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Representations in Respect of the South Kesteven District Council Draft Local Plan Public Consultation (Regulation 18)

Land to the North of Belton Lane, Great Gonerby
April 2024

On behalf of Saint Land and Development Ltd

Contents

1. INTRODUCTION

1.1 These representations are made on behalf of our clients, Saint Land and Development Ltd, who are promoting the Site at the Land to the North of Belton Lane, Great Gonerby, henceforth referred to as 'The Site'.

1.2 The Council is inviting comments between 29th February and 25th April 2024 in respect of the following consultation documents, alongside a Draft Policies Map:

- South Kesteven District Council Draft Local Plan and its supporting documents;
- Gypsy, Traveller and Travelling Showpeople Call for Sites; and
- Policy Priorities Survey;
- Design Code.

1.3 This representation provides our views on the:

- Plan Objectives;
- Housing Requirement and Need;
- Plan Period;
- Settlement Hierarchy;
- Suitability of Proposed Allocations; and
- Promotion of Land North of Belton Lane as an Allocation in the Plan.

2. PLANNING POLICY CONTEXT

2.1 Chapter 3 of the December 2023 NPPF addresses 'Plan Making' and states in paragraph 16 that, "*plans should:*

a. *Be prepared with the objective of contributing to the achievement of sustainable development;*

b. *Be prepared positively, in a way that is aspirational but deliverable;*

c. *Be shaped by early, proportionate and effective engagement between plan-makers and communities, local organisations, businesses, infrastructure providers and operators and statutory consultees;*

d. *Contain policies that are clearly written and unambiguous, so it is evident how a decision maker should react to development proposals;*

e. *Be accessible through the use of digital tools to assist public involvement and policy presentation; and*

f. *Serve a clear purpose, avoiding unnecessary duplication of policies that apply to a particular area.*

2.2 Paragraph 35 explains that Local Plans and spatial development strategies are examined to assess whether they have been prepared in accordance with legal and procedural requirements and whether they are sound. It goes on to state that "*plans are 'sound' if they are:*

a. ***Positively prepared –*** *providing a strategy which, as a minimum, seeks to meet the area's objectively assessed needs; and is informed by agreements with other authorities, so that unmet need from neighbouring areas is accommodated where it is practical to do so and is consistent with achieving sustainable development;*

b. ***Justified –*** *an appropriate strategic, taking into account the reasonable alternatives, based on proportionate evidence;*

c. ***Effective*** *– deliverable over the plan period, and based on effective joint working on cross-boundary strategic matters that have been dealt with rather than deferred, as evidenced by the statement of common ground; and*

d. ***Consistent with National Policy*** *– enabling the delivery of sustainable development in accordance with the policies in his Framework and other statements of national planning policy where relevant.*

3. RESPONSES TO THE REGULATION 18 CONSULTATION

3.1 The Regulation 18 Consultation documents build upon the matters consulted on since the commencement of the preparation of the draft local plan in April 2020. This involved addressing several key issues such as the distribution of housing and employment development across the District, as well as more specific policy topics such as addressing climate change issues.

Plan Objectives

3.2 The documents set out a number of Plan Objectives for what the new Local Plan aims to achieve which provide a guiding framework for the Plan's policies and proposals. We support the plan's Vision to 2041 for South Kesteven. In particular, we welcome the description of the role and function of the District's villages, with the Vision setting out that the more sustainable villages (i.e. Larger Villages), will continue to provide the necessary day-to-day services to ensure rural communities have a choice in terms of homes, work and recreation.

3.3 We welcome Objective 1 which seeks to encourage development that supports the sustainable growth and diversification of the local economy. Similarly, Objective 5 seeks to facilitate and sustain a network of sustainable communities which offer a sense of place, that are safe, inclusive and can respond to the needs of local people, establishing an appropriate spatial strategy that will guide the scale, location and form of new development across the District, providing the long term basis for the for the planning of South Kesteven.

3.4 Objective 8 states that services, community, leisure and cultural activities through integrating development and transport provision, ensuring new development is located where it is most accessible by a range of modes of transport, retaining and upgrading existing infrastructure related to transport and communications; and by ensuring choice and encouraging the use of public transport, walking and cycling, for as many journeys as possible.

3.5 Objective 8 is welcomed, particularly considering that Land North of Belton Lane presents a unique opportunity for the spine road, which will be delivered as part of the proposed development, to unlock (if needed) further sustainable and suitable

sites for development that may put further pressure on the Newark Hill/Belton Lane junction at Great Gonerby. This would result in development being realised without the restriction of improvements and complex physical works to the Newark Hill/Belton Lane Junction itself.

3.6 Plan Objective 9 makes reference to the provision of an "adequate supply and choice of land for new housing." We consider that this Plan Objective plays down a key element of national planning policy which is to "boost significantly" the supply of housing, not merely achieving an adequate supply. The provision of housing goes beyond offering a choice in the market but rather defining and addressing needs in a manner that addresses the challenges experienced by the Plan Area and also delivers the Plan's ambitions.

3.7 The NPPF encourages focusing significant development on locations which are already or can be made sustainable. Accordingly, opportunities for enhancing the sustainability of places should also be referred to within these objectives.

Draft Policy SP1 – Spatial Strategy

The Housing Requirement:

3.8 Paragraph 60 of the National Planning Policy Framework (December 2023) ("NPPF") sets out that in order to support the Government's objective of significantly boosting the supply of housing, it is important that a sufficient amount and variety of land can come forward where it is needed. In addition, paragraph 60 also sets out that the needs of groups with specific housing requirements should also be addressed and that the overall aim should be to meet as much of an area's identified housing need as possible.

3.9 Paragraph 61 of the NPPF sets out that to determine the minimum number of homes need, strategic policies should be informed by a local housing needs assessment, conducted using the Standard Method.

3.10 Paragraph 63 of the NPPF clarifies that within the context of establishing need, the size, type and tenure of housing needed for different groups in the community should be assessed and reflected in planning policies. These groups include those who require affordable housing.

3.11 Paragraph 67 of the NPPF establishes that strategic policy-making authorities should establish a housing requirement figure for their whole area and that this requirement may be higher than the identified housing need if, for example, it includes for neighbouring areas, or reflects growth ambitions linked to economic development or infrastructure investment.

3.12 Paragraph 22 of the NPPF establishes that strategic policies should look ahead over a minimum 15 year plan period from adoption, in order to anticipate and respond to long-term requirements and opportunities arising from major improvements in infrastructure. Where larger scale requirements and investments and requirements such as new settlements or significant extensions to existing villages and towns from part of the strategy, policies should be set within a vision that looks further ahead (at least 30 years) to take into account the likely timescales for delivery.

3.13 The Planning Practice Guidance ("PPG") clarifies that a local housing needs assessment is the first step in the process of deciding how many homes need to be planned for and that this should be undertaken separately from assessing land availability, establishing a housing requirement figure and preparing policies to address this such as site allocations.

3.14 The PPG sets clearly that there are circumstances and factors where it might be appropriate to plan for a higher housing need figure than that indicated by the Standard Method. These are summarised below:

- *The Standard Method does not attempt to predict the impact of changing economic circumstances or the impact other factors might have on demographic behaviour.*

- *Circumstances where it may be appropriate to plan for a greater level of housing growth than the LHN includes, but is not limited to:*

- *Growth strategies for the area that are likely to be deliverable, for example where funding is in place to promote and facilitate additional growth*

- *Strategic infrastructure improvements that are likely to drive an increase in the homes needed locally; or*

- *An authority agreeing to take on unmet need from neighbouring authorities, as set out in a statement of common ground.*

- *There may also be situations where previous levels of housing delivery in an area, or previous assessments of need, are significantly greater than the outcome of the Standard Method.*[1]

- *Total affordable housing need can then be considered in the context of its likely delivery as a proportion of mixed market and affordable housing developments, taking into account the probable percentage of affordable housing to be delivered by eligible market housing led developments. An increase in the total housing requirement included in the plan may need to be considered where it could help deliver the required number of affordable homes.*[2] *[Emphasis Added]*

Calculating Local Housing Need:

3.15 Draft Policy SP1 of the Local Plan Review (LPR) sets out the scale of housing need and a general strategy for the distribution of housing growth over the plan period to 2041. Draft Policy SP1 identifies a housing requirement of 14,020 dwellings which equates to 701 dwellings per annum (dpa).

3.16 The calculation of Draft Policy SP1's housing requirement figure is informed by a Local Housing Needs Assessment (LHNA) prepared by AECOM and dated September 2023. The LHNA used the Standard Method based on the latest affordability ratios available at that time (March 2023) to produce the result of 701 dpa. As such, the proposed housing requirement in Draft Policy SP1 is similar to South Kesteven's local housing need (LHN) figure calculated using the Standard Method.

3.17 Prior to the current consultation in respect of the Draft Plan, the LHN for South Kesteven was calculated to amount to 754 dpa which the LHNA confirms was the correct figure as at April 2020. As confirmed by paragraph 1.13 of the Draft Plan, the preparation of the LPR commenced in April 2020. As set out in PPG, assessing baseline housing need is the "first step in the process of deciding how many homes need to be planned for." Accordingly, the LHN or baseline housing

[1] Paragraph: 010 Reference ID: 2a-010-20201216
[2] Paragraph: 008 Reference ID: 67-008-20190722

need figure for South Kesteven should align with the point at which the LPR was initiated given that understanding the LHN is the first step in the plan-making process. The LHNA at paragraph 3.27 does attempt to deal with this issue by explaining that, firstly, 754 dpa would represent a rate of housebuilding not experienced in South Kesteven since the 2008 recession and, secondly, that 754 dpa was not "confirmed as the new Local Plan target." Neither of these arguments are convincing. Firstly, the housing trajectory on page 47 of the Draft Plan expects to deliver as many as 1,400 completions per annum and capping housing requirements based on past delivery would clearly not reflect the Government's objective to boost significantly the supply of housing. Secondly, as is recognised within the LHNA itself, the Standard Method does not produce a housing requirement or a "target." Rather, it informs a baseline assessment of housing need which is the first step in the process of deciding how many homes should be planned for.

3.18 The LHN figure should not be re-calculated midway through the plan preparation process and the figure used should be that which aligns with the date at which the LPR was commenced. The LHN and therefore the housing requirement for South Kesteven should be <u>at least</u> 754 dpa or 15,080 over the plan period.

The Plan Period:

3.19 The plan period for the LPR extends to 2041. Paragraph 22 of the NPPF requires strategic policies to look ahead at least 15 years from adoption. The most recent Local Development Scheme (LDS) dated May 2023 anticipates adoption of the LPR by Spring 2026, which would dictate a minimum plan period to 2041. The end date for the LPR therefore provides virtually no room for slippage, noting that this has already occurred given the current consultation was anticipated to be undertaken in Winter 2023/2024. This approach is at odds with Objective 5 of the Draft Plan which seeks to provide a long-term basis for planning in the District.

3.20 The timeframe specified at paragraph 22 of the NPPF is a minimum figure. As it stands, the LPR would look only five years beyond the end date of the adopted local plan and it is questionable whether such a short timespan would enable to the LPR to anticipate and respond to long-term requirements and opportunities. As set out in the housing trajectory at page 47 of the Draft Plan, housing

completions will drop below the 701 dpa from 2036/2037 with substantial drop-off in completions occurring in 2038/2039 and in every monitoring year thereafter. The LPR would therefore not deliver sufficient housing completions to meet annualised need significantly beyond 2036, the end date of the adopted local plan.

Affordable Housing Need:

3.21 The Draft Plan sets out at Table 1 a series of challenges affecting the District which the LPR should address. Amongst these, the social challenges include areas of the District with high house prices and a shortage of affordable housing. The LHNA estimates an annual need for affordable homes of 402 dwellings per annum which equates to 57% of the annualised housing requirement figure of 701 dpa. Whilst no whole-plan viability study has been produced, Policy H2 of the adopted local plan sets out a requirement of 30% affordable housing provision on sites of 11 or more dwellings or with greater than 1000 sq m floor space except in Grantham, where the requirement is 20%. Based on these figures, it seems very unlikely that the local planning authority will be able to seek anywhere close to 57% affordable housing provision particularly given the fact that slightly under half of the LPR's overall housing provision will be located at Grantham, which has a generally less buoyant housing market than other parts of the District.

3.22 Paragraph 8.68 of the LHNA vaguely considers the relationship between affordable housing needs and the overall housing requirement at. It is stated that the NPPF and the PPG do not require the Standard Method to be uplifted to meet all affordable housing needs. We do not agree with this statement. The PPG unambiguously sets that an increase in the total housing requirement included in the plan may need to be considered where it could help deliver the required number of affordable homes. Given that the overall level of housing requirement proposed will plainly not meet affordable housing needs identified within the LHNA, nowhere within the Draft Plan, or its evidence base, has an uplift to the Standard Method figure of 701 dpa been considered. That runs contrary to the advice of the PPG and paragraph 60 of the NPPF, which states that the overall aim should be to meet as much of an area's identified housing need as possible. There is no explanation within the Draft Plan or its evidence base as to why it is not possible to meet affordable housing needs in full or at least more than would

otherwise be met by Draft Policy SP1's housing requirement.

3.23 Having regard to the Government's live tables on affordable housing supply, South Kesteven has seen an average of 120 affordable completions per annum over the last ten years. That is 70% below where the LHNA's estimate of affordable housing need clearly suggesting that a significant increase in overall housing provision is required over and above previous trends.

Economic Growth:

3.24 The PPG states that the Standard Method does not attempt to predict the impact of changing economic circumstances or the impact other factors might have on demographic behaviour. Accordingly, it is appropriate to consider, in formulating the overall housing requirement, whether it is sufficient to meet the economic aspirations of the LPR and whether sufficient homes will be provided to serve the number of jobs created.

3.25 As part of the LPR's evidence base, the local planning authority has commissioned an Employment Land Study (ELS) prepared by AECOM and dated February 2024. In summary, the ELS establishes a need for 79.5ha of employment land to be brought forward through the LPR. Against this, the ELS identified 236ha plus a further potential 35ha of vacant land currently designated for employment uses. As such, taking the ELS findings at face value, there is a considerable overprovision of employment land against minimum employment land requirements identified in the ELS. However, the LPR has appropriately taken into account wider economic growth aspirations, Plan objectives such as the reduction of out-commuting, and providing appropriate choice and competition in the market. In addition to the committed supply which is circa 191.5ha above the minimum requirement identified within the ELR, the LPR identifies 338ha of new employment sites across the District.

3.26 This intended level of employment growth needs to be properly considered when calculating the overall housing requirement so that it provides the right level of homes to accommodate the anticipated number of jobs and thus people living in South Kesteven. In fact, having regard to the ELS and the LHNA, it appears that the preparation of neither document has been informed by the other and there is

disconnect between the economic needs and the housing needs evidence base. Clearly, given the significant uplift in employment land identified through the LPR over and above the baseline employment need identified in the ELS, it is appropriate to consider the same approach in respect of housing to achieve an alignment of homes and jobs. We question whether the housing requirement informed by the minimum possible figure will support the District's economic growth ambitions.

3.27 The LHNA also sets out that the anticipated population growth in South Kesteven is expected to be led by the older population, with a projected 87.8% increase in households with a person aged 65 or above expected between 2011 and 2041. In the context of an aging population and ambitious economic growth plans, it stands to reason that providing additional homes could assist in addressing matters of housing affordability and attracting working age individuals to the area.

3.28 We would strongly encourage the local planning authority to investigate the linkages between the overall planned level of economic growth and housing provision to ensure an alignment between the two and to incorporate an uplift to the Standard Method figure as appropriate as part of the LPR's housing requirement.

Draft Policy SP2 – Spatial Strategy

3.29 We support Policy SP2 as it identifies a robust settlement hierarchy that is justified against the evidence base. We specifically support the identification of a number of Larger Villages which have good levels of services and accessibility and their inclusion within the hierarchy. As to the general soundness of Policy SP2, with a few exceptions, it is largely based on the current settlement hierarchy in the adopted Local Plan which was examined and found to be sound relatively recently in 2020. Nonetheless, the LPR has appropriately been informed by the Settlement Hierarchy Review dated February 2024.

3.30 The Settlement Hierarchy Review is generally robust and competent. It ranks the performance of all villages according to the presence or absence of fundamentally important services and facilities with a weighted score for those services and facilities that are most important for day-to-day living. In specific regard to Great

Gonerby, we support the identification of this settlement as a Larger Village and generally as a location for proportionate housing growth. We also note that Great Gonerby is closely related to Grantham and so is also supported by the further services and facilities of Grantham.

Draft Policy H1 – Housing Distribution

3.31 Draft Policy H1 sets out how the 14,020 new homes will be distributed by the development strategy and settlement hierarchy. This is intended to be delivered by an existing 1,127 completions, 4,903 commitments and 8,044 allocations in the adopted local plan. In addition to the 2,901 draft housing allocations below (table 1), this leads to a total of 16,975 dwellings across the plan period until 2041.

Table 1 - Draft Housing Allocations by Hierarchy Tier

Hierarchy Classification	**Number of Dwellings – Draft Allocations**
Market Towns (Grantham, Stamford, Bourne, The Deepings)	1,899
Larger Villages (including Ancaster)	1,002
Other Settlements	0
Total	**2,901**

3.32 Critically, the Council have committed to an oversupply of 2,955 dwellings across the plan period. However, this figure is reliant on existing commitments (as of 31st March 2023) and the adopted local plan allocations. It is unclear as to the deliverability of the sites set out in the Draft Local Plan.

3.33 As present, Policy H1 does not propose to allocate Land to the North of Belton Lane. It is however submitted that this site is wholly deliverable and is located within a highly sustainable settlement, closely aligned to Grantham itself and in a

relatively close proximity to large scale employment sites, therefore providing sustainable housing options for employees of those sites. Consequently, it would be prudent to commit to its allocation within the emerging local plan.

3.34 It may also be prudent for the council to commit to further draft allocations or intensify the previously identified draft allocations where appropriate and sustainable to do so.

Policy H2 – Affordable Housing Provision

3.35 Draft Policy H2 sets out the requirements regarding affordable housing provision. It is intended that all developments comprising 10 or more dwellings (or an area of 0.5ha or more) should make provision for 27-57%, depending on the outcome of the Whole Plan Viability Assessment. Moreover, it is also expected that all affordable housing provision will be delivered on site, and 25% of all affordable housing delivered through planning obligations as First Homes. Based on these figures, it seems very unlikely that the local planning authority will be able to seek anywhere close to 57% affordable housing provision particularly not given the fact that slightly under half of the LPR's overall housing provision will be located at Grantham, which has a generally less buoyant housing market than other parts of the District

3.36 It is welcomed that the council will consider site specific viability assessments in certain cases. This will ensure that developments are context based.

Policy H4 – Meeting All Housing Needs

3.37 Draft Policy H4 states that all major developments for residential development should provide appropriate type and sized dwellings to meet the needs of current and future households in the District. This is to be achieved by ensuring that new residential development above a threshold of 10 or more dwellings will be granted subject to a target of at least 10% of new dwellings being developed as 'Accessible and Adaptable' in line with the optional standards set out in Part M4(2) of the Building Regulations and the submission of a statement as part of an application for full planning permission to evidence compliance.

3.38 We support the aspirations and aims of these policies, but would caution the use of a number of policies that place a greater burden upon the delivery of development without a thorough understanding of the viability implications of this approach.

3.39 We are supportive in principle of the NDSS but these may not be appropriate or reasonable for all development proposals – possibly due to density, design or viability. We would encourage balancing clauses in all these policies to enable reasonable flexibility to avoid the potential for developments which would otherwise be acceptable to fail.

Policy ID1 – Infrastructure for Growth

3.40 Additionally, we are supportive of Policy ID1 which states that all development proposals will be expected to demonstrate that there is, or will be, sufficient infrastructure capacity (including blue and green infrastructure) to support and meet the essential infrastructure requirements arising from the proposed development.

3.41 We would welcome an acknowledgement of the delivery of an excess or a significant improvement in local infrastructure that could enable additional sustainable development.

Policy ID2 – Transport and Strategic Transport Infrastructure

3.42 We welcome the passage of Policy ID2 as set out in the Draft Local Plan which states that new development will be required to contribute to transport improvements in line with appropriate evidence, including the Infrastructure Delivery Schedule, the Local Transport Plan and local transport strategies.

4. PREFERRED SITES ASSESSMENT

4.1 This section of the representation will address the suitability of the relevant draft allocated sites in and around Great Gonerby. It is prudent to allocate as many sites to sustainable settlements such as Great Gonerby as possible. However, allocation of sites should be seen in the context of technical constraints and how any constraints can be overcome – for example, whether there are issues within the road network and associated highway infrastructure that must be addressed before further development can be sustainably absorbed.

4.2 The South Kesteven Draft Local Plan process involved an assessment of the draft allocations for the District. A Sustainability Appraisal and a Draft Site Assessment Report were published by South Kesteven District Council in February 2024.

4.3 There are various sites which were assessed as part of the Sustainability Appraisal and the Draft Site Assessment Report. There are several sites relevant to the Great Gonerby including sites, SKPR-57, SKPR-39, SKPR-40 and SKPR-241. Of these, only SKPR-57 and SKPR-241 were identified as preferred sites in the Draft Sites Assessment Report.

4.4 A number of points were raised during the Draft Site Assessment Report, one of the most relevant points include the comments made towards site SKPR-57 (Land off Belton Lane, Great Gonerby). SKPR-57 was identified as a 'preferred site' in the Draft Site Assessment. This is despite the fact that the Site Assessment identified issues with the junction between Newark Hill and Belton Lane, which highlights whether SKPR-57 could feasibly be delivered within a suitable timeframe given the extent of highways improvement works required. As noted in section 5 (below) Land North of Belton Lane can deliver a highways solution to the issues at the Newark Hill/Belton Lane junction that could also alleviate the uncertainty concerning SKPR-57 and assist its delivery. Within the Site Assessment, Lincolnshire County Council Highways went so far as to state that the "*Overall mitigation required* [for the highways issues] *is probably too great for site*". This demonstrates the pressing issue of the Newark Hill/Belton Lane and its inability to accommodate the additional traffic generated from SKPR-57.

4.5 The final comments regarding site SKPR-57 state that "*development will enable*

upgrades to the Belton Lane/Newark Hill junction" presumably through the developer making monetary contributions via a Section 106 agreement. The resultant effect of this approach means that it could take years for the funds required to be accumulated (from various sites relative to their impact and therefore required contribution) in order to make necessary complex improvements to the highway infrastructure. However, development of the Land North of Belton Lane, Great Gonerby presents an opportunity to resolve this issue, by diverting traffic through the site via a new spine road, thus alleviating the traffic impacts at the Newark Hill/Belton Lane junction without the necessity of very costly/time consuming/complex (and possibly unachievable) highway improvement works to the existing junction. This is discussed in more detail within the accompanying transport appraisal prepared by BWB [**Appendix 2**].

4.6 Likewise, the Draft Site Assessment Report raised similar concerns regarding site SKPR-241 (Land off Church Lane, Great Gonerby). The report highlights the access issues regarding site SKPR-241 and it states that the site will need "*to make highway improvements to Church Lane*" in order to be suitable for development. That being said, the report identified the Church Lane site as being a preferred site for development. In addition, arguably, development of the land at Church Lane could have more significant traffic impacts on the village, particularly during construction, given its location to the south of the village. Whereas, in comparison, development of Land North of Belton Lane would not result in the same impacts on the village, given the site is located at the northern edge of the village and has good access links with the A1 to the north.

4.7 In addition, site SKPR-57 is located between Grantham and Great Gonerby. Development of that site will encroach on the separation between the two settlements and increase the risk of Grantham and Great Gonerby merging. However, the Land North of Belton Lane is appropriately located so that it is not in close proximity to any other settlement in any direction.

5. SPECIFIC REPRESENTATIONS IN RESPECT OF LAND NORTH OF BELTON LANE, GREAT GONERBY

5.1 This section of the Representations introduces the Land North of Belton Lane, Great Gonerby (the Site) and addresses the site's deliverability as a logical and immediately available housing allocation within the emerging Local Plan. This is in addition to the unique ability of the Site to be able to provide a solution to the issue of the Newark Hill/Belton Lane Road junction which will provide a wider benefit to the community and the strategic highway network.

5.2 A Promotion Document dated November 2023 was previously submitted to the local planning authority (see **Appendix 1**). The document demonstrated how the Site could technically and viably be delivered for residential development and how it could be brought forward with no material adverse impacts arising.

5.3 A Transport Appraisal (**Appendix 2)** was prepared by BWB, and was also submitted and to the local planning authority alongside the Promotion Document. The Transport Appraisal sets out the access strategy for the Site, the options to support sustainable transport options and the capacity impacts on the local road network.

5.4 The Site is located to the northern edge of the sustainable settlement of Great Gonerby, with access taken off both Belton Road and Newark Hill which are both proposed to be linked with a new spine road. It is currently comprised of around 19 hectares of agricultural land. A cemetery occupies the south-western corner alongside a small car park. The site is bound by hedgerows and the B1174 to the east, existing built environment across from Belton Lane to the south (including Great Gonerby Memorial Hall) and other agricultural land to the north and east.

5.5 Overall, the site is suitable, available and achievable for development within a 5-year period and can therefore assist in meeting housing need in the short-term.

5.6 We recognise the capacity as up to 350 dwellings and in accordance with the NPPF objective to make the most effective use of land consider that the final quantum of development on allocated sites should be informed by a constraints-led master-planning exercise at the planning application stage and maximised

alongside the areas of public open space, a sustainable drainage system and the provision of safe and suitable access.

5.7 The site is in single ownership and there is significant market interest in the site.

5.8 Great Gonerby is identified as a Larger Village, the 2nd tier within the draft settlement hierarchy. Importantly, the Settlement Study 2023 finds Great Gonerby to perform well when assessed against other settlements and the available services/facilities, culminating in Great Gonerby being placed in the second highest category on the hierarchy.

5.9 Great Gonerby itself has a primary school, a pub, a convenience food store, a combined post office/newsagents, a church, a cemetery, open spaces, a social club and a village hall. Great Gonerby is located around 3km to the north west of Grantham, Grantham is extremely accessible from Great Gonerby and benefits from an additional range of services and facilities including the Grantham and District Hospital.

5.10 Existing bus stops are located on Great Gonerby High Street around 400m of the Site and is served by the number 22 and the number 24 service bus. The number 24 provides a Monday to Friday link to/from Newark and Grantham. The number 22 provides a once daily service to Coddington and Grantham.

5.11 The closest railway station is in Grantham town centre, it has a regular rail service to London, Nottingham, Manchester, Norwich, Skegness, Leeds, Liverpool and Lincoln.

5.12 Focusing development in sustainable settlements is an appropriate way to address the districts urgent housing need.

5.13 The site is at very low risk of flooding, being located within flood zone 1, with no watercourses on or adjacent to the site, this means that the land at the lowest risk of fluvial flooding, and is not at risk from canals, reservoirs or large waterbodies. There are no heritage assets within, or adjoining the site, and it is not located in a Conservation Area.

5.14 The immediate context is provided by the urban influence from existing built form

and boundary hedgerows which provide containment and structure. A sensible, landscape-led approach, including retention and augmentation of trees and hedges will provide natural screening of the development given its edge of settlement location. Development would also seek to enhance the biodiversity and landscape of the northern area of the Site, via retention and enhancement of the existing Priority Habitat – Deciduous Woodland area of "Hook Cliff", which would provide additional natural landscape screening for the proposed residential development.

5.15 Access can be taken from both Belton Lane and Newark Hill where there are no anticipated constraints in relation to the provision of site access, highway safety and capacity. This is in contrast to several of the other draft allocated sites in Great Gonerby as mentioned in the Draft Sites Assessment Report.

5.16 Two accesses have been considered for this site, this is well in excess of the one access required by the guidance (Lincolnshire Development Roads and Sustainable Drainage Design Approach, 2017). This has been included within the draft layout in order to resolve a locally known problem.

5.17 Under the approved scheme S15/3189 at the northern edge of Grantham, mitigation measures were required for western entrance to Belton Lane. This was considered necessary to accommodate the increased traffic generated by the development. At the existing junction with Belton Lane, Newark Hill (B1174) has poor visibility in both directions, has a significant downhill gradient on approach to the junction and the junction is forecast to operate over capacity with planned development in place. This is not even taking into account the other draft allocations in Great Gonerby, such as the currently allocated site further along Belton Lane which will have a significant impact on the junction.

5.18 In addition, the mitigation measures beyond the signalisation of the Newark Hill/Belton Lane Junction are considered undeliverable because of the existing retaining structures. Therefore, the development of the Site offers an ideal opportunity for alternative mitigation, by diverting traffic away from the Belton Lane/Newark Hill junction via a new spine road through the Site.

5.19 Compared to many of the other preferred sites identified in the Draft Sites

Assessment, the Site is able to deliver a solution to the highway issues at the Newark Hill/Belton Lane Junction as part of the development itself rather than through the accumulation of various section 106 monetary contributions and without the necessity of very costly/time consuming/complex (and possible unachievable) highway improvement works to the existing junction.

5.20 Additionally, the Site will not encroach upon other settlements unlike other sites which exist in the vicinity. As previously mentioned, the nearby site SKPR-57 is located between Grantham and Great Gonerby. Development on that site encroaches on the separation between the two settlements and increases the risk of Grantham and Great Gonerby merging. However, the Site is located to the north of Great Gonerby and is not in close proximity to any other in any direction.

5.21 The Site is capable of providing a number of configurations to achieve the number of homes and type of development required for Great Gonerby. Saint Land and Development Ltd are willing and able to take a flexible approach to the development and welcome further discussions with the Council as the Local Plan continues to develop. The fact that the site and its immediate environs are available for development further reflects this flexibility.

6. CONCLUSION

6.1 Saint Land and Development Ltd are promoting Land to the North of Belton Lane Great Gonerby for residential development compromising approximately 350 dwellings. A Promotion Document (appended to these representations) demonstrates how a high quality residential development can come forward quickly, would not result in any materially harmful impacts, and will deliver a much needed solution to the highway issues at the Newark Hill/Belton Lane junction.

6.2 Whilst Saint Land and Development Ltd are broadly supportive of the overall thrust of the LPR, there are a number of matters that should be addressed prior to the next stage of consultation. The most pressing of these is the LPR's housing requirement, which has been calculated on the basis of the Standard Method with little consideration as to whether uplifts are required to address affordable housing delivery or economic growth.

6.3 The spatial strategy in relation to the LPR's broad distribution of housing is sound. The apportionment of housing growth to the Larger Villages will ensure balanced growth across the District; will enhance the deliverability of the LPR; and underpin the viability and vitality of rural areas by securing the delivery of affordable housing and encouraging the influx of new residents.

6.4 The PPG is clear that the LHN is the minimum starting point for calculating the number of homes needed. The LHN is not a housing requirement figure and there are numerous reasons why the latter could be higher than the LHN.

6.5 It is clear that this is a matter that the Council should continue to explore as further analysis is undertaken in respect of whole plan viability testing to inform Draft Policy H5 on affordable housing provision.

6.6 In respect of the Plan Period of 2020-2040, the NPPF sets out at paragraph 22 that strategic policies should look ahead over a minimum of 15 years from adoption. The latest LDS (October 2023) identifies adoption of the plan at October 2026 and therefore a plan period to 2040 would fall short of the minimum time horizon established within the NPPF and must be reviewed.

6.7 Our view is that a contingency closer to 20%, rather than the 10% proposed (and 8.25% in actuality) within Policy H1, would assist in driving forward these objectives as well as insulating the Plan's strategy against economic uncertainty.

6.8 The Councils strategy is to focus growth to the most sustainable settlements consistent with the settlement hierarchy. We are supportive of this approach which allows for the delivery of a good mix of sites and more incremental expansion to rural settlements to facilitate deliverability.

6.9 In respect of the development of the Land North of Belton Lane, Great Gonerby this presents an opportunity to resolve a known existing highway issue, by diverting traffic through the site via a new spine road, thus alleviating the traffic impacts at the Newark Hill/Belton Lane junction without the necessity of very costly/time consuming/complex (and possibly unachievable) highway improvement works to the existing junction.

6.10 The aforementioned spine road will also enable and assist in the delivery of wider development in South Kesteven.

6.11 In respect of site capacity, we recognise the approximate quantum represents a minimum starting point for the housing allocations but consider that the final quantum of development on allocated sites should be informed by a constraints-led master-planning exercise at the planning application stage.

6.12 The site is in single ownership with limited constraints and the wider site itself offers a unique opportunity for flexibility in delivering additional growth.

6.13 The Site would be a logical and deliverable extension to Great Gonerby adjoining the existing settlement boundary to the north of the village. Development would represent a natural extension to this wholly sustainable larger village, which will not only provide future homes for the settlement that are well designed and appropriate to the context, but will also deliver important and much needed new transport infrastructure for the South Kesteven area as a whole, and will deliver additional biodiversity and open space enhancements.

6.14 There are no barriers to suggest that the site cannot come forward for development and, as a result, it should be considered suitable, available,

achievable and capable of contributing towards the delivery of up to 350 new homes in the short term and in a location with a strong market interest.

APPENDIX 1 – PROMOTION DOCUMENT

APPENDIX 2 – TRAFFIC AND TRANSPORT APPRAISAL

Land to the North of Belton Lane

Great Gonerby

PROMOTION DOCUMENT

Prepared by
DL Design Studio and Marrons
on behalf of
Saint Land and Development Ltd

November 2023

Prepared by

DL DesignStudio

Marrons

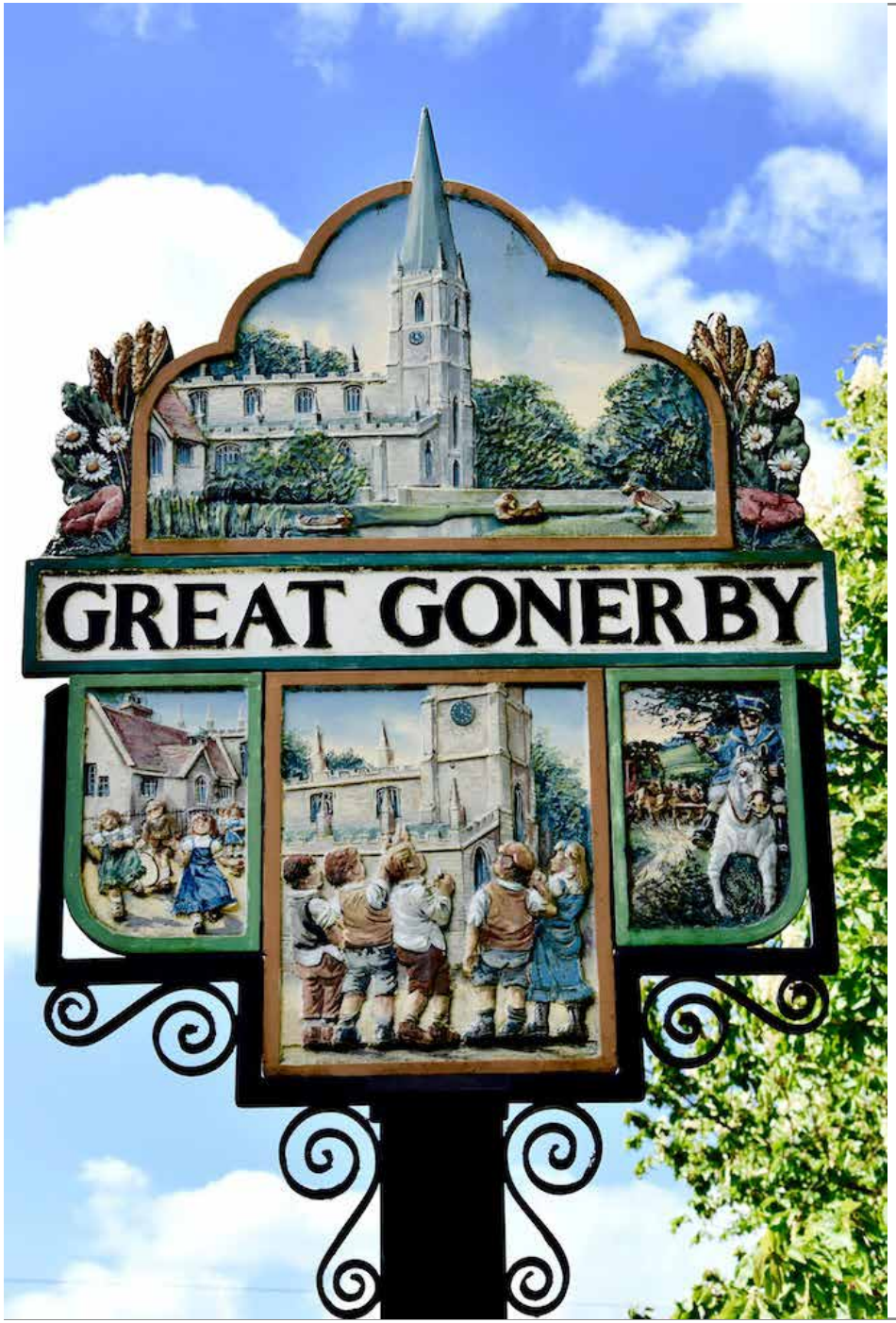
on behalf of

saint

November 2023

Document Title: Promotion Document

[redacted]



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Introduction
Executive Summary

Marrons alongside DL Design Studio have been instructed by Saint Land and Development Ltd to prepare a Promotion Document to demonstrate the deliver ability of Land to the North of Belton Lane, Great Gonerby (the Site). In line with the findings of this document it is considered that the Site could deliver up to 350 homes alongside much needed new highways infrastructure for South Kesteven.

The Site would be a logical and deliverable extension to Great Gonerby adjoining the existing settlement boundary to the north of the village. Development would represent a natural extension to this wholly sustainable larger village, which will not only provide future homes for the settlement that are well designed and appropriate to the context, but will also deliver important and much needed new transport infrastructure for the South Kesteven area as a whole.

This scheme offers a solution to a problem for which no other solution seems apparent. Condition 24 of approved planning application reference S15/3189, at Land to the North of Longcliffe Road, Grantham, for 480 dwellings and associated infrastructure (including a neighbourhood centre and a primary school) required various highway improvements, including to the junction of Belton Lane and Newark Hill. As demonstrated in application s23/0785 (which is pending consideration at the time of writing), the Local Highways Authority (LHA) no longer consider that the junction improvements are feasible within the confines of the highway boundary. It was advised by the LHA that in order to improve capacity at the junction a much wider scheme would be required, involving third party land. However, development of this site presents an opportunity to resolve this issue, by diverting traffic through the Site via a new spine road, thus alleviating the traffic impacts at the Belton Lane junction. This is discussed in more detail within the highways and access section of this document.

An analysis of the Site's attributes and local context, in conjunction with technical input from key disciplines, has informed the opportunities and constraints for development of the site. In turn, these have influenced the development vision for the Site and the Illustrative Master plan.

Introduction

The Site & Location

The majority of the Site is vacant although there is a cemetery (and associated car parking) at the southwest corner which is accessed from Belton Lane via a priority-controlled junction. Whist the cemetery and car park site outside of the red line boundary for the Site, access requirements are accommodated within the redline boundary as denoted on the Illustrative Master plan. There is also a second field access from the B1174 at the Northwest corner of the site, which is shared by the adjacent land owners to other fields, one of which appears to be used as an area of outdoor storage.

Great Gonerby is a large village in Lincolnshire, situated within the District of South Kesteven. Located along the B1174, the village is located around 2.8km to the Northwest of Grantham Town Centre.

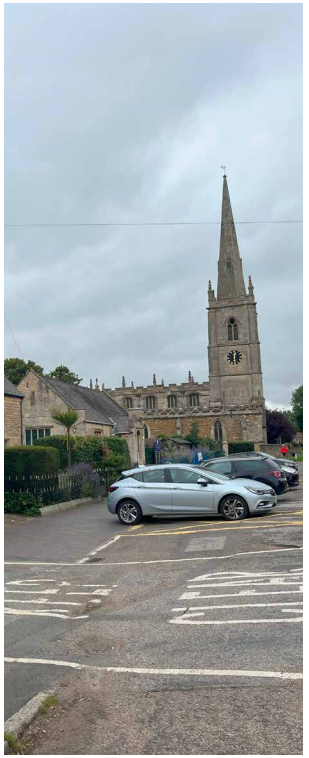
Introduction

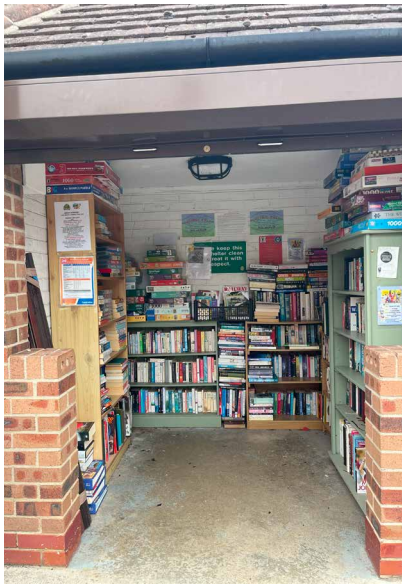
The Site & Location

A historic settlement which was mentioned in the Domesday Book, Great Gonerby maintains much of its original village form centred on High Street and Green Street. These streets now sit at the centre of the adopted Conservation Area for the village. The village grew and expanded most significantly during the 20th and 21st century, with a mixture of infill development within the village core and minor expansions occurring to the east and west.

The village is highly sustainable and benefits from good connectivity. The nearest bus stops to the Site are located to the south of the Site near the Post Office. From these bus stops there are regular bus services to Grantham and some to Newark. By car, Grantham Town Centre is accessible within 10 minutes. Newark-on-Trent Town Centre is accessible within 25 minutes by car.

Both Belton Lane and Newark Hill, the two roads which bound the Site, benefit from continuous foot ways which run from the Site to the village centre and its amenities which include the St Sebastian's C of E Primary School, a pub, a children's play area with sports court, a post office and small convenience shop. These facilities are all within 600m of the Site, a 10 minute walking distance which is considered a sustainable walk-able distance





Introduction

The Site & Location

Planning Overview
The Development Plan

The statutory development plan insofar as it relates to this site is comprised of:

South Kesteven District Council Local Plan

Adopted 31st January 2020

The South Kesteven District Council (SKDC) Local Plan covers the period from 2011-2036. Policy SP2 of the settlement hierarchy sets out that Great Gonerby is a 'Larger Village'. This is the second highest settlement tier in the hierarchy, after Grantham which is characterised as a Sub Regional Centre.

Policy SP4 of the plan sets out the authority's stance towards proposed development outside of the settlement boundary. The authority will support development on the edge of a settlement of it meets specific criteria, one of which is if the locality can demonstrate housing need which the development can help to mitigate.

Policy SP5 is also relevant, it sets out the South Kesteven's position regarding development in open countryside. It states that development in the open countryside will be limited to that which has an essential need.

Policy H1 set out the districts housing allocations and housing need, the 2017 SHMA update establishes an assessed need of 16,125 dwellings in South Kesteven across the plan period of 2019-2036. 10% of all new supply is allocated to larger villages in the plan period. This equates to a total of 1,612 dwellings to be built in 'large villages'.

Policy H2 sets out the districts expectations for affordable housing contributions. SKDC expects all developments which provide 11 or more dwellings should have an affordable housing provision of 30%.

Policy EN1 states that the settlement of Great Gonerby is located within the 'Grantham Scarps and Valleys' Landscape Character Area (LCA). As a result SKDC expects prospective development within these landscape areas to adequately assess the impact of development on the character of the area.

Policy DE1 states that SKDC expects prospective development in the district to achieve high quality design that makes a positive contribution to the existing built environment.

Policy SB1 sets out the expectations regarding sustainable building practice, new development will be expected to mitigate and adapt to climate change complying with national and local targets unless it can be demonstrated to be unfeasible.

Other Plans and Documents

There are no Neighbourhood Development Plans made, in preparation or currently proposed which would affect the Site.

SKDC has produced a design guideline SPD for development in the district. It provides a direction for the urban design and open space values that SKDC expects for prospective development in the district.

Emerging Local Plan

SKDC is committed to undertaking an early review of their Local Plan, which will set out the framework for development up to 2041. The Council's most recent Local Development Scheme update stated that the Draft Consultation Regulation 18 stage would occur in Winter 2023/24, with the pre-submission consultation Regulation 19 stage in summer 2024. The eventual examination would begin in winter 2024 with adoption in spring 2026.

Housing Land Supply

As of 2023, the published housing land supply is 6.1 years. South Kesteven are one of only a few local authorities who publish an Annual Position Statement each year, where their housing land supply is submitted to and examined by the Planning Inspectorate. If found sound through examination, the 5YHLS cannot then be challenged, and is considered 'fixed' for a period of one year. The figure of 6.1 years for 2023 has recently been submitted to the Inspectorate. In the meantime, the figure from 2022 of 5.22 years remains in place and 'fixed' until October 2023.

Planning Overview
The Case for Development

As a 'Larger Village' within the Settlement Hierarchy, which is likely to be carried forward into the new Local Plan, Great Gonerby is expected to accommodate a proportion of development for South Kesteven, particularly given its close proximity to the Sub Regional Centre of Grantham.

Under the current Local Plan there is one allocated site in Great Gonerby, known as Easthorpe Road (LV-H6). LV-H6 was granted an outline permission in October 2019 (planning ref: s19/1138). This permission pre-dates the adoption of the Local Plan.

Elsewhere in Great Gonerby, the following applications have been made for residential development following the adoption of the Local Plan:

Reference	Site	Proposal	Outcome	Date
s23/1356	25 Pond Street	1.no barn conversion and 1.no new bungalow	Permitted with conditions	05/10/2023
s23/0553	Land adjacent to 61 Belton Lane	Outline application for 8 dwellings	Refused	16/05/2023
s23/0165	1 Grantham Road	1 new dwelling	Refused - appeal in progress	09/03/2023

In terms of the ongoing Local Plan Review, an Issues and Options Document Consultation was carried out in October-November 2020. This indicated that the Local Plan Review would see the majority of policies remain unchanged, including key policies relating to the distribution of development and the settlement hierarchy. What impact the revised NPPF, which is expected later this year, will have upon that remains unknown. Of note from the Issues and Options Document is that the new Local Plan intended to utilise the Standard Method for calculating Housing Need, which would result in a greater number of dwellings required per annum - from 650pa in the adopted Local Plan to an estimated 754pa which could be required under the Standard Method.

This Promotion Document is intended to support our assertion that the Site represents a logical and beneficial expansion to the sustainable settlement of Great Gonerby and that there are no site constraints which would prevent development, particularly in the context of the delivery of vital highways infrastructure for the area as a whole. This document should be read in conjunction with the Traffic and Transport Appraisal prepared by BWB Consulting which is submitted as an appendix in support of this Promotion Document.

Site Analysis

The Site is located to the northern edge of the sustainable settlement of Great Gonerby, with access taken off Belton Road and Newark Hill and comprises around 19 hectares of agricultural land north of Belton Lane. A cemetery occupies the south-western corner alongside a small car park (outside of the redline boundary).

The Site slopes gently away to the north, with topography presenting an opportunity for a development which works with the natural land levels to create a visually interesting and sympathetic extension to the village.

The Site is bordered to the west by hedgerow and separated from the highway along Newark Hill by a roadside bank. To the north and east, it currently does not have distinctive boundary features, as the wider agricultural parcel extends beyond the Site's red line. This provides opportunity for ecological enhancement through the addition of suitable native species planting to form new site boundaries, linking in with existing areas of vegetation within the wider parcel, and provide important landscaped buffers to the development parcels.

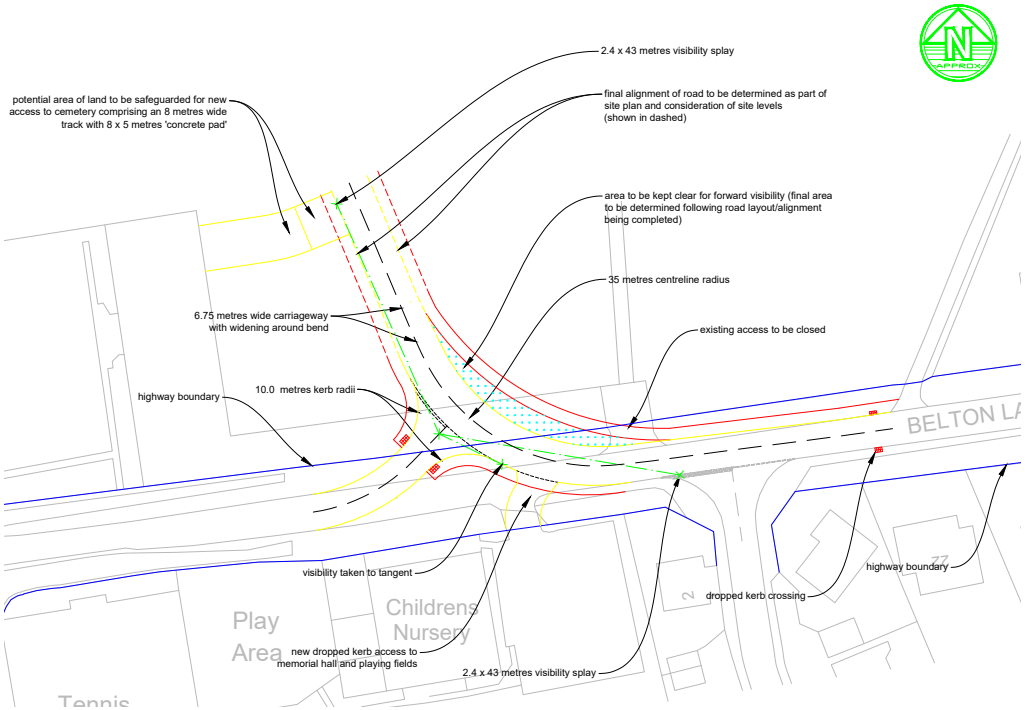
The Site is located adjacent to the built up area of Great Gonerby and the amenities and facilities that are provided in Great Gonerby. These include a primary school, public house, convenience store, Locally Equipped Area for Play (LEAP) and memorial hall, the latter being just opposite the site on Belton Lane. In terms of onward connections Great Gonerby has regular bus services to nearby villages as well as larger settlements such as Newark and Grantham, the latter of which is within very close proximity to Great Gonerby.

This site is considered to be very minimally affected by the main common constraints to development. The site is at very low risk of flooding, being located within flood zone 1, with no watercourses on or adjacent to the site. Matters of highways & access, heritage, and landscape will be addressed below.

Site Analysis

Highways & Access

With the site being capable in spatial terms of accommodating up to 350 homes, guidance contained within the 'Lincolnshire Development Roads and Sustainable Drainage Design Approach' document (LCC, 2017) states that only one 'Major Access Road' would be required, however the Appraisal carried out for the site considered the possibility of providing two accesses.



This has been considered in order to primarily resolve a known problem locally; under approved scheme S15/3189 at the northern edge of Grantham, mitigation measures were required for western entrance to Belton Lane. This was considered necessary to accommodate the increased traffic generated by the development. However, these mitigation measures are considered undeliverable because of the existing retaining structures. Therefore, the development of the Site offers an ideal opportunity for alternative mitigation, by diverting traffic away from the Belton Lane/Newark Hill junction via a new spine road through the Site.

Drawing Number HCF-BWB-HML-00-DR-TR-103 Revision P2 which has been included alongside this submission shows how Belton Lane could be realigned so that priority is through the site, providing a 6.75m wide carriageway with a centreline radius of 35m (with wide around the bend to accommodate refuse collection vehicles). The location of the realigned carriageway would avoid impacting the Covill Close junction and avoid the downhill section of Belton Lane on approach to the B1174. Footways of 2m in width could be provided along the proposed access road and the existing section of Belton Lane to the east, supported with crossing points to transfer pedestrians to the south towards Great Gonerby. It also shows how a new access could be provided to the cemetery further north.

The purpose of realigning Belton Lane is to remove traffic away from the B1174/ Belton Lane junction, which would have benefits in that the junction has poor visibility in both directions, has a significant downhill gradient on approach to the junction and is forecast to operate over capacity with planned development in place. There are also no tangible improvements that are deliverable to address these issues because of the existing retaining structures. The site therefore provides an opportunity to resolve these issues and transfer a large proportion of traffic to the B1174 further north via a fully compliant junction.

Site Analysis

Highways & Access

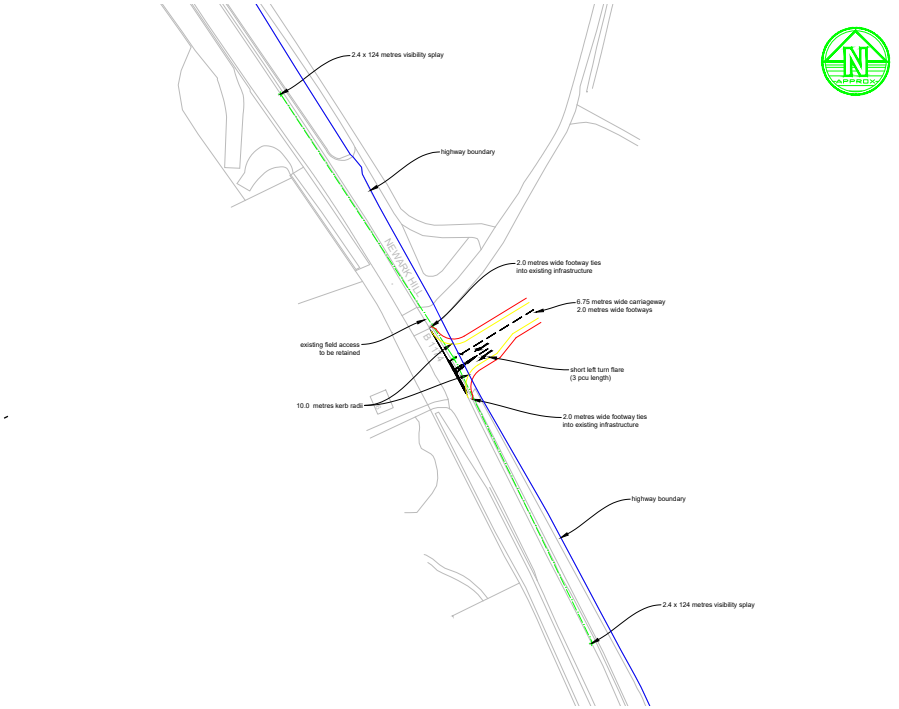
Drawing Number HCF-BWB-HML-00-DR-TR-102 Revision P2 shows the form and location of a new site access from the B1174. The access has been positioned 20 metres south of the existing field access (centreline to centreline) to avoid the existing retaining wall but also to allow the field access to be retained to separate residential and agricultural/commercial traffic.

The access has been designed to show a 6.75 metres wide carriageway, with 10 metres kerb radii. A short left turn flare (3 pcu length) has been provided to separate left and right turning movements at the junction. Footways of 2 metres in width are provided at both sides of the carriageway which would tie into the existing footway infrastructure along the eastern side of the B1174 at both sides.

As part of the highways work undertaken to inform this submission, traffic modelling has also been carried out.

An assessment of the potential impacts of a development of 350 dwellings at the four main junctions locally has been undertaken to establish whether the additional traffic is likely to be accommodated on the network. This analysis concluded that the proposed development is not expected to cause any significant capacity problems at any junction in the vicinity of the site along the B1174. Furthermore, the site has the potential to transfer background traffic away from the B1174/Belton Lane junction, which is expected to exceed capacity and has highway safety issues with poor visibility. This removes the need for the approved mitigation scheme to be delivered as part of the Grantham SUE development, which appear to be undeliverable. Hence, the site has the opportunity to provide benefits to the existing highway layout for other road users.

If required, there are also opportunities to deliver physical infrastructure improvements off-site to mitigate impacts from the development, which would have benefits on both capacity and highway safety. Any highway improvements schemes would be part of any Transport Assessment in consultation with Lincolnshire County Council.



For a full analysis of the highways and access impacts of the development please see the accompanying Traffic and Transport Appraisal, prepared by BWB Consulting in support of this submission.

Site Analysis
Heritage

In order to inform the assessment of this site, a Heritage Scoping Report has been prepared by Marrons (Heritage).

Their research concludes that no designated heritage assets lie within the Site, and as such its development would not directly impact upon a designated heritage asset.

The Site currently makes a neutral contribution to the setting and significance of all designated heritage assets with the Study Area and to the group of designated heritage assets within Belton Park c.3km to the east. From easternmost parts of the Site the uppermost part of the spire of the Grade I Church of St. Sebastian can be seen. The views are incidental and their character and extent do not make any marked contribution to the significance of the listed building.

Redevelopment of the Site for residential use would not alter the experience of any designated heritage assets from within their settings. As such, designated assets within the Study Area show no sensitivity to the Site's development.

There is currently no local list of non-designated heritage assets available for South Kesteven. Review of the Site and the surrounding area revealed no candidate non-designated heritage assets beyond those buildings that positively contribute to the character and appearance of the Great Gonerby Conservation Area to the south. As such, no non-designated assets within the Study Area show any sensitivity to the Site's development.

Site Analysis
Landscape

Currently, the site area consists of open farmland, divided by hedgerows and contains a few small copses of trees including the Priority Habitat – Deciduous Woodland area of “Hook Cliff”. The site is located within NCA 48 Trent and Belvoir Vales and some of the characteristics do resonate with the locality, most notably, reference to the strongly rural and predominantly arable farmland landscape. However, in the main, the NCA is described as a low lying-rural landscape which is a key characteristic of the landscape further north and south of Great Gonerby, beyond the immediate environs of the Site. The proposals for the Site are a small component part of this NCA and therefore the local landscape character assessment has been considered in more detail.

The Site is within LCA Grantham Scarps and Valleys as categorised within the SKDC Landscape Character Assessment. The Site has some characteristics as described within this LCA such as, steep scarp slopes with small scale hedged pasture fields and hedgerow trees.

The proposals seek to enhance the biodiversity and landscape of the northern area of the Site, whilst also retaining the existing Priority Habitat – Deciduous Woodland area of “Hook Cliff”, which would also provide natural landscape screening for the proposed residential developments. The proposals also seek to create a new point of access from the B1174 / High Street and improve the existing access from Belton Lane.

Site Analysis

Landscape

The topography of the site and its surrounding area slopes down towards the north and the majority of the views are almost exclusively available from the Public Right of Way (PRoW) network to the north and west of the Site. Near views from the west are limited by the intervening topography and the vegetation on the edge of the B1174 and from the south, of Belton Road, only the south western most aspect of the site will be visible due to the set back of the development and the proposed open space. The proposed development would provide a visual barrier between the road and the currently unrestricted, long distance views towards the north. Despite this, the area where development would restrict these views is limited to the site itself and the concept allows for green links to be designed through the space to maintain some view.

Belton Road is a residential street and the proposed development of new residential units within the site would be read against the existing built edge of Great Gonerby. Further to the north, the wider landscape is a busy and active landscape. Gonerby Moor Retail Park and Services are located at the junction with the A1 main trunk road and the B1174, which runs adjacent to the Site, effecting the rural context.

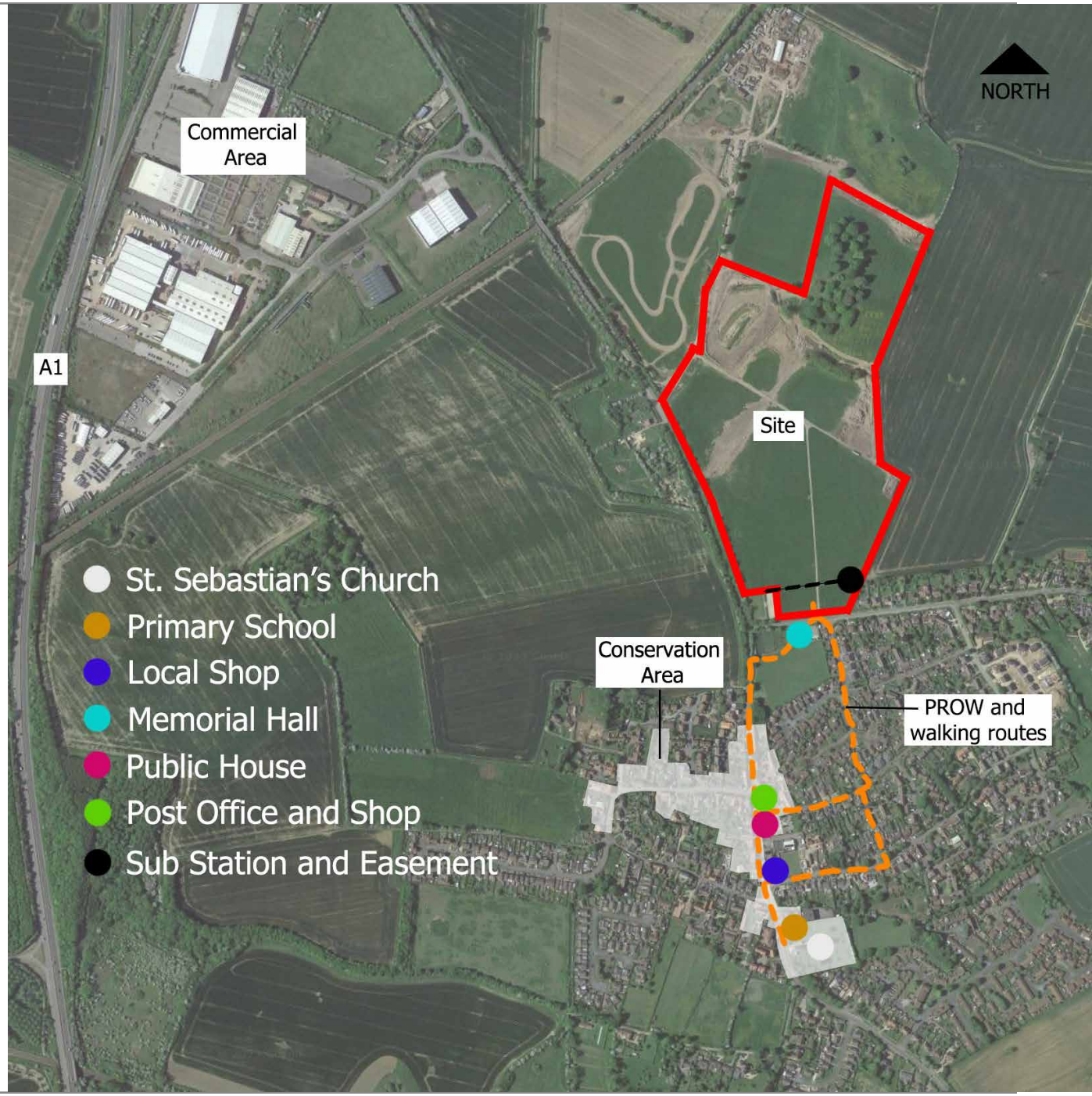
The proposals would introduce a new element into the immediate landscape of Great Gonerby, as the site area will change from an open field to a residential development. The natural sloping topography of the site area also allows views of the site from the north, although these are from limited locations and the site is seen within a panoramic view.

Additionally, with the surrounding context of the site currently consisting of residential developments and other built forms, the change in character and views experienced within a close proximity to the site will not be completely contrasting and can be mitigated by planting and a considered layout.

Opportunities & Considerations

not to scale

- Improved vehicular connection between Belton Lane and Newark Hill.
- Delivery of up to 350 new homes.
- Approximately 36% of the site will be utilised for biodiversity enhancements and public open space.
- Sustainable location with good connectivity.
- Creation of new access required from Belton Lane to provide new spine road.
- Sub-station and easement crossing existing site.
- Site is within LCA Grantham Scarps and Valleys.



The Development Vision

An Framework Plan has been prepared in response to the identified opportunities and constraints set out in this document. This masterplan provides a framework for development to deliver a high quality sustainable new community for Great Gonerby and the wider South Kesteven area equating to circa 333 dwellings (at a density of 35 dwellings per hectare).

The development would seek to deliver much needed market and affordable housing alongside significant areas of open space and green infrastructure. Of the total site area of 19 hectares, the developable area constitutes of 9.52 hectares (excluding the Sustainable Urban Drainage (SUDs) features, LEAP and other areas of internal public open space). An area for biodiversity enhancements and public open space is included equating to a total of 6.87 hectares. On top of that, 2.61 hectares are devoted to additional internal areas of public open space, a LEAP and areas for SUDs features). This equates to a total of circa 50% of the Site being devoted to green infrastructure.

The framework plan includes the potential to provide a new link road through the site, diverting traffic away from the currently inadequate Belton Lane/Newark Hill junction.

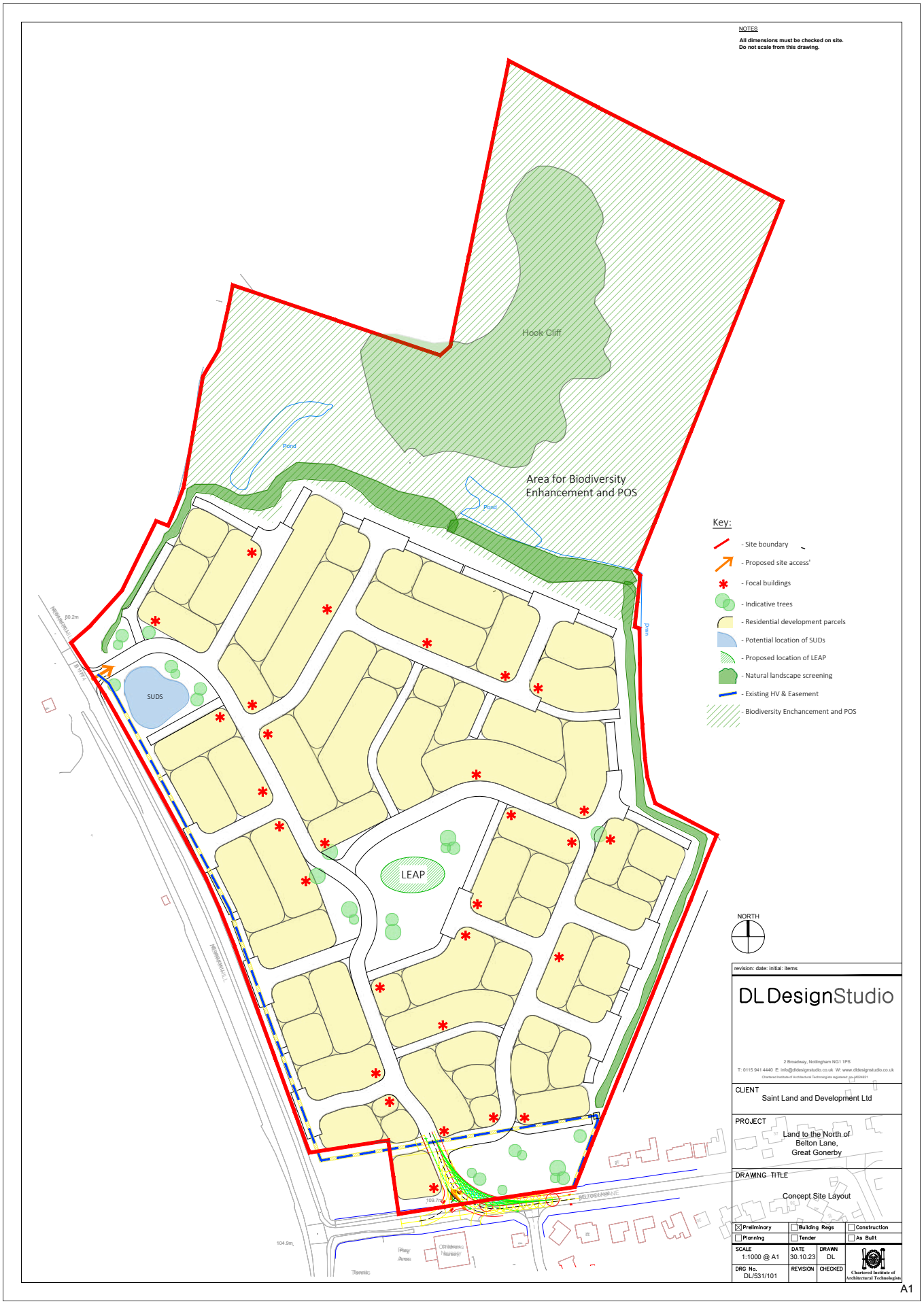
A key design rationale for development would be to sensitively integrate the proposed development into the landscape, and to minimise impacts on landscape character, visual amenity and ecology.

Development would include the delivery of a large area of green infrastructure that could provide benefits for biodiversity (net gains), local landscape character, recreation, health and well-being, and adaptation to climate change.

Sustainable drainage infrastructure such as an attenuation basin can also be integrated into the layout and an allowance has been made for this.

Initial layouts envisage a central spine road linking Belton Lane with Newark Hill as previously described. From this would be secondary routes and private drives serving the dwellings. In the centre of the development would be a pleasant area of open greenspace including a LEAP, providing a community focal point and providing children with further opportunities for play. Trees would be planted throughout the development and in particular along the primary spine road which will provide a tree lined boulevard through the site. Landscape buffers are to be provided along the Site boundaries of the developable parcels to provide natural screening and in order to minimise views from the wider landscape.

Proposed Site Layout



Summary

This site is sustainably located and offers an ideal opportunity for a well-designed and sensitive extension to a wholly sustainable large village. This would be a logical and sensible location for new residential development which will be necessary to meet the increased housing requirement expected to be forthcoming in the Local Plan review.

The Site also offers the opportunity to resolve a known highways problem, namely the capacity of the Belton Lane/Newark Hill junction, in lieu of the mitigation measures previously suggested which have now been found to be undeliverable.

The Site is deliverable, being under the ownership of a single landowner, and is being promoted by Saint Land and Development Limited. It is also available now, offers a suitable location for development and is achievable with the potential for housing and the highlighted highways improvements to be delivered on the site within five years.

Accordingly, for the reasons set out within this Promotion Document, it is requested that the site be allocated for the residential development of up to 350 dwellings in the Local Plan Review.

saint

DL DesignStudio

Marrons

PROJECT	Hook Cliff Farm, Great Gonerby, Lincolnshire		
DOCUMENT NUMBER	HCF-BWB-GEN-XX-RP-TR-0001_TTA	**BWB REF**	232815
AUTHOR	Matt Corner	**STATUS**	S2
CHECKED	Sara Terrey	**REVISION**	P5
APPROVED	Matt Corner	**DATE**	23/10/2023

1. INTRODUCTION

1.1 BWB Consulting Ltd (BWB) has been appointed by Saint Land and Development Ltd to provide highways and transportation advice in respect of a potential residential development on land to the north of Belton Lane in Great Gonerby, Lincolnshire.

1.2 South Kesteven District Council (Local Planning Authority) is consulting on its Local Plan and has issued a Call for Sites to landowners for possible development. The purpose of this Traffic and Transport Appraisal is to assist in promoting the site through the Call for Sites representation for inclusion in the revised Local Plan by examining the following key transport areas:

- Whether safe and suitable access is achievable for all users.
- Whether the additional traffic is likely to be accommodated on the highway network without causing any significant capacity or safety problems.
- Whether the site is in a sustainable location and how it could connect to the existing off-site infrastructure to promote active travel.

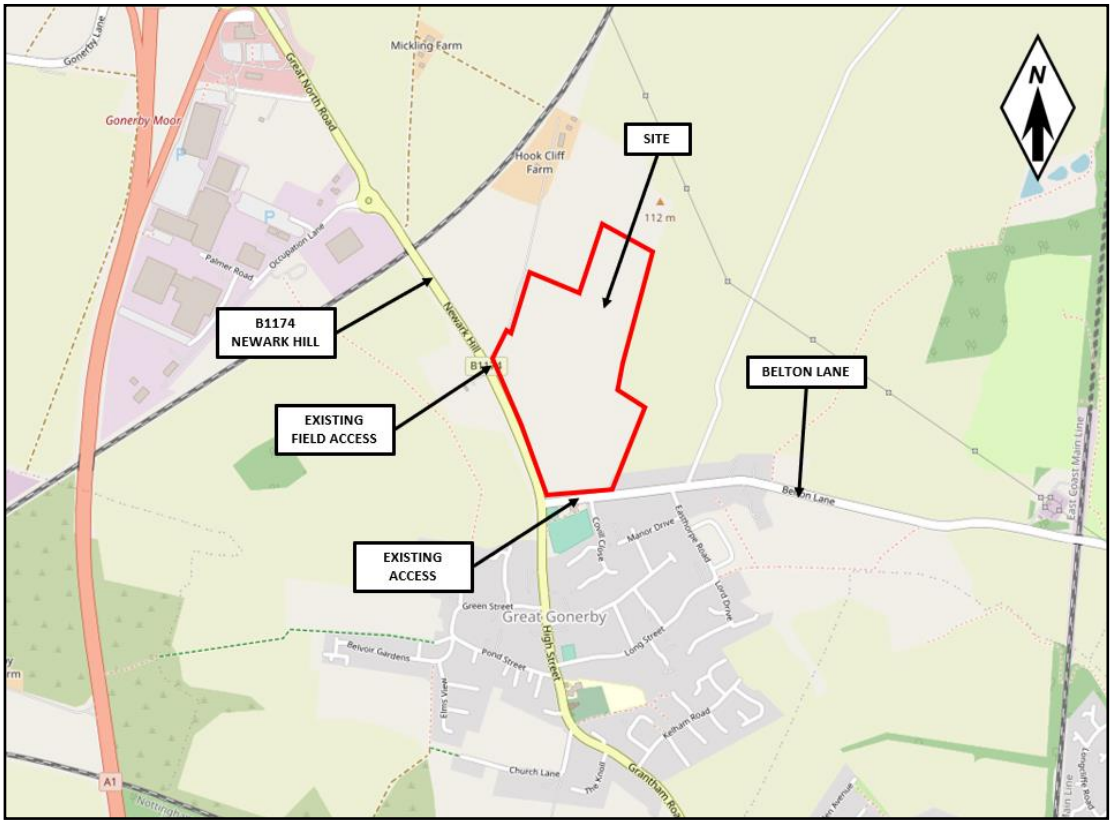
2. EXISTING CONDITIONS

Site Details

2.1 The site comprises an irregular shaped parcel of land located to the north of Great Gonerby in Lincolnshire. It is bound by undeveloped land to the north and east, Belton Lane to the south and the B1174 Newark Hill to the west. Further afield, Grantham is located approximately 3 kilometres to the south.

2.2 The majority of the site is vacant although there is a cemetery and parking area at the southwest corner, which is accessed from Belton Lane via a priority-controlled junction. There is also a second field access from the B1174 at the northwest corner of the site, which is shared by the adjacent land owners to other fields, one of which appears to be used as an area of outdoor storage. **Figure 1** shows the location of the site and the two existing points of access.

Figure 1: Site Location



Highway Layout

2.3 Belton Lane is a single carriageway road measuring 5.5 metres wide that extends in an east to west direction past the southern side of the site. It is subject to a 30mph speed limit and 7.5 tonnes weight restriction and serves the Great Gonerby Memorial Hall at the southern side opposite the site and a number of direct private driveways to residential dwellings along both sides to the east of the site. Belton Lane features a footway along its southern edge and a verge along its northern edge, although there is a short section of footway around the existing site access that leads to the cemetery/car park. At the existing access location, the carriageway is relatively flat but features a downhill gradient approximately 50 metres to the west for a distance of 70 metres where it forms a priority-controlled T-junction with the B1174.

2.4 The B1174/Belton Lane junction is priority controlled with the B1174 forming the major arms and Belton Lane forming the minor arm. The junction operates from a stop line because of the downhill gradient along Belton Lane and also because visibility appears to be restricted in both directions. There is limited scope to deliver any significant improvements to the junction because of retaining structures that bound the carriageway at both sides.

2.5 The B1174 Newark Hill extends in a north to south direction from the Belton Lane junction and past the western side of the site. It is subject to a 30mph speed limit at the junction which increases to the National Speed Limit (60mph) approximately 20 metres to the

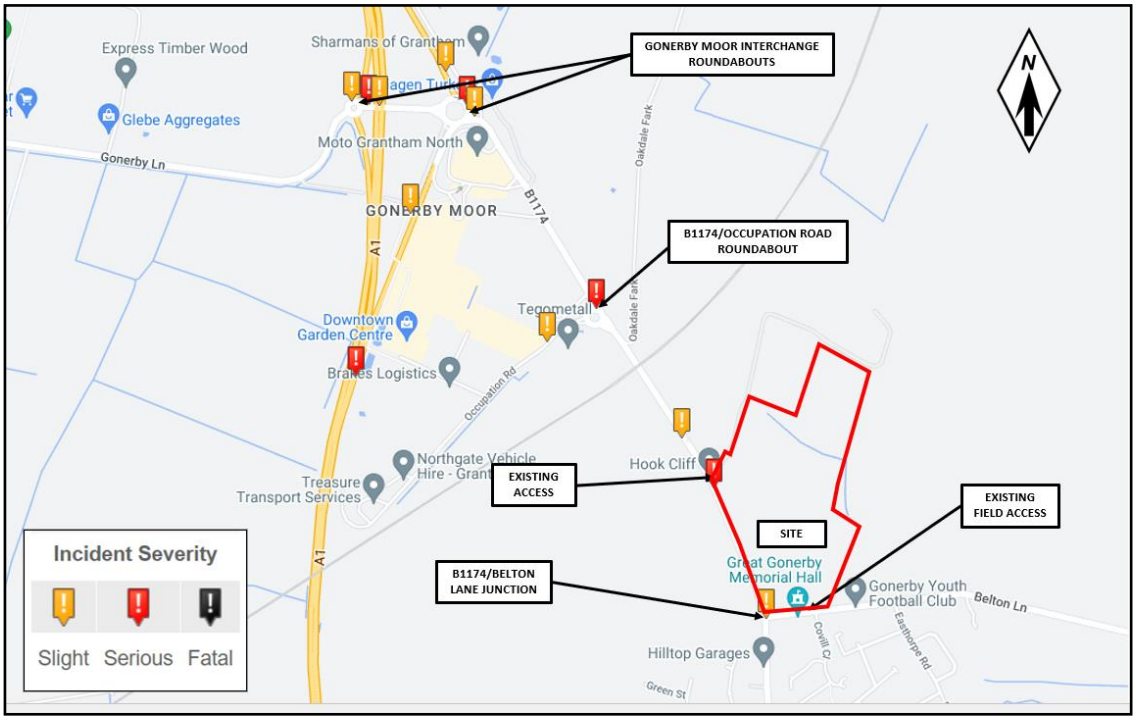
north. The B1174 measures approximately 6.5 metres wide and provides a footway along its eastern edge. There is a retaining wall that separates the majority of the site frontage from the B1174, as the ground level of the site is raised significantly higher than the road. This limits access into the site from the northwest corner only where the existing field access is located.

2.6 Highway land boundary information has been purchased from Lincolnshire County Council for both Belton Lane and the B1174 in the vicinity of the site, a copy of which is included at **Appendix 1**. This has been taken into account in the preliminary access designs presented in Section 3.

Road Safety Review

2.7 The Crashmap website (www.crashmap.co.uk) has been reviewed to understand whether there are any on-going highway safety problems along Belton Lane or the B1174 in the vicinity of the site. **Figure 2** contains an extract from the website covering the latest 5-year period (2017 to 2022) showing the locations and severity of all recorded Personal Injury Collisions (PIC) that have occurred during this time.

Figure 2: Personal Injury Collision Records



2.8 The records show that there has not been a single recorded PIC at the existing site access on Belton Lane. A single PIC has occurred approximately 20 metres south of the existing field access from the B1174, which invovled two vehicles and was classified as serious.

2.9 There has been a single recorded PIC at the B1174/Belton Lane junction, which invovled two vehicles and was classified as slight. Further afield, there has been a single recorded

PIC at the B1174/Occupation Road roundabout, which was classified as slight and two recorded PICs at the Gonerby Moor Interchange comprising one slight and one serious.

2.10 Whilst any future Transport Assessment would purchase and review full PIC records from Lincolnshire County Council, the frequency of accidents on the local road network is relatively low given the volume of traffic they accommodate and hence there appear to be no significant highways safety problems in the local area.

Committed Development & Traffic Flows

2.11 Traffic flow data along Belton Lane and the B1174 has been obtained from a Transport Assessment supporting a Sustainable Urban Extension (SUE) on land at the northern edge of Grantham, which is being delivered by Allison Homes (planning reference S15/3189). The application was granted planning permission for up to 480 residential dwellings, a neighbourhood centre and single form entry primary school.

2.12 The traffic impacts of the Grantham SUE were assessed using Lincolnshire County Council's SATURN model. Relevant extracts of the Transport Assessment detailing the schemes included in the SATURN model are included at **Appendix 2,** with the 2024 forecast future year traffic flows along Belton Lane and the B1174 shown at **Diagram 1** and **Diagram 2** for the morning and evening peak hours respectively. This shows the following traffic flows are expected to be generated along both roads.

B1174

	AM Peak Hour		PM Peak Hour
Northbound	630		426
Southbound	455		638
Two-Way	1,085		1,064
AADT		6,717*	

**taken from DfT traffic count*

Belton Lane

	AM Peak Hour	PM Peak Hour
Eastbound	363	440
Westbound	353	300
Two-Way	716	740

2.13 The data shows that the B1174 is forecast to accommodate 1,085 movements in the AM peak hour and 1,064 movements in the PM peak hour. It also shows that the B1174 carries 6,717 movements based on Annual Average Daily Traffic (AADT). Belton Lane is expected to accommodate less traffic with 716 movements in the AM peak hour and 740 movements in the PM peak hour.

2.14 The Grantham SUE Transport Assessment includes a scheme of mitigation at the B1174/Belton Lane junction, which involves widening Belton Lane and signalising the junction. Whilst this scheme has been approved, it is understood that it is undeliverable

because of the retaining structures along both sides of Belton Lane meaning there is an issue with resolving traffic impacts at this junction. **Appendix 3** includes a copy of the approved improvement scheme.

3. POTENTIAL DEVELOPMENT

Scale

3.1 At this stage, the site is considered suitable in accommodating up to 350 residential dwellings, with the accommodation mix/house types to be confirmed at a later stage.

Access Opportunities

Introduction and Design Standards

3.2 Table 5.1 of the 'Lincolnshire Development Roads and Sustainable Drainage Design Approach' document (LCC, November 2017) sets out the 'indicative highway design parameters' for various road types serving different scales of development. It states that a 'Major Access Road' is suitable in serving 200 dwellings from a cul-de-sac, or 400 dwellings from a loop/circuit arrangement. A Major Access Road should comprise a carriageway width of between 5 and 6.75 metres, with 10 metres kerb radii and provide 2 metres wide footways on both sides.

3.3 Whilst Lincolnshire County Council's standards allow for a development of 350 dwellings to be served by a single point of access (subject to the design of the internal layout), the following section of this Traffic and Transport Appraisal assesses the opportunities of delivering new accesses from both Belton Lane and the B1174 to serve a residential development at the site, taking into account the above design standards.

Belton Lane

3.4 As mentioned in Section 2, there is an approved mitigation scheme at the B1174/Belton Lane junction that was designed as part of the Grantham SUE scheme being delivered by Allison Homes (contained at **Appendix 3**). This scheme is required to accommodate the future traffic volumes along the B1174 and Belton Lane, however, is undeliverable because of the existing retaining structures. With this, there is an opportunity for the site to provide an alternative mitigation strategy by transferring traffic travelling towards the A1 through the site and out onto the B1174 further north.

3.5 **Drawing Number HCF-BWB-HML-00-DR-TR-103 Revision P2** shows how Belton Lane could be realigned so that the priority is through the site. The road would comprise a carriageway width of 6.75 metres and have a centreline radius of 35 metres (with widening around the bend to accommodate refuse collection vehicles). The location of the realigned carriageway would avoid impacting the Covill Close junction and avoid the downhill section of Belton Lane on approach to the B1174. Footways of 2 metres in width could be provided along the proposed access road and the existing section of Belton Lane to the east, supported with crossing points to transfer pedestrians to the south towards Great Gonerby. It also shows how a new access could be provided to the cemetery further north.

3.6 The purpose of realigning Belton Lane is to remove traffic away from the B1174/Belton Lane junction, which would have benefits in that the junction has poor visibility in both directions, has a significant downhill gradient on approach to the junction and is forecast to operate over capacity with planned development in place. There are also no tangible improvements that are deliverable to address these issues because of the existing retaining structures. The site therefore provides an opportunity to resolve these issues and transfer a large proportion of traffic to the B1174 further north via a fully compliant junction, further details of which are provided below.

B1174 Newark Hill

3.7 **Drawing Number HCF-BWB-HML-00-DR-TR-102 Revision P2** shows the form and location of a new site access from the B1174. The access has been positioned 20 metres south of the existing field access (centreline to centreline) to avoid the existing retaining wall but also to allow the field access to be retained to separate residential and agricultural/commercial traffic.

3.8 The access has been designed to show a 6.75 metres wide carriageway, with 10 metres kerb radii. A short left turn flare (3 pcu length) has been provided to separate left and right turning movements at the junction. Footways of 2 metres in width are provided at both sides of the carriageway which would tie into the existing footway infrastructure along the eastern side of the B1174 at both sides.

3.9 The B1174 is subject to National Speed Limit restrictions past the site access location and hence consideration has been given to the need for a right turn lane. The design standards for right turn lanes are outlined in the Design Manual for Roads and Bridges document 'CD 123 – Geometric design of at-grade and priority and signal controlled junctions'. Paragraph 2.12 states:

"priority junctions shall include a major road central treatment when the minor road flow exceeds 300 vehicles 2-way annual average daily traffic (AADT), or the major road flow exceeds 13,000 vehicles 2-way AADT"

3.10 The B1174 carries approximately 6,717 movements two-way AADT (based on 2022 survey data) and hence significantly below the 13,000-movement threshold specified in DMRB. Whilst a development of 350 dwellings would generate more than 300 movements AADT along the site access, this is a low flow and often side roads are able to accommodate much higher traffic numbers before capacity problems are triggered. These standards are also specific to the Strategic Road Network where the primary purpose of the road is to transport vehicular traffic and hence greater flexibility is often applied to the local road network where the needs of other non-motorised users take priority.

3.11 The safety of any simple T-junction could be improved by relocating the existing 30/60mph speed limit to north of the access to reduce the speed of vehicles travelling northbound on the B1174 and towards any vehicle waiting to turn right into the site. With this and noting that all other existing junctions along the B1174 further south comprise simple T-junctions, it is considered that a right turn lane would not be required and simple T-junction would suffice, subject to further detailed capacity assessments.

3.12 In terms of visibility and based on the existing 60mph speed limit along the B1174, visibility splays of 124 metres are required from the site access, in accordance with Table 5.2 of Lincolnshire County Council's design guidance. **Drawing Number HCF-BWB-HML-00-DR-TR-102 Revision P2** shows how visibility splay distances of 124 metres are achievable in both directions from a 2.4 metres setback distance to the nearside kerb line and demonstrates worst-case without reducing the speed limit at this location.

3.13 Overall, it is considered that a fully compliant access is deliverable from the eastern side of the B1174 that meets Lincolnshire County Council's design standards from both a geometric and visibility perspective. Whilst this is subject to further capacity assessments to confirm that a simple T-junction is suitable (detailed in Section 4), it is considered that this would be the most suitable junction type for the traffic volumes it would accommodate and be in keeping with other junctions in the local area.

Active Travel Infrastructure

3.14 The main facilities within Great Gonerby are located on High Street approximately 800 metres from a central point within the site. This includes:

- Retail (Post Office and Premier Convenience Store)
- Commercial (Recruiting Sergeant Pub)
- Leisure (Gonerby Social Club)
- Education (St Sebastian's Church of England Primary School

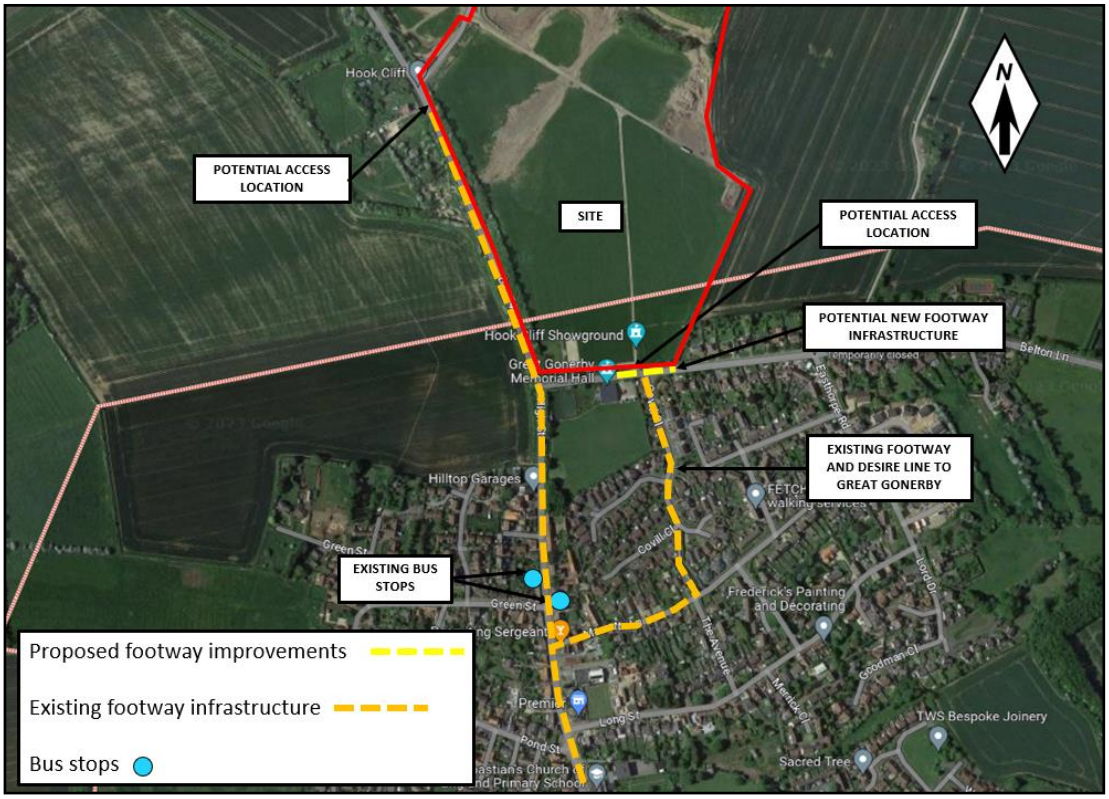
3.15 The main desire lines to the above facilities are likely to be via Covill Road (for residents departing from Belton Lane) and via the B1174 (for residents departing from the B1174).

3.16 At Belton Lane, the design of the access would include 2 metres wide footways at both sides which would extend to new dropped kerb and tactile paving crossings to transfer pedestrians to the southern side of the road. Covill Road provides footways on both sides of the carriageway that continue south to a footpath that leads to Marratts Lane and then west to the High Street.

3.17 Residents travelling from the B1174 access would be able to use the proposed infrastructure internally that would connect to the existing footway that extends along the eastern side of the road directly towards the High Street.

3.18 **Figure 3** shows the existing and potential future infrastructure/desire lines from the site towards Great Gonerby. Whilst there are no dedicated cycle facilities in the local area, the residential roads within the site and within Great Gonerby should be suitable in accommodating cyclists within the carriageway.

Figure 3: Walking/Cycling Desire Lines



3.19 **Figure 3** also shows the location of the closest bus stops on High Street approximately 800 metres from a central point within the site, which is within the maximum walking distances for rural locations. These stops are served by Route Number 24, which operates at an hourly frequency between 0720 and 1820 hours Monday to Friday and connects Great Gonerby with Newark, Grantham and Long Bennington. **Appendix 4** includes the current bus timetable information.

3.20 As part of any future Transport Assessment, negotiations could take place with the bus operators, alongside Lincolnshire County Council, to establish whether new bus stops could be provided closer to the site, or improvements made to increase the frequency of the existing services. Notwithstanding this, it is considered at this stage that there are a variety of transport modes for future residents to use to travel within the local area and further afield.

4. HIGHWAY IMPACT

Potential Increase in Activity

4.1 To understand the potential increase in traffic from the potential development, the TRICS database has been interrogated to obtain suitable trip rates. To do this, the TRICS database was filtered using the following parameters:

- Land Use: Residential – Houses Privately Owned
- Regions: England (excluding Greater London)
- Range: 200 to 800 dwellings
- Date: 01/01/15 to 27/09/22 (default)
- Locations: suburban and edge of town
- Survey days: weekdays only (excluding Friday)

4.2 The above filtering criteria generated 16 surveys from 16 sites and average trips rates were calculated. **Appendix 5** includes the TRICS output data, whilst **Table 1** includes the morning and evening peak hour trip rates and corresponding traffic generation based on a development of 350 dwellings.

Table 1: Trip Rates and Traffic Generation Calculations (350 dwellings)

Time Period	Trip Rates			Trip Generation		
	Arrive	Depart	Two-Way	Arrive	Depart	Two-Way
08:00 – 09:00	0.152	0.406	0.558	53	142	195
17:00 – 18:00	0.374	0.161	0.535	131	56	187

4.3 To understand how the above traffic could distribute across the network, the split of traffic north and south on the B1174 from the 2024 forecast flows within the Allison Homes Transport Assessment has been used. This would be revisited as part of any future Transport Assessment but provides a reasonable estimation at this stage. The data shows the following percentage distribution.

- Morning peak hour – 58% northbound, 42% southbound
- Evening peak hour – 40% northbound, 60% southbound

4.4 **Diagram 3** and **Diagram 4** show the development distribution pattern in the morning and evening peak hours respectively. **Diagram 5** and **Diagram 6** subsequently show the development traffic assignment based on the above distribution pattern assumptions.

Off-site Vehicular Impact

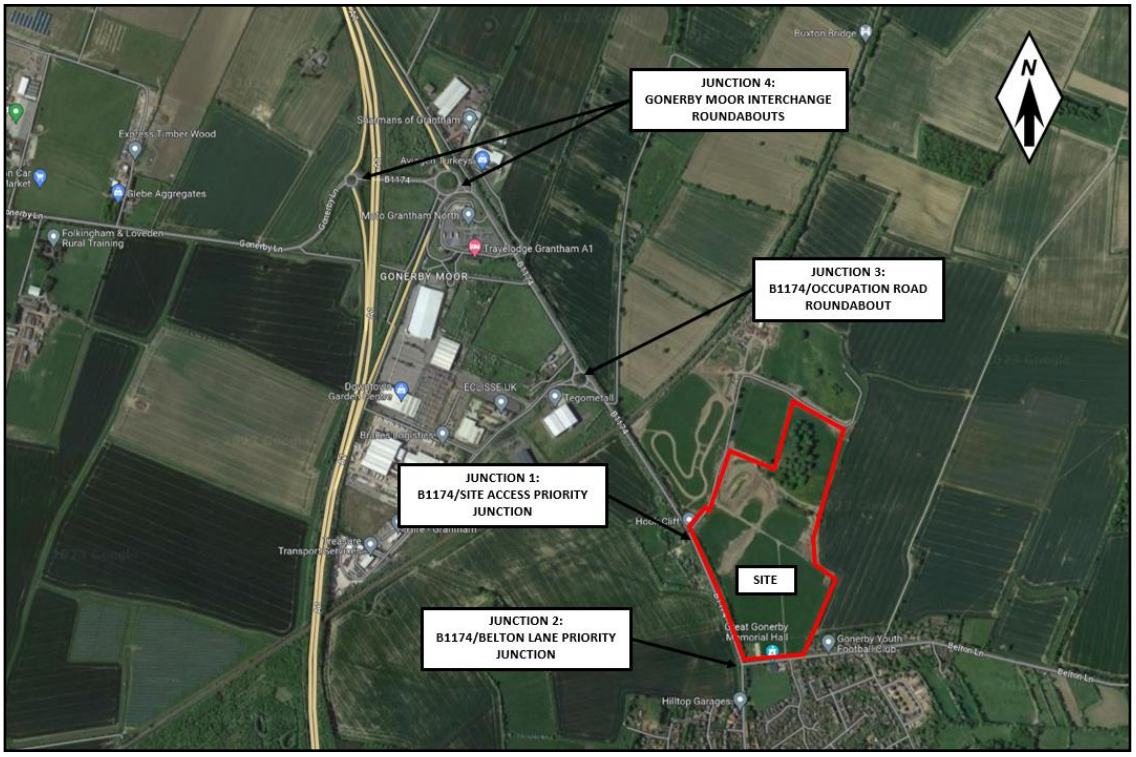
4.5 The details in **Diagram 5** and **Diagram 6** show that the following junctions would likely need assessing as part of any future Transport Assessment (the locations of which are shown on **Figure 4**).

1. B1174/Site Access junction – 132 additional movements
2. B1174/Belton Lane priority junction – 81 additional movements
3. B1174/Occupation Road roundabout – 113 additional movements
4. Gonerby Moor Interchange roundabout dumbbell roundabout (A1 Strategic Road Network) – 113 additional movements

4.6 An assessment of the potential impacts of a development of 350 dwellings at the above four junctions has been undertaken to establish whether the additional traffic is likely to be accommodated on the network. As the access strategy involves re-aligning Belton Lane so that the priority is through the site towards the B1174, a proportion of the background traffic shown in **Diagram 1** and **Diagram 2** has been transferred through the site. At this stage, it is anticipated that 70% of the background traffic heading towards the A1 would route through the site within 30% continuing along Belton Lane to the B1174. The transferred background traffic flows are shown in **Diagram 7** and **Diagram 8** for the morning and evening peak hours respectively.

4.7 **Diagram 9** and **Diagram 10** subsequently show the 2024 transferred background plus development traffic flows for the morning and evening peak hours. This includes for a significant number of committed development and infrastructure schemes that were included in the SATURN model.

Figure 4: Off-Site Junction Locations



Junction 1: B1174/Site Access Priority Junction

4.8 To understand the future operation of a new priority-controlled T-junction to the site from the B1174 a model has been created using Junctions 10 software. **Appendix 6** includes a scaled plan showing the junction geometry and the Junctions 10 output data. The junction has been tested using the 2024 transferred background plus development traffic flows shown in **Diagram 9** and **Diagram 10**. **Table 2** summarises the results.

Table 2: Junctions 10 Modelling Results (B1174/Site Access Junction)

Arms	Weekday AM Peak			Weekday PM Peak		
	Q (pcu)	Delay (secs)	RFC	Q (pcu)	Delay (secs)	RFC
2024 Transferred Background plus Development Traffic Flows						
Stream B-C (Site Access)	0.1	16.01	0.06	0.0	8.81	0.02
Stream B-A (Site Access)	4.0	43.00	0.82	1.0	17.97	0.51
Stream C-AB (B1174 S)	0.0	4.88	0.01	0.1	5.63	0.04

4.9 The results show that the priority-controlled T-junction layout from the B1174 shown in **Drawing Number HCF-BWB-HML-00-DR-TR-102 Revision P2** is forecast to operate within capacity, even when accommodating the transferred background traffic flows.

Junction 2: B1174/Belton Lane Priority Junction

4.10 To understand the future capacity levels at the B1174/Belton Lane junction, a Junctions 10 model has been created. **Appendix 7** includes a scaled plan showing the junction geometry and the Junctions 10 output data. The junction has been tested using the 2024 transferred background plus development traffic flows shown in **Diagram 9** and **Diagram 10**. **Table 2** summarises the results.

Table 3: Junctions 10 Modelling Results (B1174/Belton Lane Junction)

Arms	Weekday AM Peak			Weekday PM Peak		
	Q (pcu)	Delay (secs)	RFC	Q (pcu)	Delay (secs)	RFC
2024 Transferred Background plus Development Traffic Flows						
Stream B-AC (Belton Lane)	0.9	17.62	0.48	0.9	16.51	0.47
Stream C-AB (B1174 S)	0.8	7.03	0.36	1.2	9.40	0.47

4.11 The results show that the junction is expected to operate comfortably within capacity. Therefore, it can be concluded that by transferring background traffic through the site and onto the B1174 via the new site access, the previous capacity problems at the B1174/Belton Lane junction would be resolved. This would remove the need for the approved highway mitigating improvements (noting they are also undeliverable) and also reduce turning movements from a junction that has poor visibility (operating off a stop line) and features a downhill gradient along Belton Lane approaching the junction. Therefore, the site and the possible highway infrastructure changes along Belton Lane would provide significant overall benefits to highway capacity and safety at the B1174/Belton Lane junction.

Junction 3: B1174/Occupation Road Roundabout

4.12 The B1174/Occupation Road junction is a 3-arm roundabout. The B1174 arms provide single lane approaches with a short flare into two lanes at the roundabout, whilst the Occupation Road arm features a single lane. The traffic flow data summarised in Section 2, shows that the B1174 is forecast to accommodate 1,085 movements (two-way) in the busier morning peak hour. Whilst this excludes movements to/from Occupation Road from the B1174 (north), the additional 113 movements from the development equates to less than 2 additional movements per minute in either direction.

4.13 Therefore, whilst a detailed capacity assessment has not been undertaken at this stage, this additional volume of traffic is not expected to cause any significant capacity problems at the junction, subject to further detailed assessment as part of any future Transport Assessment. However, should improvements be required, then these are expected to be minor and possibly involve increasing the length of the flare and two-lane approach by widening out the inside kerb along both B1174 arms using the existing verge space. This is subject to confirmation of the highway boundary at this location, albeit there appears to be space within the verge to deliver minor improvements.

Junction 4: Gonerby Moor Interchange Roundabout

4.14 The Gonerby Moor Interchange junction is a dumbbell roundabout providing access to the A1 in all directions with both roundabouts providing 3 entry arms. Whilst existing traffic flows are unknown at this junction and would be surveyed as part of any Transport Assessment, given the strategic nature of the junction it is likely that the 113 additional movements generated by the residential development would be a small percentage. As such, it is not anticipated that there would be any significant impacts caused by the proposed development at this location.

4.15 However, should improvements be required, then there is scope to widen the entry arm on the B1174 arms to provide a short flare or deliver a scheme of signalisation. This is subject to confirmation of the highway boundary at this location, albeit there appears to be space within the verge to deliver minor improvements.

Summary

4.16 A potential development of 350 dwellings is not expected to cause any significant capacity problems at any junction in the vicinity of the site along the B1174. Furthermore, the site has the potential to transfer background traffic away from the B1174/Belton Lane junction, which is expected to exceed capacity and has highway safety issues with poor visibility. This removes the need for the approved mitigation scheme to be delivered as part of the Grantham SUE development, which appear to be undeliverable. Hence, the site has the opportunity to provide benefits to the existing highway layout for other road users.

4.17 If required, there are opportunities to deliver physical infrastructure improvements off-site to mitigate impacts from the development, which would have benefits on both capacity and highway safety. Any highway improvements schemes would be

determined as part of any Transport Assessment in consultation with Lincolnshire County Council.

5. SUMMARY AND CONCLUSIONS

5.1 This Traffic and Transport Appraisal has been prepared to promote the site through the Call for Sites representation for inclusion in South Kesteven District Council's revised Local Plan. The key transport conclusions are as follows:

- The site could be served by new accesses from both Belton Lane and the B1174 Newark Hill that meets Lincolnshire County Council's adopted design standards from a geometric layout and visibility perspective.

- The site could connect to the existing infrastructure within Great Gonerby by providing new footway infrastructure at both site access and along Belton Lane as well as delivering new pedestrian crossings. This would provide a continuous route for pedestrians and cyclists to reach the existing facilities and amenities.

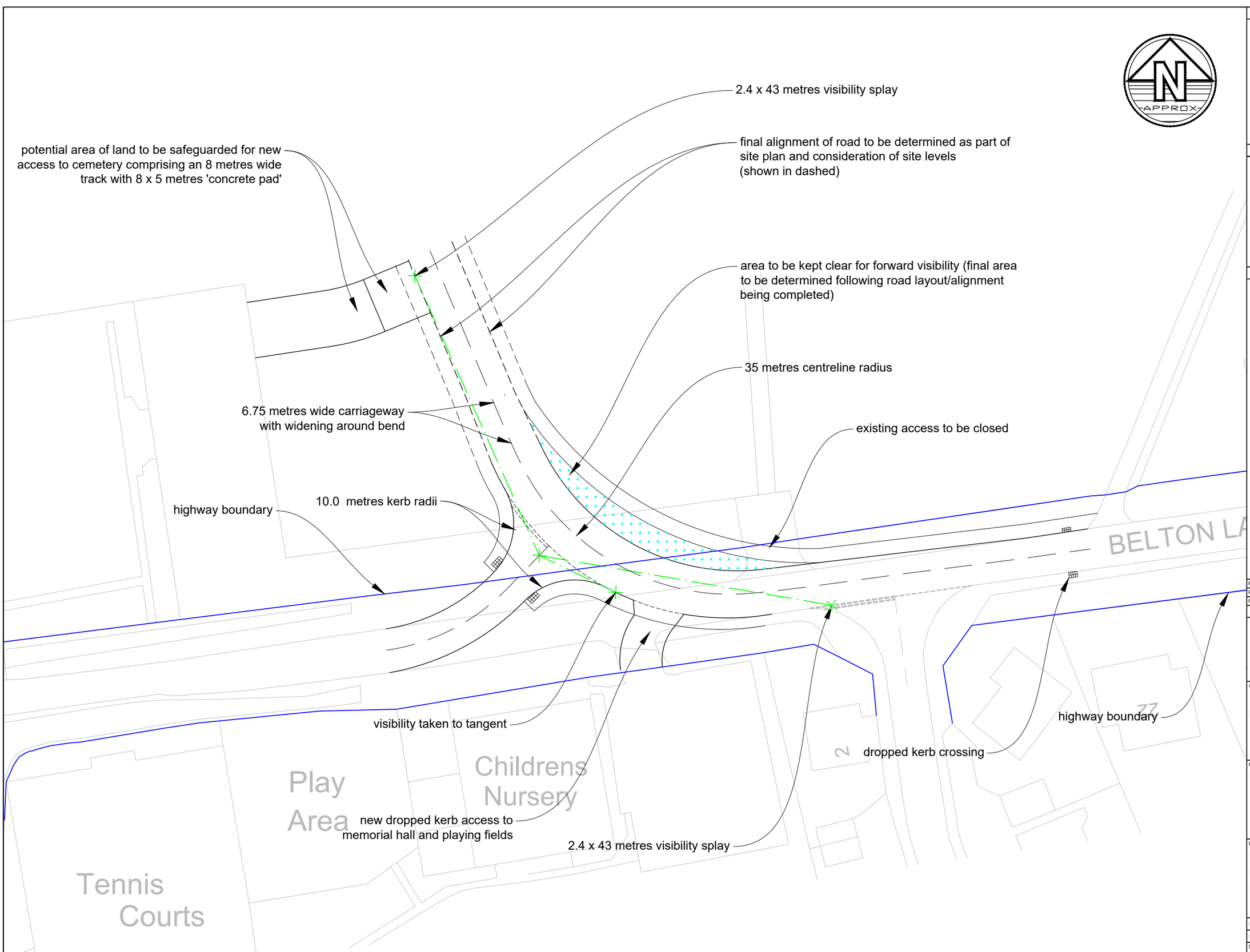
- The closest bus stops are located within a reasonable walking distance of the site, although there would be scope to consider introducing new stops and improving the frequency of services as part of any future Transport Assessment.

- The additional traffic generation by development at the site is expected to be accommodated on the local road network without causing any significant capacity or safety problems. There should however be scope to deliver highway improvements to improve both highways safety and capacity at nearby junctions should this be required.

- By changing the priority of Belton Lane and transferring traffic through the site, the B1174/Belton Lane junction would be relieved of its capacity problems removing the need for the approved mitigation scheme which is undeliverable because of the existing retaining structures. Hence, developing the site would have significant benefits in relieving existing capacity issues that are difficult to mitigate.

5.2 Overall, it is considered that the site constitutes sustainable development and would not result in any significant highway safety or capacity impacts that could not be mitigated. In addition, two points of access should be deliverable that meets Lincolnshire County Council's design standards. On this basis, the site is considered suitable for inclusion in South Kesteven District Council's Local Plan for residential development.

DRAWINGS



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 Plan

Legend

Rev	Date	Details of issue / revision	Drw	Rev
P2	23.10.23	NEW CEMETERY ACCESS INCLUDED	MC	AJO
P1	23.08.23	PRELIMINARY ISSUE	MC	AJO

Issues & Revisions

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Client

SAINT LAND AND DEVELOPMENT LTD

Project Title

HOOK CLIFF FARM, GREAT GONERBY

Drawing Title

POTENTIAL RE-ALIGNMENT OF BELTON LANE INTO SITE

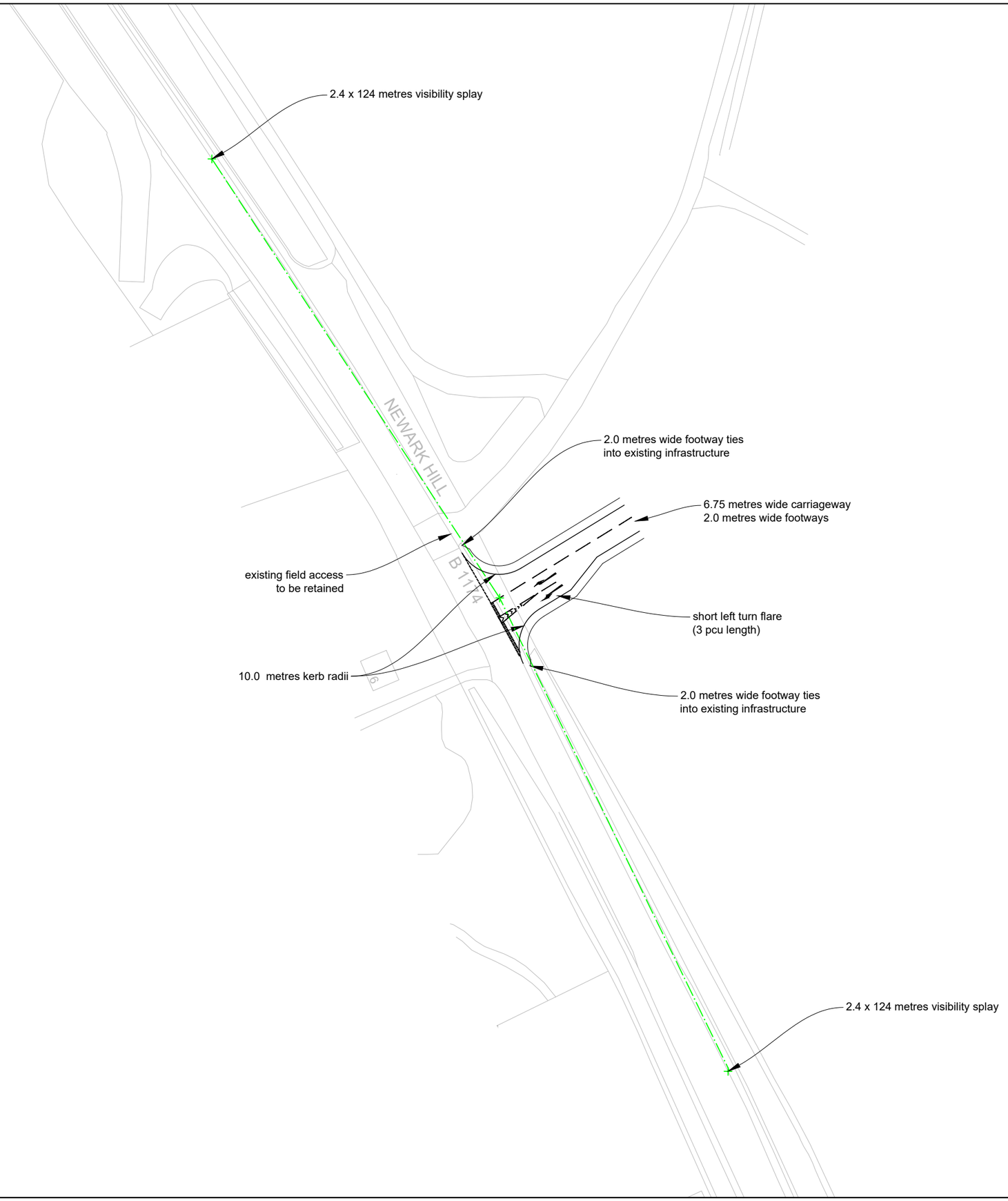
Drawn:	M. Corner	Reviewed:	AJ. Oakes
BWB Ref:	232815	Date: 28.07.23	Scale@A3: 1:500

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HCF-BWB-HML-00-DR-TR-103	S2	P2

J:\2023\232815-Hook Cliff Farm, Great Gonerby\ProjectDelivery\01-WIP\Drawings\HCF-BWB-HML-00-DR-TR-103_Belton Lane Reverse T-Junction.DWG



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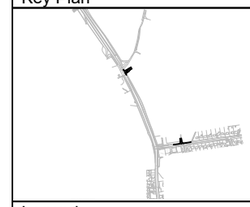
Key Plan



Legend

Rev	Date	Details of issue / revision	Drw	Rev
P2	31.08.23	UPDATED TO INCLUDE LEFT TURN FLARE	MC	MC
P1	28.07.23	PRELIMINARY ISSUE	FS	MC

Issues & Revisions

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Client

SAINT LAND AND DEVELOPMENT LTD

Project Title

HOOK CLIFF FARM, GREAT GONERBY

Drawing Title

POTENTIAL SITE ACCESS FROM B1174

Drawn:	F. Summerfield		Reviewed:	M, Corner	
BWB Ref:	232815	Date:	28.07.23	Scale@A3:	1:1000

Drawing Status

PRELIMINARY

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
HCF-BWB-HML-00-DR-TR-102	S2	P2

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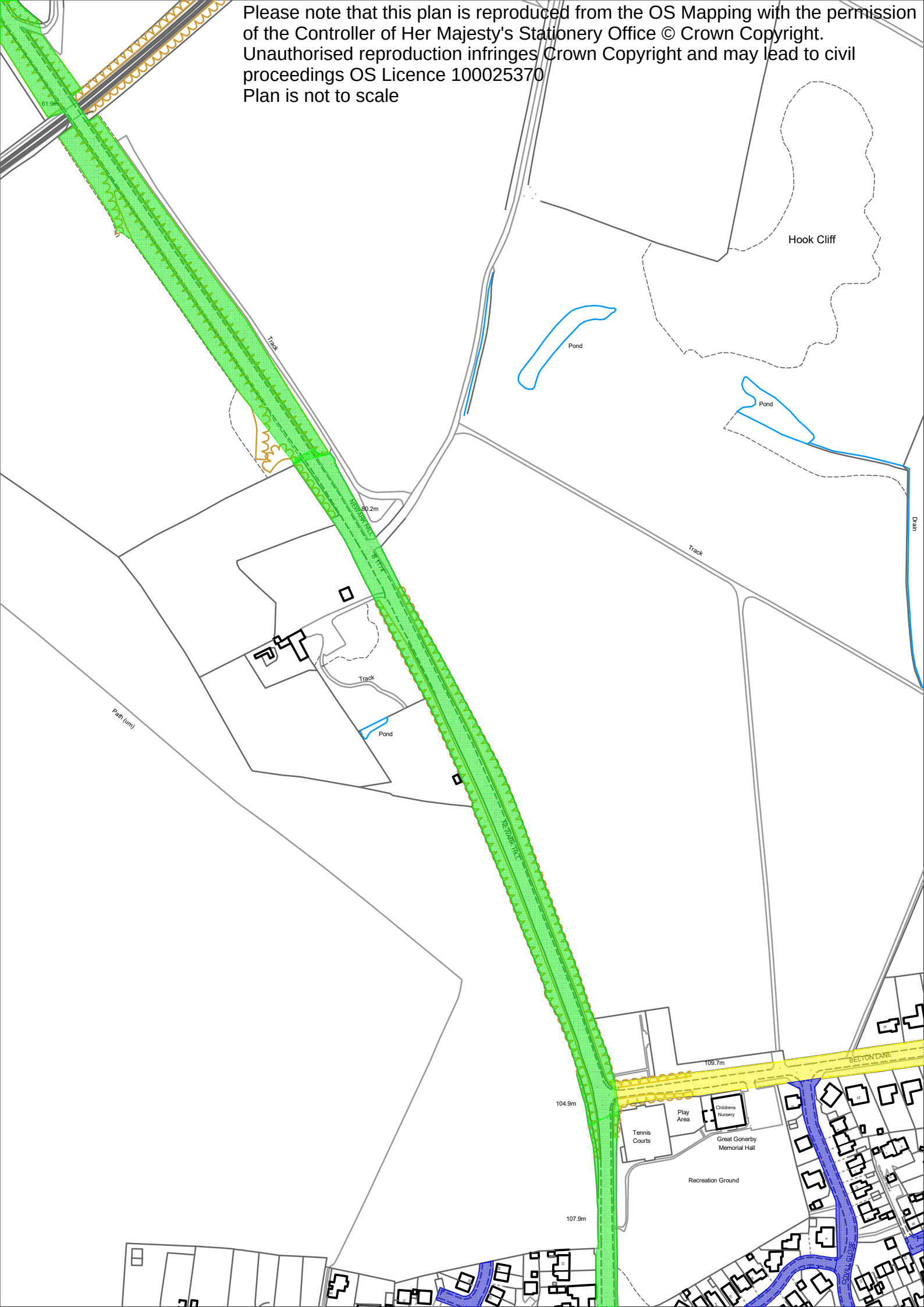
APPENDICES

Appendix 1: Highway Boundary Information



Appendix 2: Relevant Extracts from the Grantham SUE Transport Assessment

Odyssey Markides

LAND ON THE NORTHERN EDGE OF THE GRANTHAM URBAN AREA

Transport Assessment

Client : Larkfleet Homes

Project No. 14-022

July 2015

6 LCC'S SATURN MODEL

Introduction

6.1 As stated in Section 5 it has been agreed with LCC to make use of Grantham Traffic Model to investigate the impact of the proposed development. The resultant Traffic Modelling Report is shown in full in Appendix E. The following paragraphs provide a summary of the main modelling assumptions.

Assessment Year

6.2 The SATURN model has a base year of 2016 and a future year of 2024 is available. It is anticipated that development on the site would be completed and occupied be 2022, but it has been agreed to utilise the 2024 model for the purpose of this assessment.

Network Improvement Schemes

6.3 The 2016 model includes the following highway improvements:

- Bridge End Road/ London Road junction improvement
- A1- B1174 Link Road
- Southern Quadrant Link Road

6.4 In addition, the 2024 model also includes the Pennine Link Road.

Committed Development

6.5 The 2016 model includes the following committed residential development:

- Springfield Road
- Impress Site, Springfield Road
- Station Road

- Kwiksave Site
- Beacon Lane
- St Vincent Lodge
- Rycroft Street
- Bairds Malt
- Station Approach
- Greyfriars
- Land north of Dysart Road
- Stonebridge House, Stonebridge Road
- Land north of Peachwood Close
- Southern Quadrant (200 dwellings at Valley North)

6.6 The 2016 model also includes the following commited employment developments:

- South of Barrowby Road, east of A1
- North of Harlaxton Road, west of A1
- Old Quarry, Spittlegate Level
- King 31 / Hampton Brook

6.7 The 2024 models also include the Poplar Farm East and Poplar Farm West residential development and Phase 1 (Valley North Residential and Employment North) and Phase 2 (Plateau North Residential and Employment South) of the Southern Quadrant development.

Scenarios Modelled

6.8 The following scenarios were modelled:

- Scenario 1 – 2016. Including all committed development and highway improvement previously identified for this year.
- Scenario 2- 2024. Including all committed development and highway improvement previously identified for this year
- Scenario 3a – 2024. As scenario 2 with the addition of the proposed development accessed from Longcliffe Road only (to

provide a basis for comparison with scenario 3b with regard to flows using Belton Lane).

- Scenario 3b – 2024. As Scenario 2 with the addition of the proposed development accessed from both Longcliffe Road and Belton Lane

6.9 Traffic flows using the A607 / Belton Lane junction were slightly lower in Scenario 3b and there was no significant increase in traffic at the Belton Lane / Newark Hill junction when compared to Scenario 3a. This confirmed that appropriateness of the chosen site access strategy.

Use of the Model Results

6.10 Turning flows for each scenario have been provided for the following junctions:

- A607 Manthorpe Road / Belton Lane
- A607 Manthorpe Road / Belton Lane
- A607 Manthorpe Road / Sandcliffe Road
- B1174 Newark Hill / Belton Lane
- Belton Lane site access

6.11 These flows for Scenarios 2 and 3b have been used in conjunction with the PICADY models referred to in Section 3 to assess the impact of the development proposals on these junctions.

6.12 In addition to turning flows, data on junction delays and journey times has been provided from the model. These are examined in detail in Section 7.

7 TRAFFIC IMPACT AND MITIGATION

Traffic Impact at Local Junctions

7.1 The junctions most likely to be impacted by traffic generated by the development are the A607 / Longcliffe Road, the A607 / Sandcliffe Road, A607 / Belton Lane and the B1174 / Belton Lane junctions. These junctions have all been assessed under Scenario 2 and Scenario 3b traffic flows. The results of this junction capacity analysis is discussed in further detail below. Full PICADY outputs are included in Appendix G.

A607/ Sandcliffe Road junction

7.2 Table 7.1 summarises the main PICADY output for this junction.

Table 7.1 : A607 / Sandcliffe Road

Junction / Arm	AM Peak (0800 - 0900)		PM Peak (1700 - 1800)	
	RFC	End Queue	RFC	End Queue
AM 2024 Do Minimum				
Sandcliffe Road	0.578	1.33	0.551	1.19
A607 Right Turn	0.106	0.14	0.097	0.12
AM 2024 DS2				
Sandcliffe Road	0.769	3.03	0.724	2.42
A607 Right Turn	0.116	0.16	0.127	0.17

7.3 The two of the main outputs from PICADY that indicate how a junction is performing are the RFC (ratio of flow to capacity) and queue lengths. Junctions with RFC's of less than 0.85 are considered to be operating within capacity. RFC's between 0.85 and 1.0 show that the junction has exceeded practical capacity but remains within theoretical capacity.

Queuing would start to become more significant with RFC's in this range. An RFC over 1.0 shows the junction is over its theoretical capacity and queues increase considerably with the introduction of any additional traffic.

7.4 It can be seen that under both scenarios assessed this junction continues to operate with RFC's below 0.85 and would therefore be considered to remain within capacity.

A607 / Longcliffe Road

7.5 Table 7.2 summarises the main PICADY output for this junction.

Table 7.2 : A607 / Longcliffe Road

Junction / Arm	**AM Peak (0800 - 0900)**		**PM Peak (1700 - 1800)**	
	RFC	**End Queue**	**RFC**	**End Queue**
AM 2024 Do Minimum				
Longcliffe Rd Right Turn	0.595	1.42	0.522	1.06
Longcliffe Rd left Turn	0.186	0.23	0.138	0.16
A607 Right Turn	0.099	0.12	0.150	0.20
AM 2024 DS2				
Longcliffe Rd Right Turn	0.822	3.97	0.699	2.18
Longcliffe Rd left Turn	0.427	0.71	0.224	0.28
A607 Right Turn	0.105	0.13	0.156	0.21

7.6 In the Do Minimum Scenario (i.e. without the development proposal in place) the A607 / Longcliffe Road junction is shown to be operating within capacity with a maximum RFC of 0.595 in the AM peak and 0.522 in the PM peak. With the development site in place the maximum RFC is 0.822 and indicates that the junction would remain within capacity.

A607 / Belton Lane

7.7 Table 7.3 summarises the main PICADY output for this junction.

Table 7.3 : A607 / Belton Lane

Junction / Arm	AM Peak (0800 - 0900)		PM Peak (1700 - 1800)	
	RFC	End Queue	RFC	End Queue
AM 2024 Do Minimum				
Belton Lane	0.988	13.17	0.943	9.09
A607 Right Turn	0.459	1.19	0.499	1.30
AM 2024 DS2				
Belton Lane	0.940	9.01	0.927	8.04
A607 Right Turn	0.494	1.36	0.512	1.38

7.8 In 2024 without the development in place the Belton Lane arm of this junction is over-capacity in both AM and PM peak periods, with RFC's of 0.988 and 0.943 respectively. With the development in place the RFC's reduce to 0.940 and 0.927. The queue lengths decrease by 4 vehicles in the AM peak and by 1 vehicle in the PM peak. The proposals do not have a severe adverse impact on the performance of this junction.

Newark Hill / Belton Lane

7.9 Table 7.4 summarises the main PICADY output for this junction.

Table 7.4 : Newark Hill / Belton Lane

Junction / Arm	AM Peak (0800 - 0900)		PM Peak (1700 - 1800)	
	RFC	End Queue	RFC	End Queue
AM 2024 Do Minimum				
B-AC – Belton Lane	1.167	30.06	0.944	8.66
B C-AB – Newark Lane Right Turn	0.376	0.85	0.345	0.72
AM 2024 DS2				
B-AC – Belton Lane	1.246	46.15	1.012	13.76
B C-AB – Newark Lane Right Turn	0.364	0.83	0.389	0.86

7.10 It can be seen that in 2024 without the development in place the Belton Lane approach to the junction is already over theoretical capacity in the AM peak hour. Adding on development traffic, as would be expected, worsens the performance of the junction. Even though the increase in flows on Belton Lane towards Newark Hill is only 14 vehicles, the increase results in a queue length increase of approximately 12 vehicles. The additional vehicles simply add onto the existing queue. In the PM peak the impact is less, with a queue length increases of 3 vehicles.

Proposed Mitigation

7.11 It can be seen from the above assessments that the only junction that is over-capacity and suffers a worsening in performance as a result of the proposals is the B1774 Newark Hill / Belton Lane junction. The potential for improvement to this junction has therefore been examined in the following paragraphs. The LINSIG outputs for this assessment can be found in Appendix H.

B1174 Newark Hill / Belton Lane signal junction

7.12 The S106 Agreement for the previous Appeal Scheme included an allowance for signalisation of this junction if post-development monitoring identified a capacity problem. A LINSIG model of a simple three arm signal junction with a pedestrian crossing included over Belton Lane has been produced and the results of this are summarised in Table 7.5.

Table 7.5 : Newark Hill / Belton Lane Signal Junction

Junction / Arm	AM Peak (0800 - 0900)		PM Peak (1700 - 1800)	
	DoS	Queue	DoS	Queue
Newark Hill North	44.7%	9.8	58.0%	14.3
Belton Lane	78.3%	12.7	80.4%	11.5
High Street South	76.5%	13.7	83.4%	13.0

7.13 It can be seen that the provision of a signal controlled junction in this location would result in the junction operating well within capacity (DoS of less than 90%). This not only mitigates the impact of the development proposals, but also results in a dramatic improvement over the 2024 baseline situation.

7.14 The existing priority junction has no footways on Belton Lane or on the west side of Newark Hill, the junction is in a fairly deep cutting, the carriageway on Belton Lane is narrow and the corner radii are tight. These constraints mean that it is necessary to set the stopline on Belton Lane well back from the B1174 in order to safely accommodate large vehicles turning. This means that stopline intervisibility is not achieved. However:

- The visibility at the existing priority junction is substandard and signalisation, even without full stopline intervisibility, would be safer arrangement
- Any large vehicles using this junction to access existing residential properties (i.e. refuse lorries) currently has to use the full width of the road to turn in or out of the junction, conflicting with other vehicle movements. Introducing signals with appropriately located stoplines means that these conflicts are removed.
- Pedestrians waiting to crossing Belton Lane are visible from all stoplines and therefore the substandard intervisibility does not pose a risk to pedestrians.
- A controlled pedestrian crossing of Belton Lane is introduced.

7.15 On this basis the provision of signals without full stopline intervisibility would result in a safer arrangement than the current priority junction.

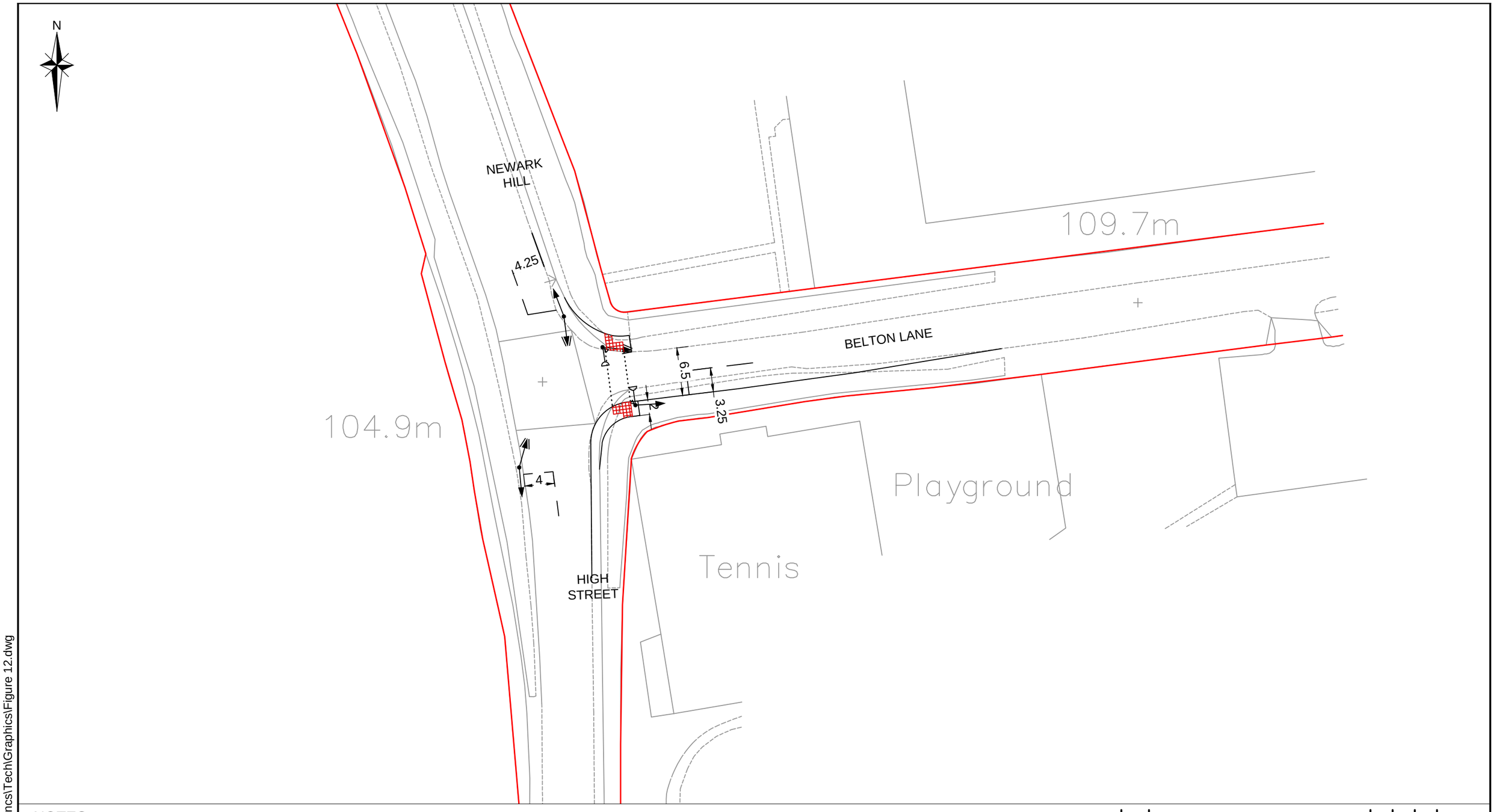
J3 A607 Manthorpe Road / Sandcliffe Road

			Scenario 1 -2016 DM		Scenario 2 -2024 DM		Scenario 3a -2024 DS1		Scenario 3b -2024 DS2	
	From	To	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Manthorpe Road S	Arm A	Arm B	142	110	153	130	163	163	163	163
		Arm C	415	610	441	653	457	736	453	707
Sandcliffe Road	Arm B	Arm A	122	111	136	122	176	144	176	144
		Arm C	47	36	44	33	56	41	56	41
Manthorpe Road N	Arm C	Arm A	721	537	709	532	737	577	729	565
		Arm B	53	44	46	38	50	47	50	47

J4 B1174 Newark Hill / Belton Lane / B1174 High Street

			Scenario 1 -2016 DM		Scenario 2 -2024 DM		Scenario 3a -2024 DS1		Scenario 3b -2024 DS2	
	From	To	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Newark Hill	Arm A	Arm B	219	226	215	265	216	267	221	295
		Arm C	213	289	235	341	235	348	234	343
Belton Lane	Arm B	Arm A	222	146	316	190	350	205	352	218
		Arm C	30	54	23	108	1	93	1	82
High Street	Arm C	Arm A	223	209	270	208	278	210	278	208
		Arm B	90	88	148	131	148	142	142	145

Appendix 3: Approved Mitigation Scheme at B1174/Belton Lane Junction



NOTES:-

1. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
2. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES.

HIGHWAY BOUNDARY

Rev	Amendments	Drn	Chk	App	Date

Odyssey Markides
Elizabeth House
39 York Road
London
SE1 7NQ
Telephone: 0207 620 2444
Fax: 0207 620 1168
E: enquiries@odysseymarkides.com
W: www.odysseymarkides.com

Job Title: LAND NORTH OF GRANTHAM

Drawing Title: B1174/BELTON LANE SIGNAL SCHEME

Client: LARKFLEET HOMES

Scale	Date	Designed
1:500 @ A3	APR' 15	MM
Drawn	**Checked**	**Approved**
MM	JB	ACM
Job No	**Figure No**	**Rev**
14-022	FIGURE 12	-

DRAWING NO. 14-022-012

Q:\14-022 - Land North of Grantham, Lincs\Tech\Graphics\Figure 12.dwg

Appendix 4: Bus Timetable Information

Grantham - Newark 24

via Great Gonerby, Long Bennington

Monday to Friday Ref.No.: 2301

Service No	*24*	*24*	*24*	*24*	*24* K	*24*	*24*	*24*	*24*
	NBH	NBH	NBH	NBH	NBH	NBH	NBH	NBH	NBH
Grantham, Bus Station	0733	0845	0910	1045	1135	1245	1410	1630	1800
Hornsby Road	.....	.....	.....	.....	.....	.....	.....	1638	1808
Trent Road, Meres	.....	.....	.....	.....	.....	.....	.....	1641	1811
Cliffe Road	.....	0854	0919	1054	1141	1254	1419	1647	.....
Great Gonerby, High St	0740	0857	0922	1057	1152	1257	1422	1655	1820
Downtown	0744	0900	0925	1100	1155	1300	1425	1658	1822
Allington, Green	0753	.....	.....	.....	.....	.....	.....	1705	.....
Long Bennington, Church St	.....	0910	.....	1110	.....	1310	.....	.....	1832
Long Bennington, Village Hall	0800	.....	.....	.....	.....	.....	.....	1712	.....
Long Bennington, Reindeer	.....	0913	.....	1113	.....	1313	.....	.....	1834
Westborough	.....	0918	.....	1118	.....	1318	.....	.....	.....
Dry Doddington	.....	0921	.....	1121	.....	1321	.....	.....	.....
Claypole	.....	0925	.....	1125	.....	1325	.....	.....	.....
Balderton, Grove	.....	0934	.....	1134	.....	1334	.....	.....	.....
Newark, Bus Station	.....	0940	.....	1140	.....	1340	.....	.....	.....

NBH - Not on Bank Holidays
K - via Kelham Road

Service No	*24*	*24*	*24* K	*24*	*24*	*24*	*24*	*24*	*24*
	NBH	NBH	NBH	NBH	NBH	NBH	NBH	NBH	NBH
Newark, Bus Station	.....	.....	.....	0945	.....	1145	.....	1440	.....
Balderton, Grove	.....	.....	.....	0951	.....	1151	.....	1446	.....
Claypole	.....	.....	.....	1000	.....	1200	.....	1455	.....
Dry Doddington	.....	.....	.....	1004	.....	1204	.....	1459	.....
Westborough	.....	.....	.....	1007	.....	1207	.....	1502	.....
Long Bennington, Village Hall	0704	0800	.....	1013	.....	1213	.....	1508	1712
Long Bennington, Church St	0706	0802	.....	1014	.....	1214	.....	1509	1714
Foston, Long St/Main St	0710	0806	.....	.....	.....	.....	.....	.....	1719
Downtown	0718	0814	0925	1023	1155	1223	1425	1518	1728
Great Gonerby, High St	0720	0817	0929	1027	1159	1227	1429	1522	1731
Cliffe Road	.....	0822	0938	1032	1204	1232	1434	1527	.....
Grantham, Bus Station	0730	0830	0947	1040	1212	1240	1442	1537	1742

NBH - Not on Bank Holidays
K - via Kelham Road

Centrebus

Grantham - Newark 24

via Great Gonerby, Long Bennington

Saturday

Ref.No.: 2301

Service No	*24*	*24*	*24*	*24*
Grantham, Bus Station	0845	1145	1345	1545
Gonerby, Cliffe Rd	0854	1154	1354	1554
Great Gonerby, High St	0857	1157	1357	1557
Downtown	0900	1200	1400	1600
Long Bennington, Church St	0910	1210	1410	1610
Long Bennington, Reindeer	0913	1213	1413	1613
Westborough	0918	1218	1418	.....
Dry Doddington	0921	1221	1421	.....
Claypole	0925	1225	1425	.....
Balderton, Grove	0934	1234	1434	.....
Newark, Bus Station	0940	1240	1440	.....

Service No	*24*	*24*	*24*	*24*
Newark, Bus Station	.....	0945	1245	1445
Balderton, Grove	.....	0951	1251	1451
Claypole	.....	1000	1300	1500
Dry Doddington	.....	1004	1304	1504
Westborough	.....	1007	1307	1507
Long Bennington, Village Hall	0813	1013	1313	1513
Long Bennington, Church St	0814	1014	1314	1514
Downtown	0823	1023	1323	1523
Great Gonerby, High St	0827	1027	1327	1527
Gonerby, Cliffe Rd	0832	1032	1332	1532
Grantham, Bus Station	0840	1040	1340	1540

Appendix 5: TRICS Output Data

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	2 days
	KC	KENT	2 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	NF	NORFOLK	6 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 212 to 799 (units:)
Range Selected by User: 200 to 800 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 27/09/22

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	5 days
Wednesday	7 days
Thursday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	13 days
Directional ATC Count	3 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	15

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	13
Out of Town	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	23 days - Selected

Secondary Filtering selection:

Use Class:

C3	16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	7 days
10,001 to 15,000	4 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	5 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	12 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	11 days
No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	16 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 DY-03-A-01 MIXED HOUSES DERBY
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

2 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

3 HC-03-A-24 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: WEDNESDAY *10/11/21* *Survey Type: MANUAL*

4 HC-03-A-26 MIXED HOUSES & FLATS HAMPSHIRE
BOTLEY ROAD
WHITELEY

Edge of Town
Out of Town
Total No of Dwellings: 270
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

5 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

6 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

7 NF-03-A-17 MIXED HOUSES & FLATS NORFOLK
ROUND HOUSE WAY
NORWICH
CRINGLEFORD
Edge of Town
Residential Zone
Total No of Dwellings: 716
Survey date: TUESDAY *20/10/15* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

8 NF-03-A-23 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 514
Survey date: WEDNESDAY *22/09/21* *Survey Type: MANUAL*

9 NF-03-A-31 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 321
Survey date: THURSDAY *22/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

10 NF-03-A-38 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 537
Survey date: TUESDAY *20/09/22* *Survey Type: MANUAL*

11 NF-03-A-39 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: TUESDAY *27/09/22* *Survey Type: MANUAL*

12 NF-03-A-47 MIXED HOUSES & FLATS NORFOLK
BURGH ROAD
AYLSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 300
Survey date: WEDNESDAY *21/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

13 SC-03-A-08 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 790
Survey date: WEDNESDAY *04/05/22* *Survey Type: MANUAL*

14 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

15	ST-03-A-07	DETACHED & SEMI-DETACHED	STAFFORDSHIRE
	BEACONSIDE		
	STAFFORD		
	MARSTON GATE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	248	
	Survey date: WEDNESDAY	*22/11/17*	*Survey Type: MANUAL*
16	WS-03-A-06	MIXED HOUSES	WEST SUSSEX
	ELLIS ROAD		
	WEST HORSHAM		
	S BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	799	
	Survey date: THURSDAY	*02/03/17*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Ranking Type: TOTALS Time Range: 08:00-09:00 CALCULATION FACTOR 100m2 DWELLS
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 14 NF-03-A-39 Tot: 0.415
85th Percentile = No. 3 ES-03-A-03 Tot: 0.627

Median Values		Mean Values	
Arrivals:	0.171	Arrivals:	0.142
Departures:	0.363	Departures:	0.400
Totals:	0.534	Totals:	0.542

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces
								Arrivals	Departures	Totals	Per Dwelling
1	SP-03-A-02	MIXED HOUSES &	NEAR SOUTHAMPTON	SOUTHAMPTON	250	Tue	12/10/21	0.184	0.584	0.768	2.44
2	NF-03-A-38	MIXED HOUSES	GREAT YARMOUTH	NORFOLK	537	Tue	20/09/22	0.201	0.505	0.706	2.56
3	ES-03-A-03	MIXED HOUSES &	POLEGATE	EAST SUSSEX	212	Mon	11/07/16	0.165	0.462	0.627	1.68
4	WS-03-A-06	MIXED HOUSES	WEST HORSHAM	WEST SUSSEX	799	Thu	02/03/17	0.164	0.463	0.627	2.15
5	KC-03-A-07	MIXED HOUSES	HERNE BAY	KENT	288	Wed	27/09/17	0.240	0.385	0.625	3.09
6	NF-03-A-23	MIXED HOUSES &	WYMONDHAM	NORFOLK	514	Wed	22/09/21	0.183	0.422	0.605	2.48
7	SC-03-A-08	MIXED HOUSES	HORLEY	SURREY	790	Wed	04/05/22	0.151	0.432	0.583	2.20
8	NF-03-A-47	MIXED HOUSES &	AYLSHAM	NORFOLK	300	Wed	21/09/22	0.130	0.413	0.543	2.41
9	NF-03-A-17	MIXED HOUSES &	NORWICH	NORFOLK	716	Tue	20/10/15	0.212	0.314	0.526	2.35
10	DY-03-A-01	MIXED HOUSES	DERBY	DERBY	371	Tue	10/07/18	0.089	0.402	0.491	2.92
11	ST-03-A-07	DETACHED & SEM	STAFFORD	STAFFORDSHIRE	248	Wed	22/11/17	0.105	0.383	0.488	3.55
12	HC-03-A-26	MIXED HOUSES &	WHITELEY	HAMPSHIRE	270	Thu	24/06/21	0.111	0.374	0.485	2.06
13	KC-03-A-06	MIXED HOUSES &	HERNE BAY	KENT	363	Wed	27/09/17	0.091	0.386	0.477	2.17
14	NF-03-A-39	MIXED HOUSES	HOLT	NORFOLK	212	Tue	27/09/22	0.118	0.297	0.415	2.31
15	HC-03-A-24	MIXED HOUSES &	EASTLEIGH	HAMPSHIRE	243	Wed	10/11/21	0.049	0.366	0.415	2.19
16	NF-03-A-31	MIXED HOUSES	SWAFFHAM	NORFOLK	321	Thu	22/09/22	0.072	0.218	0.290	2.86

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Ranking Type: TOTALS Time Range: 17:00-18:00 CALCULATION FACTOR 100m2 DWELLS
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 14 ST-03-A-07 Tot: 0.444
85th Percentile = No. 3 ES-03-A-03 Tot: 0.651

Median Values		Mean Values	
Arrivals:	0.350	Arrivals:	0.376
Departures:	0.169	Departures:	0.160
Totals:	0.518	Totals:	0.536

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces
								Arrivals	Departures	Totals	Per Dwelling
1	SP-03-A-02	MIXED HOUSES &	NEAR SOUTHAMPTON	SOUTHAMPTON	250	Tue	12/10/21	0.528	0.216	0.744	2.44
2	NF-03-A-38	MIXED HOUSES	GREAT YARMOUTH	NORFOLK	537	Tue	20/09/22	0.426	0.272	0.698	2.56
3	ES-03-A-03	MIXED HOUSES &	POLEGATE	EAST SUSSEX	212	Mon	11/07/16	0.434	0.217	0.651	1.68
4	KC-03-A-07	MIXED HOUSES	HERNE BAY	KENT	288	Wed	27/09/17	0.444	0.149	0.593	3.09
5	NF-03-A-23	MIXED HOUSES &	WYMONDHAM	NORFOLK	514	Wed	22/09/21	0.393	0.198	0.591	2.48
6	KC-03-A-06	MIXED HOUSES &	HERNE BAY	KENT	363	Wed	27/09/17	0.380	0.198	0.578	2.17
7	NF-03-A-47	MIXED HOUSES &	AYLSHAM	NORFOLK	300	Wed	21/09/22	0.357	0.183	0.540	2.41
8	WS-03-A-06	MIXED HOUSES	WEST HORSHAM	WEST SUSSEX	799	Thu	02/03/17	0.367	0.168	0.535	2.15
9	NF-03-A-17	MIXED HOUSES &	NORWICH	NORFOLK	716	Tue	20/10/15	0.332	0.169	0.501	2.35
10	DY-03-A-01	MIXED HOUSES	DERBY	DERBY	371	Tue	10/07/18	0.407	0.084	0.491	2.92
11	HC-03-A-26	MIXED HOUSES &	WHITELEY	HAMPSHIRE	270	Thu	24/06/21	0.363	0.104	0.467	2.06
12	NF-03-A-39	MIXED HOUSES	HOLT	NORFOLK	212	Tue	27/09/22	0.297	0.165	0.462	2.31
13	SC-03-A-08	MIXED HOUSES	HORLEY	SURREY	790	Wed	04/05/22	0.353	0.105	0.458	2.20
14	ST-03-A-07	DETACHED & SEM	STAFFORD	STAFFORDSHIRE	248	Wed	22/11/17	0.319	0.125	0.444	3.55
15	NF-03-A-31	MIXED HOUSES	SWAFFHAM	NORFOLK	321	Thu	22/09/22	0.312	0.125	0.437	2.86
16	HC-03-A-24	MIXED HOUSES &	EASTLEIGH	HAMPSHIRE	243	Wed	10/11/21	0.309	0.074	0.383	2.19

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

Calculation Reference: AUDIT-714101-230823-0808

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	2 days
	KC	KENT	2 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	NF	NORFOLK	6 days
05	EAST MIDLANDS		
	DY	DERBY	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
Actual Range: 212 to 799 (units:)
Range Selected by User: 200 to 800 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 27/09/22

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	5 days
Wednesday	7 days
Thursday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	13 days
Directional ATC Count	3 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	15

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	13
Out of Town	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	7 days - Selected
Servicing vehicles Excluded	23 days - Selected

Secondary Filtering selection:

Use Class:

C3	16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	7 days
10,001 to 15,000	4 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	5 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	12 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	11 days
No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	16 days

This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions

LIST OF SITES relevant to selection parameters

1 DY-03-A-01 MIXED HOUSES DERBY
RADBOURNE LANE
DERBY

Edge of Town
Residential Zone
Total No of Dwellings: 371
Survey date: TUESDAY *10/07/18* *Survey Type: MANUAL*

2 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

3 HC-03-A-24 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: WEDNESDAY *10/11/21* *Survey Type: MANUAL*

4 HC-03-A-26 MIXED HOUSES & FLATS HAMPSHIRE
BOTLEY ROAD
WHITELEY

Edge of Town
Out of Town
Total No of Dwellings: 270
Survey date: THURSDAY *24/06/21* *Survey Type: MANUAL*

5 KC-03-A-06 MIXED HOUSES & FLATS KENT
MARGATE ROAD
HERNE BAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 363
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

6 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total No of Dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

7 NF-03-A-17 MIXED HOUSES & FLATS NORFOLK
ROUND HOUSE WAY
NORWICH
CRINGLEFORD
Edge of Town
Residential Zone
Total No of Dwellings: 716
Survey date: TUESDAY *20/10/15* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

8 NF-03-A-23 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 514
Survey date: WEDNESDAY *22/09/21* *Survey Type: MANUAL*

9 NF-03-A-31 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 321
Survey date: THURSDAY *22/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

10 NF-03-A-38 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 537
Survey date: TUESDAY *20/09/22* *Survey Type: MANUAL*

11 NF-03-A-39 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: TUESDAY *27/09/22* *Survey Type: MANUAL*

12 NF-03-A-47 MIXED HOUSES & FLATS NORFOLK
BURGH ROAD
AYLSHAM

Edge of Town
Residential Zone
Total No of Dwellings: 300
Survey date: WEDNESDAY *21/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

13 SC-03-A-08 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 790
Survey date: WEDNESDAY *04/05/22* *Survey Type: MANUAL*

14 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

15	ST-03-A-07	DETACHED & SEMI-DETACHED	STAFFORDSHIRE
	BEACONSIDE		
	STAFFORD		
	MARSTON GATE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	248	
	Survey date: WEDNESDAY	*22/11/17*	*Survey Type: MANUAL*
16	WS-03-A-06	MIXED HOUSES	WEST SUSSEX
	ELLIS ROAD		
	WEST HORSHAM		
	S BROADBRIDGE HEATH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	799	
	Survey date: THURSDAY	*02/03/17*	*Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	402	0.090	16	402	0.339	16	402	0.429
08:00 - 09:00	16	402	0.152	16	402	0.406	16	402	0.558
09:00 - 10:00	16	402	0.137	16	402	0.173	16	402	0.310
10:00 - 11:00	16	402	0.119	16	402	0.141	16	402	0.260
11:00 - 12:00	16	402	0.134	16	402	0.148	16	402	0.282
12:00 - 13:00	16	402	0.150	16	402	0.149	16	402	0.299
13:00 - 14:00	16	402	0.149	16	402	0.141	16	402	0.290
14:00 - 15:00	16	402	0.149	16	402	0.171	16	402	0.320
15:00 - 16:00	16	402	0.252	16	402	0.161	16	402	0.413
16:00 - 17:00	16	402	0.271	16	402	0.172	16	402	0.443
17:00 - 18:00	16	402	0.374	16	402	0.161	16	402	0.535
18:00 - 19:00	16	402	0.314	16	402	0.162	16	402	0.476
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.291			2.324			4.615

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

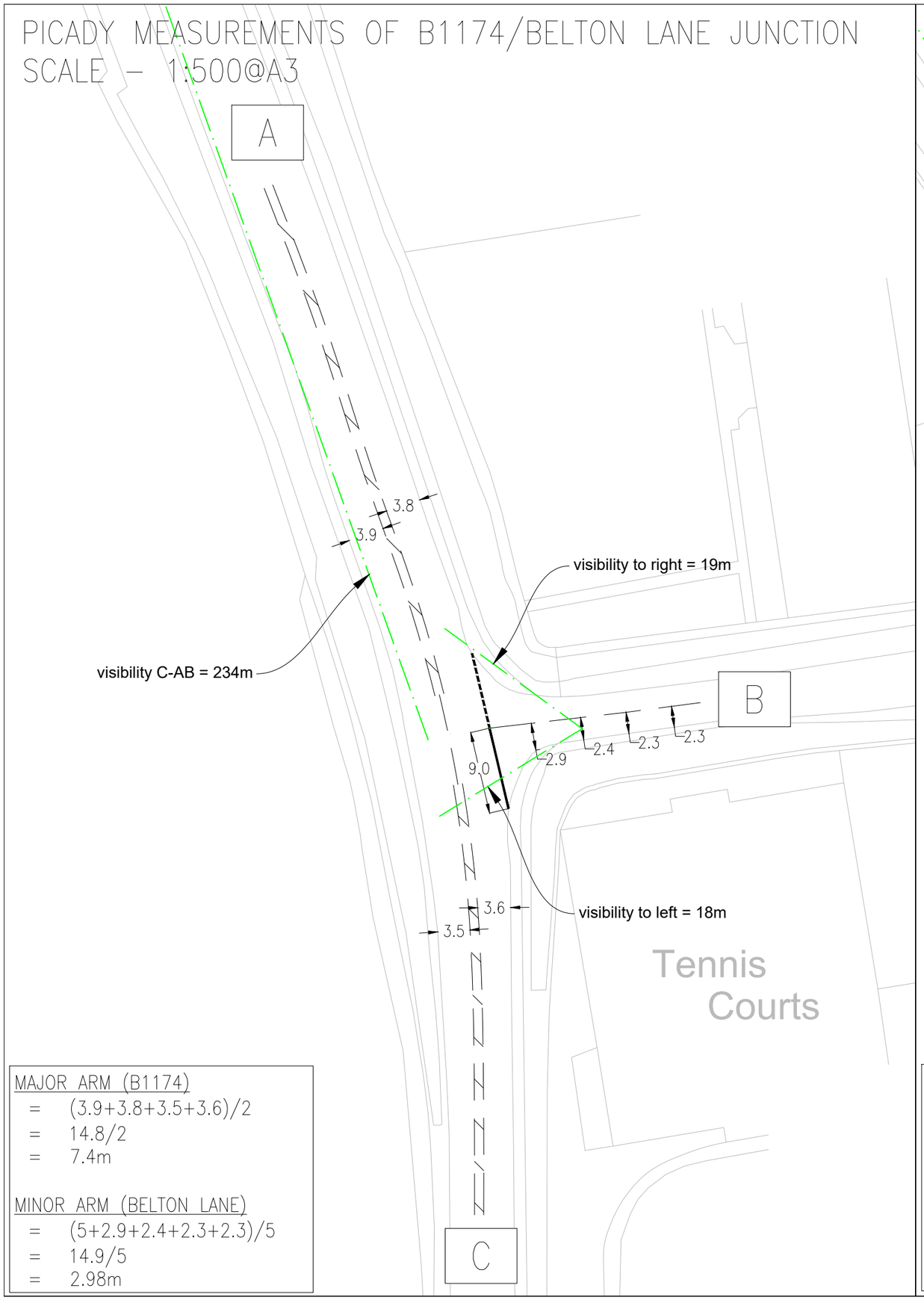
Parameter summary

Trip rate parameter range selected:	212 - 799 (units:)
Survey date date range:	01/01/15 - 27/09/22
Number of weekdays (Monday-Friday):	16
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	14
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix 6: B1174/Site Access Junction Measurements and Modelling Output Data

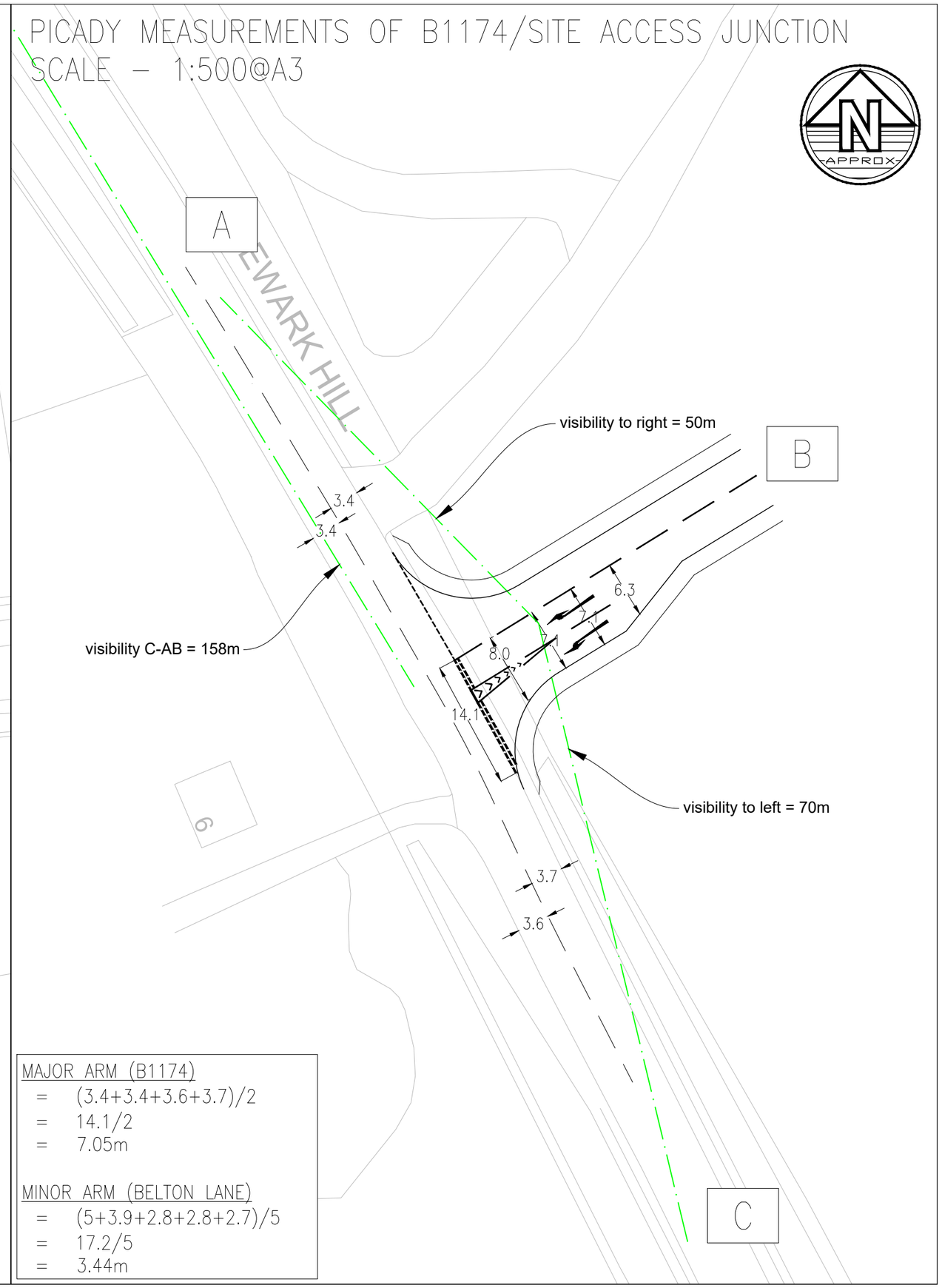
PICADY MEASUREMENTS OF B1174/BELTON LANE JUNCTION
SCALE – 1:500@A3



MAJOR ARM (B1174)
= (3.9+3.8+3.5+3.6)/2
= 14.8/2
= 7.4m

MINOR ARM (BELTON LANE)
= (5+2.9+2.4+2.3+2.3)/5
= 14.9/5
= 2.98m

PICADY MEASUREMENTS OF B1174/SITE ACCESS JUNCTION
SCALE – 1:500@A3



MAJOR ARM (B1174)
= (3.4+3.4+3.6+3.7)/2
= 14.1/2
= 7.05m

MINOR ARM (BELTON LANE)
= (5+3.9+2.8+2.8+2.7)/5
= 17.2/5
= 3.44m

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: Import of B1174_Site Access PICADY Model.j10
Path: J:\2023\232815-Hook Cliff Farm, Great Gonerby\ProjectDelivery\01-WIP\DesignAndCalculations\T&I Planning\Junction Modelling
Report generation date: 05/09/2023 14:15:36

»2024 SATURN Transferred Flows with Development, AM
»2024 SATURN Transferred Flows with Development, PM

Summary of junction performance

	AM								PM							
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	2024 SATURN Transferred Flows with Development															
Stream B-C	D1	0.1	16.01	0.06	C	11.81	B	-4 % [Stream B-A]	D2	0.0	8.81	0.02	A	2.95	A	23 % [Stream B-A]
Stream B-A		4.0	43.00	0.82	E					1.0	17.97	0.51	C			
Stream C-AB		0.0	4.88	0.01	A					0.1	5.63	0.04	A			

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Hook Cliff Farm, Great Gonerby
Location	B1174/Site Access Junction
Site number	
Date	24/08/2023
Version	
Status	(new file)
Identifier	MC
Client	Saint Land and Development
Jobnumber	232815
Enumerator	BWB\matt.corner
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 SATURN Transferred Flows with Development	AM	ONE HOUR	08:00	09:30	15
D2	2024 SATURN Transferred Flows with Development	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 SATURN Transferred Flows with Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B1174/Site Access	T-Junction	Two-way	Two-way	Two-way		11.81	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-4	Stream B-A	11.81	B

Arms

Arms

Arm	Name	Description	Arm type
A	B1174 (N)		Major
B	Site Access		Minor
C	B1174 (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.05			158.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	8.00	7.10	7.10	6.30		3.00	70	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	630	0.110	0.277	0.174	0.396
B-C	636	0.093	0.235	-	-
C-B	665	0.246	0.246	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 SATURN Transferred Flows with Development	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	486	100.000
B		✓	342	100.000
C		✓	389	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	186	300
	B	328	0	14
	C	384	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	10
	B	0	0	0
	C	10	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.06	16.01	0.1	C
B-A	0.82	43.00	4.0	E
C-AB	0.01	4.88	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	485	0.022	10	0.0	7.580	A
B-A	247	501	0.493	243	0.9	13.795	B
C-AB	6	772	0.008	6	0.0	4.864	A
C-A	287			287			
A-B	140			140			
A-C	226			226			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	425	0.030	13	0.0	8.720	A
B-A	295	475	0.620	292	1.6	19.413	C
C-AB	8	796	0.010	8	0.0	4.743	A
C-A	342			342			
A-B	167			167			
A-C	270			270			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	15	262	0.059	15	0.1	14.573	B
B-A	361	441	0.820	352	3.7	37.585	E
C-AB	11	831	0.014	11	0.0	4.589	A
C-A	417			417			
A-B	205			205			
A-C	330			330			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	15	240	0.064	15	0.1	16.009	C
B-A	361	441	0.820	360	4.0	42.996	E
C-AB	11	831	0.014	11	0.0	4.605	A
C-A	417			417			
A-B	205			205			
A-C	330			330			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	412	0.031	13	0.0	9.017	A
B-A	295	475	0.620	304	1.7	22.036	C
C-AB	8	796	0.010	8	0.0	4.775	A
C-A	342			342			
A-B	167			167			
A-C	270			270			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	481	0.022	11	0.0	7.645	A
B-A	247	501	0.493	250	1.0	14.518	B
C-AB	6	772	0.008	6	0.0	4.882	A
C-A	287			287			
A-B	140			140			
A-C	226			226			

2024 SATURN Transferred Flows with Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	Arm B - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B1174/Site Access	T-Junction	Two-way	Two-way	Two-way		2.95	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	23	Stream B-A	2.95	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024 SATURN Transferred Flows with Development	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	718	100.000
B		✓	193	100.000
C		✓	286	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	286	432
	B	187	0	6
	C	273	13	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	10
	B	0	0	0
	C	10	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.02	8.81	0.0	A
B-A	0.51	17.97	1.0	C
C-AB	0.04	5.63	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	498	0.009	4	0.0	7.288	A
B-A	141	477	0.295	139	0.4	10.607	B
C-AB	14	677	0.021	14	0.0	5.582	A
C-A	201			201			
A-B	215			215			
A-C	325			325			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	468	0.012	5	0.0	7.789	A
B-A	168	447	0.376	167	0.6	12.834	B
C-AB	18	683	0.027	18	0.0	5.585	A
C-A	239			239			
A-B	257			257			
A-C	388			388			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	416	0.016	7	0.0	8.785	A
B-A	206	406	0.507	204	1.0	17.703	C
C-AB	25	693	0.037	25	0.1	5.597	A
C-A	290			290			
A-B	315			315			
A-C	476			476			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	415	0.016	7	0.0	8.808	A
B-A	206	406	0.507	206	1.0	17.966	C
C-AB	25	693	0.037	25	0.1	5.617	A
C-A	290			290			
A-B	315			315			
A-C	476			476			

18:00 - 18:15

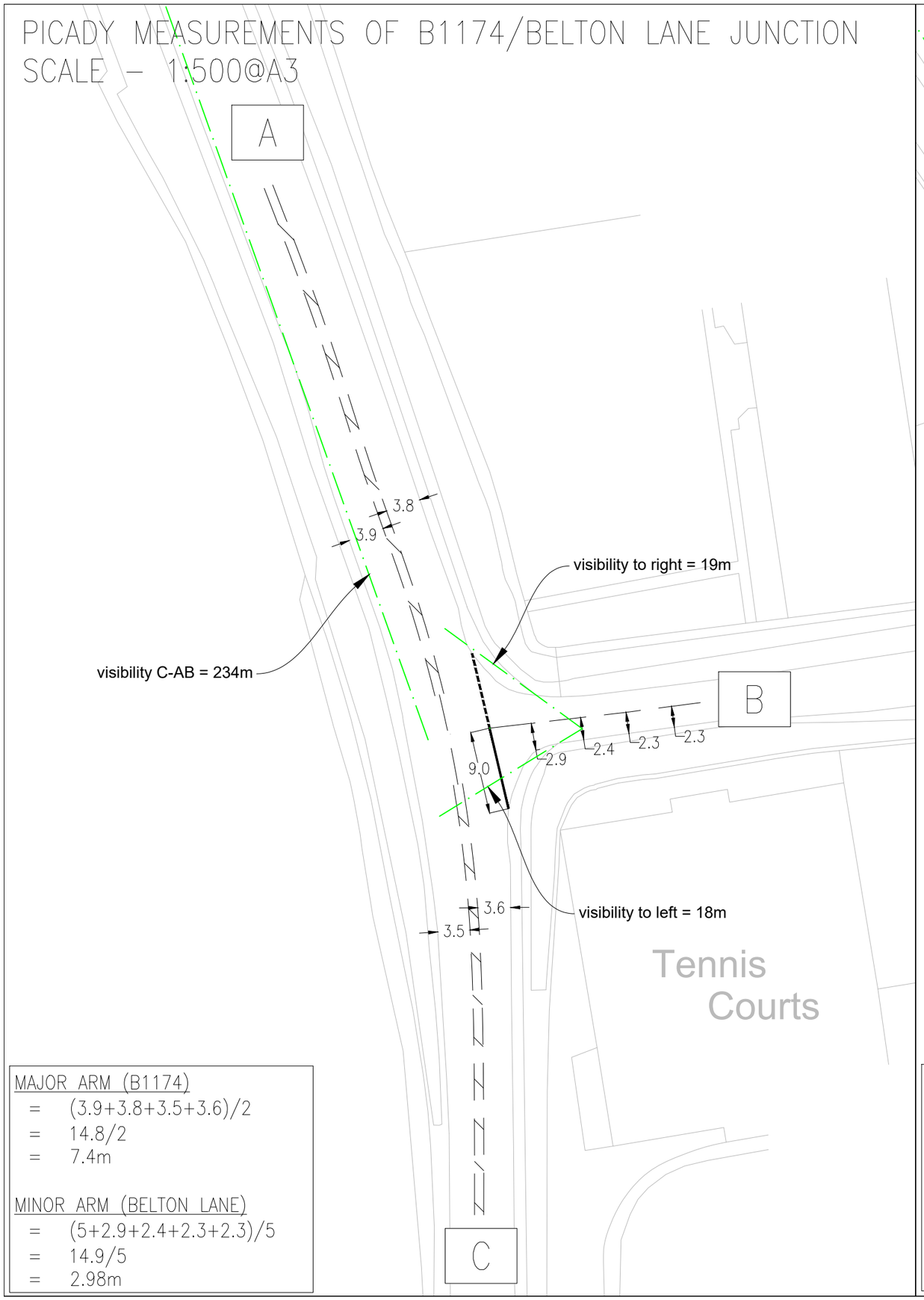
Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	467	0.012	5	0.0	7.806	A
B-A	168	447	0.376	170	0.6	13.046	B
C-AB	18	683	0.027	18	0.0	5.626	A
C-A	239			239			
A-B	257			257			
A-C	388			388			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	498	0.009	5	0.0	7.303	A
B-A	141	477	0.295	142	0.4	10.758	B
C-AB	14	677	0.021	14	0.0	5.603	A
C-A	201			201			
A-B	215			215			
A-C	325			325			

Appendix 7: B1174/Belton Lane Junction Measurements and Modelling Output Data

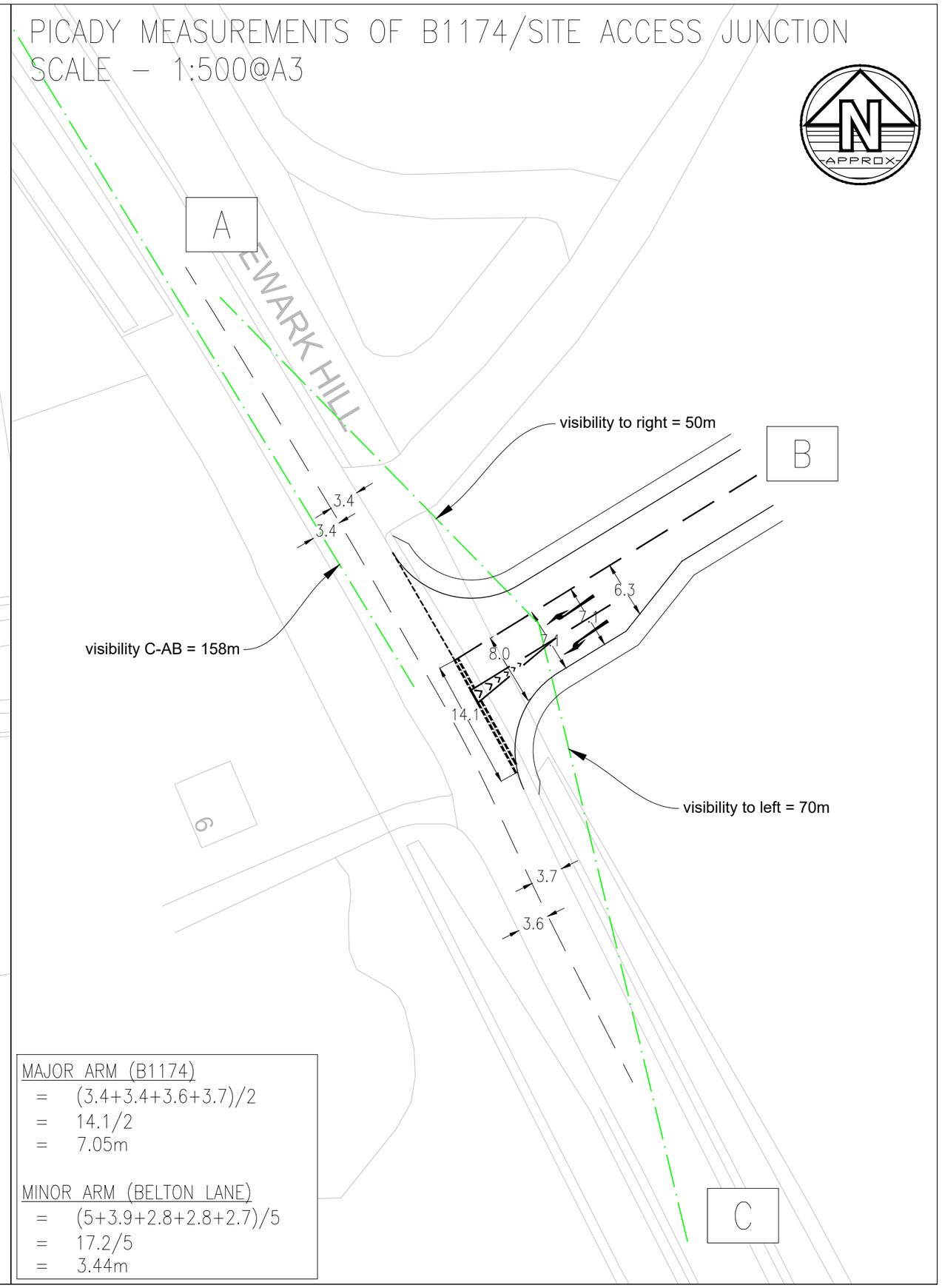
PICADY MEASUREMENTS OF B1174/BELTON LANE JUNCTION
SCALE – 1:500@A3



MAJOR ARM (B1174)
= (3.9+3.8+3.5+3.6)/2
= 14.8/2
= 7.4m

MINOR ARM (BELTON LANE)
= (5+2.9+2.4+2.3+2.3)/5
= 14.9/5
= 2.98m

PICADY MEASUREMENTS OF B1174/SITE ACCESS JUNCTION
SCALE – 1:500@A3



MAJOR ARM (B1174)
= (3.4+3.4+3.6+3.7)/2
= 14.1/2
= 7.05m

MINOR ARM (BELTON LANE)
= (5+3.9+2.8+2.8+2.7)/5
= 17.2/5
= 3.44m

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: Import of B1174_Belton Lane PICADY Model.j10
Path: J:\2023\232815-Hook Cliff Farm, Great Gonerby\ProjectDelivery\01-WIP\DesignAndCalculations\T&I Planning\Junction Modelling
Report generation date: 05/09/2023 14:14:26

»2024 SATURN Transferred Flows with Development, AM
»2024 SATURN Transferred Flows with Development, PM

Summary of junction performance

	AM								PM							
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	2024 SATURN Transferred Flows with Development															
Stream B-AC	D1	0.9	17.62	0.48	C	5.06	A	30 % [Stream B-AC]	D2	0.9	16.51	0.47	C	5.48	A	31 % [Stream B-AC]
Stream C-AB		0.8	7.03	0.36	A					1.2	9.40	0.47	A			

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Hook Cliff Farm, Great Gonerby
Location	B1174/Belton Lane Junction
Site number	
Date	24/08/2023
Version	
Status	(new file)
Identifier	MC
Client	Saint Land and Development
Jobnumber	232815
Enumerator	BWB\matt.corner
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
	✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 SATURN Transferred Flows with Development	AM	ONE HOUR	08:00	09:30	15
D2	2024 SATURN Transferred Flows with Development	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 SATURN Transferred Flows with Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B1174/Belton Lane	T-Junction	Two-way	Two-way	Two-way		5.06	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	30	Stream B-AC	5.06	A

Arms

Arms

Arm	Name	Description	Arm type
A	B1174 (N)		Major
B	Belton Lane		Minor
C	B1174 (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.40			234.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.98	18	19

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	492	0.084	0.213	0.134	0.304
B-C	635	0.091	0.231	-	-
C-B	709	0.258	0.258	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 SATURN Transferred Flows with Development	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	315	100.000
B		✓	169	100.000
C		✓	449	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	66	249
	B	106	0	63
	C	284	165	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	10
	B	0	0	0
	C	10	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.48	17.62	0.9	C
C-AB	0.36	7.03	0.8	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	439	0.290	126	0.4	11.443	B
C-AB	171	785	0.217	169	0.4	5.986	A
C-A	167			167			
A-B	50			50			
A-C	187			187			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	152	418	0.363	151	0.6	13.441	B
C-AB	218	802	0.272	218	0.5	6.336	A
C-A	185			185			
A-B	59			59			
A-C	224			224			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	186	390	0.477	185	0.9	17.394	C
C-AB	293	825	0.356	292	0.8	6.978	A
C-A	201			201			
A-B	73			73			
A-C	274			274			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	186	390	0.477	186	0.9	17.617	C
C-AB	294	826	0.356	294	0.8	7.031	A
C-A	201			201			
A-B	73			73			
A-C	274			274			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	152	418	0.363	153	0.6	13.647	B
C-AB	219	802	0.273	220	0.5	6.416	A
C-A	185			185			
A-B	59			59			
A-C	224			224			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	438	0.290	128	0.4	11.627	B
C-AB	171	785	0.218	172	0.4	6.050	A
C-A	167			167			
A-B	50			50			
A-C	187			187			

2024 SATURN Transferred Flows with Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	B1174/Belton Lane	T-Junction	Two-way	Two-way	Two-way		5.48	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	31	Stream B-AC	5.48	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024 SATURN Transferred Flows with Development	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	438	100.000
B		✓	178	100.000
C		✓	438	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	89	349
	B	65	0	113
	C	222	216	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	10
	B	0	0	0
	C	10	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.47	16.51	0.9	C
C-AB	0.47	9.40	1.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	468	0.286	132	0.4	10.677	B
C-AB	211	734	0.287	209	0.5	6.988	A
C-A	119			119			
A-B	67			67			
A-C	263			263			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	446	0.359	159	0.5	12.544	B
C-AB	266	740	0.360	266	0.7	7.758	A
C-A	127			127			
A-B	80			80			
A-C	314			314			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	196	414	0.473	195	0.9	16.312	C
C-AB	354	750	0.471	352	1.1	9.278	A
C-A	128			128			
A-B	98			98			
A-C	384			384			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	196	414	0.474	196	0.9	16.513	C
C-AB	354	751	0.472	354	1.2	9.396	A
C-A	128			128			
A-B	98			98			
A-C	384			384			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	445	0.359	161	0.6	12.727	B
C-AB	267	741	0.360	269	0.7	7.902	A
C-A	127			127			
A-B	80			80			
A-C	314			314			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	468	0.287	135	0.4	10.834	B
C-AB	211	734	0.288	212	0.5	7.091	A
C-A	118			118			
A-B	67			67			
A-C	263			263			