



RIDGE

LAND EAST OF WROTHAM ROAD,
MEOPHAM

TRANSPORT ASSESSMENT

09/06/2026

**Transport Assessment
Land East of Wrotham Road, Meopham**

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TRANSPORT ASSESSMENT

09/06/2026

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Transport Assessment Land East of Wrotham Road, Meopham

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1.0 Introduction

Background

- 1.1 Ridge & Partners LLP (formerly Hub Transport Planning Ltd) has been commissioned by Richborough to provide transport advice for a proposed residential development on land east of Wrotham Road, Meopham, Kent.
- 1.2 The proposals have been submitted as part of an outline planning application for the erection of up to 350 residential dwellings, public open space and associated works. Approval is sought for the principal means of vehicular access from Wrotham Road and all other matters are reserved. The site location is shown on **Figure 1.1**.
- 1.3 An interim Transport Assessment (TA) was submitted to support the planning application whilst discussions and strategic modelling work continued with Kent County Council (KCC) as the Local Highway Authority (LHA). This TA includes the local junction modelling based on the traffic data from the Gravesham/Kent traffic model and the geographic scope agreed with KCC for junction assessments.

Structure and Purpose of the Report

- 1.4 This TA and accompanying Travel Plan (TP) set out the predicted traffic and transport impacts of the proposed development for various forecast scenarios and where appropriate includes proposed mitigation measures. The TP sets out a series of measures intended to encourage and promote the use of active and sustainable travel measures early in the occupation of the development.
- 1.5 Following this introduction, the report is set out as follows:
 - Section 2.0 – Planning Context;
 - Section 3.0 – Planning Policy and Guidance;
 - Section 4.0 – Background Information;
 - Section 5.0 – Sustainable Travel;
 - Section 6.0 – Development Proposals;
 - Section 7.0 – Traffic Generation, Distribution and Assignment;
 - Section 9.0 – Summary and Conclusion.

Limitations of the Report

- 1.6 This report has been undertaken at the request of Richborough, thus should not be entrusted to any third party without written permission from Ridge and Partners LLP. However, should any information contained within this report be used by any unauthorised third party, it is done so entirely at their own risk and shall not be the responsibility of Ridge and Partners LLP.
- 1.7 This report has been compiled using data from several external sources (such as TRICS and public transport websites); these sources are considered trustworthy and therefore the data provided is considered accurate and relevant at the time of preparing this report.

2.0 Planning Context

Background

- 2.1 At the time of writing, Richborough also have a live planning application (Ref: GB20250993) for a proposed residential development of up to 120 dwellings on land south of Longfield Road, to the west of the proposed development, also supported by Ridge.
- 2.2 Whilst both proposals are being progressed as separate planning applications, this TA considers the potential cumulative impacts of the land south of Longfield Road proposals.
- 2.3 On that basis, both planning applications will consider future scenarios where the other development comes forward (subject to planning permission), on a similar timescale and each will consider the other as a committed development for testing purposes.

Pre-Application Engagement

- 2.4 Ridge (under the former Hub brand) produced a Transport Assessment Scoping Report (TASR) for KCC in May 2025, outlining the principles for the proposed development and the proposed methodology for assessment.
- 2.5 KCC provided a response to the TASR on 10/06/2025 (Document Ref: PAP/2025/22). The key comments are summarised below with the full response included at **Appendix A**.
 - Unknown whether Gravesham Borough Council (GBC) has adopted the new KCC parking standards (Jan 2025). They currently use the standards in SPG4.
 - Cycle facilities should be provided in accordance with LTN 1/20 and any bus priority measures are in line with LTN 1/24. Any departure from these standards should be justified.
 - Consideration should be given to whether people are likely to drive to Ebbsfleet station for the highspeed line to St Pancras of southeast Kent.
 - Confirm bus journey times to key local facilities and whether they serve Meopham and Ebbsfleet railway stations.
 - Explore potential to improve bus service provision, and ideally a public transport strategy should be formed with other emerging sites within the area to ensure the site does not prohibit future development.
 - Provide information on major employment sites.
 - Provide a Walking and Cycling Audit of the routes to/from key local facilities. Any improvements to existing routes should be provided on a scaled plan so that they can be condition to any planning permission granted.
 - Queried the size of the access given the proposals are for residential development.
 - Consideration should be given to the proposed crossing points, as well as extending and widening the footway along the entire length of the site to accommodate both pedestrians and cyclists.
 - Proposals to be accompanied by a Stage 1 Road Safety Audit report and designers' response.
 - Further consideration needs to be given to on-site parking proposals for Camer Parade/local schools to discourage further driving.

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- Trip distribution and modelling should be undertaken in line with the Kent Transport Model (KTM)/Gravesham Transport Model (GTM).
 - Whilst the application is outline, the principles of the site in regard to parking should be set out in the TA.
- 2.6 A pre-application meeting was undertaken with KCC on 26/06/2025. Key supplemental points to those raised in the initial pre-application response are summarised below, with the agreed minutes from the meeting provided at **Appendix A**.
- Proposals should be based on a 'vision-led' approach as opposed to a 'predict and provide' approach in accordance with the latest National Planning Policy Framework.
 - Make reference to both the SPG4 parking standards, and new KCC standards.
 - Emphasised the importance of engaging with applicants/consultants from forthcoming local developments to create an aligned approach to off-site mitigation works and contributions.
 - Confirmed it would be acceptable to provide smaller junction radii of 6m, however the width of the road should be maintained at 6.75m to 'future proof' the site.

Interim Transport Assessment

Kent County Council

- 2.7 An Interim TA was submitted to KCC in September 2025 whilst strategic modelling work was being agreed and carried out by KCC's consultant, Jacobs.
- 2.8 Comments were received from KCC on the Interim TA on 3rd December 2025 and is included in full at **Appendix B**. The response is summarised below other than comments relating to traffic modelling work given that is superseded anyway by this updated TA.
- Sustainability: Limited public transport provision, inadequate walking and cycling infrastructure, and insufficient measures to support modal shift away from private car use.
 - Access and Safety: Existing speeds exceed limits; proposed access arrangements raise safety concerns and require further review.
 - Public Transport: Bus services are infrequent and lack peak-time commuter options.
 - Walking and Cycling: Deficiencies in local infrastructure, including lighting, cycle routes, and accessibility features.
 - Policy Compliance: The application conflicts with NPPF requirements for sustainable transport and Gravesham Design Code principles.
 - Further Information Required: Details on emergency access, visibility splays, off-site improvements, financial contributions and modelling results.
- 2.9 Most recently, having been through the modelling process with KCC and their transport consultants, and having received the relevant peak hour turning count forecasts from the GTM, this updated TA addresses not only addresses the comments indicated above but also provides peak hour junction capacity modelling and consideration of any necessary mitigation.
- 2.10 KCC's public transport team has provided a note which sets out the level of contribution expected to deliver sustainable bus improvements to serve the A227 corridor and support forthcoming development in the area. This is discussed later in this report.

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Active Travel England

2.11 Active Travel England (ATE) provided a response on the Interim TA (ATE Ref: ATE/25/01695/OUT) on 3rd December 2025. The key comments are summarised below and included in full at **Appendix B**. It should be noted that the majority of these comments are reflected within the KCC response to the Interim TA.

- Requested daily multi-modal trip generation analysis rather than being confined to peak hour periods.
- If the distance to key amenities is greater than 800m it is even more important that the route is of high quality.
- Does not consider the 3.0m shared use path LTN 1/20 compliant and requested the applicant to consider a fully segregated route for pedestrians and cyclists. Do not consider the use of Tradescant Drive suitable given it is indirect, narrow and lacks lighting.
- Requested that at the Wrotham Road/Green Lane junction, Green Lane should be redesigned for cycle priority and keep vehicle speeds low. Similarly, further design consideration should be given to the walking/cycle priority over the site access.
- Supports the applicants desire to improve bus services and bus stop infrastructure (albeit requested these be supported with seating).
- Should discuss with Southeastern the potential provision of step free access at Meopham station for platform 1 and potential improvements to rail service frequency.
- Supports the provision of cycle parking at Meopham Station and requested cycle provision at Camer Parade.

National Highways

2.12 National Highways (NH) provided a response to the Interim TA (NH Ref:25/13746) on 26th February 2026 recommending that planning permission not be granted for a specified period. The comments are summarised as follows and included at **Appendix B**.

- Requested that distribution and traffic flows were presented prior to assessment and noted that the Wrotham Road/A2 junction is sensitive to flow changes.
- Applicant to agree committed development with the LPA and provide the information to NH for review.
- Full details of TEMPro factors derived.
- Until trip generation, distribution and assignment are agreed, NH are unable to confirm the need for, or extent of SRN assessment required.
- Likely to recommend a Construction Environmental Management Plan (CEMP) to be secured via planning condition.

2.13 The GTM turning flow data was received from Jacobs on 6th March 2026 and were used to assess the agreed local junction for the relevant scenarios included within the GTM.

2.14 Following review, and processing of the data, this was provided to NH on 8th April 2026. NH provided a response on 29th April 2026 which is summarised as follows and included in full at **Appendix B**.

- Request to see the change in flows for the study area, particularly along the A2 as well as the impacts of the developments on the junction operation.

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- An independent high level distribution assessment was undertaken using Census 2011 Method of Travel to Work data which shows a greater number of vehicles traveling towards the A2/Wrotham Road junction and towards the M20. Therefore, NH request the modelling brief to be provided to understand the methodology used to distribute and assign traffic within the strategic model, in addition to the forecast model reports.
 - Acknowledge that the A2/Wrotham Road junction is currently operating under congested conditions during the evening peak hour at the southern roundabout with queueing traffic on the A2 westbound off slip. There are two committed mitigation schemes for the southern roundabout, these being:
 - 'Interim' Mitigation Scheme proposed under planning application ref: 20240856 (Former Tollgate Hotel); and,
 - 'Final' Mitigation Scheme proposed under planning application ref: 20141214 (Land at Coldharbour Road).
 - An assessment of the A2/Wrotham Road junction will be required and should be based on a calibrated and validated model.
 - Any assessment should include the two committed schemes within the relevant scenarios and be compliant with the guidance set out in DfT Circular in 01/2022.
 - Recommended that once the full extent of the SRN assessment has been agreed, the applicant should seek an up-to-date list of committed developments and details of committed schemes from the LPA.
 - Depending upon distribution, a merge and diverge assessment may be required.
 - Collision data analysis to be provided on any SRN junction assessed.
- 2.15 Further information has been requested from Jacobs including assumptions on distribution and committed developments. At the time of writing this information had not been received. Once received, the data will be considered and provided to NH for comment.
- 2.16 The link and junction validation details of the GTM model are not available to Ridge. In other words, we are not aware that queueing observations were undertaken at the A2/Wrotham Road junction to validate the specific turning flow predictions in the model. In order to validate, and if necessary, calibrate the junction model to represent existing operational conditions, it is considered necessary to undertake a manual assessment of the junction and to validate/calibrate the individual junction model using queue and traffic flow data collected in 2025.
- 2.17 In order to provide NH with further comfort on distribution, a manual Census 2011 Method of Travel to Work distribution has been undertaken of the proposed development traffic following NH's query of the level of anticipated traffic expected to reach the junction.
- 2.18 This note provides a manual (calibrated) assessment of the junction, alongside a separate merge/diverge assessment and review of highway safety at the junction. We have also considered the proposed mitigation schemes at the southern roundabout.
- 2.19 For clarity, the same assessment has been provided to NH for the adjacent site (Land south of Longfield Road).

3.0 Planning Policy and Guidance

Introduction

- 3.1 A review of key, national and local policy and guidance that is relevant to the proposed development has been undertaken and is presented within this chapter.

National Planning Policy Framework

- 3.2 The latest National Planning Policy Framework (NPPF) was published in December 2024 and sets out the Government's planning policies and how these are expected to be applied.
- 3.3 The most relevant paragraphs to the proposed development are 109, 110, 112, 115, 116, 117 and 118, which are detailed in **Table 1**.

Table 1: Relevant paragraphs from the NPPF

Paragraph Ref	Description
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. This should involve: - making transport considerations an important part of early engagement with local communities; - ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places. - understanding and addressing the potential impacts of development on transport networks; - realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated; - identifying and pursuing opportunities to promote walking, cycling and public transport use; and - identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.
110	The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural area, and this should be taken into account in both plan-making and decision making.
112	If setting local parking standards for residential and non-residential development, policies should take into account: - the accessibility of the development; - the type, mix and use of development; - the availability of and opportunities for public transport; - local car ownership levels; and - the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.
115	In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that: - sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location; - safe and suitable access to the site can be achieved for all users;

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Paragraph Ref	Description
	- the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and - any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach.
116	Development should only be prevented or refused on highways 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.
117	Within this context [related to paragraph 116], applications for development should: - give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use; - address the needs of people with disabilities and reduced mobility in relation to all modes of transport; - create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards; - allow for the efficient delivery of goods, and access by service and emergency vehicles; and - be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.
118	All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a vision-led transport statement or transport assessment so that the likely impacts of the proposal can be assessed and monitored.

- 3.4 This report is consistent with the statutory obligations outlined within the NPPF. This assessment considers how residents will be able to access the site safely and sets out the existing opportunities around the site to travel via alternative modes to the private car.
- 3.5 The site is considered to be situated in a location suitable to deliver sustainable development with regards to its close proximity to local facilities, Meopham railway station, and local schools. This report also sets out a package of enhancements to sustainable transport opportunities to maximise modal shift from the private car.
- 3.6 Notwithstanding this, the assessment also considers the level of vehicular trips to the site, and the potential level of impact this could have on the local highway network.

KCC Local Transport Plan

- 3.7 KCC's Local Transport Plan (LTP5), adopted in December 2024, sets out the strategic long-term vision for transport and accessibility within the county over the plan period (2024-2037).
- 3.8 The LTP5 document focuses on the following ambitions:
- "We want to improve the health, wellbeing, and economic prosperity of lives in Kent by delivering a safe, reliable, efficient and affordable transport network across the country and as an international gateway..."*
- "We will do this by delivering emission-free travel by getting dedicated infrastructure to electrify vehicles, increase public transport use and make walking and cycling attractive."*
- 3.9 The key transportation and highway policies that are most applicable to the proposed development are outlined in **Table 2**.

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Table 2: Relevant paragraphs and policies from Kent Local Transport Plan 5

Policy Ref	Description
Policy Objective 2	A) Achieve a fall over time in the volume of people killed or very seriously injured on KCC's managed road network, working towards the trajectory set by Vision Zero for 2050. Outcome: Deliver our Vision Zero road safety strategy through all the work that we do.
Policy Objective 5	B) Reduce the amount of forecast future congestion and crowding on highways and public transport that is associated with demand from development by securing funding and delivery of our Local Transport Plan. Outcome: Deliver a transport network that is quick to recover from disruptions and future-proofed for growth and innovation, aiming for an infrastructure-first approach to reduce the risk of highway and public transport congestion due to development.
Policy Objective 8	A) We will aim to obtain further funding to deliver the outcomes our Bus Services Improvement Plan (or its successor) beyond its current horizon of 2024/25. We will ensure that our Local Transport Plan proposals are clearly evidenced in terms of their contribution towards achieving our Bus Service Improvement Plan. Outcome: A growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to invest in and provide better services.
Policy Objective 9	A) We will aim to deliver walking and cycling improvements at prioritised locations in Kent to increase activity levels and support Kent's diverse economy, presented in a Kent Cycling and Walking Infrastructure Plan. Outcome: Health, air quality, public transport use, congestion and the prosperity of Kent's high streets and communities will be improved by supporting increasing numbers of people to use a growing network of dedicated walking and cycling routes.

KCC Design Guide

- 3.10 The KCC Design Guide (HDG), adopted in 2006, is the leading guidance document for highways design in Kent for new developments.
- 3.11 Considering the proposals are for outline permission, except for details of access, the design guide has been used to inform the access arrangements, detailed and referenced to later in this report.
- 3.12 Further use of (and reference to) the HDG will be undertaken as the proposals evolve to the detailed planning stage. The final proposals will be designed in accordance with the technical specifications presented in the HDG, including but not limited to, internal road layout, and serving and delivery arrangements.

KCC Parking Standards

- 3.13 The KCC Parking Standards document was formally adopted in January 2025 and replaces the previously used standards adopted in 2006.
- 3.14 The guidance sets out the parking standards for new developments in Kent and seeks to balance the need to provide an appropriate parking provision, ensure the safe operation of the local highway and encourage sustainable travel.
- 3.15 It is not yet clear whether Gravesham Borough Council (GBC) has adopted the new parking standards, or whether they continue to utilise the superseded KCC standards from 2006.
- 3.16 Considering this, and from pre-application discussions with KCC, both documents will be reviewed as part of this TA to set out the principles for parking on site, however it is considered likely that the Gravesham standards will be used for assessment.

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- 3.17 The schedule of accommodation remains to be detailed as part of a reserved matters planning application. Once the detailed schedule of accommodation is known, as well as the formal parking standards adopted by GBC, the finalised level and type of parking will be provided.

Gravesham Local Plan Core Strategy

- 3.18 The GBC Local Plan Core Strategy was formally adopted in September 2014 and sets out the long-term spatial vision for the Borough during its plan period (April 2011-March 2028).
- 3.19 The document outlines the strategic objectives for the borough based on the characteristics of the area and the key issues to be addressed.
- 3.20 Whilst the Local Plan Core Strategy is an overarching spatial document, it does include policies relating to transport.
- 3.21 The key policies relating to transport that are considered within this report are summarised in **Table 3**.

Table 3: Relevant paragraphs and policies from Gravesham Local Plan Core Strategy

Policy Ref	Description
Policy CS11 - Transport	New developments should mitigate their impact on the highway and public transport networks as required. As appropriate, transport assessments and travel plans should be provided and implemented to ensure the delivery of travel choice and sustainable opportunities for travel.
	Sufficient parking in new development will be provided in accordance with adopted parking standards which reflect the availability of alternative means of transport and accessibility to services and facilities.
	The council will support proposals which improve public transport provision and facilities in the Borough.
	The Council will seek improvements to walking and cycling facilities and networks in the Borough including provision in new development as appropriate.

- 3.22 It should be noted that the emerging GBC Local Plan to cover the period up to 2042 is currently at the Regulation 19 stage. This will be reviewed as part of any future reserved matters application.

Gravesham Local Cycle and Walking Infrastructure Plan (LCWIP)

- 3.23 The Gravesham LCWIP, formally adopted in November 2022, identifies and prioritises investment for new infrastructure to support and encourage people to walk and cycle. The LCWIP identifies infrastructure for a short, medium and long terms horizon to meet the active travel objectives of Gravesham.
- 3.24 The LCWIP identified the following schemes within the vicinity of the site.
- Route 6 – Higham – Meopham via Cobham and Sole Street: Primarily identified as a Leisure connection which utilises a number of rural routes and existing PRow routes. The route commences in Meopham via Wrotham Road near to the junction with Norwood Lane.
- 3.25 It is acknowledged within the LCWIP that the route is inherently constrained by narrow rural roads with no existing infrastructure and unsurfaced PRow, and therefore several alignments are proposed.

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- 3.26 As part of this TA, consideration is given to how future users of the site could either link to the route, or whether contributions can be provided to help progress the LCWIP proposals.

4.0 Background Information

Site Location

- 4.1 The site is situated c.7.5km to the south of Gravesend (as the crow flies), on land east of Wrotham Road, Meopham, and is bound by Green Lane to the north, agricultural land to the east, a private lane and residential properties to the south, and the A227 Wrotham Road to the west.

Local Highway Network

A227 Wrotham Road

- 4.2 The A227 Wrotham Road is a single carriageway road and provides a strategic function by connecting to the M20 at Junction 2 in the south, and the A2 and Gravesend in the north. More locally, Wrotham Road provides access to a variety of land uses including residential, leisure, and commercial properties.
- 4.3 Wrotham Road is c.8.0m wide with footways present on either side of the carriageway. Footways are of variable widths along its length; however, they are generally c.2.0m wide within the vicinity of the site.
- 4.4 Pedestrians are facilitated crossing over Wrotham Road to the south of the junction with Longfield Road via a dropped kerb facility and pedestrian refuge area in the middle of the carriageway.
- 4.5 Wrotham Road forms a priority junction with the B260 Longfield Road as well as Camer Parade. The junction benefits from the provision of a ghost-island right turn lane on Wrotham Road southbound which measures c.50m in length.
- 4.6 A 30mph speed limit is in operation along Wrotham Road directly adjacent the site. It is also noted that a central reserve strip has been installed in recent years adjacent Camer Parade prior to the ghost-island right turn.
- 4.7 Traffic Regulation Orders (TROs) in the form of double yellow lines are marked on either side of Wrotham Road along the entire length of the site frontage and signed as 'No stopping at any time on verge or footway'. This is likely to discourage stopping and parking associated with school drop-off and pick-up periods for schools on Longfield Road, and for people accessing local facilities on Camer Parade.

B260 Longfield Road

- 4.8 Longfield Road is a single carriageway road with a c.6.0m width, along with c.1.5m-2.0m footways either side, which reduces to a provision of one footway on the southern side of the carriageway once it becomes more rural.
- 4.9 The B260 provides a continuous connection to Dartford in the northwest. Within the vicinity of the site, Longfield Road, operates a 30mph speed limit to the east of the site before transitioning into a 60mph speed limit part way along the site frontage and to the west. Along its length, it provides direct access to Meopham Community Academy, a pre-school and the National Autistic Society Helen Allison School, as well as several residential dwellings.
- 4.10 Many of the dwellings between Meopham Community Academy and the Helen Allison School do not have designated off-street parking facilities, meaning residents rely on on-street parking availability.

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- 4.11 'No Stopping' TROs are situated outside of the schools within the vicinity of their accesses, on the westbound side of Longfield Road. This prohibits vehicles stopping, waiting and parking between the periods of 08:00-09:30 and 14:30-16:00, coinciding with the school drop-off and pick-up times. Double yellow lines are also provided on the eastbound side of the carriageway outside of Meopham Community Academy.
- 4.12 There is a zebra crossing facility adjacent Meopham Community Academy to facilitate pedestrian crossing. It is noted that a dropped kerb facility has previously been provided over Longfield Road at the junction with Wrotham Road, however this has now been removed, with guard rail installed to guide pedestrians towards the zebra crossing.

Green Lane

- 4.13 Green Lane forms a priority T-Junction with Wrotham Road immediately north of the site and provides a primarily local function by providing access to nearby rural settlements.
- 4.14 The junction benefits from the provision of a ghost-island right turn lane for vehicles traveling northbound on Wrotham Road and turning right to Green Lane. The carriageway is c.8.0m in width with a footway of variable width situated on its northern side.
- 4.15 Green Lane is limited to a 30mph speed limit within the vicinity of the site, before transitioning to national speed limit (60mph for cars) further east.
- 4.16 At the junction with Wrotham Road, Green Lane is signed as 'Unsuitable for Heavy Goods Vehicles'.

Huntingfield Road

- 4.17 Huntingfield Road is a residential access road connecting Longfield Road at its southern extent, between Meopham Community Academy and the Helen Allison School, to Wrotham Road at its eastern extent.
- 4.18 The carriageway measures c.5.0m in width with footways c.1.5-2.0m in width either side to facilitate pedestrian access.
- 4.19 Huntingfield Road provides access to several residential properties along its length, the majority of which benefit from off-street parking facilities.

School Close

- 4.20 School Close is a minor access way leading to a cul-de-sac of several bungalows and is solely accessible for vehicles from Longfield Road. The carriageway measures c.4.5m in width and contains c.2.0m footways either side.
- 4.21 The entirety of School Close has double yellow lines marked on either side of the carriageway, likely to discourage parking associated with school pick up and drop off at the local schools and parking associated with the shops situated directly adjacent on Longfield Road. Wooden bollards are also present to discourage parking on the verges adjacent the carriageway.
- 4.22 A dedicated footway connection is provided from School Close at its northern extent to the local facilities provided on Camer Parade.

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- 4.23 At the northern end of School Close, a turning head is provided in the form of a roundabout and gives access to Camer Parade car park which serves the local facilities on Camer Parade. On-site observations estimate that there is capacity in the region of 20 vehicles, although there are no marked bays.
- 4.24 Camer Parade itself has designated parking bays that are signed as a maximum 2-hour stay Mon-Sat 08:00-18:30pm with no return within 1 hour. On-site observations estimate that there is capacity in the region of 28 vehicles.

On-Site Observations

- 4.25 Engagement was undertaken with the Parish Council during the initial site promotion phase in 2019 and 2020. From this, concerns were raised regarding local traffic and parking issues associated within the school pick-up and drop-off periods on local roads, as well as on Camer Parade.
- 4.26 A site visit was undertaken of local roads surrounding the site, as well as the schools located on Longfield Road on 5th March and 6th March 2025, with a view to observing the existing situation on the highway network.

Pre and Post School Pick-up and Drop-off

- 4.27 According to their websites, the start and finish times for the schools on Longfield Road are between 08:45-08:50 and 15:00-15:15, respectively. To understand local parking accumulation on surrounding roads associated with school pick-up and drop-off, a spot parking survey was undertaken which accounted for the school gates opening and closing prior to and following the start and finish times. **Table 4** and **Table 5** summarise the parking accumulation during the school drop-off and pick-up periods, respectively. The surveys were undertaken along a circular route at 15-minute intervals.

Table 4: School Drop-Off Parking Accumulation (08:00-09:15)

Road	Time periods observed				
	08:00-08:15	08:15-08:30	08:30-08:45	08:45-09:00	09:00-09:15
Wrotham Road	0	6	8	20	4
Longfield Road	12	13	25	16	12
School Close (dropping off)	0	1	2	7	0
Camer Car Park (off School Close)	10	10	13	20	12
Huntingfield Road (NB/SB)	7	7	18	16	9
Huntingfield Road (EB/WB)	7	8	8	11	6
Camer Parade	18	18	21	22	20
Total	54	63	95	112	63

Table 5: School Pick-Up Parking Accumulation (14:30-15:45)

Road	Time periods observed				
	14:30-14:45	14:45-15:00	15:00-15:15	15:15-15:30	15:30-15:45
Wrotham Road	3	10	30	3	1
Longfield Road	13	14	26	19	15
School Close	0	0	6	5	1
Camer Car Park (off School Close)	18	18	16	16	12

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Road	Time periods observed				
	14:30-14:45	14:45-15:00	15:00-15:15	15:15-15:30	15:30-15:45
Huntingfield Road (NB/SB)	13	15	19	17	11
Huntingfield Road (EB/WB)	7	7	8	9	9
Camer Parade	26	26	23	20	19
Total	80	90	128	89	68

- 4.28 Obviously, the spot parking survey demonstrates that across the school drop-off and pick-up periods, parking on the local road network and parking areas increases closer to the school start/finish times before dropping back to a 'typical' level.
- 4.29 Parking accumulation was observed to be more intense on roads closer to the schools, as would be expected. It was observed that vehicles that park closer to the school dwell for a much shorter period than those parked further away, which again would be expected given the shorter walking distance.

Local Highway Network Operation

- 4.30 It was observed that parking accumulation on Wrotham Road occurs predominantly south of the junction with Longfield Road on the northbound side of the carriageway. Most of the parking is largely attributed to school pick-up and drop-off with parents observed to be walking between the school and their vehicles.
- 4.31 The majority of Wrotham Road south of Longfield Road is marked with single yellow lines; however, it was observed that vehicles were also parking unlawfully on the double-yellow lined section closer to the junction with Longfield Road, both partially and fully on the verge which contravenes the TROs currently in place.
- 4.32 On Longfield Road, inconsiderate kerbside parking was observed further west near to the Helen Allison school, past the existing TROs adjacent the school access. This severely restricts the useable width of the footway for pedestrians and pedestrians with pushchairs.
- 4.33 However, some vehicles were also observed to be stopping in front of the schools either very briefly or for up to five minutes which contravenes the TROs currently in place. In some instances, this was on either side of the carriageway (including partial kerbside parking) which made it difficult for both pedestrian access and for vehicles on the main carriageway to manoeuvre.
- 4.34 Despite the TROs in place on School Close, vehicles were observed to be parking and dropping children off on the double yellow lines on the southbound side of the carriageway, as well as on the mini-roundabout circulatory. Some vehicles were observed to dwell for up to five minutes which seemed to cause some issues for vehicles accessing/egressing Camer car park.
- 4.35 Vehicles were observed to mainly be parking on Huntingfield Road on the northbound side of the carriageway close to the junction with Longfield Road and in some instances within the bellmouth.

Highway Safety

- 4.36 A review of Personal Injury Accident Data (PIA) on the local highway network surrounding the site has been undertaken using data obtained directly from KCC for the most recent five years of available data from January 2021 to December 2025. This supersedes the previous data provided within the interim TA (2019-2024).

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4.37 The PIA results are summarised in **Table 6** and included at **Appendix C**.

Table 6: Personal Injury Accident Data (01/01/2021–31/12/2025)

Location	Slight	Serious	Fatal	Total
Junctions				
Wrotham Road/Longfield Road	2	0	0	2
Wrotham Road/Camer Parade Egress	1	0	0	1
Wrotham Road/Denesway	1	0	0	1
Wrotham Road/Melliker Lane	1	0	0	1
Green Lane/Tradescant Drive	1	0	0	1
Links				
Wrotham Road	0	1	0	1
Longfield Road	0	1	0	1
Total	6	2	0	8

4.38 **Table 6** demonstrates that a total of 8 PIAs have occurred within the most recent five years of available data, six of which were classified as 'Slight', and two classified as 'Serious'.

Wrotham Road/Longfield Road

4.39 Two PIAs were recorded at the Wrotham Road/Longfield Road junction, both of which have been classified as 'Slight'.

4.40 The description from PIA 1 indicates that the driver of the vehicle hit something in the carriageway causing them to correct the vehicle path. The driver over corrected, resulting in the vehicle colliding with the pedestrian refuge on Longfield Road.

4.41 PIA 2 was as a result of a driver rear ending a stationary vehicle at temporary traffic lights on Longfield Road.

Wrotham Road/Camer Parade exit

4.42 One PIA was recorded at the Wrotham Road/Camer Parade exit and was classified as 'Slight'. This was as a result of a vehicle egressing Camer Parade to turn right and failing to give way to a vehicle heading southbound on Wrotham Road.

Wrotham Road/Denesway

4.43 One PIA occurred at the Wrotham Road/Denesway junction, classified as 'Slight'. This was due to a police vehicle being in pursuit of a suspect on foot. A member of the public tackled the suspect and hit their face on the number plate of the police vehicle.

Wrotham Road/Melliker Lane

4.44 One PIA occurred at the Wrotham Road/Melliker Lane junction, classified as 'Serious'. This was as a result of vehicle turning right into Melliker Lane and failing to indicate and colliding with a motorcycle driver traveling northbound.

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Green Lane/Trandescant Drive

- 4.45 One PIA occurred at Green Lane/Trandescant Drive, classified as 'Slight'. It is unclear from the details of the exact nature of the PIA, however it appears to have been as a result of a poorly executed driving manoeuvre.

Wrotham Road

- 4.46 One PIA occurred on Wrotham Road, south of Denesway, classified as 'Serious'. It appears that this was as a result of a vehicle towing a trailer egressing a layby without looking properly, causing a cyclist to be knocked off their bicycle by the trailer.

Longfield Road

- 4.47 One PIA occurred on Longfield Road, classified as 'Serious'. This was as a result of a vehicle egressing Huntingfield Road and collided head on with a vehicle on Longfield Road. This PIA occurred outside of the school drop-off and pick-up periods.

A2/Wrotham Road

- 4.48 Additional PIA data was obtained for the A2/Wrotham Road junction complex as requested by NH. This is presented in **Table 7**.

Table 7: A2/Wrotham Road PIAs (01/01/2021-31/12/2025)

Location	Slight	Serious	Fatal	Total
A2 Mainline EB	6	0	0	6
A2 Mainline WB	4	1	0	5
A2 EB Off slip	1	0	0	1
A2 WB Off slip	5	1	0	6
A2 EB On slip	0	1	0	1
A2 WB On slip	0	0	0	0
Wrotham Road (S)	2	0	0	2
Wrotham Road (N)	3	0	0	3
Internal Links	1	0	0	1
Northern Roundabout Circulatory	2	1	0	3
Southern Roundabout Circulatory	2	0	0	2
Total	26	4	0	30

- 4.49 The results show that there has been a total of 30 PIAs over the most recent five-year period for which data is available, 26 of which were classified as 'Slight' and 4 classified as 'Serious'. The data refers to both roundabout junctions, the link road between the two junctions, and the A2 mainline in the vicinity of the junction complex.
- 4.50 The highest volume of PIAs has been recorded on the A2 mainline; 6 in the eastbound direction and 5 in the westbound direction (10 classified as 'Slight' and 1 classified as 'Serious'). From interrogation of the PIA details, these appear to be as a result of driver error with the majority resulting in rear-end shunts following poor observation of other traffic.

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- 4.51 There has been a total of 6 PIAs recorded on the A2 WB off slip, 5 of which have been classified as 'Slight' and 1 which has been classified as 'Serious'. Again, the majority of these PIAs occurred as a result of driver error not observing traffic on the slip road. Notably, PIA 26 appears to be caused by a bike throttle being stuck causing the driver to lose control and PIA 27 details that the offending driver failed a breath test and was arrested for drink driving.
- 4.52 Two PIAs were recorded (13 and 15) on the Wrotham Road approach to the southern roundabout and both were detailed as rear end shunts. Notably, the details recorded for PIA 15 indicates that the driver was using their phone prior to colliding with the rear of the other vehicle in question.
- 4.53 The 'Serious' PIA on the northern roundabout appears to be as a result of a driver mistiming their entry into the circulatory carriageway from the internal link road and colliding with a vehicle already on the circulatory. The remaining 'Serious' PIA which occurred on the A2 EB on slip was due to a motorcycle towing another motorcycle via a tow rope. The tow rope snapped causing the towed motorcycle to fall and injure the pillion passenger.

Summary

- 4.54 Whilst all PIAs are regrettable, the volume and pattern of incidents recorded within the vicinity of the site do not give any undue cause for concern, with the data suggesting that the majority of accidents have been caused by driver error and poorly executed manoeuvres rather than the layout and marking of the highway.
- 4.55 It should also be noted that the updated PIA data for the local road network within the vicinity of the site highlights a reduction of two PIAs compared to the proceeding five years of available data presented within the Interim TA.
- 4.56 In addition, the level of development traffic that is forecast to pass through the A2/Wrotham Road junction is negligible in comparison to the level of traffic already using the junction, as demonstrated in Section 8 of this report. As a result, it is concluded that the proposed development will not have an unacceptable impact on highway safety at the A2/Wrotham Road junction.

5.0 Sustainable Travel

Accessibility by Active Travel

Accessibility by Walking

- 5.1 Walking and cycling provide important alternatives to cars and should also be encouraged to form part of longer trips via public transport. The Chartered Institute of Highways and Transportation (CIHT) has prepared several guidance documents that provide advice for sustainable travel infrastructure provision within new developments. The suggested walking distances to key facilities (e.g. healthcare, shops) are presented in **Table 8**.

Table 8: Suggested Walking Distances (CIHT Guidelines)

	Town Centre (m)	Commuting/Schools/ Sightseeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

- 5.2 In addition to the CIHT guidance, MfS and the National Design Guide (2021) states that 'walkable neighbourhoods' are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which may be accessed comfortably on foot.
- 5.3 MfS also states that the 800m walking distance is not an upper limit and references the former Planning Policy Note 13: Transport (PPG13) guidance in respect of walking replacing short car trips, particularly those under 2km.
- 5.4 Table NTS0303 from the 2024 National Travel Survey (released August 2024) indicates that the national average walking trip distance in 2024 was 0.7 miles or 1.12km.
- 5.5 The 2024 National Travel Survey (Table NTS0308) also shows that walking was the most frequent mode used for short trips, with 76% of trips under one mile (1.6km) being completed by foot in 2024, which is very similar to 2023 (77%) and 2022 (80%).

Local Facilities and Accessibility

- 5.6 Footways are present on either side of Wrotham Road as previously discussed with crossing facilities provided in the form of a dropped kerb facility with pedestrian refuge to the south of the site, and a recently installed dropped kerb crossover adjacent the Camer Parade egress.
- 5.7 To the north, footways are provided either side of the carriageway towards Meopham railway station, with multiple dropped kerb facilities and pedestrian refuges along its length to facilitate crossing.
- 5.8 The walking distances from the site are presented in **Figure 5.1** which accounts for local footways and crossing facilities as well as the Public Rights of Way (PRoW) network within the vicinity of the site, including promoted walking routes such as along Camer Road and through Camer Park.
- 5.9 The walking distances have been measured from the developable area of the site to all of the proposed access points.

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5.10 The local facilities situated within the vicinity of the site are presented in **Figure 5.2** and summarised in **Table 9**.

Table 9: Local Facilities

Local Facility (Figure Reference)	Distance
Community Facilities	
St Pauls Catholic Church (C1)	560m
St John the Baptist (C2)	560m
Meopham Library (C3)	1.0km
Meopham Station Post Office (C4)	1.1km
Meopham Village Hall (C5)	1.3km
Southdown Shaw Allotments (C6)	1.7km
Meopham Green Baptist Church (C7)	1.9km
Education	
Meopham Community Academy (E1)	350m
Helen Allison School (E2)	510m
Meopham Secondary School (E3)	1.0km
Employment	
Bowes Industrial Centre (EMP1)	1.8km
Gravesend Town Centre (EMP2)	7.9km
Healthcare	
Meopham Medical Centre (H1)	1.0km
Meopham Pharmacy (H2)	1.1km
Meopham Dental Care (H3)	1.8km
Leisure	
Judsons Recreation Ground (L1)	900m
Camer Park Country Park (L2)	1.0km
Meopham Leisure Centre (L3)	1.0km
The Lab Performance UK (L4)	1.3km
Frank Mulley Combat Academy (L5)	1.3km
Royal Hounds Dog Park (L6)	1.5km
Meopham Cricket Club (L7)	1.8km
Retail	
Sir Male Grooming (Barber Shop) (R1)	150m
Tesco Express – including EVRI Parcel Drop off (R2)	200m
Meopham Shish Grill and Restaurant (R3)	200m
Café Lounge (R4)	200m
Costa Coffee (R5)	200m
The Salon (R6)	200m
McCoy's Fish Shop (R7)	250m
Meopham Tandoori (R8)	250m
Bartellas Mediterranean Restaurant (R9)	600m

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Local Facility (Figure Reference)	Distance
George Inn Public House (R10)	700m
Valeries Sandwich and Coffee Shop (R11)	1.1km
Morrisons Daily (R12)	1.1km
Railway Tavern Public House (R13)	1.2km
The Indian Palace Restaurant and Takeaway (R14)	1.3km
The Cricketers Inn (R15)	1.7km
Minel Meze & Grill Restaurant / Bar (R16)	1.7km

- 5.11 Collectively, **Figure 5.1** and **Figure 5.2** demonstrate that there is a wide variety of local facilities that are likely to be used on a day-to-day basis by future residents of the site that are all reachable within the preferred maximum 2.0km walking distance.
- 5.12 Notably, there are a significant number of facilities situated on Camer Parade opposite the site, and along Wrotham Road and Longfield Road, all within an 800m, and 1.2km walking distance of the developable area of the site.
- 5.13 It should be noted that Camer Parade is identified within the adopted and emerging Local Plans as a Local Centre which meets the “everyday needs” of the local community and therefore is considered to be suitable to facilitate the proposals.
- 5.14 Within their pre-application response, KCC stated:
“It would be useful to understand where major employment centres are in relation to the site, and how access to them can be achieved by sustainable modes”
- 5.15 Whilst there are a number of datasets that outline where people are traveling to, i.e. Census Method of Travel to Work, there is a limitation on being able to identify the specific employment locations within the datasets lower than the Middle Super Output Area level (MSOA).
- 5.16 Census 2011 Method of Travel to Work at the MSOA level indicates that the top five destinations people travel to work using all methods of travel from the MSOA Gravesham 012 is Gravesend, Dartford, Westminster (City of London, Medway (i.e. Rochester, Chatham), and Sevenoaks.

Accessibility by Cycling

- 5.17 There is potential for short car trips to be substituted for cycle trips, and for longer trips to be substituted by a combination of cycle and public transport trips.
- 5.18 The CIHT Planning for Cycling document (2014) states that “The majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips (DfT, 2014a).”
- 5.19 The Department for Transportation (DfT) Cycling and Walking Investment Strategy (2017) also refers to the threshold of five miles (or 8km), stating that “two out of every three personal trips are within five miles – an achievable distance to cycle for most people, with many shorter journeys also suitable for walking.”

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- 5.20 The second Cycling and Walking Investment Strategy published DfT in 2022 does not specifically reference the statement in Paragraph 5.18, however one of the main objectives is to increase the percentage of short journeys (i.e. those under five miles) in towns and cities that are walked or cycled from 41% in 2018/19 to 46% in 2025.
- 5.21 The 2024 National Travel Survey also shows that the average cycle trip distance (for all purposes) was three miles (or 4.8km). Therefore, it is reasonable to consider cycling as a viable mode of travel for distances up to 8km.
- 5.22 The site is situated c.5.0km to the south of National Cycle Network (NCN) Route 177 which provides an east-west traffic-free route to Gravesend via NCN Route 1 and to Stroud.
- 5.23 As previously noted, Gravesham LCWIP cycle route 6 is situated to the north of the site on Wrotham Road/Norwood Lane. This route is proposed to link Meopham and Higham via Cobham and Sole Street.
- 5.24 The cycling distances from the site are presented within **Figure 5.3** and are inclusive of the distance from the developable area of the site to all proposed access points. This also includes the proximity of the site to promoted NCN routes and identified LCWIP schemes.
- 5.25 This shows that cyclists can reach key locations such as Gravesend, which provides a large variety of facilities typical of a large town centre. In addition, Meopham railway station is situated a 3-minute cycle from the site and therefore offers a sustainable multi-modal method of travel for longer distance journeys.
- 5.26 Although there is no designated cycle infrastructure within the vicinity of the site, given the 30mph speed limit between the site and surrounding facilities, it is considered that the local network is generally suitable for cyclists of all abilities, although it is acknowledged that some routes are likely to be used by more experienced cyclists.

Walking and Cycling Audit

- 5.27 A Local Transport Note (LTN) 1/20 route audit has been undertaken using an adaption of the assessment framework provided in Appendix A of LTN 1/20. The scope of the route audit was:
- Route 1 – Wrotham Road between Green Lane and Longfield Road (Incl. Camer Parade).
 - Route 2 – Longfield Road between Wrotham Road and National Autistic Society Helen Alison School.
 - Route 3 – Wrotham Road between Green Lane and Station Road.
 - Route 4 – Wrotham Road between Longfield Road and Ifield Road.
- 5.28 In LTN 1/20, a route comprises “street checks” (on road) and “path checks” (off-road). Therefore, in this instance, all routes are considered as “street checks” given off-road facilities such as footways follow a road, and are not completely segregated, they have interactions with motor vehicles at junctions.
- 5.29 Where bus stops are not present along a route, these have been removed from the total score, and the score has been recorded as a “-” in the full assessment.
- 5.30 The tool acts as a system for reviewing new schemes against absolute ideal conditions and therefore existing routes will naturally not score as highly. However, this does not inherently mean that the route is ‘bad’ or that the route would not be used by pedestrians and cyclists. This should be considered when reviewing the assessment.

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5.31 In essence, the tool acts as a framework to identify any potential off-site measures to improve active travel within an area as part of a development proposal.

5.32 A summary of the route audit is provided in **Table 10** with the full assessment provided at **Appendix D**.

Table 10: LTN 1/20 Route Audit

Key Requirement	Score	Key Comments
Route 1: Wrotham Road between Green Lane and Longfield Road (Incl. Camer Parade)		
Accessibility	7	- Gradient is less than 3%. - Tactile paving is available but not entirely compliant with Guidance i.e. on Camer Parade where two tactiles are not provided on dropped kerbs. - Cyclists are required to wait behind buses with limited overtaking opportunities given the central reserve strip on Wrotham Road. - Toilet facilities provided within local shops.
Comfort	3	- Consistent, good quality surface material along Wrotham Road. - Inconsistent footway surfacing on footways along Wrotham Road and on Camer Parade.
Directness	7	- Route follows road and is very direct. - Pedestrians and cyclists give way at minor arm junctions; however, delay is low.
Attractiveness	3	- No wayfinding signs, places to rest and shelter, and no cycle parking available. - Route is partially lit along Camer Parade. - There are no shared use cycle tracks.
Cohesion	3	- No transitions are provided for cyclists as there is currently no designated cycle infrastructure. - Infrastructure provision for pedestrians is generally consistent but could be improved with regards to widths.
Overall Score	25	
Route 2: Longfield Road between Wrotham Road and National Autistic Helen Alison School		
Accessibility	4	- Gradient is between 3-5%. - Tactiles provided across Huntingfield Road, however no dropped kerb crossover is provided from southern footway prior to section of vehicles observed to be parking half-on/half-off the kerb which impedes wheelchair users and prams.
Comfort	2	Sections of good quality surface material on Longfield Road but not for the entire route.
Directness	7	- Route follows road and is very direct. - Pedestrians and cyclists give way at the Longfield Road/Wrotham Road junction (pedestrians facilitated by pedestrian refuge); Delay is likely to be low for pedestrians whilst cyclists are generally likely to have similar delay to motor vehicles.
Attractiveness	3	- No wayfinding signs, places to rest and shelter, and no cycle parking available. - Route is partially lit, although could be improved.

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Key Requirement	Score	Key Comments
Cohesion	3	- No transitions are provided for cyclists as there is currently no designated cycle infrastructure. - Infrastructure provision is generally consistent, but the location of parked vehicles could require some users to cross the road prematurely without the presence of a dropped kerb crossover.
Overall Score	19	
Route 3: Wrotham Road between Green Lane and Meopham railway station		
Accessibility	8	- Gradient is less than 3%. - Some tactiles provided although there are some locations where they are not provided at dropped kerbs, such as Pine Rise at the junction with Wrotham Road. - Bus stops situated within laybys help to reduce cyclist delay. - No step-free access to Platform 2 at Meopham railway station.
Comfort	3	Consistent, good quality surface material along Wrotham Road.
Directness	8	- Route follows road and is very direct. - Pedestrians and cyclists give way at minor arm junctions; however, delay is low.
Attractiveness	4	- No wayfinding signs, places to rest and shelter. - Some cycle parking available at Meopham railway station that is sheltered. - Route is partially lit along sections of Wrotham Road and on Station Road.
Cohesion	3	- No transitions are provided for cyclists as there is currently no designated cycle infrastructure. - Infrastructure provision is generally consistent.
Overall Score	26	
Route 4: Wrotham Road between Longfield Road and Ifield Road		
Accessibility	5	- Gradient is less than 3%. - Some tactiles provided. Width of footways in some locations could impede wheelchair access such as adjacent The George Inn.
Comfort	3	- Consistent, good quality surface material along Wrotham Road for cyclists. - Footway surface conditions on footways on western side of Wrotham Road are inconsistent.
Directness	7	- Route follows road and is very direct. - Pedestrians and cyclists give way at minor arm junctions. - Crossing locations are generally sparse although signalised crossing is provided adjacent Meopham School. Delay is likely to be low for pedestrians.
Attractiveness	2	- No wayfinding signs, places to rest and shelter. - Long sections of Wrotham Road are not lit.
Cohesion	2	- No transitions are provided for cyclists as there is currently no designated cycle infrastructure. - Infrastructure provision is generally consistent.

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Key Requirement	Score	Key Comments
Overall Score	19	

- 5.33 Based on the audit, the following aspects of local routes identified as the most appropriate to improve are:
- Signage towards interchanges and facilities;
 - Improvement to lighting on Wrotham Road towards Meopham station;
 - Improvement of crossing facilities towards local facilities; and,
 - Potential cycle improvements at busy points on the network.
- 5.34 These have been identified on the basis of likely residents of the site using this infrastructure, and the general benefit to existing residents of the local area. These aspects deliver the largest improvements in a manner which is proportional with the impact of the proposed development, supporting the genuine modal choice for all and reducing private car dependency.
- 5.35 Whilst we have attached scores to the various elements of the route assessment, as indicated in the LTN 1/20 guidance, the relevance of these scores to the assessment of existing routes is limited; the scoring system is designed to support local authority consideration of major new routes. What is important in this instance are the measures that can be implemented by the developer to improve the various active travel routes.
- 5.36 Proposed measures to improve active travel from the site are detailed within **Section 6**.

Accessibility by Bus

- 5.37 The closest bus stops to the site are situated along Wrotham Road directly adjacent the primary access, c.180-220m, from the developable area of the site.
- 5.38 Pedestrians are facilitated crossing over Wrotham Road to the northbound bus stop by a dropped kerb pedestrian crossing with a guarded pedestrian refuge.
- 5.39 **Table 11** presents the nearest local bus stops and their level of service. Bus service frequency has been taken from [bustimes.org](https://www.bustimes.org).
- 5.40 It should be noted that residents will also be able to use the additional northbound and southbound bus stops on Wrotham Road, north of Green Lane, which is served by the same bus services but may be more attractive to walk to for residents who live to the north of the site.

Table 11: Local Bus Services

Bus Stop (code)	Route (Operator)	Frequency (approx.)		
		Mon – Fri	Sat	Sun
Wrotham Road Northbound (kntapmga)	306 – Vigo – Gravesend (1st Bus Stops Ltd)	Two services per day (08:27, 15:49)	No Service	No Service
	308 – Sevenoaks – Gravesend (Redroute Buses)	Seven services per day (10:09, 11:34, 13:04, 14:34, 16:38, 17:36, 18:36)	Seven services per day (08:33, 10:04, 11:34, 13:04, 15:04, 16:36, 18:36)	No Service

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Bus Stop (code)	Route (Operator)	Frequency (approx.)		
		Mon – Fri	Sat	Sun
	416 – Meopham – Gravesend (Redroute Buses)	Six services per day (07:28, 09:31, 11:01, 12:26, 15:06, 16:36)	Three services per day (08:06, 11:01, 15:21)	No Service
Wrotham Road Southbound (kntapmdt)	306 – Gravesend – Vigo (Redroute Buses)	Two services per day (07:54, 15:17)	No Service	No Service
	308 – Gravesend – Sevenoaks (Redroute Buses)	Seven services per day (07:13, 09:35, 11:05, 12:35, 14:25, 17:07, 18:07)	Six services per day (09:35, 11:05, 12:35, 14:35, 16:08, 18:08)	No Service
	416 – Gravesend – Meopham (Redroute Buses)	Four Services per day (10:53, 12:18, 14:38, 16:18)	Two services per day (10:53, 15:13)	No Service

- 5.41 **Table 11** shows that there are several local bus services providing connections to Meopham railway station and into Gravesend and local surrounding villages.
- 5.42 The nearest bus stops to the station are on Wrotham Road c.100-140m walk to the south of the station. Both northbound and southbound bus stops comprise of bus shelters, and flag and pole signs.
- 5.43 These are served by the same bus services as those adjacent the site and therefore future residents will be able to access the station via bus. From the centre of the site the total journey would be c.6-minutes (1-minute walk/3-minute Bus/2-minute walk). This does not include associated dwell times and users would likely time their journey to avoid this.
- 5.44 In total, there are four morning peak hour services, two during the morning peak, and two during the afternoon peak hour across both bus stops.
- 5.45 As requested by KCC, journey times via bus to key destinations along the routes are summarised as follows:
- Meopham to Gravesend – 23 Minutes (via 308)
 - Meopham to Sevenoaks – 56 Minutes (via 308)
 - Meopham to Vigo – 15 Minutes (via 306)
- 5.46 In total, there are eight dedicated bus services providing connections to local schools, including but not limited to, Dartford Boys Grammar School, Wilmington Grammar School for Girls, Meopham Secondary School and Wrotham School.

Accessibility by Rail

- 5.47 Meopham railway station is situated c.1.3km (as the crow flies) to the north of the site (within the preferred maximum 2.0km walking distance), and within a 5.0km cycle distance.
- 5.48 The station provides 167 vehicle parking spaces (6 accessible) and 20 cycle parking spaces (stands).
- 5.49 **Table 12** presents the key direct rail services from Meopham railway station and their frequency. Rail service frequency has been taken from [Trainline](#).

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Table 12: Meopham Railway Station Services

Destination (Key stops)	Average Frequency	Approx. Journey Time	First and Last Direct Services					
			Monday to Friday		Saturday		Sunday	
			Departures	Arrivals*	Departures	Arrivals*	Departures	Arrivals*
London Victoria (Longfield, Bromley South)	2 per hour (Mon – Sat)	0 Hours, 56 Minutes (Maximum)	First Service: 05:20	First Service: 00:40	First Service: 00:13	First Service: 00:10	First Service: 07:02	First Service: 00:40
	2 per hour (Sun)		Last Service: 23:40	Last Service: 23:40	Last Service: 23:47	Last Service: 23:42	Last Service: 23:32	Last Service: 23:40
Gillingham (Kent) (Sole Street, Rochester, Chatham)	2 per hour (Mon-Sat)	0 Hours, 19 Minutes (Maximum)	First Service: 06:31	First Service: 05:00	First Service: 00:13	First Service: 05:00	First Service: 00:29	First Service: 06:46
	2 per hour (Sun)		Last Service: 23:43	Last Service: 23:20	Last Service: 23:43	Last Service: 23:28	Last Service: 23:59	Last Service: 23:11
Dover Priory (Rochester, Gillingham)	1 per hour (Mon-Sat)	1 Hour, 31 Minutes (Maximum)	First Service: 06:31	First Service: 07:45	First Service: 06:29	First Service: 05:12**	First Service: 09:00	First Service: 06:50
	1 per hour (Sun)		Last Service: 22:43	Last Service: 17:48	Last Service: 22:43	Last Service: 22:17**	Last Service: 22:00	Last Service: 21:50

*Arrival services are the departure times to Meopham from destination.

**Connection service shown. No direct service to Meopham from Dover Priory on Saturdays.

- 5.50 **Table 12** shows that there are regular rail services to key regional and national destinations including London and Gillingham, therefore offering future residents of the site opportunities to commute sustainably over longer distances.
- 5.51 It should also be iterated that the approximate journey times are presented as the maximum, however there are also faster regular services to each destination. For example, there are two trains per hour to London Victoria that take 35-minutes and 46-minutes, respectively and 33-minutes and 47-minutes in the opposite direction.
- 5.52 KCC requested that a review of other local stations such as Sole Street and Ebbsfleet should be undertaken to determine whether future residents may use these stations as opposed to Meopham should alternative destinations be accessible.

Sole Street

- 5.53 Sole Street railway station is situated c.1.4km to the east of the site (as the crow flies) via Green Lane and Camer Road. There are no pedestrian or cycle facilities along Camer Road to connect to Sole Street.
- 5.54 The station provides 61 vehicle parking spaces (3 accessible) and no cycle parking spaces.
- 5.55 Sole Street provides access to the same frequency of services and range of destination as Meopham as they both operate on the same rail line. It is therefore more likely that residents will travel from Meopham given the closer proximity and better walking and cycling connection.

Ebbsfleet International

- 5.56 Ebbsfleet International railway station is situated c.8.0km to the north of the site (as the crow flies) and a c.12-18-minute car drive.

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- 5.57 The station provides a total of 4,945 car parking spaces (84 accessible) across four car parks and a further 280 car parking spaces (6 accessible) within a 'Premium' car park. The station also contains 44 cycle parking spaces (stands).
- 5.58 Parking is charged at a rate of £10.20 per day, or £1,367.20 per year according to the [National Rail](#) website.
- 5.59 **Table 13** presents the key direct rail services from Ebbsfleet International railway station and their frequency. Rail service frequency has been taken from [Trainline](#).

Table 13: Ebbsfleet Railway Station Services

Destination (Key stops)	Average Frequency	Approx. Journey Time	First and Last Direct Services					
			Monday to Friday		Saturday		Sunday	
			Departures	Arrivals*	Departures	Arrivals*	Departures	Arrivals*
London St Pancras International (Stratford International)	4 per hour (Mon – Sat)	0 Hours, 20 Minutes (Maximum)	First Service: 05:29	First Service: 06:20	First Service: 05:59	First Service: 06:40	First Service: 07:50	First Service: 08:20
	3 per hour (Sun)		Last Service: 23:35	Last Service: 00:12**	Last Service: 23:35	Last Service: 00:12**	Last Service: 22:59	Last Service: 23:40
Ramsgate (Gravesend, Stood, Gillingham, Faversham, Margate)	3 per hour (Mon-Sat)	1 Hour, 32 Minutes (Maximum)	First Service: 06:56	First Service: 04:55	First Service: 06:59	First Service: 06:02	First Service: 08:59	First Service: 07:05
	1 per hour (Sun)		Last Service: 23:59	Last Service: 22:08	Last Service: 23:59	Last Service: 22:08	Last Service: 22:59	Last Service: 22:02
Margate (Ashford International, Canterbury West, Ramsgate, Broadstairs)	3 per hour (Mon-Sat)	1 Hour, 21 Minutes (Maximum)	First Service: 06:56	First Service: 05:25	First Service: 06:59	First Service: 05:49	First Service: 08:59	First Service: 07:49
	1-2 per hour (Sun)		Last Service: 23:58	Last Service: 21:49	Last Service: 23:59	Last Service: 21:49	Last Service: 22:59	Last Service: 21:49
Faversham (Strood, Gillingham)	2 per hour (Mon-Sat)	0 Hours, 51 Minutes (Maximum)	First Service: 06:39	First Service: 05:00	First Service: 07:39	First Service: 05:32	First Service: 08:39	First Service: 07:00
	1 per hour (Sun)		Last Service: 00:18**	Last Service: 22:00	Last Service: 00:09**	Last Service: 22:00	Last Service: 23:39	Last Service: 22:00

*Arrival services are the departure times to Ebbsfleet from destination.

**Final service operates the following morning.

- 5.60 **Table 14** presents a comparison between journey times via rail should residents choose to drive to Ebbsfleet International, or should residents choose to walk to Meopham.
- 5.61 Journey times have been taken from Google Maps route planner to arrive at each destination prior to 09:00 during a typical weekday to represent a representative commuting journey time.
- 5.62 All journey times from Meopham are inclusive of walk time and connections via other stations.

Table 14: Meopham and Ebbsfleet Journey Time Comparison

Destination	Approx. Journey Time Via Ebbsfleet	Approx. Journey Time Via Meopham	Difference
London St Pancras International	Drive: 12-18 Minutes Rail Journey Time: 20-Minutes	Walk: 18-Minutes Rail Journey Time: 1 Hour, 6-Minutes Total Journey Time: 1 Hour, 24-Minutes	+46 Minutes

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Destination	Approx. Journey Time Via Ebbsfleet	Approx. Journey Time Via Meopham	Difference
	Total Journey Time: 32-38 Minute		
Ramsgate	Drive: 12-18 Minutes Rail Journey Time: 1 Hour, 32 Minutes Total Journey Time: 1 Hour, 42-50 Minutes	Walk: 18-Minutes Rail Journey Time: 1 Hour, 37-Minutes Total Journey Time: 1 Hour, 55-Minutes	+5 Minutes
Margate	Drive: 12-18 Minutes Rail Journey Time: 1 Hour, 21 Minutes Total Journey Time: 1 Hour, 33-39 Minutes	Walk: 18-Minutes Rail Journey Time: 1 Hour, 23-Minutes Total Journey Time: 1 Hour, 41-Minutes	+2 Minutes
Faversham	Drive: 12-18 Minutes Rail Journey Time: 51 Minutes Total Journey Time: 1 Hour, 1-7 Minutes	Walk: 18-Minutes Rail Journey Time: 52-Minutes Total Journey Time: 1 Hour, 10-Minutes	+3 Minutes

- 5.63 From the analysis, other than London St Pancras International railway station, journey times to all destinations are similar regardless of whether users decide to drive to Ebbsfleet or walk to Meopham and catch connecting services. Journey times from Meopham will be lower than what is shown if future residents choose to cycle.
- 5.64 It should be iterated that Meopham provides direct rail services to London Victoria, which is situated within Westminster, City of London, which was identified as one of the top five employment areas for people residing within the area.
- 5.65 Unless future residents specifically require access to the area around London St Pancras railway station, it is likely that residents will use Meopham railway station instead of Ebbsfleet for the majority of railway journeys, especially for journeys into major employment areas such as within London, or Gravesend.
- 5.66 Parking charges at Ebbsfleet as well as fuel costs are likely to be considered by future residents when planning their journey. These costs would be avoided should residents choose to walk/cycle to Meopham.

Summary

- 5.67 This access appraisal demonstrates that there are several local facilities that can, and are likely, to be used on a day-to-day basis by local residents that can be comfortably accessed by active travel modes within recommended walking and cycling distances.
- 5.68 Additionally, there are local public transport opportunities for future residents to travel by sustainable means to destinations further afield, including to key regional and national destinations such as Gravesend, Gillingham and London.
- 5.69 A walking and cycling audit has been undertaken that has identified several off-site measures that can potentially be implemented to improve the uptake of active travel to local facilities and public transport interchanges. These are detailed further later in this report.

6.0 Development Proposals

Residential Development

- 6.1 The forthcoming outline planning application is for up to 350 residential dwellings with all matters reserved except for details of access.
- 6.2 The illustrative development framework plan is presented at **Appendix E**.

Vehicular Access

- 6.3 Primary vehicular access is proposed to be taken from Wrotham Road to the north of the site via a priority access, along with an emergency access from Wrotham Road to the south.
- 6.4 KCC's design guide – 'Step 3: Designing for movement' document, sets out the relevant design parameters for new development access roads. The proposals for 350 dwellings exceed KCC's guidance for a 'Major Access Road' which typically serves between 50 and 300 dwellings from a single point of access and emergency link.
- 6.5 Access designs for proposals comprising 300+ dwellings fall under a 'Local Distributor Road'. The typical parameters for such a road are:
 - A typical carriageway width of 6.75m with a typical footway width of 3m.
 - Kerbed radii of 10m.
 - Suitable for use by a fire tender.
- 6.6 It was confirmed by KCC during pre-application engagement that, given the scale of the proposals only slightly exceed the 'Major Access Road' thresholds, the junction kerbed radii could be reduced to 6m.
- 6.7 Additionally, it was confirmed by KCC that the width of the access road should be designed at 6.75m to 'future proof' the site should it ever be used as a bus route.
- 6.8 A ghost-island right turn lane is proposed on Wrotham Road given the volume of vehicles recorded along Wrotham Road within the vicinity of the site access. This has been designed in accordance with DMRB for a 30mph road, with hatching tying into the existing ghost-island right turn for Green Lane.
- 6.9 The following was noted by KCC in their response to the Interim TA:

"The start of the hatching for the new right turn bay is very close to the Camer Parade exit. The modelling results show that there is likely to be a queue of one vehicle on Wrotham Road. Could the bay therefore be shortened slightly? The amendments would still need to meet the DMRB standard. The proposed hatching in this area is likely to frequently be overrun and will wear away quickly."
- 6.10 Consideration has been given to shortening the length of the right turn bay, however in order for it to remain DMRB compliant for a 30mph speed limit, the right turn bay cannot be shortened. However, we accept KCC's comment on maintenance of the road marking and therefore a portion of the hatching has been removed to negate this issue.
- 6.11 KCC also provided the following comment in their response to the Interim TA:

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“For sites over 300 units, a secondary access is usually required but has not been provided. Justification for this omission is required.”

- 6.12 The proposed development will provide a main point of vehicular access and emergency access along with multiple pedestrian/cycle access points. The development framework plan also demonstrates that the layout of the site will be in a looped system, allowing for continuous movement through the site for all vehicles. The looped system would provide an alternative ‘emergency’ access around the development should the road become blocked in one direction. As demonstrated later in this report, the access itself operates within capacity with minimal queueing and delay across all future scenarios.
- 6.13 Notwithstanding this, the provision of a second form of access, which would naturally be to the south of the site, would create greater loss of trees and vegetation and create a potential route for ‘rat-running’ in an area that receives a high volume of traffic flow.
- 6.14 The proposed site access is presented in Drawing **T25512.001**.
- 6.15 The proposed emergency access has been designed to a width of 3.7m in accordance with Building Regulations ‘Document B – Fire Safety’ and is included in **Drawing T25512.001**. Please note that the size of the bellmouth has been reduced following comments provided by KCC as part of the Interim TA including the incorporation of a priority crossover.
- 6.16 The extent of the adopted highway is included at **Appendix F**.
- 6.17 KCC queried the available widths along the A227 as these conflict with a KCC scheme within the area. The access has been designed to topographical mapping data which provides greater accuracy than OS. This has been double checked, and we can confirm that the measurements presented are correct. For avoidance of doubt, the access design does utilise the site frontage and pushes the A227 towards the site in order to accommodate the ghost island right turn lane.
- 6.18 It can also be confirmed that no trees within the highway are required to be removed to provide the proposed works.

Stage 1 Road Safety Audit

- 6.19 An RSA1 and designers’ response has been undertaken, as requested by KCC, and is included at **Appendix G**.
- 6.20 A letter from the RSA auditor is also included at **Appendix G** which confirms that the designers’ response and changes are acceptable.

Vehicular Access Location

- 6.21 In response to KCC’s pre-application comment on the location of the junction to Green Lane, the Kent Design Guide, ‘Making It Happen’ document states on page 8:
“Where a residential road joins a distributor road, a road width of 5.5m should be maintained for at least 20m from the junction, with footways provided on both sides of the non-priority road. No other access or road junction should be provided within the 20m distance”.
- 6.22 The proposals include footways on either side of the access (non-priority), and the junction is situated c.50m south of the Green Lane junction. This is considered to be in accordance with the KCC Design Guide.

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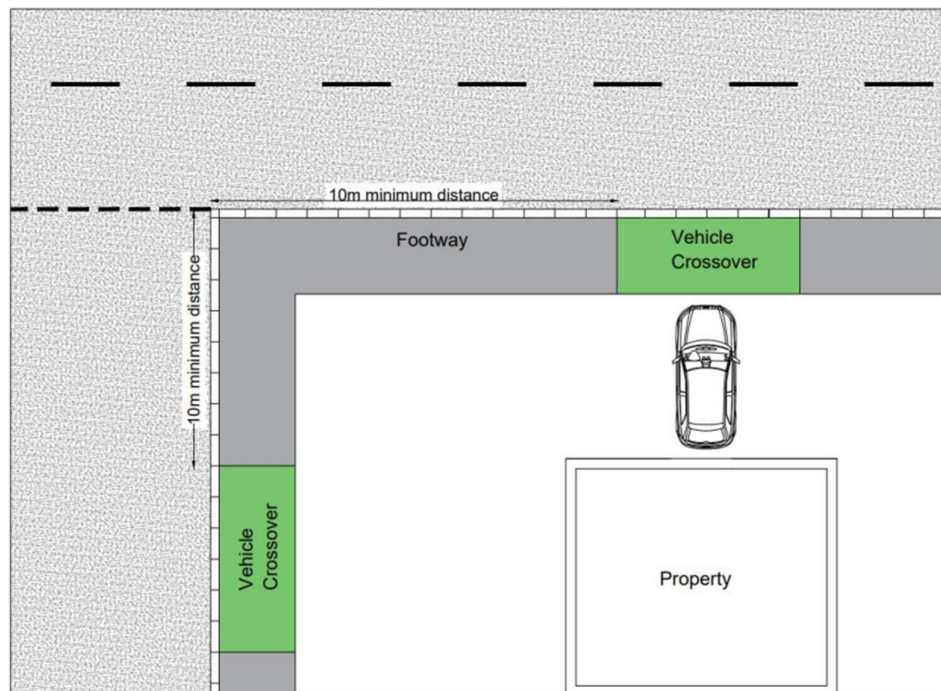
6.23 KCC stated within their pre-application response:

"There are driveways located along the western side of Wrotham Road within proximity to the proposed access. In line with the KCC guidance, driveways should not be located within 10m of a junction. This should be referenced on the plan how the access meets this standard."

6.24 The KCC guidance document 'Dropped Kerb Application Guidance' (April 2025) states within section 5:

"If the location of the proposed crossing is closer than 10 metres to a road junction and creates a major hazard, the application will be refused."

6.25 The guidance indicates that this is only applicable for driveways on the same side of the access junction as indicated on the extract below.



6.26 Furthermore, as part of their response to the Interim TA, KCC stated:

"The site access junction is located within close proximity of existing driveways, which is concerning, particularly the driveway that appears to be located directly opposite the exit arm of the proposed access. This creates a direct conflict, particularly as the driver exiting the driveway will also be blocked by drivers in the right turn bay. The right turn bay could hold approximately 6 vehicles, which could cause significant delay to the existing residents waiting to emerge from the driveway. This may result in the residents trying to push their way through – not only causing potential conflicts with other vehicles in the right turn bay, but also being obscured from view from A227 northbound traffic by a vehicle in the right turn bay.....Consideration should be given the relocating the vehicles access towards the southern end of the site."

6.27 There are a total of three driveways opposite the access road and proposed ghost-island right turn lane.

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- 6.28 Considering the most onerous manoeuvre from the driveways will be the right turn to Wrotham Road south across three lanes of traffic. The GTM turning flows indicate in the future years, a maximum of 8 vehicles will use the ghost-island right turn lane during the AM Peak (2032 and 2042) and 25 vehicles during the PM peak (2042). In addition, 33 and 14 vehicles (2042) are forecast to turn left to Wrotham Road south from the access during each peak, respectively.
- 6.29 This equates to roughly 1 vehicle every one to two minutes for vehicles egressing driveways to give-way to. Given full visibility will be achievable of the access junction from the driveways, this will not cause significant delay or highway safety concerns. To reinforce this, the modelling work demonstrates that there will be no queueing on the ghost island right turn in the AM or PM peak period across all future scenarios with minimal delay across both peaks (<9 seconds maximum.) Considering this, we dispute KCC's comments that this will create "*significant*" delay or cause residents to push their way through traffic and create potential conflicts.
- 6.30 It should also be noted that similar configurations are present within the immediate area, notably at the Wrotham Road/Green Lane junction c.50m north of the proposed access location. This also incorporates a ghost-island right turn lane.
- 6.31 At that location, three driveways are situated directly opposite the junction with Manual Classified Count data (MCC) indicating that a total of 180 vehicle movements from Wrotham Road south are using the existing ghost-island right turn lane into Green Lane in the AM peak, and 281 vehicles are using it during the PM peak. In addition, 208 and 155 total vehicle movements are turning left out of Green Lane to Wrotham Road south in each respective peak hour. The MCC data is included at **Appendix N**.
- 6.32 These flows are in excess of what is predicted to use the proposed site access, and no PIAs have been recorded at this junction over the most recent five years of available data.
- 6.33 It should also be noted that no comments were raised within the RSA1 regarding this matter.
- 6.34 Again, to reiterate, there is no evidence to suggest that the proposed access location is likely to cause an unacceptable impact on highway safety in relation to the proximity to adjacent driveways.
- 6.35 Whilst consideration has been given to the potential to locate the access further south, this would involve the removal of a significant number of trees and this is not the preferred option. Furthermore, we are aware of on-street parking within this area during certain periods of the day which could impact upon the operation of the site access in this location.

Swept Path Analysis

- 6.36 A swept path analysis of the largest likely vehicle to require access to the site on a regular basis, i.e. a refuse vehicle, has been undertaken. This is presented in **Drawing T25512.002**.
- 6.37 In addition, a swept path analysis of a fire tender has been undertaken through the emergency access. This is presented in **Drawing T25512.003**.
- 6.38 The analysis demonstrates that vehicles of this nature can access and egress the site safely, in a forward gear.
- 6.39 Further swept path analysis has been undertaken following comments raised within the RSA1 and by KCC as part of the Interim TA. This is presented in **Drawing T25512.002**.
- 6.40 Specifically, KCC stated with their response to the Interim TA:

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“The 2m wide island running north/south parallel to Camer Parade is too close to the bus stop. Whilst tracking shows a car can pass a stationary bus, it is questioned whether a HGV could make this manoeuvre.”

- 6.41 The location of the bus stop road markings themselves have not been moved as part of the proposals, only the removal of the flag and pole sign (to be replaced with a new bus stop shelter location). However, vehicle tracking of a 16.5m articulated heavy goods vehicle has been undertaken which demonstrates it is able to pass a stationary bus without having to amend the central island. Regardless, the likelihood of this event occurring on a regular basis is rare and, if it does, HGVs would simply wait a short period behind the bus until it moves.

Visibility Splay Assessment

- 6.42 Visibility splays from the access junction are provided within **Drawing T25512.001** and are informed by 85th percentile speeds recorded as part of a seven-day Automatic Traffic Count (ATC) on Wrotham Road within the vicinity of the site access.
- 6.43 The visibility splays have been calculated using the Manual for Streets (MfS) visibility calculator and 85th percentile speeds/traffic volumes from the ATC. The 85th percentile speeds recorded are as follows:
- Northbound: 33mph
 - Southbound: 34mph
- 6.44 This results in the requirement for splays measuring 2.4m x 52.2m to the north, and 2.4m x 49.3m to the south in accordance with Manual for Streets for speeds up to 37mph (60kph).
- 6.45 In addition to this, the average speeds recorded as part of the ATC are as follows:
- Northbound: 29mph
 - Southbound: 30mph
- 6.46 This demonstrates that the average speeds are not in excess of the 30mph speed limit.
- 6.47 The visibility splay calculations are provided at **Appendix H** and the raw data is included at **Appendix N**.
- 6.48 In addition to the above, pedestrian and cyclist visibility splays have been provided at all crossing points. These are provided in **Drawing T25512.005**.

Pedestrian and Cycling Access

- 6.49 The main form of pedestrian/cycle access will be provided from the primary vehicular access point via a 3.0m shared footway/cycleway across the site frontage. Consideration has been given to LTN 1/20 design guidance including level of provision, and priority sections where interaction with motor vehicles are likely.
- 6.50 KCC stated within their response to the Interim TA, the following:
- “A continuous crossing is proposed across the site access bell mouth. However, the modelling results show there is significant delay (60 seconds) to the site access arm which could result in drivers sitting on the footway trying to force their way out/seeking gaps. The continuous footway is therefore unlikely to be appropriate in this particular location.”*
- 6.51 Following the results of the updated junction modelling using GTM flows, the proposed site access road is forecast to operate with less delay across all future scenarios with the maximum delay being 30 seconds in the

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AM peak in the 2042 Local Plan scenario. Therefore, we consider that the proposed continuous footway remains suitable.

- 6.52 However, ATE has welcomed the priority over the access road but have queried the form this will take in regard to raised kerbs (if any), and whether this could be set further back into the access to allow for a vehicle to store between the main carriageway and the footway/cycleway.
- 6.53 As part of the RSA1, a setback design was originally suggested, however concerns were raised regarding the desire line of the facility for pedestrians and cyclists and that a short cut could be taken across the bellmouth. On that basis, the facility was moved closer to the bellmouth and provided in accordance with a 'No Set Back' arrangement as presented in Figure 10.13 of LTN 1/20. This could include a chamfered kerb as exemplified below and in Figure 10.19 of LTN 1/20.



- 6.54 Similarly, KCC also provided comments on the proposed uncontrolled crossing over Green Lane stating visibility is poor when crossing from south to north. They go on to state the following:
- "Green Lane is signed as 'Not suitable for Heavy Goods Vehicles'. Has consideration therefore been given to narrowing the bell mouth (ensuring refuse vehicles still have appropriate access) and pulling the crossing further forward, reducing the crossing width and increasing visibility?"*
- 6.55 Whilst we appreciate the comment from KCC, the 'Not Suitable for Heavy Goods Vehicles' is an advisory sign and does not mean that HGVs will not route down Green Lane, albeit frequency is likely to be low. This is further evidenced by the fact there is a large entry radius on the northern side, likely to allow for HGVs to turn into Green Lane and avoid overrunning the ghost island right turn lane.
- 6.56 Building on this, and as demonstrated later in this report, modelling of the junction demonstrates it will operate above capacity in the future with significant queueing and delay as a result of Local Plan traffic. If this is indeed

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to be the case, narrowing of the bellmouth is only likely to worsen this situation by slowing vehicles accessing the junction.

- 6.57 Nevertheless, a pedestrian/cyclist priority crossover to improve movement across the junction could be provided in line with LTN 1/20 for a 'Full set back' arrangement, allowing for a 5.0m vehicle waiting area between the crossover and give-way line to the major arm. We welcome KCC's thoughts on such a design.
- 6.58 The emergency access point will serve as an additional pedestrian/cyclist access point, providing a link to the proposed shared footway/cycleway.
- 6.59 Further pedestrian/cycle access points are to be provided at the northern, western, and southern boundaries of the site, providing access to the proposed on-site active travel routes, as well as access to Green Lane and Camer Park (via an existing PRoW).

Parking Proposals

- 6.60 Although the schedule of accommodation remains to be detailed as part of subsequent reserved matters applications, the principles for on-site parking have been considered within this report.
- 6.61 As part of the pre-application process, it was agreed with KCC that the SPG4 standards should be used, alongside a comparison with the new KCC standards.
- 6.62 The parking standards from both documents for use class C3 Dwellings are summarised in **Table 15**. The parking standards under the new KCC guidance is based on a residential development situated within a 'Suburban' area.

Table 15: Parking Standards Comparison – C3 Dwellings

Parking Type	Parking Requirements			
	No. Bedrooms	KCC Parking Standards (2006) (SPG4)	No. Bedrooms	KCC Parking Standards (2025)
Car Parking	1 bedroom 2 and 3 bedrooms 4+ bedrooms	1 space per dwelling 2 spaces per dwelling 3 spaces per dwelling	1 and 2 bedrooms 3 bedrooms 4+ bedrooms	1 space per unit 2 spaces per unit* 2 spaces per unit**
Cycle Parking	All Dwellings	1 space per bedroom	All Dwellings	1 space per bedroom

*Allocation of one space per unit possible.

**Allocation of both spaces possible.

- 6.63 **Table 15** demonstrates that there is a greater flexibility under the new parking standards to not only provide a lower number of vehicle parking spaces, but also in terms of how they are allocated either within curtilage or unallocated on local roads within the site.
- 6.64 The vehicular parking requirements will align with the standards presented within SPG4; however, it is recommended that this is reviewed as part of the reserved matters planning application should GBC adopt the latest KCC parking standards, or otherwise.

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Cycle Parking

- 6.65 The standards for cycle parking remain consistent between both documents with 1 space per bedroom (including flats and maisonettes). On that basis, cycle parking at the proposed development will align with the following standards:
- Cycle parking provision will be provided within the curtilage of a dwelling, including secure rear gardens. Garages will be of a suitable size to accommodate the required cycle parking provision.
 - A secure, sheltered, communal parking facility will be provided should suitable provision not be provided within the curtilage of a dwelling. This will include spaces for adapted bikes (approx. 5%), electric vehicle charging, and visitor parking.

Electric Vehicle Parking

- 6.66 Given the advances in Electric Vehicle (EV) parking requirements since the production of the superseded standards, no mention of EV parking was previously included.
- 6.67 It is envisaged that the proposed development will utilise the current guidance and principles presented within the new KCC parking standards. This includes:
- Each dwelling with on-plot parking will provide an electric vehicle charging-point within proximity to the parking space.
 - Where communal residential parking areas are present, a mix of 'active' charging spaces with charging infrastructure in place from occupation, and 'passive' charging spaces with wiring and ducting in place for future conversion.

Proposed Mitigation Measures

- 6.68 In addition to the proposals, the following additional measures are proposed based on comments raised by KCC as well the results of the Walking and Cycling Audit.

Public Transport

- 6.69 New bus stop infrastructure is proposed to the northbound and southbound bus stops including new bus shelter, flag and pole sign, seating, and real-time journey information following existing footway widening.
- 6.70 KCC provided the following comment on their response to the Interim TA:
- "The proposed bus shelter is located where the back of the bus would be positioned which could lead to the bus blocking the Camer Parade entrance. This should be relocated"*
- 6.71 The location of the bus stop is in the most suitable location for the proposed development and to provide access to the facilities at Camer Parade. We do not agree that the bus is likely to block the Camer Parade access as professional bus drivers will be aware of this and will use the allocated bus stop space provided. Pedestrians will also walk the very short distance from the proposed bus shelter (c.10m) to reach the doors at the front of the bus once it arrives.
- 6.72 KCC's public transport team provided a note in January 2026 to developers within the surrounding area, setting out the required contributions towards an improve bus strategy along the A227 corridor to support future development.

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- 6.73 The note determines that the existing level of bus services are insufficient to support proposals within the area and are therefore unlikely to encourage modal shift.
- 6.74 Specifically, they state:
- “It has been established that for any of the current or pending planning applications to be supported then they would either individually or collectively need to release funding that would support the following minimum service levels.*
- *Monday to Saturday – half hourly bus services connecting the development sites with Gravesend, operating between the hours of 0600 and 2300.*
 - *Sunday – hourly bus service connecting the development sites with Gravesend, operating between the hours of 0900 and 1700.”*
- 6.75 The provision of this minimum level of service is estimated at costing £760,000 per annum or £3.8m in total to sustain this level of service for five years (excl. inflation). This is formed of the following:
- £250,000 per annum to sustain the existing (306/308) service at current frequency;
 - £300,000 per annum to double the frequency of the service providing a 30-minute frequency;
 - £60,000 per annum to provide evening journeys operating Mondays to Saturdays;
 - £50,000 per annum would enable the service to operate on Sundays;
 - £100,000 per annum for every additional school capacity vehicle that were needed to service additional demand.
- 6.76 The full note is provided at **Appendix I**.
- 6.77 Following review of the note, the client is content to provide a proportionate contribution towards the delivery of bus service improvements in line with that requested by the KCC public transport team and requested by the KCC highways team. This will be secured by a section 106 contribution at planning approval.
- 6.78 We will discuss with KCC the details of the improved bus service to ensure that future residents are able to utilise this at the earliest opportunity of occupancy. In the interim, the existing service would still facilitate access along the corridor for the early occupants of the development.
- 6.79 In addition, contributions towards a 6-month season ticket will be provided to each household upon initial occupation to promote the use of local bus services and help develop a culture of sustainable travel from the outset.

Active Travel

- 6.80 In response to the access proposals as part of the TASR, KCC stated within their pre-application response:
- “...as the site boundary continues further south, consideration must be given to widening the route to serve both pedestrians and cyclists along the entire boundary. This would assist with walking and cycling to the school and also for cyclists who currently need to travel on the carriageway and who are likely to be traveling at a slow speed given the uphill gradient.”*
- 6.81 Considering this, a 3.0m shared footway/cycleway is proposed along the entire length of the Wrotham Road frontage with pedestrian/cycle priority provided over the site access. Cycle transitions are provided from/onto Wrotham Road and Green Lane.

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- 6.82 To the south of the access, the footway/cycleway will connect to a new dropped kerb crossover facility with pedestrian refuge (2.0m x 2.0m) to access local facilities on Camer Parade via the existing footway between Camer Parade and Wrotham Road. The crossing will be facilitated by a section of build out on Camer Parade through the removal of a single section of parking to allow for pedestrians, pedestrians with pushchairs and wheelchair users, to wait to cross the road.
- 6.83 An additional shared footway/cycleway crossover will be provided to the north of the access with a refuge (3.0m x 3.0m) located within the central hatching to facilitate cyclists travelling northbound and transitioning into the carriageway. This requires a short section of shared footway/cycleway on the western side of Wrotham Road.
- 6.84 New tactiles are proposed and guard railing moved on the existing crossing facility on Wrotham Road (south of Longfield Road) to accommodate crossing for cyclists heading northbound, to access the shared facility.
- 6.85 KCC provided the following comment on the Interim TA:
"The shared cycle facilities along the site boundary fronting the A227 Wrotham Road are welcome. However, please could the applicant confirm why this cannot be a segregated cycle route, for example, cyclists at carriageway level but segregated from the road with a kerbed edge."
- 6.86 This has been explored, however given the nature of this type of facility and the level of space that would be required to provide it, it would mean extensive foliage and tree loss along the frontage which is considered unacceptable.
- 6.87 KCC provided the following comment on these proposals within the Interim TA:
"The amendments to the uncontrolled crossing point south of Longfield Road is acceptable in principle. However, it is questioned whether this reduced waiting area would cater for the demand during school drop off and pick up, and also whether this design has been considered in the context of the illegal parking which occurs during school drop off and pick up. Consideration should be given to having the crossing area at carriageway level, while retaining the kerbed edge on the outer edge of the refuge."
- 6.88 We acknowledge the comments made by KCC and, given that there is currently sufficient width for cyclists on the crossing in its current layout, we are leaving the crossing point in its current location but amending the tactiles to be cycling compliant.
- 6.89 KCC provided the following comment on the Interim TA:
"The provision of a new crossing point between the site and Camer Parade is welcomed. However, this should also accommodate cyclists. Have alternative crossing types been considered, e.g. Toucan Crossing?..."
- 6.90 We acknowledge the comments made by KCC and agree that a signalled crossing will assist and encourage safe crossing between the site and local facilities on Camer Parade. The crossing is indicated on **Drawing T25512.001**.
- 6.91 Please note that Ridge queried the adoption status of the Camer Parade frontage following receipt of the highway extents. The extents plan shows that this frontage is not adopted and this was confirmed by KCC when queried despite there being a large amount of public infrastructure such as lighting columns and bollards.
- 6.92 Given an uncontrolled pedestrian crossing is proposed over Camer Parade to access the facilities, a suitable dropped kerb or tactiles would not be able to be provided on the opposite side if indeed given this is third party. We welcome KCC's thoughts on this and we can investigate an alternative provision if required.

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- 6.93 KCC provided the following comment on the Interim TA:
- "It is unclear why cyclists traveling northbound would need to exit the carriageway south of Longfield Road, to cross over the A227, when they could enter the shared route further south (near the emergency access)"*
- 6.94 The proposed facility offers a safe crossing option by utilising the existing refuge area. This also reduces the distance that a cyclists would be continuously required to cross (i.e. one lane, refuge, one lane) in comparison to south of the emergency access where they would be required to cross two lanes of traffic continuously without refuge.
- 6.95 Following the Walking and Cycling Audit, the following mitigation measures are proposed to assist with and potentially encourage active travel:
- The existing footway between Camer Parade and Wrotham Road is currently c.1.5m in width. This is proposed to be widened to 2.0m to allow for more suitable pedestrian access to the northbound bus stop which will tie into the proposed dropped kerb crossover facility.
 - General vegetation clearance along Wrotham Road south (Route 4) to increase useable width of footways.
 - Provision of additional cycle parking stands at Meopham railway station to make cycling a more attractive method of travel to the station. At this stage we envisage up to 10 additional cycle parking stands will be funded which increases the existing capacity (20 stands) by 50%.
 - A proportionate contribution towards improved lighting along the A227 corridor is proposed to improve the attractiveness of the route for pedestrians and cyclists. We expect a contribution to be secured as part of any approval with details to be submitted at a later date.
 - Provision of tactiles across Green Lane, Huntingfield Road, Pine Rise, Norwood Lane, St John's access road, Shipley Hills Road, and The Street.
- 6.96 As previously highlighted, ATE requested potential cycle parking at Camer Parade. Having reviewed this, and notwithstanding the third party issue discussed previously, there does not appear to be a suitable location, or space, on the parade that would facilitate this, other than to the south adjacent Longfield Road (in front of the garage).
- 6.97 When considering the outcomes of the walking and cycling audit, whilst there are some inconsistencies in footways widths along the routes, as highlighted within the route audit, the routes are not considered to be narrow and unwalkable for the majority of pedestrian users, especially when considering the use of footways on either side of the carriageway. On site observations demonstrated that these routes are utilised by existing residents. Considering this, no footway widening is proposed along the routes.
- 6.98 Again, it should be iterated that the scoring system is for new schemes, and a low score does not mean that the route is unlikely to be used by non-motorised users.
- 6.99 Notwithstanding this and the contributions suggested above, the client is also committed to providing contributions towards enhancing local bus service provision which will create a frequent, sustainable connection to both Meopham Railway Station and Meopham Secondary School which will be attractive for new residents.
- 6.100 We are also aware that KCC and Gravesham Borough Council (GBC) are currently developing a cycle route scheme along the A227 Wrotham Road between Istead Rise and Meopham Station, and between Meopham Station and Meopham Community Academy. The client is committed to providing a proportionate contribution to deliver this and is expected to be secured as part of any planning approval.

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LCWIP Connection

- 6.101 Contributions are proposed to progress the LCWIP route 6, which runs from Wrotham Road to Norwood Lane to the northeast of the site.
- 6.102 Cyclists would be able to access the route via Transdescant Drive and this would offer a quieter route towards Meopham railway station, should cyclists wish to do so. Cyclists would be advised to dismount at the end of Transdescant Drive to continue through an alley which connects to Norwood Lane (Rowan Close).
- 6.103 This would provide a quiet route for cyclists away from Wrotham Road to connect to route 6, and to access Meopham railway station, should cyclists wish to do so.
- 6.104 KCC stated within their response to the interim TA:
“Due to the lack of cycle infrastructure and lighting on the A227, the applicant proposes to direct cyclists to Transdescant Drive and Norwood Lane. The suitability of this route is questionable given that it is a 200m diversion from the A227, is not lit, and includes a PROW (public footpath) that prohibits cycle access. Requiring cyclists to dismount would be impractical and discriminatory, particularly for disabled cyclists who may struggle to do this.”
- 6.105 Signing of residents towards Transdescant Drive (LCWIP Route 6) has been proposed as it is considered to be a suitable alternative to providing a dedicated facility along the A227 which would be costly and disproportionate to the scale of the proposals
- 6.106 It is debatable that cyclists dismounting for a c.30m section would be impractical or unreasonable for the majority of users who are likely to prefer a safer and quieter route compared to using the A227 in its current form.
- 6.107 It should be reiterated that this route is within the LCWIP, and a contribution is proposed to help further develop the route either in its current form or with potential enhancements. We consider it appropriate that a proportionate contribution towards the proposed route is agreed with KCC.
- 6.108 Alternatively, as previously suggested, the client is committed to providing a proportionate contribution towards the emerging cycle scheme along the A227 Wrotham Road which is currently being developed by KCC and GBC, as well as contributions towards enhancing local bus service provision which will create a more frequent, sustainable connection along the A227 corridor.

Travel Plan Measures

- 6.109 As previously stated, a TP has been produced in support of this TA to encourage uptake of sustainable transport modes. The following potential measures are proposed as part of the TP:
- Public transport seasons tickets for 6 months.
 - Parcel lockers (drop-off/pick-up).
 - Public transport timetable and route information.
 - Active Travel events and promotion.
- 6.110 The purpose of the TP will be to promote the sustainable transport options within and around the site to encourage sustainable travel from initial occupation.

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Signage

- 6.111 Contribution towards additional signage is proposed along the length of Wrotham Road between the site and Meopham railway station.
- 6.112 It was identified as part of the Walking and Cycling Audit that no existing signage to the station is present along the route, however this could encourage existing residents and future residents of the site to walk/cycle to the station as part of a multi-modal journey.

Parking

- 6.113 Following the on-site observations which indicate an existing issue of unlawful and inconsiderate parking, and its subsequent impact on the local highway network, it is proposed that parking will be provided within the site close to the site frontage as part of the TASR. This would either be solely allocated to facilities on Camer Parade or unallocated parking for general use.
- 6.114 Whilst this was also an issue raised by the local Parish Councils, KCC stated within the pre-application stage that ideally the site should not be encouraging additional driving as less parking could discourage car travel.
- 6.115 As part of their response to the Interim TA, KCC stated the following:
"...Providing additional parking for these facilities is therefore not required to make the proposal acceptable in planning, and could have a negative impact by encouraging more car-based trips to the area at a time when policy requires the encouragement of walking and cycling to local facilities. However, should any parking bays need to be removed at Camer Parade to enable delivery of a safe crossing, these could be re-provided within the site, adjacent the crossing. Information related to how these spaces would be signed and managed is required"
- 6.116 Whilst we accept KCC's comment on the proposed on-site parking proposals, we do not necessarily agree that it would encourage more car-based trips, rather it would cater for existing demand. As witnessed on-site, vehicles were observed to perform multiple loops of the parade to find a space, and the central refuge on Wrotham Road has been added in recent years to limit kerbside parking which disrupts traffic flow. Therefore, additional parking is likely to provide benefits in this sense.
- 6.117 Nevertheless, as this will not determine the acceptability of the outline proposals, we envisage that the proposed level of parking could be revisited at the reserved matters stage (subject to outline approval). For clarity, any spaces lost at Camer Parade to deliver the proposed measures (i.e. the build out and crossing area) will be provided on-site. All parking would also remain unallocated.

7.0 Trip Generation, Distribution and Assignment

Background

- 7.1 As previously stated, KCC have requested the use of the GTM which will distribute and assign the proposed development traffic.
- 7.2 The initial TA for the development relied upon traffic count data collected at and around the proposal site whilst the requested traffic forecasts from the GTM were produced by KCC's transport consultant, Jacobs.
- 7.3 That data is now available and junction capacity tests have been rerun on the basis of the turning count data derived from the GTM. The rerun models therefore supersede the initial results presented as part of the interim TA.

Model Runs

- 7.4 The following scenarios have been tested in the model, with AM (08:00-09:00) & PM (17:00-18:00) turning count outputs produced. The references to Site 1 and Site 2 refer to the proposed development (350 dwellings) and a proposed development off Longfield Road (120 dwellings – a live application: Planning Ref: GB/20250993), respectively.

Table 16: GTM Scenarios Tested

ID	Scenario	Details
Scenario 0	2019 Base Model	Enhancement at local area
Scenario 1	2042 Local Plan	Gally Hill Closed + Local Plan Sites without proposed sites (site 1 -Land East of Wrotham Road , Site 2 -Land South of Longfield Road)
Scenario 2	2042 Local Plan with Site 1	Gally Hill Closed + Local Plan Sites + site 1 -Land East of Wrotham Road
Scenario 3	2042 Local Plan with Site 2	Gally Hill Closed + Local Plan Sites + site 2 -Land South of Longfield Road
Scenario 4	2042 Local Plan with Site 1 + Site 2	Gally Hill Closed + Local Plan Sites + proposed sites (site 1 - Land East of Wrotham Road , Site 2 -Land South of Longfield Road)
Scenario 5	2032 Reference Case	Gally Hill Closed + TEMPRo Growth (no Local Plan sites)
Scenario 6	2032 Reference Case + Site 1	Gally Hill Closed + TEMPRo Growth (no Local Plan sites) + Site 1
Scenario 7	2032 Reference Case + Site 2	Gally Hill Closed + TEMPRo Growth (no Local Plan sites) + Site 2
Scenario 8	2032 Reference Case + Site1 + Site 2	Gally Hill Closed + TEMPRo Growth (no Local Plan sites) + Site 1 +Site 2

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- 7.5 Jacobs requested committed development lists from Gravesham Borough Council but did not receive a response. On that basis, it was agreed with KCC that TEMPro factors would instead be used for the 2032 Reference Case scenario so as not to cause delay of the modelling process.
- 7.6 The 2042 Local Plan scenario includes all known allocated sites within the Gravesham area at the time the modelling was commissioned/started.
- 7.7 To create a robust assessment, a base model enhancement was undertaken to identify any discrepancies between the observed data and model flows by Jacobs.
- 7.8 All scenarios have been run under the assumption that Gally Hill is closed to through traffic. It was confirmed by Jacobs that this is within Gravesham and outside of the study area and the impact on the local highway network near to the site is likely to be minimal.
- 7.9 For the purposes of this TA the Local Plan and Reference Case scenarios that include just Site 1 (land east of Wrotham Road) are not relevant and are therefore not included.
- 7.10 For presentation purposes within the junction models, the 2032 Reference Case scenarios are presented before the 2042 Local Plan scenarios.

Traffic Generation

- 7.11 This report considers a proposed development of up to 350 residential dwellings.
- 7.12 The TRICS 7.11.4 database has been used to determine the potential vehicle trip generation for the proposed development. The output is provided at **Appendix J** of this report and summarised in **Table 17**.
- 7.13 The following parameters have been used within the TRICS assessment:
- Land Use – Residential, Houses Privately Owned.
 - Regions – United Kingdom (Excl. Greater London and Ireland).
 - Unit Range – 100-140 (Selected Average: 121).
 - Date Range – 01/01/2016 – 23/05/2024.
 - Locations – Suburban Area, Edge of Town.
 - Surveys undertaken during the Covid-19 pandemic were removed.

Table 17: TRICS Trip Generation Assessment

Peak Period	Trip Rate (per dwelling)		Vehicle Trips (350 dwellings)		Total
	In	Out	In	Out	
AM	0.156	0.355	55	124	179
PM	0.332	0.187	116	65	182

N.B. Figures subject to rounding.

- 7.14 The trip generation summarised in **Table 16** indicates that the proposed development is forecast to generate 179 two-way vehicular trips in the AM peak, and 182 two-way vehicle trips in the PM peak.

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Distribution and Assignment

GTM Assessment

- 7.15 The distribution of traffic within the GTM has been based on the existing distribution of traffic from nearby residential zones in that model.
- 7.16 The updated assignment of development traffic has been undertaken on the basis of the parameters contained within the GTM, as agreed with KCC. This considers the future scenarios in which committed development and allocated local plan sites come forward which could impact on queuing and delay across the network and hence influence journey times and route choices.

A2/Wrotham Road Manual Assessment

- 7.17 As previously noted, NH has raised a holding objection until further information on the methodology to distribute and assign development traffic in the GTM has been provided. This precise details have been requested from Jacobs and will be provided to NH in due course.
- 7.18 In the meantime, a manual assessment of the A2/Wrotham Road junction has been assessed in this report based on a manual distribution using Census 2011 Method of Travel to Work data and a calibrated junction model.
- 7.19 Manual distribution has been undertaken for the proposed development as part of this assessment using Census 2011 Method of Travel to Work data.
- 7.20 The distribution has been undertaken at the MSOA level using Gravesham 012 as the place of origin using.
- Zone A – A227 North
 - Zone B – A2 West
 - Zone C – A2 East
 - Zone D – B260
 - Zone E – Sole Street (via Green Lane)
 - Zone F – A227 South
- 7.21 The Census distribution assessment is detailed at **Appendix K** and the resulting traffic flow diagrams are provide at **Appendix L**.
- 7.22 Traffic was assigned onto the network using Google maps routing tool between the location of the site access on Longfield Road and the destinations within the Census 2011 Method of Travel to Work data.
- 7.23 Based on the distribution and assignment exercise, the level of development traffic expected to reach the distribution zones are summarised in **Table 18**.

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Table 18: Census 2011 Distribution

Distribution Zone	Distribution Proportions (%)	Two Way Total	
		In	Out
A227 North	15%	27	28
A2 West	51%	92	94
A2 East	8%	14	14
B260	0%	0	0
Sole Street (Via Green Lane)	11%	20	20
A227 South	14%	25	26
Total	100%	179	182

N.B. Figures subject to rounding

- 7.24 As can be seen from the distribution exercise, 75% of vehicle traffic is anticipated to reach the A2/Wrotham Road junction. This equates to vehicle trips in the region 134 two-way vehicle trips in the AM peak period, and 136 two-way vehicle trips in PM peak period.
- 7.25 The census distribution and assignment exercise forecasts minimal levels of traffic routing through other junctions on the SRN (below 30 two-way trips across both peak periods) and will therefore create an imperceptible impact on their operation. This includes with the addition of traffic associated with Land south of Longfield Road (Site 2). We therefore do not propose to assess any further SRN junctions.
- 7.26 A similar exercise has been presented as part of the land south of Longfield Road application, and the manually distributed exercise has also been included within this assessment in the event both developments come forward.

8.0 Traffic Impact and Capacity Assessments

Traffic Impact

- 8.1 KCC provided initial traffic model runs that indicated how development traffic would assign to the network and therefore the likely traffic impact upon any particular junction.
- 8.2 A level of peak hour impact of more than 30 vehicles (two-way) at any junction was chosen as a suitable guide to the area of assessment required for junction capacity assessments. On this basis, the following junctions were identified as requiring junction capacity analysis:
 - Junction 1 - Wrotham Road/Site Access
 - Junction 2 - Longfield Road/Site Access
 - Junction 3 - Wrotham Road/Longfield Road
 - Junction 4 - Wrotham Road/Green Lane
 - Junction 5 - Wrotham Road/Huntingfield Road
 - Junction 6 – Wrotham Road/Lewis Road
 - Junction 7 - Wrotham Road/Istead Rise
 - Junction 8 – Wrotham Road/Station Road
 - Junction 9 - Wrotham Road/A2 (Double Roundabout)
 - Junction 10 – Green Lane/Norwood Lane
 - Junction 11 - Sole Street/The Street
 - Junction 12 -Longfield Road/Huntingfield Road
 - Junction 13 – Main Road/Manor Road
 - Junction 14 – Main Road/Nurstead Lane
- 8.3 Due to the strategic nature of the model, not all links are coded in detail and therefore some minor junctions are not included within the modelled turning flows.
- 8.4 For example, following review of the Wrotham Road/Station Road junction, it was confirmed by Jacobs that the zone which covers this area (Zone 107508) assumes that traffic loads onto the network from Nursery Road/Orchard Drive. On that basis, the outputs do not provide turning flows to/from Station Road within any of the model scenarios during the peak periods.
- 8.5 As a result, the Wrotham Road/Station Road junction has been omitted from capacity assessments given the junction model would assume that both northbound and southbound traffic on Wrotham Road would not be blocked by turning vehicles into Station Road and hence would show no delay or queuing.
- 8.6 The junction numbering has therefore been amended accordingly within the subsequent junction assessments.
- 8.7 The raw turning flows received from Jacobs for each junction across all scenarios has been summarised within Network Flow Diagrams presented at **Appendix M**.

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Sensitivity Assessment

- 8.8 As previously stated, the proposed development (Site 1) and land south of Longfield Road (Site 2) may progress through the relevant planning stages at similar timescales and, subject to approval, may be occupied within similar timeframes.
- 8.9 It should be emphasised that neither development is reliant on the other coming forward and therefore this development proposal should be considered on its own merits, albeit the sensitivity assessment gives an indication of potential cumulative impact should the Longfield Road proposals come forward.
- 8.10 An additional manual assessment is also provided for the A2/Wrotham Road junction.

Assessment Scenarios

- 8.11 To create a robust assessment, the following assessment scenarios have been tested within the junction models:
- 2032 Reference Case (Assumed Opening Year)
 - 2032 Reference Case + Development (Site 1)
 - 2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)
 - 2042 Local Plan
 - 2042 Local Plan + Development (Site 1)
 - 2042 Local Plan + Site 1 + Site 2 (Sensitivity Assessment)
- 8.12 The tests including Site 2 must be considered as sensitivity assessment for the purposes of this report.

A2/Wrotham Road Manual Assessment

Calibration/Validation

- 8.13 Given the GTM is strategic in nature, no junction queuing data was provided by Jacobs. Of course, validation and calibration can only be provided against on-site observations. Therefore, the isolated A2/Wrotham Road junction model could not be validated or calibrated on the basis of data provided from the GTM.
- 8.14 On that basis, this assessment considers the MCC observed average and 95th percentile queue data to validate/calibrate the model for the 2025 base year. The raw turning flow data is summarised in **Table 19** and also summarised at the end of **Appendix N**.

Table 19: Observed Average and 95th Percentile Queue Data (2025)

	Northern Roundabout			Southern Roundabout		
	Wrotham Road (N)	Link Road	A2 EB Off slip	Link Road	A2 WB Off Slip	Wrotham Road (S)
AM Peak						
Average Queue	9	0	12	0	20	11
95th Percentile Queue	17	0	18	0	31	15

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	Northern Roundabout			Southern Roundabout		
	Wrotham Road (N)	Link Road	A2 EB Off slip	Link Road	A2 WB Off Slip	Wrotham Road (S)
PM Peak						
Average Queue	11	0	20	0	14	9
95th Percentile Queue	19	0	36	0	27	14

- 8.15 The 2025 base model was run uncalibrated and compared to the average and 95th queues observed as part of the MCC survey. The results of the uncalibrated model are presented in **Table 20** and included at **Appendix O**.

Table 20: Uncalibrated 2025 Base Model

Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2025 Base Year (Uncalibrated)							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.48	1	3	0.45	1	3
	A2 (W) Off-Slip	0.58	1	5	0.72	3	7
	Wrotham Road (N)	0.85	6	13	0.79	4	9
Southern Roundabout (2)	A2 (E) Off-Slip	0.71	3	12	0.64	2	9
	Wrotham Road (S)	0.85	5	20	0.67	2	9
	Wrotham Road (N) Internal Link	0.55	1	3	0.51	1	3

- 8.16 As demonstrated from the observed queue data, there is sustained queuing on both off slips during both peak periods, and to a lesser extent on Wrotham Road north and south.
- 8.17 On the A2 EB off slip, drivers are signed to use both lanes to turn left to Wrotham Road north. However, it appears that drivers may not be using both lanes to undertake this manoeuvre. There is also an atypical give-way arrangement with hard segregation which forces drivers directly onto the exit arm as opposed to the circulatory, causing drivers to look over their shoulder and be more cautious.
- 8.18 Similarly, queuing is currently observed on the A2 WB off slip. At present, the off slip is largely one lane along with a hard shoulder lane until it flares out at the circulatory for c.5 vehicles length. There is a relatively high right turn flow which is likely creating an element of lane starvation for the left turn lane. It was also noted with NH's response that they are aware of queueing on this off slip.
- 8.19 To more accurately reflect the current operation of these arms and to allow for a robust consideration of development impact, saturation intercept adjustments have been cautiously applied to arm 1-3 (A2 EB off slip) of -350 and on arm 2-1 (A2 WB off slip) of -250 to be within a more suitable range of the observed average and 95th percentile queue data.
- 8.20 The results for the other arms are more representative of the observed conditions based on geometry alone and therefore no adjustments have been made to these.
- 8.21 The results of the calibrated model are presented in **Table 21** and included at **Appendix O**.

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Table 21: Calibrated 2025 Base Model

Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2025 Base Year (Calibrated)							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.47	1	3	0.45	1	3
	A2 (W) Off-Slip	0.71	3	9	0.88	7	19
	Wrotham Road (N)	0.85	6	13	0.79	4	9
Southern Roundabout (2)	A2 (E) Off-Slip	0.93	10	52	0.83	4	24
	Wrotham Road (S)	0.84	5	20	0.67	2	9
	Wrotham Road (N) Internal Link	0.55	1	3	0.51	1	3

TEMPro (Manual Assessment)

- 8.22 For the purpose of the A2/Wrotham Road manual assessment, in order to forecast future traffic growth, the turning flows from the MCC were uplifted using NTM adjusted growth factors obtained from TEMPro for the AM and PM peak periods.
- 8.23 The factors were generated for the Gravesham 012 MSOA using the Core model for car driver only. The resulting factors are presented in **Appendix L**.
- 8.24 Given the regulation 19 status of Land south of Longfield Road (Site 2), it is considered likely that this is included within the TEMPro future housing forecasts and therefore the proposed quantum of dwellings (120) has been removed to avoid double counting of trips. However, given the proposed development (Site 1) has not been given regulation 19 status, the 350 dwellings proposed have not been deducted from the future housing forecasts to provide a robust assessment.

Committed Development

- 8.25 In their response, NH have requested that the following sites be included as committed development within the junction assessment:
- Former Tollgate Hotel, Gravesend – Electric Vehicle (EV) ChargePoint facility with ancillary sales building, small retail facility and 12-pump fuel station (Planning Ref: 20240856)
 - Land at Coldharbour Road – 400 residential units (Ref: 2014214)
- 8.26 The trip generation for each site has been reviewed from their respective assessments.
- 8.27 At the time of writing, a significant proportion of Land at Coldharbour Road has already been built out and the traffic flows associated with the level of development will have been collected within the 2025 MCC surveys.
- 8.28 This was also noted within the Transport Assessment addendum for the former Tollgate Hotel, dated 24th October 2024 (Doc number: TAA01) following interrogation of the committed development list provided by GBC in September 2024. This indicated that of the 400 units, 164 remained to be built out. This was ‘acknowledged’ by NH in their response dated 12th November 2024 (NH Ref: NH/24/08483) and raised no further comments.

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- 8.29 These vehicle trips for Land at Coldharbour Road were subsequently included within the modelling assessment of the A2/Wrotham Road junction and are included within Appendix E of the addendum report for the former Tollgate Hotel. These forecasts have been used within this assessment.
- 8.30 Similarly, the development trips for the former Tollgate Hotel are provided in Appendix G of the original Transport Assessment (Doc Ref: TA01) and have also been included within this assessment. This assumes some rerouting of existing trips on the network to use the facility which has also been reflected within our assessment in the future years. The flows used are also included within the traffic flow diagram in **Appendix L** of this report.
- 8.31 Land at Coldharbour Road is likely to be built out prior to the opening year of the proposed development. Similarly, the opening year modelled for the former Tollgate Hotel is 2028 and is therefore also likely to be operational prior to the opening year of the proposed development. On that basis, the committed development is included as an assessment scenario for both the 2032 and 2042 future years.
- 8.32 It should also be noted that the remaining number of units to be built at Land at Coldharbour Road is likely to be less than 164 given the time that has elapsed. Therefore, this provides a robust assessment of the junction. For clarity, these flows were removed from the TEMPro growth rates as these are likely to be included within the future forecasts.

Scenarios Assessed

- 8.33 The same scenarios have been assessed as those within the GTM for ease of comparison. It has also been assumed that the committed development is likely to come forward prior to the proposed development opening and has therefore been added to the reference case and local plan future years.
- 8.34 The results of the manual assessment are presented later in this section.

Junction Assessment

- 8.35 All junction assessments have been undertaken using the Junctions 11 software for priority and roundabout junctions.
- 8.36 The junction measurements have been based on topographical survey mapping within the AutoCAD software where available. Otherwise, junction measurements are based on measurements using Ordnance Survey mapping, also within AutoCAD software.
- 8.37 The junction measurements are presented in **Drawing T25526.003**.

Junction 1 - Site Access

- 8.38 The Wrotham Road/Site 1 access has been modelled using the PICADY module of Junctions 11.
- 8.39 The model results are summarised in **Table 22** with the full model outputs included at Appendix P.

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Table 22: Site Access PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case + Site 1						
Site Access	0.48	1	24	0.26	0	17
Wrotham Road	0.02	0	8	0.05	0	8
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Site Access	0.48	1	24	0.26	0	17
Wrotham Road	0.02	0	8	0.05	0	8
2042 Local Plan + Site 1						
Site Access	0.53	1	29	0.27	0	18
Wrotham Road	0.02	0	8	0.06	0	8
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Site Access	0.53	1	29	0.27	0	18
Wrotham Road	0.02	0	8	0.06	0	8

8.40 **Table 22** demonstrates that the site access is forecast to operate with a considerable level of spare capacity, within minimal queueing across all scenarios and peak periods.

Junction 2 - Wrotham Road/Longfield Road

8.41 The Wrotham Road/Longfield Road junction has been modelled using the PICADY module of Junctions 11 for priority T-Junctions.

8.42 The model results are summarised in **Table 23** with the full model outputs provided at **Appendix P**.

Table 23: Wrotham Road/Longfield Road PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Longfield Road (Lft)	0.12	0	13	0.07	0	10
Longfield Road (Rht)	0.61	2	35	0.44	1	26
Wrotham Road (N) (Rht)	0.11	0	8	0.09	0	9
2032 Reference Case + Site 1						
Longfield Road (Lft)	0.12	0	13	0.06	0	11
Longfield Road (Rht)	0.62	2	36	0.46	1	27
Wrotham Road (N) (Rht)	0.13	0	8	0.10	0	9
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Longfield Road (Lft)	0.15	0	14	0.06	0	11
Longfield Road (Rht)	0.66	2	41	0.49	1	29
Wrotham Road (N) (Rht)	0.14	0	9	0.11	0	9

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2042 Local Plan						
Longfield Road (Lft)	0.21	0	23	0.02	0	15
Longfield Road (Rht)	0.77	3	68	0.65	2	46
Wrotham Road (N) (Rht)	0.20	0	10	0.11	0	10
2042 Local Plan + Site 1						
Longfield Road (Lft)	0.23	0	25	0.05	0	18
Longfield Road (Rht)	0.78	3	71	0.72	2	57
Wrotham Road (N) (Rht)	0.22	0	10	0.11	0	10
2042 Local Plan + Site 1 + Site 2 (Sensitivity Assessment)						
Longfield Road (Lft)	0.36	1	40	0.07	0	23
Longfield Road (Rht)	0.84	4	88	0.76	3	67
Wrotham Road (N) (Rht)	0.23	0	10	0.13	0	10

- 8.43 **Table 23** demonstrates that the Wrotham Road/Longfield Road junction is forecast to operate within practical capacity across all 2032 Reference Case scenarios during both peak periods.
- 8.44 The addition of development traffic creates a minimal impact on junction operation, with minor increases in delay on Longfield Road in the AM and PM peaks. Queueing remains constant during both peak periods.
- 8.45 The sensitivity assessment also demonstrates that the junction is forecast to operate within practical capacity during both peak periods, with minimal increases in delay in both peak periods. The model also forecasts that there will be no change in queueing during either peak period.
- 8.46 The junction is forecast to still operate within practical capacity during the 2042 Local Plan scenario, albeit with a reduction in overall junction capacity compared to the 2032 Reference Case scenario. The junction operates with higher delay across both peak periods, at 68 seconds AM and 46 seconds PM on Longfield Road, respectively. Queueing, however, remains largely similar.
- 8.47 The addition of development traffic creates a minimal increase in delay on Longfield Road by 3 seconds to 71 seconds in the AM peak and by 11 seconds in the PM peak to 57 seconds. There is no increase in queueing on Longfield Road or Wrotham Road in either peak period.
- 8.48 Within the sensitivity assessment, the junction reaches an RFC of 0.84 on Longfield Road during the AM peak. The junction experiences an increase in delay of 20 seconds on Longfield Road during the AM peak period and by 21 seconds in the PM peak period, with an increase in queueing of 1 PCU.
- 8.49 Considering the above, the proposed development in isolation is forecast to have a minimal impact on the operation of the Wrotham Road/Longfield Road junction. Even allowing for traffic related to the potential Longfield Road proposals (Site 2), the impact at this junction is considered minimal.
- 8.50 Given the junction does not exceed any capacity threshold during any of the assessment scenarios or peak periods, no mitigation is proposed at this junction.

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Junction 3 - Wrotham Road/Green Lane

8.51 The Wrotham Road/Green Lane junction has been modelled using the PICADY module of Junctions 11.

8.52 The model results are summarised in **Table 24** with the full outputs provided at **Appendix P**.

Table 24: Wrotham Road/Green Lane PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Green Lane (Left-Turn)	0.44	1	12	0.27	0	9
Green Lane (Right-Turn)	0.12	0	18	0.09	0	20
Wrotham Road (S) (Right-Turn)	0.30	0	9	0.50	1	11
2032 Reference Case + Site 1						
Green Lane (Left-Turn)	0.48	1	13	0.35	1	10
Green Lane (Right-Turn)	0.13	0	20	0.10	0	23
Wrotham Road (S) (Right-Turn)	0.36	1	9	0.52	1	11
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Green Lane (Left-Turn)	0.48	1	13	0.35	1	10
Green Lane (Right-Turn)	0.13	0	20	0.10	0	22
Wrotham Road (S) (Right-Turn)	0.37	1	9	0.51	1	11
2042 Local Plan						
Green Lane (Left-Turn)	1.32	46	542	0.38	1	12
Green Lane (Right-Turn)	1.31	34	550	0.45	1	33
Wrotham Road (S) (Right-Turn)	0.37	1	10	0.53	1	12
2042 Local Plan + Site 1						
Green Lane (Left-Turn)	1.40	54	655	0.45	1	14
Green Lane (Right-Turn)	1.38	37	664	0.47	1	39
Wrotham Road (S) (Right-Turn)	0.44	1	10	0.56	2	12
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Green Lane (Left-Turn)	1.39	54	636	0.47	1	15
Green Lane (Right-Turn)	1.37	35	641	0.50	1	41
Wrotham Road (S) (Right-Turn)	0.44	1	10	0.55	2	12

8.53 **Table 24** demonstrates that the Wrotham Road/Green Lane junction is forecast to operate within practical capacity across all 2032 Reference Case scenarios.

8.54 The addition of proposed development traffic in the 2032 Reference Case scenario creates slight increases in queuing on Wrotham Road by 1 PCU and slight increases in delay on Green Lane. There is also a negligible increase in delay on Green Lane and minimal changes to queuing in the PM peak period.

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- 8.55 The sensitivity analysis forecasts that the addition of Site 2 traffic will change little in the 2032 Reference Case scenario. The forecast changes are not considered to be significant and there will be no perceptible impact on the operation of the junction.
- 8.56 Within the 2042 Local Plan scenario, the junction is forecast to operate beyond capacity. From review of the turning flow movements, there is a general increase in vehicles turning into/out of Green Lane, however the most significant increase is in right turn movements from Green Lane to Wrotham Road north which are required to give-way to three lanes of traffic (including the ghost-island right turn). This will in turn cause blockage for vehicles wanting turn left from the junction, creating queueing and delay.
- 8.57 The proposed development causes an increase in queueing in the AM peak by 8 PCUs and an increase in delay of 114 seconds on Green Lane. There is a minimal impact on the junction operation in the PM peak.
- 8.58 The sensitivity analysis forecasts that the additional traffic from Site 2 will create slight improvements to the junction operation, likely due to rerouting of trips to avoid delay at the junction.
- 8.59 It should be reiterated that it is common for junction models, such as in Junction 11, to become more sensitive to change in traffic flows once they exceed capacity and become more saturated, leading to exponential increases in forecasts of delay compared to limited traffic increases. Therefore, the results should be treated with some caution.
- 8.60 It is clear from the 2042 Local Plan scenario that the GTM model is forecasting a significant traffic impact at this junction as a result of a Local Plan allocation to the east of the junction. However, the impact of the proposed development does not create a significant impact and it is for that particular Local Plan development to mitigate its impact at this location. On that basis, no mitigation of this junction is proposed.

Junction 4 - Wrotham Road/ Huntingfield Road

- 8.61 The Wrotham Road/Huntingfield Road junction has been modelled using the PICADY module of Junctions 11.
- 8.62 The model results are summarised in **Table 25** with the full model outputs provided at **Appendix P**.

Table 25: Wrotham Road/Huntingfield Road PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Huntingfield Road	0.25	0	12	0.20	0	13
Wrotham Road (N) (Right-Turn)	0.09	0	8	0.08	0	7
2032 Reference Case + Site 1						
Huntingfield Road	0.27	0	12	0.22	0	14
Wrotham Road (N) (Right-Turn)	0.09	0	8	0.08	0	8
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Huntingfield Road	0.27	0	12	0.24	0	15
Wrotham Road (N) (Right-Turn)	0.09	0	8	0.08	0	8
2042 Local Plan						
Huntingfield Road	0.37	1	16	0.32	1	17

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
Wrotham Road (N) (Right-Turn)	0.11	0	9	0.09	0	8
2042 Local Plan + Site 1						
Huntingfield Road	0.38	1	17	0.33	1	18
Wrotham Road (N) (Right-Turn)	0.11	0	9	0.09	0	8
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Huntingfield Road	0.37	1	16	0.35	1	18
Wrotham Road (N) (Right-Turn)	0.11	0	9	0.09	0	8

- 8.63 **Table 25** demonstrates that the Wrotham Road/Huntingfield Road junction is forecast to operate within practical capacity with minimal queueing and delay across all assessment scenarios and peak periods.
- 8.64 Notably, the addition of the proposed development traffic causes an imperceptible impact on junction operation in both the 2032 Reference Case and 2042 Local Plan scenarios, with minimal changes to RFC, queueing and delay.

Junction 5 - Wrotham Road/Lewis Road

- 8.65 The Wrotham Road/Lewis Road junction has been modelled using the PICADY module of Junctions 11.
- 8.66 The model results are summarised in **Table 26** with the full model outputs provided at **Appendix P**.

Table 26: Wrotham Road/Lewis Road PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Lewis Road	0.73	3	39	0.73	3	38
Wrotham Road (N) (Right-Turn)	0.22	0	11	0.36	1	12
2032 Reference Case + Site 1						
Lewis Road	0.76	3	44	0.80	4	55
Wrotham Road (N) (Right-Turn)	0.23	0	11	0.37	1	13
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Lewis Road	0.77	3	46	0.82	4	57
Wrotham Road (N) (Right-Turn)	0.22	0	11	0.37	1	12
2042 Local Plan						
Lewis Road	1.22	39	370	1.06	17	195
Wrotham Road (N) (Right-Turn)	0.32	1	13	0.53	1	17
2042 Local Plan + Site 1						
Lewis Road	1.26	43	418	1.12	24	260
Wrotham Road (N) (Right-Turn)	0.32	1	14	0.52	1	17

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Lewis Road	1.27	44	429	1.15	27	290
Wrotham Road (N) (Right-Turn)	0.32	1	14	0.53	1	17

- 8.67 **Table 26** demonstrates that the Wrotham Road/Lewis Road junction is forecast to operate within practical capacity within all 2032 Reference Case scenarios.
- 8.68 The additional development traffic creates a negligible impact on the operation of the junction, creating an additional 5 second delay and 17 second delay in the AM and PM peak periods, respectively, on Lewis Road. Similarly, there is only an increase in queuing of 1 PCU in the PM peak period.
- 8.69 The addition of traffic from Site 2 within the sensitivity assessment is forecast to create an increase in delay of 2 second in the AM and PM peak periods. There is no additional queuing across either peak period on Lewis Road or Wrotham Road. This is considered to be a negligible impact.
- 8.70 The junction is forecast to operate beyond capacity within all 2042 Local Plan scenarios on the Lewis Road approach. This is largely due to the increase in flows on Wrotham Road as a result of 2042 Local Plan traffic considered within the GTM model which is restricting vehicles from egressing Lewis Road.
- 8.71 The results show that the proposed development will create a minimal impact on the operation of the junction, with an increase in delay of 48 seconds and queueing by 4 PCUs on Lewis Road in the AM peak period. There is an increase in delay of 65 seconds and increase in queueing of 7 PCUs in the PM peak period.
- 8.72 The sensitivity analysis forecasts that the additional traffic from Site 2 will increase delay by 11 seconds and queueing by 1 PCU in the AM peak. In the PM peak, the sensitivity assessment will create an increase in delay by 30 seconds, and queueing by 3 PCUs.
- 8.73 As previously stated, it is common for junction models, such as in Junction 11, to become more sensitive to change in traffic flows once they exceed capacity and become more saturated, leading them to forecast unrealistic increases in delay such as these. Therefore, the results should be treated with caution.
- 8.74 The largest impact at the junction is associated with traffic from sites included within the 2042 Local Plan. The proposed development does not create a significant impact on the operation of the junction and therefore no mitigation is proposed.

Junction 6 - Wrotham Road/Istead Rise

- 8.75 The Wrotham Road/Istead Rise junction has been modelled using the PICADY module of Junctions 11.
- 8.76 The model results are summarised in **Table 27** with the full model outputs provided at **Appendix P**.

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Table 27: Wrotham Road/Istead Rise PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Istead Rise (Left-Turn)	0.50	1	18	0.45	1	15
Istead Rise (Right-Turn)	0.35	1	33	0.25	0	33
Wrotham Road (N) (Right-Turn)	0.33	1	13	0.53	1	17
2032 Reference Case + Site 1						
Istead Rise (Left-Turn)	0.51	1	20	0.46	1	16
Istead Rise (Right-Turn)	0.38	1	37	0.26	0	38
Wrotham Road (N) (Right-Turn)	0.33	1	13	0.55	1	17
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Istead Rise (Left-Turn)	0.52	1	20	0.46	1	15
Istead Rise (Right-Turn)	0.39	1	38	0.25	0	37
Wrotham Road (N) (Right-Turn)	0.33	1	13	0.54	1	17
2042 Local Plan						
Istead Rise (Left-Turn)	1.01	10	147	0.69	2	36
Istead Rise (Right-Turn)	0.93	4	248	0.63	1	114
Wrotham Road (N) (Right-Turn)	0.41	1	16	0.61	2	21
2042 Local Plan + Site 1						
Istead Rise (Left-Turn)	1.09	15	208	0.69	2	36
Istead Rise (Right-Turn)	1.02	5	305	0.63	1	120
Wrotham Road (N) (Right-Turn)	0.41	1	17	0.60	2	21
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Istead Rise (Left-Turn)	1.10	16	218	0.77	3	51
Istead Rise (Right-Turn)	1.03	5	315	0.72	2	159
Wrotham Road (N) (Right-Turn)	0.41	1	17	0.61	2	22

- 8.77 **Table 27** demonstrates that the Wrotham Road/Istead Rise junction is forecast to operate well within practical capacity during the 2032 Reference Case scenarios.
- 8.78 The impact of the proposed development traffic is negligible, with no changes to queueing across either peak period, and only negligible increases in delay.
- 8.79 There are also negligible changes to queueing a delay with the addition of Site 2 traffic in the sensitivity assessment, across both peak periods.
- 8.80 Within the 2042 Local Plan scenarios, the junction is forecast to operate slightly beyond its maximum capacity in the AM peak period, with the Istead Rise approach reaching an RFC of 1.01.
- 8.81 The addition of the proposed development traffic creates a minor impact on the junction with increases in delay of 61 seconds and 6 seconds in the AM and PM peaks, respectively, on Istead Rise. There is an increase of 5

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PCUs in the AM peak queue on Istead Rise and no changes in queueing in the PM peak. Again, this is not considered to be significant, especially given the junction is forecast to already be operating above capacity.

- 8.82 The addition of the Site 2 traffic within the sensitivity assessment creates negligible changes, with an increase in delay of 10 seconds and increase in queueing of 1 PCU on Istead Rise in the AM peak. In the PM peak, there is also an increase in delay of 39 seconds and increase in queueing of 1 PCU in the PM peak on Istead Rise.
- 8.83 Given the junction is forecast to operate over capacity without development traffic in the AM peak within the 2042 Local Plan scenario and given the impact of the proposed development on the operation of the junction is minimal, no mitigation is proposed.

Junction 7 - Wrotham Road/A2 (Double Roundabout) – GTM Assessment

- 8.84 The Wrotham Road/A2 (Double Roundabout) junction has been modelled using the ARCADY module of Junctions 11 for roundabouts.
- 8.85 The model has been set up as a linked roundabout to assess the relationship between the northern and southern roundabout, and to determine any potential impact on the internal link arms.
- 8.86 The A2 off-slips at both roundabouts have been modelled as entry only (flows entering the circulatory), and the A2 on-slips have been modelled as exit only (flows exiting the circulatory).
- 8.87 For clarity, the GTM turning flows do not show any flows traveling to/from the former Tollgate Hotel access for any of the future scenarios. These are, however, considered as part of the manual assessment.
- 8.88 The model results are summarised in **Table 28** with the full model outputs provided at **Appendix P**.

Table 28: A2/Wrotham Road ARCADY Results (GTM Flows)

Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.39	1	2	0.46	1	3
	A2 (W) Off-Slip	0.55	1	4	0.76	3	8
	Wrotham Road (N)	1.11	116	169	1.10	106	162
Southern Roundabout (2)	A2 (E) Off-Slip	0.39	1	7	0.47	1	7
	Wrotham Road (S)	0.98	18	59	0.75	3	11
	Wrotham Road (N) Internal Link	0.65	2	4	0.57	1	3
2032 Reference Case + Site 1							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.38	1	2	0.46	1	3
	A2 (W) Off-Slip	0.56	1	4	0.78	3	8
	Wrotham Road (N)	1.11	117	170	1.11	111	171
Southern Roundabout (2)	A2 (E) Off-Slip	0.38	1	7	0.46	1	7
	Wrotham Road (S)	1.00	24	75	0.77	3	11
	Wrotham Road (N) Internal Link	0.66	2	4	0.58	1	3

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Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.39	1	2	0.46	1	3
	A2 (W) Off-Slip	0.57	1	4	0.78	3	9
	Wrotham Road (N)	1.11	117	170	1.11	112	173
Southern Roundabout (2)	A2 (E) Off-Slip	0.38	1	7	0.46	1	7
	Wrotham Road (S)	1.01	27	81	0.76	3	11
	Wrotham Road (N) Internal Link	0.66	2	4	0.58	1	3
2042 Local Plan							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.35	1	2	0.44	1	3
	A2 (W) Off-Slip	0.58	1	4	0.82	4	10
	Wrotham Road (N)	1.10	106	159	1.10	102	167
Southern Roundabout (2)	A2 (E) Off-Slip	0.38	1	7	0.44	1	7
	Wrotham Road (S)	1.17	111	291	0.83	5	16
	Wrotham Road (N) Internal Link	0.68	2	5	0.60	2	4
2042 Local Plan + Site 1							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.35	1	2	0.45	1	3
	A2 (W) Off-Slip	0.58	1	4	0.81	4	10
	Wrotham Road (N)	1.10	106	160	1.09	91	151
Southern Roundabout (2)	A2 (E) Off-Slip	0.38	1	7	0.45	1	7
	Wrotham Road (S)	1.18	120	316	0.84	5	16
	Wrotham Road (N) Internal Link	0.68	2	5	0.60	2	4
2042 Local Plan + Site 1 + Site 2 (Sensitivity Assessment)							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.35	1	2	0.45	1	3
	A2 (W) Off-Slip	0.58	1	4	0.82	5	11
	Wrotham Road (N)	1.10	104	158	1.09	94	155
Southern Roundabout (2)	A2 (E) Off-Slip	0.38	1	7	0.45	1	7
	Wrotham Road (S)	1.19	122	323	0.84	5	16
	Wrotham Road (N) Internal Link	0.68	2	5	0.64	2	4

- 8.89 **Table 28** demonstrates that the Wrotham Road/A2 junction is forecast to operate over capacity in the 2032 Reference Case scenarios across both peak periods.
- 8.90 Within the 2032 Reference Case AM peak, the Wrotham Road northern approach to the northern roundabout is forecast to operate with a delay of 169 seconds and queue of 116 PCUs. Similarly, the Wrotham Road southern approach to the southern roundabout is forecast to operate with a delay of 59 seconds and queue of 18 PCUs.
- 8.91 The junction is also forecast to operate over capacity in the PM peak with the Wrotham Road northern approach to the northern roundabout forecast to operate with a 162 second delay and queue of 106 PCUs.

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- 8.92 However, the proposed development is forecast to create minimal impact on the operation of the junction in the 2032 Reference Case scenario across both peak periods. For example, the proposed development increases delay by 1 seconds and queueing by 1 PCUs in the AM peak on the Wrotham Road northern approach to the northern roundabout. In addition, the Wrotham Road southern approach to the southern roundabout is only forecast to increase delay by 16 seconds and queues of 6 PCUs.
- 8.93 Similarly, the proposed development flows create negligible changes to the operation of the junction in the 2032 Reference Case scenario PM peak.
- 8.94 The sensitivity assessment with Site 2 traffic also creates a negligible impact with minimal changes to queueing and delay.
- 8.95 Within the 2042 Local Plan scenario, the junction operates over capacity with similar operation to the 2032 Reference Case scenario.
- 8.96 Again, the proposed development and sensitivity assessment create negligible impacts with slight improvements on some arms within both the AM and PM peak periods, possibly as a result of the model rerouting some traffic.
- 8.97 Notwithstanding potential rerouting within the GTM, the junction model does not predict any of the off-slips to operate over capacity across all scenarios and peak periods which is not representative of current conditions.
- 8.98 Again, it should be reiterated that the junction model becomes more sensitive to change in traffic flows once it exceeds theoretical capacity and becomes more saturated, leading the model to overestimate forecast increases in queues and delays.

Junction 7 - A2/Wrotham Road (Double Roundabout) – Manual Assessment

- 8.99 The results for the A2/Wrotham Road manual assessment, based on Census 2011 distribution and assignment and calibrated model are summarised in **Table 29** with the full model outputs provided at **Appendix O**.

Table 29: A2/Wrotham Road ARCADY Results (Manual Assessment)

Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2026 Base							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.48	1	3	0.46	1	3
	A2 (W) Off-Slip	0.72	3	9	0.90	8	21
	Wrotham Road (N)	0.86	6	14	0.80	4	10
	Former Tollgate Hotel	0.00	0	0	0.00	0	0
Southern Roundabout (2)	A2 (E) Off-Slip	0.95	12	62	0.84	5	26
	Wrotham Road (S)	0.86	6	22	0.68	2	9
	Wrotham Road (N) Internal Link	0.56	1	3	0.51	1	3
2032 Reference Case							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.48	1	3	0.46	1	3
	A2 (W) Off-Slip	0.74	3	10	0.91	9	23
	Wrotham Road (N)	0.88	7	16	0.80	4	10

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Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
Southern Roundabout (2)	Former Tollgate Hotel	0.00	0	0	0.00	0	0
	A2 (E) Off-Slip	0.98	16	76	0.85	5	28
	Wrotham Road (S)	0.88	6	25	0.69	2	9
	Wrotham Road (N) Internal Link	0.57	1	4	0.52	1	3
2032 Reference Case + Committed Development							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.49	1	3	0.48	1	3
	A2 (W) Off-Slip	0.77	3	11	0.99	22	55
	Wrotham Road (N)	0.91	10	22	0.85	5	13
	Former Tollgate Hotel	0.60	2	46	0.57	1	36
Southern Roundabout (2)	A2 (E) Off-Slip	1.11	46	184	0.93	10	48
	Wrotham Road (S)	0.91	9	33	0.72	3	11
	Wrotham Road (N) Internal Link	0.59	2	4	0.53	1	3
2032 Reference Case + Committed Development + Site 1							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.50	1	3	0.49	1	3
	A2 (W) Off-Slip	0.79	4	12	1.05	42	91
	Wrotham Road (N)	0.93	12	26	0.88	7	16
	Former Tollgate Hotel	0.67	2	60	0.67	2	54
Southern Roundabout (2)	A2 (E) Off-Slip	1.15	57	228	0.99	17	81
	Wrotham Road (S)	0.99	21	70	0.75	3	12
	Wrotham Road (N) Internal Link	0.61	2	4	0.56	1	3
2032 Reference Case + Committed Development + Site 1 + Site 2							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.51	1	3	0.49	1	3
	A2 (W) Off-Slip	0.79	4	12	1.05	49	102
	Wrotham Road (N)	0.94	12	28	0.88	7	18
	Former Tollgate Hotel	0.69	2	66	0.70	2	61
Southern Roundabout (2)	Former Tollgate Hotel	1.16	61	244	1.01	22	98
	A2 (E) Off-Slip	1.02	28	88	0.77	3	12
	Wrotham Road (S)	0.61	2	4	0.57	1	4
2042 Local Plan							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.49	1	3	0.49	1	3
	A2 (W) Off-Slip	0.79	4	12	0.99	24	57
	Wrotham Road (N)	0.94	13	28	0.86	6	14
	Former Tollgate Hotel	0.00	0	0	0.00	0	0
Southern Roundabout (2)	A2 (E) Off-Slip	1.11	46	187	0.95	12	57
	Wrotham Road (S)	0.95	12	45	0.75	3	12
	Wrotham Road (N) Internal Link	0.60	2	4	0.55	1	3
2042 Local Plan + Committed Development							
Northern Roundabout	Wrotham Road (S) Internal Link	0.49	1	3	0.50	1	3

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Junction (No.)	Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
(1)	A2 (W) Off-Slip	0.81	5	14	1.07	63	130
	Wrotham Road (N)	0.98	21	44	0.90	8	20
	Former Tollgate Hotel	0.80	3	99	0.71	2	63
Southern Roundabout (2)	A2 (E) Off-Slip	1.24	87	339	1.02	24	104
	Wrotham Road (S)	0.97	17	60	0.78	3	13
	Wrotham Road (N) Internal Link	0.63	2	4	0.56	1	3
2042 Local Plan + Committed Development + Site 1							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.51	1	3	0.50	1	3
	A2 (W) Off-Slip	0.83	5	14	1.11	90	178
	Wrotham Road (N)	0.99	27	54	0.93	11	26
	Former Tollgate Hotel	0.88	4	136	0.84	4	108
Southern Roundabout (2)	A2 (E) Off-Slip	1.28	98	400	1.09	41	164
	Wrotham Road (S)	1.06	43	125	0.81	4	15
	Wrotham Road (N) Internal Link	0.64	2	4	0.58	1	4
2042 Local Plan + Committed Development + Site 1 + Site 2							
Northern Roundabout (1)	Wrotham Road (S) Internal Link	0.51	1	3	0.49	1	3
	A2 (W) Off-Slip	0.83	5	15	1.12	93	181
	Wrotham Road (N)	1.00	29	58	0.93	12	28
	Former Tollgate Hotel	0.91	5	145	0.89	4	130
Southern Roundabout (2)	A2 (E) Off-Slip	1.30	102	423	1.10	44	177
	Wrotham Road (S)	1.08	54	151	0.79	4	14
	Wrotham Road (N) Internal Link	0.64	2	4	0.59	2	4

- 8.100 The results of the manual assessment demonstrate that the junction is currently operating above capacity and will continue to do so across all future scenarios without the proposed development in place and on more than one arm at each junction in both peak hours.
- 8.101 In the 2032 Reference Case + Committed + Proposed Development (Site 1) scenario, the proposed development is predicted to create a minor impact at the southern roundabout. Queuing increases by 11 PCUs on the A2 WB off slip and by 12 PCUs on Wrotham Road South. Delays increase by 44 seconds and 37 seconds, respectively. There is little impact at the northern roundabout within the AM peak.
- 8.102 In the PM peak, the highest development impact is at the northern roundabout with the highest increase in queuing of 20 PCUs on the A2 EB off slip and subsequent delay increase of 36 seconds.
- 8.103 In the 2042 Local Plan + Committed + Proposed Development (Site 1) AM Peak scenario at the southern roundabout, queueing increases by 11 PCUs on the A2 WB off slip and by 26 PCUs on Wrotham Road south with subsequent delay increase of 61 and 65 seconds, respectively.
- 8.104 In the PM peak, at the northern roundabout, queueing increases by 27 PCUs on the A2 EB off slip, and by 3 PCUs on Wrotham Road north. Delay increases by 48 and 6 seconds, respectively.

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- 8.105 The addition of Site 2 traffic is expected to have a negligible impact on both roundabouts across both peak periods.
- 8.106 In the 2042 Local Plan + Committed + Proposed Development scenario, the proposed development is expected to create a minor impact across both peak periods, albeit the former Tollgate Hotel arm slightly exceeds the 0.85 threshold but still operates within capacity. However, the junction is much more likely to become sensitive to minor changes in flows given it is already operating above capacity on other arms at the northern junction.
- 8.107 Overall, the level of development impact on the A2/Wrotham Road junction is not considered to be significant. The model results are robust given the manual assessment does not consider any rerouting away from the junction in the future years as the junction becomes more congested with background traffic growth and committed development traffic added.
- 8.108 It should be noted that in the future years, the queuing on the A2 EB off slip does not exceed the storage capacity of the arm (c.226 PCUs across both lanes) and therefore does not create a safety issue in relation to queueing back to the A2 mainline. Similarly, queueing on Wrotham Road North does not exceed the storage capacity (c.67 PCUs) of the link between the roundabout and the Wrotham Road/Coldharbour Road roundabout to the north.

Junction 8 – Camer Road/Norwood Lane

- 8.109 The Camer Road/Norwood Lane junction has been modelled using the PICADY module of Junctions 11.
- 8.110 It was confirmed by Jacobs that Norwood Lane is closed to through traffic as a result of a scheme that is modelled in the 2042 Local Plan scenario. Subsequently, this means there are no flows to/from Norwood Lane from Camer Road in the 2042 Local Plan scenarios. On that basis, these scenarios have been omitted from the assessment as the model will show no results for the minor arm (Norwood Lane) or any subsequent delay or queueing for the right turn from Camer Road.
- 8.111 The model results are summarised in **Table 30** with the full model outputs provided at **Appendix P**.

Table 30: Camer Road/Norwood Lane PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Norwood Lane	0.03	0	7	0.05	0	7
Camer Road (E) (Right-Turn)	0.12	0	5	0.06	0	6
2032 Reference Case + Site 1						
Norwood Lane	0.03	0	7	0.05	0	7
Camer Road (E) (Right-Turn)	0.12	0	5	0.06	0	5
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Norwood Lane	0.03	0	7	0.05	0	7
Camer Road (E) (Right-Turn)	0.13	0	5	0.06	0	5

- 8.112 **Table 30** demonstrates that the Camer Road/Norwood Lane junction is forecast to operate well within practical capacity with minimal queueing and delay within the 2032 Reference Case scenario.

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8.113 The addition of the proposed development traffic does not create an impact on this junction during either peak period. Similarly, there is a negligible change to capacity results within the sensitivity assessment during either peak period.

Junction 9 -Sole Street/The Street

8.114 The Sole Street/The Street/Jeskyns Road junction has been modelled using the PICADY module of Junctions 11.

8.115 The model results are summarised in **Table 31** with the full model outputs provided at **Appendix P**.

Table 31: Sole Street/The Street PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Sole St (Left-Turn)	0.41	1	11	0.44	1	13
Sole St (Right-Turn)	0.47	1	19	0.65	2	29
Jeskyns Road (Right-Turn)	0.60	2	15	0.62	2	16
2032 Reference Case + Site 1						
Sole St (Left-Turn)	0.45	1	12	0.44	1	14
Sole St (Right-Turn)	0.52	1	22	0.67	2	31
Jeskyns Road (Right-Turn)	0.63	2	17	0.66	2	18
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Sole St (Left-Turn)	0.46	1	12	0.48	1	15
Sole St (Right-Turn)	0.54	1	22	0.69	2	33
Jeskyns Road (Right-Turn)	0.63	2	17	0.67	2	18
2042 Local Plan						
Sole St (Left-Turn)	0.82	4	42	0.86	4	62
Sole St (Right-Turn)	0.84	4	65	0.90	6	91
Jeskyns Road (Right-Turn)	0.74	3	23	0.90	7	50
2042 Local Plan + Site 1						
Sole St (Left-Turn)	0.96	9	86	0.98	8	107
Sole St (Right-Turn)	0.94	7	105	0.95	9	118
Jeskyns Road (Right-Turn)	0.75	3	24	0.91	8	54
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Sole St (Left-Turn)	0.97	10	93	0.98	8	106
Sole St (Right-Turn)	0.95	8	113	0.95	8	116
Jeskyns Road (Right-Turn)	0.76	3	25	0.92	8	58

8.116 **Table 31** demonstrates that the Sole Street/The Street junction is forecast to operate within practical capacity during the 2032 Reference Case scenarios during both peak periods.

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- 8.117 The proposed development creates a negligible impact on the operation of the junction during this scenario with an increase in delay of 3 seconds on Sole Street and 2 seconds on Jeskyns Road in the AM peak period and 2 seconds on Sole Street and Jeskyns Road in the PM peak period. There are no changes to queueing on any arm of the junction across either peak period.
- 8.118 The addition of the Site 2 traffic also has an imperceptible impact on queueing and delay, with no changes in the AM peak period and an increase in delay of just 2 seconds on Sole Street in the PM peak period. There are no changes to queueing on any arm of the junction across either peak period.
- 8.119 The junction exceeds 0.85 RFC in the 2042 Local Plan scenario in the PM peak period, reaching an RFC of 0.90 on Sole Street and Jeskyns Road. In the AM peak, Sole St operates with an RFC of 0.84 – only marginally below the 0.85 indicator.
- 8.120 From review of the turning flow data, there is a significant increase in flows at the junction as a result of local plan traffic, especially in right-turners from Jeskyns Road which is likely restricting right-turn movements from Sole Street, causing increases in queues and delays.
- 8.121 However, the proposed development traffic creates only a minor impact on junction operation with increase in queueing and delay during the 2042 Local Plan scenario, increasing queueing by 5 PCUs on Sole Street in the AM peak, and by 4 PCUs in the PM peak period. Delay increases by 40 seconds in the AM peak period on Sole Street and by 27 seconds in the PM peak period. Overall, the arms still operate within the 1.00 RFC capacity threshold.
- 8.122 The sensitivity assessment shows that the junction will still operate within the capacity threshold of the junction (below 1.00), albeit with an increase of 8 second delay and 1 PCU queue in the AM peak period and marginal reductions in both in the PM peak period, likely due to rerouting within the model.
- 8.123 Given the model is forecast to operate above the 0.85 indicator within the PM peak period in the 2042 Local Plan scenario, and close to the threshold in the AM peak period, no mitigation of the junction is proposed. It should be emphasised that it works well within capacity in the 2032 Reference Case year and the general increase in flows through the junction is largely due to forecast Local Plan traffic.
- 8.124 In addition, the GTM assigns traffic based on delay and speed through junctions, however it does not necessarily consider the appropriateness of such routes and therefore the results should be treated with caution.

Junction 10 - Longfield Road/Huntingfield Road

- 8.125 The Longfield Road/Huntingfield Road junction has been modelled using the PICADY module of Junctions 11.
- 8.126 The model results are summarised in **Table 32** with the full model outputs provided at **Appendix P**.

Table 32: Longfield Road/Huntingfield Road PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Huntingfield Rd	0.08	0	8	0.15	0	8
Longfield Rd (E) (Right-Turn)	0.08	0	5	0.10	0	5

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case + Site 1						
Huntingfield Rd	0.08	0	8	0.16	0	8
Longfield Rd (E) (Right-Turn)	0.09	0	5	0.10	0	5
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Huntingfield Rd	0.08	0	8	0.16	0	8
Longfield Rd (E) (Right-Turn)	0.09	0	5	0.10	0	5
2042 Local Plan						
Huntingfield Rd	0.16	0	9	0.20	0	9
Longfield Rd (E) (Right-Turn)	0.11	0	5	0.16	0	6
2042 Local Plan + Site 1						
Huntingfield Rd	0.16	0	9	0.21	0	9
Longfield Rd (E) (Right-Turn)	0.11	0	5	0.16	0	6
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Huntingfield Rd	0.16	0	9	0.21	0	9
Longfield Rd (E) (Right-Turn)	0.11	0	5	0.16	0	6

- 8.127 **Table 32** demonstrates that the Longfield Road/Huntingfield Road junction is forecast to operate well within practical capacity with minimal queueing and delay across all assessment scenarios and peak periods.
- 8.128 The addition of the proposed development traffic creates an imperceptible impact on this junction in both the 2032 Reference Case scenarios and 2042 Local Plan scenarios.
- 8.129 Similarly, there is a negligible impact in the sensitivity assessment on junction capacity across all scenarios and peak periods.

Junction 11 - Main Road/Manor Road

- 8.130 The Main Road/Manor Road junction has been modelled using the PICADY module of Junctions 11.
- 8.131 The model results are summarised in **Table 33** with the full model outputs provided at **Appendix P**.

Table 33: Main Road/Manor Road PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Manor Rd	0.13	0	8	0.15	0	8
Main Rd (W) (Right-Turn)	0.04	0	5	0.01	0	6
2032 Reference Case + Site 1						
Manor Rd	0.15	0	8	0.15	0	8
Main Rd (W) (Right-Turn)	0.04	0	5	0.01	0	6

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Manor Rd	0.16	0	8	0.15	0	8
Main Rd (W) (Right-Turn)	0.04	0	5	0.01	0	6
2042 Local Plan						
Manor Rd	0.15	0	9	0.18	0	8
Main Rd (W) (Right-Turn)	0.07	0	6	0.01	0	6
2042 Local Plan + Site 1						
Manor Rd	0.16	0	9	0.18	0	8
Main Rd (W) (Right-Turn)	0.07	0	6	0.01	0	6
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Manor Rd	0.16	0	9	0.18	0	8
Main Rd (W) (Right-Turn)	0.07	0	6	0.01	0	6

- 8.132 **Table 33** demonstrates that the Main Road/Manor Road junction is forecast to operate well within practical capacity with minimal queueing and delay across all assessment scenarios and peak periods.
- 8.133 The addition of the proposed development traffic creates an imperceptible impact on this junction in both the 2032 Reference Case scenarios and 2042 Local Plan scenarios.
- 8.134 Similarly, there is a negligible impact in the sensitivity assessment, with no changes to queueing and delay, across all scenarios and peak periods.

Main Road/Nurstead Lane

- 8.135 The Main Road/Nurstead Lane junction has been modelled using the PICADY module of Junctions 11.
- 8.136 For the purpose of this assessment, the junction has been modelled using separate PICADY assessments for the eastern and western arms of Nurstead Lane with Main Road following review of the turning flows obtained from the strategic model.
- 8.137 From review of the turning flows, the model assumes that any vehicles accessing/egressing Nurstead Lane from/to Main Road East will use the eastern junction, and any vehicles accessing/egressing Nurstead Lane from/to Main Road West will use the western junction.
- 8.138 This indicates that each arm of Nurstead Lane is likely to be used as standalone junctions depending on where vehicles are traveling to/from, and it is considered appropriate to model them separately to represent this.
- 8.139 The model results are summarised in **Table 34** and **Table 35** with the full model outputs provided at **Appendix P**.

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Table 34: Main Road/Nurstead Lane (East) PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Nurstead Lane East	0.03	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.07	0	6	0.05	0	6
2032 Reference Case + Site 1						
Nurstead Lane East	0.03	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.09	0	6	0.05	0	6
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Nurstead Lane East	0.03	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.10	0	6	0.05	0	6
2042 Local Plan						
Nurstead Lane East	0.05	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.08	0	5	0.07	0	5
2042 Local Plan + Site 1						
Nurstead Lane East	0.05	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.08	0	5	0.08	0	6
2042 Local Plan + Site 1 + Site 2 (Sensitivity Assessment)						
Nurstead Lane East	0.05	0	6	0.01	0	6
Main Road (E) (Right-Turn)	0.08	0	5	0.08	0	6

Table 35: Main Road/Nurstead Lane (West) PICADY Results

Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
2032 Reference Case						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0
Nurstead Lane East (Right-Turn)	0.04	0	8	0.04	0	7
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0
2032 Reference Case + Site 1						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0
Nurstead Lane East (Right-Turn)	0.04	0	8	0.03	0	7
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0
2032 Reference Case + Site 1 + Site 2 (Sensitivity Assessment)						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0
Nurstead Lane East (Right-Turn)	0.04	0	8	0.04	0	7
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0
2042 Local Plan						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0

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Approach	AM Peak 08:00 – 09:00			PM Peak 17:00-18:00		
	RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
Nurstead Lane East (Right-Turn)	0.06	0	9	0.05	0	8
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0
2042 Local Plan + Site 1						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0
Nurstead Lane East (Right-Turn)	0.06	0	9	0.05	0	8
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0
2042 Local Plan + Site 1 + Site 2 (Sensitivity Assessment)						
Nurstead Lane West (Left-Turn)	0.00	0	0	0.00	0	0
Nurstead Lane East (Right-Turn)	0.06	0	9	0.05	0	8
Main Road (E) (Right-Turn)	0.00	0	0	0.00	0	0

- 8.140 **Table 34** and **Table 35** demonstrate that the Main Road/Nurstead Lane junctions are forecast to operate well within practical capacity with minimal queueing and delay across all assessment scenarios and peak periods.
- 8.141 The addition of the proposed development traffic creates an imperceptible impact on this junction in both the 2032 Reference Case scenarios and 2042 Local Plan scenarios.
- 8.142 Similarly, there is a negligible cumulative impact within the sensitivity assessment, with minimal changes to queueing and delay, across all scenarios and peak periods.
- 8.143 Notably, there are no results for the Main Road arm at the western junction across any scenarios or peak periods given there are no right turners to block ahead traffic. As previously stated, the model assumes the right turners coming from the east on Main Road to Nurstead Lane will use the eastern junction.

Junction Mitigation

- 8.144 As previously stated, we have been made aware by NH of two current mitigation schemes as part of the two committed developments. These include:
- 'Interim' Mitigation scheme (Road marking adjustments) – Former Tollgate Hotel;
 - 'Final' Mitigation Scheme (Signalisation) – Land at Coldharbour Road.
- 8.145 Both schemes are focused on the southern roundabout and are as much to ensure safety as they are for capacity. Both schemes focus on improving the operation of the A2 WB off slip given the level of queueing forecast for the future year.
- 8.146 As demonstrated from the manual assessment undertaken, queueing is expected to exceed the storage capacity of the off slip (c.60 PCUs) in the 2042 future year with committed development traffic.
- 8.147 The 'Final' mitigation scheme will come once a certain level of dwellings has been built for Land at Coldharbour Road, however it is unclear whether this threshold has been met. In reality, it is likely that this scheme will be in place prior to the proposed development opening year.
- 8.148 No mitigation schemes are proposed for the northern roundabout.

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'Interim' Mitigation Scheme

- 8.149 The 'Interim' mitigation scheme proposed as part of the Former Tollgate Hotel application within Drawing 22052-MA-XX-DR-C-0102 P07 focuses on changes to the road marking on the off-slip approach by signing both lanes for left turners and provided a two-lane designation on the circulatory. No alterations are proposed to the dimensions of the circulatory or approach arms.
- 8.150 The core ARCADY model does not account for lane designation and instead models based on the full width and use of the entry arm. The intercept values applied to the calibrated model accounts for the existing operation of the junction and therefore restricts the level of demand able to exit the off slip. In reality, the proposed measures are likely to alter driver behaviour on approach to the circulatory and utilise both approach lanes. This is therefore likely to improve junction operation.

'Final' Mitigation Scheme

- 8.151 The 'Final' mitigation scheme includes the signalisation of the A2 WB off slip, and southbound circulatory arm. This includes filling in the northern section of the roundabout to stop 'U-turners'.
- 8.152 The proposals address the level of queueing and delay on the A2 WB off slip and offers both capacity and safety enhancements to the southern roundabout. To fully assess the impact of the proposed mitigation, the manual distribution and assignment has been used which does not assume any rerouting and hence creates a robust assessment of the impact on the slip, for which the signal scheme was developed in the first place.
- 8.153 NH stated in their response that the approved scheme is included in Drawing 684437CH-JAC-A2-HGN-DR-1200-001 Rev P01, however this could not be identified on the Gravesham Planning portal. Instead, an early version of the scheme was identified (Drawing No. PHCOLDHARBOURRD.1/01).
- 8.154 However, it appears that the approved scheme has been modelled as part of the Former Tollgate Hotel application within a technical note (Doc ref: TN01) albeit we are unsure whether this was accepted by NH. Using both the early version of the design and the LinSig model output, an assessment of the scheme has been undertaken.
- 8.155 Considering the above, some assumptions on the scheme were required made. These include:
- Give way saturation flow for arm 3 in the LinSig is based on the intercept value within the ARCADY model. This saturation flow is 1966. As ARCADY inputs represent the full flared multilane stop line, the LinSig utilises these values applied to a single lane.
 - Pedestrian crossing added to phasing over the A2 WB off slip.
 - Right turn radii updated on arm 1 and arm 2 to represent roundabout entry radii.
- 8.156 The results of the signalised model are presented in **Table 36** with the full results included at **Appendix Q**.

Table 36: A2/Wrotham Road Southern Roundabout Signalisation Mitigation

Approach	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	DoS (%)	MMQ (PCUs)	Delay (s/PCU)	DoS (%)	MMQ (PCUs)	Delay (s/PCU)
2032 Reference Case						
Internal Link (N)	75	9	18	73	7	18
A2 WB off slip	84	7	30	76	5	24

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Wrotham Road (S)	79	6	9	62	3	4
Cycle Time (s)	45			45		
PRC (%)	7			19		
Delay (PCU/Hr)	14			11		
2032 Reference Case + Committed Development						
Internal Link (N)	86	12	25	73	8	18
A2 WB off slip	86	7	30	80	6	26
Wrotham Road (S)	84	7	16	64	4	5
Cycle Time (s)	45			45		
PRC (%)	5			12		
Delay (PCU/Hr)	17			11		
2032 Reference Case + Committed Development + Site 1						
Internal Link (N)	86	12	30	78	9	19
A2 WB off slip	86	7	23	86	7	31
Wrotham Road (S)	93	17	17	68	4	5
Cycle Time (s)	45			45		
PRC (%)	-3			5		
Delay (PCU/Hr)	21			13		
2032 Reference Case + Committed Development + Site 1 + Site 2						
Internal Link (N)	86	12	31	81	10	21
A2 WB off slip	87	7	31	86	7	32
Wrotham Road (S)	95	19	18	69	4	6
Cycle Time (s)	45			45		
PRC (%)	-6			4		
Delay (PCU/Hr)	23			14		
2042 Local Plan						
Internal Link (N)	84	11	23	77	9	20
A2 WB off slip	85	7	29	81	6	26
Wrotham Road (S)	88	13	17	68	4	5
Cycle Time (s)	45			45		
PRC (%)	3			12		
Delay (PCU/Hr)	17			12		
2042 Local Plan + Committed Development						
Internal Link (N)	91	14	27	77	9	20
A2 WB off slip	91	9	36	85	7	29
Wrotham Road (S)	94	17	17	70	4	6
Cycle Time (s)	45			45		
PRC (%)	-4			6		
Delay (PCU/Hr)	25			13		

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Land East of Wrotham Road, Meopham

2042 Local Plan + Committed Development + Site 1						
Internal Link (N)	91	14	37	87	11	26
A2 WB off slip	91	9	93	86	7	30
Wrotham Road (S)	103	65	19	74	5	7
Cycle Time (s)	45			45		
PRC (%)	-14			4		
Delay (PCU/Hr)	46			16		
2042 Local Plan + Committed Development + Site 1 + Site 2						
Internal Link (N)	91	14	37	89	12	29
A2 WB off slip	91	9	130	87	8	31
Wrotham Road (S)	106	77	19	75	5	7
Cycle Time (s)	45			45		
PRC (%)	-17			1		
Delay (PCU/Hr)	58			17		

- 8.157 The results demonstrate that the mitigation scheme in its current form will be unable to accommodate the proposed development traffic along with background traffic growth, committed development schemes, and traffic associated with Site 2 traffic.
- 8.158 On that basis, some amendments to the scheme have been made in order to accommodate traffic in all future scenarios, including with committed development and Site 2 traffic. These include:
- Extension of the flare lane to 19m through removal of hatching.
 - The give-way saturation flow for arm 3 in the LinSig is based on the intercept value within the ARCADY model with the amended flare length. The saturation flow is therefore 2095. As ARCADY inputs represent the full flared multilane give-way line, this has been equally split across the two-lane approaches within the mitigation, and the coefficient has been amended accordingly. The ARCADY with the amended flare lane is included at **Appendix R**.
 - Phase delay provided between phase A and B by 4 seconds to reduce queueing on the internal link and A2 WB off slip.
 - Hatching layout has been amended to ensure appropriate entry path curvature and deflection can be achieved whilst accommodating a larger flare.
- 8.159 The mitigation still includes the signing on the A2 WB off slip to use both lanes, along with the two-lane designation on the circulatory.
- 8.160 The mitigation drawing is provided as a sketch in **Drawing T25512.SK002**.
- 8.161 The results of the proposed mitigation scheme modelling are summarised in **Table 37** with the full outputs included at **Appendix Q**.

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Table 37: A2/Wrotham Road Southern Roundabout Signalisation Mitigation (With Adjustments)

Approach	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	DoS (%)	MMQ (PCUs)	Delay (s/PCU)	DoS (%)	MMQ (PCUs)	Delay (s/PCU)
2032 Reference Case						
Internal Link (N)	75	9	18	73	7	18
A2 WB off slip	84	7	30	76	5	24
Wrotham Road (S)	71	4	6	56	2	3
Cycle Time (s)	45			45		
PRC (%)	7			19		
Delay (PCU/Hr)	13			10		
2032 Reference Case + Committed Development						
Internal Link (N)	86	12	25	73	8	18
A2 WB off slip	86	7	30	80	6	26
Wrotham Road (S)	75	5	7	58	3	4
Cycle Time (s)	45			45		
PRC (%)	5			12		
Delay (PCU/Hr)	16			11		
2032 Reference Case + Committed Development + Site 1						
Internal Link (N)	86	12	25	78	9	19
A2 WB off slip	86	7	30	86	7	31
Wrotham Road (S)	83	7	10	61	3	4
Cycle Time (s)	45			45		
PRC (%)	5			5		
Delay (PCU/Hr)	17			13		
2032 Reference Case + Committed Development + Site 1 + Site 2						
Internal Link (N)	86	12	25	81	10	21
A2 WB off slip	86	7	30	86	7	32
Wrotham Road (S)	85	8	18	63	4	4
Cycle Time (s)	45			45		
PRC (%)	4			4		
Delay (PCU/Hr)	18			13		
2042 Local Plan						
Internal Link (N)	84	11	23	77	9	20
A2 WB off slip	85	7	29	81	6	26
Wrotham Road (S)	78	6	8	61	3	4
Cycle Time (s)	45			45		
PRC (%)	6			12		
Delay (PCU/Hr)	16			12		
2042 Local Plan + Committed Development						

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Internal Link (N)	91	14	31	77	9	20
A2 WB off slip	91	9	36	85	7	29
Wrotham Road (S)	83	7	17	63	4	4
Cycle Time (s)	45			45		
PRC (%)	-1			6		
Delay (PCU/Hr)	21			13		
2042 Local Plan + Committed Development + Site 1						
Internal Link (N)	91	14	31	87	11	26
A2 WB off slip	91	9	37	86	7	30
Wrotham Road (S)	91	16	19	67	4	5
Cycle Time (s)	45			45		
PRC (%)	-2			4		
Delay (PCU/Hr)	24			15		
2042 Local Plan + Committed Development + Site 1 + Site 2						
Internal Link (N)	91	14	25	89	12	29
A2 WB off slip	91	9	37	87	7	31
Wrotham Road (S)	94	19	19	68	4	5
Cycle Time (s)	45			45		
PRC (%)	-4			1		
Delay (PCU/Hr)	26			16		

- 8.162 **Table 37** demonstrates that the modified signalised mitigation scheme at the southern roundabout is able to significantly improve the performance of the junction in all future scenarios.
- 8.163 Whilst the DOS slightly exceeds the 90% threshold on Wrotham Road south in the AM peak in the 2042 Local Plan scenarios, this creates a much more suitable alternative to the existing operation with significantly less queuing and delay.
- 8.164 In reality, the signals could operate on a MOVA system which utilises flexible cycle times depending upon demand. This cannot be accurately reflected within LinSig which can only model fixed cycle times. Therefore, the signalised junction, in reality, is likely to perform better in comparison to the model. Indeed, a simple alteration to the cycle time may bring capacity benefits.
- 8.165 In addition, the Travel Plan targets a 7% modal shift from private car use following contributions towards improving bus services and other sustainability measures. Therefore, the forecast level of proposed development vehicle trips are likely to be less than what has been modelled, hence improving junction performance.

Northern Junction Considerations

- 8.166 As the northern junction is already operating above capacity due to background growth and committed development traffic, no mitigation measures are proposed as part of the proposed development.

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- 8.167 The level of future queuing on the A2 EB off slip across all scenarios can be accommodated within the existing storage of the off-slip and therefore the proposals do not create a highway safety concern in regard to the A2 mainline. Similarly, queuing on Wrotham Road north can be accommodated within the available storage.

Merge/Diverge Assessment

- 8.168 In the absence of information from Jacobs, a manual Merge/Diverge assessment has been undertaken of the northern and southern roundabout on/off slips. This has been undertaken in accordance with CD 122.
- 8.169 As part of the application for the former Tollgate Hotel, it was agreed with NH that WebTris data could be used to inform the mainline flow on the A2 using count points A2/8374B (westbound) and A2/8375A (eastbound). To provide a suitable baseline, they utilised an average of Tuesday to Thursday flows through October (avoiding half term week) as these will be less impacted by flexible working patterns.
- 8.170 This approach has also been adopted for this assessment to ensure consistency on what has historically been agreed, albeit the use of data from November 2025 as opposed to October in order to avoid the half term week. The raw data is provided in **Appendix S**.
- 8.171 To inform the flows on the on slip and off slips at the junction, turning counts from a Manual Classified Turning Count (MCC) survey has been used.
- 8.172 The locations of both WebTris sites are situated within the dumbbell arrangement (after the off slips and before the on slips) and therefore acts as the respective upstream and downstream mainline flows for both the merge and diverge assessments.
- 8.173 To demonstrate the highest impact, the flows have been uplifted to the 2042 Local Plan year using TEMPro factors plus the committed development traffic and Site 2 traffic to assess the full impact of the proposed development. Further information on the committed development traffic is provided later in this section.
- 8.174 The relevant merge/diverge graphs and calculations are provided in **Appendix S**, and the flows are summarised in **Table 38**.

Table 38: A2/Wrotham Road Merge/Diverge Assessment

Merge/Diverge Location	Flow	AM Peak	PM Peak	Required Form of Layout	
				AM Peak	PM Peak
2042 Local Plan + Committed Development					
A2 WB on slip	Merge Flow	1066	802	D	A
	Mainline Flow	5757	4870		
A2 WB off slip	Diverge Flow	750	730	C	A
	Mainline Flow	5757	4870		
A2 EB on slip	Merge Flow	778	842	B	D
	Mainline Flow	4079	6158		
A2 EB off slip	Diverge Flow	1045	1415	C	D
	Mainline Flow	4079	6158		
2042 Local Plan + Committed Development + Site 1					
A2 WB on slip	Merge Flow	1130	836	D	A
	Mainline Flow	5757	4870		

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A2 WB off slip	Diverge Flow	754	739	C	A
	Mainline Flow	5757	4870		
A2 EB on slip	Merge Flow	788	848	B	D
	Mainline Flow	4079	6158		
A2 EB off slip	Diverge Flow	1073	1474	C	D
	Mainline Flow	4079	6158		
2042 Local Plan + Committed Development + Site 1 + Site 2					
A2 WB on slip	Merge Flow	1146	845	D	A
	Mainline Flow	5757	4870		
A2 WB off slip	Diverge Flow	757	745	C	A
	Mainline Flow	5757	4870		
A2 EB on slip	Merge Flow	794	851	B	D
	Mainline Flow	4079	6158		
A2 EB off slip	Diverge Flow	1080	1490	C	D
	Mainline Flow	4079	6158		

- 8.175 Based on the manual distribution, the proposed development will create an additional 64 vehicles heading to the westbound on slip in the AM peak and 34 vehicles in the PM peak. There will also be an additional 10 vehicles heading to the eastbound on slip in the AM peak and 6 vehicles in the PM peak.
- 8.176 The proposed development will also create an additional 28 vehicles using the eastbound off slip and 4 vehicles using the westbound off slip in the AM Peak. In the PM peak there will be an additional 59 vehicles using the eastbound off slip and 9 using the westbound off slip.
- 8.177 The addition of the trips associated with Site 2 also creates a negligible increase in merge/diverge flows.
- 8.178 The level of additional trips associated with the development at this junction is not significant. As demonstrated in **Table 38** the addition of the proposed development traffic does not create a step change in layout requirements, as defined by the criteria set out in DMRB CD 122.

Summary

- 8.179 As demonstrated by the modelling work, the proposed development will have a minimal impact across all junctions on the highway network. Certainly, the proposed development and traffic growth will not result in a severe cumulative impact on any of the off-site junctions modelled across any scenario or peak period.
- 8.180 Those junctions that are forecast to operate over capacity mainly do so as a result of 2042 Local Plan traffic and not as a result of the proposed development traffic.
- 8.181 A sensitivity assessment has been undertaken which demonstrates that the proposed development will have a minor impact on capacity and will not have an unacceptable impact on safety at the A2/Wrotham Road junction complex.
- 8.182 The merge/diverge assessment undertaken demonstrates that the addition of the proposed development traffic does not create a step change in layout requirements, as defined by the criteria set out in DMRB CD 122.

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- 8.183 The manual assessment demonstrates that the A2/Wrotham Road junction better reflects the existing operation of the junction following calibration against observed queue data. This more accurately models existing and future queueing and delay which is not reflected otherwise.
- 8.184 The manual assessment considers a larger level of proposed development traffic routing through the junction compared to the GTM flows. The manual assessment does not consider any rerouting which could take trips away from the junction and improve performance.
- 8.185 On that basis, the manual assessment is considered to be robust, and it demonstrates that the impact of the proposed development will be minimal.
- 8.186 It is acknowledged that a long-term signal mitigation scheme has been approved for the southern roundabout of the A2/Wrotham Road roundabout. In order to suitably accommodate our proposed development traffic along with that of Land south of Longfield Road, modifications have been made which demonstrate that it is able to operate with additional capacity beyond the existing arrangement proposal.

9.0 Summary and Conclusion

Summary

- 9.1 Ridge and Partners LLP has been commissioned by Richborough to provide transport advice for a proposed residential development on Land East of Wrotham Road, Meopham.
- 9.2 This Transport Assessment has been prepared in support of an outline planning application for the erection of up to 350 residential dwellings, public open space and associated works. Approval is sought for the principal means of vehicular access from Wrotham Road, and all other matters are reserved.
- 9.3 The site is situated close to facilities that are likely to be used by residents on a day-to-day basis within comfortable walking and cycling distances. For trips further afield, residents are able to travel to key regional and national destinations by public transport, with Meopham railway station offering relatively frequent services towards Gravesend and London Victoria.
- 9.4 A review of Personal Injury Accident Data (PIA) on the local highway network demonstrates that 8 PIAs have been recorded within the most recent five years of available data from January 2021 to December 2025. Whilst all PIAs are regrettable, the volume and pattern of accidents observed does not suggest any inherent highway safety issue and does not give any undue cause for concern.
- 9.5 The primary vehicular access will be taken from Wrotham Road to the north of the site via a priority junction with a dedicated ghost-island right turn lane. The access comprises a 6m kerbed radii and 6.75m carriageway width, whilst the right turn lane has been designed in accordance with the Design Manual for Roads and Bridges CD123 document.
- 9.6 Several mitigation measures are proposed, some in response to comments raised by KCC as part of pre-application engagement. The include active travel improvements to increase the uptake of walking and cycling from initial occupation, contributions to improve the frequency of bus services along Wrotham Road, and provision of bus season tickets for each household.
- 9.7 The proposed development is forecast to generate 179 two-way vehicle trips in the AM peak hour, and 182 two-way vehicle trips during the PM peak hour.
- 9.8 Modelling work has been undertaken of local junctions using turning flow data provided from the GTM for a 2032 Reference Case scenario, and 2042 Local Plan scenario. A sensitivity assessment was also undertaken should both the proposed development and land south of Longfield Road come forward simultaneously.
- 9.9 Overall, the modelling work demonstrates the proposed development will not cause an unacceptable impact on any of the junctions assessed.
- 9.10 In addition to the above, a manual assessment has been undertaken of the A2/Wrotham Road junction which demonstrates that the proposed development will have a minimal impact on capacity and will not have an unacceptable impact on safety.
- 9.11 Amendments to a future mitigation scheme have been undertaken which demonstrates that it is able to accommodate the proposed development on top of background traffic growth, committed development traffic, and traffic associated with the Land south of Longfield Road proposals.

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Conclusion

9.12 The NPPF Paragraph 116 states that:

“Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual impact on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.”

9.13 The assessment work undertaken and detailed in this report demonstrates that, in NPPF terms, the residual cumulative impacts on the road network will not be severe, taking into account all reasonable scenarios, and there would not be an unacceptable impact on highway safety.

Figures



Legend

- Site Location
- 🚌 Bus Stop
- Railway Station
- ⎓ Railway Network

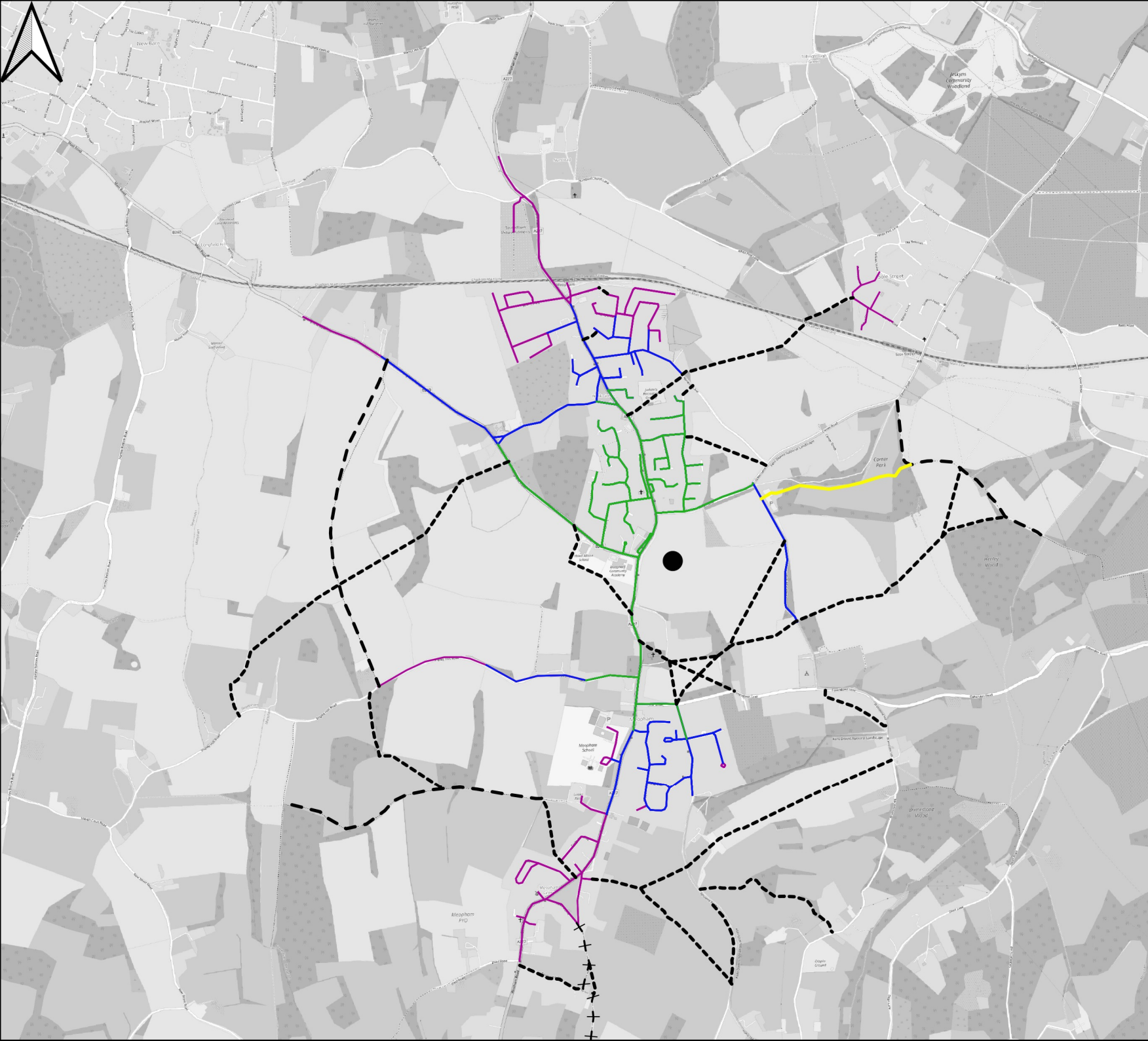
Figure 1.1 - Site Location





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0200400 m



Legend

● Site Location

Walking Distances

— 800m

— 1.2km

— 2.0km

PRoW

++ Byway open to all traffic

-- Public Bridleway

--- Public Footpath

— KCC Promoted Walking Route

Figure 5.1 - Walking Distances

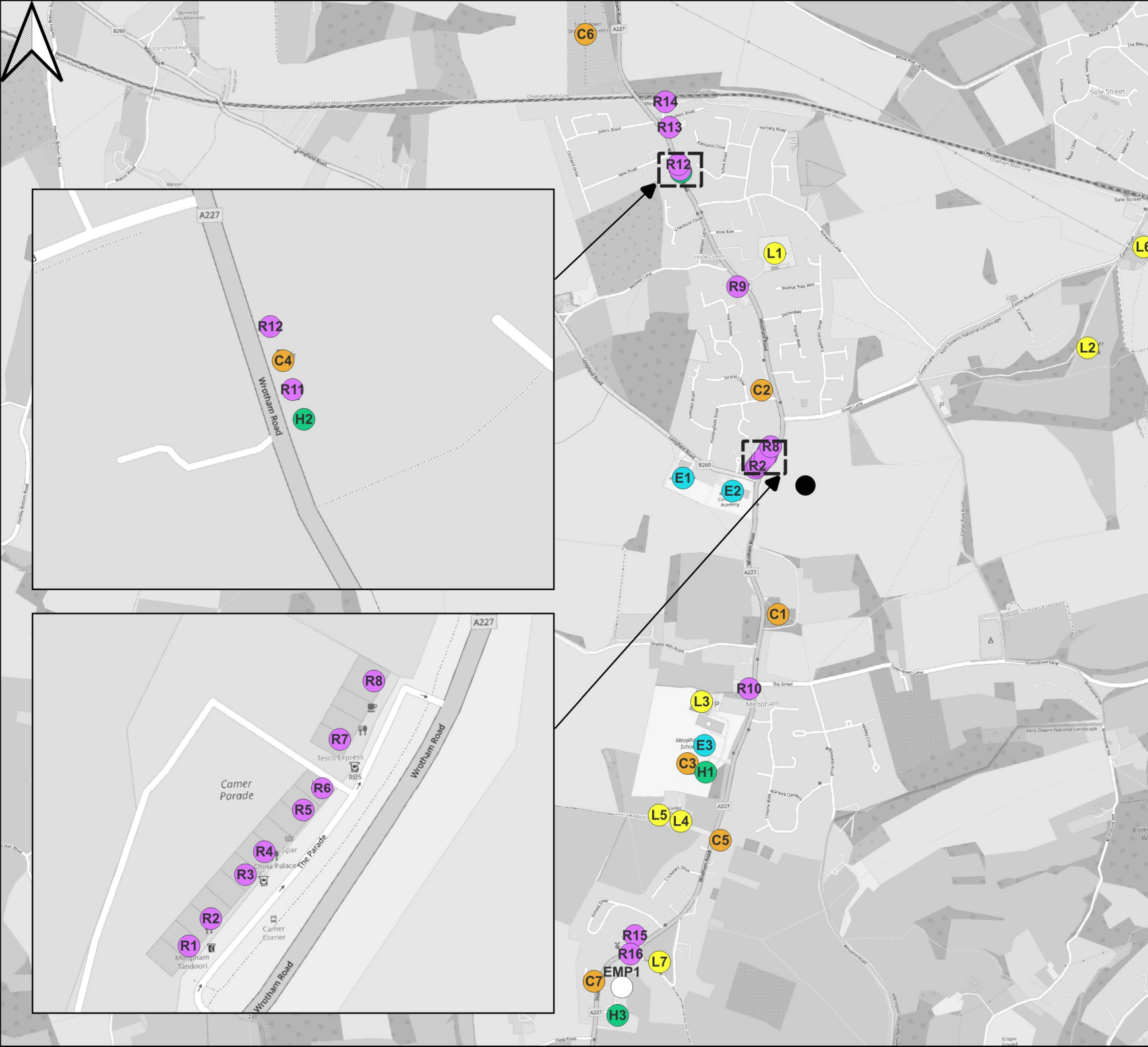
 Richborough

RIDGE

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0 0.5 1 km





Legend

● Site Location

Local Facilities

● Community

● Education

○ Employment

● Healthcare

● Leisure

● Retail

Figure 5.2 - Local Facilities

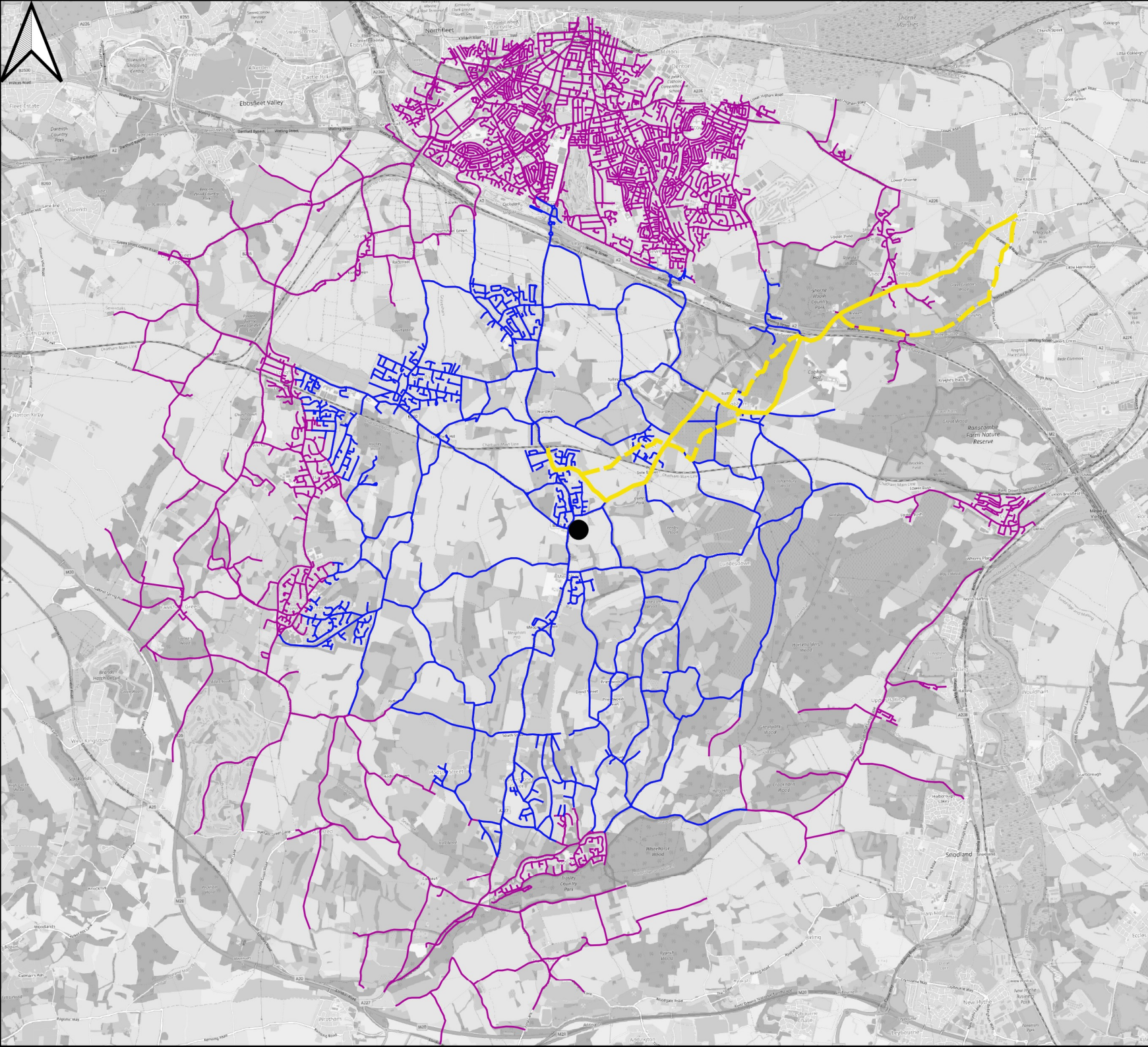
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0 400 800 m





Legend

● Site Location

Cycling Distances

— 5.0km

— 8.0km

LCWIP Routes

— Preferred Route

— Alternative Route

Figure 5.3 - Cycling Distances

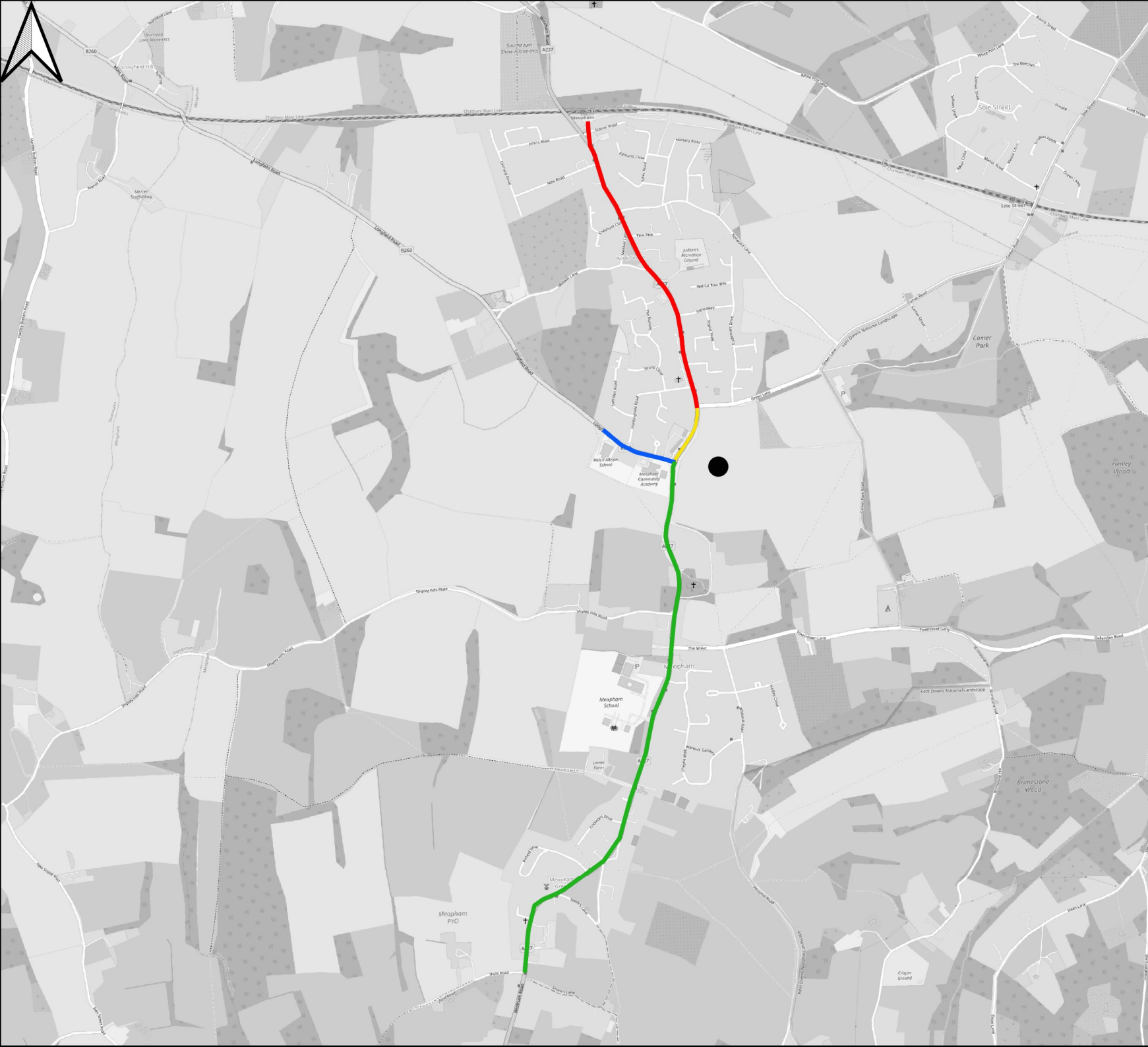
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0 1.5 3 km





Legend

● Site Location

Audit Routes

Route 1

Route 2

Route 3

Route 4

Figure 5.4 - ATE Audited Routes

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0 400 800 m

