PINS REF: APP/P1940/V/26/3378268

Land East of Oxhey Lane, Carpenders Park, Hertfordshire

(LPA ref: 25/1020/OUT)

Proof of Evidence

of

David Walpole BSc(Hons) CivEng MCIHT MTPS

on behalf of

Residents Protecting Oxhey Lane Fields

May 2026

(Ver 1.3)

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APPENDICES

1 QUALIFICATIONS AND EXPERIENCE

1.1 My name is David Walpole, and I am a partner at THaT Consultancy.

1.2 I have a Bachelor of Science degree with Honours in Civil Engineering from the University of Nottingham. I am a Member of the Chartered Institution of Highways and Transportation (CIHT) and a Member of the Transport Planning Society.

1.3 I have been actively involved in providing transport and highway advice relating to the development planning process since the mid-1980s. I have advised a wide variety of clients in both the public and private sectors

1.4 My evidence for this inquiry is given in accordance with the guidance of my professional body, and I confirm that the opinions expressed are my true and professional opinions.

2 SCOPE OF MY EVIDENCE

2.1 My evidence focuses on the transport and highway aspects of the proposed development.

2.2 I address the fundamental transport requirements of the National Planning Policy Framework (NPPF), including:

- does the application site represent a sustainable location in transport terms and provide a genuine choice of transport modes?
- if not, will the applicant's proposed sustainable transport initiatives make it a sustainable location where sustainable modes of travel are the first choice for journeys?
- Will the proposed site access arrangements provide a safe and suitable access for all users?

2.3 My evidence is structured as follows:

- in Section 3 I summarise the transport policy and guidance background against which I consider that the proposed development should be evaluated.
- in Section 4 I introduce the new Connectivity Tool.
- In Section 5 I analyse the application site using the connectivity tool
- In Section 6 I consider the site's accessibility, taking account of the proposed mitigation measures.
- In Section 7 I evaluate the proposed site access arrangements and the appropriate design standards.
- In Section 8 I present my summary and conclusions.

3 TRANSPORT POLICY AND GUIDANCE

Preamble

3.1 The main statements of national and local transport policy and guidance that I consider most pertinent to determining this application are summarised below.

National Planning Policy Framework (December 2024, updated February 2025)

3.2 The NPPF is a material consideration that must be taken into account where it is relevant when determining a planning application.

3.3 I think this is particularly important in this case because we must address Para 155c which states:

"c. The development would be in a sustainable location, with particular reference to paragraph 110 and 115 of this Framework"

3.4 The NPPF places significant emphasis on ensuring that development is planned and designed in a manner that promotes sustainable transport, provides safe access, and mitigates transport impacts.

3.5 Paragraph 109 requires that transport issues are considered during the early stages of plan-making and development proposals, using a vision led approach to identify transport solutions that deliver well-designed, sustainable and popular places.

3.6 Paragraph 110 requires significant development to be focused on locations which are or can be made sustainable.

3.7 Paragraph 111 requires that planning policies should seek to minimise the number and length of journeys needed for employment, shopping, leisure education and other activities. It goes on to require that development patterns are aligned with strategies and investments for supporting sustainable transport.

3.8 Paragraph 115 requires that, when assessing development proposals, priority is given to sustainable transport modes having regard to the nature and location of the development. It further requires safe and suitable access for all users, compliance with current national design guidance, and that any significant impacts on the transport

network or highway safety are mitigated to an acceptable degree through a vision-led approach.

3.9 Paragraph 116 sets out the national policy test for refusal on highway grounds. Development should only be refused where there would be an unacceptable impact on highway safety, or where the residual cumulative impacts on the road network, after mitigation, would be severe when assessed against all reasonable future scenarios.

3.10 Paragraph 117 requires development proposals to prioritise pedestrian and cycle movements, facilitate access to high-quality public transport, address the needs of disabled and mobility-impaired users, create safe and attractive places, accommodate servicing and emergency access requirements, and enable charging infrastructure for ultra-low emission vehicles.

Draft NPPF (December 2025)

3.11 In December 2025 the Government launched a consultation seeking feedback on proposed changes to the NPPF. The new NPPF has not yet been published so the proposed policies currently have limited weight in the decision-making process. I have included them here because the proposed transport policies refer to the new connectivity tool and the role that it is expected to play in the plan-making and decision-making process.

3.12 Chapter 15 "Promoting Sustainable Transport" is particularly relevant in this case.

3.13 The draft text explains that:

"The objective of the policies in this chapter is to ensure that transport considerations are taken fully into account in the preparation of development plans and the evolution and assessment of development proposals; using a vision-led approach to embed the role that transport infrastructure and choices can play in creating well-designed, sustainable, inclusive and popular places."

3.14 Plan making policy "TR1: vision led approach to planning for transport" puts the relationship between movement and place making at the heart of the planning system.

3.15 The draft policy explains that "The Connectivity Tool should be used to inform the assessment and selection of sites for development alongside other relevant evidence."

3.16 Decision-making policy "TR3: locating development in sustainable locations" requires development to be located where it can support sustainable patterns of movement and sets out the principles that should be followed to achieve this objective.

3.17 This draft policy again explains that The Connectivity Tool "should be used alongside other relevant evidence in assessing the connectivity of particular locations proposed for development".

National Design Guide (2021)

3.18 Paragraph 63 explains that:

"Well-designed places have:

- *compact forms of development that are walkable, contributing positively to well-being and place making;*
- *accessible local public transport, services and facilities, to ensure sustainable development;"*

3.19 A "walkable" development is defined in the National Design Guide as being:

"Local facilities are within walking distance, generally considered to be no more than a 10 minute walk (800 m radius)."

Hertfordshire's Local Transport Plan 2018 – 2031 (LTP4)

3.20 Hertfordshire County Council is the local highway authority (LHA). Policy 1 of LTP 4 sets out the LHA's "transport user hierarchy". This policy states:

"Policy 1: Transport User Hierarchy

To support the creation of built environments that encourage greater and safer use of sustainable transport modes, the county council will in the design of any scheme and development of any transport strategy consider in the following order:

- *Opportunities to reduce travel demand and the need to travel*
- *Vulnerable road user needs (such as pedestrians and cyclists)*
- *Passenger transport user needs*
- *Powered two wheeler (mopeds and motorbikes) user needs*
- *Other motor vehicle user needs"*

3.21 Policy 5: Development Management states:

"The county council will work with development promoters and the district and borough councils to:

a) ensure the location and design of proposals reflects the LTP Transport User Hierarchy and encourage movement by sustainable transport modes and reduce travel demand.
b) ensure access arrangements are safe, suitable for all people, built to an adequate standard and adhere to the County Council's Highway design standards.
c)
d)
e)
f) only consider new accesses onto primary and main distributor roads where special circumstances can be demonstrated in favour of the proposals.
g)"

Three Rivers District Council – Core Strategy (adopted October 2011)

3.22 Policy CP 10 Transport and Travel states:

"The Council will promote transport measures identified in the Infrastructure Delivery Plan in partnership with Hertfordshire County Council, the Highways Agency and transport providers.
Development proposals will be expected to contribute to the delivery of transport and travel measures identified as necessary for the development, either on-site as part of the development or through contributions to off-site provision as appropriate.

Provision for interchange and access by public transport, walking and cycling will be regarded as particularly important."

The Policy later sets out the specific requirements relating to development proposals:

"Development proposals
All development should be designed and located to minimise the impacts of travel by motor vehicle on the District. In particular, major development will be expected to be located in areas highly accessible by the most sustainable modes of transport, and to people of all abilities in a socially inclusive and safe manner, in accordance with the user hierarchy below. Priority will be given in the following order:

i. Pedestrians, particularly people with restricted mobility
ii. Cyclists and where appropriate, horse riders
iii. Public transport (including taxis)
iv. All forms of motor vehicles.

Development will need to demonstrate that:

i) It provides a safe and adequate means of access
j) It is appropriate in scale to the existing transport infrastructure, including public transport and, where necessary, infrastructure can be improved
k) It is integrated with the wider network of transport routes, including public rights of way and cycle paths where appropriate
l) It makes adequate provision for all users, including car and other vehicle parking, giving priority to people with mobility difficulties, pedestrians, cyclists and equestrians
m) It includes, where appropriate, provision for public transport either within the scheme or through contributions
n) The impact of the proposal on transport has been fully assessed; for major development this should be done through a comprehensive Transport Assessment detailing the measures that will be used to reduce impacts
o) The proposal is accompanied by a draft Green Travel Plan for prospective

users and employees of the development for all major development."

4 THE CONNECTIVITY TOOL

4.1 On 11 December 2025 the Secretary of State for Transport (Heidi Alexander) made a statement to the House of Commons "Launching the Connectivity Tool". On the same day the Minister of State for Transport (Lord Hendy of Richmond Hill) made the same statement to the House of Lords.

4.2 The Connectivity Tool is jointly badged by the Department for Transport (DfT), The Ministry of Housing Communities & Local Government (MHCLG) and Active Travel England (ATE).

4.3 In her Planning Newsletter dated 16 December 2025 the Chief Planner introduced the tool and explained that:

"The Connectivity Tool has been explicitly designed for planning professionals working in transport and the built environment. It enables plan makers and decision takers to locate development in the most sustainable locations and plan for the transport infrastructure required to support it. It also indicates which new sustainable transport schemes could prove most useful in raising people's connectivity to vital jobs and services."

4.4 The opening paragraphs of the Statement to Parliament state:

"Achieving sustainable development is a core aim of the U.K.'s planning system but has been hindered by the lack of a clear way of measuring what is a "sustainable location" for development in transport terms. This means that policymakers and decision takers have lacked a commonly agreed evidence base to define connectivity."

"To tackle this problem the Department for Transport has created a new Connectivity Tool which combines transport and land use data in an innovative way to generate a "connectivity score" for every location across England and Wales at a resolution of 100m x 100m squares. This score measures people's ability to get where they want and need to go, using walking, cycling and public transport to reach jobs, shops, schools, healthcare and other essential services."

The first sentence in the final paragraph of the Statement states:

"This landmark platform will serve as the new national metric of connectivity, transforming how we plan for new development and the transport infrastructure needed to support it, ensuring new homes and services can be easily accessed by sustainable modes of transport, helping kickstart economic growth, and delivering the Government's housebuilding targets."

4.5 The Connectivity Tool was made available to public bodies in England and Wales in June 2025, and access was opened up to registered planning professionals following the Statement to Parliament in December 2025.

4.6 The proposed changes to the NPPF published for consultation in December 2025 (see above) refer to using the Connectivity Tool when preparing Local Plans, and when evaluating development proposals.

4.7 The connectivity metric estimates the total value of destinations that can be reached within a 60 minute travel time window across four travel modes (walking, cycling, public transport and driving) and six purposes (employment, education, healthcare, shopping, leisure/community and social visits).

4.8 These are combined into overall "connectivity scores" scaled so that the best connected areas in England and Wales equals 100 and everything else is measured relative to that on a scale of 0 to 100. A final "Overall Connectivity Score" is calculated for each location from data relating to all the modes of travel (excluding driving) and journey purpose.

4.9 The DfT has produced a guidance note entitled "Interpreting Connectivity Scores".

4.10 This guidance note includes two tables to help in interpreting the Connectivity Score. These tables present the connectivity score values for the median band and for each of the 10 percentile bands above and below the median (which represents the 50th percentile). Values are given for each 10 percentile band for each type of destination, and for each mode of transport.

4.11 The two tables are reproduced below:

Table A: By destination

	Overall	Education	Leisure	Health	Shopping	Residential	Workplaces
10th percentile	38.9	34.1	37.8	25.9	38.1	45.6	36.9
20th percentile	52.1	47.0	48.7	43.1	56.5	55.2	45.9
30th percentile	58.6	55.1	54.9	51.1	64.9	60.5	51.0
40th percentile	63.1	60.6	59.6	56.9	70.6	64.3	54.7
Median	66.8	65.0	63.6	61.7	75.2	67.3	58.0
60th percentile	70.2	68.9	67.5	66.1	79.3	70.2	61.1
70th percentile	73.7	72.8	71.7	70.3	83.4	73.5	64.4
80th percentile	77.8	77.1	76.8	74.9	87.4	77.4	69.1
90th percentile	83.2	82.7	83.3	80.6	91.6	84.6	78.8

Table B: By mode of transport

	Overall	Walking	Cycling	Public transport	Driving
10th percentile	38.9	33.7	48.4	40.7	74.6
20th percentile	52.1	48.0	58.1	53.5	79.8
30th percentile	58.6	55.5	63.1	59.7	82.6
40th percentile	63.1	60.7	66.7	64.2	84.5
Median	66.8	64.8	69.7	67.8	86.2
60th percentile	70.2	68.5	72.5	71.2	87.6
70th percentile	73.7	72.1	75.5	74.7	89.0
80th percentile	77.8	76.3	78.7	79.0	90.6
90th percentile	83.2	81.6	83.6	85.3	92.5

4.12 It is important to note that a score of 50 does not represent a median or average score.

4.13 The best connected places lie within the 90th percentile band, and the least well connected places fall into the 10th percentile band.

5 CONNECTIVITY TOOL ANALYSIS

Preamble

5.1 In my opinion establishing whether or not the application site represents a sustainable location in transport terms is a fundamental consideration when determining this application.

5.2 If sustainable travel (i.e. walking, cycling and public transport) is not the first choice for journeys by new residents then, irrespective of any sustainable transport initiatives funded by the development, the proposals will inevitably be a car-dependant community built on green-belt land beyond the edge of the existing built-up area and separated from the built up area of Carpenders Park by Oxhey Lane (A4008).

5.3 If the Government's sustainable development policies are to be successful then new development, and particularly new residential development, should be located so that it has easy access by sustainable modes of travel to a wide range of facilities and services including education, shopping, healthcare, leisure and employment opportunities.

Connectivity Tool Analysis of the Application Site

5.4 I have analysed the connectivity of the application site using the new connectivity tool.

5.5 Figure 1 shows how the connectivity score of the application site relates to the connectivity scores across the surrounding area. The connectivity scores are colour-coded. As expected the main urban areas such as Watford have the highest connectivity scores which are coloured red in Figure 1. The slightly less well connected areas, such as Carpenders Park, are coloured yellow. The more poorly connected areas, such as the application site, are coloured green. The most poorly connected areas are coloured blue.

5.6 It should be noted that the colour coding in Figure 1 accords with the colour coding presented in Tables A and B above (which are extracts from the DfT's Interpreting Connectivity Scores guidance).

5.7 The detailed output from the connectivity tool relating to the application site is presented at Appendix 1.

5.8 This analysis has included all four modes of transport considered in the Connectivity Tool, these being:

- walking
- cycling
- public transport
- driving

5.9 Only the first three of these four modes of transport are used when calculating the overall Connectivity Score for a location.

5.10 The analysis has also covered all six destination categories, these being:

- employment/workplaces
- education
- leisure & community
- healthcare
- shopping
- visiting friends in their homes (residential)

5.11 The analysis of this output is presented in Table 1 below.

	National Median Value (i.e. 50th percentile)	Application Site	
		Score	**Percentile**
By Journey Purpose			
Education	65.0	44	10-20th percentile
Leisure	63.6	42	10-20th percentile
Health	61.7	47	20-30th percentile
Shopping	75.2	47	10-20th percentile
Residential	67.3	69	50-60th percentile
Workplace	58.0	64	60-70th percentile
By Mode of Travel			
Walking	64.8	37	10-20th percentile
Cycling	69.7	66	30-40th percentile
Public transport	67.8	63	30-40th percentile
Driving	86.2	83	30-40th percentile
Overall connectivity	**66.8**	**53**	**20-30th percentile**

Table 1 Overall Connectivity Scores & Banding

5.12 The main findings of this analysis are:

- with an overall connectivity score of 53 the application site would fall between the 20th and 30th percentiles. As such the site's connectivity would only be higher than at least 20% of Output Areas (OA) in England and Wales. Given that Output Areas have similar populations to one another this means that the site is better connected than just 20% of the residential population in England and Wales.
- This means that the overall connectivity of the application site is low.
- The site is below the national median values for all four modes of travel.

6 ACCESSIBILITY

6.1 The Connectivity Tool has clearly demonstrated that the application site is poorly connected when evaluated using this new national metric.

6.2 In this section of my evidence, I consider how accessible the site is by walking, cycling and using public transport in order to expand upon the overarching connectivity tool analysis. I consider whether the applicant's proposed mitigation measures are likely to result in a significant modal shift towards sustainable modes of travel in preference to the private car.

6.3 I also consider how safe, and convenient, walking and cycling will be for residents. This analysis also encompasses those residents using public transport given that in order to use either bus or rail residents will have to walk or cycle to a bus stop or station. Assuming, of course, that they are not given a lift to the station e.g. "kiss and ride".

How far are people prepared to walk?

6.4 Section 6.4 of the Chartered Institution of Highways and Transportation (CIHT) Publication "Planning for Walking" (2015) states:

"Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes walking distance (around 800 m)."
It continues:
"For bus stops in residential areas, 400 m has traditionally been regarded as a cut-off point and in town centres, 200 m. People will walk up to 800 m to get to a railway station, which reflects the greater perceived quality or importance of rail services."

6.5 As noted previously a walkable development is defined in the National Design Guide as having local facilities within "no more than a 10 minute walk (800 m radius)."

6.6 The consultation draft of the "Design and Place Making Planning Practice Guidance" (MHC & LG, 2026) also refers to people being prepared to walk up to 10 minutes (about 800 m) from the start of their journey to a railway station and five minutes (about 400 m) to a bus stop.

Walking

6.7 Carpenders Park is identified as a "secondary centre" in the Council's Core Strategy. In Table 3.3 "Summary of Local Facilities" of the Transport Assessment the applicants present a schedule of local facilities and associated distances. Paragraph 3.5.1 of the TA says, "Table 3.3 details the facilities and the walking cycling times from the centre of the site". The same information is presented in Table 3.1 "Summary of Local Facilities" in the Transport Statement of Common Ground. However, paragraph 3.1.11 of the Transport SoCG explains that "The distances are taken from the site".

6.8 The pedestrian links between the Oxhey Lane/Carpenders Avenue junction and the centre of the site as shown on the revised illustrative masterplan are typically in the order of 250-300m. This means that pedestrians and cyclists will have to travel an additional 250-300m within the site before they reach the existing public highway network, whether this be by way of the proposed new signal controlled site access junction or the two separate pedestrian/cycle accesses.

6.9 In my opinion, this distance is an important consideration when establishing whether or not walking represents a realistic option. For example, the closest convenience store to the site is the Co-op Food store on Delta Gain. According to Google maps this store is 750 m walking distance via Carpenders Avenue from the proposed site access junction at the Oxhey Lane/Carpenders Avenue junction. This route is shown in Figure 2.

6.10 When we consider the additional distance that residents will have to walk between the site access and the centre of the site the distances increase to 1,000-1,050 m, or thereabouts.

6.11 The distance to the Co-op food store given in both the TA and the transport SoCG is 800 m.

6.12 Of the 30 local destinations given in Table 3.1 of the TA only 9 are said to be within 800 m of the site.

Proposed improvements to the walking network

6.13 In conjunction with the planning application the applicant has agreed to deliver a package of measures to improve the off-site walking network. These involve footway resurfacing and the installation of tactile paving at various junctions.

Comment

6.14 It is clear from the applicant's own analysis that most of the day-to-day facilities and services needed to support a large residential development, including the closest railway station, are not within an easy walking distance of the site.

6.15 The proposed improvements to the pedestrian network will make the pedestrian environment slightly more attractive, but will not, in my opinion be transformational in terms of encouraging people to walk who would otherwise use another mode of travel.

6.16 In my opinion, the determining factor as to whether or not a person will walk between the proposed new homes and the persons intended destination is likely to be the overall length of the journey. In this case the distances are, in my opinion, too long for walking to be a realistic day-to-day option.

Access by bus

6.17 At present the closest bus stops to the site are located on By the Wood, a distance of approximately 700 m from the proposed signal controlled site access.

6.18 The applicant has agreed to provide funding for a five year period to reroute an existing bus service so that it runs along Oxhey Lane close to the proposed site access.

6.19 A new bus stop is to be provided in this area "to ensure that the majority of the development will be within a 400 m walk distance (thus there is no need to the bus service to route into development site)" (Transport SoCG para 3.2.8).

6.20 It is also understood that the bus service is expected to provide an hourly service.

Comment

6.21 In my opinion the provision of an hourly bus service is unlikely to encourage a significant number of residents to travel by bus rather than car.

6.22 The proposed new bus stop is intended to be within 400 m of "the majority", but not all of the development.

6.23 There is no guarantee that the bus service will be self-sustaining beyond the five year funding period. It is unclear what will happen after the five year period if the bus service is not self-sustaining.

6.24 In my opinion therefore whilst the proposed improvements to the bus service are welcome they will have minimal impact in terms of delivering a significant, and sustainable shift away from car dependency.

Cycling

6.25 The applicants have assumed a maximum distance of 5 km for cyclists. This is a standard figure, and I take no issue with it.

6.26 TA Figure 5.1 "Cycling Catchment Plan" shows the 5 km cycling isochrone from the application site. It will be noted that this covers an extensive area which extends to include Watford to the north and Harrow to the south.

6.27 In the Transport Assessment the applicants say that most pedestrian and cycle journeys will route along Carpenders Avenue (Ref. TA Paras 7.2 & 7.3).

6.28 Carpenders Avenue rises at a gradient of 2.4% (1 in 42) over a distance of 725 m from its junction with Delta Gain to its junction with Oxhey Lane.

6.29 Local Transport Note (LTN) 1/20 "Cycle Infrastructure Design" presents the following guidance relating to the longitudinal gradient of cycle routes:

*"**5.9.7** Unlike motor traffic, human physiology means that people can cycle steep gradients that are fairly short but are not capable of maintaining high levels of effort for longer distances. Cycle routes should therefore, where possible, be designed in such*

a way that the steepness and maximum length of longitudinal gradients meets the requirements of Table 5-8."

6.30 Table 5-8 is reproduced below.

Table 5-8: Maximum length for gradients

Gradient %	Desirable maximum length of gradient (m)
2.0	150
2.5	100
3.0	80
3.5	60
4.0	50
4.5	40
5.0	30

6.31 It is clear from this advice that Carpenders Avenue will be an unattractive route for cyclists given that its average gradient over a length of 725 m is 2.4%. According to LTN 1/20 advice the desirable maximum length of such a steep gradient is little more than 100 m.

6.32 In my opinion, the gradient of Carpenders Avenue will make it an unattractive route for cyclists.

Cycling contribution

6.33 In conjunction with the proposed development the applicants have agreed to contribute £20,000 towards the provision of three bikes at a Beryl Bike parklet in Carpenders Park and the provision of a dedicated Beryl Bike parklet on site.

6.34 The applicants do not propose to make any other contributions towards improving the cycling network in the vicinity of the application site.

Comment

6.35 As I have explained the gradient of Carpenders Avenue will make it an unattractive route for cyclists even though, as the applicants say, *"It is likely that most cycle journeys will route along Carpenders Avenue upon exiting the site"* (TA paragraph 7.3.3).

6.36 There is an existing shared footway/cycleway along the eastern side of Oxhey Lane to the north of the site. At present this stops approximately 300 m north of the site.

6.37 In conjunction with planning application number 25/1055/FULL (development of 96 dwellings on land to the rear of Woodlands Cottage, Oxhey Lane, Carpenders Park), and at the request of the local highway authority, it is intended to extend the existing shared footway/cycleway northwards along Oxhey Lane to tie into the proposed site access serving the Woodlands Cottage site.

6.38 It seems to me, on the basis of the information currently available to me, that the existing shared footway/cycleway that currently stops approximately 300 m north of the proposed signal controlled junction could be extended in a southerly direction to tie into the proposed signal controlled site access junction. Thereby providing a much longer section of shared footway/cycleway along the eastern side of Oxhey Lane.

6.39 Providing improved cycle access to the north along Oxhey Lane would have the advantage of providing improved cycle links between the site and Bushey station and Watford.

6.40 The Oxhey Lane (A4008) corridor is currently an unattractive environment for cyclists and pedestrians. The extension of the existing shared footway/cycleway to the north of the site would go some way towards improving this situation.

6.41 In my opinion, if a large new residential development is to be built on land to the east of Oxhey Lane then this should only be done in conjunction with significant sustainable transport improvements along the A4008 corridor to the north and south of the site.

7 HIGHWAY SAFETY ISSUES

The Proposed Site Access Arrangements

7.1 It is proposed to provide three new accesses on Oxhey Lane to serve the proposed development:

- the main site access will be by way of a new four arm signal controlled crossroads junction between Oxhey Lane (A4008)/Carpenders Avenue/site access. This access will cater for vehicles, pedestrians & cyclists.
- A separate pedestrian only access is proposed immediately to the north of the care home.
- An emergency access is proposed south of the care home. This will be a permanent access for pedestrians & cyclists and will also provide access for emergency vehicles.

Design Standards

7.2 The proposed site access arrangements have been designed in accordance with Manual for Streets 2 (MfS 2) and the LHA's "Place & Movement Planning and Design Guidance for Hertfordshire" (the LHA's Design Guide).

7.3 It should be noted that The LHA's Design Guide (Highways Place and Movement Planning and Design Guide) was adopted in March 2024.

7.4 Paragraph 1.3 of the Introduction to the Design Guide states:

*"**1.3** This guidance is a local interpretation and articulation of national policies and guidelines aimed at delivering sustainable development appropriate for Hertfordshire in accordance with HCC's 4th Local Transport Plan's (LTP4) policies."*

7.5 As such it represents an up-to-date interpretation and application at the local level of current policy and best practice guidance in the field of transportation and highways.

7.6 In January 2025 the applicant submitted a report entitled "Access Option Appraisal Report". This is included as Appendix A of the Transport Assessment.

7.7 In this report the applicants strongly argued for the use of the lower MfS standards rather than the standards presented in the Design Manual for Roads and Bridges (DMRB).

7.8 The LHA subsequently accepted the applicant's arguments and the agreed site access arrangements as described in the Transport SoCG do not accord with the DMRB.

DMRB or MFS?

7.9 In my opinion, compromising on highway design standards, particularly with regards to stopping sight distances, is inappropriate in a situation such as this where it is proposed to provide three new junctions onto the A4008.

Status of Oxhey Lane (A4008)

7.10 Oxhey Lane is described on Hertfordshire County Council website as being:

- part of the Primary Route Network (PRN: Principal Road – A)

  It is described as being a "Main Distributor (other A Roads)"

- status within the Place and Movement Network: "combination"

  Category "P2/M2 (eg Multi Function Road)"

7.11 The Primary Road Network (PRN) is described on the County Council's website as follows:

"The primary road network designates roads between places of traffic importance across the UK, with the aim of providing easily identifiable routes to access the whole of the country." (Source: the LHA's design guide: glossary)

7.12 Clearly, therefore Oxhey Lane has an important role to play as a traffic route.

7.13 Part 3 Chapter 1 of the LHA's design guide includes the "design menu cards" for different types of road. The requirements relating to a P2/M2 main distributor road subject to a 40 mph speed limit are:

- active travel provision - recommended standard
  - segregated footways & cycle track

- shared use but segregated from carriageway
- footways & step cycle track

- Design Code DMRB
- Minimum forward visibility 120 m

Active Travel Provision

7.14 As noted previously there is no specific cycle provision on Oxhey Lane in the vicinity of the site. The existing shared use footway/cycleway that stops approximately 300 m to the north of the site complies with the recommended standard set out above. The extension to the north of that shared footway/cycleway as proposed in conjunction with the site at Woodlands Cottage also accord with that standard. However, there is no provision in the vicinity of the site we are dealing with. Nor is there any similar provision to the south of the site.

7.15 It is apparent therefore that the level of active travel provision on Oxhey Lane in the vicinity of the application site does not accord with the LHA's design requirements.

Minimum Forward Visibility

7.16 Forward visibility (i.e. stopping sight distance) on the Oxhey Lane approaches to the proposed new traffic signal controlled crossroads junction have been calculated in accordance with MfS criteria rather than DMRB.

7.17 The forward visibility (i.e. visibility to the primary signal head) shown in drawing number ITL200107-GA-002 Rev E (this being the junction layout reference in the Transport SoCG) is:

52.3 m from the south
48 m from the North

7.18 Clearly, this is well below the "minimum forward visibility" of 120 m set out in the LHA's design guide.

Observed Traffic Flows & Speeds

7.19 In Table 3.4 of the TA the applicants presented observed traffic speeds and volumes based on automatic traffic counts (ATCs) undertaken on Oxhey Lane at 3 locations:

ATC 1 south of Carpenders Avenue
ATC 2 care home access
ATC 3 south of care home

7.20 The proposed new signal controlled junction is at the existing Oxhey Lane/Carpenders Avenue junction so the observed data at ATC 1 is particularly relevant.

7.21 The observed 24 hour 85th percentile speeds were:

northbound	38.0 mph (61.2 KPH)
southbound	37.3 mph (60.0 KPH)

7.22 The observed daily flows were:

northbound	8239
southbound	8894
Total Flow	17,133

7.23 Table 10.1: "Summary of Recommended SSD Criteria" in MFS 2 presents the recommended approach to be followed when calculating stopping sight distances for different design speeds. For design speeds of 60 KPH and below MFS criteria are recommended. For design speeds above 60 KPH DMRB standards are recommended.

7.24 It will be noted that the observed 85th percentile design speed on the northbound approach to the proposed signals is above 60 KPH. The equivalent southbound figure is exactly 60 KPH.

Comment

7.25 In situations such as this where the road in question is not a motorway or trunk road (in which case the use of DMRB would be mandatory) then deciding which set of design standards is appropriate is a matter of judgement.

7.26 In this case it seems clear to me that DMRB is the appropriate standard for the following reasons:

- Oxhey Lane is part of the Primary Route Network (PRN)
- Oxhey Lane (A4008) is classified as a Main Distributor (other A roads) within the PRN
- Oxhey Lane is classified as a P2/M2 Multifunction Road within the highway authority's Place and Movement Network
- the highway authority has a recently adopted Design Guide that sets out the specific design requirements for different categories of road. The required Design Code relating to a P2/M2 main distributor road subject to a 40 mph speed limit is DMRB with a 120 m stopping sight distance.
- MFS recommends the use of DMRB criteria given the observed design speeds.
- There will be a significant increase in pedestrian activity on Oxhey Lane in the vicinity of the site as a result of the proposed development.

7.27 In my opinion, in a situation such as this it is not appropriate to use lower design standards than those recommended in both the LHA's design guide and in the MFS. To do so is likely to introduce new, and avoidable, highway risks which are likely to have a particularly adverse impact on the most vulnerable road users i.e. pedestrians and cyclists.

7.28 The proposed site access arrangements have been designed in accordance with the lower MFS standards and not those set out in the highway authority's Design Guide i.e. DMRB.

7.29 There is no specific provision for cyclists waiting to turn into the shared pedestrian/cyclist access. Cyclists waiting to turn right into the site will have to wait in the middle of the carriageway waiting for a suitable gap in oncoming traffic. As such they will be vulnerable to being hit by a vehicle approaching from the south.

7.30 The creation of 3 new accesses to the site along this stretch of Oxhey Lane will create numerous additional potential conflict points between vehicles on Oxhey Lane and vehicles/cyclists/pedestrians turning into and out of the application site.

7.31 In my opinion, if highway safety is not to be unnecessarily compromised then it is essential that a high standard of visibility is provided for all road users.

Delay & Inconvenience

7.32 As a result of creating a new four arm signal controlled junction to serve the proposed development existing traffic on Oxhey Lane (which is part of the Primary Road Network and a Main Distributor) and Carpenders Avenue will inevitably be subject to increased delay and inconvenience.

8 SUMMARY & CONCLUSIONS

Appointment

8.1 I have been appointed by the Rule 6 Party "Residents Protecting Oxhey Lane Fields".

Scope of my evidence

8.2 My evidence considers the transport and highway implications of the proposed residential development on land east of Oxhey Lane, Carpenders Park. The assessment has been undertaken against the requirements of the National Planning Policy Framework (NPPF), Hertfordshire County Council's Local Transport Plan, Three Rivers District Council Core Strategy policies, and current transport planning guidance.

8.3 The principal questions addressed are:

- Whether the site represents a sustainable location in transport terms.
- Whether the proposed mitigation measures would create a genuine choice of travel modes and make sustainable transport the first choice for everyday journeys.
- Whether the proposed access arrangements provide a safe and suitable access for all users.

Policy context

8.4 National and local transport policy places considerable emphasis on locating development in sustainable locations where walking, cycling and public transport can become the preferred means of travel. The NPPF requires significant development to be focused on locations which are, or can be made, sustainable and requires priority to be given to sustainable transport modes. Development proposals must provide safe and suitable access for all users and should only be refused on highway grounds where highway safety impacts are unacceptable or where residual cumulative impacts are severe.

8.5 At the local level, both Hertfordshire County Council and Three Rivers District Council apply a transport user hierarchy which prioritises pedestrians, cyclists and public

transport ahead of private motor vehicles. Major development is expected to be located in areas that are highly accessible by sustainable modes and integrated with wider walking, cycling and public transport networks.

8.6 The County Council's local transport plan only allows new accesses onto primary and main distributor roads where special circumstances can be demonstrated.

Connectivity Tool Assessment

8.7 I have analysed the application site using the Government's new Connectivity Tool. The Connectivity Tool has been introduced by the Department for Transport, Ministry of Housing, Communities and Local Government, and Active Travel England as a national measure of transport sustainability. The tool assesses how easily people can access jobs, education, healthcare, shopping, leisure opportunities and other essential destinations using walking, cycling and public transport.

8.8 My analysis demonstrates that the application site performs poorly against this new national metric. The site achieves an overall connectivity score of 53, placing it within the 20th-30th percentile nationally. This means that the site's connectivity is only better than approximately 20% of locations in England and Wales and is therefore significantly below average. The site scores below the national median for all modes of travel assessed, including walking, cycling, public transport and driving.

8.9 The detailed assessment also shows particularly poor performance for access to education, leisure, shopping and healthcare destinations, all of which fall within the lower national percentile bands.

8.10 In my opinion, this analysis provides strong evidence that the site does not represent a sustainable location in transport terms.

Accessibility Assessment

<u>Walking</u>

8.11 Walking is the most important sustainable transport mode for accessing local facilities and connecting with public transport services. National guidance consistently identifies 800 metres (a 10-minute walk) as the distance within which local facilities

should generally be accessible on foot. Bus stops are typically expected to be within 400 metres, whilst railway stations should ideally be within 800 metres.

8.12 The applicant's accessibility analysis significantly understates actual walking distances because it measures from the edge of the site rather than from the centre of the proposed development. Internal walking distances of approximately 250–300 metres must be added before residents reach the existing highway network.

8.13 For example, the nearest convenience store is approximately 750 metres from the proposed access junction but around 1,000–1,050 metres from the centre of the development itself. Of the 30 destinations identified by the applicant, only nine are stated to be within 800 metres even before allowing for these internal site distances.

8.14 The applicant proposes limited off-site pedestrian improvements consisting primarily of footway resurfacing and additional tactile paving. While these measures are welcome, they do not materially alter journey lengths or transform accessibility. In my opinion, the fundamental issue is the distance between the site and key destinations. The majority of day-to-day facilities, services and the nearest railway station are simply too far away for walking to be a realistic travel choice for most routine journeys.

Public Transport

8.15 The nearest existing bus stops are approximately 700 metres from the proposed site access. The applicant proposes funding an existing bus service diversion for a five-year period and providing a new bus stop on Oxhey Lane in the vicinity of the main site access. The revised bus service is expected to operate hourly.

8.16 While this proposal would improve public transport accessibility, I do not consider that an hourly service is likely to encourage significant modal shift away from the private car. Furthermore, there is no guarantee that the service will remain viable once the five-year funding period ends. The long-term sustainability of this mitigation measure therefore remains uncertain.

8.17 Consequently, I conclude that the proposed bus service enhancements are unlikely to materially reduce car dependency.

Cycling

8.18 Cycling offers greater opportunities to access destinations within a wider area. However, the existing cycling environment along Oxhey Lane is poor. Although there is a shared pedestrian/cycle route to the north of the site, it currently terminates approximately 300 metres away and there is no dedicated cycling infrastructure in the vicinity of the development site.

8.19 The applicants say that most cyclists will route along Carpenders Avenue. The length and gradient of Carpenders Avenue mean that this route will be unattractive to cyclists.

8.20 The applicant proposes only limited cycling mitigation, comprising a contribution towards a Beryl Bike facility. No substantive improvements to the wider cycling network are proposed.

8.21 In my view, if a major residential development is to be accommodated in this location, it should be accompanied by significant active travel improvements along the Oxhey Lane corridor, particularly towards Bushey Station and Watford. The proposed measures fall considerably short of this requirement.

Highway Safety

8.22 The development proposes three new accesses onto Oxhey Lane, including a signal-controlled four-arm junction, a pedestrian access and a combined pedestrian/cyclist/ emergency access.

8.23 A key issue concerns the design standards that have been applied. The applicant and the Highway Authority have agreed a design based on Manual for Streets (MfS) criteria rather than the more demanding Design Manual for Roads and Bridges (DMRB) standards.

8.24 In my opinion, this approach is inappropriate in this case because Oxhey Lane is:

- Part of the Primary Route Network.
- Classified as a Main Distributor A-road.
- Categorised within Hertfordshire's Place and Movement hierarchy as a P2/M2 multifunction road.

- Subject to a locally adopted design guide which specifically requires DMRB standards and a minimum forward visibility distance of 120 metres.

8.25 The proposed signal controlled junction provides forward visibility distances of only 48 metres and 52.3 metres on the Oxhey Lane approaches to the signals. These are significantly below the Highway Authority's own design requirement of 120 metres.

8.26 Observed traffic flows on Oxhey Lane exceed 17,000 vehicles per day, with recorded 85th percentile vehicle speeds around 60 kph. These conditions support the application of DMRB standards rather than the lower MfS criteria.

8.27 I am also concerned that providing 3 new accesses onto Oxhey Lane will create additional conflict points between vehicles, cyclists and pedestrians. Cyclists turning right into the site at the southernmost access point would be required to wait within the carriageway, exposing them to potential collision risks.

8.28 In my professional opinion, adopting lower visibility standards in this location introduces avoidable highway safety risks, particularly for vulnerable road users such as pedestrians and cyclists.

Policy Conflicts

8.29 In my opinion, the proposed development conflicts with the following policies:

- NPPF paragraph 109 insofar as the vision led transport solutions proposed will not create a sustainable development.

- NPPF paragraph 110 because the site is not in a sustainable location. The applicants proposed sustainable transport interventions will not, in my opinion, make the site a sustainable location.

- NPPF paragraph 115 because the location of the site in open countryside beyond the existing built-up area, and with access from a main distributor A-road, mean that the policy requirements of providing safe and suitable access for all users, and giving priority to sustainable transport modes have not been achieved.

- NPPF paragraph 117 because the proposed development does not prioritise pedestrian and cycle movements and does not provide access to high quality public transport. The proposed site access arrangements do not minimise the scope for conflicts between pedestrians, cyclists and vehicles. Indeed, the provision of three new accesses onto the A4008 will increase the scope for conflict between pedestrians, cyclists and vehicles.

- LTP Policy 5 (f) which resists the creation of new accesses onto main distributor roads except where special circumstances are demonstrated. In this case it is proposed to create a new four arm signal controlled junction and two additional accesses onto the A4008 main distributor road in order to serve the proposed residential development. I have identified conflict between the proposed junction designs and the LHA's Design Guide. Inevitably, creating three new accesses to serve a large new residential development will introduce a large number of additional movements, and conflict points, onto this section of the Primary Road Network. This will inevitably increase the scope for conflict between pedestrians, cyclists and vehicles.

8.30 With regard to NPPF paragraph 116 I do not think that there is a fundamental conflict with this policy given that it sets a very high "bar". I would though invite the Inspector to take the following matters into consideration, in addition to the points I have mentioned above:

- the creation of a new four arm signal controlled junction on Oxhey Lane will, by its very nature, disrupt the free flow of traffic on this section of the Primary Road Network. At present traffic on Oxhey Lane has priority over traffic turning out of Carpenders Avenue and is therefore not subject to any delay or interruption to the free flow. In the future traffic on all four arms of the signal controlled junction will be subject to delay and interruption due to the traffic lights.

- Forward visibility i.e. stopping sight distances on the approaches to the proposed new signal controlled junction have been calculated in accordance

with MfS criteria. This is despite the highway authority's design guide specifying the use of DMRB criteria and explicitly stating that 120 m stopping sight distances should be provided on a 40 mph main distributor road such as Oxhey Lane.

- Vulnerable road users (cyclists and pedestrians) will be discouraged from using Oxhey Lane by the substandard level of provision along this route for active travel. Those vulnerable users that do use this route, particular cyclists, will be exposed to danger given that they will have to share the carriageway with vehicles. This is contrary to the standard of provision required along this type of road in the highway authority's design guide.

Overall Conclusions

8.31 My investigations lead me to conclude as follows:

1. The application site is not a sustainable location in transport terms. The Government's Connectivity Tool demonstrates that the site has below-average connectivity and performs poorly against the new national benchmark for sustainable locations.

2. The development would remain fundamentally car-dependent. Most everyday destinations, including shops, services and public transport facilities, are beyond comfortable walking distances for many residents.

3. The proposed mitigation measures are insufficient to achieve meaningful modal shift. The pedestrian improvements are modest, the proposed bus service is limited and potentially temporary, and cycling enhancements are minimal.

4. The development fails to align with the objectives of national and local transport policy, which seek to prioritise walking, cycling and public transport and locate major development in highly accessible locations.

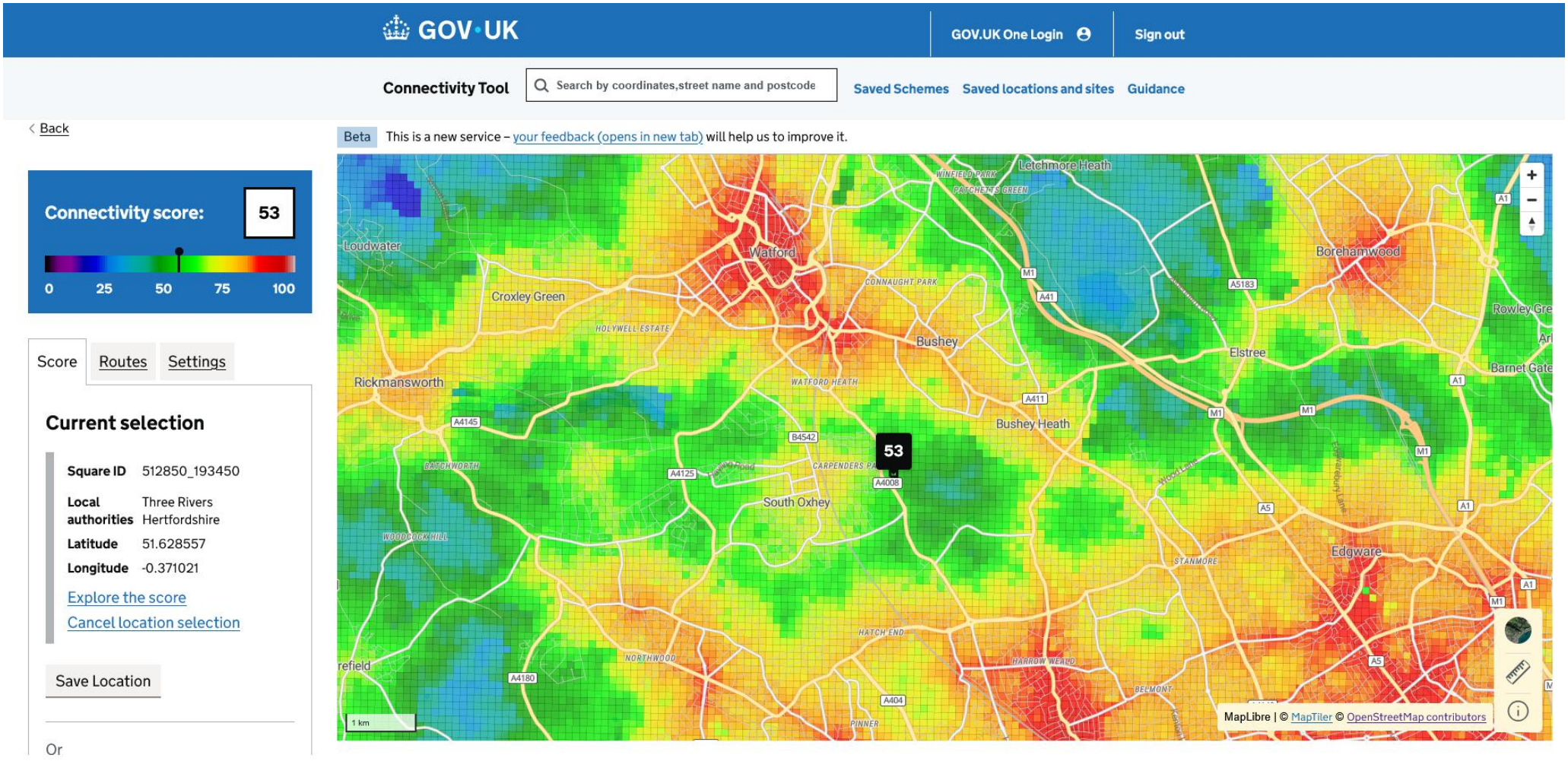
5. The proposed access arrangements raise important highway safety concerns. The design relies on lower standards than those recommended by the Highway Authority's own design guidance, despite the strategic function of Oxhey Lane and the traffic conditions that exist.

6. The proposal would introduce avoidable risks for vulnerable road users and increase conflict between vehicles, cyclists and pedestrians.

8.32 In my opinion, it is open to the Inspector to afford adverse weighting to the harms that I have identified. In paragraph 5.47 of the Rule 6 Party's SoC, two distinct moderate levels of adverse weighting are suggested. On having reviewed matters in close detail, I think the evidence would support that indication: there is plainly an adverse effect. I am not a planner, so the level of that effect is for the Inspector to determine, and it is for the Inspector to attribute what negative weight he considers appropriate in the circumstances.

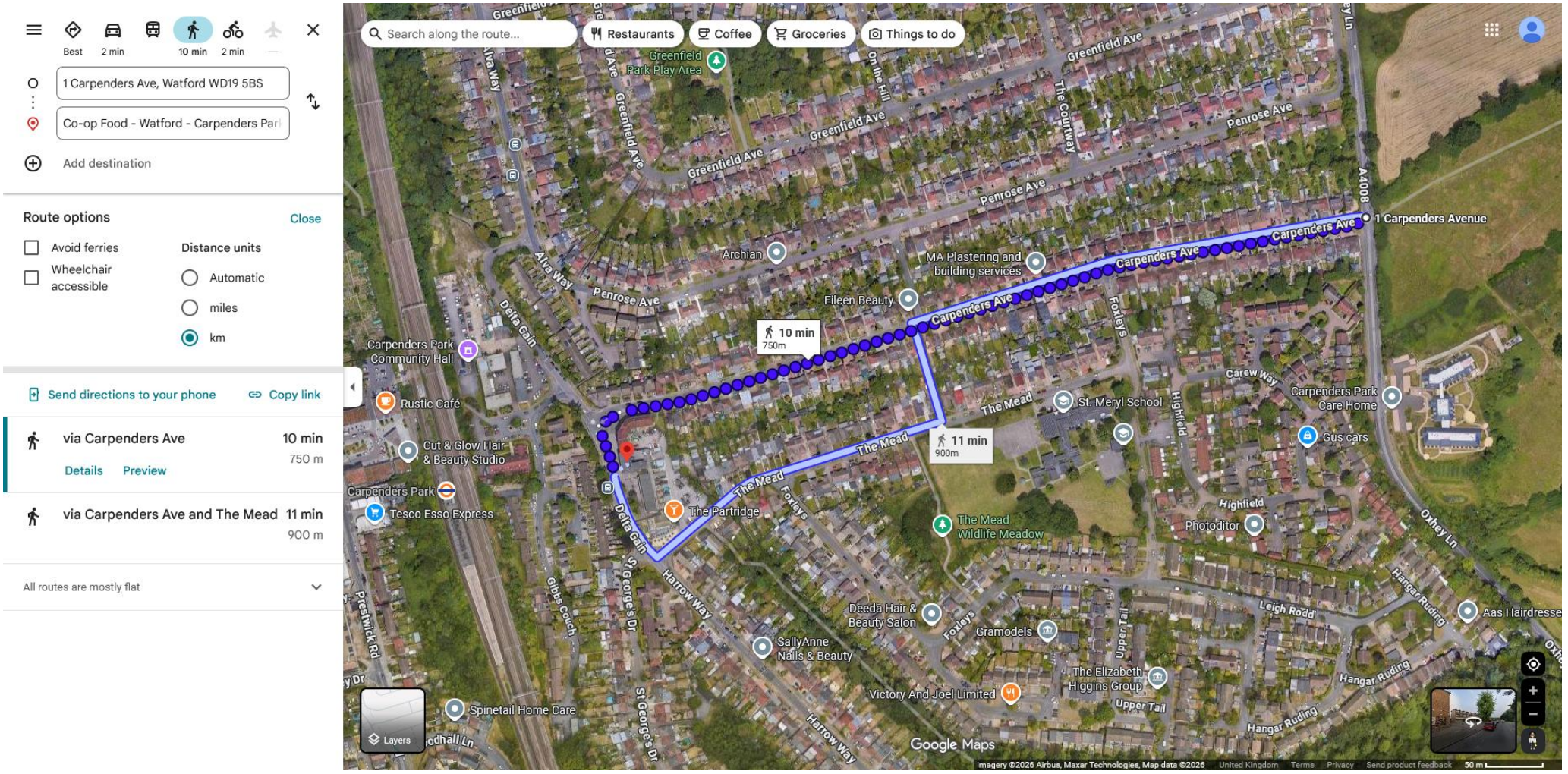
8.33 For the reasons set out above, I conclude that the proposed development does not adequately satisfy the transport sustainability and highway safety requirements of national and local planning policy. This being the case I conclude that planning permission should be refused on transport and highway grounds.

FIGURES



Connectivity Tool – The Application Site & Surrounding Area

Figure 1



Walking Route from Site access to Co-op convenience store

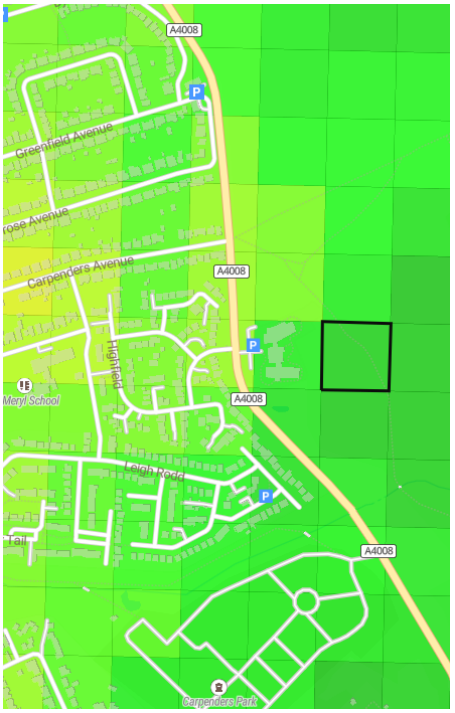
Figure 2

APPENDIX 1

Explore the score

Please see Interpreting Connectivity Scores (/help/interpreting-connectivity-scores) for guidance

Square ID	512850_193450
Local authorities	Three Rivers Hertfordshire
Latitude	51.628557
Longitude	-0.371021



Overall

Type	National score
Overall (except driving)	53
Public transport	63
Walking	37
Cycling	66
Driving	83

Education

Type	National score
Overall (except driving)	44
Public transport	63

Type	National score
Walking	28
Cycling	63
Driving	74

Leisure

Type	National score
Overall (except driving)	42
Public transport	52
Walking	27
Cycling	59
Driving	77

Health

Type	National score
Overall (except driving)	47
Public transport	56
Walking	33
Cycling	55
Driving	76

Shopping

Type	National score
Overall (except driving)	47
Public transport	56
Walking	36
Cycling	59

Type	National score
Driving	80

Residential

Type	National score
Overall (except driving)	69
Public transport	71
Walking	65
Cycling	80
Driving	92

Workplaces

Type	National score
Overall (except driving)	64
Public transport	71
Walking	42
Cycling	69
Driving	85