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Transport Assessment

Client: The McManus Family

Project: Land North of Camer Road, Meopham

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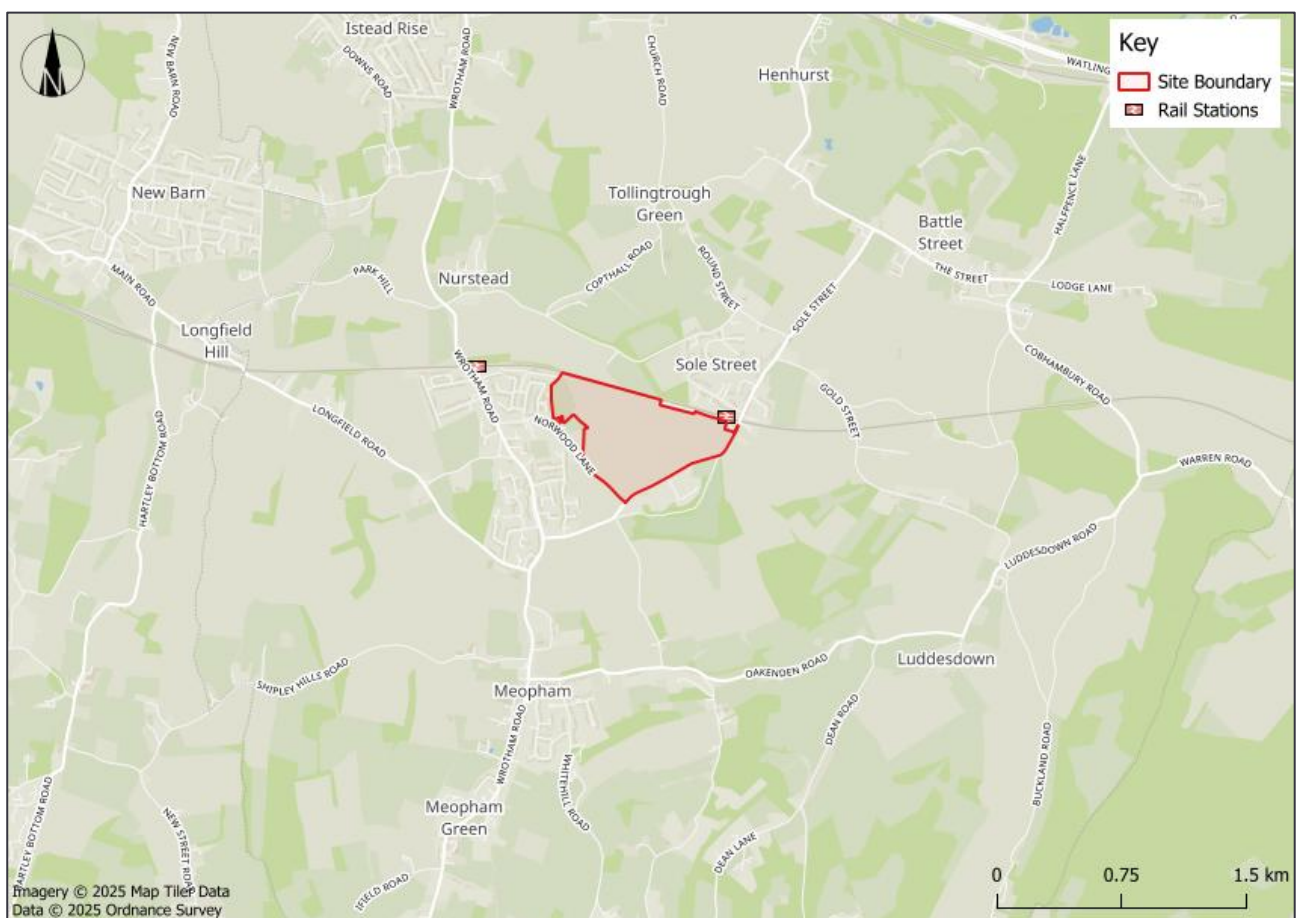
1. Introduction

1.1 Overview

This Transport Assessment (TA) has been prepared by The Transportation Consultancy Ltd ('ttc') on behalf of The McManus Family ('the applicant') to support an outline planning application for a new residential-led mixed-use development at Land North of Camer Road, Meopham ('the site'). Gravesham Borough Council (GBC) are the local planning authority with Kent County Council (KCC) as the highway authority.

Figure 1.1 below sets out the location of the site in a strategic context.

Figure 1.1 Strategic Site Location



1.2 Existing Site

The site is located to the east of Hook Green / Meopham and to the south-west of Sole Street. It comprises c.44ha of predominantly flat, readily developable land which is currently used to cultivate arable crop. Alongside the agricultural land, there are six acres of closely mown grass in the form of paddocks in the north-western corner of the site, with an associated small stable block, and two (small) areas of woodland within the central portion of the site, and a small agricultural building within the western section of the site.

Public Right of Way (PRoW) Footpath NS192 bisects the site connecting the north and south-west boundaries.

1.3 Pre-Application Engagement

Prior to submission of this planning application, pre-application engagement has been undertaken with KCC as highway authority.

A first round of pre-application engagement was undertaken with KCC in January 2025 (application ref. PAP/2024/117). This round of pre-application engagement considered the following proposals:

“To provide 360 – 390 dwellings (Use Class C3), a new two-form entry (2FE) primary school (Use Class F1) and 1,000 sqm commercial use – light industrial employment area (Use Class B2) at the site, alongside appropriate open space, access and leisure and sports provision.”

A Transport Scoping Note as well as an initial masterplan and access arrangements were submitted to KCC for comment and review. The following provides a summary of the key matters raised:

- The walking and cycling routes to Meopham and Sole Street Stations will need improving;
- Consideration should be given as to whether people will drive to Ebbsfleet Station for the high-speed line to St Pancras;
- Discussions should be undertaken with local bus operators to determine what improvements could be made to significantly improve bus provision;
- A Public Transport Strategy should be formed with other emerging sites in the area to ensure the site supports bus provision for other developments;
- Consideration should be given to the major employment centres near to the site and how access can be achieved by sustainable modes;
- A detailed walking and cycling audit to local facilities should be undertaken to identify any existing issues and propose improvements where required;
- The local facilities considered as part of the walking and cycling audit should be expanded;
- Consideration should be given to the lack of continuous footway and cycle connection between the site and Sole Street Station;
- Active travel access on Norwood Lane should be considered further given there is currently no footway or cycleway and the carriageway is narrow;
- Whether access to the north-west corner of the site is achievable given land ownership;
- Access for both future residents and existing residents accessing the site;
- Consideration of any barriers along the PRow and whether these could be removed to enhance access;
- Principles of the sustainable modes to be provided, including cycle facilities in line with LTN 1/20, footways and public transport incentives;
- Scaled plans with dimensions for pedestrian and cycle access points as well as off-site improvements and appropriate visibility splay drawings should be provided;
- A Stage 1 Road Safety Audit (RSA) and Designers Response will be required for the site access points and any off-site improvements;
- The alignment of the PRow should be incorporated into the design, with KCC supportive of leaving PRows on their existing alignment in a green corridor but provided with a suitable aggregate;

- A traffic-free link between NS192 and NS191 and / or NS242 should be provided;
- A PRow Management Plan will be required to support the planning application;
- The area for the collision data review should be expanded and utilise KCC data;
- Accesses and driveways should meet the requirements set out in the Kent Design Guide;
- Confirmation should be provided on whether any informal access points need to be closed and / or kerbs reinstated;
- Vehicle tracking should be undertaken to demonstrate that an 11.3m refuse collection vehicle (RCV) is able to access / egress the site in forward gear;
- Consideration should be given to the reduction of the speed limit on Camer Road as well as footway / cycleway provision;
- Evidence to support the school trip generation / distribution must be provided;
- Trip distribution should be reviewed, with a 'vision and validate' approach supported;
- Traffic modelling should be undertaken using the Kent strategic Transport Model (KTM) then utilise the outputs to conduct local junction modelling as required;
- The level of car and cycle parking proposed should be outlined in line with the latest standards; and
- A Framework Travel Plan will need to be provided.

Further pre-application engagement was undertaken in June 2025, with a further Transport Scoping Note submitted to KCC for comment and review.

The comments raised as part of the pre-application process have been positively addressed during design development to ensure the proposals align with national, regional and local policy.

By proactively addressing these transport comments, the proposed development reflects a commitment to creating a safe, well-connected and sustainable community.

1.4 Proposed Development

The description of development is as follows:

"Outline planning application for up to 725 dwellings (Use Class C3), a new two-form entry primary school (Use Class F1), the provision of Public Open Space including sport and recreation facilities, alongside associated access, landscaping, parking, and infrastructure; with all matters reserved except for access."

The proposed site masterplan is included at **Appendix A**.

1.5 Report Purpose

This TA should be read in conjunction with the suite of documents which accompany the planning application. This TA has been prepared with reference to the National Planning Policy Framework (NPPF), Planning Practice Guidance (PPG) and KCC's Transport Assessment & Travel Plan Guidance (2025).

The PPG states that a TA should address the following:

- The planning context of the development proposals;
- Appropriate study parameters (i.e. area, scope and duration of study);
- Assessment of public transport, walking / cycling and road network capacity;
- Vehicle trip generation and trip distribution methodologies and / or assumptions about the proposed development;
- Measures to promote sustainable travel;
- Safety implications of development; and
- Mitigation measures (where applicable) – including scope and implementation strategy.

The purpose of this report is to examine the transport implications arising from the proposed development on the local transport network.

1.6 Report Structure

The remainder of this TA is structured as follows:

- **Chapter 2:** Describes the existing situation including the local highway network, sustainable transport options and a review of highway safety;
- **Chapter 3:** Determines the national, regional and local policy context in relation to the proposed development;
- **Chapter 4:** Describes the proposed development including access arrangements, parking and servicing arrangements;
- **Chapter 5:** Considers the forecast travel demand of the proposed development;
- **Chapter 6:** Outlines the methodology used in the assessment of the potential traffic impacts associated with the proposed development;
- **Chapter 7:** Assesses the impact of the proposed development on the transport network; and
- **Chapter 8:** Provides the summary and conclusions to the report.

2. Existing Situation

2.1 Overview

This chapter outlines the existing local highway network, sustainable transport options and a review of highway safety within the vicinity of the site.

The content of this chapter has been collated to supplement the criteria of the Active Travel England (ATE) Application Assessment Toolkit: Checklist User Manual and where relevant sets out how the existing infrastructure compares to guidance set out in the LTN 1/20.

For ease of reference, an overview of the ATE criteria, the appraisers' comments and relevant policy and guidance is contained at **Appendix B**.

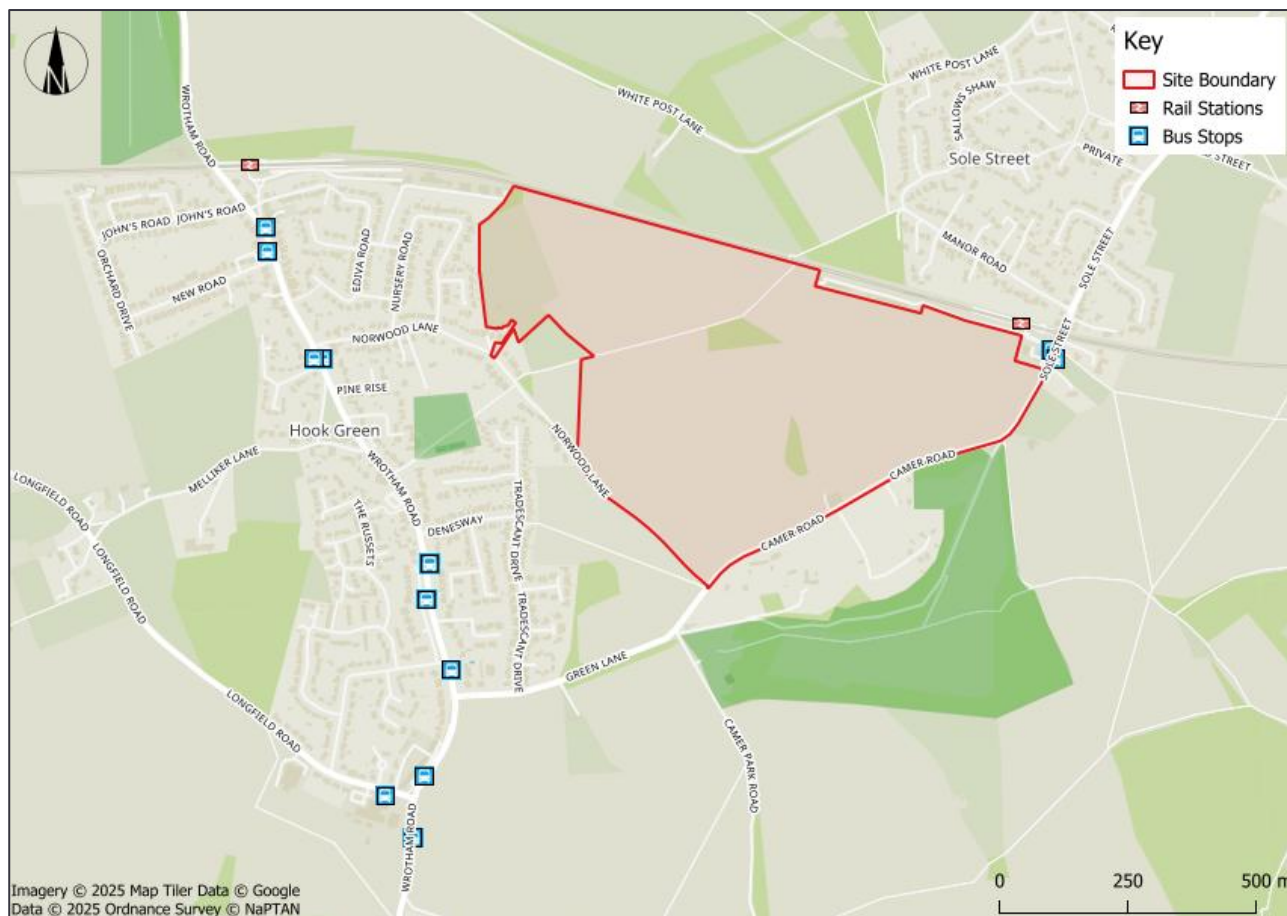
2.2 Site Location and Context

The site is located to the east of Hook Green / Meopham and to the south-west of Sole Street and is bordered by the Medway railway line to the north, Camer Road to the south-east and Norwood Lane to the south-west. The north-west boundary is marked by the rear gardens of the properties along Nursery Road within the village of Hook Green.

Sole Street Station is located at the north-east corner of the site, with Meopham Station to the north-west of the site as well as Gravesend approximately 4km to the north.

Figure 2.1 overleaf illustrates the site in its local context.

Figure 2.1 Local Site Location



2.3 Walking and Cycling

Introduction

Walking and cycling form sustainable modes of transport which not only provide health benefits to residents and visitors of the site but help to reduce the amount of congestion and pollution within the area.

Guidance on the preferred maximum walking distances to amenities is given in the Chartered Institution of Highways and Transportation (CIHT) document, *Providing for Journeys on Foot* (2000). The Guidelines indicate that a walking distance of 400m is acceptable for trips to bus stops and local shops, with 800m being the preferred maximum. The corresponding walking distances for trips to work and school are given as 500m and 1,000m, respectively. A preferred general maximum walking distance of 2,000m is identified.

Manual for Streets (MfS) and the National Design Guide reinforce this advice, stating that "walkable neighbourhoods" should have a range of facilities within 800m (a ten minute walk). However, this is not regarded as the upper limit for walking journeys and MfS notes that walking offers the greatest potential to replace short car trips, particularly those under 2km.

Table NTS0303 of the National Travel Survey (NTS) indicates that the average walk trip distance in 2024 was 1.5 miles or 2.41km.

Overall, it is therefore reasonable to assume that people would walk a distance of 2km to local facilities in the area.

Cycling also provides the opportunity as a substitute for a short car journey, with the CIHT document, *Planning for Cycling*, stating:

“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).”

Table NTS0303 of the NTS indicates that the average cycle trip distance in 2024 was 3.3 miles or 5.31km.

It is therefore reasonable to assume that people would cycle a distance of 5km on a regular basis.

Walking

With regard to the existing footway provision, a footway is provided along the eastern side of Camer Road from the Royal Hounds Dog Park north towards Sole Street Station. On Norwood Lane, a footway is provided on the northern side of the road from Wrotham Road until approximately 100m east of Nursery Road, at the property named ‘Alston’, at which point it is extinguished. After this point, there is mixed footway provision to Footpath NS192, with provision along the frontage of Norwood Farmhouse and Norwood Farm Cottage.

Continuing north on Wrotham Road, pedestrians are able to route to Meopham Station. Wrotham Road is provided with footways on both sides of the carriageway, with crossing points and mixed provision of dropped kerbs and tactile paving. A more detailed review of the footway provision is provided within the walking and cycling audit at **Appendix C**.

There is an extensive PRow network through and surrounding the site including:

- Footpath NS192 which bisects the site and, in its entirety, runs from Wrotham Road (A227) to the south to Sole Street in the north.
- Footpath NS250 which runs from the Camer Road / Norwood Lane junction north-west across open land to connect to Tradescent Drive.
- Footpath NS191 which runs from Camer Road east to Gold Street.
- Footpath NS308 which runs from Norwood Lane to Tradescent Drive.
- Bridleway NS242 which runs from the Royal Hounds Dog Park to Henley Street.

Figure 2.2 overleaf shows the extensive PRow network available near the site.

Figure 2.2 PRow Network



To demonstrate the accessibility of the site on foot, a 2km walking isochrone has been assessed as shown in **Figure 2.3** overleaf. Considering the scale of the site, walking isochrones have been assessed from both Norwood Land and Camer Road, the two locations from where access to the site will be provided for the proposed development.

Figure 2.3 2km Walking Isochrone

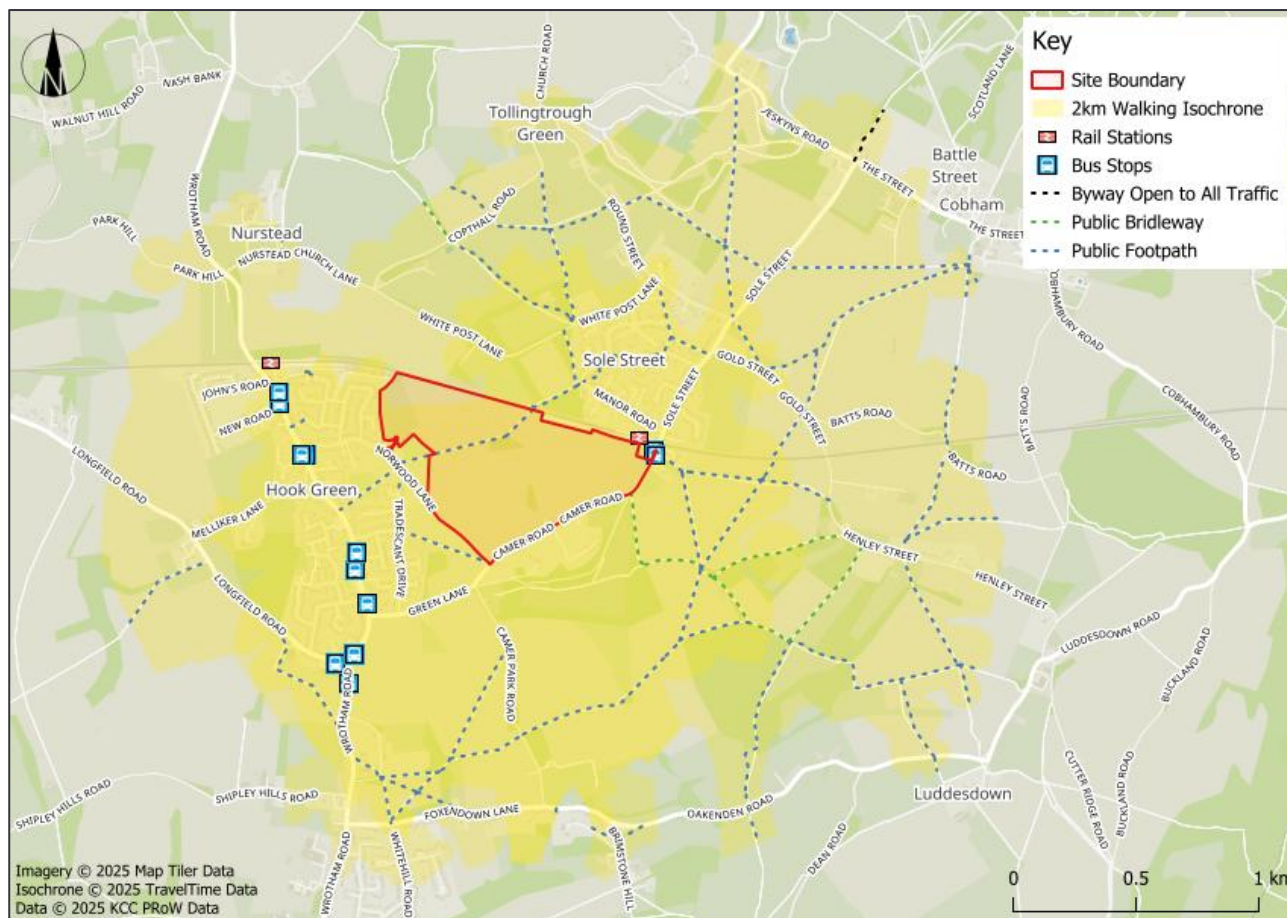


Figure 2.3 shows that within a 2km walk of the site, both Meopham and Sole Street Stations are accessible, as well as nearby bus stops. Footways near the site provide access to local amenities, including shops and schools, as well as a range of PROWs to support leisure trips, allowing future residents the genuine opportunity to travel on foot for daily trips.

Cycling

Figure 2.4 below shows a 5km cycling isochrone from the site. As with the walking isochrone, the cycling isochrone has been assessed from both Norwood Land and Camer Road, the two locations from where access to the site will be provided for the proposed development.

Figure 2.4 5km Cycling Isochrone

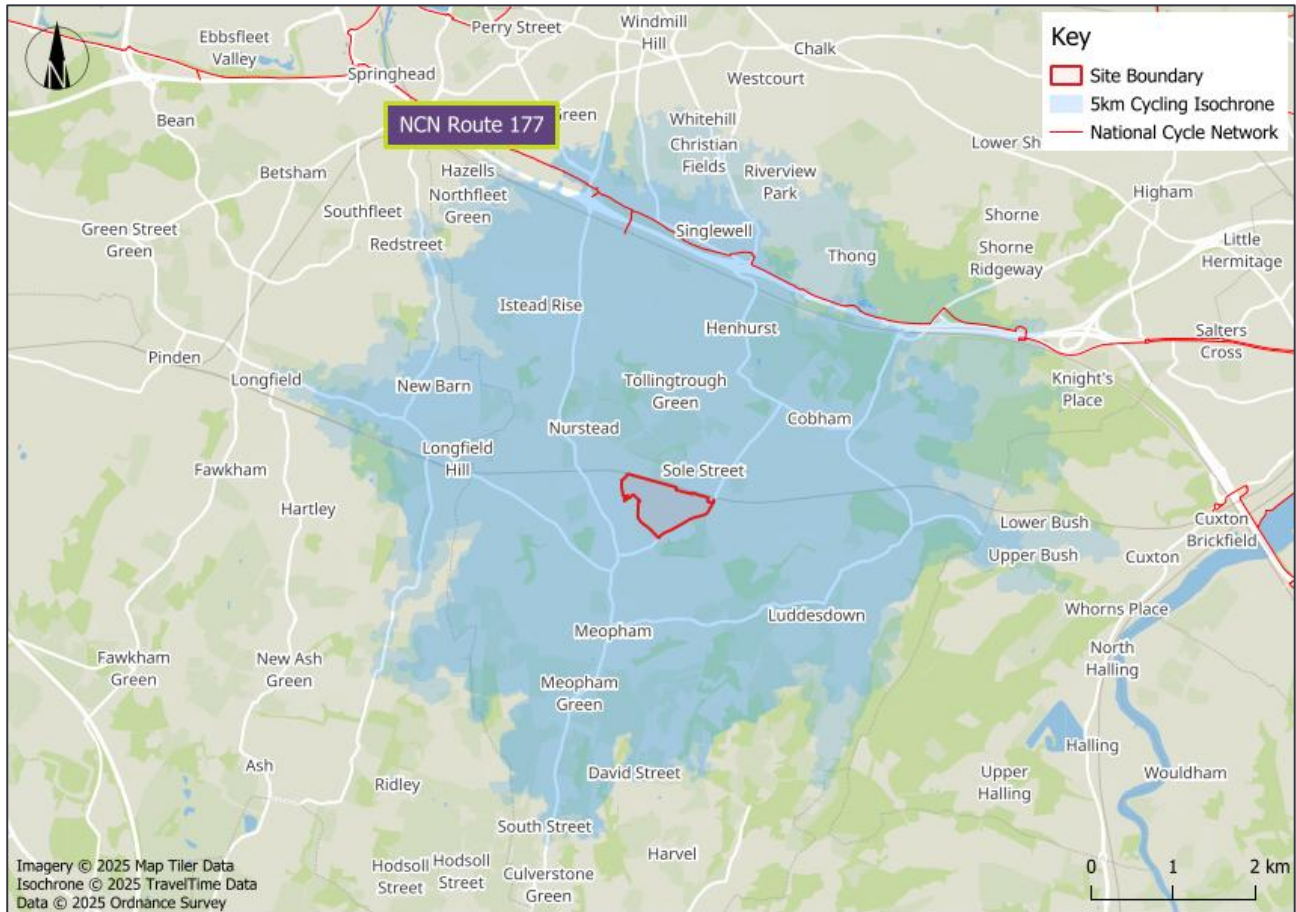


Figure 2.4 shows that nearby residential and employment locations, including Meopham and Istead Rise, are accessible within a 5km cycle. In addition, National Cycle Network (NCN) Route 177 is located to the north of the site which currently runs from Northfleet to Strood. Once complete, the route will run south from Northfleet via Rochester, Maidstone and Ashford to join with NCN Route 2.

2.4 Local Amenities

In order to assess the accessibility of key amenities on foot and by cycle, **Figure 2.5** and **Table 2.1** below highlight the accessible amenities within 2km of the site alongside their distance from the site as well as the walking and cycling journey time.

Figure 2.5 Local Amenities

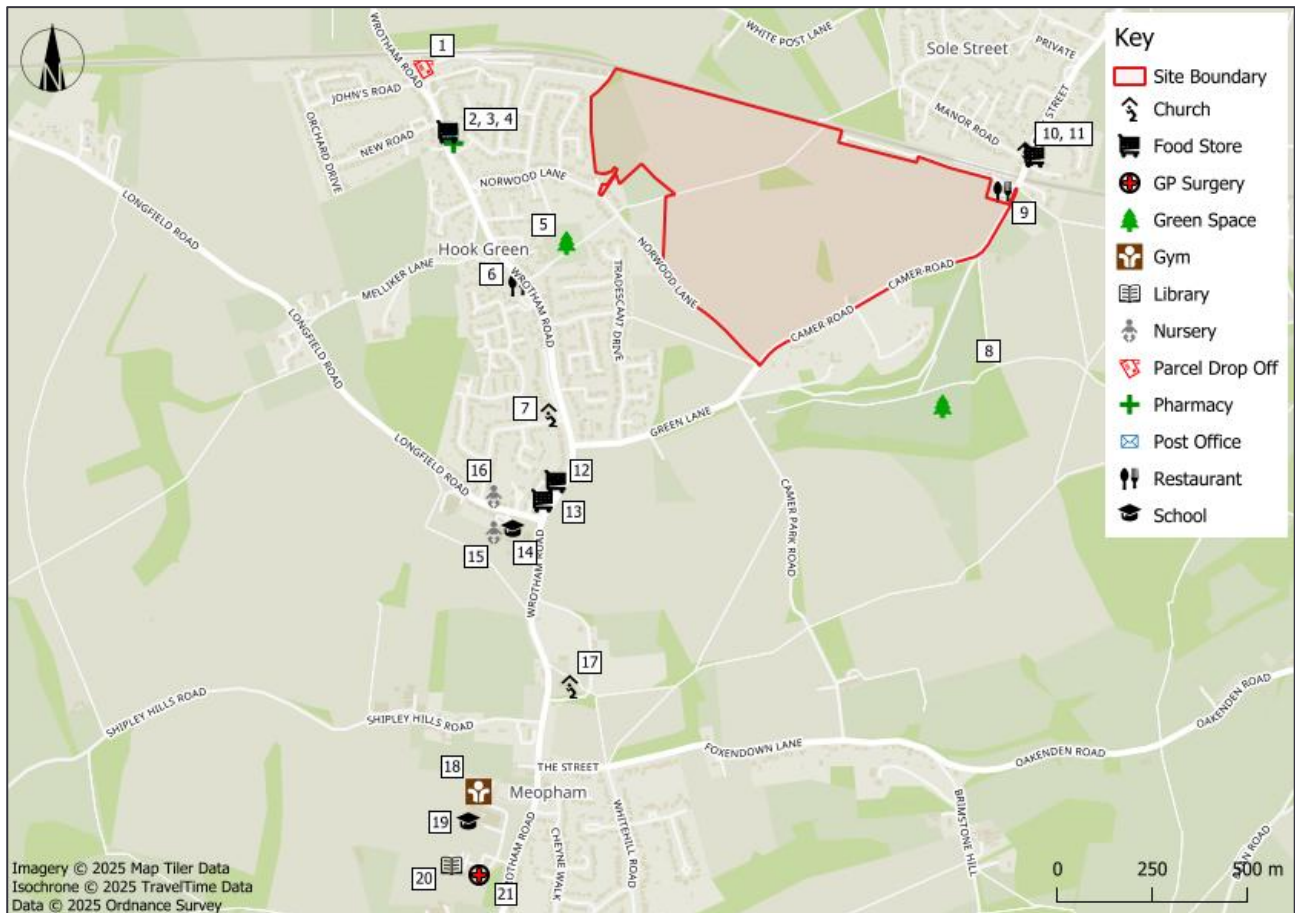


Table 2.1 Local Amenities

Number	Amenity	Distance (From Nearest Site Access)	Walking Time	Cycling Time
1	InPost Locker	700m	9 minutes	4 minutes
2	Morrisons Daily	500m	7 minutes	3 minutes
3	Meopham Station Post Office	500m	7 minutes	3 minutes
4	Meopham Pharmacy	500m	7 minutes	3 minutes
5	Judson's Recreation Ground	200m	3 minutes	1 minute
6	Bartellas	400m	6 minutes	2 minutes

Number	Amenity	Distance (From Nearest Site Access)	Walking Time	Cycling Time
7	Saint Paul's Catholic Church	850m	12 minutes	6 minutes
8	Camer Park Country Park	300m	5 minutes	2 minutes
9	The Railway Inn, Sole Street	250m	3 minutes	1 minute
10	The Little Shop	350m	5 minutes	2 minutes
11	Saint Mary's Church Room	350m	5 minutes	2 minutes
12	Tesco Express	1km	15 minutes	7 minutes
13	Costcutter	1km	15 minutes	7 minutes
14	Meopham Community Academy	1.1km	16 minutes	7 minutes
15	Playpen Pre-School	1.2km	17 minutes	7 minutes
16	Mini Meophams Nursery	1.2km	17 minutes	7 minutes
17	Saint John the Baptist Meopham	1.5km	22 minutes	8 minutes
18	Meopham Leisure Centre	2.2km	32 minutes	12 minutes
19	Meopham Secondary School	2.2km	31 minutes	12 minutes
20	Meopham Library	2.2km	31 minutes	12 minutes
21	Meopham Medical Centre	2.1km	30 minutes	11 minutes

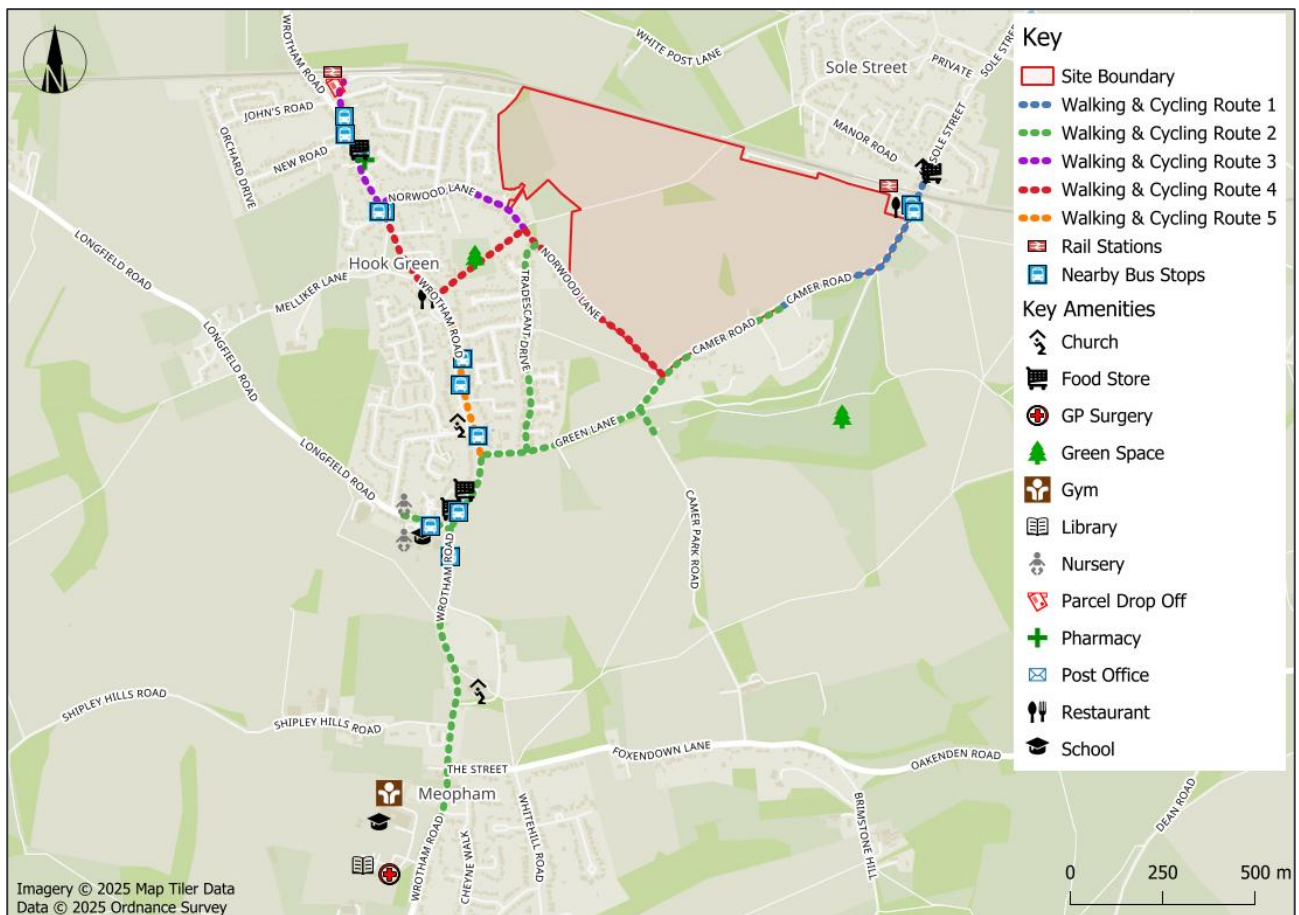
Table 2.1 above demonstrates that there are a wide range of facilities within approximately 2km of the site which future residents would be able to walk or cycle to for everyday use.

It is noted that, in order for future residents to complete their weekly shopping, they may need to travel to a supermarket instead of one of the local convenience stores. The nearest supermarkets are Lidl and Morrisons in Gravesend to the north and Waitrose and Partners in Longfield. All three stores are located within approximately 5km of the site. These supermarkets are only a 20-minute cycle or 20-minute journey via train (Waitrose and Partners) and, in order to reduce the number of car trips, home delivery will be promoted to future residents.

2.5 Walking and Cycling Audit

As requested during pre-application engagement, a walking and cycling audit was undertaken on 13th August 2025 to assess the routes pedestrians and cyclists would use to access local facilities near to the site. **Figure 2.6** below shows the walking and cycling routes assessed to the key amenities.

Figure 2.6 Walking and Cycling Routes



The following provides a summary of the amenities accessible using each route:

- Route 1: Site to Sole Street Station, Sole Street Bus Stops, The Railway Inn (Sole Street), The Little Shop and Saint Mary's Church Room;
- Route 2: Site to Camer Park Country Park, Tesco Express, Costcutter, Wrotham Road Bus Stops, Meopham Community Academy, Playpen Pre-school, Mini Meophams Nursery, Saint John the Baptist Meopham, Meopham Leisure Centre, Meopham Secondary School, Meopham Library and Meopham Medical Clinic;
- Route 3: Site to Meopham Pharmacy, Meopham Station Post Office, Morrisons Daily, Wrotham Road Bus Stops, InPost Locker and Meopham Station;
- Route 4: Site to Judson's Recreation Ground, Wrotham Road Bus Stops and Bartellas; and
- Route 5: Site to Saint John the Baptist Meopham and Wrotham Road Bus Stops.

The walking and cycling audit is included in full at **Appendix C**.

Where issues are identified in this assessment, these should be reviewed by the local authority and appropriate funding streams or mechanisms for implementation identified if appropriate as part of authority-wide improvements. Suitable channels include local, regional or national government funding, CIL contributions and / or S106 contributions (subject to the standard legal tests as to whether they are necessary, relevant, enforceable, precise and reasonable).

2.6 Bus Services

The nearest bus stops to the site are located on Camer Road in proximity to Sole Street Station. These stops are served by the 311, 416 and 695 to destinations including Rochester and Gravesend. The northbound bus stop is provided with a flag-and-pole arrangement with timetable information.

Additional stops are provided on Wrotham Road approximately 1km west of the site served by the 34, 223, 306, 308, 416, 418R, 418W, 695, M1 and VIGO1 to destinations including Vigo Village, Sevenoaks and Gravesend. The stops are provided with a flag-and-pole arrangement and timetable information, with some of the stops also provided with a bus shelter and seating.

A summary of the bus services near the site is provided in **Figure 2.7** below and **Table 2.2** overleaf.

Figure 2.7 Bus Routes

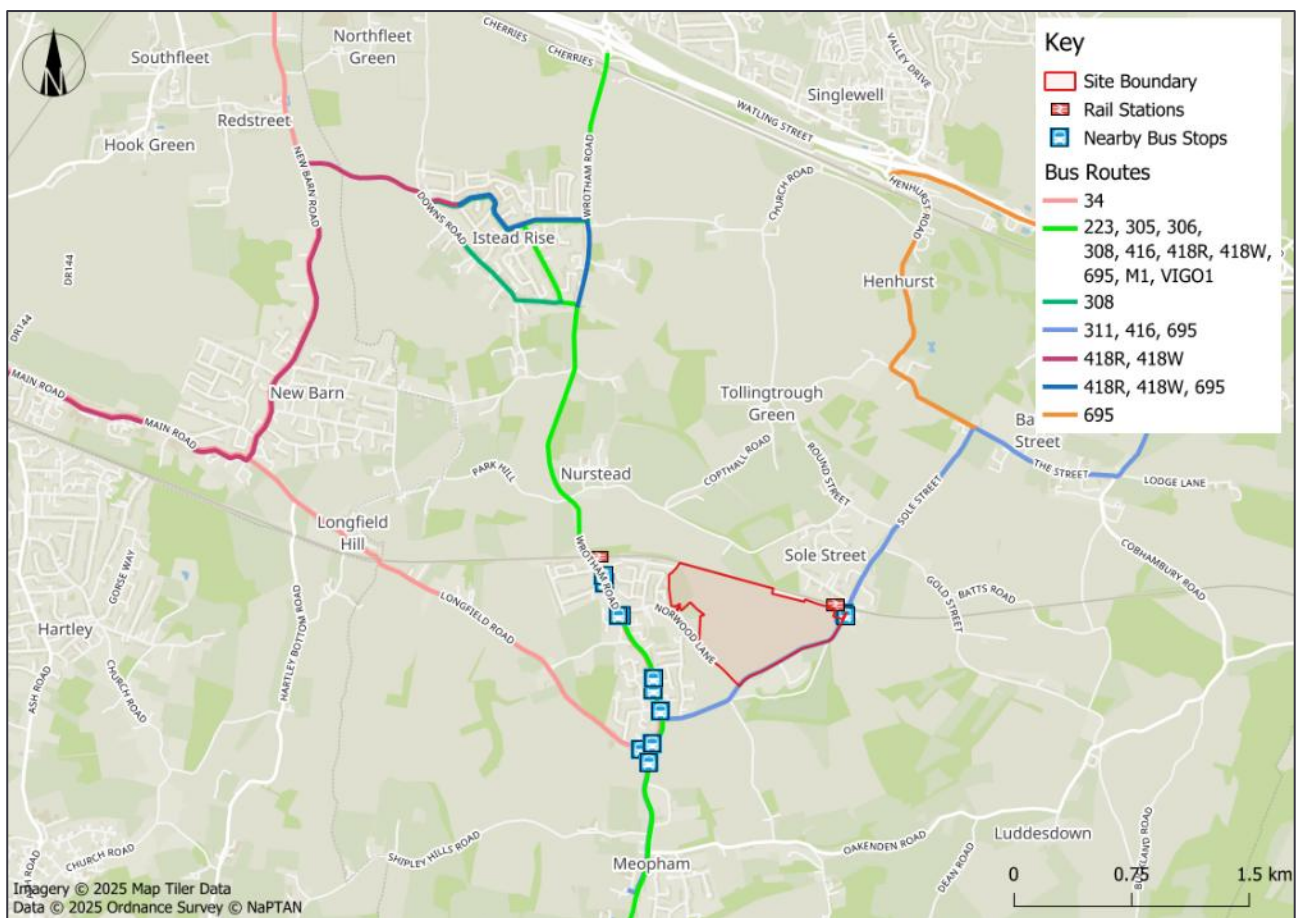


Table 2.2 Bus Service Summary

Bus Stop	Service	Route	Weekday Frequency	Weekend Frequency
Camer Road Bus Stops				
Northbound	311*	Lower Higham to Cobham	One per day	No service
Southbound		Cobham to Lower Higham	One per day	No service
Northbound	416	Meopham to Gravesend	Four per day	Three Saturday only
Southbound		Gravesend to Meopham	Three per day	Two Saturday only
Northbound	695*	Istead Rise to Rochester Grammar School	One per day	No service
Southbound		Rochester Grammar School to Istead Rise	One per day	No service
Wrotham Road Bus Stops				
Northbound	34*	Wilmington to Meopham	One per day	No service
Southbound		Meopham to Wilmington	One per day	No service
Northbound	223*	Tonbridge to Gravesend	One per day	No service
Southbound		Gravesend to Tonbridge	One per day	No service
Northbound	306	Vigo Village to Gravesend	Two per day	No service
Southbound		Gravesend to Vigo Village	Two per day	No service
Northbound	308	Sevenoaks to Gravesend	Eight per day	Seven Saturday only
Southbound		Gravesend to Sevenoaks	Seven per day	Six Saturday only
Northbound	418R*	Wrotham to New Ash Green	One per day	No service
Southbound		New Ash Green to Wrotham	One per day	No service
Northbound	418W*	Wrotham to New Ash Green	One per day	No service
Southbound		New Ash Green to Wrotham	One per day	No service
Northbound	695*	Istead Rise to Rochester	One per day	No service
Southbound		Rochester to Istead Rise	One per day	No service
Northbound	M1*	Meopham to Denton	One per day	No service
Southbound		Denton to Meopham	One per day	No service
Northbound	VIG01*	Vigo to Gravesend	One per day	No service
Southbound		Gravesend to Vigo	One per day	No service

* School services

It is acknowledged that while there are a number of bus services available to a range of destinations, the service frequency across both weekdays and weekends may reduce the viability of daily bus travel, including to places of employment.

2.7 Rail Services

With regard to rail services, the site is located within walking distance of both Meopham and Sole Street Stations. **Figure 2.8** below shows the locations of the rail stations, with **Table 2.3** overleaf setting out the facilities which are available at each station.

Figure 2.8 Nearby Rail Stations



Table 2.3 Rail Station Facilities

Facility	Sole Street Station	Meopham Station
Seated Waiting Area	Yes	Yes
Ticket Office	Yes Monday – Friday: 06:30 – 10:30 Saturday: Closed Sunday: Closed	Yes Monday – Friday: 06:15 – 12:45 Saturday: 08:00 – 13:15 Sunday: Closed
Cycle Parking	10 spaces (5 Sheffield stands)	20 spaces (10 Sheffield stands)
Car Parking	61 Spaces	167 Spaces

A summary of the services available from Meopham and Sole Street Stations is provided in **Table 2.4** below.

Table 2.4 Rail Service Summary

Destination	Service Provider	Approximate Journey Time	Weekday Frequency	Weekend Frequency
Sole Street Station				
London Victoria	Southeastern Railway	1 hour	Hourly	Hourly
Gillingham		15 minutes	Hourly	Hourly
Meopham Station				
London Victoria	Southeastern Railway	35 – 55 minutes	Every 30 minutes	Every 30 minutes
Gillingham		20 minutes	Every 30 minutes	Every 30 minutes
Dover Priory		1 hour 30 minutes	Hourly	Hourly

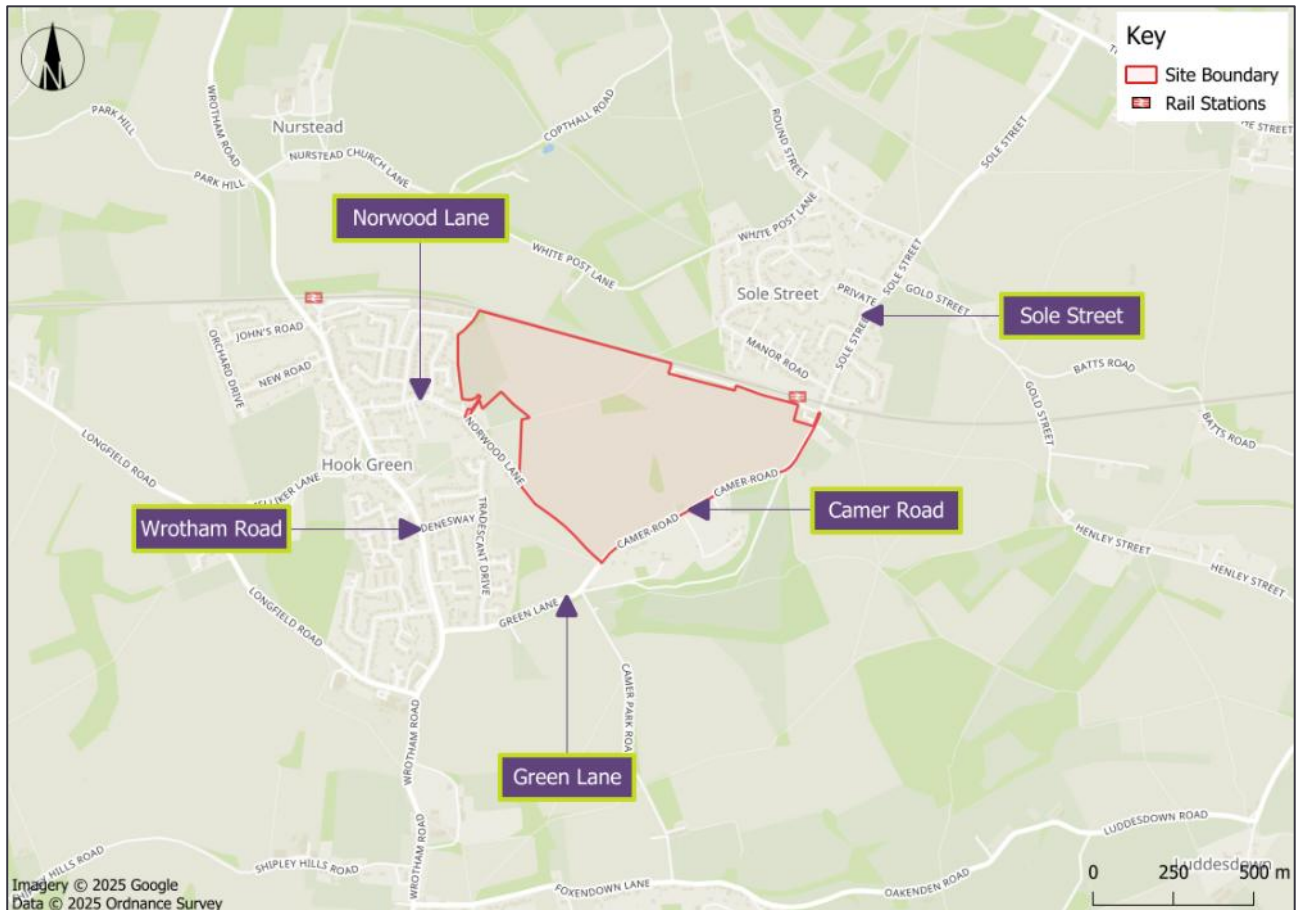
Table 2.4 shows that there are frequent rail services to key employment destinations, including London, within less than 1km of the site.

It is also acknowledged that some people may travel to Ebbsfleet International Station to utilise the high-speed services available. The station is located a 12-minute drive or 35-minute cycle from the site. During peak periods, high-speed services are available to London St Pancras (International) approximately six times per hour with a journey time of c.20 minutes.

2.8 Local Highway Network

The local highway network is illustrated in **Figure 2.9** below which is managed and maintained by KCC in their capacity as highway authority.

Figure 2.9 Local Highway Network



Camer Road

Camer Road bounds the site to the south-east and comprises a two-way single carriageway subject to the national speed limit which reduces to 30mph on the approach to Sole Street Station. The road is approximately 6m in width with footway provision commencing at the Royal Hounds Dog Park, north towards Sole Street Station.

Norwood Lane

Norwood Lane bounds the site to the south-west and comprises a two-way single carriageway operating at the national speed limit to the south and 30mph to the north in the vicinity of the existing residential dwellings. The road varies in width from approximately 4m south of the site to 5m adjacent to the residential dwellings.

There is currently a footway provided on the eastern side of the carriageway from Wrotham Road to the north which continues southbound until the property named 'Alston' at which point it is extinguished. After this point, there is mixed footway provision to Footpath NS192, with provision along the frontage of Norwood Farmhouse and Norwood Farm Cottage.

Green Lane

Green Lane is located to the south-west of the site and connects to Camer Road at the junction with Camer Park Road which provides access to Camer Park Country Park. The road runs on a north-east to south-west alignment, connecting to Wrotham Road (A227) via a priority-controlled junction at its southern extent.

The road operates at a 30mph speed limit until approximately 75m east of Tradescant Drive, upon which the road is subject to the national speed limit as it continues towards Camer Road. The road varies in width but is approximately 5m wide. Footways are provided along the length of Green Lane to the junction of Camer Park Road, with pedestrians required to cross from the southern to northern side of the road approximately 75m east of Tradescant Drive.

Sole Street

Sole Street is located to the north-east of the site and connects to Camer Road at Sole Street Station. The road continues north to connect with the priority-controlled junction with The Street and Jeskyns Road. Near to the site as the road travels through Sole Street village, the road is subject to a 30mph speed limit.

The road varies in width between approximately 5 – 6m, however this varies based on the provision of parking bays along the road. Footways are provided on both sides of the road between the station and village amenities, then with footway provision continuing on the western side of the road until the junction with Scratton Fields where the provision ends.

Wrotham Road (A227)

Wrotham Road runs to the west of the site on a north-south alignment between Gravesend and Meopham. In proximity to the site, the road comprises a two-way single carriageway operating with a 30mph speed limit. Footways are provided on both sides of the carriageway providing connections to local facilities.

2.9 Traffic Counts

In order to determine the existing traffic conditions on the local highway network, Automatic Traffic Count (ATC) surveys have been undertaken to record speeds and traffic volumes at the following locations:

- Camer Road between 18th and 24th October 2024; and
- Norwood Lane between 23rd and 29th April 2025.

The survey data is provided at **Appendix D. Table 2.5** overleaf summarises the observed traffic volumes and speeds on both Camer Road and Norwood Lane throughout the survey period.

Table 2.5 ATC Survey Results

Direction	Total Vehicles	5 Day Average	7 Day Average	Average 85th Percentile Speed	Average Mean Speed
Camer Road					
Eastbound	17,974	2,922	2,568	41.2mph	35.5mph
Westbound	24,383	4,177	3,483	37.4mph	31.1mph
Norwood Lane					
Eastbound	2,017	323	288	33.6mph	27.6mph
Westbound	1,767	278	252	34.6mph	28.3mph

Table 2.5 shows that the average 85th percentile speed on Norwood Lane was 33.6mph and 34.6mph eastbound and westbound, respectively. On Camer Road, the eastbound and westbound 85th percentile speeds were 41.2mph and 37.4mph, respectively.

2.10 Highway Safety

As requested during pre-application engagement, Personal Injury Collision (PIC) data has been obtained from Kent Police for the most recent five-year period available up to 31st March 2025.

The purpose of assessing recorded PICs is to determine whether there is a history of collisions in proximity to the site and to investigate whether there are any patterns or contributing factors to the collisions recorded. Clusters of collisions could indicate that improvements are required to enable development on the site to come forward.

The impact of casualties differs according to the severity of the injuries sustained. Three groups are differentiated as follows:

- **Fatal:** any death that occurs within 30 days from causes arising out of the collision;
- **Serious:** records casualties who require hospital treatment and have lasting injuries, but who do not die within the recording period for a fatality; and
- **Slight:** where casualties have injuries that do not require hospital treatment, or, if they do, the effects of the injuries quickly subside.

The assessment considers the following key links and junctions:

- Links:
 - ▶ Camer Road;
 - ▶ Norwood Lane;
 - ▶ Green Lane;
 - ▶ Sole Street; and
 - ▶ Wrotham Road.
- Junctions:

- ▶ Camer Road / Green Lane / Norwood Lane junction;
- ▶ Wrotham Road / Green Lane junction; and
- ▶ Wrotham Road / Norwood Lane junction.

Table 2.6 below provides a summary of collisions by severity by year, whilst **Figure 2.10** overleaf shows the collisions recorded in the most recent five-year period of data. The full PIC mapping and report are included at **Appendix E**.

Table 2.6 Collision Summary

Year	Slight Collision	Serious Collision	Fatal Collision	Total
2020	1	3	0	4
2021	1	0	0	1
2022	0	0	0	0
2023	2	0	0	2
2024	2	0	0	2
2025	0	2	0	2
Total	6	5	0	11

Figure 2.10 Collision Data

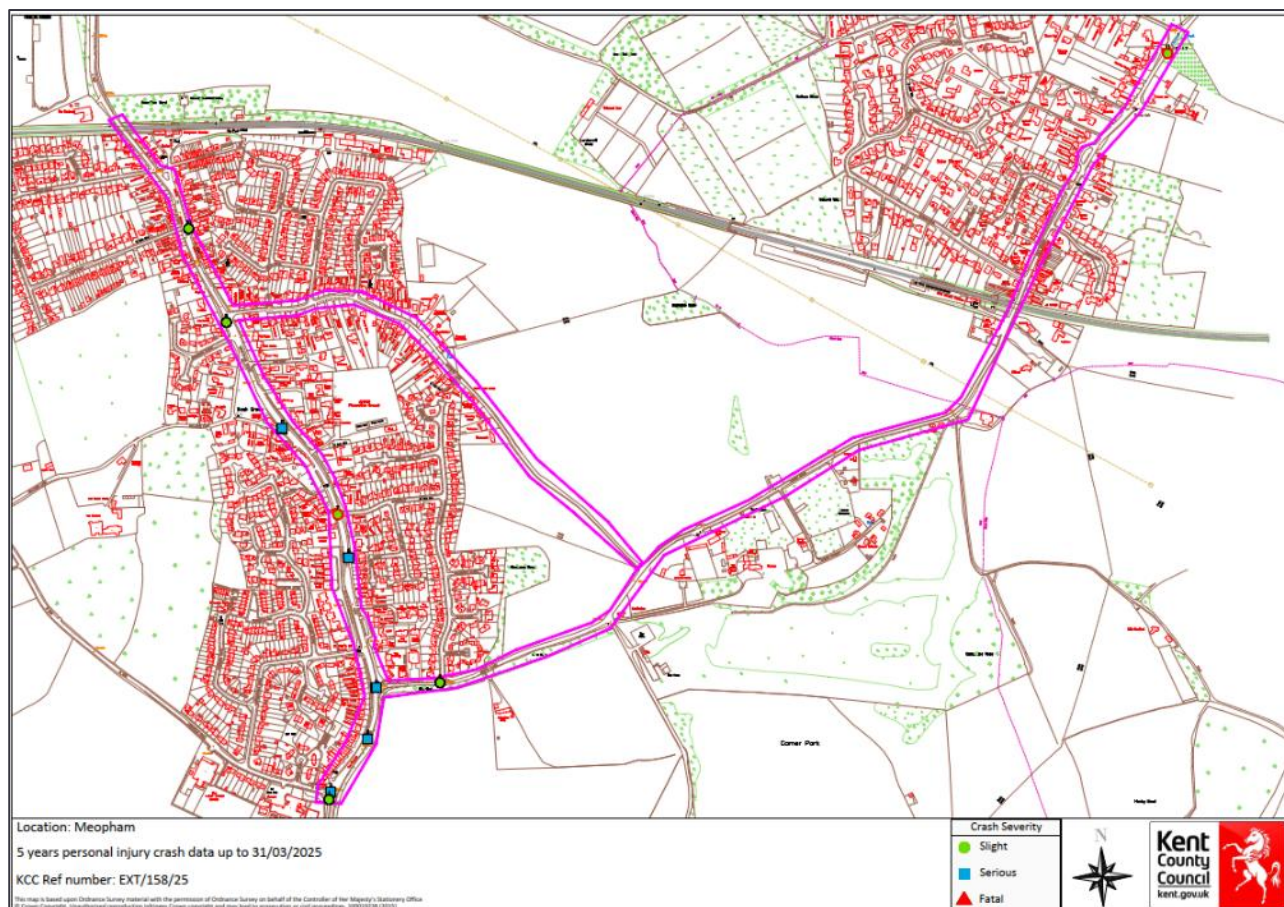


Table 2.6 shows that, over the five-year period, a total of six slight collisions have occurred and five serious collisions; no fatal collisions have occurred. Whilst it is noted that four collisions occurred in 2020, including three serious collisions, across the study area, an average of only two collisions occurred per annum which does not indicate a recurring pattern.

It is noted that no collisions occurred at the Camer Road / Norwood Lane junction, with only one slight collision at the Wrotham Road / Norwood Lane junction over the five-year period.

Notwithstanding the above, further analysis has been undertaken of the five serious collisions as well as the two collisions at the Wrotham Road / Longfield Road junction.

- Wrotham Road / Longfield Road junction
 - ▶ On 27th November 2020 at 14:31, a cyclist was travelling along Wrotham Road when a car pulled out of Longfield Road onto Wrotham Road, colliding with the cyclist; this resulted in serious injury to the cyclist.
 - ▶ On 1st November 2024 at 22:05, a car was stationary at temporary traffic lights at the junction when it was hit from behind by another car. This resulted in slight injury to the car occupant.
- On 11th October 2020 at 08:39 on Wrotham Road near the parade of shops, a car was travelling north on Wrotham Road when another car turned right out of the shops across the path of the northbound vehicle. This resulted in serious injury to the car occupant.

- On 23rd April 2020 at 15:50, a car was travelling along Wrotham Road and turned right onto Green Lane. At this point they hit a cyclist who was travelling in the opposite direction on Wrotham Road resulting in serious injury to the cyclist.
- On 3rd March 2025 at 11:58, a cyclist pulled out from the bus layby on Wrotham Road and collided with the nearside of a car towing a trailer, resulting in the cyclist being knocked off and seriously injured.
- On 26th March 2025 at 18:30, a car was turning into Melliker Lane from Wrotham Road without indicating, colliding with a motorcyclist and knocking them off their bike, resulting in serious injury.

Whilst it is acknowledged there are an increased number of collisions in 2020, there is considered to be no long-term repeating pattern of collisions on the local highway network. Therefore, whilst any collision is unfortunate, there is not deemed to be any inherent safety issues with the local highway network so there is no need for further investigation.

2.11 Summary

As a result of the information provided in this chapter, it can be concluded that:

- Whilst footway provision near the site is mixed, there is an extensive PRoW network providing an option for leisure trips. Within a 5km cycle of the site, Meopham and Istead Rise are accessible as well as NCN Route 177 which connects Northfleet and Strood.
- Noting the mixed footway provision, there are a range of amenities, including shops, pharmacies and schools, available within a 2km walk of the site which future residents would be able to access.
- Public transport provision is varied, with frequent rail services to key employment destinations, including London, available from both Sole Street and Meopham Stations, however bus service frequency across both weekdays and weekends may affect the viability of daily bus travel except for school trips.
- With regard to highway safety, whilst it is acknowledged there were an increased number of collisions in 2020, this is not a long-term, repeating pattern. As such, there is not deemed to be any inherent safety issues with the local highway network.

3. Policy Review

3.1 Overview

This chapter outlines the relevant national, regional and local policy guidance that the proposed development contributes to including:

- National Planning Policy Framework (2024);
- National Planning Policy Framework: Draft Text for Consultation (2025);
- Planning Practice Guidance (2014);
- DfT Circular 01/2022;
- KCC Local Transport Plan 5 (2024);
- Kent Vehicle Parking Standards SPG 4 (2006);
- Gravesham Local Plan Core Strategy (2014);
- Gravesham Local Plan First Review (1994) – Saved Policies; and
- Gravesham Local Cycling and Walking Infrastructure Plan.

3.2 National Planning Policy Framework (2024)

The National Planning Policy Framework (NPPF) sets out the Government’s key objectives for achieving sustainable development. The NPPF was first published in March 2012 and revised in December 2024 in order to streamline the national planning policies set out in previous policy guidance. Within the NPPF, it is suggested that an economic, social and environmental objective should be at the heart of the planning process.

Under the ‘Promoting sustainable transport’ chapter of the NPPF, it is stated that transport issues should be considered from the earliest stages of plan-making and development proposals (Para. 109). By doing this, the potential impacts of development on transport networks can be addressed and the appropriate transport infrastructure can be implemented. By considering transport at the earliest stages, it allows the opportunity to promote walking, cycling and public transport, and to mitigate any problems.

Significant developments should be focused on being sustainable, this can be done through limiting the need to travel and offering a genuine choice of transport modes.

The NPPF states (Para. 111, pg.31) that planning policies should:

- *Support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;*
- *Be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;*
- *Provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking, Local Cycling and Walking Infrastructure Plans.*

Within the context of assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that (Para. 115, pg.33):

- *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;*
- *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.*

Within this context, new developments should (Para. 117, pg.33):

- *a) 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;*
- *b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- *c) 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;*
- *d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and,*
- *e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.*

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 cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios.”

Paragraph 118 concludes that all developments expected to generate significant amounts of movement should provide a Travel Plan (TP), and applications should also be supported by a TA or Transport Statement (TS) to assess the likely impacts of the proposals.

The proposed development has been designed in accordance with the NPPF guidelines, and this TA demonstrates that the above objectives would be satisfied by the development proposals.

3.3 National Planning Policy Framework: Draft Text for Consultation (2025)

Whilst not currently adopted policy, this consultation document, published in December 2025, seeks views on revised national planning policy to support wider objectives and reflects the direction of travel of national planning policy.

Policy S5 states that mixed-use developments which would be within reasonable walking distance (800m) of a railway station would be supported.

Chapter 15 relates to ‘Promoting sustainable transport’ and focuses on a vision-led approach to transport. Policy TR1 states sustainable transport should be considered from the earliest stages of development proposals which can be achieved by:

- Making sustainable transport an early part of engagement to reflect local opportunities;
- Locating development where it can support sustainable patterns of movement;
- Supporting an appropriate mix of uses to minimise the number and length of journeys;
- Identifying sites and routes which will widen transport choice; and
- Providing for transport facilities which are required to support development.

Policy TR3 highlights the need to ensure development is located where it can support sustainable patterns of movement where a genuine choice of transport modes is available, transport infrastructure can be utilised and opportunities to improve wheeling, cycling and public transport can be enhanced.

Policy T4 states that transport considerations should be an integral part of development including:

- Giving priority first to pedestrian and cycle movements to facilitate easy access to public transport;
- Incorporate facilities to support this prioritisation;
- Ensure streets are safe, inclusive and attractive for all users;
- Allows for the efficient servicing which does not compromise place-making principles; and
- Provide a suitable number of parking spaces alongside plug-in vehicle charging.

Policy TR8 states development proposals should maintain the PRow network.

Policy TR6 concludes that all developments expected to generate significant amounts of movement should provide a TP, and applications should also be supported by a TA or TS to assess the likely impacts of the proposals.

Policy TR6 continues to states that:

“All development proposals should be capable of proceeding without having a severe adverse impact on the transport network (in terms of capacity and congestion, including cumulative impacts), or an unacceptable impact on highway safety, taking into account any mitigation measures proposed as well as any wider network improvements.

In assessing potential impacts, all reasonable future scenarios should be considered, taking into account impacts at different times of the day, potential cumulative impacts, multimodal trip generation and the promotion of sustainable modes of travel, and realising the transport vision for the development itself.”

Whilst the draft NPPF is not yet adopted, the proposed development has been designed in accordance with the guidelines, including following a vision-led approach to transport, which this TA demonstrates.

3.4 Planning Practice Guidance (2014)

The PPG sets out guidance in relation to the preparation of Transport Assessments, Transport Statements and Travel Plans.

The scope and level of detail in a TA / TS will vary from site to site but the following should be considered when setting the scope of the assessment:

- Information about the proposed development and site layout;
- Information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;
- Data about existing public transport provision, including provision / frequency of services and proposed public transport changes;
- A qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the site's vicinity;
- An assessment of trips from all directly relevant committed developments in the area;
- Data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highway network;
- An analysis of the collision records on the public highway in the vicinity of the site access for the most recent three- or five-year period;
- An assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas;
- Measures to improve accessibility of the location where these are necessary to make the development acceptable in planning terms;
- A description of parking facilities in the area and the parking strategy of the development;
- Ways of encouraging environmental sustainability by reducing the need to travel; and
- Measures to mitigate the residual impacts of development.

3.5 DfT Circular 01/2022

The 'Strategic road network and the delivery of sustainable development' guidance, known as the DfT Circular 01/22, sets out how National Highways (NH) should engage with the planning system in England.

The core goal of the guidance is to ensure that development across England:

- Promotes economic growth, connectivity, and efficiency through reliable long-distance links between population centres, ports, airports and rail hubs;
- While at the same time minimises environmental impact, supports sustainable transport and reduces carbon emissions, consistent with the government's broader environmental and transport decarbonisation ambitions;

- Steers new development towards locations and designs that reduce dependency on private cars and favour walking, cycling and public transport; and
- Thus the document attempts to balance the strategic road network's role as critical national infrastructure with sustainable development and net-zero transport goals.

When considering development that might affect the strategic road network, the major principles that should be reviewed are:

- Sustainable development: promoting economic growth while protecting the environment, improving safety and quality of life for present and future generations. As part of this, NH to net zero road user emissions by 2050;
- Reducing car dependency: new developments should aim to be located where sustainable transport is, or can be made, feasible;
- New connections to the strategic road network only if necessary: new direct connections are discouraged unless there is an essential strategic need, and only after all reasonable alternatives have been exhausted;
- Capacity enhancements or junction modifications scrutinised on a case-by-case basis;
- Early and effective engagement with local planning: NH expects to be consulted at the plan-making stage; and
- For residential or mixed-use developments: design streets, parking, EV charging, cycle parking, broadband, micromobility, servicing and amenities to support low-carbon living and reduce travel demand.

3.6 Kent County Council Local Transport Plan 5 (2024)

KCC's Local Transport Plan 5 (LTP5) is a strategic document that outlines Kent's transport policies and objectives from 2024 to 2037. It sets out a long-term strategy for delivering a safe, efficient and sustainable transport system that supports housing and economic growth while aligning with environmental objectives.

The LTP outlines the council's ambition for transport in the county stating:

- *"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 county and as an international gateway. We will plan for growth in Kent in a way that enables us to combat climate change and preserve Kent's environment.*
- *We will do this by delivering emission-free travel by getting effective dedicated infrastructure to electrify vehicles, increase public transport use and make walking and cycling attractive. This will be enabled by maintaining our highway network and delivering our Vision Zero road safety strategy. These priorities will ensure our networks are future-proof, resilient and meet user needs."*

In order to achieve this vision, LTP5 outlines ten outcomes including the following relevant points:

- Outcome 5: Deliver resilient transport, future-proofed for growth and innovation, aiming for an infrastructure-first approach to reduce the risk of highways and public transport congestion due to development;
- Outcome 7: Road-side air quality improves as decarbonisation of travel accelerates, contributing towards the pursuit of carbon budget targets and net zero in 2050;

- Outcome 8: A growing public transport system supported by dedicated infrastructure to attract increased ridership, helping operators to provide more and invest in better services; and
- Outcome 9: 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.

3.7 Kent Vehicle Parking Standards SPG 4 (2006)

GBC have not yet adopted KCC's updated 2025 'Parking Standards' document, and as such continue to utilise the 2006 document.

Table 3.1 below sets out the standards for residential developments.

Table 3.1 KCC Residential Parking Standards

	Car Parking	Cycle Parking
1 Bedroom		
Provision	1 space per unit	Flats: 1 space per unit Houses: 1 space per bedroom
2 & 3 Bedrooms		
Provision	2 spaces per unit	Flats: 1 space per unit Houses: 1 space per bedroom
4+ Bedrooms		
Provision	3 spaces per unit	Flats: 1 space per unit Houses: 1 space per bedroom

Table 3.2 overleaf sets out the parking standards for the non-residential uses. As the nature of the Class E commercial uses within the local centre are not yet defined, the highest potential parking requirements have been set out in order to provide a robust assessment, i.e. E(a) and E(b).

Table 3.2 KCC Non-Residential Parking Standards

Use	Car Parking	Cycle Parking	Other Requirements
Food retail (up to 1,000sqm)	1 space per 18sqm	Short-stay: 1 space per 200sqm Long-stay: 1 space per 200sqm	1 HGV space per 500sqm
Restaurants and cafés	1 space per 2 staff 1 space per 6sqm	Short-stay: 1 space per 10 seats Long-stay: 1 space per 20 seats	Adequate facilities should be provided to enable HGV deliveries
Primary schools	1 space per staff + 10%	1 space per 50 pupils	Adequate facilities should be provided to enable HGV deliveries to park / manoeuvre clear of the public highway Provision should be made to accommodate school vehicles dropping off / picking up children Provision should be made for the setting down / picking up of children in a safe environment and does not interfere with the public highway
Community centre	1 space per 22sqm	Short-stay: 1 space per 10 participants + 10% Long-stay: 1 space per 10 staff	-
Areas or places for outdoor sport or recreation	1 space per 2 participants + 1 space per 15 spectators	Short-stay: 1 space per 10 participants + 10% Long-stay: 1 space per 10 staff	-

In addition:

- For shopping, recreation and leisure uses with car parks with up to 50 spaces, one designated disabled space + two spaces of sufficient size but not specifically designated should be provided; and
- A minimum of one motorcycle space + one space for every 20 car parking spaces should be provided.

3.8 Gravesham Local Plan Core Strategy (2014)

The Gravesham Local Plan Core Strategy helps shape the future of the Borough to determine planning applications.

With regard to Transport, Policy CS11 Paragraph 5.5.38 requires new developments to mitigate their impact on the transport network. As such, TAs and TPs should be provided to ensure the delivery of sustainable travel options.

Paragraph 5.5.39 continues to state that sufficient parking should be provided for new developments in accordance with adopted standards in consideration of sustainable transport availability.

3.9 Gravesham Local Plan First Review (1994) – Saved Policies

The Gravesham Local Plan First Review was replaced by the adopted Local Plan, however a number of policies have been saved.

Policy T1 states the impact of developments on the transport system should be adequately considered alongside the environmental impact of traffic generated.

Policy T2 states the authority will seek to channel traffic onto the primary road network or district distributors. As such, development that generates significant volumes of commercial traffic away from these routes will not normally be permitted (Policy T3).

Policy T5 states that new accesses will be accepted where they are designed to an acceptable standard.

With regard to the highway layout of developments, it is expected that this is in accordance with the Kent Design Guide and vehicle parking standards (Policy T9). As such, Policy P3 notes that vehicle parking should be within the site in accordance with standards.

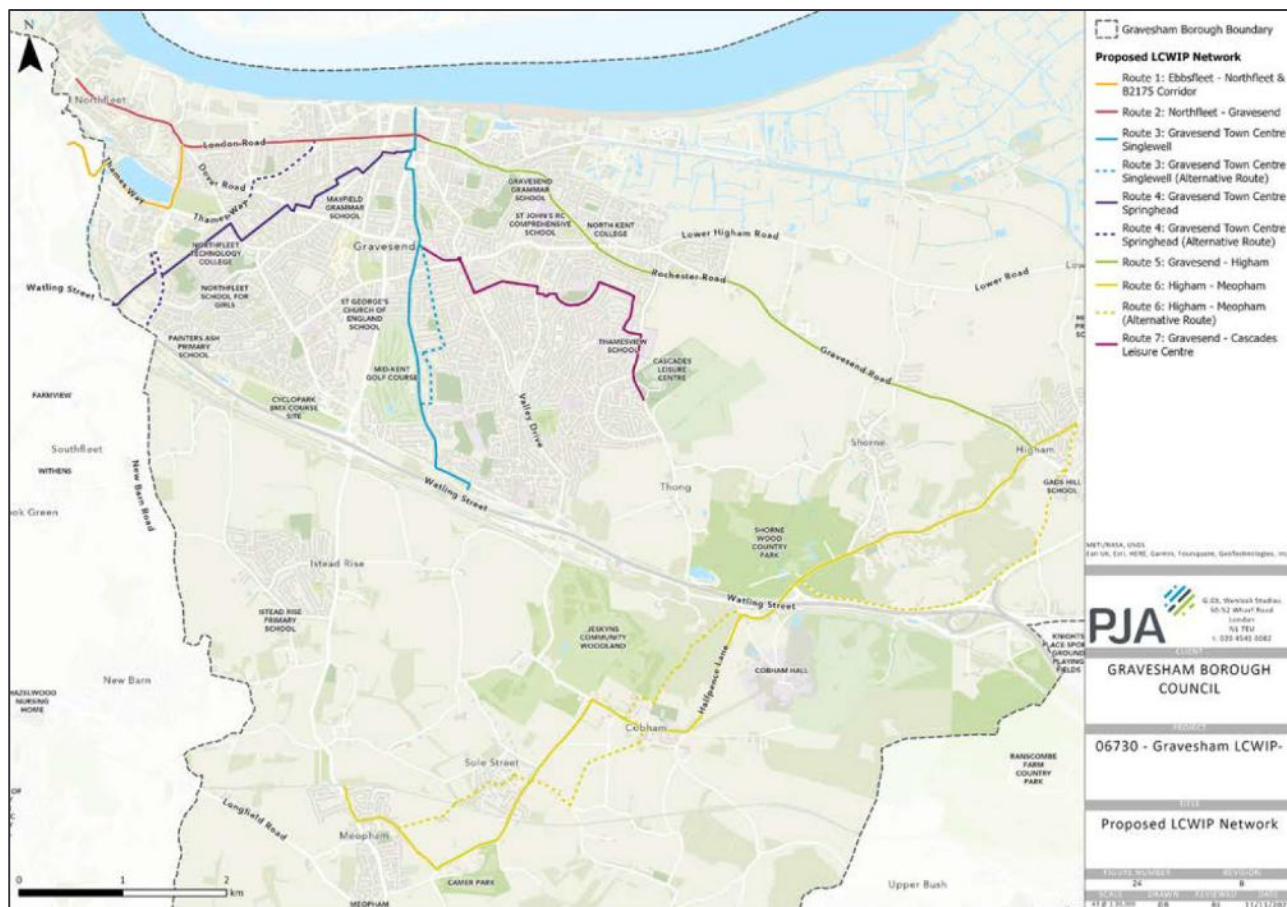
3.10 Gravesham Local Cycling and Walking Infrastructure Plan (2022)

Gravesham's Local Cycling and Walking Infrastructure Plan (LCWIP) identifies and prioritises investment for new infrastructure to support and encourage people to walk and cycle.

The LCWIP identifies infrastructure for short-, medium- and long-term horizons to meet the active travel objectives of the area.

Within the vicinity of the site, the LCWIP identifies Route 6 (Higham – Meopham via Cobham and Sole Street). This is primarily identified as a leisure connection and utilises a number of rural and PRoW routes. The route starts near Meopham Rail Station, routing south along Wrotham Road before routing along Norwood Lane and turning north onto Camer Road. An alternative alignment is considered along Footpath NS192 which bisects the site and north through Sole Street. The proposed alignments are shown at **Figure 3.1** overleaf.

Figure 3.1 Recommended LCWIP Cycling Network



Given the route is inherently constrained by the rural nature of the routes, several alignments are proposed.

As part of this TA, consideration is given to how future occupiers of the site could utilise the route and whether the proposed development can support its provision.

3.11 Summary

The planning policy set out above collectively seeks to ensure that development is located where residents, staff and visitors are provided with genuine modal choice by situating development in locations that reduce the need to travel, reduce average journey lengths and benefit from local infrastructure to enable use of modes of transport other than the single occupancy private car.

Furthermore, the planning policy also seeks to ensure that the impacts of the development are properly considered and mitigated via the preparation of appropriate transportation reports to accompany the planning application and where necessary the provision of mitigation in order to temper the impacts of a given development, to ensure that any residual impacts are not "severe". This TA has been prepared in line with current best practice guidance, policy and methodology.

4. Development Proposals

4.1 Overview

This chapter describes the development proposals, including details of access, parking and servicing arrangements.

4.2 Development Proposals

The description of development is as follows:

“Outline planning application for up to 725 dwellings (Use Class C3), a new two-form entry primary school (Use Class F1), the provision of Public Open Space including sport and recreation facilities, alongside associated access, landscaping, parking, and infrastructure; with all matters reserved except for access.”

The following residential development quantum is proposed as set out in **Table 4.1** below.

Table 4.1 Proposed Residential Development Quantum

Unit	Market		Affordable		Total	
1 Bedroom	0%	0	20%	72	10%	72
2 Bedroom	25%	90	38%	138	31%	228
3 Bedroom	47%	171	32%	116	40%	287
4+ Bedroom	28%	102	10%	36	19%	138
Total	100%	363	100%	362	100%	725

In addition, the following non-residential uses are proposed:

- 2FE primary school (use class F1);
- 500sqm commercial use – local centre (use class E);
- 750sqm club house (use class F2(b)); and
- Two sports pitches (use class F2(c)).

The proposed site masterplan is included at **Appendix A**.

4.3 Transport Vision

As required by the NPPF, DfT Circular 01/2022 and KCC's Local Transport Plan, a vision-led approach to movement at the proposed development has been adopted when developing the scheme and assessing the scheme.

Active and sustainable travel have been prioritised when developing the transport and movement vision of the site. This supports wider aspirations to improve health, wellbeing and economic prosperity to combat climate change and preserve Kent's environment.

The key principles of the vision are:

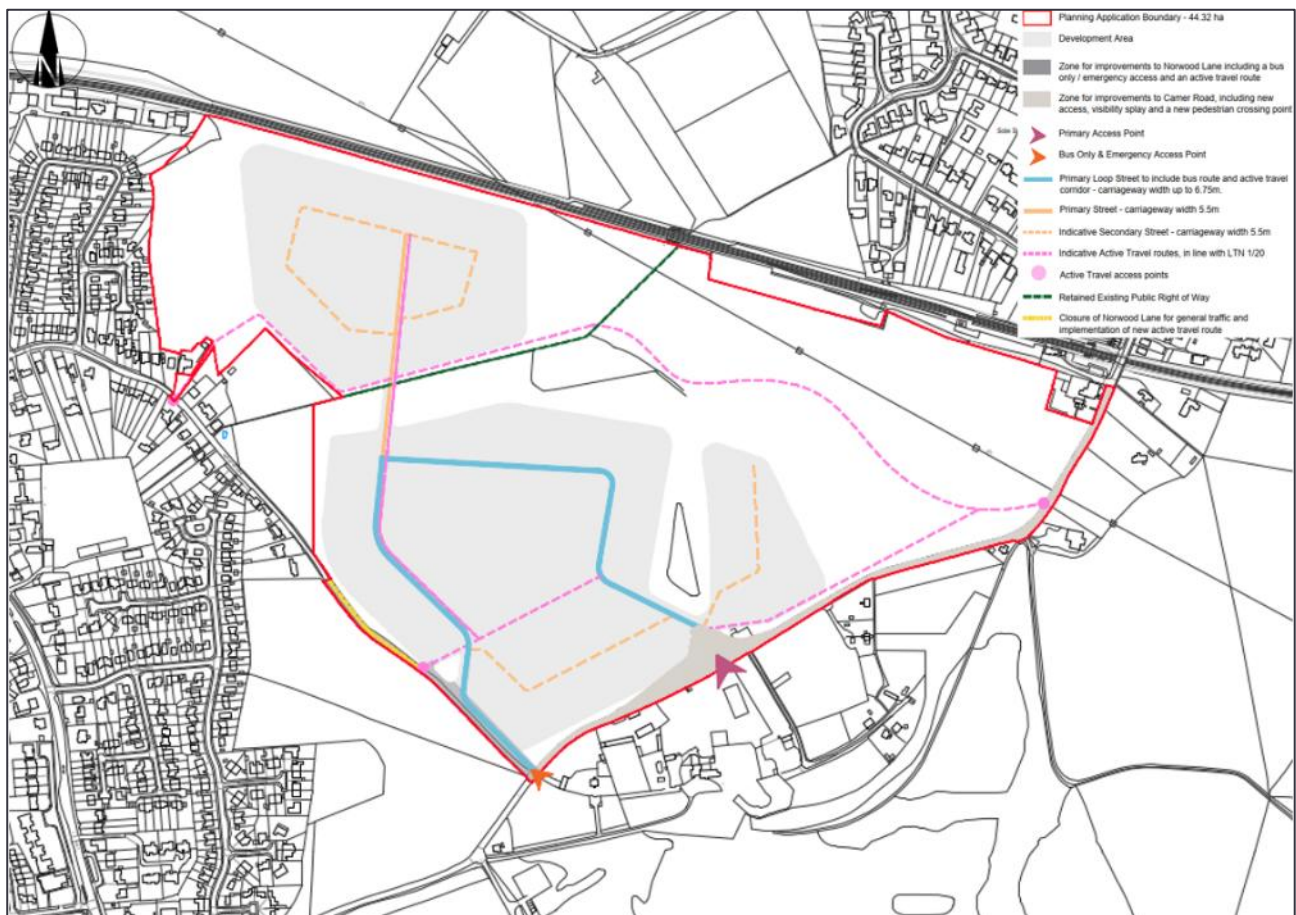
- Principle 1: Residents can walk, wheel or cycle safely to local facilities;
- Principle 2: Pupils and parents can travel safely to the primary school;
- Principle 3: Residents can viably travel to key destinations by bus and rail;
- Principle 4: A site layout that is safe, permeable and adopts the design principles in the Kent Design Guide, the Design for Gravesham Design Code and LTN 1/20.
- Principle 5: Electric vehicle charging provided in accordance with Building Regulations; and
- Principle 6: Servicing vehicles are suitably accommodated.

Further details on the approach to trip generation considering the 'Vision and Validate' approach are set out in **Chapter 5**.

4.4 Access Arrangements

The proposed access arrangements for the site by all modes is provided at **Appendix A**, with an extract at **Figure 4.1** below. The Movement and Access Parameter Plan has been developed in consideration of the Transport Vision set out above.

Figure 4.1 Movement and Access Parameters Plan



Vehicular Access

Camer Road

There are currently no formalised vehicle access points into the site, however the site boundary has significant frontage on both Camer Road and Norwood Lane.

The location of the proposed junction has been determined in consideration of observed traffic flows and vehicle speeds set out in **Section 2.9**. As such, the proposed main vehicular access will be located to the south of the site, taking access from Camer Road in the form of a standard priority three-arm roundabout.

The observed vehicle speeds on Camer Road are considerably lower than the national speed limit, with 85th percentile speeds of 41.2mph and 37.4mph eastbound and westbound, respectively. With Camer Road currently subject to the national speed limit (60mph), it is proposed to extend the existing 30mph limit southbound on Camer Road, along the length of Camer Road from Sole Street to the A227 Wrotham Road. This will assist in encouraging the use of alternative modes of travel and enhance safety for all road users. The site access junction will act as a natural speed restraint feature and the potential development of additional land adjacent to Green Lane will do the same. As a result, significantly reduced visibility splays can be utilised when considering the junction design parameters in conjunction with reducing the speed limit in the vicinity of the new access junction.

In consideration of the above and based on the nature of Camer Road and forecast traffic flows, the primary vehicular access to the site is proposed in the form of a roundabout. This will help to manage vehicle speeds in line with the proposed reduction to a 30mph speed limit as well as offer a gateway to the site, clearly defining the nature of Camer Road and providing a balance of priority for existing road users and new site users.

As the junction will form part of a bus route, it has been designed in accordance with the Kent Design Guide.

In order to accommodate the roundabout, Camer Road will be marginally realigned and widened including:

- Camer Road to be widened to 6.7m between the Norwood Lane priority junction and proposed site access roundabout.
- Camer Road to be widened to a continuous 5.5m east of the proposed site access roundabout to Royal Hounds Dog Park.

The drawings setting out the proposed roundabout access and highway alterations to Camer Road are presented at **Appendix F**. In addition, in line with Manual for Street, visibility splays in line with the reduced 30mph speed limit, i.e. 2.4m x 43m, have been provided and are set out in **Appendix G**.

Swept path analysis has been undertaken at the proposed roundabout access to demonstrate that an 11.3m RCV, bus and fire tender can manoeuvre at the junction appropriately. These drawings are included at **Appendix H**.

Norwood Lane

In considering a secondary access point from Norwood Lane, as with Camer Road, despite the national speed limit being in place, observed vehicle speeds are considerably lower, with 85th percentile speeds of 33.6mph and 34.6mph eastbound and westbound, respectively. As such, this supports the use of significantly reduced visibility splays when considering design parameters.

It is proposed to redesign the existing Norwood Lane / Camer Road priority T-junction, with an amended alignment into the site, road width and radii. This will allow Norwood Lane to accommodate the proposed bus route through the site. It is also proposed that Norwood Lane is closed for through traffic, enhancing this route

for non-motorised users and avoiding rat-running traffic. Access for general traffic would be restricted from a point just south of the southernmost existing residential dwelling 'Beaumaris' on Norwood Lane to Camer Road.

As Norwood Lane will be restricted from through traffic, signage will be provided at the Norwood Lane / Camer Road junction to prevent misuse of the bus only access.

As through traffic will be prevented, this will encourage the uptake of sustainable modes to and from the north of the site, including to Meopham Station, and provide a dedicated pedestrian and cycle route where one is currently not available. As such, road conditions on Norwood Lane are likely to be improved, enhancing the route to and from the proposed primary school for parents and children and encouraging local trips to be undertaken sustainably.

In order to ensure there is emergency access available to the site from two locations, emergency access is provided for Norwood Lane to the north of the secondary access with removable bollards to prevent daily use. In addition, a turning head will be provided to the south of 'Beaumaris' to allow larger vehicles to turn. Bollards will be provided to prevent southbound routing along Norwood Lane.

The drawings setting out the proposed arrangements on Norwood Lane are presented at **Appendix F**. In addition, in line with Manual for Street, visibility splays in line with the reduced 30mph speed limit, i.e. 2.4m x 43m, have been provided and are set out in **Appendix G**.

Swept path analysis has been undertaken at the amended Norwood Lane / Camer Road priority T-junction to demonstrate that a bus can manoeuvre at the junction appropriately. Swept path analysis has also been undertaken at the proposed emergency access to demonstrate that a fire tender can manoeuvre at the junction appropriately as well as an 11.3m RCV using the turning head. These drawings are included at **Appendix H**.

Internal Roads

The internal roads within the site will be designed in accordance with the Kent Design Guide and in consideration of the Design for Gravesham Design Code.

A number of road types are proposed for the site, as set out in **Figure 4.1**, with their characteristics summarised as follows:

- Primary loop street: to include for cars, a bus route and active travel corridor with a carriageway width of up to 6.75m;
- Primary street: to include for cars and active travel with a carriageway width of up to 5.5m; and
- Secondary street: to include for cars and active travel with a carriageway width of up to 5.5m.

All roads within the site will be subject to a 20mph speed limit in order to prioritise pedestrian and cycle movements in line with the Transport Vision for the site.

Given the outline nature of the application, the internal roads are provided as indicative only. Therefore, swept path analysis will be undertaken at reserved matters stage to confirm the suitability of the proposed layout.

Walking and Cycling Access

In order to encourage active travel, a network of active travel routes will be provided including:

- A connection east towards Sole Street Station through the country park extension adjacent to Camer Road. This will include a pedestrian crossing point on Camer Road to the north of the Royal Hounds Dog Park to allow pedestrians to cross from the site to the eastern side of the road. This will feature a proposed dropped kerb crossing with tactile paving, making it easier for those with physical or visual impairments to cross. At present, there is no safe pedestrian connection from the footway on the eastern side of Camer Road, so the provision of the crossing point provides a betterment to the wider users of the footway network. This also provides a traffic-free link to Footpath NS191 and Bridleway NS242 to the east of the site to support leisure trips by both existing and future residents.
- A pedestrian crossing point across Camer Road to the south of Sole Street Station with dropped kerbs and tactile paving will be provided. This proposed pedestrian route will link to the existing northbound bus stop. This footway provision will be at carriageway level with buff coloured surfacing to demarcate the area. At present, there is no safe pedestrian crossing point from the eastern footway to Sole Street Station, so the provision of the crossing point and carriageway-level footway provides a betterment to the wider users of the footway network.
- A non-motorised user link onto Norwood Lane which will route through the site, with dropped kerb crossings over internal access roads. As set out above, upon reaching Norwood Lane, it is proposed to restrict vehicular access to the north of the secondary access to create a dedicated active travel route. As there will no longer be through traffic on Norwood Lane, this will create an environment which is more pedestrian and cycle friendly, with reduced vehicle dominance, in keeping with the rural nature of the site.
- A route to the north-west to connect to Norwood Lane to provide a route for those outside the development accessing the proposed primary school as well as a direct route for those in the northern portion of the site to access local facilities and Meopham Station. This proposed pedestrian / cycle link will utilise the existing driveway of the residential property known as 'Barnsfield'. Subsequently, the residential driveway will be relocated.
- Footpaths through the country park extension will provide safe and pleasant routes for people to walk and exercise.

All active travel routes will be direct, well connected, well lit, attractive and overlooked so as to appeal to pedestrians and cyclists. Cycle facilities will be designed in line with LTN 1/20, including segregated cycle routes and 2m wide footways. Routes connecting to the proposed residential dwellings and primary school will prioritise pedestrians and cyclists, with footways allowing easy end-of-trip routing to homes.

The drawings setting out the proposed pedestrian and cycle access arrangements are presented at **Appendix F**. Drawings showing pedestrian visibility splay requirements in line with a 30mph speed limit at the proposed pedestrian crossings are shown at **Appendix G**.

It is noted that the section of Footpath NS192 which bisects the site will be retained and maintained as part of the proposals. During the design development, it has been ensured that an appropriate buffer has been designed between the PRoW and the development parcels so as to retain the nature of the route. The existing PRoW will be appropriately incorporated into the site and be clearly identified and signposted. The footpath surface will not be formalised into a hard-surfaced, lit route, and a suitable surface will be used. This will ensure the route is safe, durable and properly drained so it is suitable for pedestrian use and will be in keeping with the rural nature of the site.

A condition to secure the provision of a PRow Management Scheme prior to the commencement of development shall be implemented. This shall detail the design of the route, surfacing, widths, gradients, landscaping and structures as well as any details of temporary closures and temporary alternative routes as required.

As set out in **Section 3.9**, Gravesham LCWIP Cycle Route 6 routes along the site boundary on both Camer Road and Norwood Lane. The development proposals support the provision of the route through the following:

- A reduction in the speed limit to 30mph on Camer Road, creating a safer environment for cyclists;
- The creation of a non-motorised user link on Norwood Lane which will prevent vehicular traffic, thereby creating a more cyclist friendly environment; and
- A route to the north-west to connect to Norwood Lane as a pedestrian / cycle link, which could act as an alternative option for the alignment of Route 6 through the site.

It is also noted that Footpath NS192 is an alternative option for Route 6. As set out above, the section of Footpath NS192 through the proposed development will be retained and maintained. Therefore, any change in this route would require discussion and agreement with KCC PRow officers.

Public Transport Access

In order to support the Transport Vision of the site, a bus route is proposed to run through the site between the primary access on Camer Road and secondary access on Norwood Lane. A bus stop is proposed to be located in the centre of the site adjacent to the primary school. This will provide access to public transport services within approximately 400m of all residential dwellings as recommended in KCC's 'Making it Happen' guidance.

The location of the bus stop in the centre of the site adjacent to the primary school provides access to public transport services within approximately 400m of all residential dwellings as recommended in KCC's 'Making it Happen' guidance. It is expected that this will form the extension of an existing route; this will be confirmed in engagement with KCC, local operators and other nearby developments.

In addition, the northbound bus stop on Camer Road to the south of Sole Street Station will be relocated to within the carriageway, with a new bus cage for waiting. This allows the carriageway-level footway to Sole Street Station to be provided, thereby improving pedestrian connectivity and safety.

The pedestrian and cycle accessibility of Sole Street Station and Meopham Station will be improved in line with the measures set out above. As these routes will improve access to the nearby rail stations, this will make rail travel more attractive, including from Meopham Station where rail services are provided to London Victoria every 30 minutes. In addition, a number of dwellings will be located within the 800m walking distance to Sole Street Station as set out within Policy S5 of the Draft NPPF. Therefore, while it is expected that some future residents will still travel to Ebbsfleet International Station to utilise the high-speed service, this number will be reduced given the ease of access from the proposed development to the nearby stations.

Initial discussions have been held with KCC and local bus operators as well as developers looking at other local sites to consider how this service can be delivered and what the best solution is in consideration of diverting existing services or providing new services. Whilst this has not been finalised, it is anticipated that the diverting of the existing 416 is likely to be the most appropriate and sustainable option. This process will be continued and it is recommended that a Planning Condition to secure a detailed Public Transport Strategy is the best mechanism to complete this.

4.5 Stage 1 Road Safety Audit

A Stage 1 Road Safety Audit and Designer's Response will be undertaken for the site accesses to confirm the safety and suitability of the proposals in line with relevant guidance.

4.6 Mobility Hub

Within the centre of the site near the proposed bus stop, a mobility hub will be created. This will allow easy, seamless interchange between modes and provide facilities that naturally help to minimise vehicle trips. A range of measures will be explored here including, but not limited to:

- A car club;
- Parcel lockers;
- Visitor cycle parking;
- Cycle hire;
- Cycle repair stand; and
- Wayfinding.

4.7 Parking Provision

Car Parking

For the residential dwellings and non-residential uses, car parking will be provided in line with the prescribed parking standards set out in KCC's Parking Standards (2006) as summarised in **Tables 3.1** and **3.2**.

It is confirmed that, during reserved matters stage, facilities will be provided to accommodate vehicles dropping off / picking-up children from the primary school. While, as set out in **Section 5.5**, 56% of primary school trips are forecast to be undertaken by non-car modes, it is acknowledged that some trips will be undertaken by car. It is therefore important to provide appropriate facilities for the setting down / picking up of children in a safe environment which does not interfere with the public highway.

A Parking Management Plan will be secured by planning condition to set out the management and monitoring of the parking for each land use, providing a 'day in the life' assessment to ensure sufficient parking provision is proposed.

Cycle Parking

For the residential dwellings and non-residential uses, cycle parking will be provided in line with the prescribed parking standards set out in KCC's Parking Standards (2006) as summarised in **Tables 3.1** and **3.2**.

For the residential dwellings, cycle parking will be provided in easily accessible locations, such as within suitably sized garages or gardens directly accessed from the highway.

For the primary school, cycle and scooter parking will be provided to encourage active travel to the school from the local area.

For the commercial uses, long-stay and short-stay cycle parking will be provided in suitable locations for staff and visitors. It will be ensured that 5% of cycle parking spaces will be enlarged to ensure spaces are accessible for all users.

4.8 Servicing Arrangements

The proposed masterplan has been developed in consideration of the largest servicing vehicles expected to enter the site, namely an 11.3m refuse vehicle and 10m rigid vehicle. Vehicle tracking will be undertaken at Reserved Matters stage upon the development of a detailed site layout.

A Delivery and Servicing Plan will be secured by planning condition to ensure that effective and sustainable delivery and servicing methods are supported throughout the site.

Emergency Access Arrangements

Given the scale of the proposed development, in line with the Kent Design Guide, a secondary emergency access point will be provided. This will be provided from Norwood Lane to the north of the secondary access, with removeable bollards to prevent daily use.

Swept path analysis has been undertaken to demonstrate that a fire tender can safely access the site from the secondary access. These drawings are included at **Appendix H**.

4.9 Summary

The proposed development comprises an outline planning application for up to 725 dwellings (Use Class C3), a new two-form entry primary school (Use Class F1), the provision of Public Open Space including sport and recreation facilities, alongside associated access, landscaping, parking, and infrastructure.

The transport and movement vision for the site prioritises active and sustainable travel in order to support the wider aspirations to improve health, wellbeing and economic prosperity to combat climate change and preserve Kent's environment.

A roundabout is proposed to provide access to the site from Camer Road. This will help to reduce vehicle speeds in line with the proposed reduction to a 30mph speed limit as well as offer a gateway to the site, clearly defining the nature of Camer Road and providing a balance of priority for existing road users and new site users.

The Norwood Lane / Camer Road junction will be amended to accommodate the proposed bus route through the site and will be restricted from through traffic. As such, a section of Norwood Lane to the north of the proposed secondary access will provide a dedicated pedestrian and cycle route.

In order to encourage walking and cycling, a network of active travel routes will be provided throughout the site and connecting to the existing network. These routes will be direct, well connected, well lit, attractive and overlooked so as to appeal to pedestrians and cyclists. Cycle facilities will be designed in line with LTN 1/20, including segregated cycle routes and 2m wide footways.

A bus route is proposed to run through the site between the primary access on Camer Road and secondary access on Norwood Lane. A bus stop is proposed to be located in the centre of the site adjacent to the primary school which will provide access to public transport services within approximately 400m of all residential dwellings.

Within the centre of the site near the proposed bus stop, a mobility hub will be created. This will allow easy, seamless interchange between modes and provide facilities that naturally help to minimise vehicle trips.

For the residential dwellings and non-residential uses, car and cycle parking will be provided in line with the prescribed parking standards set out in KCC's Parking Standards (2006) and LTN 1/20.

The proposed masterplan has been developed in consideration of the largest servicing vehicles expected to enter the site, namely an 11.3m refuse vehicle and 10m rigid vehicle. In addition, a secondary emergency access point will be provided from Norwood Lane to the north of the secondary access, with removeable bollards to prevent daily use.

5. Forecast Trip Generation

5.1 Overview

This chapter of the TA sets out the forecast trip generation at the site considering all modes of transport. This trip generation has been presented to and agreed with KCC during the pre-application process.

5.2 Methodology

To determine the proposed person trip generation at the site, the TRICS database has been consulted. It is important to note that the TRICS Consortium Limited TRICS Good Practice Guide 2021 states that, in relation to mixed development scenarios:

“When compiling trip rates for individual components comprising a mixed development scenario, users should be aware that any cross-visitation activity between individual components would not be accounted for within the trip rates generated using TRICS®.”

Therefore, to ensure a robust and appropriate assessment is completed, consideration of internal and linked trips has been given to each land use presented in this section.

The parameters selected for each land use are shown in the following sections of this chapter, including information, where required, of any alternative methods used to generate the trip rates. It should be noted that for all TRICS searches, any surveys that were undertaken during Covid-19, i.e. lockdowns or when other restrictions were in place, have been excluded.

5.3 Residential Dwellings

A maximum of 725 residential dwellings are proposed across the site, with a 50/50 split between private and affordable housing proposed. The approach to determining an appropriate trip rate therefore considers a mix of both private and affordable housing. In order to provide a robust assessment, 730 residential dwellings have been assessed.

To develop a trip rate per residential dwelling, trip rates were extracted from the TRICS database using the criteria set out below:

- Land Use: 03/M – Residential: Mixed Private / Non-Private Housing;
- Regions: South-east / South-west / East Anglia;
- No. of Dwellings: 49 – 700 Dwellings;
- Date Range: 01/01/2000 – 16/06/2024;
- Selected Locations: Edge of Town / Neighbourhood Centre;
- Parking Ratio: All Surveys Selected; and
- Population within 500m: 350 – 3,000 people.

The total person trip rates per dwelling and resulting trip generation when applied to 730 residential dwellings for the AM (08:00 – 09:00), PM (17:00 – 18:00) and daily periods are set out in **Table 5.1** overleaf. The full trip rate reports are provided at **Appendix I**.

Table 5.1 Class C3(a) Residential Dwellings Total Person Trip Rates and Trip Generation

Time Period	Total Person Trip Rates (per Dwelling)			Total Person Trip Generation (730 Dwellings)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.247	0.842	1.089	180	615	795
PM Peak (17:00-18:00)	0.511	0.259	0.770	373	189	562
Daily	3.655	3.722	7.377	2,668	2,717	5,385

Note: discrepancies due to rounding

As shown above, a total of 795 person trips are forecast in the AM peak, with 562 total person trips during the PM peak.

As the above trip rates account for all person trips per dwelling, it has also been necessary to establish the likely mode share so the vehicular impacts can be separately addressed in consideration of the local and strategic highway network serving the site.

To establish this mode share, data has been extracted from the NOMIS website using dataset 'WU03EW: Location and usual resident and place of work by method of travel to work (MSOA level)'. Due to the irregularities recorded through the 2021 Census due to the Covid-19 pandemic, 2011 Census data has been used. It is acknowledged that this data is now relatively old so has also been combined with additional data from the Office for National Statistics (ONS) 'Opinions and Lifestyle Survey' from March 2020 to July 2025 in consideration of working adults working from home only, and data from the Department of Transport (DfT) National Travel Survey (NTS) with regard to trip start time by trip purpose.

The 2011 'Method of travel to work' data has been extracted for the MSA 'Gravesham 012' which corresponds to the site's location and is set out in **Table 5.2** overleaf.

Table 5.2 Census Method of Travel to Work – Gravesham 012 (2011)

Method of Travel to Work	Total	%
All Categories	2,877	100%
Work from home	0	0%
Train	412	14%
Bus	129	4%
Taxi	2	0%
Motorcycle	36	1%
Car driver	2,057	71%
Car passenger	116	4%
Cycle	14	0%
On foot	109	4%
Other	2	0%

Note: discrepancies due to rounding

This data shows that car driver was the predominant mode of travel for work-based trips at 71%, with train travel second at 14%. This does not, however, give any consideration to those individuals who work from home and therefore do not make a journey to work. To establish this, the ONS 'Opinions and Lifestyle Survey' data has been extracted for the most recent 12 months which covers the period August 2024 to July 2025 and is presented in **Table 5.3** overleaf.

Table 5.3 ONS Opinions and Lifestyle Survey – Trends in Working From Home Only

Date	All Persons %
7 August to 1 September 2024	13%
4 to 29 September 2024	14%
2 to 27 October 2024	13%
6 November to 1 December 2024	14%
4 December 2024 to 5 January 2025	16%
8 January to 2 February 2025	15%
5 February to 2 March 2025	15%
5 to 30 March 2025	13%
2 to 27 April 2025	14%
7 May to 1 June 2025	13%
4 to 29 June 2025	12%
2 to 27 July 2025	11%
Average	14%

This data demonstrates that for the period between August 2024 and July 2025, the average percentage of working adults that worked solely from home was 14%.

It is also important to consider the fact that those who work from home may still need to make trips during the 08:00 – 09:00 and 17:00 – 18:00 periods, for example for personal business or educational drop-off. To include consideration for this within the mode share, data from the NTS with regard to trip start time by trip purpose (Table NTSQ3004a) for commuting has been extracted for the AM and PM periods and is set out in **Table 5.4** below.

Table 5.4 Trip Start Time by Purpose (NTS)

Time Period	Commuting %
AM Peak (08:00-08:59)	32%
PM Peak (17:00-17:59)	40%
Average	36%

The average of those car drivers who identify their trip as commuting during the AM and PM periods is 36%. This means that 64% of trips are for purposes other than commuting during these time periods.

This data has been combined with the 14% set out by the ONS in **Table 5.3** above to forecast the proportion of individuals who will both work from home and therefore not complete a vehicle trip during the AM or PM peak periods.

This calculation comprises 14% x 36% which equals 5%; this result has been integrated into the original Census 2011 data presented in **Table 5.2** to provide the finalised mode share for residents. Subsequently, the 5% working from home has been proportionally removed from all other modes.

The resulting mode share proposed for the residential dwellings is set out in **Table 5.5** below.

Table 5.5 Residential Dwellings – Method of Travel to Work

Method of Travel to Work	%
All Categories	100%
Work from home	5%
Train	14%
Bus	4%
Taxi	0%
Motorcycle	1%
Car driver	68%
Car passenger	4%
Cycle	0%
On foot	4%
Other	0%

Note: discrepancies due to rounding

The resulting forecast mode share indicates that car driver will be the main mode for method of travel to work at 68%, with train travel second at 14%. The mode share percentages have been applied to the total person trip generation set out in **Table 5.1** to produce the forecast residential trip generation as set out in **Table 5.6** overleaf.

Table 5.6 Residential Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Work from home	9	30	39	18	9	27	130	132	263
Train	24	83	108	51	26	76	362	369	731
Bus	8	26	34	16	8	24	113	116	229
Taxi	0	0	1	0	0	0	2	2	4
Motorcycle	2	7	9	4	2	7	32	32	64
Car driver	122	417	539	253	128	381	1,809	1,842	3,651
Car passenger	7	24	30	14	7	21	102	104	206
Cycle	1	3	4	2	1	3	12	13	25
On foot	6	22	29	13	7	20	96	98	193

Note: discrepancies due to rounding

Table 5.6 forecasts that, in association with the residential dwellings, a total of 539 two-way vehicle trips are expected to be generated in the AM peak, with 381 two-way vehicle trips in the PM peak. In addition, a total of 108 and 76 trips by train are forecast in the AM and PM peak hours, respectively.

5.4 Commercial Uses

A maximum of 500sqm of Class E commercial floorspace is proposed on the site as part of the local centre. Due to the nature of the planning application as outline, no specific details are available with regard to the occupiers of this space. As such, the approach to determining an appropriate trip rate considers the potential for the types of development possible within this land use.

To develop a trip rate for the commercial uses within the proposed development, trip rates have been extracted from the TRICS database using the criteria set out below:

- Land Use: 01/I – Retail: Shopping Centre / Local Shops;
- Regions: Yorkshire / North Lincolnshire;
- Floor Area: 200 – 3,394 sqm;
- Date Range: 01/01/2016 – 17/06/2024;
- Selected Locations: Suburban Area;
- Parking Ratio: All Surveys Selected; and
- Population within 500m: 1,603 – 2,118 people.

The total person trip rates per 100 sqm of commercial floorspace and resulting trip generation when applied to the proposed 500sqm local centre for the AM (08:00 – 09:00), PM (17:00 – 18:00) and daily periods are set out in **Table 5.7** overleaf. The full trip rate reports are provided at **Appendix I**.

Table 5.7 Class E Commercial Use Total Person Trip Rates and Trip Generation

Time Period	Total Person Trip Rates (per sqm)			Total Person Trip Generation (500sqm)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak (08:00-09:00)	6.042	5.139	11.181	30	26	56
PM Peak (17:00-18:00)	7.258	8.199	15.457	36	41	77
Daily	85.980	86.491	172.471	430	432	862

Note: discrepancies due to rounding

Table 5.7 forecasts that a total of 56 and 77 total person trips are expected during the AM and PM peak hours, respectively.

To establish the mode share for the commercial trips, data has been extracted from the NTS with regard to the 'Average number of trips by purpose and main mode' (Table NTS0409a). Data has been extracted for mode choice based on shopping as the main purpose of the trip; this data is presented in **Table 5.8** below.

Table 5.8 Average Number of Trips by Purpose and Main Mode – Shopping (NTS)

Main Mode	No.	%
Walk	47	29%
Cycle	1	1%
Car driver	76	47%
Car passenger	30	18%
Motorcycle	[low]	0%
Bus	6	4%
Train	1	1%
Taxi	1	1%
Other	1	1%
Total	164	100%

Note: discrepancies due to rounding

The data demonstrates that, for shopping trips, car drivers retain the highest mode share with 47%, followed by walking at 29%. The mode share percentages above have been combined with the total person trip generation in **Table 5.7** to generate the forecast commercial trip generation which is set out in **Table 5.9** overleaf.

Table 5.9 Commercial Use Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	9	7	16	10	12	22	123	124	247
Cycle	0	0	1	0	0	1	4	4	8
Car driver	14	12	26	17	19	36	200	201	402
Car passenger	5	5	10	7	7	14	78	78	156
Motorcycle	0	0	0	0	0	0	1	1	1
Bus	1	1	2	1	2	3	16	16	32
Train	0	0	0	0	0	1	3	3	7
Taxi	0	0	0	0	0	0	2	2	4
Other	0	0	0	0	0	1	3	3	6

Note: discrepancies due to rounding

Table 5.9 shows that, in association with the commercial uses, 26 two-way vehicle trips are forecast during the AM peak, with 36 vehicle trips during the PM peak hour.

5.5 Primary School

A new 2FE primary school is proposed within the site. To develop a trip rate for the primary school within the proposed development, trip rates have been extracted from the TRICS database using the criteria set out below:

- Land Use: 04/A – Education: Primary;
- Regions: South-east / South-west / Munster;
- Pupil Numbers: 38 – 720 pupils;
- Date Range: 01/01/2016 – 19/06/2024;
- Selected Locations: Edge of Town / Neighbourhood Centre;
- Parking Ratio: All Surveys Selected; and
- Population within 500m: 1,058 – 2,550 people.

The total person trip rates per pupil and resulting trip generation when applied to the proposed 2FE primary school for the AM (08:00 – 09:00), PM (17:00 – 18:00) and daily periods are set out in **Table 5.10** overleaf. The full trip rate reports are provided at **Appendix I**.

Table 5.10 Class F1 Primary School Total Person Trip Rates and Trip Generation

Time Period	Total Person Trip Rates (per Pupil)			Total Person Trip Generation (420 Pupils)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak (08:00-09:00)	1.032	0.463	1.495	433	194	628
PM Peak (17:00-18:00)	0.163	0.229	0.392	68	96	165
Daily	2.539	2.56	5.099	1,066	1,075	2,142

Note: discrepancies due to rounding

Table 5.10 forecasts a total of 628 and 165 total person trips during the AM and PM peak hours, respectively.

To establish the mode share for trips associated with the primary school, data has been extracted from the NTS with regard to the 'Trips to School by Main Mode, Trip Length and Age' (Table NTSQ99002b). Data has been extracted for the main mode choice and is presented in **Table 5.11** below.

Table 5.11 Trips to School by Main Mode, Trip Length and Age (NTS)

Main Mode	Age 5-10 (%)
Walk	49%
Cycle	1%
Car	44%
Bus	5%
Other	1%
Total	100%

Note: discrepancies due to rounding

Table 5.11 shows that, for education trips for 5–10-year-olds, walking is the predominant mode of choice making up 49% of trips, followed by car at 44%. The mode share percentages above have been applied to the total person trip generation in **Table 5.10** to generate the forecast trip generation for the primary school which is presented in **Table 5.12** overleaf.

Table 5.12 Primary School Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	212	95	307	33	47	80	521	525	1,046
Cycle	4	2	6	1	1	1	9	9	19
Car	192	86	278	30	43	73	472	476	947
Bus	21	9	30	3	5	8	52	52	104
Other	5	2	7	1	1	2	13	13	25

Note: discrepancies due to rounding

Table 5.12 shows that, for the primary school, 307 trips are forecast to be undertaken on foot during the AM peak, with 80 trips on foot during the PM peak. In addition, a total of 278 and 73 two-way vehicle trips are forecast during the AM and PM peak hours, respectively.

5.6 Community Facilities

A maximum of 750sqm of Class F2(b) development is proposed to enhance the facilities on offer and will be located adjacent to the proposed sport pitches. This facility would seek to deliver a club house with changing facilities, kitchen and rooms for community uses. To develop a trip rate for the community facilities, trip rates have been extracted from the TRICS database using the criteria set out below:

- Land Use: 07/Q – Leisure: Community;
- Regions: East Anglia / Munster;
- Floor Area: 100 – 1,800 sqm;
- Date Range: 01/01/2016 – 23/04/2024;
- Selected Locations: Edge of Town / Edge of Town Centre;
- Parking Ratio: All Surveys Selected; and
- Population within 500m: 11,650 – 2,745 people.

The total person trip rates per 100sqm and resulting trip generation when applied to the proposed 750sqm of Class F2(b) development for the AM (08:00-09:00), the PM (17:00-18:00) and daily periods are set out in **Table 5.13** overleaf. The full trip rate reports are provided at **Appendix I**.

Table 5.13 Class F2(b) Community Facilities Total Person Trip Rates and Trip Generation

Time Period	Total Person Trip Rates (per 100sqm)			Total Person Trip Generation (750sqm)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak (08:00-09:00)	3.549	0.127	3.676	27	1	28
PM Peak (17:00-18:00)	5.830	3.295	9.125	44	25	69
Daily	37.202	37.136	74.338	279	279	558

Note: discrepancies due to rounding

To establish the mode share for the community use trips, data has been extracted from the NTS with regard to the 'Average number of trips by purpose and main mode' (Table NTS0409a). Data has been extracted for mode choice based on leisure as the main purpose of the trip; this data is presented in **Table 5.14** below.

Table 5.14 Average Number of Trips by Purpose and Main Mode – Leisure (NTS)

Main Mode	No.	%
Walk	41	17%
Cycle	6	3%
Car driver	97	39%
Car passenger	82	33%
Motorcycle	1	0%
Bus	6	3%
Train	7	3%
Taxi	4	2%
Other	3	1%
Total	248	100%

Note: discrepancies due to rounding

Table 5.14 shows that, for leisure trips, trips by car drivers are forecast to account for 39% of the mode share, followed by car passengers at 33% and walking at 17%. The mode share percentages above have been applied to the community facilities trip generation in **Table 5.13** to forecast the total community facilities trip generation which is presented in **Table 5.15** overleaf.

Table 5.15 Community Facilities Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	4	0	5	7	4	11	47	46	93
Cycle	1	0	1	1	1	2	7	7	14
Car driver	10	0	11	17	10	27	109	108	217
Car passenger	9	0	9	14	8	23	92	92	185
Motorcycle	0	0	0	0	0	0	1	1	1
Bus	1	0	1	1	1	2	7	7	14
Train	1	0	1	1	1	2	8	8	17
Taxi	0	0	0	1	0	1	5	5	9
Other	0	0	0	1	0	1	4	4	7

Note: discrepancies due to rounding

Table 5.15 shows that, for the community facilities, a total of 11 two-way vehicle trips are forecast during the AM peak, with 27 during the PM peak. In addition, there are forecast to be nine and 23 two-way car passenger trips during the AM and PM peak hours, respectively.

5.7 Sports Pitches

Two new sports pitches are proposed as part of the site and consideration has been given to the trip generating characteristics of these pitches to understand their impact on the surrounding transport networks. There are no comparable land uses within the TRICS database and so for this land use, a first principles approach has been adopted.

When catering for a football match, these pitches could accommodate 22 players plus two referees and some spectators. However, as is common, these pitches are also regularly split into thirds to allow for multiple games with smaller teams. This is often the case for afterschool clubs. This is therefore considered the peak usage and has been used as the starting point for forecasting the trip generation for the sports pitches.

If each pitch is split into thirds, this provides six pitches for 7-a-side matches equating to 42 players per pitch and a total of 84 across both pitches. It has also been assumed that 50% of all players also have a spectator who travel with them meaning each player has a trip rate of 1.5 persons.

For the periods in which these sports pitches are used, it has been concluded that, during a typical weekday, there would be limited or no activity during AM peak (08:00 – 09:00) but, during the PM peak (17:00 – 18:00), the pitches could be in full use. To assess daily activity, nine hours of full activity have been allowed for to include for two hours during the middle of the day (12:00 – 14:00) and seven hours after school / typical employment hours (15:00 – 22:00).

The resulting total person trip generation for the two sports pitches is set out in **Table 5.16** overleaf.

Table 5.16 Class F2(c) Sports Pitches Total Person Trip Rates and Trip Generation

Time Period	Total Person Trip Rates (per 100sqm)			Total Person Trip Generation (750sqm)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.000	0.000	0.000	0	0	0
PM Peak (17:00-18:00)	1.500	1.500	3.000	126	126	252
Daily	13.500	13.500	27.000	1,134	1,134	2,268

Note: discrepancies due to rounding

To establish the mode share for the sport pitch trips, data has been extracted from the NTS with regard to the 'Average number of trips by purpose and main mode' (Table NTS0409a). Data has been extracted for mode choice based on leisure as the main purpose of the trip; this data is presented in **Table 5.17** below.

Table 5.17 Average Number of Trips by Purpose and Main Mode – Leisure (NTS)

Main Mode	No.	%
Walk	41	17%
Cycle	6	3%
Car driver	97	39%
Car passenger	82	33%
Motorcycle	1	0%
Bus	6	3%
Train	7	3%
Taxi	4	2%
Other	3	1%
Total	248	100%

Note: discrepancies due to rounding

Table 5.17 demonstrates that, for leisure trips, car drivers have the highest mode share with 39%, followed by car passengers at 33% and walking at 17%. The mode share percentages above have been applied to the total person trip generation forecast set out in **Table 5.16** and presented in **Table 5.18** overleaf.

Table 5.18 Sports Pitches Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	0	0	0	21	21	42	189	189	379
Cycle	0	0	0	3	3	6	29	29	57
Car driver	0	0	0	49	49	98	441	441	883
Car passenger	0	0	0	42	42	83	375	375	751
Motorcycle	0	0	0	0	0	1	3	3	5
Bus	0	0	0	3	3	6	29	29	57
Train	0	0	0	4	4	8	34	34	68
Taxi	0	0	0	2	2	4	19	19	38
Other	0	0	0	2	2	3	15	15	30

Note: discrepancies due to rounding

Table 5.18 forecasts that, for the sports pitches, 98 two-way vehicle trips during the PM peak as well as 42 trips on foot during the same period. No trips are forecast during the AM peak hour.

5.8 Trip Rate Alterations

Due to the mixed-use nature of the proposed development, consideration has been given to the percentage of trips which would be internal to the site.

Residential Dwellings

No internalisation or linked trip allowances beyond the considerations already given to those working from home are proposed for the residential dwellings.

Commercial Uses

The location of the 500sqm of Class E uses centrally within the site aims to compliment the surrounding land uses comprising the primary school, residential dwellings and sports pitches. Given the proposed development quantum of the Class E uses as well as the overall scale of the site, it is not considered that the commercial uses would generate any external demand but instead be solely served by internal or linked trips across the site.

For reference, the forecast trip generation for the 500sqm of Class E floorspace comprises the following total person trips as set out in **Section 5.4** and replicated in **Table 5.19** overleaf.

Table 5.19 Class E Commercial Total Person Trip Generation

Total Person Trips			
Time Period	Arrivals	Departures	Total
AM Peak (08:00-09:00)	30	26	56
PM Peak (17:00-18:00)	36	41	77
Daily	430	432	862

Note: discrepancies due to rounding

With a population across the site anticipated to be in excess of 1,500 residents as well as visitors to these residents and the supplementary land uses, this is considered a robust approach.

Primary School

Using data from the Department of Education on housing developments, the forecast pupil yield has been calculated as set out in **Table 5.20** below.

Table 5.20 Forecast Pupil Yield

Child Phase	Number of Residents
Early Years	43
Primary School	230
Secondary School	101
Post-16 Education	27
Total	401

The forecasts identify a total of 273 children either in early years or of primary age living within the site. These children have therefore been allocated as travelling to and from the proposed primary school, therefore removing these trips from the external road network. This equates to 273 out of the total school capacity of 420 which equals a 65% internalisation rate.

The resulting trip generation assuming this level of internalisation is set out in **Table 5.21** overleaf.

Table 5.21 Primary School Adjusted External Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	68	30	98	11	15	26	167	168	335
Cycle	1	1	2	0	0	0	3	3	6
Car	61	28	89	10	14	23	151	152	303
Bus	7	3	10	1	1	3	17	17	33
Other	2	1	2	0	0	1	4	4	8

Note: discrepancies due to rounding

Following adjustments for internalisation, the majority of external primary school trips will be undertaken on foot, with 98 and 26 trips during the AM and PM peak hours, respectively. In addition, there are forecast to be 89 trips by car during the AM peak hour and 23 vehicle trips during the PM peak hour.

Community Facilities

The 'Cambourne Village TRICS Survey – Technical Report' (May 2020) presents the results of a detailed survey of a mixed-use residential development in Cambourne, Cambridgeshire. As part of the survey, the internal and external trips made to a community centre were provided. An extract of the charts showing the number of internal and external trips to the community centre is shown in **Figures 5.1** and **5.2**, respectively.

Figure 5.1 Cambourne Community Centre – Internal Trips

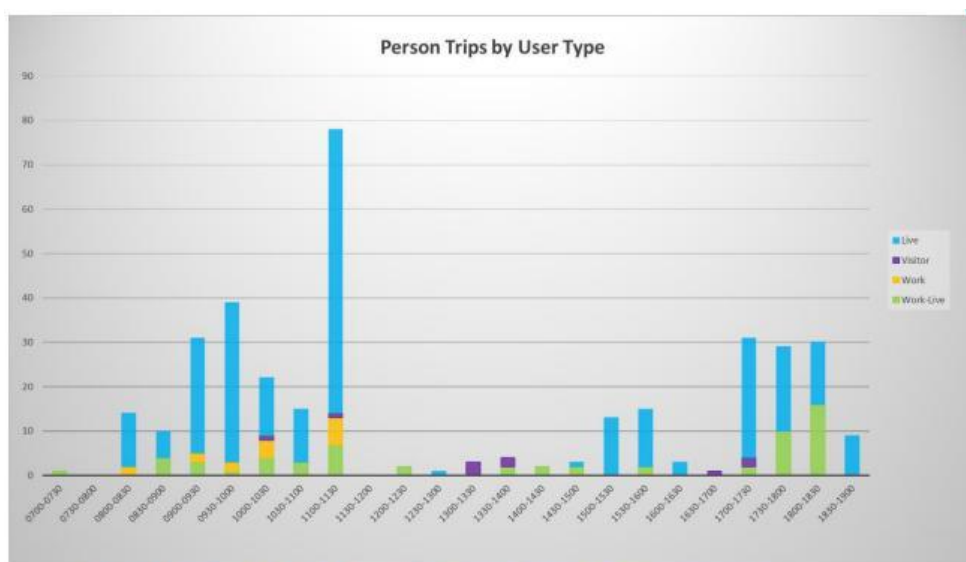


Figure 32 – Internal trips by journey type for Cambourne Community Centre

Figure 5.2 Cambourne Community Centre – External Trips

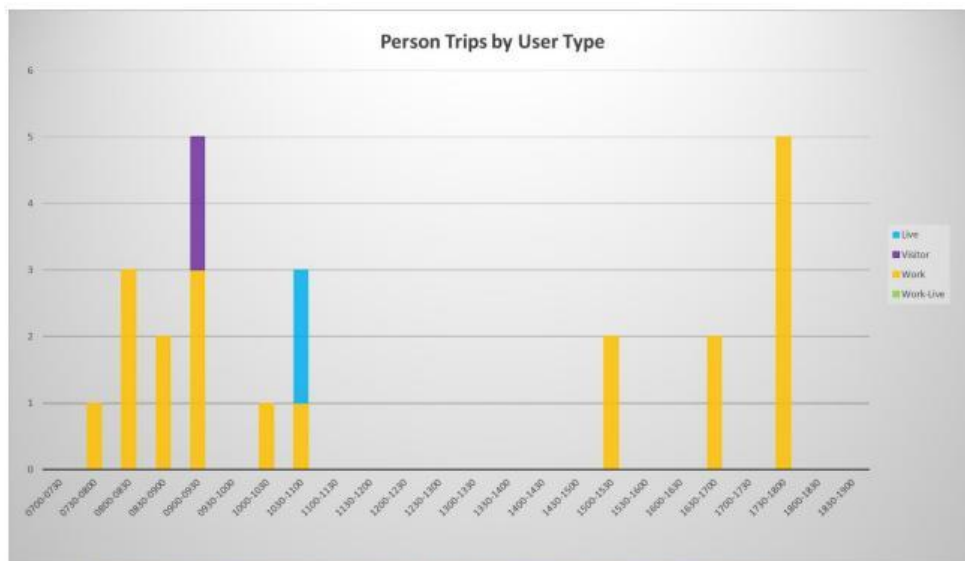


Figure 33 – External trips by journey type for Cambourne Community Centre

The data shows that almost all trips made to the community centre are internal to the site, made by those working within the development. As such, these trips were considered linked trips.

Given the proposed development quantum of the Class F(2)b uses as well as the overall scale of the site, it is not considered that this use class would generate a significant level of external demand. Instead this used would predominantly be served by internal trips across the site or those linked with the use of the sports pitches given these uses are inextricably linked.

For reference, the forecast trip generation for the 750sqm of Class F2(b) floorspace comprises the following total person trips as set out in **Section 5.6** and replicated in **Table 5.22** below.

Table 5.22 Class F2(b) Community Facilities Total Person Trip Generation

Total Person Trips			
Time Period	Arrivals	Departures	Total
AM Peak (08:00-09:00)	27	1	28
PM Peak (17:00-18:00)	44	25	68
Daily	279	279	558

Note: discrepancies due to rounding

With a population across the site anticipated to be in excess of 1,500 residents as well as visitors to these residents and the supplementary land uses, an internal and linked trip allowance of 80% is considered a robust assessment case.

The resulting forecast trip generation for the community facilities is therefore set out in **Table 5.23** overleaf.

Table 5.23 Community Facilities Adjusted External Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	4	0	4	6	3	9	37	37	74
Cycle	1	0	1	1	0	1	6	6	11
Car driver	8	0	9	14	8	21	87	87	174
Car passenger	7	0	7	12	7	18	74	74	148
Motorcycle	0	0	0	0	0	0	1	1	1
Bus	1	0	1	1	0	1	6	6	11
Train	1	0	1	1	1	2	7	7	13
Taxi	0	0	0	1	0	1	4	4	8
Other	0	0	0	0	0	1	3	3	6

Note: discrepancies due to rounding

Following adjustments for internalisation and linked trips, a total of nine and 21 vehicle trips are forecast during the AM and PM peak hours, respectively, associated with the community facilities.

Sports Pitches

As with the community uses with which the sports pitches will be inextricably linked, it is anticipated that a significant proportion of the trips associated with the sports pitches will arise from residents living within the site and through potential connection with the proposed primary school.

It is, however, also acknowledged that the sports pitches are likely to have a greater draw from users across a wider area than just the proposed development and as such there would be residual demand from outside of the site from the local community.

For reference, the forecast trip generation for the sports pitches comprises the following total person trips as set out in **Section 5.7** and replicated in **Table 5.24** below.

Table 5.24 Sports Pitches Total Person Trip Generation

Total Person Trips			
Time Period	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0	0	0
PM Peak (17:00-18:00)	126	126	252
Daily	1,134	1,134	2,268

Note: discrepancies due to rounding

The peak hourly total person trip generation is for 126 people to be travelling to or from the sports pitches. With in excess of 1,500 residents on site, it is considered reasonable to assume that up to 50% of the demand (63 people, or just 4% of 1,500) would arise from those living within the site.

The resulting forecast external trip generation for the sports pitches is therefore set out in **Table 5.25** below.

Table 5.25 Sports Pitches Adjusted External Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	0	0	0	11	11	21	95	95	189
Cycle	0	0	0	2	2	3	14	14	29
Car driver	0	0	0	25	25	49	221	221	441
Car passenger	0	0	0	21	21	42	188	188	375
Motorcycle	0	0	0	0	0	0	1	1	3
Bus	0	0	0	2	2	3	14	14	29
Train	0	0	0	2	2	4	17	17	34
Taxi	0	0	0	1	1	2	10	10	19
Other	0	0	0	1	1	2	7	7	15

Note: discrepancies due to rounding

5.9 Total External Trip Generation

Table 5.26 overleaf summarises the total external trip generation associated with all the proposed uses across the site.

Table 5.26 Total External Trip Generation

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Walk	78	52	131	41	36	76	395	398	791
Cycle	3	4	7	5	3	7	35	36	71
Car driver	191	445	637	302	175	474	2268	2302	4569
Car passenger	14	24	37	47	35	81	364	366	729
Motorcycle	2	7	9	4	2	7	34	34	68
Bus	16	29	45	20	11	31	150	153	302
Train	25	83	109	54	29	82	386	393	778
Taxi	0	0	1	2	1	3	16	16	31
Other	2	1	2	1	1	4	14	14	29

Note: discrepancies due to rounding

Table 5.26 forecasts that a total of 637 vehicle trips are expected during the AM peak hour, with 474 two-way vehicle trips during the PM peak. In addition, a total of 131 and 76 trips on foot are forecast during the AM and PM peak hours, respectively.

6. Traffic Assessment Methodology

6.1 Overview

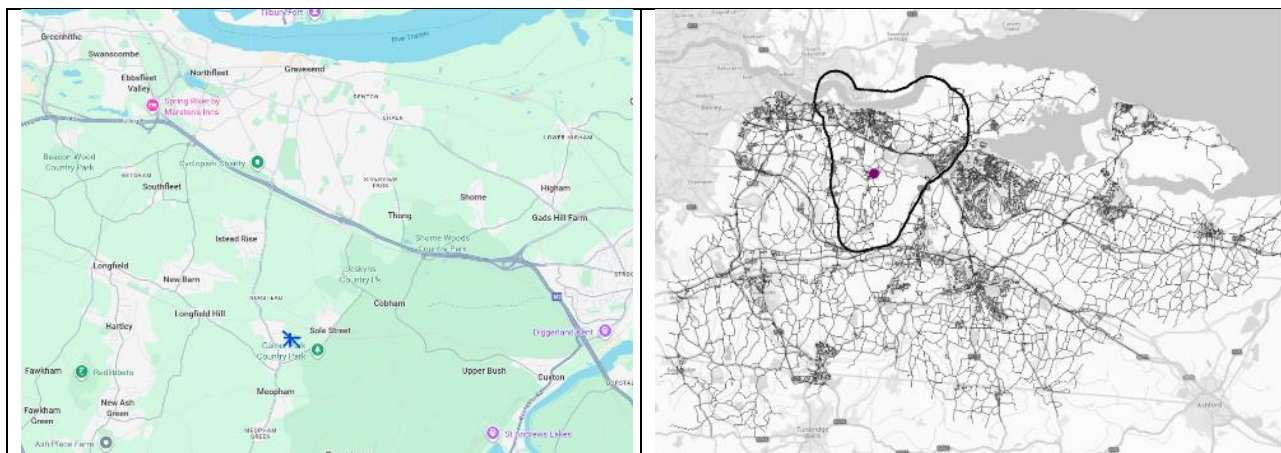
This chapter outlines the methodology used in the assessment of the potential traffic impacts associated with the proposed development. The methodology for the traffic assessment was agreed with KCC during the pre-application correspondence for this application, which confirmed the need to use the Kent Transport Model (KTM) to form the traffic impact assessment. It was agreed during scoping discussions that the outputs from the KTM model could be used to further assess the impacts of the proposals on individual junctions on the local highway network if necessary.

6.2 Kent Transport Model

The methodology to be adopted was set out by KCC's modelling team and presented as part of the Task Order process required to make use of the KTM. Details of the methodology are set out in the subsequent paragraphs below.

Since the proposed development sits within the Gravesham boundary, the Gravesham Transport Model (GTM), developed using VISUM22, has been used as a starting point for this work. The GTM covers Dartford, Gravesham, Medway, Swale, Sevenoaks, Tonbridge & Malling and Maidstone in full; the site location and the extent of the GTM is in **Figure 6.1** below.

Figure 6.1 KTM Extent



The assessment has been undertaken using the AM and PM peak models; the AM peak represents the morning peak hour (08:00 – 09:00) and PM peak represents the evening peak hour (17:00 – 18:00).

In April 2023, a landslide resulted in the closure to Galley Hill Road indefinitely with no fixed date as to when / if this will return to full operation. It was therefore agreed with KCC that the proposed development is assessed assuming the full closure of Galley Hill Road, which is considered as a worst-case scenario.

As a result, the following model scenarios have been prepared as agreed with KCC to assess the potential highway impacts of the proposed development:

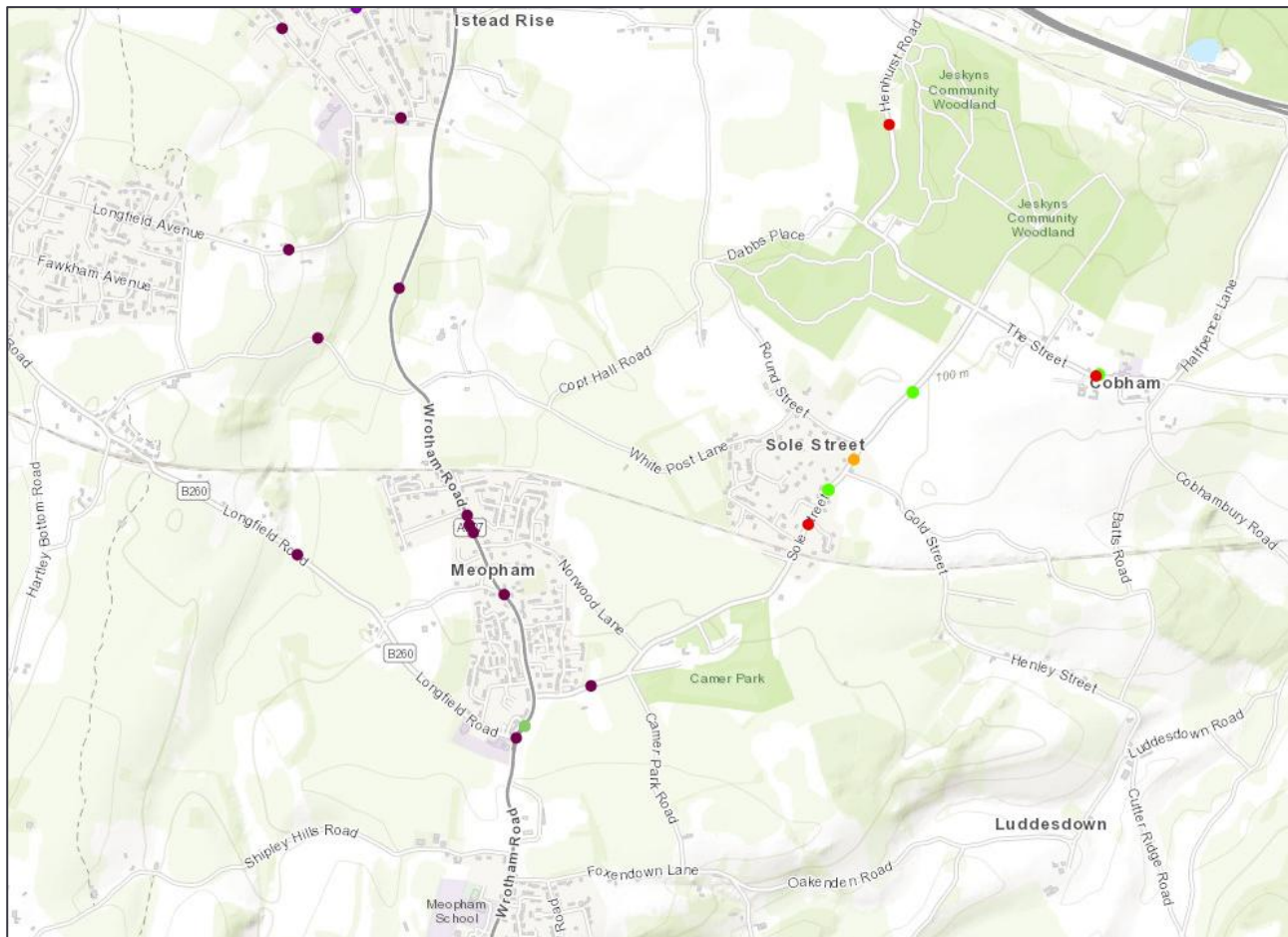
- Scenario 1: 2042 without Development (without Galley Hill Road);

- Scenario 2: 2042 with Development (without Galley Hill Road); and
- Scenario 3: 2042 with Development (without Galley Hill Road) plus Local Plan cumulative developments.

It was noted by KCC's modelling team that the existing GTM was developed specifically to support Gravesham's Local Plan transport evidence base and, whilst the model meets an acceptable level of TAG criteria at a District level, the base model performance within the vicinity of the proposed development was not taken explicitly into consideration.

It was therefore recommended that prior to undertaking a forecast assessment of the proposed development, a base model check be undertaken in the vicinity of the site to understand the base model performance. This was agreed by the application team and used the existing count data available from the KCC count database (presented in **Figure 6.2** below) and using additional ATC undertaken on Camer Road and Norwood Lane.

Figure 6.2 Available Traffic Counts in the Vicinity of the Site



The results of the Base Model check indicated that Camer Road and Sole Street were not representative of base year traffic conditions with high GEH values of 12 and 9 respectively during AM peak. To address these discrepancies, a Base Model enhancement was therefore completed to improve the accuracy of the model performance in this area.

The 2042 Reference Case models (Scenario 1) reflect all completed and consented growth within Gravesham and Dartford between 2019 and 2042; for other districts within Kent, background growth factors from TEMPro have been applied to capture the additional demand on the network.

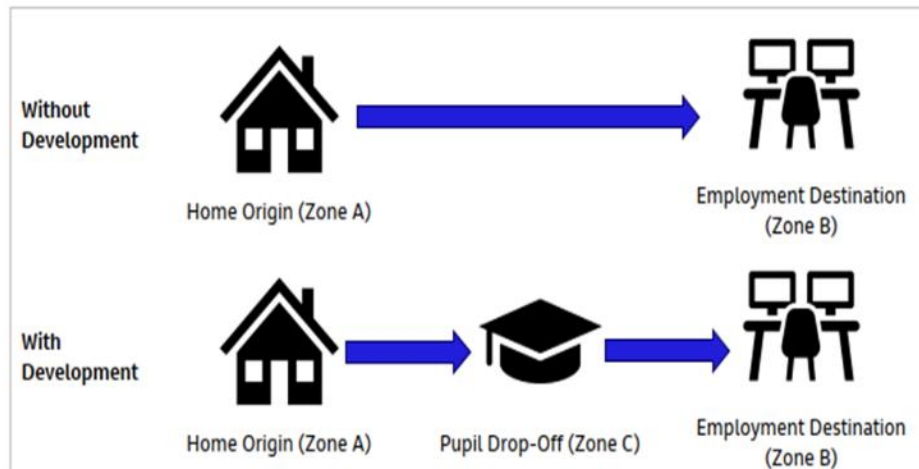
It is noted that the GTM 2042 Reference Case model was recently updated to form the Gravesham Regulation 19 consultation in Autumn 2025 and this model remains subject to agreement from National Highways (NH), and whilst they have been involved in the development on the model, there is risk that the model could be rejected. This was acknowledged by KCC in selecting the use of this model.

The only difference between the Scenario 1 and Scenario 2 is the inclusion of the trip generation associated with the proposed development (as agreed with KCC and set out in **Chapter 5**), the proposed three-arm roundabout access to the site and the closure of Norwood Lane for through traffic. Comparison of the vehicle flows therefore demonstrates the proposed development trips and any dynamic re-assignment / displacement of existing trips.

The following approach has been taken to distribute the proposed trips from the proposed development:

- Residential Trips: reflect that of a neighbouring base model polygon zone with similar land use type (residential) to where the site is located. In advance of finalising the DS model for assigning, KCC's modelling team produced zone flow bundle analysis (in the form of network figures) which were shared with TTC to determine if the zone distribution was appropriate.
- Employment trips associated with the Class E and F2: reflect that of a neighbouring base model polygon zone with similar land use type (employment) to where the site is located. In advance of finalising the DS model for assigning, KCC's modelling team produced zone flow bundle analysis (in the form of network figures) which were shared with TTC to determine if the zone distribution was appropriate.
- School Trips: The pupil school trips associated with the proposed development have been distributed assuming that parents start their journey at their home origin, travelling via the school drop-off before continuing to the workplace destination (UC1) using the following methodology:
 - ▶ Distribution school destination trips using Census 2011 primary / secondary school age population (Census 2021 does not segregate school age pupils in the same way) subject to agreed catchment area of pupils;
 - ▶ Distribute school origin trips using workplace (UC1 – commute) trips from existing home origins; and
 - ▶ The proposed number of school trips reflects the school drop-off trips and this method assumes all drop-off trips are existing trips on the network and that all vehicles continue to workplace zones (rather than returning home e.g. WFH). This is illustrated in **Figure 6.3** overleaf.

Figure 6.3 Trip Linking



KCC's modelling team incorporated the demand within three new point zones (in the same location, but to allow for the differing distribution of flows), which have been distributed to the wider network via the proposed three-arm roundabout on Camer Road.

Scenario 3 has been built upon the existing Gravesham Local Plan scenario with Galley Hill Road closed, which represents the forecast scenario with full Local Plan allocations and Galley Hill Road closure, by updating the trip generation, distribution and network access of the proposed development to be consistent with Scenario 2. The Base Model enhancements undertaken have also been included in this forecast scenario.

The trip generation and distribution of the Local Plan sites has been modelled using the following approach:

- The trip rates for each Local Plan site except for the proposed development have been derived from the TRICS database; and
- Where proposed Local Plan sites had less than 200 HHs/Jobs, the additional trips were added to existing zones and followed the same zonal distribution of the existing model (providing the land uses were reflective). Local Plan sites with greater than 200 HHs/Jobs were explicitly modelled and new zones were created; the distribution for these zones reflected nearby zones of a similar size and land use.

The trip generation associated with the proposed Local Plan allocations was added onto the RC matrices without constraining or finessing.

7. Traffic Impact Analysis

7.1 Methodology

Due to the nature of the KTM the results provided by KCC's modelling team include numerous metrics which we have used to establish the forecast impacts of the proposals on the local and strategic highway network. For the purposes of this TA there are three key metrics which have been used as set out below:

- Level of Service;
- Delay; and
- Volume Capacity Ratio.

These metrics are presented as visual plot outputs from the KTM which can then be used in assessing impacts.

Level of Service

The first metric comprises the Level of Service (LoS) which uses an alphabetised ranking system depending on the LoS forecast for each junction. These different levels and the corresponding meanings are set out in **Table 7.1** below.

Table 7.1 Level of Service (LoS) Description

LoS Level	Description
A	Level A represents the best quality of traffic where the driver has the freedom to drive with free flow speed.
B	Level B represents good traffic quality where the driver can reasonably maintain speed and manoeuvrability within the traffic stream is slightly restricted.
C	Level C represents stable traffic flows, at or near free flow. Ability to manoeuvre through lanes noticeably restricted and requires awareness.
D	Level D represents almost unstable traffic flows. Speeds slightly decrease and driver's level of comfort decreases.
E	Level E represents unstable traffic flows, operating at capacity. Driver's level of comfort becomes poor.
F	Level F represents the worst traffic quality with forced or breakdown traffic flows. Travel time cannot be predicted, with generally more demand than capacity.

When considering the operation of the highway network LoS results of C and higher are highlighted, with E and F being of particular note given they indicate junctions reaching operational capacity.

Delay

The delay outputs from the KTM provide an indication of link delay along a specific length of the highway network. These plots use colour coordinated bars to indicate delay varying from green to red. The levels included are set out in **Figure 7.1** overleaf.

Figure 7.1 Delay Plot Key

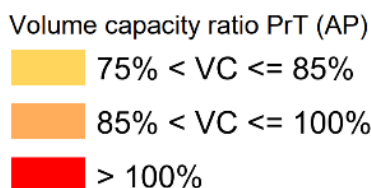


The delay outputs also provide the mean delay time per vehicle across the network to allow any overarching impacts to be observed.

Volume over Capacity Ratio

The Volume over Capacity Ratio (VoC) provides a metric which forecasts how close links and junctions are to reaching theoretical capacity and is illustrated in percentage terms for individual segments of each link. The KTM outputs once again use colour coded bars to indicate the forecast VoC which are illustrated in **Figure 7.2** below.

Figure 7.2 Delay Plot Key



7.2 KTM Results

The results from the KTM scenario testing, inclusive of turning flows, are included in **Appendix J** with image plots of the metrics described in **Section 7.1** provided in the subsequent sections. These results have been summarised through this section with each Scenario reviewed in turn. The site location is illustrated on each figure by a green circle.

Scenario 1: 2042 Without Development

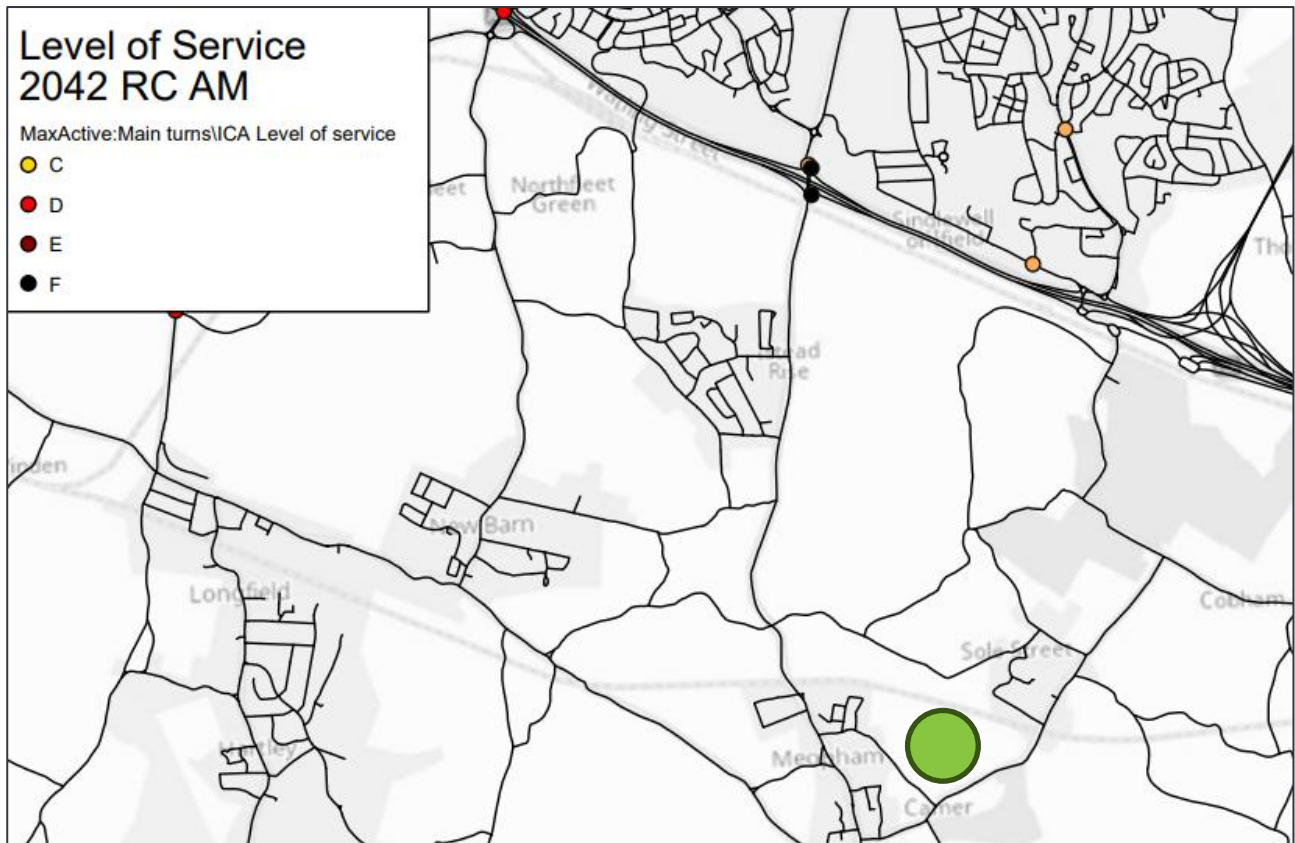
Level of Service

During the AM peak period the KTM forecasts LoS levels of F and C at the A2 junctions with the A227 to the north of Meopham whilst to the north-west, the junction between the B262 and A2 is forecast to have a LoS of D.

North of the A2 the junction of Hever Crescent Road and Miskin Way is forecast to have a LoS of C and slightly further north still, the junction at Valley Drive and Livingstone Road is also forecast to have a LoS of C.

Figure 7.3 overleaf provides an indication of these locations and their LoS levels for the AM peak of Scenario 1.

Figure 7.3 Scenario 1 AM LoS Plot



During the PM peak period the same locations forecast LoS levels above C, though the A2 junction with the A227 has a range of LoS of C, E and F whilst the B262 junctions with the A2 has a forecast LoS of E. To the north of the A2 the junction between Hever Crescent Road and Miskin Way retains a LoS of C whilst the junction of Valley Drive and Livingstone Road has a LoS forecast of D.

Figure 7.4 overleaf provides an illustration of the LoS levels forecast for the PM peak of Scenario 1.

Figure 7.4 Scenario 1 PM LoS Plot



Delay

The level of delay is provided for all links and so to concentrate more closely on the potential impacts of the proposals, focus has been placed on those links which are forecast to have a delay in excess of 30 seconds.

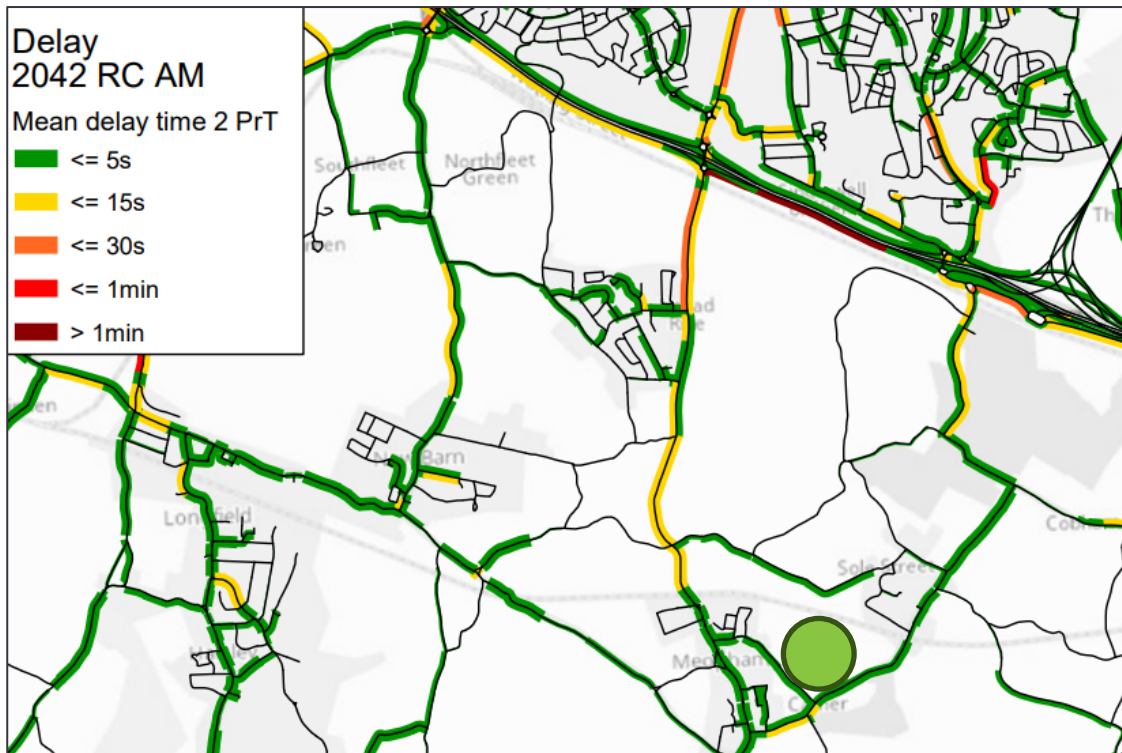
During the AM peak period the forecast areas of delay lie predominantly around the approach to the A2 from the A227 south which has a forecast delay between 15 and 30 seconds. The A2 westbound mainline carriageway and off slip to the A227 are forecast to have a delay in excess of one minute.

To the west a small section of the B262 is forecast to experience delay between 15 and 30 seconds, as is a section of the to be constructed Lower Thames Crossing junction.

North of the A2, a delay between 15 and 30 seconds is forecast on Valley Drive whilst Marling Way has a forecast delay of between 30 seconds and one minute.

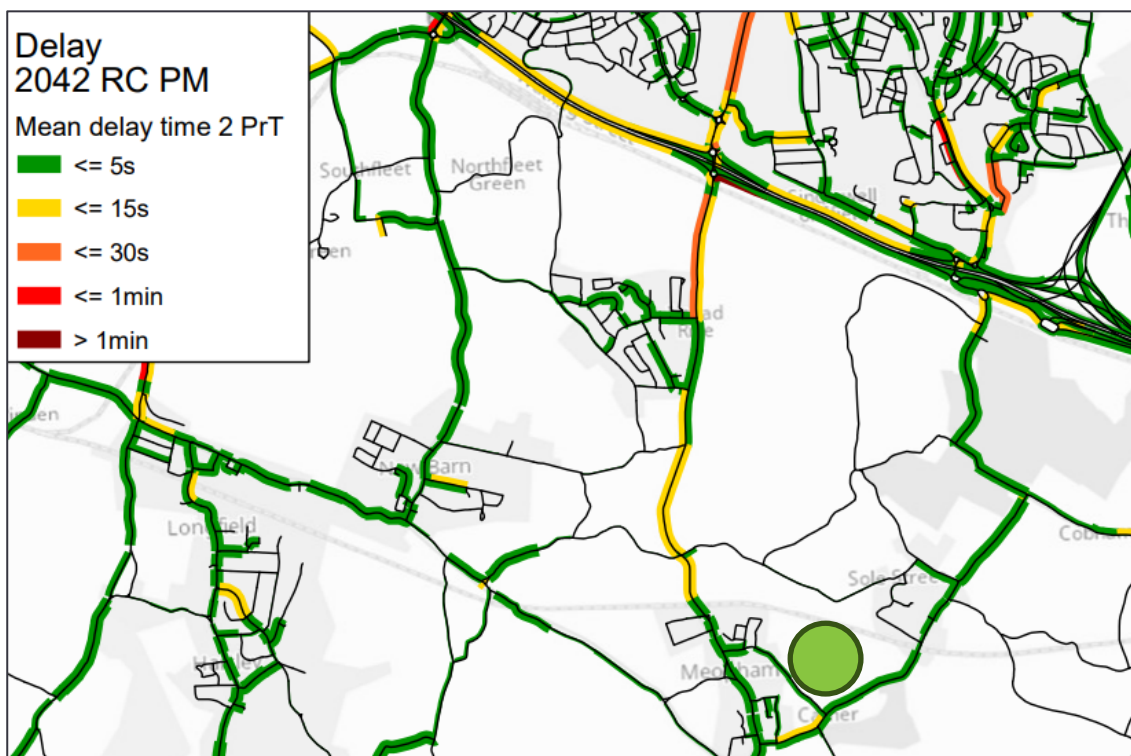
Figure 7.5 overleaf provides an illustration of the forecast delays during the AM peak for Scenario 1.

Figure 7.5 Scenario 1 AM Delay Plot



The delay forecasts during the PM peak period broadly mirror those during the AM peak though the A2 delay is no longer present on the mainline carriageway. **Figure 7.6** below illustrates the forecast delay during the PM peak.

Figure 7.6 Scenario 1 PM Delay Plot

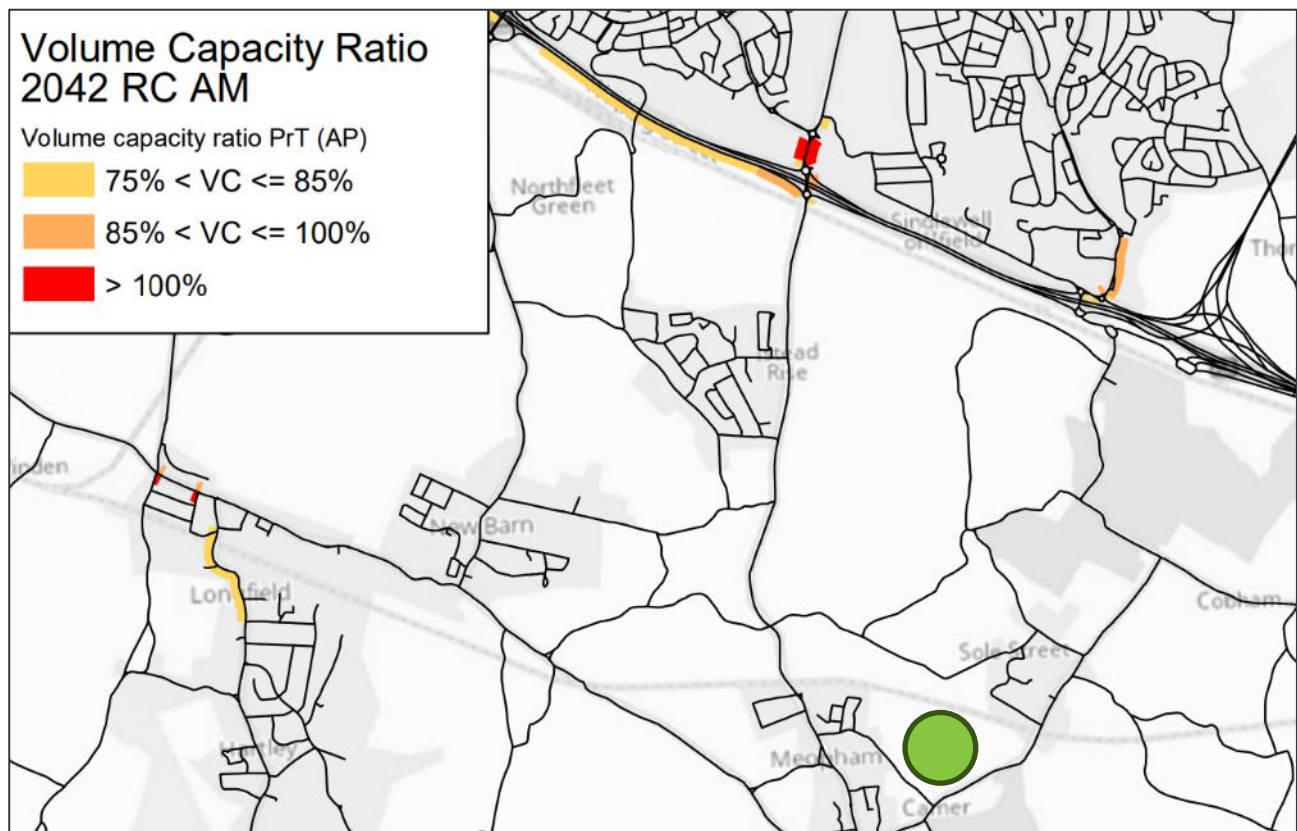


Volume over Capacity

During the AM peak period the A2 westbound on slip and internal link between the dumbbell roundabouts is forecast to experience a VoC between 85% and 100% whilst the continuing westbound mainline carriageway has a forecast VoC of between 75% and 85%. The southbound approach from the A227 is forecast to have a VoC in excess of 100%.

To the east the southbound approach to the A2 from Valley Drive is forecast to have a VoC of between 85% and 100%. **Figure 7.7** below provides a plot of the forecast VoC values in the vicinity of the site during the AM peak period.

Figure 7.7 Scenario 1 AM VoC Plot

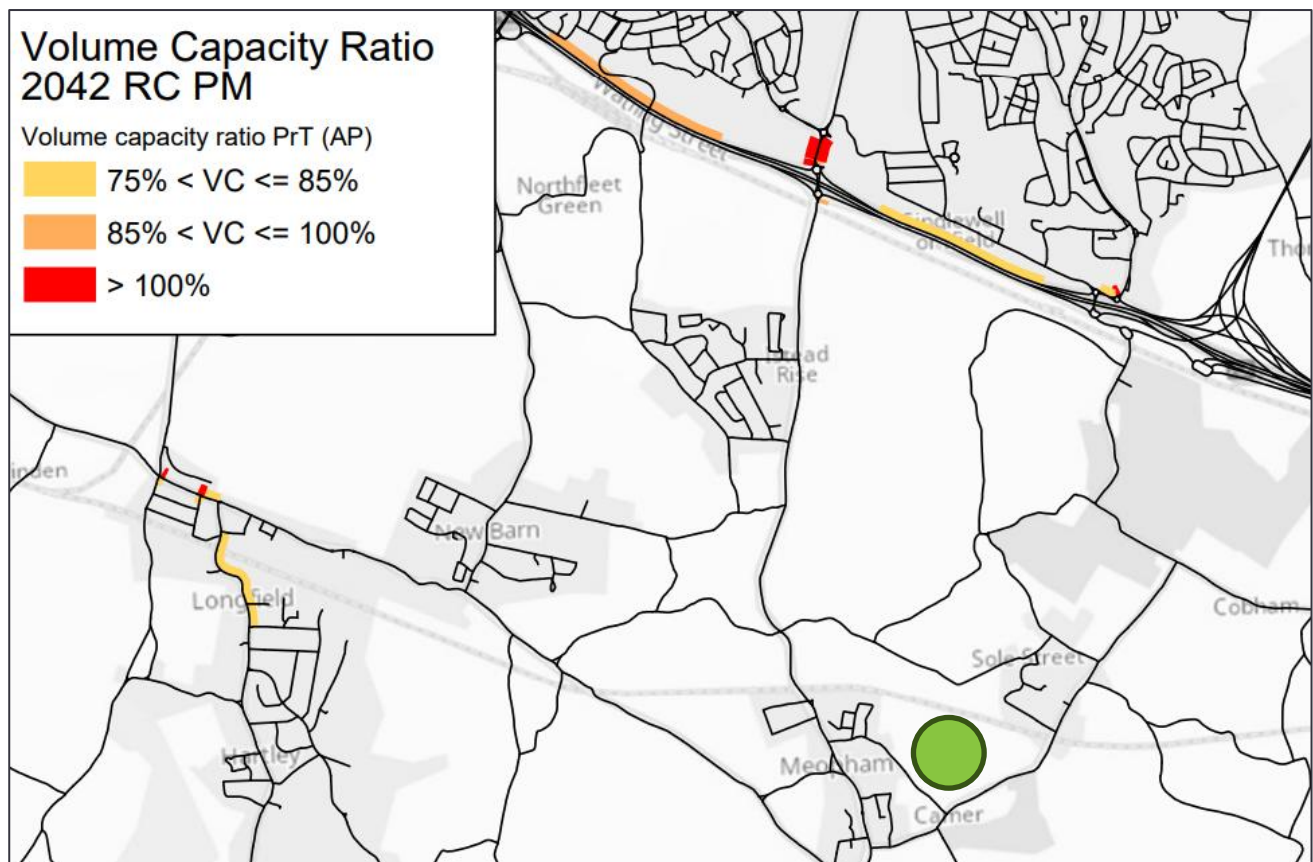


During the PM peak the eastbound A2 mainline carriageway is forecast to have a VoC of between 85% and 100% between the B262 and A227, whilst east of the A227 this delay decreases to 75% to 85%. This level of delay is forecast to continue eastbound on the A2 past the new Lower Thames Crossing junction also.

The southbound approach to the A2 from the A227 is forecast to have a VoC of over 100% with a minor section of the westbound off slip from the A2 at the junction with the A227 forecast to have a delay of between 85% and 100%.

Figure 7.8 overleaf provides a plot of the forecast VoC values for the highway network in the vicinity of the site during the PM peak period.

Figure 7.8 Scenario 1 PM VoC Plot



Scenario 2: 2042 With Development

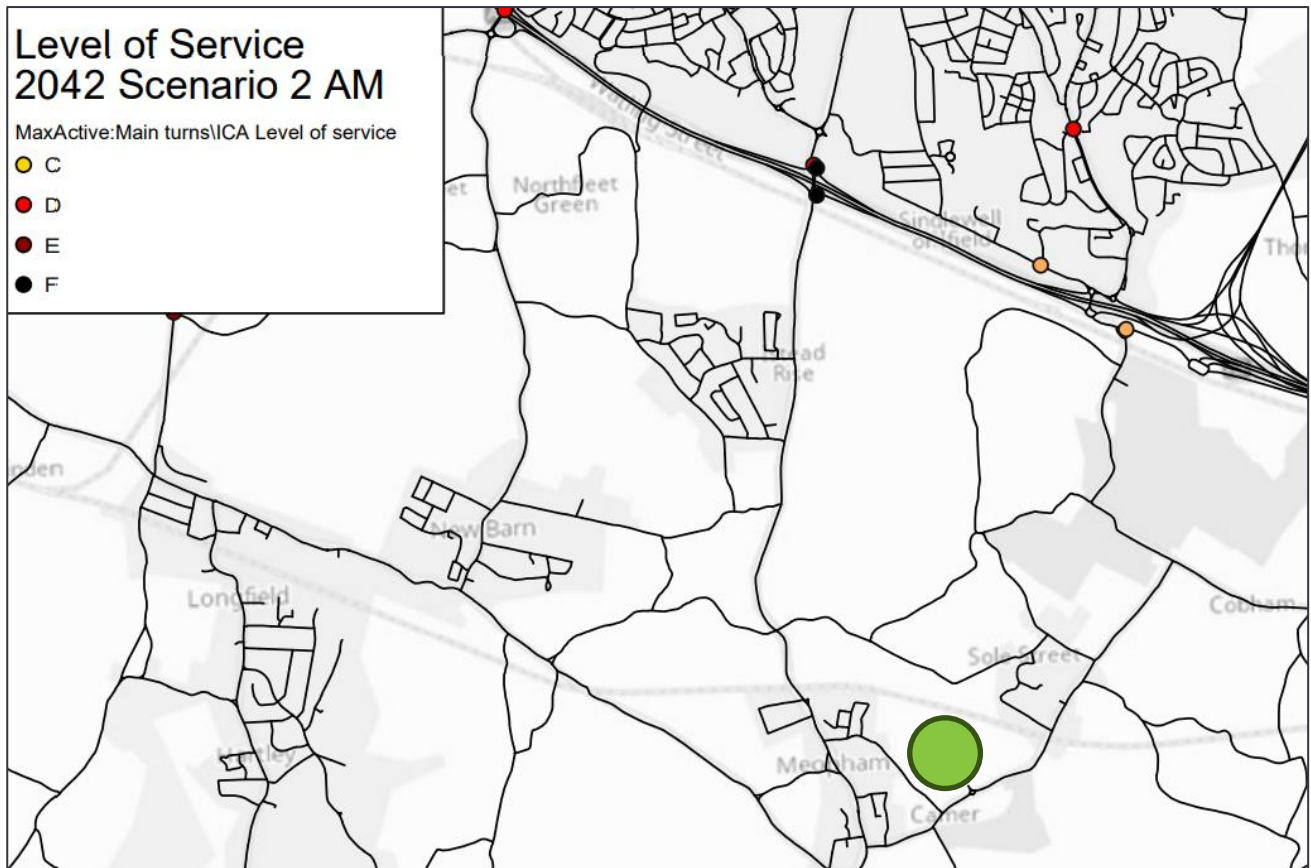
Level of Service

During the AM peak period the KTM forecasts LoS levels of F and D at the A2 junctions with the A227 to the north of Meopham whilst to the north-west, the junction between the B262 and A2 is forecast to have a LoS of D. This represents a partial change in this location with one junction moving from a LoS of C to D.

North of the A2 the junction of Haver Crescent Road and Miskin Way is forecast to have a LoS of C and slightly further north still, the junction at Valley Drive and Livingstone Road is forecast to have a LoS of D This is a change from a LoS of C in Scenario 1. There is also a LoS of C forecast at the junction of Henhurst Road and the Lower Thames Crossing. This is a change from Scenario 1.

Figure 7.9 overleaf provides an indication of these locations and their LoS levels for the AM peak of Scenario 2.

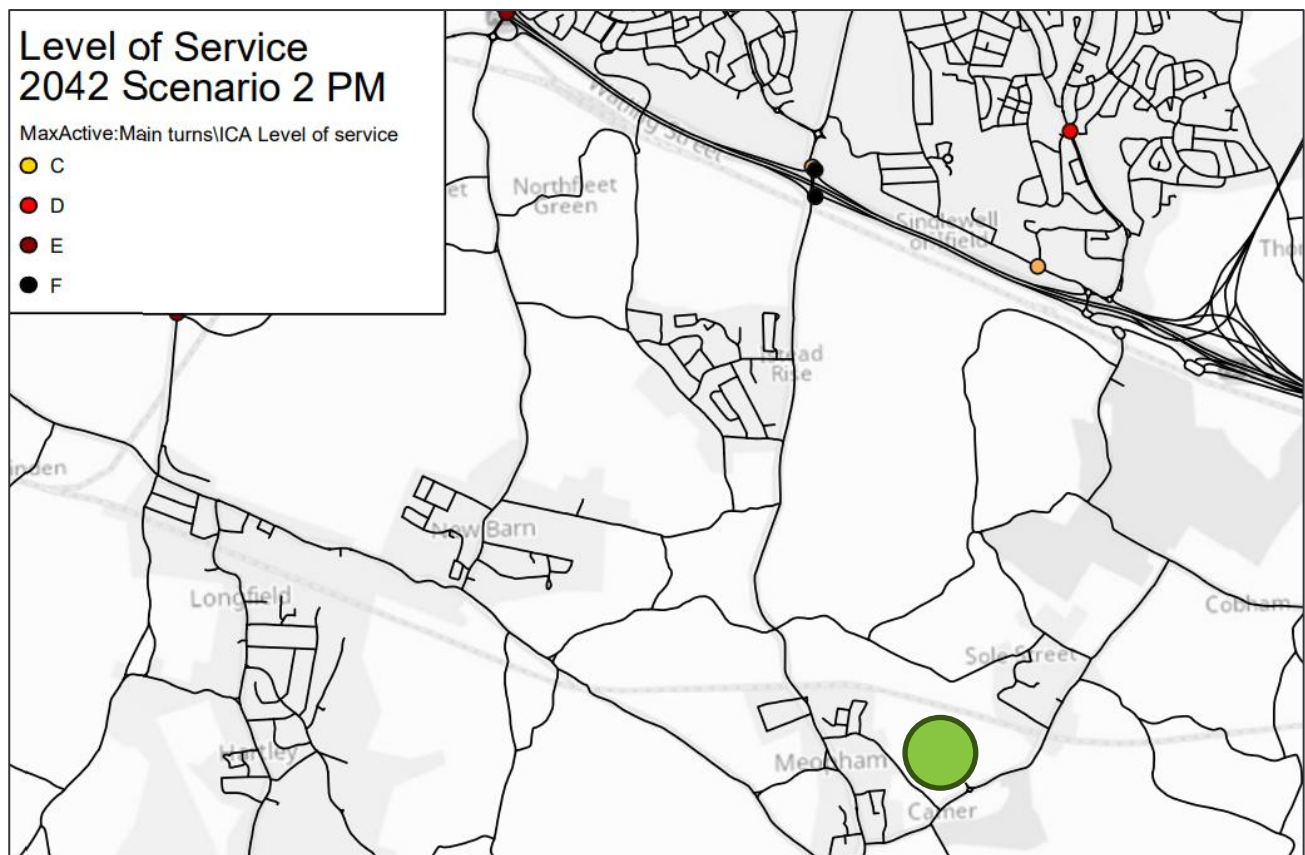
Figure 7.9 Scenario 2 AM LoS Plot



During the PM peak period the same locations forecast LoS levels above C, though the A2 junction with the A227 has a range of LoS of C, F and F which is a change from Scenario 1. The B262 junction with the A2 has a forecast LoS of E.

To the north of the A2 the junction between Hever Crescent Road and Miskin Way retains a LoS of C whilst the junction of Valley Drive and Livingstone Road has a LoS forecast of D. **Figure 7.10** overleaf provides an illustration of the LoS levels forecast for the PM peak of Scenario 2.

Figure 7.10 Scenario 2 PM LoS Plot



Delay

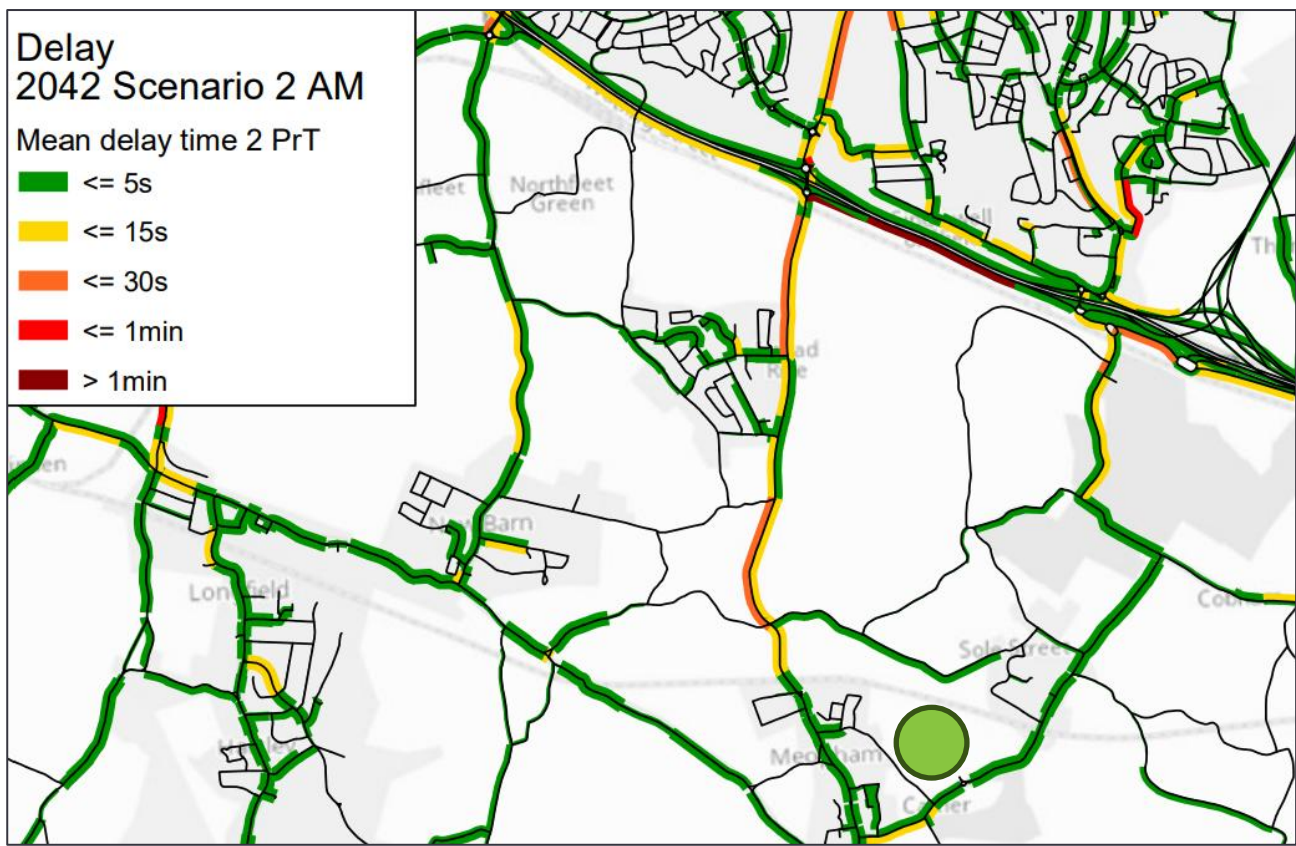
During the AM peak period the forecast areas of delay lie predominantly around the approach to the A2 from the A227 south which has a forecast delay between 15 and 30 seconds. This is also forecast further south on the A227 northbound between Park Hill and Nash Bank which is a change from Scenario 1.

The A2 westbound mainline carriageway and off slip to the A227 are forecast to have a delay in excess of one minute. To the west a small section of the B262 is forecast to experience delay between 15 and 30 seconds, as is a section of the to be constructed Lower Thames Crossing junction.

North of the A2, a delay between 15 and 30 seconds is forecast on Valley Drive whilst Marling Way has a forecast delay of between 30 seconds and one minute.

Figure 7.11 overleaf provides an illustration of the forecast delays during the AM peak for Scenario 2.

Figure 7.11 Scenario 2 AM Delay Plot

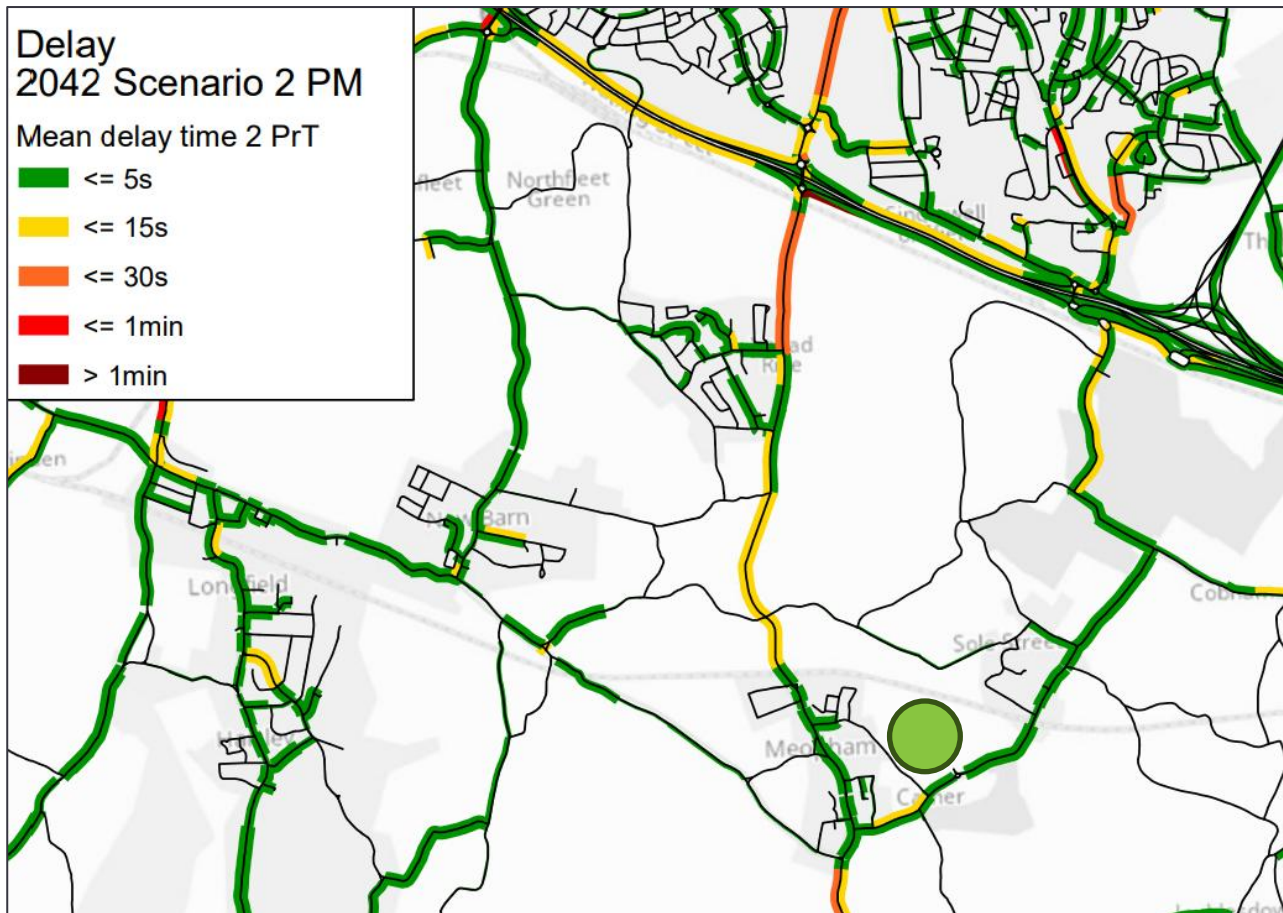


The delay forecasts during the PM peak period broadly mirror those during the AM peak though the A2 delay is no longer present on the mainline carriageway and there is a change on the A227 southbound with delay increasing to 15 to 30 seconds.

North of the A2 delay on Valley Drive is forecast to be between 30 seconds and one minute whilst Marling Way has a forecast delay of 15 to 30 seconds.

Figure 7.12 overleaf illustrates the forecast delay during the PM peak for Scenario 2.

Figure 7.12 Scenario 2 PM Delay Plot



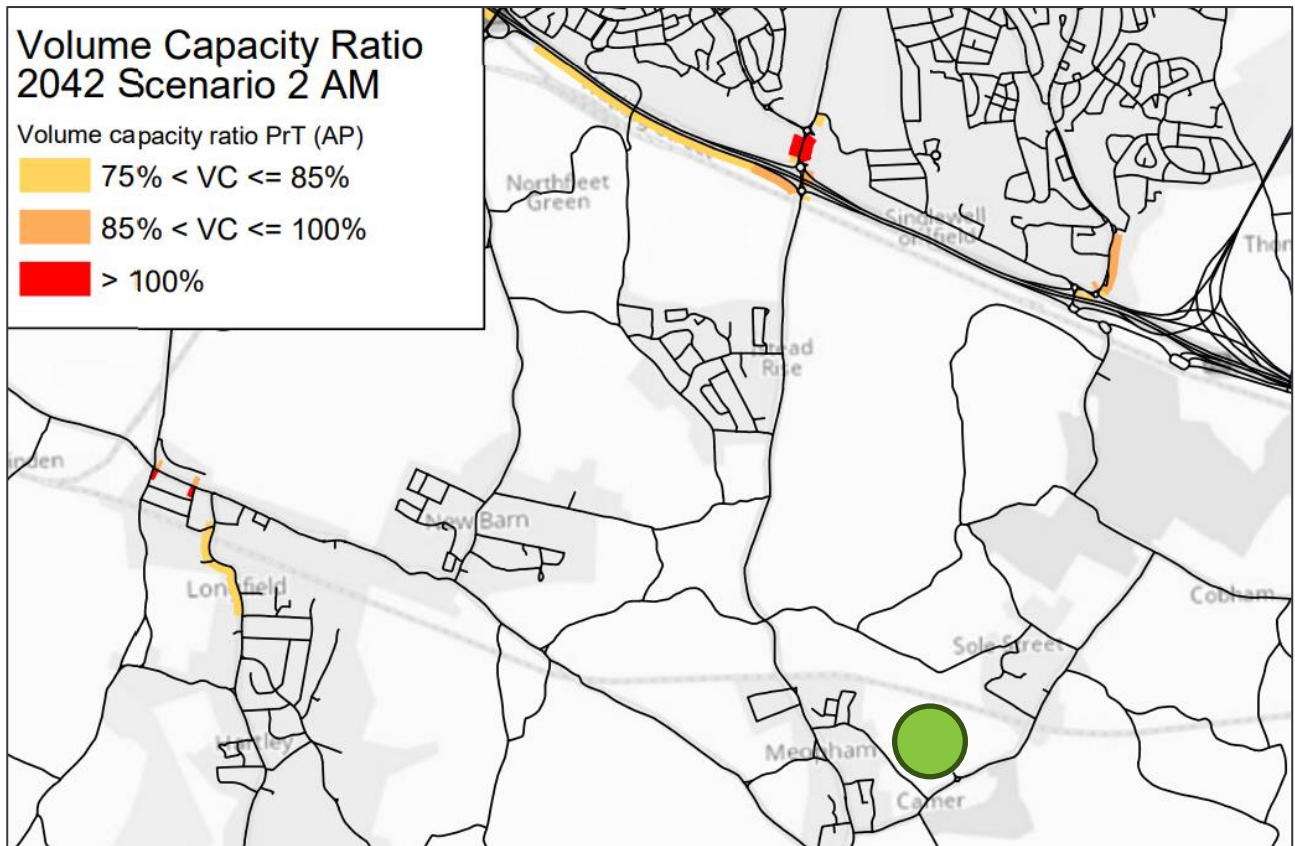
Volume over Capacity

During the AM peak period the A2 westbound on slip and internal link between the dumbbell roundabouts is forecast to experience a VoC between 85% and 100% whilst the continuing westbound mainline carriageway has a forecast VoC of between 75% and 85%. The southbound approach from the A227 is forecast to have a VoC in excess of 100%.

To the east the southbound approach to the A2 from Valley Drive is forecast to have a VoC of between 85% and 100%.

Figure 7.13 overleaf provides a plot of the forecast VoC values in the vicinity of the site during the AM peak period.

Figure 7.13 Scenario 2 AM VoC Plot

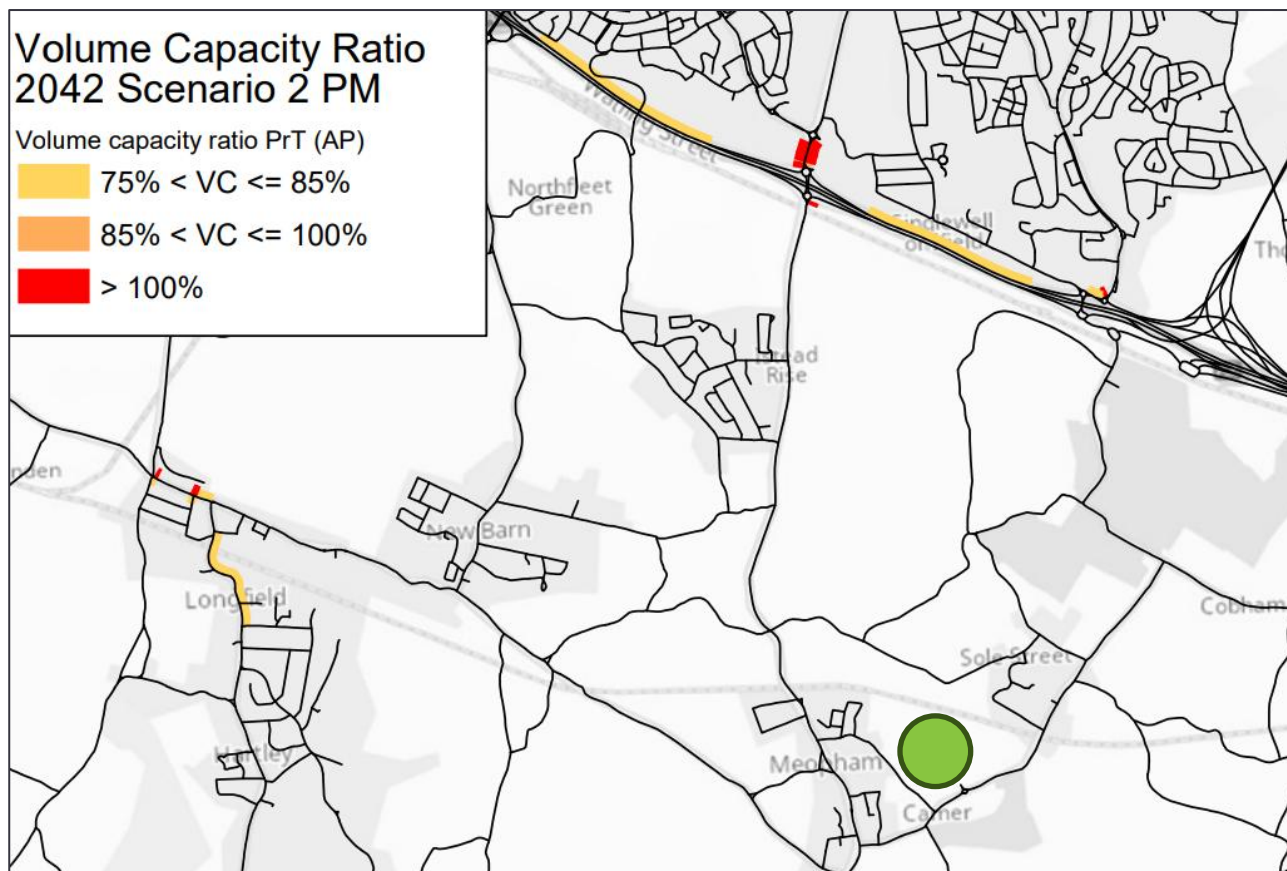


During the PM peak the eastbound A2 mainline carriageway is forecast to have a VoC of between 75% and 85% between the B262 and A227 and east of the A227. This level of delay is forecast to continue eastbound on the A2 past the new Lower Thames Crossing junction also.

The southbound approach to the A2 from the A227 is forecast to have a VoC of over 100% with a minor section of the westbound off slip from the A2 at the junction with the A227 forecast to have a delay of over 100%.

Figure 7.14 overleaf provides a plot of the forecast VoC values for the highway network in the vicinity of the site during the PM peak period of Scenario 2.

Figure 7.14 Scenario 2 PM VoC Plot



Scenario 3: 2042 With Development plus Local Plan Cumulative Development

Level of Service

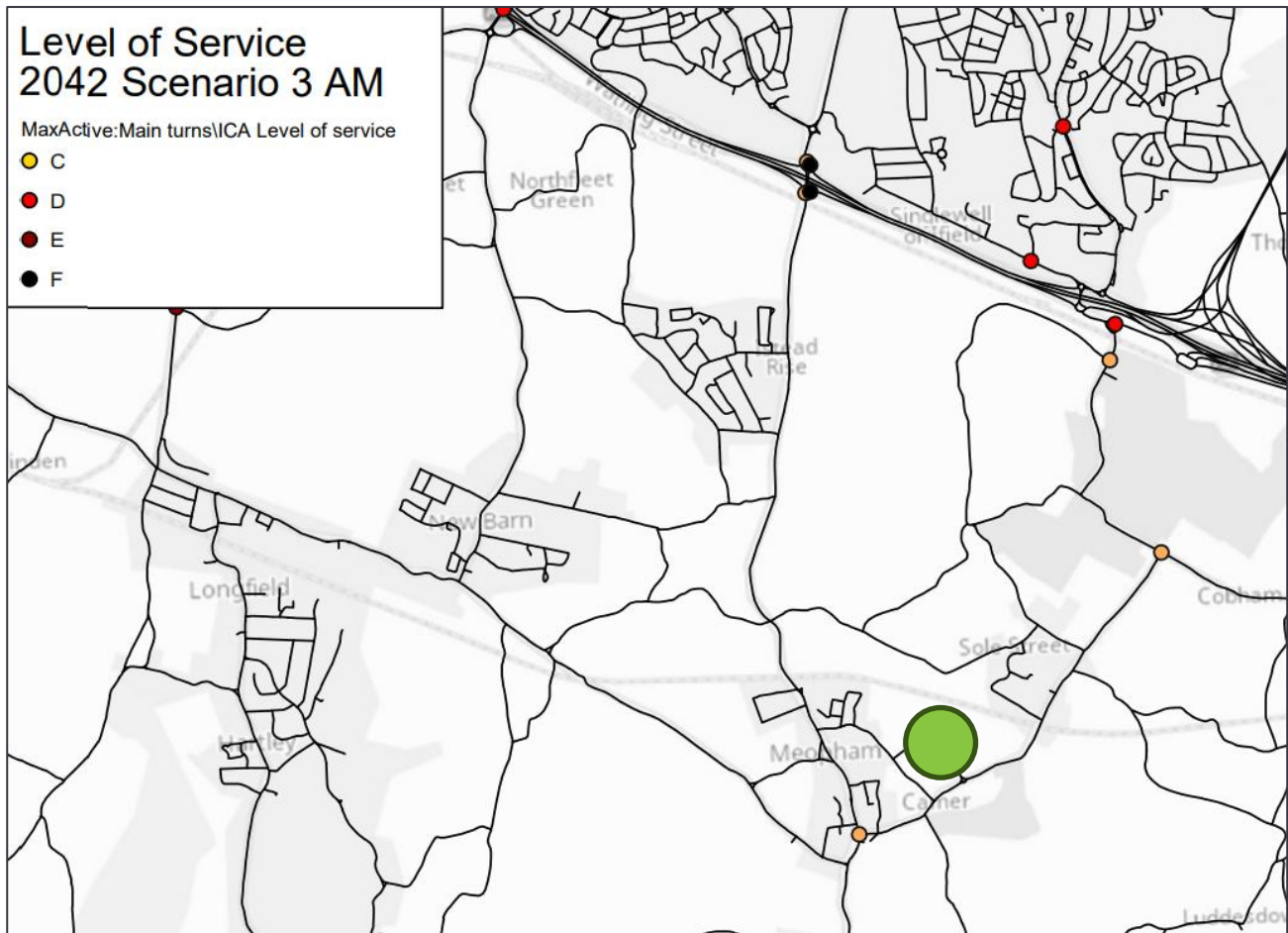
During the AM peak period the KTM forecasts LoS levels of F and C at the A2 junctions with the A227 to the north of Meopham whilst to the north-west, the junction between the B262 and A2 is forecast to have a LoS of D. This represents a partial change in this location with one junction moving from a LoS of D to C.

North of the A2 the junction of Hever Crescent Road and Miskin Way is forecast to have a LoS of D, a change from C in Scenario 2, and slightly further north still, the junction at Valley Drive and Livingstone Road is forecast to have a LoS of D. There is also a LoS of D forecast at the junction of Henhurst Road and the Lower Thames Crossing, a change from C in Scenario 2.

The junction of Henhurst Road and Church Road is forecast to have a LoS of C which is a change from Scenario 2.

Figure 7.15 overleaf provides an indication of these locations and their LoS levels for the AM peak of Scenario 2.

Figure 7.15 Scenario 3 AM LoS Plot

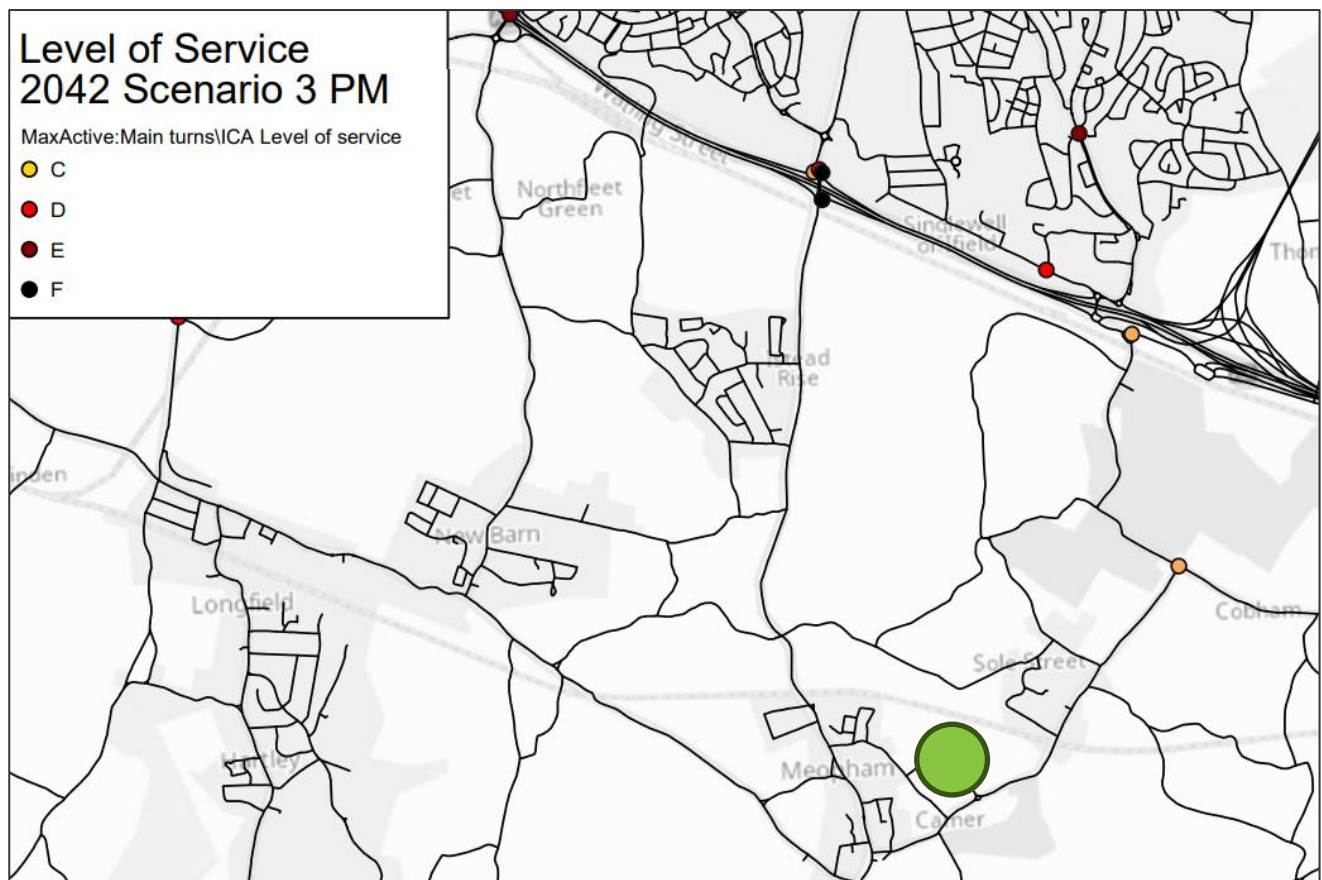


During the PM peak period the same locations forecast LoS levels above C, though the A2 junction with the A227 has a range of LoS of C, F and F which is a change from Scenario 1. The B262 junction with the A2 has a forecast LoS of E.

To the north of the A2 the junction between Hever Crescent Road and Miskin Way becomes a LoS of D whilst the junction of Valley Drive and Livingstone Road has a LoS forecast of D. There is also a LoS of C forecast at the junction of Henhurst Road and the Lower Thames Crossing, a change from Scenario 2.

Figure 7.16 overleaf provides an illustration of the LoS levels forecast for the PM peak of Scenario 3.

Figure 7.16 Scenario 2 PM LoS Plot



Delay

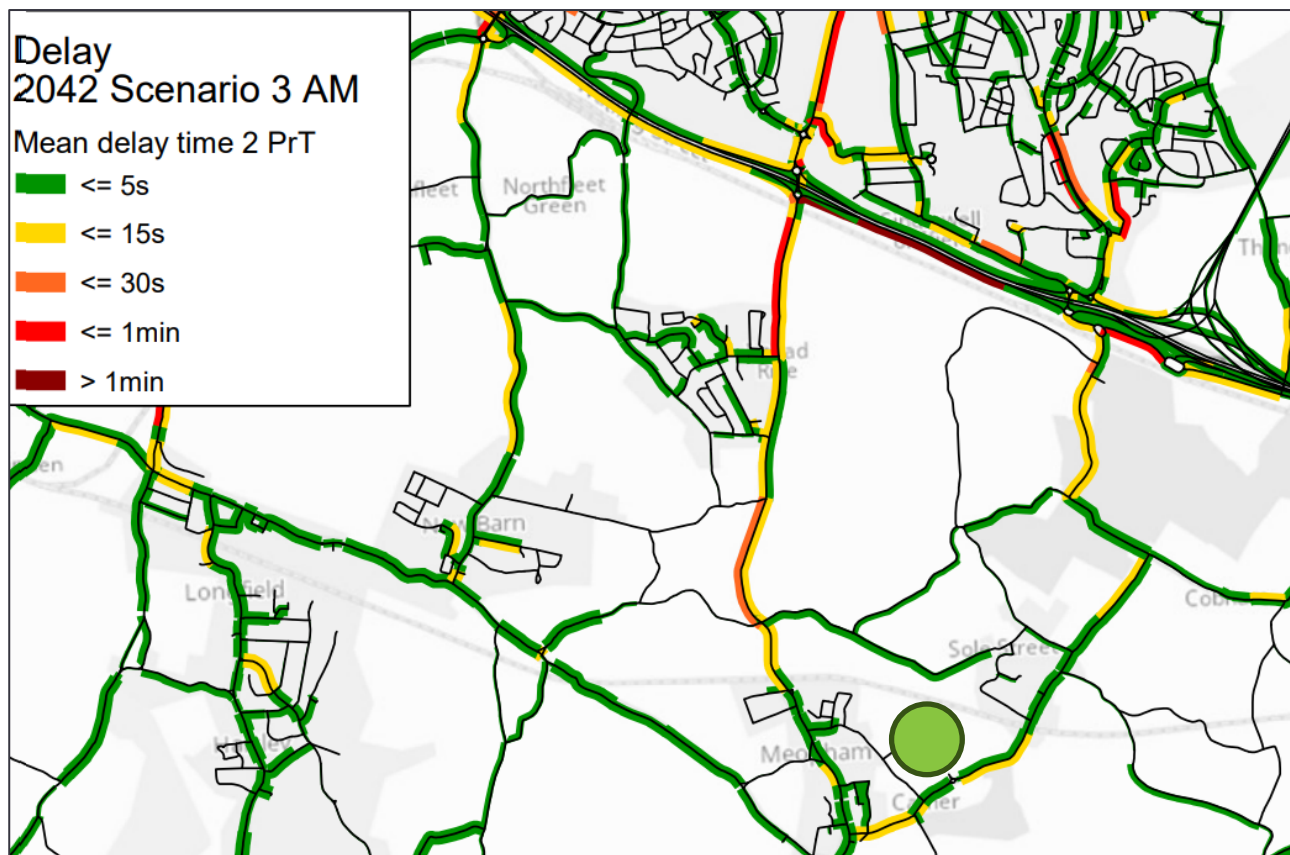
During the AM peak period, the forecast areas of delay lie predominantly around the approach to the A2 from the A227 south which has a forecast delay between 15 and 30 seconds. This is also forecast further south on the A227 northbound between Park Hill and Nash Bank .

The A2 westbound mainline carriageway and off slip to the A227 are forecast to have a delay in excess of one minute. To the west a small section of the B262 is forecast to experience delay between 30 seconds and one minute, as is a section of the to be constructed Lower Thames Crossing junction to the east.

North of the A2, a delay between 30 seconds and one minute is forecast on Valley Drive northbound and 15 to 30 seconds southbound. Marling Way has a forecast delay of between 30 seconds and one minute southbound.

Figure 7.17 overleaf provides an illustration of the forecast delays during the AM peak for Scenario 3.

Figure 7.17 Scenario 3 AM Delay Plot



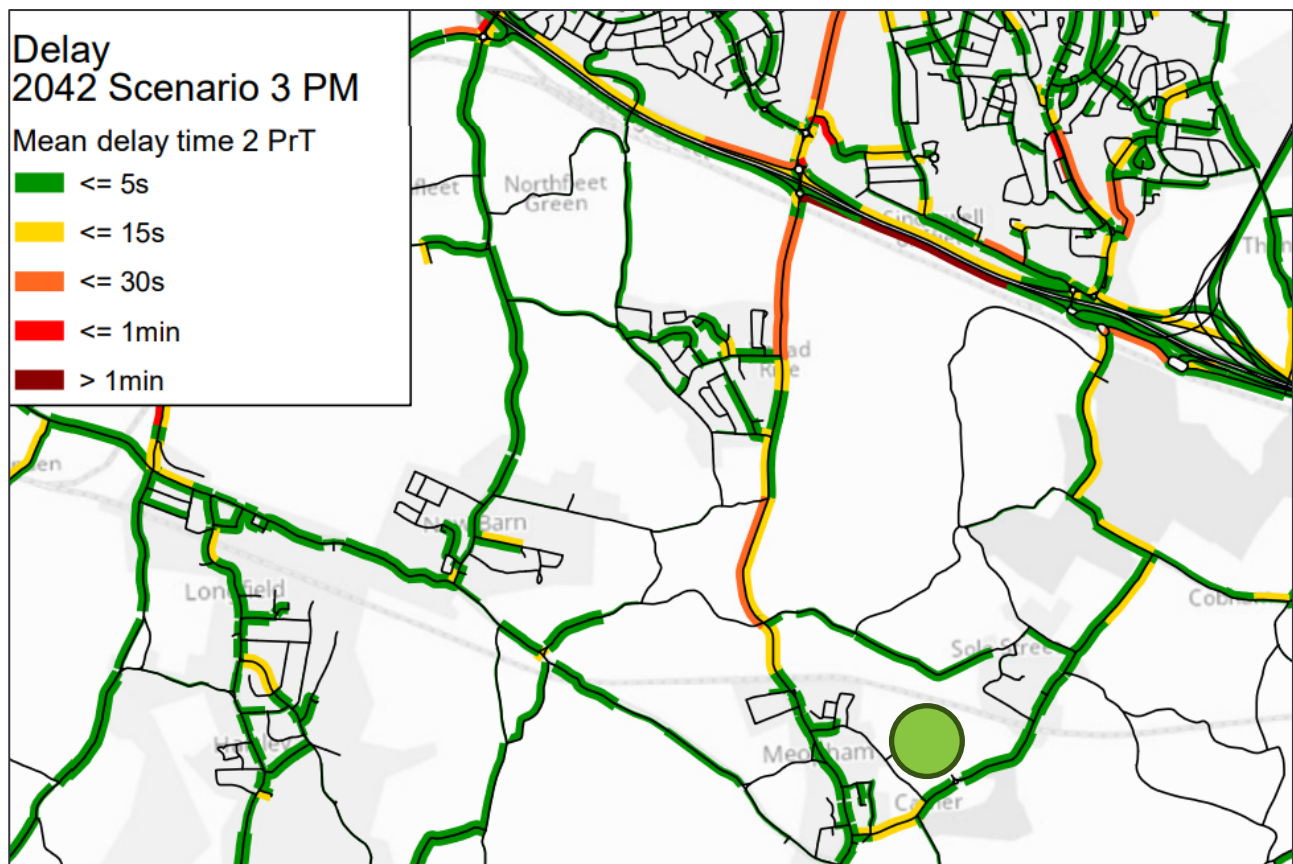
The delay forecasts during the PM peak period broadly mirror those during the AM peak. The A227 north and southbound has a forecast delay of 15 to 30 seconds north of Istead Rise and northbound a delay of 15 to 30 seconds north of Park Hill.

North of the A2 delay on Valley Drive is forecast to be between 30 seconds and one minute northbound and 15 to 30 seconds southbound whilst Marling Way has a forecast delay of 15 to 30 seconds in both directions.

A section of the newly constructed Lower Thames Crossing also has a forecast delay of 15 to 30 seconds westbound towards Henhurst Road.

Figure 7.18 overleaf illustrates the forecast delay during the PM peak for Scenario 3.

Figure 7.18 Scenario 3 PM Delay Plot



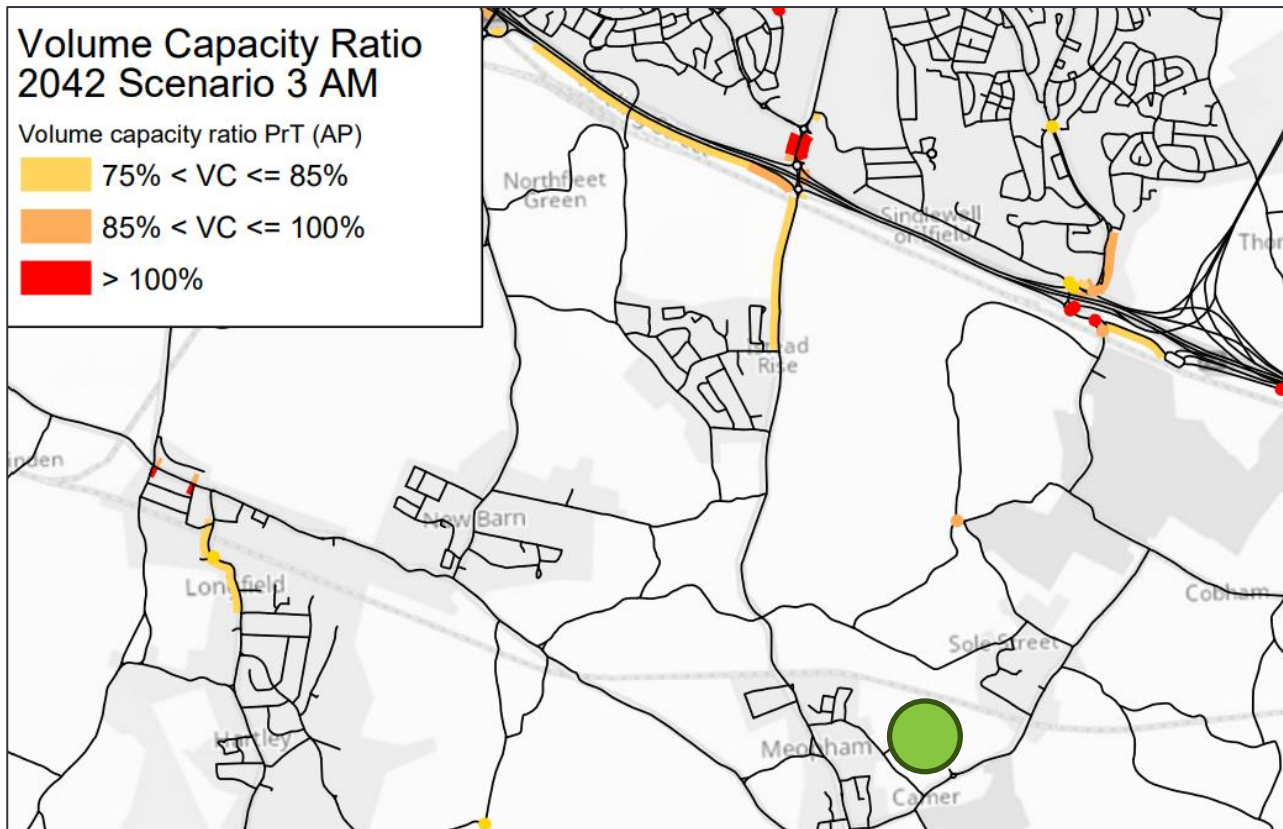
Volume over Capacity

During the AM peak period the A2 westbound on slip and internal link between the dumbbell roundabouts is forecast to experience a VoC between 85% and 100% whilst the continuing westbound mainline carriageway has a forecast VoC of between 75% and 85%. The southbound approach from the A227 is forecast to have a VoC in excess of 100%.

To the east the southbound approach to the A2 from Valley Drive is forecast to have a VoC of between 85% and 100% with some small sections of road forecast to have a VoC of over 100% in and around this A2 junction. The newly constructed Lower Thames Crossing junction approach to Henhurst Road also have a VoC of 75% to 85% as is a small point on Church Road.

Figure 7.19 overleaf provides a plot of the forecast VoC values in the vicinity of the site during the AM peak period.

Figure 7.19 Scenario 3 AM VoC Plot

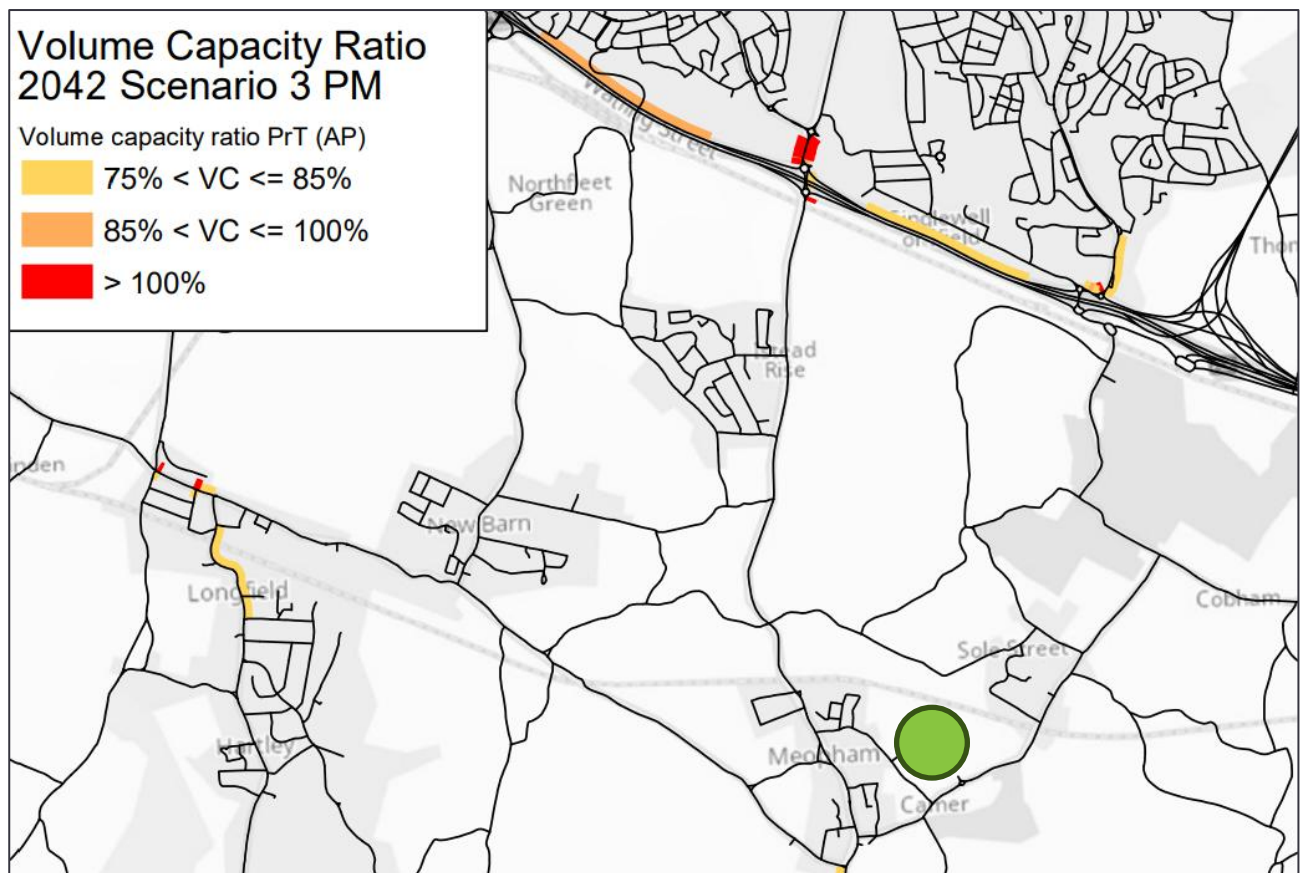


During the PM peak the eastbound A2 mainline carriageway is forecast to have a VoC of between 75% and 85% between the B262 and A227 and 75% to 85% east of the A227. This level of delay is forecast to continue eastbound on the A2 past the new Lower Thames Crossing junction also.

The southbound approach to the A2 from the A227 is forecast to have a VoC of over 100% with a minor section of the westbound off slip from the A2 at the junction with the A227 forecast to have a delay of over 100%.

Figure 7.20 overleaf provides a plot of the forecast VoC values for the highway network in the vicinity of the site during the PM peak period of Scenario 2.

Figure 7.20 Scenario 3 PM VoC Plot



7.3 KTM Output Analysis

To objectively review the forecast impacts of the development and each Scenario the results from each model output have been collated and tabulated so a side by side comparison can be done and the results examined in more details. This has been done using the three key metrics outline in Section 7.1.

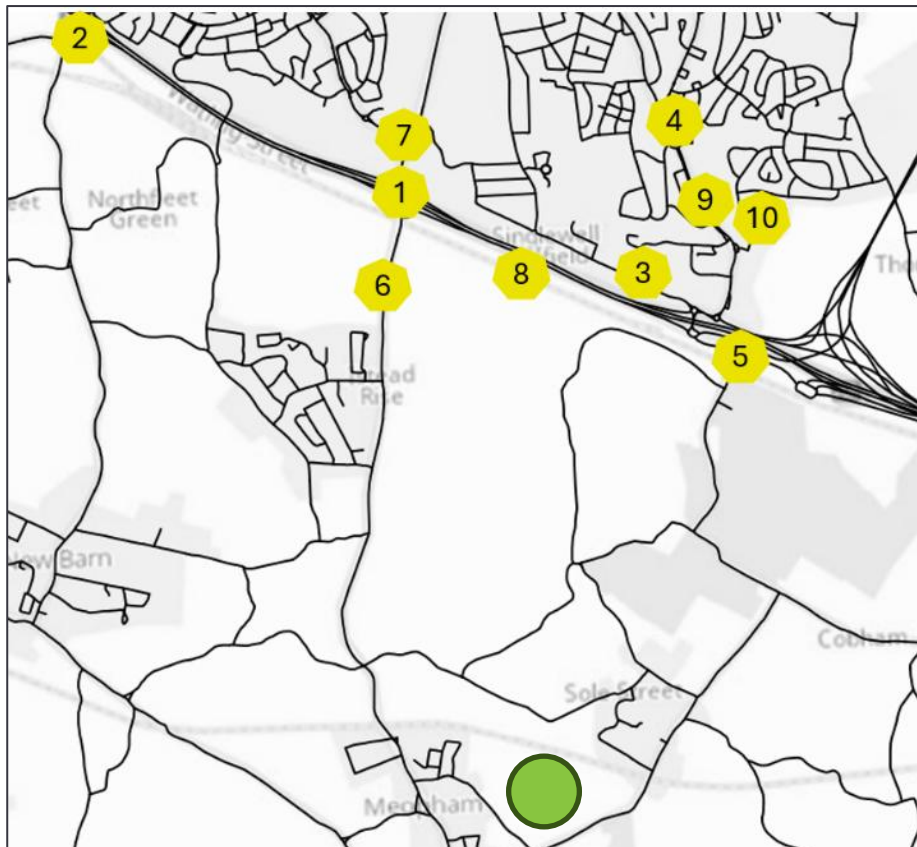
To make this process clearer, the metrics focus on those areas identified to have either LoS levels of D or greater, delay is greater than 30 seconds or a VoC ratio of greater than 85%. The links / junctions selected are therefore as follows:

- Location 1: A2 / A227 Junction;
- Location 2: A2 / Hall Road Junction;
- Location 3: Hever Crescent Road / Miskin Way;
- Location 4: Valley Drive / Livingstone Road;
- Location 5: Henhurst Road / Lower Thames Crossing;
- Location 6: A227 Wrotham Road south of the A2 (northbound);
- Location 7: A227 Wrotham Road north of the A2 (two-way);
- Location 8: A2 Westbound;
- Location 9: Valley Drive; and

- Location 10: Marling Way.

These junctions and links have been identified in **Figure 7.21** below.

Figure 7.21 Scenario 3 PM VoC Plot



Each metric has been reviewed in turn, with any junctions or links considered to require additional assessment set out subsequently in turn.

Level of Service

Table 7.2 overleaf sets out each development scenario and the forecast Level of Service for each location for both the AM and PM peak periods. Any changes from Scenario 1 to Scenario 2 or Scenario 3 are highlighted in the text beneath.

Table 7.2 Forecast LoS

Location	Description	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
Scenario		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
1	A2 / A227 Junction	C/F/F/-	D/F/F/-	C/F/F/C	C/F/E/-	C/F/F/-	D/F/F/-
2	A2 / Hall Road Junction	D	D	D	E	E	E
3	Hever Crescent Road / Miskin Way	C	C	D	C	C	D
4	Valley Drive / Livingstone Road	C	D	D	D	D	E
5	Henhurst Road / Lower Thames Crossing	-	C	D	-	-	C
6	A227 Wrotham Road south of the A2	-	-	-	-	-	-
7	A227 Wrotham Road north of the A2	-	-	-	-	-	-
8	A2 Westbound	-	-	-	-	-	-
9	Valley Drive	-	-	-	-	-	-
10	Marling Way	-	-	-	-	-	-

The results above indicate that there are minor impacts observed during both Scenario 2 and 3 in comparison to Scenario 1. During the AM peak period in Scenario 2 the impacts move LoS levels at the A2/A227 and Valley Drive from a LoS of C to a LoS of D and at Henhurst Road from below C to C. These forecast level of LoS do not indicate any of these affected junctions are forecast to operate at capacity but remain within it.

During the PM peak of Scenario 2 only one impact is forecast at the A2/A227 Junction where a LoS of E is forecast to become a LoS of F. This junction is therefore reviewed separately in Section 7.4.

During the AM peak of Scenario 3 the A2/A227 is forecast to move from a LoS of below C to a LoS of C, Henhurst Road from below a LoS of C to a LoS D and Hever Crescent Road and Valley Drive forecast to move from a LoS of C to a LoS of D. These forecast levels of LoS do not indicate any of these affected junctions are forecast to operate at capacity but remain within it.

During the PM peak of Scenario 3 the A2/A227 junction is forecast to move from a LoS of E to a LoS of F whilst Valley Drive moves from a LoS of D to E. Henhurst Road moves to a LoS of C. As with the Scenario 2 PM peak, the A2/A227 is explored further in Section 7.4.

Delay

Table 7.3 overleaf sets out each development scenario and the forecast Delay for each location for both the AM and PM peak periods. Any changes from Scenario 1 to Scenario 2 or Scenario 3 are highlighted in the text beneath.

For ease of reference a single value is entered to align with the key in Section 7.1. For example, 15s means less than 15 seconds, 30s less than 30 seconds and so on with 1m+ referring to over one minute. For junctions, the greatest delay is indicated only.

Table 7.3 Forecast Delay

Location	Description	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
Scenario		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
1	A2 / A227 Junction	1+	1+	1+	1+	1+	1+
2	A2 / Hall Road Junction	30	30	1	1	1	1
3	Hever Crescent Road / Miskin Way	15	15	30	15	15	30
4	Valley Drive / Livingstone Road	15	15	15	15	15	15
5	Henhurst Road / Lower Thames Crossing	30	30	1	15	15	30
6	A227 Wrotham Road south of the A2	30	30	1	30	30	30
7	A227 Wrotham Road north of the A2	30	1	1	30	30	1
8	A2 Westbound	1+	1+	1+	15	15	1+
9	Valley Drive	30	30	1	1	1	1
10	Marling Way	1	1	1	30	30	30

During the AM peak of Scenario 2 the only forecast increase in delay occurs on the A227 Wrotham Road north of the A2 where delay is forecast to increase from less than 30 seconds to less than one minute. This is reviewed in more detail in Section 7.4. During the PM peak there are no changes in delay forecast.

During the AM peak of Scenario 3 forecast delay at the A2 / Hall Road junction increases from 30 seconds to a minute or less with an increase of from 15 seconds to 30 seconds or less also forecast at Hever Crescent Road. Henhurst Road experiences a forecast increase in delay from 30 seconds or less to a minute or less as does the A227 Wrotham Road both north and south of the A2 corridor. Valley Drive is forecast to experience an increase in delay from 30 seconds or less to a minute or less.

The PM peak of Scenario 3 forecasts an increase in delay at Hever Crescent Road and Henhurst Road from 15 seconds or less to 30 seconds or less. An increase from 30 seconds or less to a minute or less on the A227 Wrotham Road north of the A2 and on the A2 westbound from 15 seconds or less to over one minute. The A2 impacts is considered further in **Section 7.4**.

Volume over Capacity

Table 7.4 overleaf sets out each development scenario and the forecast Volume over Capacity (VoC) for each location for both the AM and PM peak periods. Any changes from Scenario 1 to Scenario 2 or Scenario 3 are highlighted in the text beneath.

The figures used to represent the forecast VoC are the upper limit of each band of the scale so 75% equates to 85% or less, 85% equates to 85% to 100% and 100% equates to 100% or over.

Table 7.4 Forecast Volume over Capacity

Location	Description	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
Scenario		Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
1	A2 / A227 Junction	85%	85%	85%	85%	85%	100%
2	A2 / Hall Road Junction	75%	75%	85%	-	-	-
3	Hever Crescent Road / Miskin Way	-	-	-	-	-	-
4	Valley Drive / Livingstone Road	-	-	-	-	-	-
5	Henhurst Road / Lower Thames Crossing	-	-	100%	-	-	-
6	A227 Wrotham Road south of the A2	-	-	75%	-	-	-
7	A227 Wrotham Road north of the A2	100%	100%	100%	100%	100%	100%
8	A2 Westbound	75%	75%	75%	-	-	-
9	Valley Drive	85%	85%	85%	-	-	75%
10	Marling Way	-	-	-	-	-	-

Scenario 2 shows no forecast changes in VoC across any of the links or junctions set out in **Table 7.4** above. During Scenario 3 increases are forecast on Henhurst Road and the A227 south of the A2 during the AM peak with Henhurst Road reaching 100% and the A227 between 75% and 85%. During the PM peak for Scenario 3, only one change is forecast on Valley Drive which reaches a VoC of 75% to 85%.

7.4 Impact Assessment

Further analysis has been completed of the site access and those junctions and link which were forecast to either have a LoS of E or F, a delay in excess of 1 minute, or a significant change, and a VoC of 100%. This analysis is set out below.

Site Access Junction

It is noted that the site access is not forecast to reach a LoS level of above B, no delays on Camer Road are forecast to be in excess of 15 seconds and no VoC values above 75% are forecast during any modelled scenario. However, to fully demonstrate the appropriateness of the site access junction a capacity analysis study has been prepared using Junctions 11 software.

The results have been presented for Scenario 2 during the AM and PM peak periods with the full outputs included in **Appendix K** and a summary provided in **Table 7.5** overleaf.

Table 7.5 Site Access Junction Results

Arm	Description	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Delay (s)	Queue (PCU)	RFC	Delay (s)	Queue (PCU)	RFC
A	Camer Road (South)	3.83	0.3	0.25	5.81	1.1	0.51
B	Site Access	5.38	0.7	0.42	4.15	0.2	0.18
C	Camer Road (North)	10.12	2.3	0.70	3.50	0.3	0.22

Table 7.5 shows that, in the future year with development scenario, the proposed site access roundabout on Camer Road is expected to operate within capacity. During the AM peak, the peak delay is expected to occur on Camer Road (north) with a queue of 2.3 PCUs, delay of 10.12 seconds and RFC of 0.70. During the PM peak, the peak delay is expected to occur on Camer Road (south) with a queue of 1.1 PCUs, delay of 5.81 seconds and RFC of 0.51.

It is therefore considered that the impacts of the proposed development on the site access roundabout cannot be considered severe as the arms remain within capacity.

A2 / A227 Junction

The proposed development is only forecast to affect the LoS for a single point at the A2 / A227 junction during the PM peak period where the southern dumbbell roundabout is forecast to experience a LoS change from E to F. This location has therefore been analysed further using the outputs from the KTM.

A review of the turning movements and vehicle change plots for this junction during this scenario indicates a total uplift in traffic flows resulting from the development of 114 vehicles, which equates to an increase across the junction of just 4%. This level of change could conceivably be observed simply in daily variations in traffic flow from day to day.

The majority of these vehicles are forecast to travel on the A227 Wrotham Road south of the A2 heading north into the junction with 104 vehicles.

A review of the delays plots in Section 7.3 identifies that the A227 Wrotham Road south of the A2 is not forecast to experience a change in delay nor is the VoC value forecast to increase as a result of the proposals.

During Scenario 3 there are no additional increases in LoS to values of E or F nor in forecast delay. The VoC is forecast to increase during the PM peak from 85% to 100% to 100% or over.

We know already that the proposed development does not trigger this increase and a review of the turning movements identifies that the flow increase over and above the proposed development scenario is 140 additional vehicles. The majority of these arrive to the junction from the A227 Wrotham Road north of the A2 (95 vehicles) where the delay is forecast to be over 1 minute and the VoC 100%.

It is therefore considered that the impacts on the A2 /A227 junction which are attributable to the proposed development cannot be considered severe as the links upon which traffic travels remain within capacity and delay does not increase. It is the introduction of additional Local Plan developments and demand on the other arms of the junction which carry significant impact.

The specific impacts on the A227 Wrotham Road north of the A2 are provided separately below.

A2 / Hall Road Junction

The only changes forecast at the junction of the A2 and Hall Road occur during the AM peak of Scenario 3 when the forecast delay increases along with the VoC. This increase does not however suggest this junction will reach capacity during the AM peak period with LoS remaining at D and VoC 85%.

During the PM peak the junction is forecast to reach a LoS of E during Scenario 1, but this does not change during either Scenario 2 or Scenario 3. It is therefore considered the results demonstrate no severe impact at this junction results from the proposed development.

A227 Wrotham Road North of A2 (Two Way)

The VoC for the A227 Wrotham Road north of the A2 is forecast to be 100% for all scenarios and so a review of the delay and traffic impacts has been completed to better understand the forecast impacts of the proposals.

During the AM peak period of Scenario 2 the delay is forecast to increase from 30 seconds or less to a minute or less. A review of the turning movements on this link identifies the proposed development only adds 47 two-way vehicles or an uplift of 2% during this period. Scenario 3 adds an additional 88 vehicles or further 3.5% during the AM peak though the delay does not increase further.

Considering the relative lack of change in modelling metrics observed on the A227 Wrotham Road north of the A2, and the relatively minor increases in traffic presented by the proposed development, it is apparent that the LoS values are a function of existing demand and capacity constraints on this link. The impacts resulting directly from the development are therefore not considered severe. It is also likely that some additional traffic is distributed along the A2 between Greenhithe and Gravesend as a result of the unforeseen closure of Galley Hill Road.

A2 Westbound

The only change forecast on the A2 westbound mainline carriageway occurs during the PM peak of Scenario 3 where the forecast delay increases from 15 seconds or less to over one minute. A review of the flow change plots identifies a reduction of 242 vehicles on these links and the VoC remains below 75%.

This could be a function of queueing traffic on the westbound off slip at the A227 though it is unclear from the data available if the impact is a result of wider effects. Either way, the impacts from the proposed development on this link are negligible.

8. Summary and Conclusions

8.1 Summary

This TA has been prepared by ttc on behalf of the applicant to support an outline planning application for a new residential-led mixed-use development at Land North of Camer Road, Meopham.

The proposed development comprises an outline application for up to 725 dwellings (Use Class C3), a new two-form entry primary school (Use Class F1), the provision of Public Open Space including sport and recreation facilities, alongside associated access, landscaping, parking, and infrastructure.

The transport and movement vision for the site prioritises active and sustainable travel in order to support the wider aspirations to improve health, wellbeing and economic prosperity to combat climate change and preserve Kent's environment.

As a result of the information provided in this chapter, it can be concluded that:

- Whilst footway provision near the site is mixed, there is an extensive PRow network providing an option for leisure trips. Within a 5km cycle of the site, Meopham and Istead Rise are accessible as well as NCN Route 177 which connects Northfleet and Strood.
- Noting the mixed footway provision, there are a range of amenities, including shops, pharmacies and schools, available within a 2km walk of the site which future residents would be able to access.
- Public transport provision is varied, with frequent rail services to key employment destinations, including London, available from both Sole Street and Meopham Stations, however bus service frequency across both weekdays and weekends may affect the viability of daily bus travel except for school bus trips.
- With regard to highway safety, whilst it is acknowledged there were an increased number of collisions in 2020, this is not a long-term, repeating pattern. As such, there is not deemed to be any inherent safety issues with the local highway network.
- A roundabout is proposed to provide access to the site from Camer Road. This will help to reduce vehicle speeds in line with the proposed reduction to a 30mph speed limit as well as offer a gateway to the site, clearly defining the nature of Camer Road and providing a balance of priority for existing road users and new site users.
- The Norwood Lane / Camer Road junction will be amended to accommodate the proposed bus route through the site and will be restricted from through traffic. As such, a section of Norwood Lane to the north of the proposed secondary access will provide a dedicated pedestrian and cycle route.
- In order to encourage walking and cycling, a network of active travel routes will be provided throughout the site and connecting to the existing network. These routes will be direct, well connected, well lit, attractive and overlooked so as to appeal to pedestrians and cyclists. Cycle facilities will be designed in line with LTN 1/20, including segregated cycle routes and 2m wide footways.
- A bus route is proposed to run through the site between the primary access on Camer Road and secondary access on Norwood Lane. A bus stop is proposed to be located in the centre of the site adjacent to the primary school which will provide access to public transport services within approximately 400m of all residential dwellings.

- For the residential dwellings and non-residential uses, car and cycle parking will be provided in line with the prescribed parking standards set out in KCC's Parking Standards (2006) and LTN 1/20.
- The forecast trip generation for the proposed development has been undertaken using a range of data sources to ensure a robust assessment; this includes TRICS, Census, ONS Opinions and Lifestyle Survey and the National Travel Survey. A total of 637 vehicle trips are expected during the AM peak hour, with 474 two-way vehicle trips during the PM peak. In addition, a total of 131 and 76 trips on foot are forecast during the AM and PM peak hours, respectively.
- The methodology for the traffic assessment was agreed with KCC during pre-application engagement, which confirmed the need to use the KTM to form the traffic impact assessment.
- The results of the KTM modelling identify that there are no severe impacts forecast as a result of the proposed development.

8.2 Conclusion

On the basis of the information presented in this report, it is considered that the proposed development can be accommodated within the local area with safe and suitable access provided for all users.

As such, there should be no reason why the application cannot be recommended for approval in terms of highways and transportation.

As a result of the above, the development proposals will provide '*safe and suitable*' access and the residual impacts of the proposed development on the highway network would not be severe as stated in **Paragraphs 115 and 116** of the NPPF.