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1. INTRODUCTION

1.1 This Highways Technical Note (HTN) has been prepared by Paul Basham Associates on behalf of Endurance Estates Land Promotion Ltd (EELP) to outline the highways work undertaken to date as it relates to Land East of the Village Centre, Horsford. The Site forms a draft allocation in the emerging Horsford Neighbourhood Plan (Regulation 14 Version October 2025), under Policy SS2A, for a community hub building and a facilitating residential scheme of approximately 300 dwellings (the 'proposed development'). This HTN includes a summary of the pre-application engagement undertaken with Norfolk County Council (NCC) Highway Authority including traffic surveys and junction modelling assessments undertaken.

1.2 Following this introduction, this HTN is structured as follows:

- **Chapter 2 Hosford Neighbourhood Plan Regulation 14:** outlines the relevant transport and access comments raised by NCC Highway Authority:
- **Chapter 3 Summary of Highways Pre-Application Engagement:** provides a summary of the pre-application engagement undertaken with NCC Highway Authority;
- **Chapter 4 Land East of the Village Centre Proposal Summary:** provides an overview of the proposed residential development including quantum and access strategy for active travel and vehicles;
- **Chapter 5 Summary of Future Works to Support a Planning Application:** provides an overview of the expected next steps to be undertaken as part of preparation for the planning application for the residential development.

2. HORSFORD NEIGHBOURHOOD PLAN REGULATION 14

2.1 Regulation 14 consultation on the Horsford Neighbourhood Plan took place from 16th October to 27th November 2025. Land East of the Village Centre is identified in the Horsford Neighbourhood Plan Regulation 14 version under Policy SS2A and as shown in Figure 1.

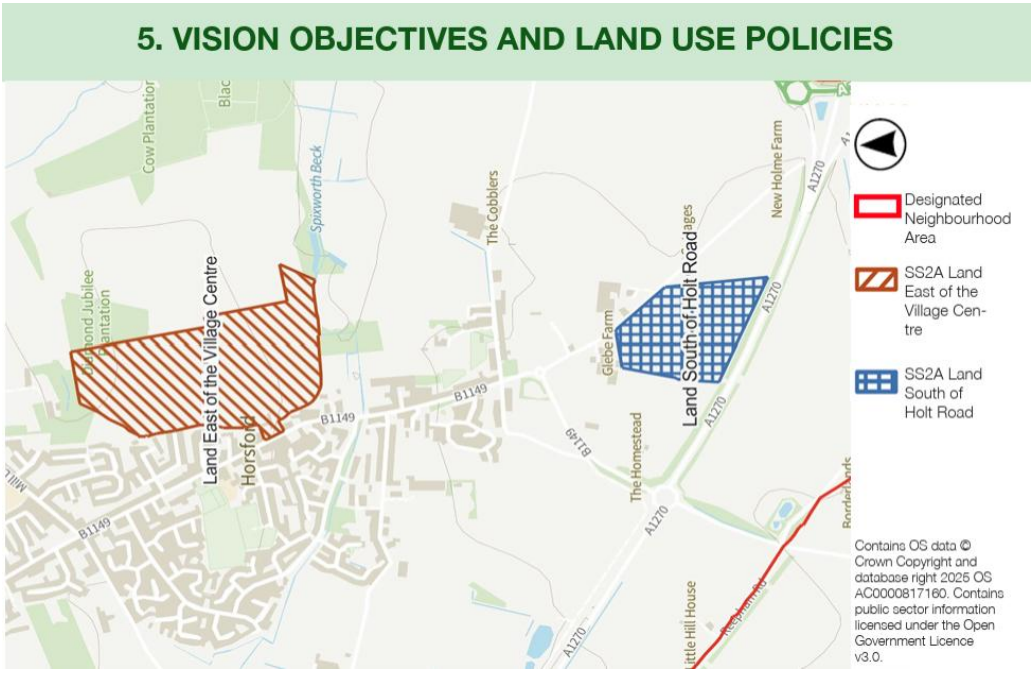


Figure 1: Extract from Horsford Neighbourhood Plan Regulation 14 - Fig 3. SS2A. New Development Map

2.2 Figure 2 within the Horsford Neighbourhood Plan includes a Development Principles Plan for the site as shown below within Figure 2.

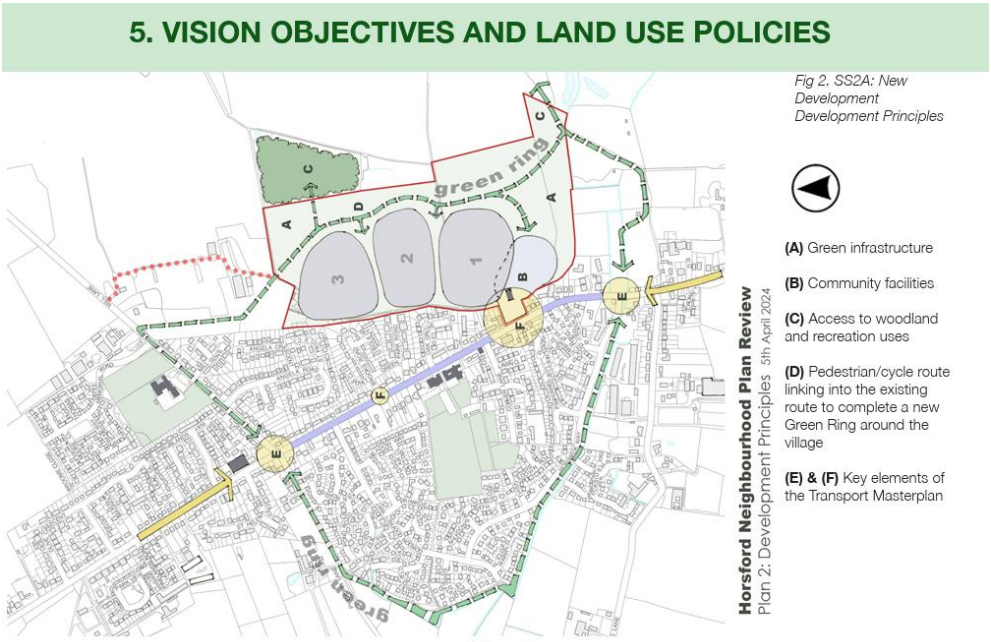


Figure 2: Extract from Horsford Neighbourhood Plan Regulation 14 – Fig 2. SS2A: New Development: Development Principles

2.3 NCC Highway Authority provided comments on the Horsford Neighbourhood Plan (Reg 14) document dated 27th November 2025. The main comments raised were:

- *'The policy should reflect that 2 points of access will be required. At this time, it is not certain that a suitable safe access can be achieved at location F. Further evidence should be gathered to determine if a safe access can be delivered to the satisfaction of the Highway Authority'*; and
- *'Given the scale the policy should make clear that a Transport Assessment will be required to support any future planning application'*

2.4 NCC Highway Authority also provided comments on the land south of Holt Road (Sports Facilities) which includes the following comment outlined below. However, it is noted that a separate Technical Note has been produced to discuss the sports facility site:

- *'This site is remote with no active travel provision. Unless this can be secured to link to existing provision, there is a highway objection to the proposed allocation'.*

2.5 NCC Highway Authority comments on the Horsford Neighbourhood Plan (Regulation 14) are provided within **Appendix A**.

2.6 Therefore, this HTN provides further information regarding the access strategy including the primary site access and secondary/emergency site access as well as the active travel strategy as it relates to the main site east of the Village centre. This includes preliminary design of the primary site access. Details are also discussed within this HTN outlining the scope of work undertaken in preparation for the Transport Assessment that would be required to support any future planning application on the site.

3. PRE-APPLICATION SUMMARY

3.1 Pre-application engagement was undertaken with NCC Highway Authority with a Pre-Application Scoping Note (PASN) produced and submitted in May 2025 (attached within Appendix B). A meeting was undertaken in June 2025 with a NCC highway officer, with the written email response also provided in June 2025 (Appendix C). Further correspondence was undertaken with the highway officer up to November 2025 regarding the residential site (provided as email correspondence also attached within Appendix C).

3.2 For the pre-application with NCC highway officer the proposed development included the following:

- Proposed Site Access/Holt Road T-junction with 2m footways on either side of the site access connecting to the footways on Holt Road;
- Proposal for a pedestrian/cycle connection to Mill Lane;
- Proposal for a pedestrian/cycle connection to Green Park Road;
- Proposal for the secondary/emergency access to be provided via Green Park Road;
- Discussion of off-site mitigation in terms of active travel improvements;
- Assessment for 300 dwellings in terms of forecast multi-modal trip generation;
- Forecast vehicle distribution and assignment;
- Summary of traffic surveys undertaken; and
- Junction capacity assessments

3.3 The main comments from NCC on the pre-application were:

- The proposed priority junction onto Holt Road would be acceptable;
- Visibility splays onto Holt Road should be provided in accordance with recorded observed 85th percentile speeds.
- If a connection to Green Park Road is proposed, a suitable turning head should be provided;
- Existing footways along Green Park Road to be widened;
- If Green Park Road is to be promoted as an active travel corridor, facilities will be required along Holt Road to provide pedestrian and cycle connectivity to Horsford CofE Primary School, the village hall, sports facilities and playground;
- Investigation to provide a shared use footway/cycleway along the east of Holt Road, upgrading the existing zebra crossing to a toucan and providing necessary shared use facility on the western side;

- Facilities/routes should be LTN 1/20 compliant;
- Formal crossing points should be provided along Holt Road;
- Public transport connections to be considered and shelters and real-time information should be provided;
- It is forecasted around 32% of the proposed development traffic heading south will head toward the Brewery Lane/Reepham Road/Drayton Lane roundabout. Consequently, the Brewery Lane/Reepham Road/Drayton Lane roundabout should be modelled;
- Should the modelling result in any junction having an RFC greater than 0.85, the junction will need mitigation to ensure it stays within capacity; and
- Any future application should be supported with a Stage 1 Road Safety Audit for off-site highway works.

3.4 It is noted that the highway officer also commented that '*in lieu of a second point of access being provided the internal layout should be provided with a loop road of appropriate standard (minimum 6m width). The initial section of road between Holt Road and the internal loop road should be 6.5m wide*'. However, it is noted that the secondary access is proposed to act as an active travel access and an emergency access point.

3.5 Therefore, this HTN provides further information regarding the access strategy including the primary site access and secondary/emergency site access as well as the active travel strategy. This includes preliminary design of the primary site access including visibility splays and swept path analysis (vehicle tracking).

4. LAND TO THE EAST OF THE VILLAGE CENTRE PROPOSAL SUMMARY

Access Design

Primary Access

4.1 As outlined previously, the proposed primary access arrangement has been agreed with the LHA in the form of a priority T-junction onto Holt Road. The site access measures 6m in width and previously had 2m footways on either side of the access carriageway connecting to the existing pedestrian infrastructure along Holt Road. However, following discussions with NCC, the active travel design has been updated to include a 3m wide shared footway/cycleway on the southern side of the access carriageway, as shown within **Figure 3** and **Appendix D**. The site access has also been adjusted to the south to accommodate a landscaping buffer to the north of the site access and the residential dwelling. This is considered to be in line with the NCC Highway Authority comments received stating that the '*initial section of road between Holt Road and the internal loop road should be 6.5m wide*'.

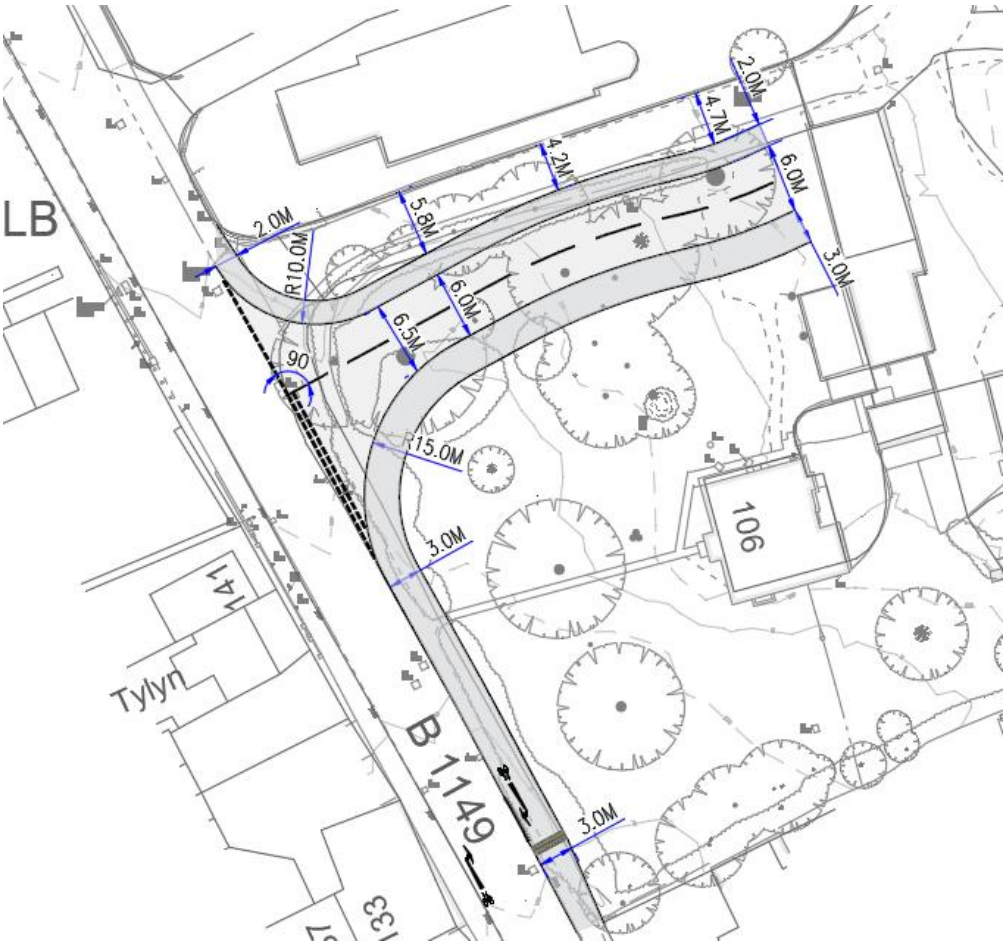


Figure 3: Holt Road/Site Access T-Junction Access Design

4.2 The site access is supported by a 10m radii on the northern side of the access and 15m radii on the southern side of the access to ensure a refuse vehicle and enter and exit the site without obstructing vehicle movements travelling in the opposite direction along Holt Road and allowing for a car to pass simultaneously, as shown in **Appendix C** with the swept path analysis (vehicle tracking).

4.3 NCC Highway Authority agreed during the pre-application discussions that the access location would be acceptable and stated in their response "*A priority junction onto Holt Road would be acceptable*" (**Appendix C**). Additionally, NCC stated "*In lieu of a second point of access being provided the internal layout should be provided with a loop road of appropriate standard (minimum 6m width). The initial section of road between Holt Road and the internal loop road should be 6.5m wide*". The proposed site access arrangement has been designed to incorporate NCC Highway Authority comments and therefore is considered acceptable. Therefore, the comments on the Horsford Neighbourhood Plan regulation 14 which stated *'At this time, it is not certain that a suitable safe access can be achieved at location F'* is considered to be resolved and accepted by NCC Highway Authority.

4.4 Visibility splays have been assessed from the proposed site access considering the 85th percentile speeds (as requested by NCC (**Appendix C**)) recorded during the Automatic Traffic Count (ATC) survey undertaken between 27th June to 3rd July 2024 along Holt Road which are summarised in **Table 1** along with the recorded vehicle flows.

	85th Percentile Speed	24-hour traffic flows
Northbound	30.5mph	6089
Southbound	31.3mph	6010

Table 1: ATC Survey Summary

4.5 Visibility splays of 2.4m x 50m are required in the primary direction and 2.4m x 48.1m in the secondary direction. Visibility splays are achievable from the proposed site access all within highway land (based on the Highways Boundary Mapping received from Norfolk County Council), as shown within **Appendix A**. Therefore, this is considered in line with NCC Highway Authority comments (**Appendix C**) outlined in chapter 2 as visibility has been shown to be achievable to the 85th percentile speeds from the proposed access location.

Secondary / Emergency Access

4.6 As outlined above, NCC stated "*In lieu of a second point of access being provided the internal layout should be provided with a loop road of appropriate standard (minimum 6m width). The initial section of road between Holt Road and the internal loop road should be 6.5m wide*". It is proposed that a secondary access onto Green Park Road acts as an active travel access and emergency access. During the pre-application discussions with NCC Highway Authority, it was confirmed that this would be suitable as long as a turning head was provided and enhancements to the existing footway widths along Green Park Road were provided. Therefore, the access strategy in terms of primary and secondary/emergency access is considered to be acceptable.

Pedestrian and Cycle Connections

4.7 In terms of proposed pedestrian and cycle connections, as outlined above a shared footway/cycleway measuring 3m in width is proposed along the site access carriageway which connects to the existing infrastructure along Holt Road. A cycle transition is proposed for cycles to join the carriageway along Holt Road.

4.8 A pedestrian and cycle connection is proposed to connect the site to Green Park Road, with existing pedestrian footways along Green Park Road. The existing footways along Green Park Road are to be investigated regarding the NCC comment in relation to widening of the existing footways. Based on the available highway boundary provided by NCC Highway Authority and the initial investigation, it would appear there is sufficient land available to increase the width of the existing footway along sections of Green Park Road and would be fully investigated as part of the preparation of the planning application for the proposed development.

4.9 Mill Lane to the north of the site is proposed to include a pedestrian and cycle connection provided between the site to facilitate sustainable travel movements between Horsford Primary School. The footway/cycleway connection between the site and Mill Lane would be provided alongside Juniper Way with ongoing discussions with the land owner. NCC were agreeable to this connection to enhance sustainable subject to connections being achievable through the require land agreement.

Off-site Highways Works

4.10 During pre-application discussions with NCC Highway Authority it was requested that sustainable travel enhancements are provided along Holt Road, Green Park Road and Mill Lane.

4.11 It was requested by NCC that a shared footway/cycleway was provided at the site access with a suitable crossing and additional shared footway/cycleway provided to allow cyclists travelling north to have an offroad route and not have to utilise the T-junction from the site on-road. This option is still to be fully explored but from a review of the available highway boundary mapping from Norfolk County Council a shared footway/cycleway is likely unachievable to the north of the proposed site access given the existing constraints in relation to the available highway boundary and location of existing properties. Therefore, an alternative cycle route via Green Park Road will be explored for those travelling by cycle to facilities and amenities within Horsford.

4.12 In terms of Green Park Road, NCC suggested the following should be considered:

- Existing footways along Green Park Road to be widened; and
- If Green Park Road is to be promoted as an active travel corridor, facilities will be required along Holt Road to provide pedestrian and cycle connectivity to Horsford Church of England Primary School, the village hall, sports facilities and playground.

4.13 As Green Park Road and Brooks Road are subject to a 20mph speed limit and support a small number of residential units (meaning vehicle flows are likely low) the route is suitable for on-road mixed traffic cycling (in line with LTN 1/20 guidance). Therefore, the proposed development would look to accommodate cycling on-road along Green Park Road and connect into a shared footway/cycleway from Brooks Road toward the local facilities and amenities along Holt Road if this can be achieved within highway land.

4.14 In addition, investigation into the potential upgrade of the existing Zebra Crossing located adjacent to the Horsford Church of England VA Primary School to a parallel crossing for pedestrians and cycles would be undertaken as part of the preparation of the planning application.

4.15 Additionally, it would be considered whether there is scope to provide a shared footway/cycleway from Brooks Road north to Mill Lane and if achievable, provide an upgraded crossing at the existing Zebra crossing circa 16m south of the Mill Lane junction.

4.16 The proposed development would also investigate a connection from the site to Mill Lane via Juniper Way through the potential provision of a shared footway/cycleway from the site to Horsford Primary School and upgrade the existing Zebra crossing to a toucan crossing for pedestrians and cycles.

4.17 The potential active travel improvements between the site and Mill Lane via Juniper Way has been considered based on available information. This includes the land ownership information provided for Juniper Way, adopted highway boundary and physical constraints. Further discussions are required with NCC Highway Authority to discuss the active travel design. However, it is considered that an active travel connection for pedestrians and cycles would be achievable between the site and Mill Lane via Juniper Way based on the available information set out below.

4.18 **Figure 4** provides an overview of the active travel route between the site and Mill Lane to provide a connection to Horsford Church of England Junior School. **Figure 5** identifies the red line boundary indicating the area available within the Applicants land ownership which could provide an active travel connection between the site and Mill Lane. **Figure 6** provides an overview of the proposed five residential units to the south of the existing Juniper Way carriageway which has a 3m wide area along the eastern boundary safeguarded for the provision of an active travel route.



Figure 4: Overview of Juniper Way Active Travel Connection

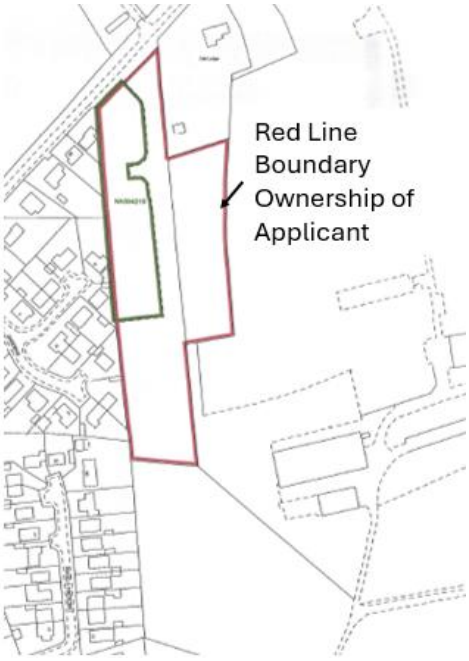


Figure 5: Red Line Boundary Ownership of Applicant

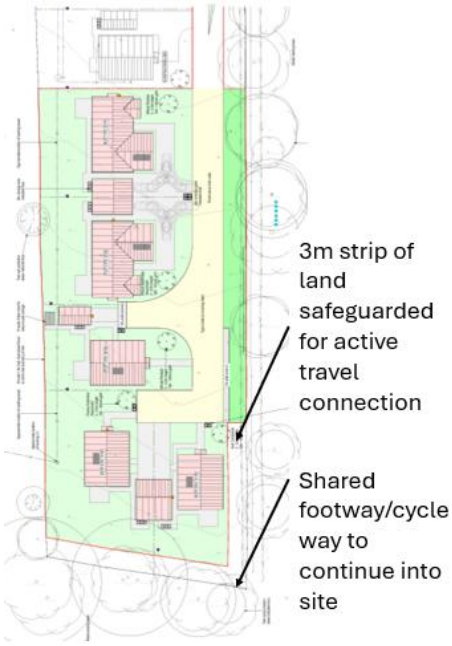


Figure 6: Overview '2024/3801' for Five Dwellings

4.19 Further to these active travel improvements (which are subject to design review and the further investigation into available highway boundary along Mill Lane), there is scope for the proposed development to provide enhancement to the existing bus stops surrounding the site such as sheltered seating and real-time information to make public transport more attractive and accessible.

4.20 In terms of sustainable travel options to the south of the site towards SS2A South of Holt Road (Sports facilities), this will be considered and is set out in a separate Technical Note. However, an overview of the expected route to be investigated from the area under Policy SS2A towards SS2A South of Holt Road (Sports facilities) is shown in **Figure 7**.

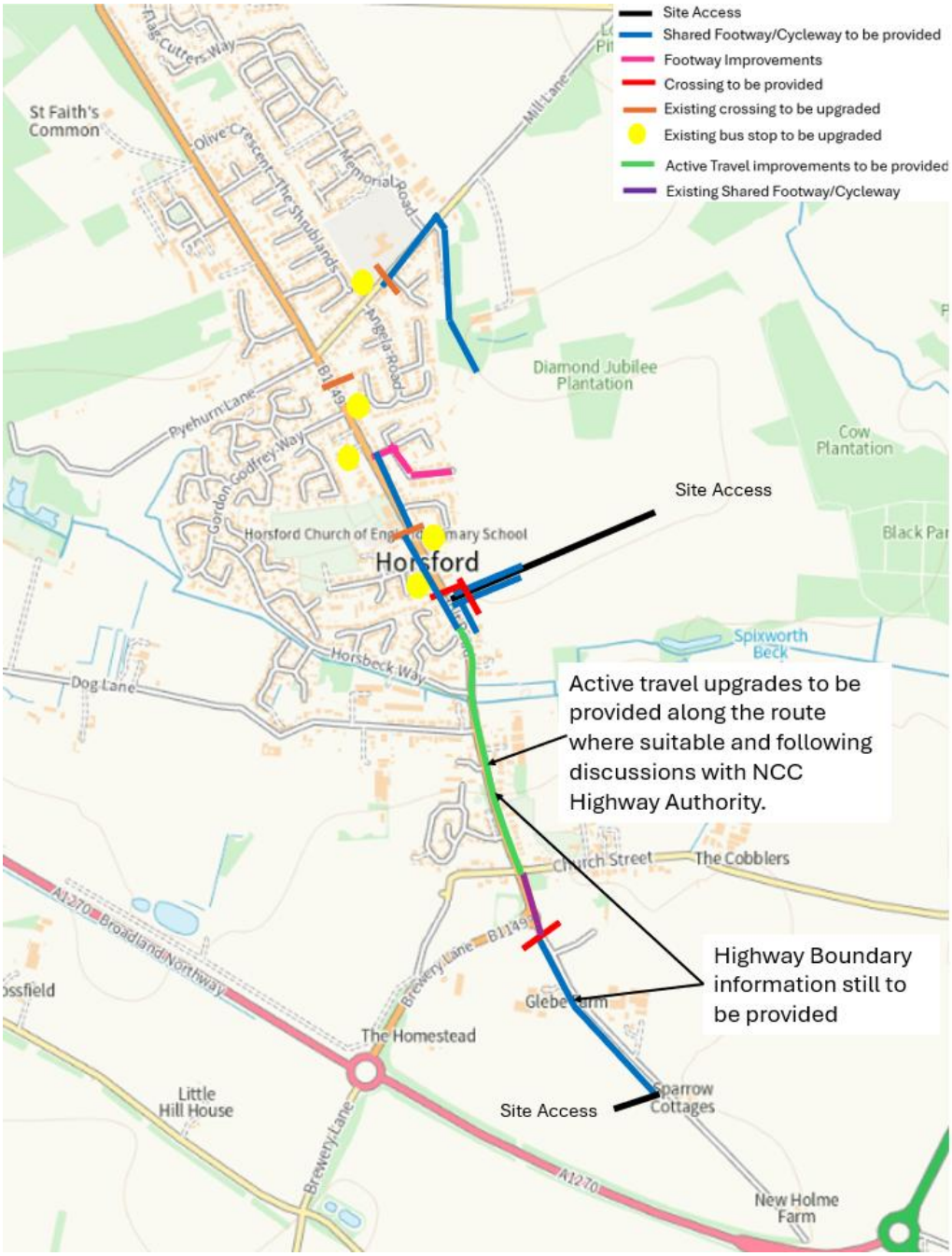


Figure 7: Overview of the Active Travel Routes including those towards SS2A South of Holt Road (Sports facilities)

Trip Generation and Junction Modelling

Trip Generation

4.21 The TRICS database has been utilised to identify relevant vehicle trip rates to understand the likely vehicle movements of the proposed development. The TRICS V7.11.2 database has been utilised with the following criteria:

- Land Use Category 'Residential', 'Houses Privately Owned';
- 'Edge of Town' location;
- Sites in East Anglia;
- Weekdays only;
- Multi-modal trips;
- 150 – 500 units.

4.22 The TRICS outputs and proposed trip generation for 300 units are summarised in **Table 2**.

	AM Peak Hour (08:00-09:00)		PM Peak Hour (17:00-18:00)		Daily (12 hours)
	Arrivals	Departures	Arrivals	Departures	
Trip Rate (per dwelling)	0.169	0.328	0.311	0.167	4.328
Trip Generation (300 units)	51	98	93	50	1298

Table 2: Proposed Development Vehicle Trip Generation

4.23 As summarised in **Table 2**, the proposed development is forecast to generate 149 two-way vehicle movements in the AM peak hour, 143 movements in the PM peak and up to 1298 vehicle movements over a daily period, equating to approximately 108 vehicle movements per hour daily.

4.24 NCC Highway Authority stated the vehicle trip rates appeared sensible and should be utilised site-wide at the time of pre-application. Therefore, it is considered the TRICS assessment is suitable to utilise for a future planning application to forecast the vehicle movements associated with the proposed development.

Vehicle Distribution

4.25 To forecast the vehicle trip distribution of the proposed development, the 2011 Census Data 'Location of usual residence and place of work by method of travel to work' (WU03EW) have been utilised. Middle Super Output Area (MSOA) E02005523: Broadland 004 has been utilised to represent residents at the proposed development, and place of work included all MSOAs. These were assessed to determine the distribution and assignment of vehicles on the local highway network.

4.26 The forecast vehicle distribution identifies 16% of vehicles to travel to/from the north of the site along Holt Road with the remaining 84% of vehicles travelling to/from the south of the site along Holt Road.

4.27 As 84% of development trips travel South of Holt Road, based on the vehicle distributions, all 84% also utilise the Holt Road/Brewery Lane Roundabout and A1270/Drayton Lane/Brewery Lane Roundabout, meaning junction capacity assessments were undertaken based on the distributions.

4.28 During pre-application engagement NCC Highway Authority confirmed the use of 2011 census to forecast vehicle distribution were acceptable (confirmed within email correspondence).

Junction Modelling

4.29 As part of the works completed, the following junctions have been assessed in terms of junction modelling assessments and traffic surveys undertaken:

- Site Access/Holt Road T-Junction;
- Holt Road/Brewery Lane Roundabout; and
- A1270/Drayton Lane/Brewery Lane Roundabout.

4.30 Following pre-application engagement with NCC Highway Authority, it was also requested that the Reepham Road/Drayton Lane Roundabout was also assessed in terms of junction modelling. Therefore, traffic surveys (Manual Classified Counts and ATC surveys) were undertaken in September 2025 and junction modelling was undertaken.

4.31 NCC Highway Authority confirmed no further modelling of the Norwich Distributor Road (NDR) Western Link junctions was required at this time as the proposed NDR is not going ahead at this stage.

4.32 The junction modelling assessments was undertaken for the following scenarios:

- 2024 Baseline (2025 for Reepham Road/Drayton Lane)
- 2035 Baseline
- 2035 Baseline + Proposed Development

4.33 It is noted that a 10-year forecast from the baseline assessment was agreed via email correspondence with NCC, Therefore, the junction modelling results discussed below relate to a baseline of either 2024 or 2025 when the traffic surveys were undertaken, and a future year assessment of 2035.

Summary of Junction Modelling Results

4.34 The capacity of the junction has been assessed using Junctions 9 software which provides a Ratio of Flow to Capacity (RFC) value, which identifies what proportion of each approach total capacity is currently being utilised. RFC values below 0.85 are considered to be operating within design capacity, RFC values between 0.85 and 1.0 are considered to be operating above design capacity but within theoretical capacity and to be approaching capacity of that approach to the junction, with an RFC value greater than 1.0 is considered to be operating above theoretical capacity. All junction modelling AM and PM peak hours relate to the network AM and PM peak hours of 08:00-09:00 and 17:00-18:00 respectively (unless stated otherwise).

4.35 In NCC's highways response it was stated that *"Should the modelling result in any junction having an RFC greater than 0.85, the junction will need mitigation to ensure it stays within capacity".*

Site Access

4.36 In terms of the results of the junction capacity assessments, there are no capacity concerns relating to the site access which is forecast to operate with a maximum RFC of 0.33 on Holt Road (South) during the PM peak hour.

Holt Road/Brewery Lane Roundabout

4.37 The Holt Road/Brewery Lane Roundabout the maximum RFC forecast is 0.84 on the Holt Road South approach in the 2035 + Proposed Development scenario in the PM peak hour. This is an increase of RFC by 0.07 from the proposed development and therefore it is not forecast that the proposed development would have a significant impact on the operation of the Holt Road/Brewery Lane Roundabout.

Brewery Lane/A1270/Drayton Lane Roundabout

4.38 The Brewery Lane/A1270/Drayton Lane Roundabout is forecast to operate within design and theoretical capacity with a maximum RFC value of less than 0.85 on all approaches in

all scenarios in both the AM and PM peak hours. The maximum RFC forecast is 0.73 on the Brewery Lane approach in the 2035 + Proposed Development scenario.

Reepham Road/Drayton Lane Roundabout

4.39 The Reepham Road/Drayton Lane Roundabout was modelled and is forecast to operate with an RFC above 1 at baseline 2035 scenario. With the additional of the proposed development, the RFC increases to 1.10 in 2035 + proposed development (addition of 0.03 from the baseline 2035 scenario). Therefore, mitigation at the Reepham Road/Drayton Lane Roundabout would be required without the addition of the proposed development. The proposed development could investigate potential improvements to improve the capacity at the Reepham Road/Drayton Road Roundabout. However, the forecast increase in maximum RFC of 0.03 is not considered to represent a severe impact in relation to paragraph 116 of the NPPF, which states that *'development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation would be severe, taking into account all reasonable future scenarios'*.

4.40 Sensitivity testing and further scenario testing was not requested by NCC at the time of pre-application.

4.41 Therefore, based on the results, there is potentially a need to consider mitigation at the Reepham Road/Drayton Lane Roundabout to support a future planning application as the forecast RFC is above 0.85.

5. SUMMARY OF FUTURE WORKS TO SUPPORT A PLANNING APPLICATION

5.1 To support a future planning application for a community building and approximately 300 dwellings a Transport Assessment and Travel Plan would be provided to support the application.

5.2 As part of any future planning application, as requested by NCC, a Stage 1 Road Safety Audit would be undertaken for the site access on to Holt Road. In addition, any proposed off-site highways work would also be subject to a Stage 1 Road Safety Audit.

5.3 As requested by NCC, visibility splays have been provided from the site access in accordance with 85th percentile speeds. The visibility splays provided within **Appendix D** are identified based on the recorded 85th percentile speeds and would be provided to support a Stage 1 RSA and future planning application.

5.4 In terms of the off-site highway's improvements, future investigation is required to ensure where feasible a shared footway/cycleway is provided along Holt Road adjacent to the site location, including potential crossing upgrades to support cycle movements and for the footways along Green Park Road to be widened where feasible. The further investigation into the off-site works is proposed to be undertaken as part of the preparation for the planning submission, with relevant drawings and proposals included within the supporting Transport Assessment.

5.5 As part of the off-site works, investigation into whether there is scope to provide a turning head along Green Park Road to ensure an emergency access to the site can be achieved in this location.

5.6 Similarly, it will need to be investigated whether there is scope to provide a pedestrian and cycle connection through Juniper Way which will require discussions with third party landowners.

5.7 Based upon the junction capacity assessments, further discussions with NCC Highway Authority regarding the junction modelling results of the Reepham Road/Drayton Lane Roundabout to support a future planning application.

Appendix A

Norfolk County Council

Norfolk County Council Comments on the: Horsford Neighbourhood Plan (Reg 14) 27 November 2025

1. Preface

1.1. The officer-level comments below are made without prejudice, the County Council reserves the right to make to any further comments the County Council may have on future iterations of the emerging Neighbourhood Plan.

1.2. The County Council welcomes the opportunity to comment on the emerging Neighbourhood Plan and recognises the considerable amount of work and effort which has been put into developing the Plan to date.

2. General Comments

2.1. The County Council has issued guidance to assist neighbourhood planning groups throughout the neighbourhood planning process.

2.2. In general, the direction of the Plan is understood, and the ambition to bring forward community and active travel benefits is recognised. However, several areas would benefit from further clarification to ensure deliverability and alignment with strategic obligations.

2.3. Policy INF1 sets out expectations for developer contributions, and it would be helpful for the Parish Council to clarify the evidence supporting the overall scale of obligations. The plan combines a significant allocation in SS2A with a wide range of accompanying requirements including a sports hub, community hub space, green infrastructure, and active travel links. Without a viability appraisal it is difficult to understand whether these cumulative expectations are realistically achievable alongside the statutory contributions necessary for education and other county services. Acknowledging how viability will be assessed at planning application stage would assist in ensuring that local aspirations do not unintentionally constrain the delivery of essential strategic infrastructure.

2.4. The level of growth proposed under Policy SS2A will create additional demand for education places across the primary and secondary phases. Horsford does not have a secondary school, so additional pupil yield arising from the development is likely to require Home to School Transport mitigation. This is an important consideration for any future planning application, and early engagement with the education authority is encouraged to ensure that the scale and timing of required contributions are fully understood. The plan also refers to pressure on the existing primary sites, and it would be helpful for the Parish Council to continue to liaise with Norfolk County Council to ensure that any expectations around school estate changes are consistent with the County's

wider education strategy.

2.5. The Neighbourhood Plan's Policy COM2 includes support for the retention and improvement of early years provision. This is a positive inclusion, but the long-term alignment of early years provision with local sufficiency assessments will need to be confirmed by the education authority. Continued dialogue will help ensure that any planning-related protection of premises is compatible with future service delivery requirements.

2.6. Taken together, these points emphasise the importance of ensuring consistency between the scale of development set out in SS2A, the infrastructure expectations in INF1, and the statutory responsibilities held at county level. Greater clarity on viability, education impacts, and the timing of mitigation would strengthen deliverability and help avoid future conflicts between neighbourhood-level aspirations and strategic service needs.

2.7. Finally, there are Areas that Could Become of Importance to Biodiversity (ACB) adjacent to the proposed allocation site. Here is a link to the Norfolk Local Nature Recovery Strategy (LNRS): Local Nature Recovery Strategy - Norfolk's Local Nature Recovery Strategy - Norfolk County Council. The policy should include reference to considering these ACBs to ensure alignment with wider environmental objectives.

3. **Lead Local Flood Authority**

3.1. Thank you for your consultation on the Horsford Neighbourhood Plan 2025 - 2038 Regulation 14 Version October 2025 and supporting documents received by the LLFA on 31st October 2025 (LLFA Ref: FW2025_0831). The LLFA note that we previously provided comments via NCC's Corporate Response on a Call for Sites consultation relating to the Horford Neighbourhood Plan (LLFA Ref: FW2023_1099), as well to the original Neighbourhood Plan adopted in 2018 which we understand is now in the process of being reviewed and updated.

3.2. The LLFA comments at Regulation 14 review stage are as follows:

3.3. The LLFA welcomes that the Horsford Neighbourhood Plan 2025 - 2038 Regulation 14 Version October 2025 and its proposed policies makes reference to sustainability and the need for new developments to adapt to climate change. However, we note that no references have made in the Regulation 14 document to the consideration and implications of flooding upon new developments from sources including surface water, groundwater or fluvial flooding. Policy SS2A: New Development, Policy HBE2: Horsford Design Code, Policy ENV1: Green Infrastructure Network and Policy ENV2: Local Green Space and their supporting text, are identified as being of the most relevance to matters for consideration by the LLFA.

3.4. Whilst the LLFA notes the Regulation 14 document states that policies have only been included where they are not already covered in other Development Plan documents, however the LLFA would welcomes references be included (either as part of existing relevant policies or within a dedicated policy), to the importance of the consideration of flood risk from all sources when considering the acceptability of new developments, along with highlighting the benefits of the inclusion of Sustainable Drainage Systems (SuDS) within development proposals. Given that the Parish of Horsford also has an Environment Agency Main River (Spixworth Beck) passing through it, areas covered by Flood Zones 2 and 3 and a number of Ordinary Watercourses, reference to these along with the inclusion of mapping identifying the location of these features would also be welcomed.

3.5. The LLFA welcome references to the Horsford Neighbourhood Plan Regulation 14 Document complimenting Strategic Policies included within the Greater Norwich Local Plan (GNLP), Broadland Development Management Development Plan Document (DPD), three Norfolk Minerals and Waste DPDs and the National Planning Policy Framework (NPPF).

3.6. The LLFA are not aware of AW DG5 records within the Parish of Horsford, however, this will need to be confirmed with/by Anglian Water.

3.7. The LLFA recommend reference be made to the 'Norfolk County Council LLFA Statutory Consultee for Planning: Guidance Document within the Neighbourhood Plan (the most relevant updated version depending on the timeframe for the preparation and adoption of the final Neighbourhood Plan document) regarding surface water risk and drainage for any allocated sites or areas of proposed development, available from the "Information for developers" section of the Norfolk County Council website.

3.8. According to LLFA datasets (extending from 2011 to present day) we have 7 no. records of internal flooding and 13 no. records of external/anecdotal flooding in the Parish of Horsford. The LLFA highlight the importance of considering surface water, groundwater and flooding from ordinary watercourses within the Neighbourhood Plan in the best interest of further development in the area. We note that all external flood events are deemed anecdotal and have not been subject to an investigation by the LLFA.

3.9. We advise that Norfolk County Council (NCC), as the LLFA for Norfolk, publish completed flood investigation reports here.

3.10. According to Environment Agency datasets, there are areas of localised surface water flooding (ponding), as well as surface water flowpaths present within the Parish of Horsford.

3.11. The LLFA note that no flood risk mapping has been included in the neighbourhood plan document. The LLFA recommend that mapping be provided for all sources of flooding, with any mapping covering the entirety of the Neighbourhood Plan Area. Information on this and associated tools/reference documents can be found at:

- GOV.UK – Flood map for planning
- GOV.UK – Check your long term flood risk
- Norfolk County Council (NCC) – Flood and Water Management Policies
- Norfolk County Council (NCC) – Lead Local Flood Authority (LLFA) Statutory Consultee for Planning: Guidance Document

3.12. **Allocation of Sites**

3.13. We would expect that the Neighbourhood Planning Process provide a robust assessment of the risk of flooding, from all sources, when allocating sites. Whilst the LLFA note that 2 no. housing allocation sites (as part of wider mixed-use development schemes) have been included as part of the Horsford Neighbourhood Plan under Policy SS2A: New Development, and it is noted by the LLFA that these sites formed part of a number of sites for part of the Call for Sites consultation, it is not evident to the LLFA the extent to which this has been undertaken in respect of these two site allocations (and whether this has been based on the most up to date mapping). If a risk of flooding is identified then a sequential test, and exception test where required, should be undertaken. This would be in line with Planning Practice Guidance to ensure that new development is steered to the lowest areas of flood risk. However, any allocated sites will also still be required to provide a flood risk assessment and / or drainage strategy through the development management planning process.

3.14. **LLFA Review of Local Green Spaces (LGS)**

3.15. The document proposes 7 no. Local Green Spaces which are identified in Policy ENV2: Local Green Space and Figure 11. It is understood that designation of LGSs provides a level of protection against development. The LLFA do not normally comment in LGSs unless they are/are proposed to be part of a SuDS or contribute to current surface water management/land drainage. If it is believed that a designated LGS forms part of a SuDS or contributes to current surface water management/land drainage, this should be appropriately evidenced within the submitted Neighbourhood Plan. The LLFA have no comments to make on the proposed LGSs in the plan.

3.16. Should you have any queries with the above comments please contact the Lead Local Flood Authority at llfa@norfolk.gov.uk.

4. **Minerals and Waste**

4.1. NCC as the Minerals and Waste Planning Authority, have the following comments to make about the Horsford Neighbourhood Plan Reg 14 Consultation:

4.2. Section 3 ‘Planning Policy Context’

4.3. Paragraph 5 refers to the three Norfolk Minerals and Waste DPDs. These DPDs were replaced by one Norfolk Minerals and Waste Local Plan in May 2025, therefore the end of paragraph 5 needs to be amended to state: “…and the Norfolk Minerals and Waste Local Plan.”

4.4. Paragraph 11 - the title of the Norfolk Minerals and Waste Local Plan 2023-2038 needs correcting (it currently states ‘Waste and Minerals’ in the Neighbourhood Plan). It would also be helpful if a link to the Mineral Safeguarding Area maps could be provided within the Neighbourhood Plan. The link to the Norfolk Minerals and Waste Local Plan is: https://norfolk.oc2.uk/document/72/

4.5. POLICY SS2A: New Development

4.6. The 25 hectares of land to the east of the village centre and the 11 hectares of land south of Holt Road are both underlain by a Mineral Safeguarding Area (sand and gravel) and the requirements of Policy MP11 ‘Mineral Resource Safeguarding’ of the Norfolk Minerals and Waste Local Plan will apply to development on these sites. A duty is placed on Local Planning Authorities to ensure that mineral resources are not sterilised by non-mineral development, where this could be avoided, as stated in the National Planning Policy Framework. The allocation policy SS2A should therefore include a requirement to ensure that this issue is addressed at a site-specific level in any future planning application. Suitable wording to be included within Policy SS2A is as follows: “The site is underlain by a defined Mineral Safeguarding Area for sand and gravel resource; therefore, investigation and assessment of the mineral will be required, to the satisfaction of the Mineral Planning Authority, potentially followed by prior extraction to ensure that needless sterilisation of a viable mineral resource does not take place.”

4.7. Should you have any queries with the above comments please contact [redacted] als and Waste Policy) at [redacted]

5. **Transport**

5.1. The Highway Authority must object to all proposed Local Green Space designations at this stage. The mapping provided does not give sufficient detail to confirm how each designation interfaces with the highway network. This includes Site D in the Horsford Neighbourhood Plan, identified as the ‘Strip of

land containing village sign', which appears to include land owned by NCC Highways. As this land forms part of the public highway, any designation as Local Green Space could restrict NCC's ability to fulfil its statutory duties for highway improvements, management, and maintenance. A holding objection will therefore remain in place until each allocation is shown individually and the Highway Authority can accurately assess the proposals.

5.2. The policy should reflect that 2 points of access will be required. At this time it is not certain that a suitable safe access can be achieved at location F. Further evidence should be gathered to determine if a safe access can be delivered to the satisfaction of the Highway Authority.

5.3. Given the scale the policy should make clear that a Transport Assessment will be required to support any future planning application.

5.4. SS2A South of Holt Road (Sports facilities)

5.5. This site is remote with no active travel provision. Unless this can be secured to link to existing provision, there is a highway objection to the proposed allocation.

5.6. Should you have any queries with the above comments please contact [redacted]

Appendix B

Project Name:	Holt Road, Horsford, Norfolk
Document Reference:	1009.0004PASN2
Document Name:	Pre-Application Scoping Note
Prepared By:	Alice Mortimer (April 2025)
Checked By:	Caroline Duff (April 2025)
Approved By:	Chris Callaway (April 2025)

Revision Record				
Rev	**Date**	**By**	**Summary of Changes**	**Aprvd**
2	30.04.25	AAM	Client Comments	CEC

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1. INTRODUCTION

1.1 This Pre-Application Scoping Note (PASN) has been prepared by Paul Basham Associates on behalf of Endurance Estates to inform pre-application discussions with Norfolk County Council (NCC) highway officers with regard to a proposed residential development, comprising of up to 300 dwellings including community facilities ('the proposed development') at Holt Road, Horsford, Norfolk (the 'site'). The site location is identified within **Figure 1.**

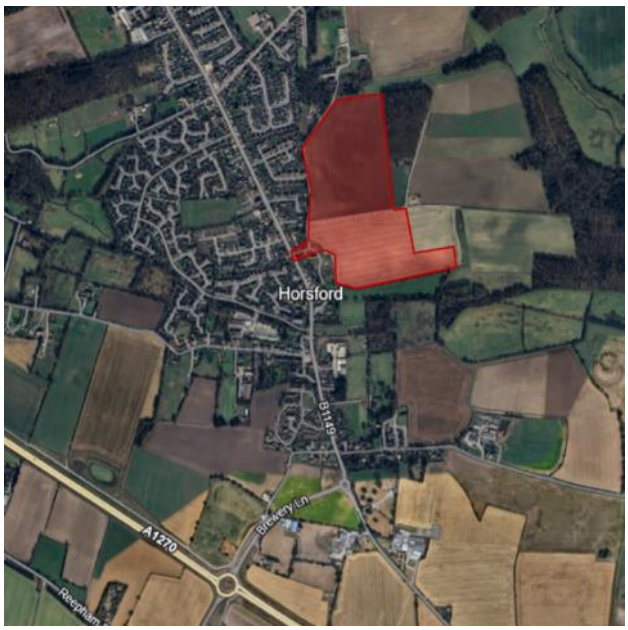


Figure 1: Site Location

1.2 Endurance Estates are engaging with Horsford Parish Council to ensure the proposed development aligns with the vision and objectives outlined in the Horsford Neighbourhood Plan. Their vision is that '*Horsford will be a sustainable place where people want to live and work into the future'*. Further details of how the proposed development is supports the Neighbourhood plan is included in the Horsford Neighbourhood Planning Showcase attached at Appendix A.

1.3 The aim of this PASN is to inform the pre-application discussions with NCC Highway Authority with regards to the principle of the proposed development in relation to transport and access. This PASN also sets out the proposed approach, methodology and scope of the Transport Assessment which would accompany the subsequent planning application, for agreement with NCC Highway Authority.

Report Structure

1.4 Following this introduction this PASN provides the following:

- Section 2: Policy and Guidance Review: outlines the relevant national, regional and local policy and guidance documents relevant to the proposed development;
- Section 3: Existing Site and Site Accessibility: describes the existing site conditions and accessibility of the site in terms of walking, cycling, public transport (bus and rail) and highway network, local facilities and amenities, summary of ATC data on Holt Road, followed identification of the proposed study area of the Personal Injury Collision data;
- Section 4: Proposed Development: provides an overview of the proposed development transport vision including the intended access strategy for pedestrians, cyclists, vehicles and servicing/deliveries. Also identified is the proposed car and cycle parking provision;
- Section 5: Trip Generation and Distribution: provides an overview of the multi-modal forecast trip generation, as well as vehicle distribution and assignment;
- Section 6: Impact Assessment Methodology: provides an overview of the proposed impact assessment methodology including summary of traffic survey data, TEMPro growth factors and committed developments;
- Section 7: Junction Capacity Assessments: outlines the junction modelling undertaken to date and considerations taken regarding the Western Link Road Scheme and;
- Section 8: Summary and Next Steps: provides a summary of the topics seeking to be agreed with NCC Highway Authority.

2. POLICY AND GUIDANCE REVIEW

Overview

2.1 The development proposals will adhere to policies set out at a national, regional and local level relating to the following:

- National Planning Policy Framework (NPPF, 2024)
- Inclusive Mobility – Department for Transport (2021)
- Norfolk County Council Local Transport Plan 4 (2021 – 2036)
- Greater Norwich Local Cycling and Walking Infrastructure Plan (2022)
- Horsford Neighbourhood Plan (2018-2038)
- Horsford Parish Council Transport Masterplan (2021-2036)

2.2 In addition to the policy documents identified above, the proposed development will refer to design guidance documents such as Manual for Streets (MfS), MfS 2 (2010), Building Regulation Document Approved Document B (2022) and Local Transport Note 1/20 (LTN 1/20) where appropriate.

National Planning Policy Framework

2.3 As outlined in the NPPF, it is proposed that the transport strategy for the proposed development is 'vision led'. Vision-led is defined in the NPPF as the following: *'an approach to transport planning based on setting outcomes for a development based on achieving well-designed, sustainable and popular places, and providing the transport solutions to deliver those outcomes as opposed to predicting future demand to provide capacity (often referred to as 'predict and provide').'*

2.4 NPPF Paragraph 109: *'Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places.'*

Horsford Parish Council Transport Masterplan

2.5 It is noted that Horsford Parish Council are developing a Transport Masterplan with the aim to use the iRAP Star Rating Assessment which has been used to identify targets and desired outlines of the Transport policy and aims to improve the environment for non-motorised road users including pedestrian and cyclists. IRAP is a tool to support making roads safer for all users and assesses the physical conditions of existing road infrastructure and creates a 'star rating' for each road user. The Horsford Transport Masterplan outlines that '*future*

developments in Horsford will be asked to demonstrate how the iRAP outcomes will be supported by their proposals through their Transport Assessments'.

Horsford Neighbourhood Plan

2.6 As outlined, Endurance Estates are engaging with Horsford Parish Council to ensure the proposed development aligns with the vision and objectives outlined in the Horsford Neighbourhood Plan. It is proposed that the proposed development will not only provide homes but access to community facilities as well as pedestrian and cycle infrastructure.

Active Travel England

2.7 It is noted that Active Travel England (ATE) guidance will be referred to throughout the planning process, with specific reference to the Active Travel England Standing Advice Note: Active travel and sustainable development (2023), as well as the use of ATE tools to assess the effectiveness of the proposed development for sustainable travel modes. In combination with design details referenced to Local Transport Note 1/20 (LTN 1/20) standards the proposed development will aim to promote and encourage sustainable travel.

3. EXISTING CONDITIONS AND SITE ACCESSIBILITY

3.1 This section of the PASN provides a summary of the existing site conditions and the current accessibility of the site in terms of the walking, cycling, public transport and highway networks. The Personal Injury Collision (PIC) data study area is proposed within this section.

Site Overview

3.2 The site is located in Horsford, Norfolk, approximately 9km north of Norwich city centre. The site is situated to the east of Holt Road B1149 with the A140 / A1270 junction approximately 2km south of the site. To the immediate north, south and east of the site are existing agricultural fields and woodland. The site overview can be seen within **Figure 2**.



Figure 2: Site Overview Plan

Pedestrian and Cycle Network

3.3 Holt Road has a footway present along both sides of the carriageway with varying widths of typically between 2m to 3m along the northbound side of the carriageway and typical widths between 1m to 2m along the southbound side of the carriageway. These footways provide access for pedestrian to the amenities and facilities located along Holt Road, both north and south of the site. A Zebra crossing is provided adjacent to Horsford Primary School, approximately 160m north of the site access and is shown in **Figure 3**.



Figure 3: Holt Road Zebra Crossing

3.4 Brooks Road is a residential road located off Holt Road, approximately 350m north of the proposed site access. Brooks Road and has footways along both sides of the road circa 1m-2m wide, which connect to Green Park Road. Green Park Road, which is a residential cul-de-sac, connecting to the site boundary, as shown in **Figure 4**. There is a footway approximately 1m-2m wide with verge in places along the northern/western side of Green Park Road. Dropped kerbs are provided on Brooks Road and Green Park Road but tactile paving is not provided.



Figure 4: Green Park Road (Source: Google Maps)

3.5 Mill Lane is located approximately 800m north of the site, adjacent to the Zebra Crossing on Holt Road. An approximately 1.5m footway runs along the south-eastern carriageway from Mill Lane / Holt Road junction. At Horsford primary School, an additional 1.5m footway is provide along the northwestern side of Mill Lane, with a Zebra crossing provided adjacent to Mill Lane / Mill Gardens junction, as shown in Figure 5. Continuing north from Horsford Primary School a footway along the northern side of Mill Lane providing a connection to Memorial Road. At the Mill Lane/Memorial Road T-Junction, tactile paving and dropped kerbs are provided including a pedestrian crossing with tactile paving and dropped kerbs to connect onto a short section of footway along the southern boundary of Mill Lane.

3.6 Juniper Way is located approximately 800m north of the site, and is accessed via Mill Lane. Juniper Way has a shared use road approximately 5.5m in width with the footway connecting to the footway along the southern side of Mill Lane carriageway. Juniper Way is shown in Figure *6*.



Figure 5: Mill Lane (Source: Google Maps)



Figure 6: Juniper Way (Source: Google Maps)

3.7 At the Brewery Lane / Holt Road roundabout, located circa 950m south of the site access, a circa 2.0m-2.5m wide shared footway / cycleway along Holt Road and terminates east of the Holt Road Brewery Lane/Brewery Lane Roundabout, as shown in **Figure 7**. Cyclists are required to dismount and re-join the carriageway as the route enters Horsford, as shown in **(Source: Google Maps)**

3.8 .



Figure 7: Brewery Lane / Holt Road Roundabout Cycle Infrastructure (Source: Google Maps)



Figure 8: Cyclist Dismount on Holt Road (Source: Google Maps)

Public Rights of Way

3.9 Public Right of Way (PRoW) routes nearby to the site are shown in **Figure 9.** Footpath 'Horsford FP8' begins at Holt Road, situated to the south of the site, and continues south to Church Street.

3.10 Footpath 'Horsford FP9' continues from 'Horsford FP8' in a north-easterly direction through agricultural fields and woodland towards the A140 where this route ends. Footpath 'Horsford FP6' runs along Corner Lane and then continues south to Dog Lane, much of this route has pedestrian and cyclist segregation.

3.11 To the north-west of the site, restricted byway 'Horsford RB3' runs from Pyehurn Lane in a south-westerly direction to Dog Lane.



Figure 9: Local Public Rights of Way

3.12 Due to the 30mph speed limit through Horsford and the residential nature of surrounding roads, cyclists can utilise this infrastructure to cycle through Horsford.

Public Transport

3.13 Corner Lane bus stop is located approximately 50m north (1-minute walk) from the site access, on Holt Road. This bus stop serves the 43A, 45 and 45A Sanders Coaches services.

3.14 Additionally, 'Dog Lane' bus stop is located approximately 350m south (5-minute walk) of the

site access and also provides access to the 36, 36A and 36B Bus services on the Norwich Network bus services operated by First Bus. Known as the 'Purple Line' bus services 36, 36A and 36B travel between Horsford and Norwich.

3.15 Further bus stops are located on Mill Lane which is located approximately 800m north of the site on Memorial Road and provides the 36, 36A and 36B Network Norwich bus services.

3.16 All bus stops at Corner Lane, Dog Lane and Mill Lane have a flagpole and street lighting with no shelter or seating provided. This is shown within **Figures 10 to 12**.



Figure 10: Corner Lane Bus Stop



Figure 11: Mill Lane Bus Stop



Figure 12: Dog Lane Bus Stop

3.17 The 43A is a school bus service operating Monday to Friday during term time. The route runs from Norwich Bus Station to Horsford, Hevingham, and Aylesham High School. The outbound service departs Norwich Bus Station at 07:43, while the inbound service leaves Aylesham High School at 15:35. The 45 bus service routes between Holt to Norwich via Horsford at a frequency of two services in the AM and two services in the PM on Monday to Saturday. The 45A bus provides one northbound service departing Norwich Bus Station at 16:20 Monday to Fridays only. In addition to the 45-bus route, the 45A provides additional stops including at Alderford, Reepham and Cawston.

3.18 The 36, 36A and 36B bus service provides a route from Horsford to Norwich, Long Stratton and Harleston at frequency of every 30 minutes Monday to Friday, and once an hour on Saturdays and a reduced hourly service on Sundays from Horsford to Tuckswood via Norwich.

3.19 The 36, 36A and 36B services form part of the First Bus Network Norwich Purple Line services, providing routes through Norwich and to Norwich city centre. These services can be accessed from Dog Lane bus stops to the south of the site and bus stops along Mill Lane to the north of the site.

3.20 A summary of the local bus services are shown in **Table 1**.

Bus Service	Summary of Route	Frequency		
		Monday - Friday	Saturday	Sunday
43A – Sanders Coaches (school service)	Norwich – Horsford – Hevingham - Aylsham	Once a day	No service	No service
45 – Sanders Coaches	Holt – Briston – Horsford - Norwich	Twice a day	Twice a day	No service
45A – Sanders Coaches	Holt – Briston – Horsford – Cawston - Norwich	Once a day	No service	No service
36, 36A, 36B – First Bus, Network Norwich	Horsford – Hellesdon, Norwich – Long Straton	Every 30 mins	Every 30 mins	Once an hour

Table 1: Local Bus Services

3.21 Norwich Railway Station can be accessed via a 30-minutes' bus journey via the36 or 36A bus services to Norwich. Norwich Railway Station provides East Midlands Railway and Greater Anglia train services. Destinations include London Liverpool Street (1hr 50mins), Manchester Piccadilly (4hr 40mins) and Cambridge (1hr, 20mins).

3.22 **Figure 13** shows Corner Lane, Dog Lane and Mill Lane bus stop locations in relation to the

site.



Figure 13: Bus Stop Location Plan

Local Highway Network

3.23 Holt Road B1149 runs through Horsford and is approximately 5.5m wide and is subject to a 30mph speed limit. The existing site access is located off Holt Road in the form of a bellmouth junction with the site access track. The existing site access is shown in **Figure 14**.



Figure 14: Holt Road Existing Site Access

3.24 Mill Lane connects to Holt Road approximately 800m north of the site access and is circa 5.5m in width. Mill Lane is subject to a 30mph speed limit and has a 20mph speed limit past Horsford Primary School. To the east of the Mill Lane/Juniper Way T-Junction, Mill Road a single track carriageway.

3.25 Holt Road continues south towards Norwich, via the Brewery Lane/Holt Road three-arm roundabout which leads south to the Drayton Lane/A1270 Broadland Northway Roundabout. The A1270 Broadland Northway is a 70mph dual carriageway which continues around the north of Norwich .

ATC Data

3.26 To understand the existing conditions along Holt Road, ATC surveys were undertaken for the 7 day period 27th June 2024 – 3rd July 2024. **Table 2** and **Table 3** displays a summary of the vehicle speeds and traffic flows recorded on Holt Road respectively.

Direction	5-Day Average	7-Day Average
Northbound	30.1 mph	30.5 mph
Southbound	30.9 mph	31.3 mph

Table 2: Summary of Vehicle Speeds on Holt Road

Direction	AM Peak Hour (08:00 – 09:00)	PM Peak Hour (17:00 – 18:00)	12-hour flows (Weekday Average) (07:00 – 19:00)
Northbound	446	637	5335
Southbound	519	484	5346

Table 3: Summary of Traffic Flows on Holt Road

3.27 As shown in **Table 3**, the weekday average vehicle flows on Holt Road is 446 vehicles travelling northbound and 519 vehicles travelling southbound in the AM peak hour. In the PM peak hour, 637 vehicles travel northbound, and 484 vehicles travel southbound on Holt Road.

3.28 As set out in **Table 4**, the recorded 85th percentile speeds on Holt Road are 30.5mph northbound and 31.3mph southbound. This speed is noted as slightly above Holt Road 30mph speed limit.

Direction	5-Day Average	7-Day Average
Northbound	30.1 mph	30.5 mph
Southbound	30.9 mph	31.3 mph

Table 4: Holt Road ATC Average 85th Percentile Speed

Amenities and Facilities

3.29 The site is located in close proximity to a number of facilities and amenities within a reasonable walking and cycling distance. A summary of the approximate travel distances and times to local amenities and facilities from the existing site access on Holt Road, is shown within **Table 5**.

3.30 CIHT's Planning for Walking (2015) document states that the average pedestrian journey length is 1.37km. With the majority of facilities within this distance, there is potential for these journeys to be undertaken on foot.

3.31 **Table 5** identifies a range of local amenities and facilities, with several key locations positioned within an 'acceptable' distance from the site, in consideration against the CIHT guidance.

Facilities and Amenities	Approximate distance from site (m)	Approximate Walking time (minutes)	Approximate Cycling time (minutes)
Co-op Village Shop and Post Office	25m	<1	<1
Corner Lane Bus Stop	50m	1	<1
Horsford Newsagents	60m	1	1
Kelly's Bakery	120m	2	1
Serenity Hair and Beauty	120m	2	1
Horsford Fish Bar Takeaway	120m	2	1
Naga Indian & Bangladeshi Takeaway	140m	2	1
Horsford House Kebab and Pizza	140m	2	1
Horsford Primary School (Years R – 2)	200m	3	2
Horsford Village Hall	230m	3	2
Horsford Recreation Ground	250m	3	2
Dog Lane Bus Stop	300m	4	2
The Dog Inn Pub	450m	6	2
Pledger Pharmacy	650m	9	3
Mill Lane Bus Stop	800m	11	4
Horsford Primary School (Years 3 – 6)	950m	13	4
Medivet Horsford - Vets	1400m	20	6

Table 5: Local Facilities and Amenities

3.32 It should also be noted that consideration of pedestrian and cycle improvements are being considered as part of the proposed development to improve connectivity via walking and cycling to local facilities and amenities, which is discussed later in Chapter 4.

Summary of Site Accessibility

3.33 The site is located in an accessible location with Holt Road providing numerous amenities and facilities within walking and cycling distance. Regular bus services at a frequency of every 30 minutes can be accessed within a 5-minutes' walk of the site access, providing a route to Norwich city centre. Therefore, the site is considered to represent a good opportunity to promote sustainable travel to future users of the proposed development.

Personal Injury Collision Data

3.34 An assessment of Personal Injury Collision (PIC) data on the surrounding local highway network of the site will be undertaken as part of the Transport Assessment to understand if there are existing highway safety concerns, patterns or trends which could be exacerbated by the proposed development. Local PIC data from the latest available 5-years period will be obtained for the study area shown within **Figure 15**. This study area includes Holt Road, Mill Lane, Brewery Lane / Holt Road roundabout and Brewery Lane / A1270 / Drayton Lane. We seek agreement with NCC to the study area of the PIC data below.



Figure 15: Proposed Personal Injury Collision Data Study Area

4. PROPOSED DEVELOPMENT

Overview

4.1 The proposed development consists of up to 300 dwellings including community facilities located on existing agricultural land off Holt Road in Horsford, Norwich.

Vision Led

4.2 The proposed development will take a vision-led approach in designing the scheme to improve the sustainability for the site to enhance connections to existing walking, cycling and public transport facilities.

4.3 As outlined in the NPPF, it is proposed that the transport strategy for the proposed development is 'vision led'. Vision-led is defined in the NPPF as the following: *'an approach to transport planning based on setting outcomes for a development based on achieving well-designed, sustainable and popular places, and providing the transport solutions to deliver those outcomes as opposed to predicting future demand to provide capacity (often referred to as 'predict and provide').'*

4.4 In addition, Norfolk County Council 'Travel Plan Guidance' (July 2023) states that *"Evidence of including with the guidance issued by Active Travel England to deliver a higher percentage of Active Travel for mode shift"* should be provided.

4.5 Therefore, in line with the NPPF, Horsford Parish Council Transport Masterplan, ATE guidance and Norfolk Travel Plan guidance, a vision-led approach would be adopted to consider how a higher percentage mode shift can be achieved to reduce the impact on the wider network.

4.6 With a vision-led approach, the design should be developed to reflect a desired future, with a focus on sustainable travel and measures, rather than automatically accommodating for an increase in private vehicles on the road network. In addition, it is important to allow for adaptation over time, ensuring that uncertainty is accommodated for. Key aspects to consider are:

- Vision driven plan
- Hierarchy users
- Developer responsibility

Vision

4.7 The vision for the proposed development is to create a sustainable residential development, which integrates with the surrounding area, prioritising travel for pedestrians, cyclists and those using sustainable modes of travel including public transport, with the aim to reduce the reliance on private vehicles.

4.8 The proposed development plans to meet the vision by providing pedestrian and cycle infrastructure within the internal layout and providing connections to existing infrastructure, key local amenities and public transport links.

4.9 In line with this vision the Travel Plan which will be produced to accompany the planning application will aim to reduce vehicle trips which will be written in line with Norfolk County Council 'Travel Plan Guidance' (July 2023). It is anticipated that a 10% mode share reduction in private vehicle trips will be included within the Travel Plan.

Horsford Parish Council Transport Masterplan

4.10 It is noted that Horsford Parish Council are developing a Transport Masterplan with the aim to use the iRAP Start Rating Assessment which has been used to identify targets and desired outlines of the Transport policy and aims to improve the environment for non-motorised road users including pedestrian and cyclists. IRAP is a tool to support making roads safer for all users and assesses the physical conditions of existing road infrastructure and crates a 'star rating' for each road user.

4.11 The Horsford Transport Masterplan outlines that '*future developments in Horsford will be asked to demonstrate how the iRAP outcomes will be supported by their proposals through their Transport Assessment*s'.

4.12 Potential off-site mitigation measures identified in the Horsford Transport Masterplan includes potential footway/cycleway improvements, traffic calming (vertical or horizontal), improvements to pedestrian crossings, provision of new pedestrian crossing(s), improvements to infrastructure (e.g. tactile paving), cycle parking landscaping improvements and reduction in speed limit from 30mph to 20mph and will be explored as part of the full planning application.

4.13 Details of the primary and secondary access strategy are detailed below as well as consideration of a pedestrian access to the north of the site.

4.14 Therefore, we seek the view of NCC Highway Authority on any further detail necessary for the vision-led approach and whether the proposed approach is accepted.

Site Access

4.15 The existing site access on Holt Road is in the form of a vehicle crossover with an access road measuring circa 3m to provide access to the existing barns on site. The existing access is shown within **Figure 16.**



Figure 16: Existing Site Access

4.16 The existing site access will be stopped up and a new access located just south of the existing access location, with an initial site access T-Junction shown in **Appendix B**. The proposed site access will be in the form of a priority T-junction with Holt Road. This will be in the form of a 6m wide minor road supported by 10m radii on either side of the site access to accommodate two-way vehicle movements, including a refuse vehicle.

4.17 Due to the desire to create a well-designed gateway, alternative access arrangement options have been considered and investigated, this includes a priority junction with a right turn lane as well as a mini-roundabout. All potential options had a junction capacity assessment undertaken (further details on this in **Chapter 7**) and no capacity concerns were raised at the proposed site access. Therefore, as the priority junction was shown to operate within capacity, this has been concluded to be an appropriate access arrangement for the proposed development.

4.18 Concept sketches of the potential site access are illustrated in **Figure 17**, with an initial T-Junction design outlined in **Appendix B**

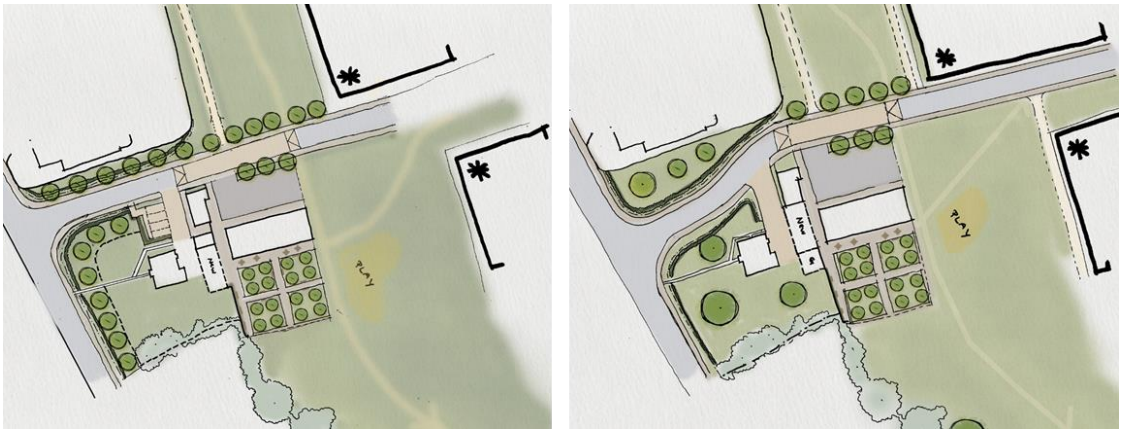


Figure 17: Proposed Development Access Options Sketches

4.19 Pedestrian footways will also be provided connecting Holt Road and the proposed development. These footways will measure 2m in width, in accordance with Manual for Streets guidance.

4.20 Within the proposed development, a footway will become a shared use pedestrian and cycleway with a minimum width of 3m (in line with LTN 1/20 guidance), offering an off-road facility to promote active travel throughout the proposed development, which connects to the secondary access and additional pedestrian connection to the north. Both the secondary access and additional pedestrian connection are discussed below.

4.21 We seek the view of NCC Highway Authority on the proposed primary access strategy.

Secondary Access

4.22 The proposed secondary access aims to provide an additional pedestrian and cycle connection to/from Holt Road for pedestrians and cyclists through providing a connection with Green Park Road. Green Park Road is a cul-de-sac and therefore limiting access to pedestrian and cycles only, will be in keeping with the streets current form. This will also form the emergency access to the proposed development.

4.23 We seek the view of NCC Highway Authority on the proposed secondary access strategy.

Active Travel Opportunities

4.24 In alignment with the vision and Horsford Neighbourhood Plan, additional considerations have been made to ensure the provision of high-quality active travel connections. **Figure 18**

identifies consideration of the potential options to provide an active travel route to the north of the site to enhance accessibility to Horsford Primary School and the Norwich Purple Line Bus services on Mill Lane.

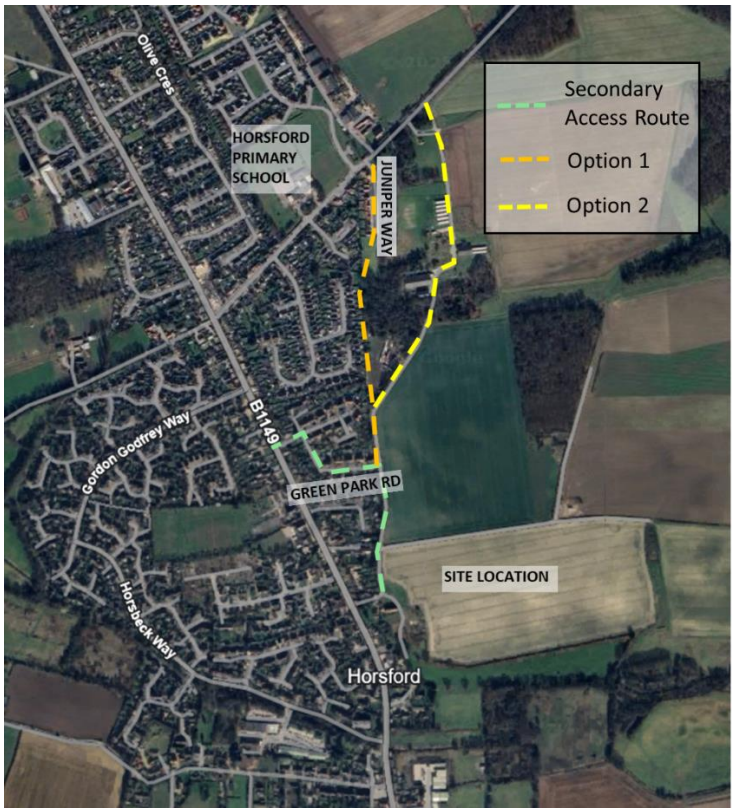


Figure 18: Potential Active Travel Routes

- Option 1: This route extends north along the rear of several residential properties, connecting to Juniper Way and onto Mill Lane. Although, this route is considered to be slightly more direct than Option 2, the connection to Juniper Way could be impacted by a future residential development along Juniper Way. This option relies on connecting to Juniper Way which is an unadopted road which serves 8 bungalows via a combination of a shared surface and a footway. Juniper Way is shown in (Source: Google Maps) Figure *6*.
- Option 2: This option also extends north from the site, connecting to Mill Lane via an existing farm track. This option could include the provision of a footway along Mill Lane to connect into the existing footway located at the Juniper Way/Mill Lane T-Junction. The Mill Lane/Juniper Way Junction is shown in Figure 19.



Figure 19: Mill Lane / Juniper Way Junction (Source: Google Maps)

4.25 The active travel route options under consideration are presented to provide a route that accommodates the anticipated desire line towards Horsford Primary School. In addition, these routes would reduce walking and cycling times to key destinations including Horsford Primary School and Mill Lane bus stop. Third party land and highway boundary are required to be investigated to understand the feasibility of implementing active travel route option 1 and 2.

4.26 We seek the view of NCC Highway Authority on the potential to provide footway connections to the north of the proposed development.

Off-Site Mitigation

4.27 The Horsford Transport Masterplan has been reviewed to understand the existing conditions surrounding the site and the potential opportunities for improvement, such as the following:

- New crossing facilities nearby to the site access with Holt Road and along Holt Road;
- Tactile paving and dropped kerbs, where absent, at junctions with side roads;
- Shared footway and cycleway adjacent to Holt Road carriageway.

4.28 In addition, to encourage active travel, an aspiration outlined in the Transport Masterplan to reduce the 30mph speed limit of Holt Road to 20mph.

4.29 As part of the proposed development wider strategy and to align with the vision of the Neighbourhood Plan, the proposed development aims to provide pedestrian and cycle infrastructure/connections to key facilities and amenities surrounding the site, along with a connection to Glebe Farm Sports Hub which land that is to be provided by the Applicant to provide new sports pitches in line with the requirement identified by Broadland District Council (Appendix A). It is noted that the sports pitches do not form part of this planning application.

4.30 We seek the view of NCC Highway Authority on potential off-site improvements to encourage active travel.

Parking Strategy

4.31 Car and cycle parking will be provided in line with NCC 'Parking Guidelines for New Developments in Norfolk' (2022) which presents the following standards as displayed in Table 6.

Dwelling Type	Vehicle Parking Standard	Cycle Parking Standard
1 bedroom	1 space per dwelling	2 secure covered space per dwelling. None if garage or secure area is provided within curtilage of dwelling
2 – 3 bedrooms	2 spaces per dwelling	
4+ bedrooms	3 spaces per dwelling	

Table 6: NCC Parking Standards

4.32 The full details will be provided as part of the future planning application once the full quantum of proposed development is confirmed.

Servicing and Emergency Access

4.33 It has been ensured that a refuse vehicle can be accommodate at the proposed development site access T-Junction on Holt Road. It will be ensured that within the internal layout of the proposed development refuse vehicles will be able to get within 25m of a dwelling or bin collection point (10m if euro-bins are to be utilised) without reversing more than 12m in line with Manual for Streets guidance and residents will not be required to walk more than 30m to the bin collection point.

4.34 It will also be ensured that a fire tender can get within 45m of each corner of the building without reversing more than 20m in line with Building regulations (document B).

5. TRIP GENERATION AND DISTRIBUTION

5.1 The existing site is an agricultural field and as such it is not expected there are any regular daily vehicular trips associated with the site apart from the occasional agricultural vehicle, which would access and egress the site via the existing T-Junction on the eastern carriageway along Holt Road. Therefore, for the purpose of this trip assessment, it is assumed that all vehicle movements to/from the site are new on the local highway network.

Vehicle Trip Generation

5.2 To forecast the impact of the proposed development of up to 300 dwellings on the local highway network, consideration has been given to the proposed vehicle movements the potential development is likely to generate.

5.3 The TRICS database has been utilised to identify relevant vehicle trip rates to understand the likely vehicle movements of the proposed development. The TRICS V7.11.2 database has been utilised with the following criteria:

- Land Use Category 'Residential', 'Houses Privately Owned';
- 'Edge of Town' location;
- Sites in East Anglia;
- Weekdays only;
- Multi-modal trips;
- 150 – 500 dwellings.

5.4 The full outputs from TRICS are attached as **Appendix C** and summarised in **Table 7.**

	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)			Daily (12 hours)
	Arrivals	Departures	Two -Way	Arrivals	Departures	Two-Way	
Trip Rate (per dwelling)	0.169	0.328	0.497	0.311	0.167	0.478	4.328
Trip Generation (300 dwellings)	51	98	149	93	50	143	1298

Table 7: Proposed Development Vehicle Trip Rates and Generation

5.5 As summarised in **Table 7** the proposed development is forecast to generate up to 149 two-way vehicle movements in the AM peak hour (08:00-09:00), 143 two-way vehicle movements in the PM peak hour (17:00-18:00) and up to 1298 two-way vehicle movements over a 12-hour period, equating to approximately 108 vehicle movements per hour daily.

5.6 It is noted that the assessment identified above includes for 'Houses Privately Owned', which includes a proportion of 'affordable housing', typically up to 15%. However, once the split of private and affordable housing is confirmed along with the total number of dwellings, the forecast vehicle trip rates and trip generation will be reviewed for use within the Transport Assessment that would be produced to accompany the planning application. However, if a larger proportion of affordable housing was included, then there could be the potential to reduce the vehicle trip rates.

5.7 It is noted that the vehicle trip rates, and trip generation outlined does not include potential scenario testing with reduced vehicle trip rates to reflect the vision led approach to minimise vehicle trip generation.

5.8 We seek the view of NCC Highway Authority on the proposed vehicle trip rates and trip generation.

Multi-Modal trip Generation

5.9 To forecast the potential number of pedestrian, cyclist and public transport trips the proposed development could generate, trip rates have been derived from the TRICS (v7.11.2) database utilising the same parameters as the vehicular trip rates as outlined above (Appendix C). The multi-modal trip rates and forecast trip generation (based on up to 300 dwellings) are summarised within Table 8.

Multi-Modal Trip Generation		AM Peak Hour (08:00 - 09:00)			PM Peak Hour (17:00 - 18:00)			Daily (12 hours)
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	
Pedestrian	Trip Rate	0.039	0.108	0.147	0.064	0.052	0.116	1.081
	Number of Trips	12	32	44	19	16	35	**324**
Cycle	Trip Rate	0.009	0.018	0.027	0.013	0.017	0.030	0.163
	Number of Trips	3	5	8	4	5	9	**49**
Public Transport	Trip Rate	0.000	0.006	0.006	0.002	0.000	0.002	0.048
	Number of Trips	0	2	2	1	0	1	**14**
Total		**15**	**39**	**54**	**24**	**21**	**45**	**387**

Table 8: Multi-Modal Trip Generation

5.10 Table 8 identifies there are 44 pedestrian movements, 8 cycle movements and 2 public transport trips generated by the proposed development in the AM peak hour. In the PM peak hour, the proposed development is forecast to generate 35 pedestrian movements, 9 cycle

movements and 1 public transport trip.

5.11 Across the 12-hour period, the proposed development is forecast to generate 324 pedestrian movements, 49 cycle movements and 14 public transport trips. Across the daily (12 hours) period, circa 400 active travel and public transport trips are forecast to be generated by the proposed development.

5.12 We seek the view of NCC Highway Authority on the proposed multi-modal trip rates and trip generation.

Vehicle Trip Distribution

5.13 To forecast the vehicle trip distribution of the proposed development, the 2011 Census Data 'Location of usual residence and place of work by method of travel to work' (WU03EW) have been utilised. Middle Super Output Area (MSOA) E02005523: Broadland 004 has been utilised to represent residents at the proposed development, and place of work included all MSOAs. These were assessed to determine the distribution and assignment of vehicles on the local highway network.

5.14 The results of the forecast vehicle distribution are summarised in **Table 9**.

Direction from Site Access	North on Holt Road	16%
	South on Holt Road	84%
Direction at Holt Road/ Brewery Lane Roundabout	Brewery Lane (south of the site)	84%
Direction at Brewery Lane/A2170 Roundabout	A1270 (East) (south of the site)	39%
	A1270 (West) (south of the site)	13%
	Drayton Lane (south of the site)	32%

Table 9: Forecast Vehicle Trip Distribution

5.15 For a robust assessment, the Holt Road/Church Street junction located to the south of the Site has not been included within the forecast vehicle distribution. However, it should be noted that if this junction were considered, there is the potential for 6% of vehicles to travel south along Holt Road and then utilise Church Street. Therefore, the forecast vehicle distribution and assignment assessment are considered robust through the Holt Road/Brewery Lane Roundabout and the Brewery Lane/A2170/Drayton Lane Roundabout.

5.16 The full distribution diagrams for the proposed development vehicle distributions and baseline data are attached within **Appendix D** and outlined below.

5.17 We seek the view of NCC Highway Authority on the proposed vehicle trip distribution and assignment outlined below.

Site Access

5.18 The forecast vehicle distribution and assignment assessment the majority of the proposed development vehicle movements are forecast to travel to/from the south of the site access (84%).

5.19 This results in a forecast of 83 vehicles travelling south along Holt Road and 16 vehicles travelling north on Holt Road during the AM peak hour (08:00-09:00), from the site access. In the PM peak hour (17:00-18:00), it is forecast a total of 79 vehicles travel to the site from the south with 15 vehicles forecast to travel to the site from the north on Holt Road.

5.20 The forecast AM (08:00-09:00) and PM (17:00-18:00) vehicle movements at the Site Access/Holt Road T-Junction are illustrated in Figure 20.

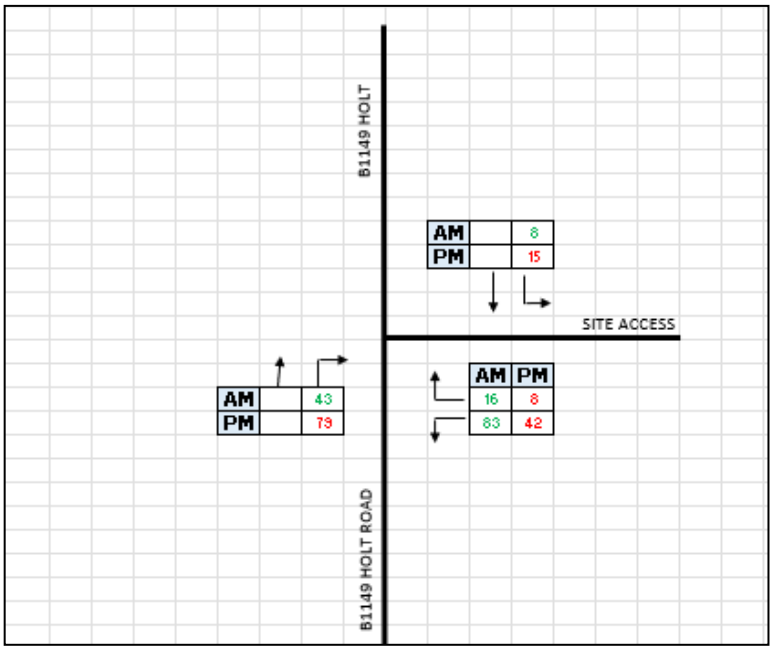


Figure 20: Forecast Vehicle Trip Distribution at the Site Access/Holt Road Junction

In terms of vehicle movements at the site access junction, a total of 150 vehicle movements are forecast within the AM peak hour (08:00-09:00) associated with the proposed development. In the PM peak hour (17:00-18:00) a total of 144 vehicle movements are forecast at the Site Access/Holt Road Junction associated with the proposed development.

Holt Road/Brewery Lane Roundabout

5.21 The southbound vehicle movements from the site access junction are assumed to travel along Holt Road onto Brewery Lane at the Holt Road/Brewery Lane Roundabout. Therefore, resulting in the forecast 84% of the total vehicle movements associated with the proposed development travelling through the Holt Road/Brewery Lane Roundabout. This equates to 83 vehicle movements traveling southbound in the traditional AM peak hour (08:00-09:00) and 79 vehicle movements northbound in the traditional PM peak hour (17:00-18:00). The forecast vehicle trip generation associated with the proposed development at the Holt Road/Brewery Lane Roundabout is illustrated in **Figure 21**.

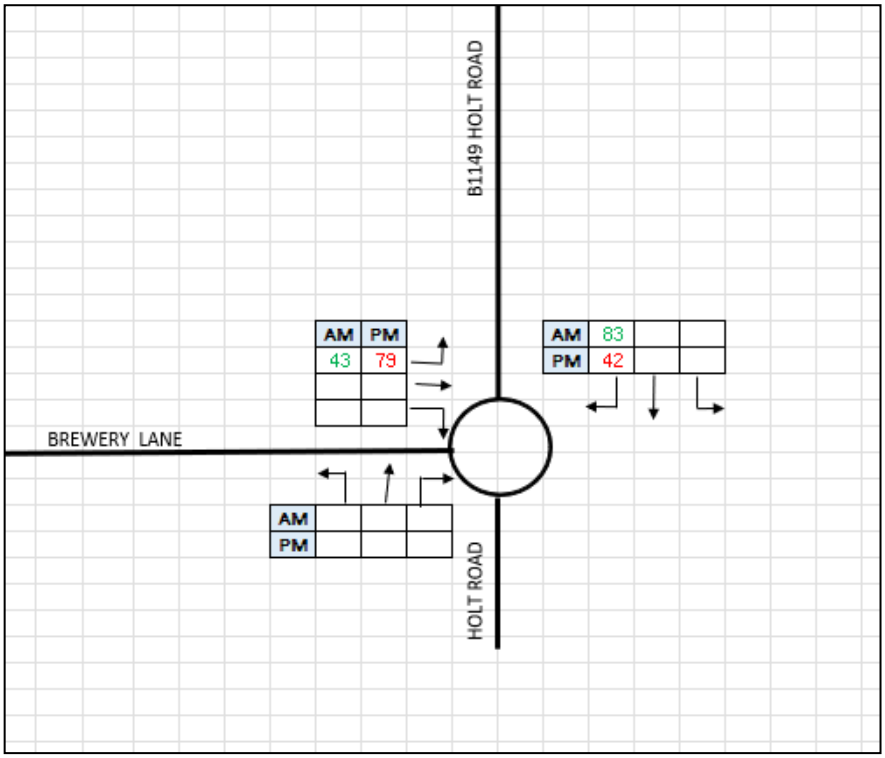


Figure 21: Forecast Vehicle Trip Generation at the Holt Road/Brewery Lane Roundabout

Brewery Lane/A1270 Roundabout

5.22 From the 84% of vehicle movements associated with the proposed development, 39% are forecast to travel east on the A1270, 32% are forecast to travel south onto Drayton Lane and 13% are forecast to travel west onto the A1270.

5.23 Therefore, the proposed development is forecast to generate 39 vehicles travelling east onto A1270 (East), 31 onto Drayton Lane and 13 onto A1270 (West) in the traditional AM peak hour (08:00-09:00). The proposed development is forecast to generate 37 vehicles travelling

from the A1270 (East), 30 from Drayton Lane and 12 from A1270 (West) in the traditional PM peak hour (17:00-18:00). Forecast Vehicle Trip Generation at the Brewery Lane/A1270 Roundabout is shown in **Figure 22**.

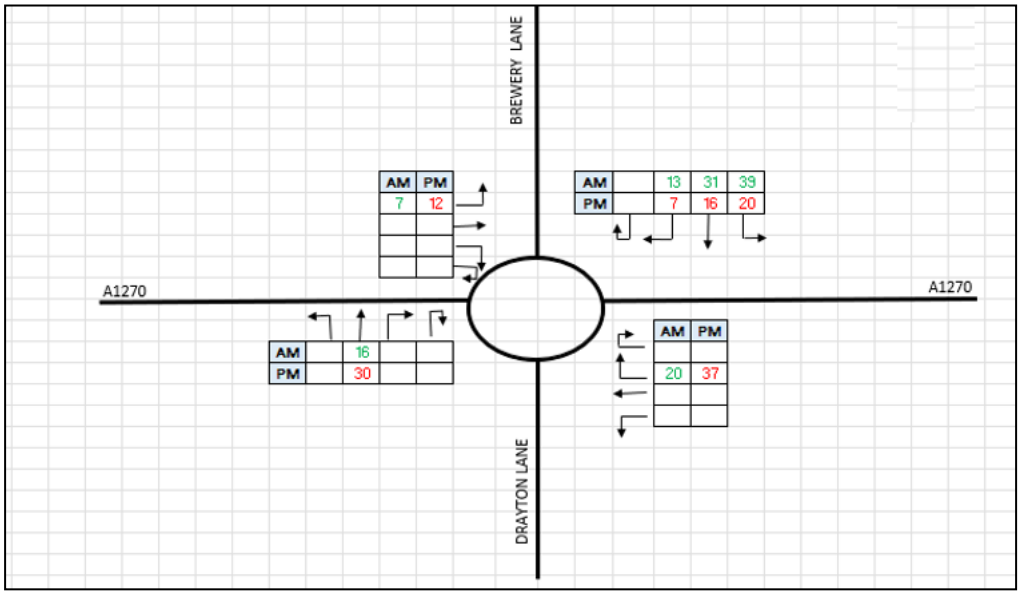


Figure 22: Forecast Vehicle Trip Generation at the Brewery Lane/A1270 Roundabout

6. IMPACT ASSESSMENT METHODOLOGY

6.1 Manual Classified Count (MCC) traffic surveys have been undertaken in June / July 2024 at the Holt Road/Brewery Lane Roundabout and the Broadland Northway/Brewery Lane/Drayton Lane Roundabout. In addition, an ATC was undertaken on Holt Road adjacent to the site access.

6.2 It should be noted that the ATC and MCC traffic survey data was analysed and although some approaches have slightly different peak hours, it is considered that the overall AM peak and PM peak hours on the local highway network to be the in line with the traditional peaks hours of 08:00-09:00 and 17:00-18:00. Therefore, these peak hours have been utilised for the purpose of the junction modelling assessments.

Hot Road ATC

6.3 ATC surveys were undertaken between 27th June 2024 – 3rd July 2024 along Holt Road adjacent to the site access are set out within **Figure 23.** There existing vehicle flows in the vicinity of the site access are 965 in the AM peak hour and 1121 in the PM peak hour along Holt Road.

Holt Road/Brewery Lane Roundabout Junction

6.4 An MCC traffic survey to identify turning movements was undertaken at the Holt Road/Brewery Lane Roundabout on 27th July 2024, 3rd – 4th July 2024 and the results are set out within **Figure 23**.

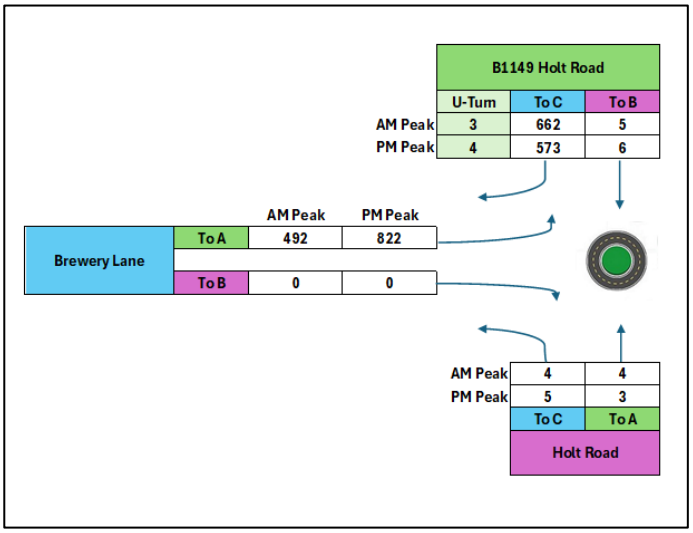


Figure 23: Traffic Flows at Holt Road/Brewery Lane Roundabout

6.5 The results indicate that there are circa 1,167 vehicle movements through the junction in the AM peak hour and 1,413 vehicle movements through the junction in the PM peak hour based on the 2024 baseline data.

Brewery Lane/A2170/Drayton Lane Roundabout Junction

6.6 An MCC survey was undertaken at the Brewery Lane/A2170/Drayton Lane Roundabout on the 27th July 2024 – 19th July and the results are set out within **Figure 24.**

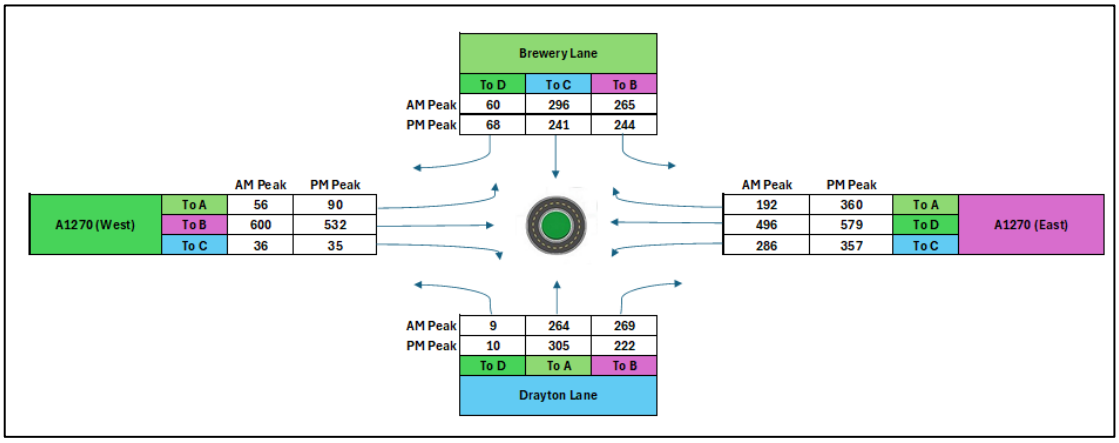


Figure 24: Traffic Flows at A2170/Brewery Lane/Drayton Lane Roundabout

6.7 The results indicate that there are circa 2,829 vehicle movements through the junction in the AM peak hour and 3,043 vehicle movements through the junction in the PM peak hour based on the 2024 baseline data.

TEMPro Growth Factors

6.8 To forecast the future year traffic flows, TEMPro growth factors were obtained for 2024 to 2035 and 2040. The TEMPro growth factors are shown within **Table 10.**

Growth Years	Growth Factors	
	AM Peak	PM Peak
2024-2035	1.1215	1.1291
2024-2040	1.1706	1.1806

Table 10: TEMPro Growth Factors

Assessment Scenarios

6.9 The forecast impact of the proposed development has been assessed for the following scenarios for the AM (08:00-09:00) and PM (17:00-18:00) peak hours:

- 2024 baseline
- 2035 baseline
- 2035 baseline + Proposed Development
- 2040 baseline
- 2040 baseline + Proposed Development

Committed Developments

6.10 In addition, should any committed development in the area have traffic flows utilising the junctions mentioned above, we would include a modelling scenario taking into account the committed developments. From our initial investigation at the time of the junction modelling, no specific committed developments have been included within the junction modelling assessments.

6.11 We seek the view of NCC Highway Authority on the proposed approach to TEMPro growth factors and committed developments to be included within the junction assessments to be included within the Transport Assessment.

7. JUNCTION CAPACITY ASSESSMENTS

Overview

7.1 This Chapter outlines the junction modelling assessments undertaken. The junction modelling assessments undertaken to date do not include scenario testing of potential reductions in vehicle trip generation in line with the vision led approach to prioritising travel for pedestrians, cyclists and those using sustainable modes of travel including public transport, with the aim to reduce the reliance on private vehicles.

7.2 Therefore, the junction modelling undertaken and outlined below is considered to provide a robust assessment of the forecast impact of the proposed development on the local highway network.

Junction Modelling Software

7.3 The capacity of the junctions has been assessed using Junctions 9 for the site access, Holt Road/Brewery Lane Roundabout and Brewery Lane/A1270/Drayton Lane Roundabout.

7.4 The capacity of the junction has been assessed using Junctions 9 software which provides a Ratio of Flow to Capacity (RFC) value, which identifies what proportion of each approach total capacity is currently being utilised. RFC values exceeding 0.85 signify the point at which the capacity of the approach is being approached, and the potential to improve capacity could be explored, whilst RFC values of 1.0 or greater represent a junction operating above capacity. Junctions 9 software also provides values for junction delay (in seconds) and queue length in vehicles.

7.5 All modelling has been completed using 'vehicle' values rather than PCUs and as such the appended traffic flow diagrams are also all in vehicles. To provide a robust assessment, a 10% HGV rate has been applied throughout.

Junction Modelling

7.6 To forecast the highway impact of the proposed development, junction capacity assessments has been undertaken at the Site Access, the Holt Road/Brewery Lane Round about and the Brewery Lane/A1270/Drayton Lane Roundabout.

7.7 To assess the forecast impact of the proposed development, the junctions have been assessed for the following scenarios in the AM (08:00-09:00) and PM (17:00-18:00) peak

hours:

- 2024 baseline
- 2035 baseline
- 2035 baseline + Proposed Development
- 2040 baseline
- 2040 baseline + Proposed Development

Junction Geometries

7.8 OS mapping was obtained and overlayed with Google Maps to identify the geometries for the roundabouts using AutoCAD software. The junction geometries have been utilised within the Junctions 9 modelling software. Full geometries are identified within Appendix E.

Holt Road/Brewery Lane Roundabout

7.9 The Holt Road/Brewery Lane Roundabout has been assessed to forecast the impact of the proposed development on the roundabout. All scenarios have been modelled as identified above, and the results are summarised within Table 11 and the full junction modelling outputs are provided in Appendix F.

Scenario	Approach	AM Peak Hour (08:00-09:00)			PM Peak (17:00-18:00)		
		Max RFC	Max Queue	Delay (seconds)	Max RFC	Max Queue	Delay (seconds)
Baseline 2024	**Holt Road (N)**	0.55	1.3	6.21	0.48	0.9	5.30
	Brewery Lane	0.01	0.0	4.17	0.01	0.0	3.91
	Holt Road (S)	0.41	0.7	4.94	0.68	2.2	8.79
Baseline 2035	**Holt Road (N)**	0.62	1.7	7.29	0.54	1.2	6.01
	Brewery Lane	0.01	0.0	4.43	0.01	0.0	4.13
	Holt Road (S)	0.46	0.9	5.39	0.77	3.4	12.16
Baseline 2040	**Holt Road (N)**	0.64	1.9	7.84	0.56	1.3	6.34
	Brewery Lane	0.01	0.0	4.55	0.02	0.0	4.23
	Holt Road (S)	0.48	1.0	5.61	0.81	4.1	14.43
Baseline 2035 + Proposed Development	**Holt Road (N)**	0.68	2.2	8.86	0.57	1.4	6.49
	Brewery Lane	0.01	0.0	4.73	0.01	0.0	4.25
	Holt Road (S)	0.49	1.0	5.77	0.84	5.0	16.85
Baseline 2040 + Proposed Development	**Holt Road (N)**	0.71	2.5	9.66	0.60	1.5	6.89
	Brewery Lane	0.01	0.0	4.87	0.02	0.0	4.37
	Holt Road (S)	0.52	1.1	6.01	0.87	6.5	21.44

Table 11: Holt Road/Brewery Lane Roundabout Junction Capacity Assessment

7.10 As summarised within **Table 11** the Holt Road/Brewery Lane Roundabout is forecast to operate within design and theoretical capacity with a maximum RFC value of less than 1.00 on all approaches in all scenarios in both the AM and PM peak hours. The maximum RFC forecast is 0.87 on the Holt Road South approach in the 2040 + Proposed Development scenario.

Brewery Lane/A1270/Drayton Lane Roundabout

7.11 The A1270/Brewery Lane Roundabout has been assessed to forecast the impact of the proposed development on the roundabout. All scenarios have been modelled as identified above, and the results are summarised within **Table 12** and the full outputs are attached as **Appendix G.**

Scenario	Approach	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
		Max RFC	Max Queue	Delay (seconds)	Max RFC	Max Queue	Delay (seconds)
Baseline 2024	**Brewery Lane**	0.55	1.3	6.81	0.47	0.9	5.47
	A1270 (E)	0.44	0.9	2.88	0.58	1.4	3.62
	Drayton Lane	0.42	0.8	4.62	0.47	0.9	5.43
	A1270 (W)	0.35	0.6	2.70	0.35	0.5	2.72
Baseline 2035	**Brewery Lane**	0.65	1.9	9.02	0.55	1.3	6.72
	A1270 (E)	0.50	1.1	3.26	0.67	2.0	4.56
	Drayton Lane	0.49	1.0	5.41	0.56	1.3	6.86
	A1270 (W)	0.40	0.7	3.00	0.40	0.7	3.09
Baseline 2040	**Brewery Lane**	0.69	2.3	10.42	0.59	1.5	7.40
	A1270 (E)	0.53	1.2	3.45	0.70	2.4	5.09
	Drayton Lane	0.52	1.1	5.82	0.60	1.5	7.69
	A1270 (W)	0.42	0.8	3.15	0.43	0.8	3.27
Baseline 2035 + Proposed Development	**Brewery Lane**	0.73	2.7	11.55	0.59	1.5	7.33
	A1270 (E)	0.52	1.2	3.41	0.69	2.2	4.89
	Drayton Lane	0.51	1.1	5.70	0.60	1.5	7.66
	A1270 (W)	0.41	0.7	3.07	0.42	0.7	3.24
Baseline 2040 + Proposed Development	**Brewery Lane**	0.77	3.3	13.86	0.63	1.7	8.15
	A1270 (E)	0.55	1.3	3.61	0.72	2.6	5.48
	Drayton Lane	0.54	1.2	6.16	0.64	1.7	8.61
	A1270 (W)	0.43	0.8	3.23	0.45	0.8	3.34

Table 12: Brewery Lane/A1270/Drayton Lane Roundabout Junction Capacity Assessment

7.12 As summarised within Table 12 the A1270/Brewery Lane Roundabout is forecast to operate within design and theoretical capacity with a maximum RFC value of less than 0.85 on all approaches in all scenarios in both the AM and PM peak hours. The maximum RFC forecast is 0.77 on the Brewery Lane approach in the 2040 + Proposed Development scenario.

7.13 The proposed development is forecast to increase the RFC by a maximum of 0.07 in 2040. Therefore, it is not forecast that the proposed development would have a significant impact on the operation of the Brewery Lane/A1270/Drayton Lane Roundabout.

Site Access/Holt Road

7.14 The proposed site access has been modelled as a standard priority junction to forecast the operation of the site access junction in 2035 + Proposed Development and 2040 + Proposed Development. The results are summarised within Table 13 and the full model outputs are attached as Appendix H.

Scenario	Approach	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
		Max RFC	Max Queue	Delay (seconds)	Max RFC	Max Queue	Delay (seconds)
Baseline 2035 + Proposed Development	**Site Access**	0.25	0.4	11.95	0.13	0.2	10.65
	Holt Road (South)	0.14	0.4	5.30	0.31	1.2	5.39
Baseline 2040 + Proposed Development	**Site Access**	0.25	0.4	12.29	0.13	0.2	10.97
	Holt Road (South)	0.14	0.4	5.25	0.33	1.3	5.41

Table 13: Site Access Priority Junction Capacity Assessment

7.15 As summarised within Table 13 the proposed development of 300 dwellings could be accommodated with a priority junction with the site access carriageway measuring 6m in width. The site access junction is forecast to operate with a maximum RFC value of 0.33 in on Holt Road (South) during the PM peak hour.

NDR Western Link Road Scheme

7.16 It is noted that improvements to Holt Road were primarily sought via the NDR Western Link Road Scheme to mitigate the impact of the reassigned traffic. However, it is noted that the NDR Western Link Road Scheme has been withdrawn as January 2025. However, to assess the impact of the proposed development should the Western Link Road Scheme come forward, a junction capacity assessment was undertaken for the Brewery Lane/A1270/Drayton Lane Roundabout for the following scenarios and is attached with Appendix I.

- 2039 Do Something
- 2039 Do Something plus Proposed Development
- 2039 Do Something with Mitigation at Brewery Lane/A1270/Drayton Lane Roundabout
- 2039 Do Something with Mitigation plus Proposed Development

7.17 The Brewery Lane/A1270/Drayton Lane Roundabout is included as Junction 21 of the Norwich Western Link Road Improvement Scheme. The improvements to the Brewery Lane/A1270/Drayton Lane Roundabout include mitigation measures on the Brewery Lane approach and the Drayton Lane approach. Mitigation measures on the Brewery Lane northern approach includes an additional traffic lane and ghost island layout. Mitigation measures on the Drayton Lane approach included an additional traffic lane and ghost island layout.

7.18 For the no mitigation option, the Brewery Lane/A1270/Drayton Lane Roundabout is forecast to operate over capacity on the Brewery Lane approach in the AM peak hour, without the addition of the proposed development. It also demonstrates that the proposed development is forecast to increase the RFC on the Brewery Lane approach by 0.15 in the traditional AM peak hour (08:00-09:00) and increase the RFC by of 0.05 on the Brewery Lane approach in the traditional PM peak hour (17:00-18:00).

7.19 For the with mitigation option, the Brewery Lane/A1270/Drayton Lane Roundabout operates below theoretical capacity (1.0 RFC). The maximum RFC for the 2039 Do Something with Mitigation is on the Brewery Lane approach in the traditional AM peak hour with an RFC of 0.83. Including the proposed development traffic flows, the maximum RFC for the 2039 Do Something with Mitigation is on the Brewery Lane approach in the traditional AM peak hour and is 0.91. Therefore, the proposed development is forecast to increase the RFC on the Brewery Lane approach by 0.08. The maximum RFC for the 2039 Do Something with Mitigation scenario on the Drayton Lane approach is 0.96. With the proposed development

the Drayton Lane approach for the for the 2039 Do something with Mitigation scenario is an RFC of 0.97. This suggests that the proposed development increases the RFC by 0.01, which is not a significant increase.

7.20 Therefore, it has been demonstrated if the Western Link Improvements Scheme were it to be implemented, the included mitigation measures on the Brewery Lane and Drayton Lane approaches mitigates both the future baseline traffic flows (2039) as well as the forecast traffic flows by the proposed development.

7.21 The mitigation scheme at the Brewery Lane/A1270/Drayton Lane Roundabout as part of the NDR Western Link Road Scheme is shown in Appendix I.

8. SUMMARY AND NEXT STEPS

8.1 This Pre-Application Scoping Note has been prepared by Paul Basham Associates on behalf of Endurance Estates to inform pre-application discussions with Norfolk County Council highway officers with regard to a proposed development, comprising of up to 300 dwellings including community facilities at Holt Road, Horsford, Norfolk.

8.2 As part of this pre-application, we ask Norfolk County Council Highway Authority to agree and provide comment to the following:

- Agreement on vision-led approach;
- Agreement of the proposed Personal Injury Collision study area;
- Agreement in principle of the proposed primary and secondary access arrangements;
- Agreement on the additional active travel route to the north of the site;
- Discussion of potential off-site mitigation;
- Agreement of the car and cycle parking provision;
- Agreement of the forecast vehicle trip rates, generation ,distribution and assignment;
- Agreement of the multi-modal trip generation;
- Agreement on the methodology for the junction modelling undertaken and use within the Transport Assessment;
- Agreement on use of 2024 traffic survey results to be used as baseline scenario;
- Agreement for the future year scenarios of 2035 and 2040 and use of TEMPro and approach to committed developments;
- Comment on the additional documents required to be submitted in support of the outline planning application, including Travel Plan, Construction and Traffic Management Plan, Road Safety Audits and S106 compliance.

8.3 Paul Basham Associates seek to utilise pre-application dialogue to further establish the scope of Transport Assessment required to support an application. At this stage, we anticipated the Transport Assessment to include the following:

- Relevant planning history;
- Outline relevant policy review and guidance documents;
- Outline existing conditions and accessibility including local facilities and amenities
- Analysis of Personal Injury Collision data
- Development Proposals including the access strategy and internal layout

- Multi-Modal trip generation
- Vehicle Trip Generation, Distribution and Assignment
- Junction Capacity Assessments
- Conclusion and Summary

8.4 Due to the scale of the proposed development, it is also proposed that a Travel Plan will be required. We anticipate the Travel Plan to include the following as in line with Norfolk County Council 'Travel Plan Guidance' (July 2023):

- Introduction
- Outline Relevant planning policy and guidance document
- Outline existing conditions and accessibility including local facilities and amenities (including bus stop locations)
- Development proposals
- Residential trip rates and modal spilt data which is compliant with TRIC's validated data specific to Norfolk and the site location
- Clearly defined objectives and targets
- Travel plan strategy – targets and measures
- Implementation and monitoring (including timetable for implementation of initiatives and annual reviews)
- Travel Plan Coordinator Details
- Summary and Conclusions
- Allocated budget to cover NCC monitoring fees
- Costed Action Plan
- A draft Sustainable Travel Information Pack (STIP)
- Evidence of including with the guidance issued by Active Travel England to deliver a higher percentage of Active Travel for modal shift

Appendix C

Horsford: Land east of Holt Road

Mon 30/06/2025 16:40

From: Graham

To: Chris

Cc: Caroline

Hi Chris

As promised I am writing with some initial comments following our meeting last week regarding the above informal proposal.

In our meeting on Tuesday 24th June it was advised the proposed sports hub does not form part of the current proposals. Consequently, no further discussion was had on this issue.

Residential development of the size proposed should ideally be provided with at least 2 points of vehicular access. In lieu of a second point of access being provided the internal layout should be provided with a loop road of appropriate standard (minimum 6m width). The initial section of road between Holt Road and the internal loop road should be 6.5m wide.

A priority junction onto Holt Road would be acceptable.

Visibility splays onto Holt Road should be provided in accordance with recorded observed 85th percentile speeds. We would expect to receive a copy of the speed survey data and confirmation of where the survey was carried out.

You are proposing a pedestrian and cycle link to Green Park Road, and utilise this route as an emergency access. What is the width of Green Park Road? Green Park Road has no turning head. If you proposed to make a connection onto this road a turning head suitable for large vehicles should be provided. The existing footways along Green Park Road are narrow. To accommodate additional demand generated by the proposed development the existing footways would need widening.

Of importance is active travel connections between the site and local facilities.:

- If Green Park Road is to be promoted as an active travel corridor, facilities will be required along Holt Road to provide pedestrian and cycle connectivity to Horsford CofE Primary School, the village hall, sports facilities and playground. As discussed investigation will be required into providing a shared use footway / cycleway along the east of Holt Road, upgrading the existing zebra crossing to a toucan and providing necessary shared use facility on the western side.
- How will active travel be accommodated to / from the site and Horsford CofE Junior School? If you intend to pursue an option of providing links to the north further information will be required. Facilities along this route should be LTN1/20 compliant. In lieu of facilities to the north being secured facilities would be required along Holt Road. Facilities will be require on Mill Lane to link to the school as well as upgrading the existing zebra to a parallel crossing.

- Existing retail facilities are present on the west side of Holt Road opposite the proposed site access. Together with proposed retail / commercial / community facilities being served from the initial section of the site access road, this will result in crossing demand in the vicinity of the site access. Formal crossing facilities will be required to cater for these movements.
- It is suggested LTN1/20 compliant cycle facilities will be provided through the site. These facilities should extend along the initial access road to Holt Road.

Public transport connections will be need to be considered. The closets stops appears to be to the north of the site access. Shelters and real time information displays should be provided at these stops.

Car parking in residential development should be provided in accordance with the NCC document Parking Guidance for New Developments in Norfolk (2022). For residential development this should include visitor parking provided at a ratio of 1 space per 5 dwellings e.g. a development of 300 dwellings would expect 60 visitor spaces. These should be designed into the street scene as laybys on estate roads. All dwellings should be provided with an EV charging point. Non-residential development should be provided with appropriate car parking, accessible car parking, EV charge points and covered cycleway parking in accordance with Parking Guidance for New Developments in Norfolk (2022).

All cul-de-sacs should be provided with appropriate turning provision. All adoptable cul-de-sacs should have a size 3 turning head suitable to cater for service and delivery vehicles.

Any future planning application should be supported with tracking showing a refuse vehicle manoeuvring along all estate roads.

New estate roads in Norfolk are subject to 20mph zones. Their layout should be designed so the horizontal alignment contains vehicle speeds/

It is forecasted around 32% of the proposed development traffic heading south will head toward the Brewery Lane / Reepham Road / Drayton Lane roundabout. Consequently, the Brewery Lane / Reepham Road / Drayton Lane roundabout should be modelled too.

Should the modelling result in any junction having an RFC greater than 0.85, the junction will need mitigation to ensure it stays within capacity.

Any future application should be supported with a stage 1 safety audit for off-site highway works.

Home to School Transport

At our meeting there was not sufficient time to discuss home to school transport. The County Council is required to provide home to school transport where there is no available safe walking route appropriate for all users. Where proposed development is located such that there is no available walking route to school the County Council requires a financial contribution to be agreed via S106. In this instance, given the location of the site and the unavailability of walking routes the value of contribution (based on current rates and 300 of dwellings - 1 bed dwellings are excluded from the calculation so the proposed accommodate schedule will in part

determine the final figure) the value of contribution toward secondary and SEND school transport is likely to be around £510,311.85.

I trust the above is of assistance

Thanks

Graham

Horsford: Land east of Holt Road

Wed 27/08/2025 16:19

From: Graham

To: Chris

Cc: Caroline

Hello Chris

I sorry for the delay in responding.

I have added some comments below in blue

All the best

Graham

Horsford: Land east of Holt Road

17 July 2025 17:14

From: Chris

To: Graham

Cc: Caroline

Hi Graham

Thank you for the highway pre-app meeting and for the written comments. These are appreciated and helpful.

We have a few items which could be great to have written responses to each of the topics below to confirm you are happy with the approach outlined within the Pre-Application Scoping Note.

- Agreement of the multi-modal trip generation

No comment. Development proposals should provide active and green travel. Pedestrian / cycle and public transport mitigation would be determined by the proposals.

- Agreement of the forecast vehicle trip rates, generation ,distribution and assignment

The proposed trip rates appear sensible. The same trip rate should be used site wide. A reduced rate should not be used for affordable housing.

- Agreement of the vehicle distribution and assignment

Use of the 2011 census to forecast distribution appears sensible.

- Agreement on the methodology for the junction modelling undertaken and use within the Transport Assessment

Reepham Road / Drayton Lane roundabout should be modelled too. We would expect to see your traffic survey results and observed queue lengths data.

- Agreement on use of 2024 traffic survey results to be used as baseline scenario

Use of 2024 traffic survey data acceptable

- Agreement for the future year scenarios of 2035 and 2040 and use of TEMPro and approach to committed development

What has determined the years 2035 & 2040? The Greater Norwich Local Plan (GNLP) has allocated a site south of Dog Lane (site GNLP0264) for 45 dwellings. This allocation should be considered as a committed development.

- Agreement if further scenario testing is required for the junction modelling as part of the vision led approach. Appreciate you had commented in the meeting that the modelling undertaken was worse-case scenario.

At this stage further scenario testing may not be required.

- Comments on the junction modelling results in terms of forecast RFC of the local junctions which are between 0.85RFC and 0.89 RFC. Given the Holt Road/Brewery Lane Roundabout is forecast to have a maximum RFC of 0.87 on the Holt Road approach in the PM peak hour in 2040 (Table 11 in the PASN), it is considered that mitigation on the approach would have limited impact given the majority of the vehicles are travelling from Holt Road (south) to Brewery Lane (west). Therefore, it is not proposed that highway mitigation would be proposed at the Holt Road/Brewery Lane Roundabout, where off-site improvements would be targeted towards active travel and public transport improvements.

Cannot comment at this time.

- Confirmation that no further consideration from SCC highways perspective is required on the iRAP assessment.

Firstly, I assume SCC is a type and should be NCC. Many of the findings on the iRAP are undeliverable / not appropriate.

- Confirmation that no further junction modelling or assessment is required of the NDR Western Link Road

Reepham Road / Drayton Lane roundabout should be modelled too. No further modelling of the NDR junctions is envisaged at this time.

- Confirmation if a Framework Construction Traffic Management Plan is required to be submitted with the planning application

It is standard practice for a CTMP to be conditioned i.e. to be submitted and approved in advance of any works commencing on site. The highway authority wouldn't insist on a framework CTMP to be submitted with the an application.

Please let us know if you have any questions. Happy to have a phone call or Teams call if easier.

Thanks

Chris

From: Graham Worsfold
Sent: 06 November 2025 11:06
To: Chris Callaway
Cc: Caroline Duff
Subject: RE: Horsford: Land east of Holt Road

Hi Chris

Apologies for the delay in responding.

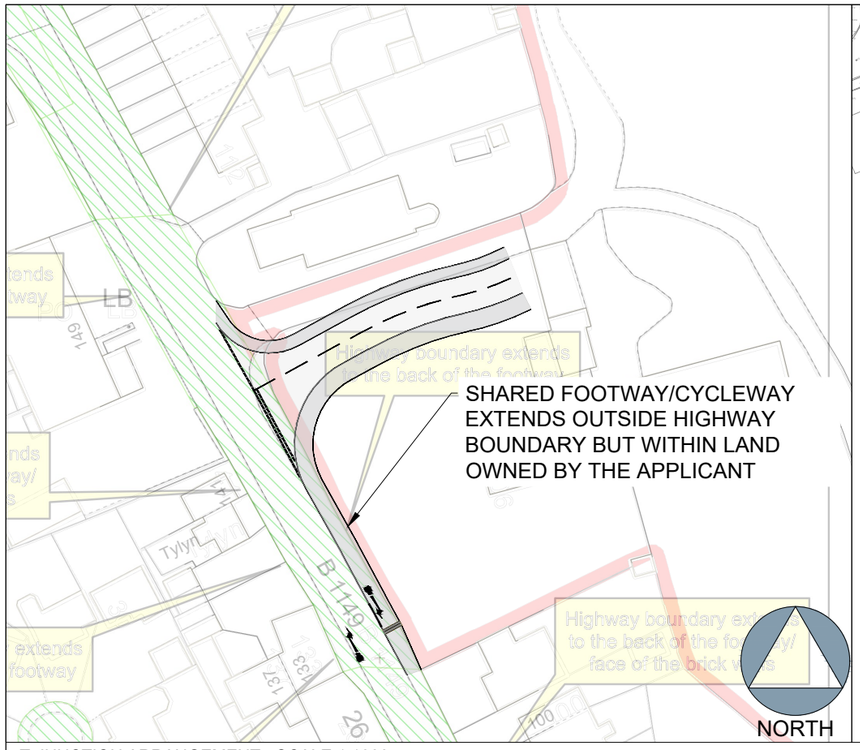
In response to multi-modal trip generation I have no further comment to make.

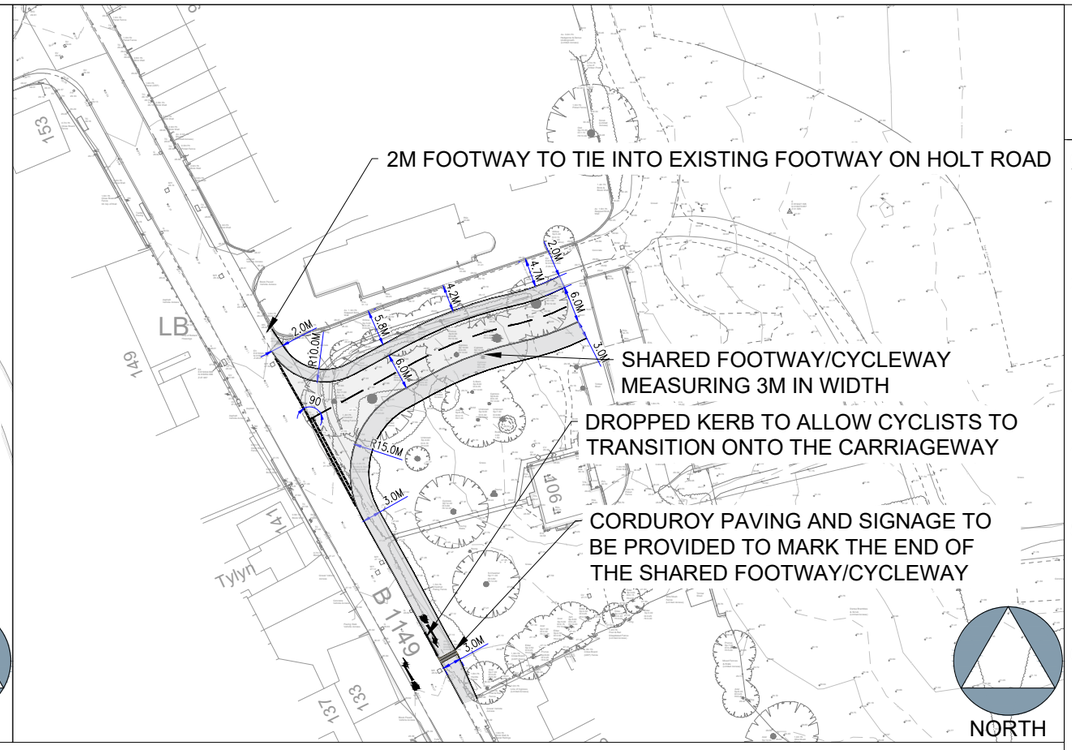
A 10 year forecast is agreeable. We look forward to the additional modelling results.

All the best

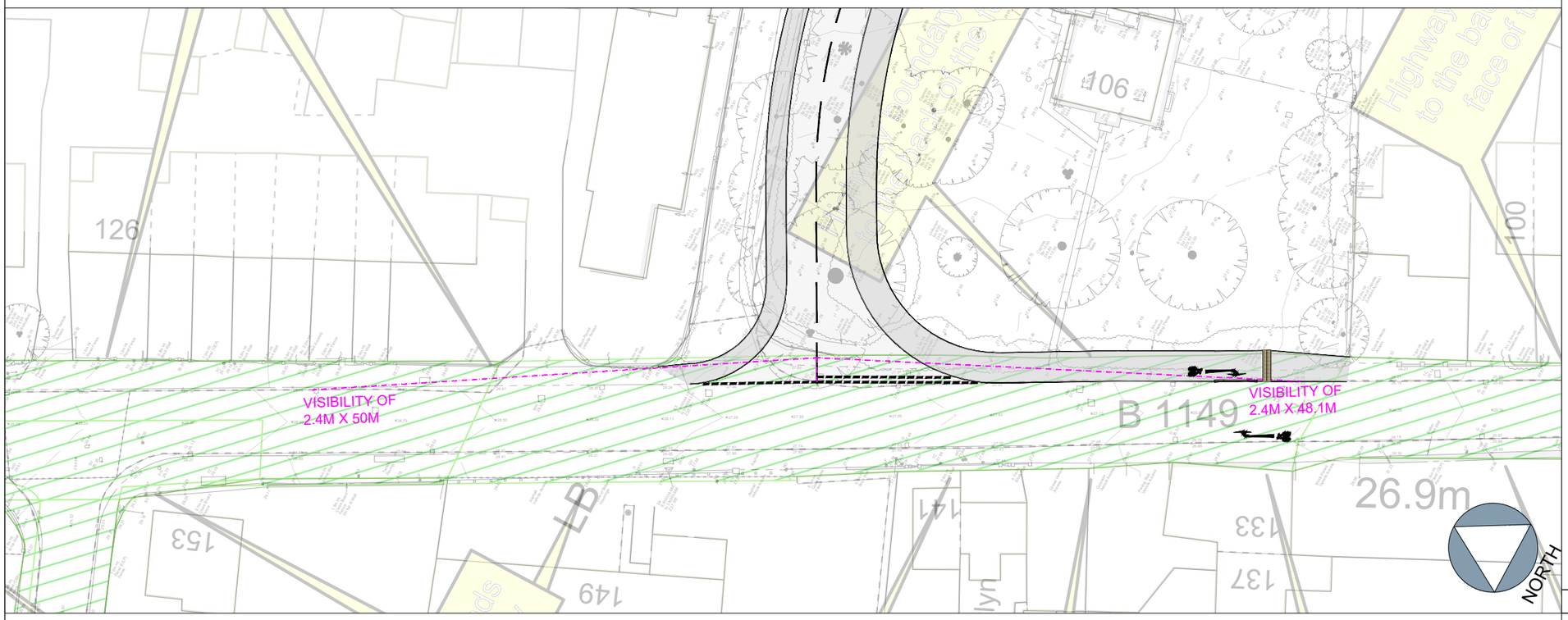
Graham

Appendix D





T-JUNCTION ARRANGEMENT - SCALE 1:1000



T-JUNCTION VISIBILITY SPLAYS - SCALE 1:500

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6. VISIBILITY SPLAYS HAVE BEEN BASED UPON THE RECORDED 85TH PERCENTILE SPEEDS ON HOLT ROAD FROM AN ATC SURVEY UNDERTAKEN BETWEEN 27TH JUNE TO 3RD JULY 2024. THE RECORDED SPEEDS WERE 30.5MPH NORTHBOUND AND 31.3MPH SOUTHBOUND.
7. HIGHWAY BOUNDARY MAPPING HAS BEEN PURCHASED FROM NORFOLK COUNTY COUNCIL.

KEY

HIGHWAY BOUNDARY EXTENT:

PRELIMINARY

DRAWING/DESIGN IS STILL 'IN DEVELOPMENT'
YOU ARE ADVISED TO MAKE DUE ALLOWANCE

Rev	Description	Date	By	App'd
P02	UPDATED DESIGN	18.03.26	CID	CEC
P01	FIRST ISSUE	06.03.26	CID	CEC

Date Created	Drawn By	Approved By	Suitabilty Code
05.03.26	CID	CEC	-

PBA Project Number	Scale
1009.0004	AS SHOWN (AT A3)

PBA Drawing No:	Revison
1009.0004-0008	P02

Project Name
HOLT ROAD, HORSFORD
NORFOLK

Project Phase
PRELIMINARY

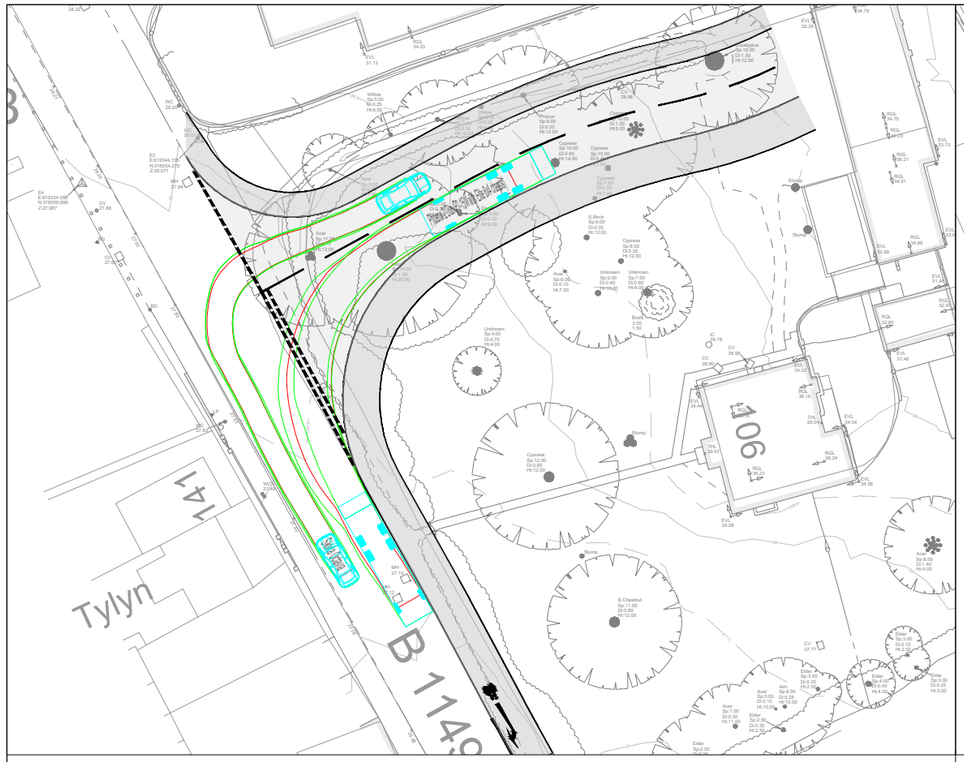
Title
T-JUNCTION ACCESS ARRANGEMENT AND VISIBILITY SPLAYS

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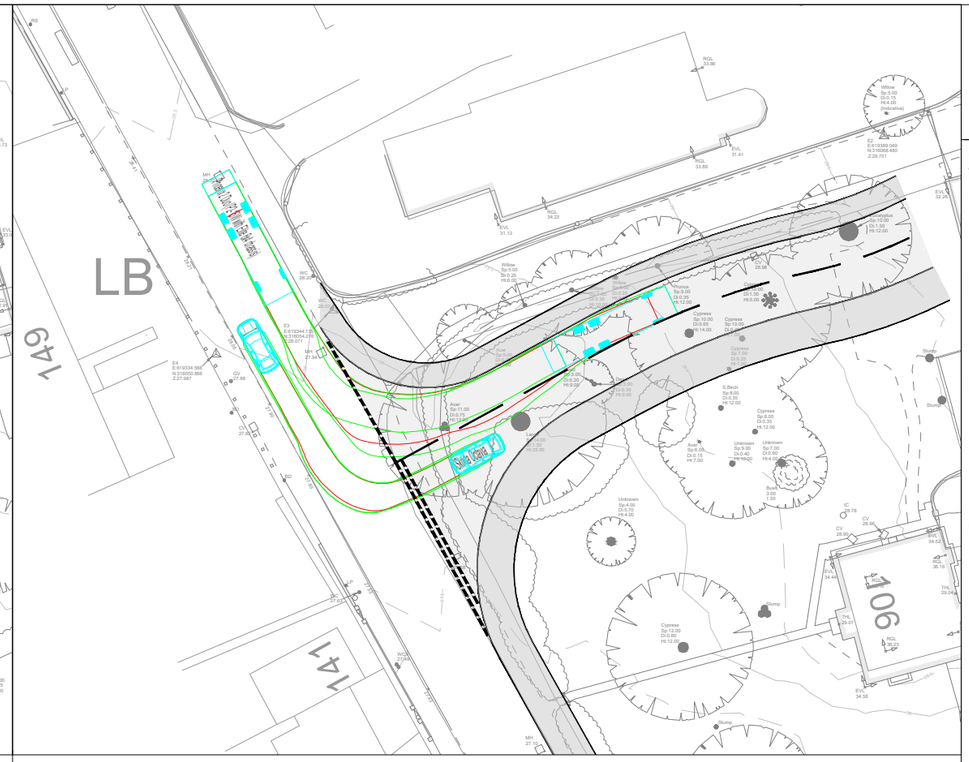
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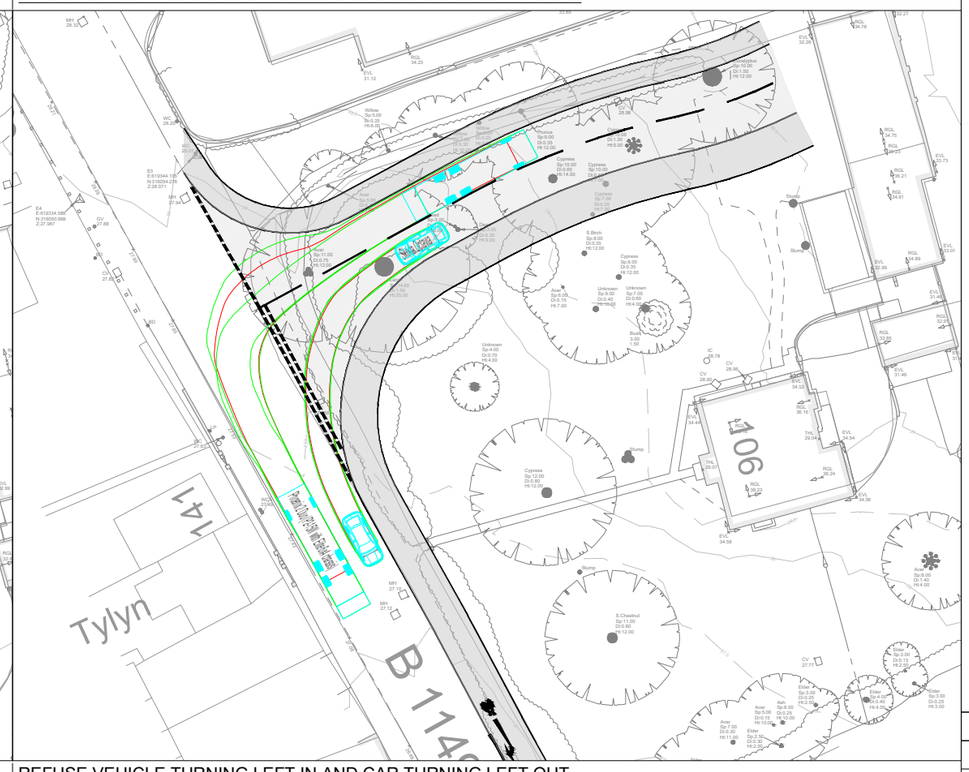
REFUSE VEHICLE TURNING LEFT OUT AND CAR TURNING RIGHT IN



REFUSE VEHICLE TURNING LEFT IN AND CAR TURNING RIGHT OUT



REFUSE VEHICLE TURNING RIGHT OUT AND CAR TURNING LEFT IN

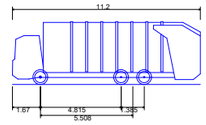


REFUSE VEHICLE TURNING LEFT IN AND CAR TURNING LEFT OUT

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VEHICLE PROFILE



NORTH

Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)

Overall Length	11.200m
Overall Width	2.530m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.500m



Skoda Octavia

Overall Length	4.572m
Overall Width	1.769m
Overall Body Height	1.488m
Min Body Ground Clearance	0.249m
Max Track Width	1.713m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.100m

PRELIMINARY

DRAWING/DESIGN IS STILL 'IN DEVELOPMENT'
YOU ARE ADVISED TO MAKE DUE ALLOWANCE

Rev	Description	Date	By	App'd
P02	UPDATED DESIGN	18.03.26	CID	CEC
P01	FIRST ISSUE	13.03.26	CID	CEC

Date Created	Drawn By	Approved By	Suitabilty Code
13.03.26	CID	CEC	-

PBA Project Number	Scale
1009.0004	1:500 (AT A3)

PBA Drawing No: 1009.0004-0009

Revison: P02

Project Name
HOLT ROAD, HORSFORD
NORFOLK

Project Phase
PRELIMINARY

Title
SWEPT PATH ANALYSIS OF A CAR AND REFUSE VEHICLE AT THE SITE ACCESS

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