckley and Bosworth 007B	42	130	0	0.00%
Nuneaton and Bedworth 004B	Nuneaton and Bedworth 004B	45	145	0	0.00%
Northampton 010B	Northampton 010B	41	122	0	0.00%
Leicester 035E	Leicester 035E	37	103	0	0.00%
Coventry 007E	Coventry 007E	29	66	0	0.00%
Solihull 010C	Solihull 010C	44	135	0	0.00%
Leicester 036E	Leicester 036E	38	103	0	0.00%
Solihull 006B	Solihull 006B	43	129	0	0.00%
Northampton 009C	Northampton 009C	37	95	0	0.00%
Solihull 010B	Solihull 010B	43	124	0	0.00%
Nuneaton and Bedworth 007E	Nuneaton and Bedworth 007E	40	108	0	0.00%
Nuneaton and Bedworth 013E	Nuneaton and Bedworth 013E	35	85	0	0.00%
Leicester 003D	Leicester 003D	44	125	0	0.00%
Nuneaton and Bedworth 004E	Nuneaton and Bedworth 004E	42	113	0	0.00%
Leicester 012E	Leicester 012E	40	99	0	0.00%
Northampton 016A	Northampton 016A	40	101	0	0.00%
Kettering 002C	Kettering 002C	42	109	0	0.00%
Charnwood 019D	Charnwood 019D	43	109	0	0.00%
North West Leicestershire 009B	North West Leicestershire 009B	45	115	0	0.00%
Oadby and Wigston 007E	Oadby and Wigston 007E	42	105	0	0.00%
Solihull 006D	Solihull 006D	41	98	0	0.00%
Northampton 012C	Northampton 012C	41	94	0	0.00%
Cherwell 005A	Cherwell 005A	39	85	0	0.00%
Solihull 009D	Solihull 009D	44	106	0	0.00%
Nuneaton and Bedworth 007D	Nuneaton and Bedworth 007D	40	88	0	0.00%
Solihull 008D	Solihull 008D	40	86	0	0.00%
Solihull 007D	Solihull 007D	44	101	0	0.00%
Northampton 005D	Northampton 005D	42	91	0	0.00%
Solihull 002C	Solihull 002C	44	100	0	0.00%
Nuneaton and Bedworth 006B	Nuneaton and Bedworth 006B	39	71	0	0.00%

Distance Deterrence Factor

1.8155

'With Factor' Total

1.819

1.812

Population Attraction Factor

1

3376

Rugby 010 Factor

Rugby 011 Factor

Destinations	Gravity Model
Rugby	32.4%
Coventry	15.1%
Daventry	14.8%
Warwick	8.5%
Northampton	5.3%
Leicester	4.1%
Stratford-on-Avon	3.1%
Harborough	2.8%
Blaby	2.3%
Nuneaton	2.1%
Solihull	2.0%
South Northamptonshire	2.0%
Hinckley	1.6%
Cherwell	1.4%
North Warwickshire	0.6%
Charnwood	0.6%
Oadby	0.5%
Kettering	0.4%
North West Leicestershire	0.2%
Birmingham	0.2%
Wellingborough	0.0%
Milton Keynes	0.0%

Technical Note

Project: Lodge Farm, Rugby

Subject: Trip Distribution

Client:	St Modwen	Version:	A
Code:	2202	Author:	NW
Date:	12 October 2016	Approved:	NM

I Introduction

1.1 In order to inform representations on the Publication Draft of Rugby Borough Council's (RBC) Local Plan, Phil Jones Associates (PJA) has been commissioned by St Modwen to carry out detailed testing of the proposed allocation at Lodge Farm using Warwickshire County Council's (WCC's) Paramics Model. Given that this modelling work will be specific to Lodge Farm, it is considered appropriate to revisit the trip distribution assumptions for the site that are currently built into the model. The purpose of this note is therefore to review the trip distribution currently assumed in the model and to propose a more appropriate revised distribution.

2 Existing Trip Distribution

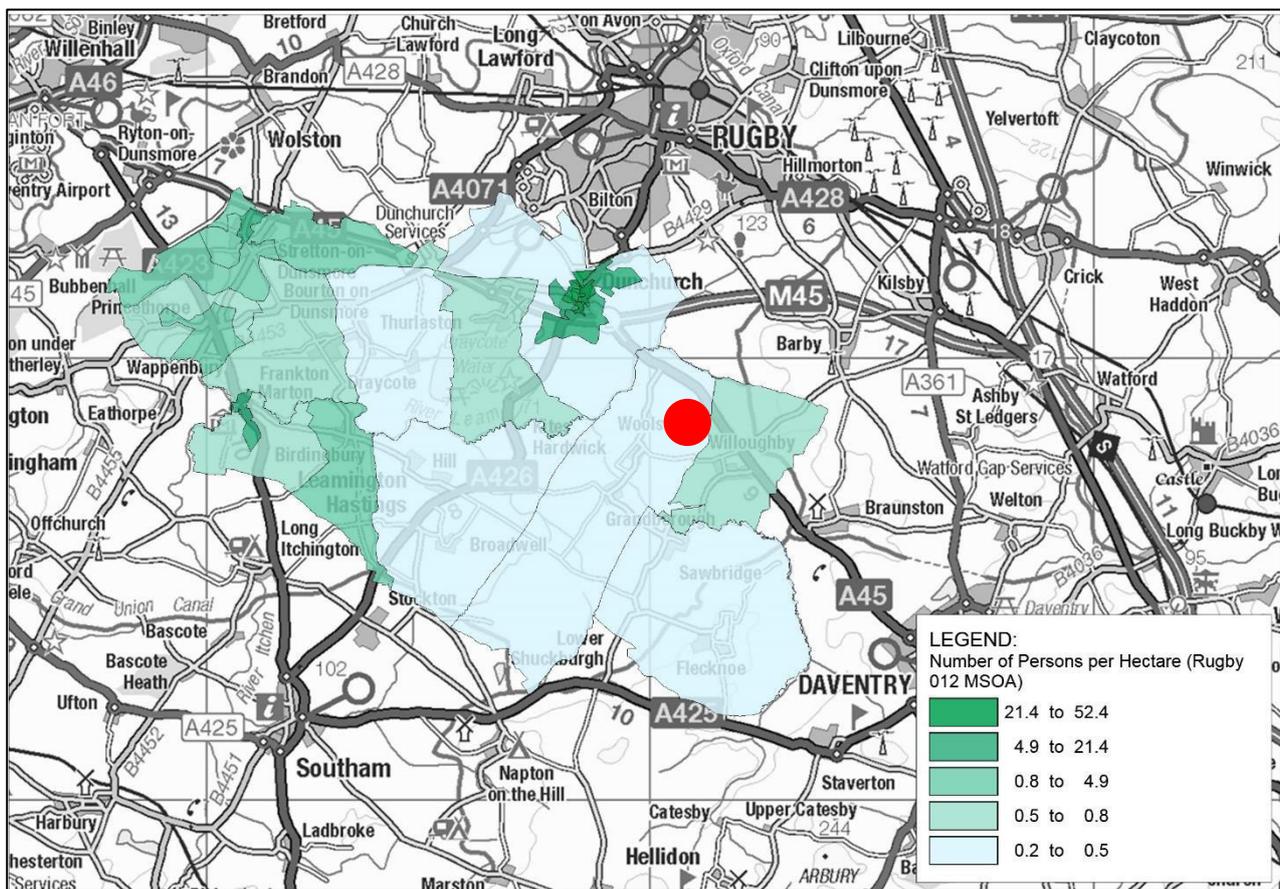
2.1 The Paramics model operated by Vectos on behalf of WCC assumes a trip distribution for Lodge Farm based on Journey to Work Origin/Destination (O/D) pairs extracted from the Census of Population for Middle Super Output Area (MSOA) Rugby 012. The resultant trip distribution is summarised in Table 2-1.

Table 2-1: Existing Model Distribution

End Destination	Vectos Trip Distribution
Rugby	42.86%
Warwick	21.88%
Coventry	14.29%
Stratford-upon-Avon	11.50%
Daventry	9.47%
Total	100%

- 2.2 This methodology is considered to be acceptable and fit for the purpose which it was intended i.e. area-wide testing of multiple potential local plan allocations. However, it is now considered appropriate to refine that methodology in order to consider the impact of Lodge Farm in detail.
- 2.3 Concern has been raised by both WCC and Northamptonshire County Council (NCC) that the current distribution for the site potentially over-estimates the proportion of trips to employment sites in Rugby, with a commensurate under-estimation of the trips towards Daventry.
- 2.4 Detailed interrogation of 2011 Census Population Density data at Output Area (OA) level has been undertaken to understand the population spread within MSOA Rugby 012. Figure 2-1 illustrates this data:

Figure 2-1: Rugby 012 Population Density



- 2.5 Figure 2-1 shows that the highest population densities are concentrated in the north and west of the MSOA, particularly around Dunchurch and the A45/A423 corridors. These areas benefit from quick, direct access to employment areas within Rugby via the A426 or A4071, and are located close to Warwick, hence why both locations draw a large proportion of the trips. It is therefore clear from this data why the Journey to Work data based on the MSOA produces the distribution set out in Table 2-1.

2.6 Given that the Lodge Farm site is located towards the eastern extremity of the MSOA, away from these main population centres, it therefore follows that a more site-specific distribution would be appropriate.

3 Proposed Distribution

3.1 In order to calculate a more realistic estimate of the likely trip distribution, a gravity model has been built based on employment areas within a 45-minute peak-hour drive time and a journey time deterrence factor of 1.5. This produces an estimate of trip distribution based on the assumption that people will travel to work in an area in proportion to the number of job opportunities available but in inverse proportion to the distance, in time, away.

3.2 The resultant residential trip distribution is summarised in Table 3-1, and the full gravity model details are included as Appendix A to this note.

Table 3-1: Gravity Model Summary

Destination	Percentage of Trips
Rugby	18.3%
Coventry	17.9%
Daventry	12.0%
Warwick	9.1%
Northampton	8.1%
Leicester	6.6%
Stratford-on-Avon	4.1%
Blaby	3.5%
Harborough	3.3%
Nuneaton	3.2%
Solihull	3.1%
Hinckley	2.4%
South Northamptonshire	2.4%
Cherwell	2.1%
North Warwickshire	1.0%
Charnwood	0.9%
Oadby	0.7%
Kettering	0.7%
North West Leicestershire	0.4%
Birmingham	0.3%
Total	100%

3.3 This approach is considered to provide a more accurate representation of the likely trip distribution from the site. Reduced trip proportions are predicted to Rugby and Warwick, with increased numbers of trips towards Daventry and Coventry, given the relative size and accessibility of these employment areas. Approval of this revised distribution is now sought from WCC and NCC so that it can be used in the revised PARAMICS modelling.

Appendix A Gravity Model



Appendix E Dunchurch Crossroads Improvement Scheme



APPROX

Design Notes

1. All traffic signal equipment at the junction to be upgraded.
2. All pedestrian crossings would be upgraded to nearside with associated on-crossing detection.
3. The control system would be upgraded to MOVA.

NOTES

1. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/ VERIFIED ON SITE. IF IN DOUBT ASK.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
3. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
4. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

KEY

P4	30.03.16	ISSUED TO WCC	MH	CH
P3	10.03.16	STOPLINE AMENDED	MH	CH
P2	15.02.16	SIGNAL DETAILS ADDED	MH	CH
P1	10.02.16	PRELIMINARY ISSUE	MH	CH
Rev	Date	Details of issue / revision	Drw	Rev

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Client
**DAVID WILSON
HOMES/GALLAGHER
ESTATES**

Project Title
ASHLAWN ROAD, RUGBY

Drawing Title
**PROPOSED DUN COW
IMPROVEMENTS TRAFFIC
SIGNALS**

Scale	1:250	Drawn	M. Higgins
Size	A3	Reviewed	C. Holloway

Drawing Status
PRELIMINARY

Drawing No.	Revision
NTW/2198/100-05	P4

