

Land off Mendip Way, Great Ashby

Transport Assessment
Revision J

February 2026



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Introduction



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Introduction

The following paragraphs state the purpose of this document. A summary of existing and future site details is also provided.

- 1.1 This Transport Assessment (TA) has been prepared by Woods Hardwick Ltd (WH) on behalf of Picture Estates Ltd in support of the Hybrid application for a residential-led development comprising residential (Use Class C3), educational use (Use Class F1), a community hub (Use Class F2) with associated new internal roads, access, parking, cycling infrastructure, landscaping and other associated infrastructure on land known as 'Land off Mendip Way, Great Ashby' in Stevenage. A Site Location Plan is included in **Appendix A**.
- 1.2 The Full application comprises the construction of vehicle access and an active travel link via Mendip Way, with associated landscaping and drainage works.
- 1.3 The Outline Application, for which all matters are reserved except for means of access, comprises the erection of up to 640 dwellings (Use Class C3), a site for a primary school, further land reserved for educational use (Use Class F1), a site for a community hub (Use Class F2), with associated infrastructure.
- 1.4 As identified within the adopted North Hertfordshire Local Plan (2011 - 2031), the site, GA2, is allocated under Policy SP18 as a Strategic Housing Site for a new neighborhood of approximately 600 homes. The Proposed Site Layout is also enclosed in **Appendix A**.
- 1.5 The development proposals consist of the following;
 - Up to 640 residential units;
 - Up to 500sqm retail, food and beverage, and medical and social floorspace;
 - 4ha of land to make provision for 2FE primary/ 4FE secondary school; and
 - Suitable parking infrastructure designed in line with local car parking standards.
 - Principle access to the Site is to be provided via Mendip Way, with provision for sustainable modes of transport in alignment with the Stevenage Mobility Strategy. The access road to the Site will be designed to effectively integrate into the nearby existing road networks.

- 1.6 The purpose of this TA is to; gauge the potential impact of the proposed development on the surrounding highway network; to identify sustainable alternatives to single occupancy vehicle (SOV) use and to propose interventions to maximise their uptake. This Transport Assessment is written in accordance with the Department for Communities and Local Government's Planning Practice Guidance (PPG) and other relevant planning policy at both a national and local level.
- 1.7 This TA will cover the requirements outlined in Section 6 of the 'Transport and Accessibility Baseline Report' in the **Guidance on transport in masterplans (DRAFT, 2023)** document. For ease of reference the requirements noted are within the aforementioned document are as follows;
- Transport Policy Context;
 - Site Location;
 - Key Destinations;
 - Walking and Cycling Accesses;
 - Public Transport;
 - Vehicular Access;
 - Highway Network Monitoring;
 - Collision Analysis;
 - Relevant Transport Schemes;
 - Key issues, constraints and opportunities; and
 - Emerging vision and principles.
- 1.8 An Accessibility Audit has been prepared to assess the routes from the site to key local services and facilities on foot, by bicycle and by public transport. For ease of reference the Accessibility Audit is included in **Appendix B**. This document incorporates the findings of the Accessibility Audit to identify gaps in sustainable travel networks, propose improvement measures and interventions and to set site specific targets.
- 1.9 In terms of Highways and Transport, the development site lies under the responsibility of Hertfordshire County Council (HCC) who represent the Local Highway Authority (LHA) for the area.
- 1.10 Through formal scoping and subsequent discussions with HCC, the main parameters contained within this TA including traffic generation, distribution and impacts on the local road network were agreed in principle with the Highway Officer. The formal Pre-Application Scoping Advice is contained within **Appendix C**. It was agreed that the traffic assessment exercise will take into account the junctions listed on the following page:

- Junction 1 - Site Access / Mendip Way
- Junction 2 - Mendip Way / Great Ashby Way / Whitehorse Lane / Great Ashby Way
- Junction 3 - Cleveland Way / Great Ashby Way / Great Ashby Way
- Junction 4 - Great Ashby Way / Fairfield Way / Great Ashby Way / Whitehorse Lane
- Junction 5 - Grasmere / Great Ashby Way / Great Ashby Way
- Junction 6 - Great Ashby Way / Lomond Way / Great Ashby Way
- Junction 7 - Great Ashby Way / Cartwright Road / Great Ashby Way
- Junction 8 - Great Ashby Way / Gresley Way / Glanville Crescent
- Junction 9 - Gresley Way / Gresley Way / Martins Way
- Junction 10 - Pilgrims Way / Martins Way / Martins Way
- Junction 11 - Canterbury Way / Martins Way / Grace Way / Martins Way
- Junction 12 - Canterbury Way / Canterbury Way / Great Ashby Way
- Junction 13 - Great Ashby Way / Orwell Avenue / Great Ashby Way
- Junction 14 - Bray Drive / Great Ashby Way / Wansbeck Close / Great Ashby Way
- Junction 16 - Church Street / High Street (Graveley)
- Junction 17 - High Street / Gravely Lane (Graveley)
- Junction 18 - Damask Green Rd / Hitchin Road (Weston)

- 1.11 Automatic Traffic Count (ATC) and Manual Classified Count (MCC) surveys were commissioned, by Woods Hardwick at Junctions 1-14 and were undertaken on the 3rd week of June 2023. The surveys recorded the number of vehicles, vehicle classification and corresponding movement made at each junction in question. Traffic flow information obtained from these surveys were used for the junction modelling included within the impact assessment section of this report.
- 1.12 In addition, 7-day ATC surveys have been undertaken along Mendip Way within the vicinity of the proposed site access (50m either side of the site access); this data has been used in the modelling of the proposed site access junction (Junction 1).
- 1.13 In addition to the capacity assessments listed above, an assessment of the impact of the proposals over a much wider study area has been undertaken. This assessment has been undertaken by WSP on behalf of HCC using their strategic Comet Model which covers the whole of Stevenage and beyond.
- 1.14 The model has been updated and calibrated using up to date traffic count data and speed data to ensure that the findings are as accurate as possible.

- 1.15 The Comet modelling demonstrates that minor increases are predicted at locations on the local road network within Stevenage, however, importantly the modelling confirms that any increase will be within acceptable limits which would not lead to capacity issues along the routes where the increase are anticipated.
- 1.16 Notwithstanding the above, a comparison of the Comet model run that was commissioned by the applicant in relation to the proposed development with the Local Plan Comet model was undertaken by the Highway Authority.
- 1.17 Following this review the Highway Authority recommended that sensitivity test junction capacity assessments were undertaken at the key junctions within the villages of Weston and Gravelly to the north. These junctions are listed as Junctions 16-18 in paragraph 1.8 above.
- 1.18 For Junctions 16-18 traffic data used in the assessments was obtained from Comet Model Local Plan Run 7 Model Hertfordshire County Council with the addition of site generated data for the site itself.
- 1.19 For junctions 1-18, the Trip End Model Presentation Program (TEMPro) software has been used to calculate growth factors which have been applied as necessary to the traffic counts in order to provide future equivalent traffic flows for the years 2030 and 2035 as agreed with HCC through scoping.
- 1.20 The modelling confirms that all junctions, with the exception of junction 13 under an extreme worst case scenario, have been calculated to operate with an RFC value below 1.0, indicating that the junctions are considered to remain within operating capacity. Junction 13 has been calculated to operate with an RFC value above the maximum theoretical capacity in the AM Do Something scenario, however it should be noted that this worst case is based on a likely overestimation of the realistic number of vehicles using this junction as reported in para 6.120, while in all other scenarios the junction would operate with an RFC value which remains within capacity.
- 1.21 When a junction operates above capacity to this extent it is traditionally considered necessary to consider physical mitigation works. However, during pre-application discussions, the Highway Authority and Planning Authority have made clear that the current approach is to encourage the use of sustainable modes of travel as opposed to junction improvement works that would provide additional capacity and therefore make it more convenient for motor vehicles. Therefore, it is not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity, particularly given that the preferred approach of the Highway Authority and Planning Authority is to reduce vehicular traffic through promotion of sustainable alternatives and improvements to sustainable transport links, as opposed to providing additional capacity for vehicular traffic.

- 1.22 The greatest increase in delay anticipated as a result of the development at any location is 19 seconds along Martins Way during the AM peak hour. Such a minor increase in delay would not be perceptible and indeed the existing day to day fluctuation in journey times would exceed this time.
- 1.23 This report addresses the potential transportation and highways issues raised by the development and concludes that the site lies in a sustainable location in terms of access to sustainable modes of transport, and access to a range of services and facilities within a reasonable walking and cycling distance. The impact of the development on the local highway network is not considered to be significant.
- 1.24 **This report demonstrates that the motor traffic impacts from the proposed development are acceptable and also sets out the strategy for maximising trips by sustainable modes, and internalising trips by providing amenities on-site.**
- 1.25 This report concludes that there is no reason in terms of highways and transportation why the proposed development at 'Land off Mendip Way, Great Ashby' should not be fully supported through the planning process.

Existing Site and Proposed Development



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Existing Site and Proposed Development

The following paragraphs provide detail on the existing and proposed future mix development; in relation to location, land uses, topography; as well as accessibility by sustainable modes of travel.

Existing Site

- 2.1 Great Ashby, in which the site is located is a civil parish in the North Hertfordshire district of Stevenage. The site is located 5km north east of Stevenage City Centre, 13.5km south of Letchworth Garden City, 12km East of Hitchin, 14km west of Buntingford and 20.5km north of Welwyn Garden City.
- 2.2 By road, Stevenage is primarily accessible by the A1(M) which runs in a north-south direction along the western outskirts of the city. The A1(M) enables access to Welwyn Garden City, Edgeware and Letchworth Garden City. The A602 runs through Stevenage, to the north west it provides access to Hitchin and to the south east it provides access to the southern outskirts of Stevenage, Watton at Stone and Ware. The A505 is accessible to the north of the site and facilitates access to Royston, Sawston and Great Abingdon.
- 2.3 The site is currently undeveloped and consists of open agricultural land, grassland and woodland. The north and east of the site is bound by grassland and woodland, to the south the site is abutted by woodland and residential development off Mendip Way and to the west the site is abutted by Mendip way and existing residential development.
- 2.4 Within the immediate vicinity of the site, Mendip Way operates under a 30mph speed limit. Pedestrian footpaths and street lighting are provided on both sides of the carriageway, in addition regular pedestrian crossing points and dropped kerbs are provided to enable safe and convenient pedestrian travel.
- 2.5 A number of Public Rights of Way bound and / or run through the site, these are outlined in 'Section 4 : Existing and Proposed Transport Infrastructure' and include; Bridleway 033, Footpath Weston 029, Footpath Weston 044, Footpath Weston 027, Footpath Great Ashby 011, Footpath Weston 026
- 2.6 National Cycle Route 12 is the closest national cycleway to the site. At its closest point National Cycle Route 12 can be accessed in the Western extents of Stevenage near Stevenage Train Station, approximately 5km (a 23 minute cycle) of the site. National Cycle Route 12 runs in sections from Enfield Lock in north London to Spalding via Stevenage, St Neots and Peterborough. More locally, National Cycle Route 12 enables access to Potters Bar, Biggleswade, Baldock and Stotfold.

Proposed Development

- 2.7 Development proposals consist of the following; up to 640 residential units; Up to 500sqm retail, food and beverage, and medical and social floorspace; provision for 2FE primary/ 4FE secondary school; and suitable parking infrastructure designed in line with local car parking standards. Development proposals are outlined on the Site Layout Plan included in **Appendix A**.
- 2.8 Highway Links within the development are designed in accordance with Chapter 8 of the Place & Movement Planning and Design Guide for Hertfordshire (2023). In accordance with this, the access roads to the development will be classified as L1 Local Distributor roads (30mph) and the proposed width will be 6.2m.
- 2.9 Vehicular access to the site will be provided in the form of a priority junction from Mendip Way, the site carriageway width will be set at 6.2m, which will increase to 7.5m on the junction bend. This width would be appropriate to accommodate bus services. Carriageway widths on the site will be designed in accordance with guidance contained in Chapter 8 of the Herts Design Guide and HCC guidance obtained through scoping. It is proposed that the new access road would become major arm extension of Mendip Way, changing priority on the junction for the northern section of Mendip Way, which would become a minor arm of the proposed junction.
- 2.10 The major access road will form a loop within the site. Minor access roads, shared surface streets, footways and cycleways will join them to create a transport network within the site, with provision for sustainable modes of transport in alignment with the Stevenage Mobility Strategy. The access road to the site will be designed to effectively integrate into the nearby existing road networks.
- 2.11 The Site Access and Refuse Vehicle Tracking drawings are included in **Appendix D**.
- 2.12 In addition to the main access, an emergency point of access is proposed from Warrens Green Lane to the north of the site. The emergency access onto Warrens Green Lane addresses the issue of the development being served by a single point of vehicular access in that it provides a secure alternative route for emergency vehicles coming from the fire stations in Stevenage or Baldock in case of blockage of the main access corridor or other congestion issues elsewhere in the Stevenage road network. An indicative drawing of the Emergency Access along which includes vehicular tracking of a Fire Engine is included in **Appendix D**.
- 2.13 Non-vehicular access for pedestrians and cyclists will be via the same primary site access off Mendip Way. This access will be constructed as a 6.2m carriageway with a 3.0m cycleway and 2.0m footway on the northern side of the spine road, which will tie into the existing provision on Mendip Way to the west of the site.

- 2.14 It is also proposed that a non-vehicular link will be provided into the Public Bridleway 033, within the southwestern corner of the site, which is to be retained within the site as part of the development proposals.
- 2.15 Several non-vehicular links will also be provided to tie into the existing Public Rights of Way and infrastructure along Great Ashby Way.
- 2.16 As also identified within the adopted North Hertfordshire Local Plan (2011 - 2031), the GA1 site is located in proximity to the GA2 site. The GA1 site proposals include the provision of a new SB12 bus service to serve the site. Given that the two sites are located in near proximity to each other, it is proposed that the provision of a bus will be provided jointly by the two developments.
- 2.17 In order to bring the bus to the site, it is proposed that a Traffic Regulation Order (TRO) in the form of yellow lining will be provided along Mendip Way, to provide a clear route for the proposed service. Details of this are described further within this Transport Assessment.
- 2.18 In the event that the new SB12 bus service is not provided, the diversion of the existing bus service (SB7 route) will be considered as a fall-back option.

Transportation Policy



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Transportation Policy

The following paragraphs provide detail on the transport related planning policies that help define the scope of requirements that should be adhered to when considering development at the proposed site.

- 3.1 This TA considers the guidance set out in the DfT document ‘Guidance on Transport Assessment’ published in March 2007, as well as the relevant sections of the Department for Communities and Local Government’s more recent guidance contained within the Planning Practice Guidance (PPG). In accordance with this guidance a review of relevant transportation policy at a national, regional and local level is included in this section.

National Guidance

- 3.2 Within the ‘Travel Plans, Transport Assessments and Statements’ section of the DCLG, PPG; the definition of a Transport Assessment is as follows:

Transport Assessments... are ways of assessing the potential transport impacts of development (and they may propose mitigation measures to promote sustainable development. Where that mitigation relates to matters that can be addressed by management measures, the mitigation may inform the preparation of Travel Plans)’.

- 3.3 The National Planning Policy Framework (NPPF: December 2024) aims to bring about sustainable development and create positive growth, to create economic, environmental and social progress for current and future generations. This revised document supersedes the previous NPPF, published in 2012, 2018, 2019 and 2021.
- 3.4 Section 9 of the NPPF focuses on promoting sustainable transport. NPPF Paragraph 117 states that all applications for developments that will generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment.
- 3.5 NPPF Paragraph 114 states that in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:
- ‘Appropriate opportunities to promote sustainable transport modes can be - or have been - taken up, given 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 reflect the 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’.

3.6 NPPF Paragraph 109 states that significant development should be focused on locations which are, or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. Opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be considered in both plan making and decision making.

3.7 NPPF Paragraph 116 states that development should be located and designed to:

- Give priority first to pedestrian and cycle movements, both within the scheme and within neighbouring areas; and second - so far as possible - to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- Create places that are safe, secure and attractive - which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter and respond to local character and design standards;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Where possible, be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

3.8 NPPF Paragraph 115 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 would be severe, in all tested scenarios.

3.9 The requirement for developers (in partnership with local authorities) to submit plans for the implementation and maintenance of measures that will minimise the traffic generated by their development and that encourage walking and cycling is also outlined in the Department for Transport Circular 02/13.

- 3.10 Manual for Streets (MfS) (March 2007) recognises the significance of the design of a development in encouraging sustainable modes of transport as paragraph 2.2.5 of MfS states that:

‘Attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving health while reducing motor traffic, energy use and pollution.’

- 3.11 Walking is widely considered to be the most important mode of travel at the local level; and Paragraph 4.4.1 of MfS states that ‘walking offers the greatest potential to replace short car trips, particularly for journeys of less than 2km’. It is also important to provide sustainable routes for journeys of greater distances through the provision of a high quality, safe, secure and reliable network of routes, with good interchanges, which match the pattern of travel demand in order to maximise public transport patronage.
- 3.12 The ‘Road User Hierarchy’ as described in Department for Transport publications MfS and ‘Building Sustainable Transport into New Developments’ (2008), also puts forward walking and cycling as the two preferred modes of travel, followed by public transport, specialist service vehicles and lastly other motor traffic. It is recommended that where possible, a scheme should follow this proposed hierarchy.
- 3.13 As advised in MfS Paragraph 6.1.3 and summarised in Manual for Streets 2 (MfS) (September 2010) Paragraph 5.1.3; encouraging walking has many benefits, including reductions in vehicle emissions and traffic collisions, and improvements in personal health. In summary, the documents advise that:
- The propensity to walk is influenced not only by distance, but also by the quality of the walking experience.
 - Good sightlines and visibility towards destinations and intermediate points are important for way finding and personal security.
 - Pedestrian routes need to be direct and match desire lines as closely as possible, including across junctions, unless site specific reasons preclude it.
 - Pedestrian networks need to be connected. Where routes are separated by heavily trafficked routes, appropriate surface level crossings should be provided where practicable.

- Pedestrians should generally be accommodated on multifunctional streets rather than on routes segregated from motor traffic. In situations where it is appropriate to provide traffic free routes, they should be short, well overlooked and relatively wide.
- Obstructions on the footway should be minimised. Street furniture on footways can be a hazard for vulnerable people.
- There is no maximum width for footways; widths should take account of pedestrian volumes and composition.

3.14 As with walking, MfS and MfS2 advise that cycling can bring about benefits in terms of vehicular emissions, traffic collisions and public health. To summarise, MfS2 Paragraph 6.1.3 states that:

- Cyclists should be accommodated on the carriageway.
- Cyclists prefer direct, barrier free routes that avoid the need to dismount. Routes that take cyclists away from their desire lines and require them to concede priority to side road traffic are less likely to be used.
- Off-carriageway cycle tracks that bring cyclists into conflict with side road traffic can be more hazardous than routes that stay on the main carriageway.
- Cyclists are sensitive to traffic conditions; high speeds or high volumes of traffic tend to discourage cycling. If traffic conditions are inappropriate for on-street cycling, they should be addressed to make on-street cycling satisfactory.
- Junctions should be designed to accommodate cyclists needs. Over-generous corner radii that lead to high traffic speeds should be avoided.

3.15 In September 2015 Highway England released 'The Strategic Road Network Planning for the Future'. The guidance states that the overall forecast demand on the Strategic Road Network and surrounding local road network should be assessed and compared to the ability of the existing road network to accommodate traffic.

- 3.16 In addition to the above, the 'Cycle Infrastructure Design - Local Transport Note 1/20 (2020)' provides guidance on the design of cycle infrastructure. The LTN 1/20 states that when people are travelling by bicycle, they need networks and routes that are:
- Coherent - routes should be designed to allow people to reach their day to day destinations easily along routes that are well connected, simple to navigate and are high quality.
 - Direct - routes should provide the shortest and fastest way of travelling from place to place. To make cycling an attractive alternative to driving short distances, cycle routes should be at least as direct - and preferably more direct - than those available for private motor vehicles.
 - Safe - cycle infrastructure must be safe, and it also must be perceived to be safe by the end user. Measures to achieve this are dependent upon the location and nature of the cycle route, which should be considered when planning new routes.
 - Comfortable - comfortable conditions for cycling require routes with good quality, well-maintained smooth surfaces, adequate width for the volume of users, minimal stopping and starting, avoiding steep gradients, excessive or uneven crossfall and adverse camber. Designers should consider comfort for all users including children, families, older and disabled people using three or four-wheeled cycles.
 - Attractive - the attractiveness of a cycle route affects whether users will choose cycling as a means of transport. The environment should be attractive, stimulating and free from litter or broken glass.
- 3.17 The LTN 1/20 also provides a tool to assess the level of service which a cycle route currently provides. The 'Cycling Level of Service' (CLOs) tool is a scoring assessment based on the five design criteria which can be used to identify the design needs of an existing cycle route. The CLOs tool has been undertaken at the site as part of an Accessibility Audit (AA). Please refer to the AA for further information.
- 3.18 Additionally, the DfT guidance document titled 'Inclusive Mobility: A Best Practice on Access to Pedestrian and Transport Infrastructure', aims to inform the design of pedestrian and transport infrastructure, to create and maintain an accessible public realm for all people.

3.19 The document includes information on how footways, footpaths and crossing facilities should be designed in order to be accessible to all. The most relevant design factors to consider include:

- Colour and contrast - to help with the identification of street furniture and infrastructure.
- Width and height clearance - ensuring a minimum width of 2000mm (which allows two wheelchairs to pass).
- Gradients - providing pedestrian routes with no slopes in excess of 1 in 20 to enable wheelchair users to comfortably use the route without fatigue.
- Shared use routes - Mixing pedestrians and cyclists should be avoided as far as possible, in order to reduce the potential for collisions or conflict. It is particularly important to protect those pedestrians who are most at risk and who, for example, might not be able to see or hear an approaching cyclist.
- Street furniture - although useful, objects on routes used by pedestrians can present a hazard (particularly to wheelchair users and visually impaired people). Street furniture should leave at least the minimum width recommended for a pedestrian footway (Section 4.2). Streetlights and signs should be mounted on buildings or walls wherever possible.
- Surface materials and maintenance - uneven surfaces and gaps between paving slabs can cause issues for some users. Surfaces should be firm and slip resistant.
- Road crossings - providing appropriate crossings, where the crossing type has been considered in the context of its location.
- Dropped kerbs and raised crossings - providing level access at all road crossings is essential to provide inclusive mobility.

Local Guidance

3.20 The following policies are of particular relevance to the development proposals;

- Hertfordshire's Local Transport Plan (LTP4) (2018 - 2031);
- Hertfordshire County Council Active Travel Strategy (2013);
- Hertfordshire's Accessibility Strategy (2019);
- Hertfordshire County Council's Air Quality Strategy;
- Hertfordshire County Council Intalink Bus Strategy (2020);
- Hertfordshire's Rail Strategy (2020);
- Hertfordshire's Rights of Way Improvement Plan (2017);
- Hertfordshire's Sustainable Modes of Travel Strategy (SMoTS) (2022);
- Hertfordshire's Speed Management Strategy (2020);
- Hertfordshire County Council Local Cycling and Walking Infrastructure Plan (2019);
- North Herts Council General guidance transport in masterplans (DRAFT - 2023);
- North Hertfordshire District Local Cycling and Walking Infrastructure Plan (DRAFT 2022);
- Department for Transport Cycle Infrastructure Design Local
- Transport Note 1/20 (2020);
- Department for Transport Cycling and Walking Infrastructure Plans - Technical Guidance for Local Authorities (2017);
- Department for Transport Decarbonising Transport, A Better, Greener Britain (2021);
- Active Travel England Framework Document (2022);
- Department for Transport Gear Change, A bold vision for cycling and walking (2020);
- Stevenage Mobility Strategy (2016);
- Stevenage Local Cycling and Walking Infrastructure Plan (LCWIP) (2019); and
- Stevenage Future Town, Future Transport Strategy (2019).

3.21 At a local level, transportation policy is set out in Hertfordshire County Council's 4th Local Transport Plan (LTP4), which covers the years 2018-2031. The LTP4 sets out the authority's aspirations for improving travel in the county.

3.22 The LTP4 has nine primary objectives relating to Prosperity, Place and People as outlined below:

Prosperity:

- Improve access to international gateways and regional centres outside Hertfordshire.
- Enhance connectivity between urban centres in Hertfordshire.
- Improve accessibility between employers and their labour markets.
- Enhance journey reliability and network resilience across Hertfordshire.

Place:

- Enhance the quality and vitality of town centres.
- Reserve the character and quality of the Hertfordshire environment.
- Reduce carbon emissions.

People:

- Make journeys and their impact safer and healthier.
- Improve access and enable participation in everyday life through transport.

3.23 Hertfordshire County Council also have twenty-three policies to be adhered to when working towards achieving the aforementioned objectives; these policies are briefly outlined below:

- 1) Transport User Hierarchy - supporting the creation of built environments that encourage greater and safer use of sustainable transport; reducing travel demand, and considering vulnerable road users.
- 2) Influencing Land Use Planning - encouraging the location of new developments in areas served by, or with the potential to be served by, high quality public transport facilities.
- 3) Travel Plans and Behaviour Change - encouraging the adoption of travel plans through working in partnership with employers and businesses; integrating travel plans into the planning process for new developments; and supporting school travel plans.
- 4) Demand Management - employing greater traffic demand management in urban areas via parking restrictions and introducing charging for on-street and off-street parking areas.
- 5) Development Management - reduce travel demand, provide safe access arrangements, adopt access roads, employ development mitigation methods and resist development where the resultant impact is severe or where the character of the area would be compromised. Also, require a Travel Plan in accordance with HCC's Travel Plan Guidance and ensure new parking facilitates electric vehicles.
- 6) Accessibility - increase accessibility to key services, particularly for disadvantaged groups by working in partnership with transport operators; address the barriers to accessibility; promote travel options via information provision, and improve travel choices and options to support shared mobility initiatives.

- 7) Active Travel: Walking - promote walking by prioritizing pedestrians; delivering infrastructure to make pedestrians feel safer; promoting walking and key networks of pedestrian priority routes, and supporting the implementation of the Public Rights of Way Improvement Plan.
- 8) Active Travel: Cycling - infrastructure improvement, increasing priority and safety of cycling movement, promotion campaigns for education (e.g. Bikeability); and facilitating provision of secure cycle parking.
- 9) Buses - minimising bus service disruption; maintaining high quality bus stops; working with partners to improve interchanges and multi-modal travel, and promoting bus services as an option for school and work journeys.
- 10) Rail - promotion of rail use by improving services in regards to capacity, journey times, frequency of services and destinations; and making rail travel more attractive by improving ticketing and station facilities.
- 11) Airports - promotion and facilitation of a modal shift of airport passengers and employees towards sustainable modes.
- 12) Network Management - reduce traffic congestion and prioritise strategic routes by the use of intelligent transport systems; encouraging walking and cycling; sharing data for all network users and controlling on-street parking.
- 13) New Roads and Junctions - working with Highways England and major scheme developers to design new transport infrastructure, to better manage existing and future demand on the road network.
- 14) Climate Change Network Resilience - Designing, constructing, maintaining and operating infrastructure in light of risk of a changing climate.
- 15) Speed Management - employing the speed management strategy in partnership with the Police, to achieve appropriate speeds and increase safety for all road users.
- 16) Freight and Logistics - encouraging HGVs to use the primary network route; encouraging rail/water/pipeline transport; monitoring changes in HGV / LGV activity, and supporting HGV facility improvement (e.g. overnight parking).

- 17) Road Safety - working towards zero fatalities and serious injuries by delivering effective and appropriate road safety measures; developing 'Safe Systems' that increase the safety of roads and vehicle speeds, and better data analysis.
- 18) Transport Safety and Security - improve the perception of safety and security by ensuring that the transport system is resilient and prepared for instances of major alert.
- 19) Emissions Reduction - reduce levels of harmful emissions by promoting change in travel behaviour and addressing barriers to and supporting the uptake of ultra-low emission vehicles (ULEVs).
- 20) Air Quality - reducing the impact of poor air quality by investigating the use of Clean Air Zones; assessing air pollution levels within district /borough council areas, and implementing the Air Quality Strategic Plan.
- 21) Environment - minimise the impact of traffic on the natural, built and historic environment; protect and enhance the quality of public spaces, and minimise visual intrusions, light and noise pollution.
- 22) Asset Management - employ the Highway Infrastructure Asset Management Plan; maximise opportunity for investment and seek value for money for all assets.
- 23) Growth and Transport - produce Growth and Transport Plans covering the sub areas of Hertfordshire to identify relevant interventions aligned with the LTP objectives.

3.24 HCC's Active Travel Strategy has also been considered. The aim of the Active Travel Strategy is to: 'increase the proportion of journeys made by walking or cycling to improve individual health, quality of life, the environment and the economy'. Through this, the Strategy seeks to:

- Enhance economic growth - rising petrol and diesel prices have significant impact upon personal finances; encouraging walking and cycling therefore helps to save money.
- Improving public health - physical inactivity is a contributor to many serious illnesses; increasing active travel can help to reduce this.
- Improving quality of life - air pollutants from vehicles are a key cause of respiratory diseases; increasing active travel and reducing motor transport can help to reduce this.
- Reducing carbon emissions - Carbon emissions from vehicular transport represent approximately 33% of all emissions.

Parking Standards

- 3.25 Parking for residents and their visitors will be provided on site in accordance with the guidance contained within the North Hertfordshire Council Vehicle Parking at New Development SPD, Sept 2011.
- 3.26 The minimum car and cycle parking standards for Land Use Class C3: residential dwellings are outlined in Table 3.1 below.

Table 3.1 Parking Standards

Description	Car Parking Standard	Minimum Cycle parking Standard
1 bedroom	1 space	1 secure covered space per dwelling.
2+ bedrooms	2 spaces	None if garage or secure area provided within curtilage of dwelling.
Visitor/unallocated	Between 0.25 and 0.75 spaces per dwelling (rounded up to nearest whole number), with the lower standard being applied where there are no garages in the proposed scheme and the higher standard applied where every dwelling in the scheme is to be provided with a garage	If no garage or secure area is provided within curtilage of dwelling then 1 covered and secure space per dwelling in a communal area for residents plus 1 space per dwelling for visitors

- 3.27 It should be noted that during the scoping discussions, HCC advised that the above-mentioned document is dated and parking provision must be agreed with North Hertfordshire District Council (NHDC) on a case by case basis. It may be the case that fewer parking spaces than required by the standards are provided, if it is agreed that a suitable level of accessibility by more sustainable modes is available.
- 3.28 Electric Vehicle (EV) charging points will be provided in accordance with UK Building regulations Part S1 (2021 Edition).

Sustainable Travel Audit and Proposed Interventions



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Sustainable Travel Audit and Proposed Interventions

The following paragraphs consider existing travel conditions in the vicinity of the site, focusing on the opportunities that exist for sustainable travel such as walking, cycling and public transport.

- 4.1 This chapter gives careful consideration to the existing travel conditions in the vicinity of the site, focusing on the opportunities that exist for sustainable travel by walking, cycling and public transport. A summary of the sustainable transport options for residents and visitors to the site is presented below. In order to evaluate existing travel conditions, data has been taken from the UK 2011 Census Parish area of 'E02004913 : North Hertfordshire 005'; in which the site is located. A summary of this data is provided in the following paragraphs.
- 4.2 The development has been designed to ensure there are various access points to the site by all modes of transport.
- 4.3 As noted in North Hertfordshire District Council's (NHDC's) Local Plan Policy SP6 'Sustainable Transport', development proposals will comply with the NHDC Transport Strategy, and the provisions of the Local Transport Plan (LTP4) and the developer will work with the HCC to ensure a range of suitable transport options are available. Existing footpaths and PRoW's will be retained and pedestrian infrastructure within the development will be arranged to tie into existing provisions.
- 4.4 An Accessibility Audit (AA) has been prepared to support the planning application. The AA assesses the routes from the site to key local services and facilities on foot, by bicycle and by public transport. The main findings of the Accessibility Audit are summarised in this section, additionally, recommendations for where improvements can be made to the existing infrastructure to enhance walking and cycling routes in terms of safety and convenience are provided.

Promotion and Marketing of maximising trips by sustainable modes

- 4.5 A Green Travel Plan (GTP) has been prepared alongside this document for the residential and school aspects of the development. The document provides a detailed assessment of the existing sustainable alternatives to the private car that are available to use from the site and proposes measures to assist in achieving the modal shift target of the GTP.
- 4.6 As detailed in the GTP, a Travel Plan Coordinator (TPC) will be appointed to oversee the management and monitoring of the Plan to ensure that all available options are capitalised upon, thereby ensuring that the site is as sustainable as possible.

- 4.7 As mentioned above, a GTP has been prepared alongside this document. All residents will be made aware of the GTP and its aims prior to occupation. Upon occupation, each household will receive a Residential Travel Information Pack, containing all relevant transport information including walking / cycling routes, public transport routes, timetable information; as well as details of potential bicycle user groups, car share schemes and information on access to educational establishments.
- 4.8 The Residential Travel Information Pack will also include the contact details of the Travel Plan Coordinator (TPC) to enable residents to discuss specific transport related issues.
- 4.9 The TPC will maintain an optional residents' mailing list to email updates relating to the GTP and any relevant local or national events e.g. bike maintenance events. The optional residents mailing list will also include the promotion of national sustainable transport events e.g. National Walk to Work Week, National Cycle to Work Week and National Liftshare Week.
- 4.10 The aforementioned measures, along with those outlined below have been identified as part of the site's strategy to maximise trips by sustainable modes.

Pedestrians

- 4.11 Walking is a wholly sustainable mode of travel and an excellent way of keeping fit, which should therefore be heavily encouraged. To maximise trips by sustainable modes, walking will be fully promoted by the TPC and relevant maps and route information will be included within the Residential Travel Information Pack.
- 4.12 In the Residents Travel Pack the TPC will promote the use of public transport as part of a multi-modal journey. In addition to this, residents will be encouraged to get off a stop earlier to promote walking.
- 4.13 The Travel Pack will contain maps of local pedestrian friendly routes in and around Great Ashby and Stevenage in addition to information on local walking groups. Furthermore, the TPC will promote different ways in which residents can incorporate walking into their commute into work and school including National Walk to Work day. Further information on this will be included in the Residents Information Travel Pack.
- 4.14 Additionally, the TPC will promote walking as a recreational/leisure activity to encourage residents to incorporate walking into their day to day lives.

Existing Pedestrian Infrastructure

- 4.15 Within the vicinity of the site, cars, cyclists and pedestrians are generally able to follow the same routes, which are easily navigable towards the centre of the town. This feature is of great benefit to pedestrians who benefit from the legible design of roads within an area. Additionally, routes through existing residential areas are overlooked by residential dwellings, which allows pedestrians to feel safer along their route. This is in line with the recommendations detailed within Manual for Streets, and it is proposed that these principles will be continued within the site.
- 4.16 The existing pedestrian infrastructure on Mendip Way to the west of the site extends northwards to Woodfield and South to Pin Green and St Nicholas. The pedestrian infrastructure from the site access provides access to several key amenities including a convenience store, park, primary school, community centre and a Chinese takeaway.
- 4.17 The pedestrian infrastructure along Mendip Way also facilitates quick and convenient access to public transport services; namely 'The Beacons', bus stop which is located to the south west of the site. 'The Beacons' bus stop is situated approximately 300m to the south west of the proposed site access is accessible within a 5 minute walk. 'The Beacons' bus stop is served by Arriva route SB7 which facilitates access into and around Stevenage.
- 4.18 Additionally, a number of Public Rights of Way bound and / or run through the site. These are shown on Figure 4.1 on the following page and are outlined below;
- Bridleway Weston 033 which runs south-west to north-east along the south-eastern boundary of the site. This provides an east to west connection from Dane End Farm, through the site and Great Ashby passing close to the District Centre, St Nicholas Park and the Pin Green employment area. This is a key connecting corridor and, in conjunction with the development of site GA1, provides the opportunity to continuously link from the Hertfordshire Way and Back Lane to Warrens Green Lane.
 - Footpath Weston 029 which runs north-west to south-east through the south-western half of the site connecting Tile Kiln Farm to Bridleway Weston 033 (above) and linking to Footpath Weston 031 / Walkern 022 which provides an onward connection to the Beane Valley east of Stevenage.
 - Footpath Weston 044 which delineates the north-eastern boundary of GA2.
 - Footpath Weston 027 which delineates the north-western boundary of GA2 linking Back Lane and Tile Kiln Farm to Warrens Green Lane

- Footpath Great Ashby 011 which connects from Great Ashby District Centre across the pylon / proposed access corridor to the south-western edge of the site.
- Footpath Weston 026 connecting from Merrick Close along the eastern edge of Tile Kiln Wood, traversing the northern end of GA2 to the junction of Back Lane and Warrens Green Lane.

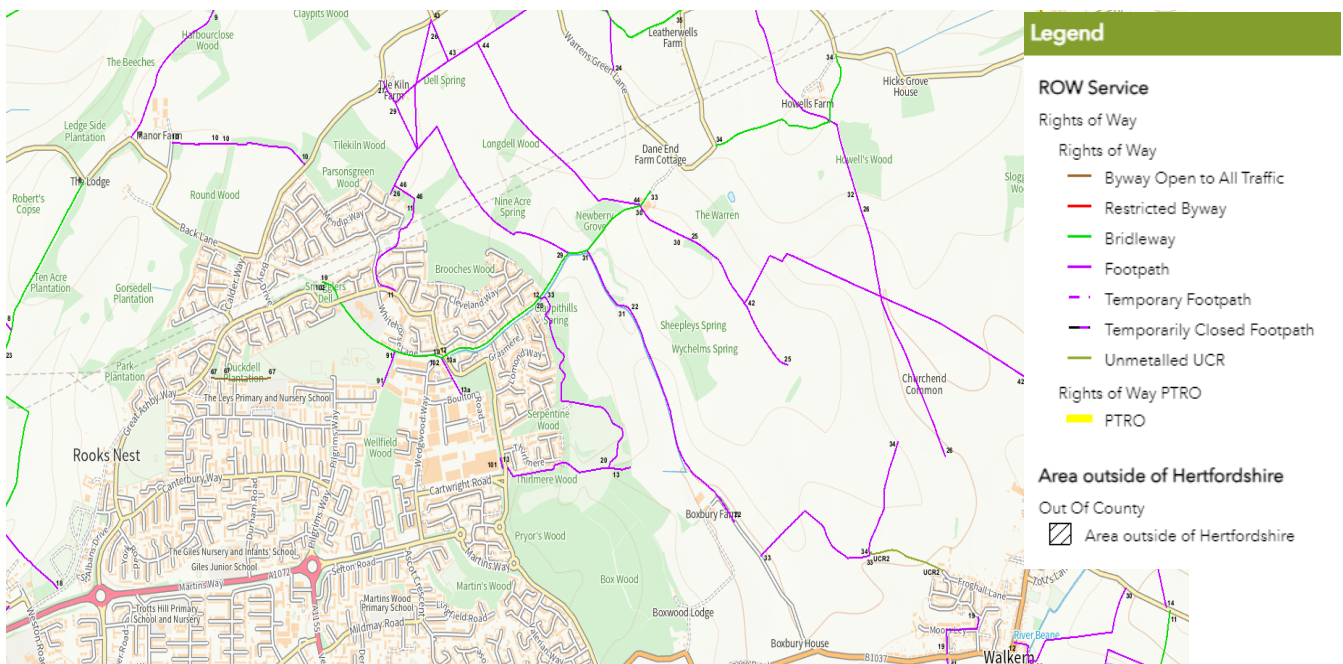


Figure 4.1: Extract of Hertfordshire's PRoW Map

- 4.19 As noted in North Hertfordshire District Council's (NHDC's) Local Plan Policy SP6 'Sustainable Transport', development proposals will comply with the NHDC Transport Strategy and the provisions of the Local Transport Plan (LTP4) and the developer will work with HCC to ensure a range of suitable transport options are available. Existing footpaths and PRoW's will be retained and pedestrian infrastructure within the development will be arranged to tie into existing provisions.
- 4.20 As shown on the Site Layout Plan included within **Appendix A**, cycle and pedestrian links are also provided into Merrick Close, Back Lande and Warrensreen Lane.

- 4.21 It is also proposed that a non-vehicular link will be provided into the Public Bridleway 033, within the southwestern corner of the site, which is to be retained within the site as part of the development proposals.
- 4.22 Several non-vehicular links will also be provided to tie into the existing Public Rights of Way and infrastructure.
- 4.23 Walking is widely considered to be the most important mode of travel at the local level. Based on the Chartered Institution of Highways and Transportation (CIHT) publication 'Providing Journeys on Foot' and Paragraph 4.4.1 of MfS; the preferred maximum walking distance for the purposes of commuting / school journeys / sight-seeing is considered to be 2km. It can be appreciated that the entirety of Great Ashby in addition to Martins Wood, Woodfield, St Nicholas and Pin Green are accessible within 2km of the site. A list of destinations considered to be accessible within 2km of the site access off Mendip Way, together with the corresponding journey distances and times are shown in Table 4.1 on the following page.

Table 4.1: Destinations Accessible within a 25-minute Walk from the site access off Mendip Way.

Destinations	Journey Distance and Time
Round Diamond Primary School, Busy Bees at Stevenage (Nursery), Budgens, Mendip Way Playground, Great Ashby Community Centre, Fortunes Palace Chinese Takeaway, Jhoots Pharmacy	800m
North Shore Open Space Park, No Bull Fitness, Employment / Industrial Centre	1600m
Martins Wood Primary School, Shell Garage, The Great Ashby District Park, St Martins Wood Play Area	Up to 2km Accessible within 25 mins

- 4.24 As outlined in paragraph 10.1 of the North Hertfordshire District Council General Guidance on Masterplans (DRAFT, March 2023), all walking and cycling routes should follow reasonably direct and unconflicted routes to on-site and off-site destinations within a manageable walking distance (approx. 2km) and have a natural surveillance. The walking and cycling routes from the site have also been illustrated on the Facilities and Services Plans included in **Appendix C** of the Accessibility Audit. For ease of reference, the aforementioned Facilities and Services plans for both the northern and southern centroids of the site are included in Figure 4.2 and 4.3.

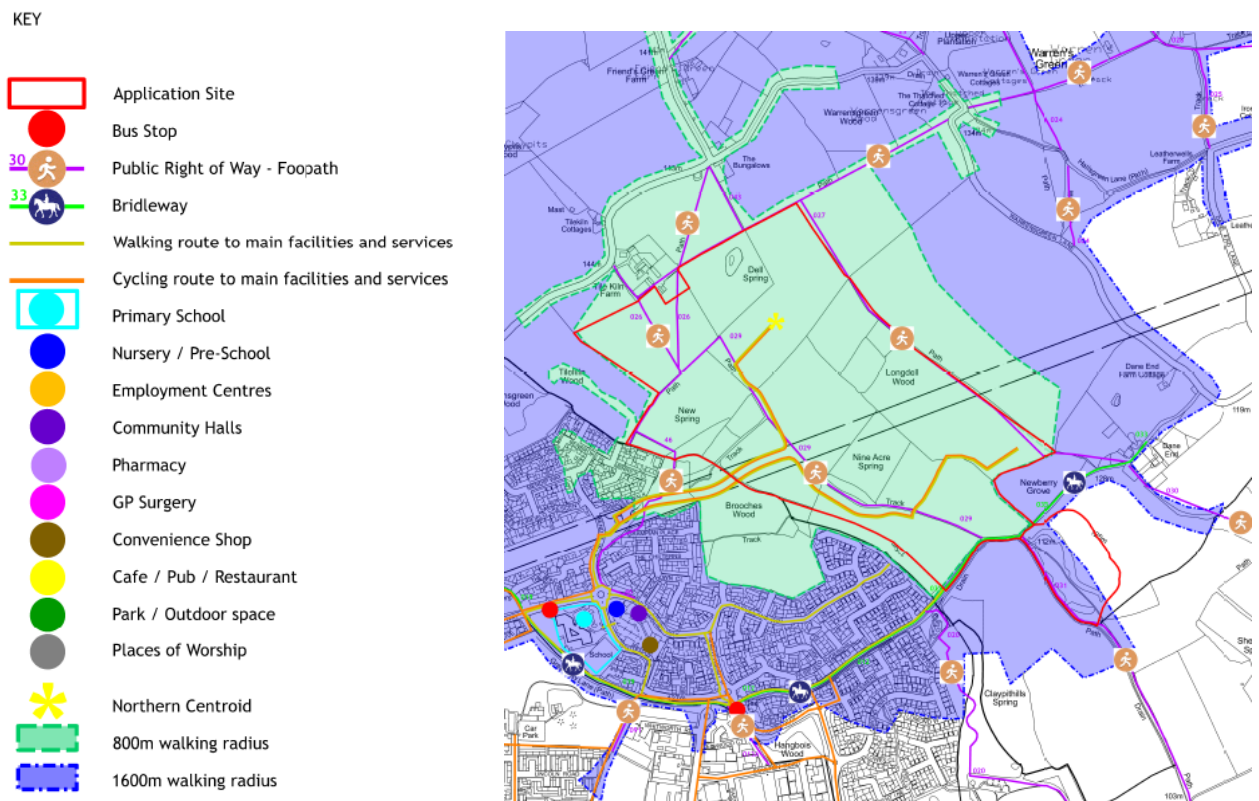


Figure 4.2. 800m and 1600m walking distance Northern Centroid

- 4.25 In accordance with Chapter 12 of NHC General Guidance on Transport in Masterplans (DRAFT, 2023) the Facilities and Services Plans also include walking isodistances for an 800m and a 1600m walking distance. Due to the size of the site, two separate plans have been prepared based on two centroids located in the most remote areas of the site; the first for the northernmost part of the site, by the school entrance and the second for the southernmost built area of the site.
- 4.26 The aforementioned Facilities and Services Plans illustrate nearby PROW's, the walking and cycling routes from the site to the nearest Facilities and Services, information on the distances to the services and facilities and approximate journey times for walking and cycling to amenities within the vicinity of the site. A list of destinations within the 1600m radius assessed within the Services and Facilities Plans is outlined in Table 4.2.

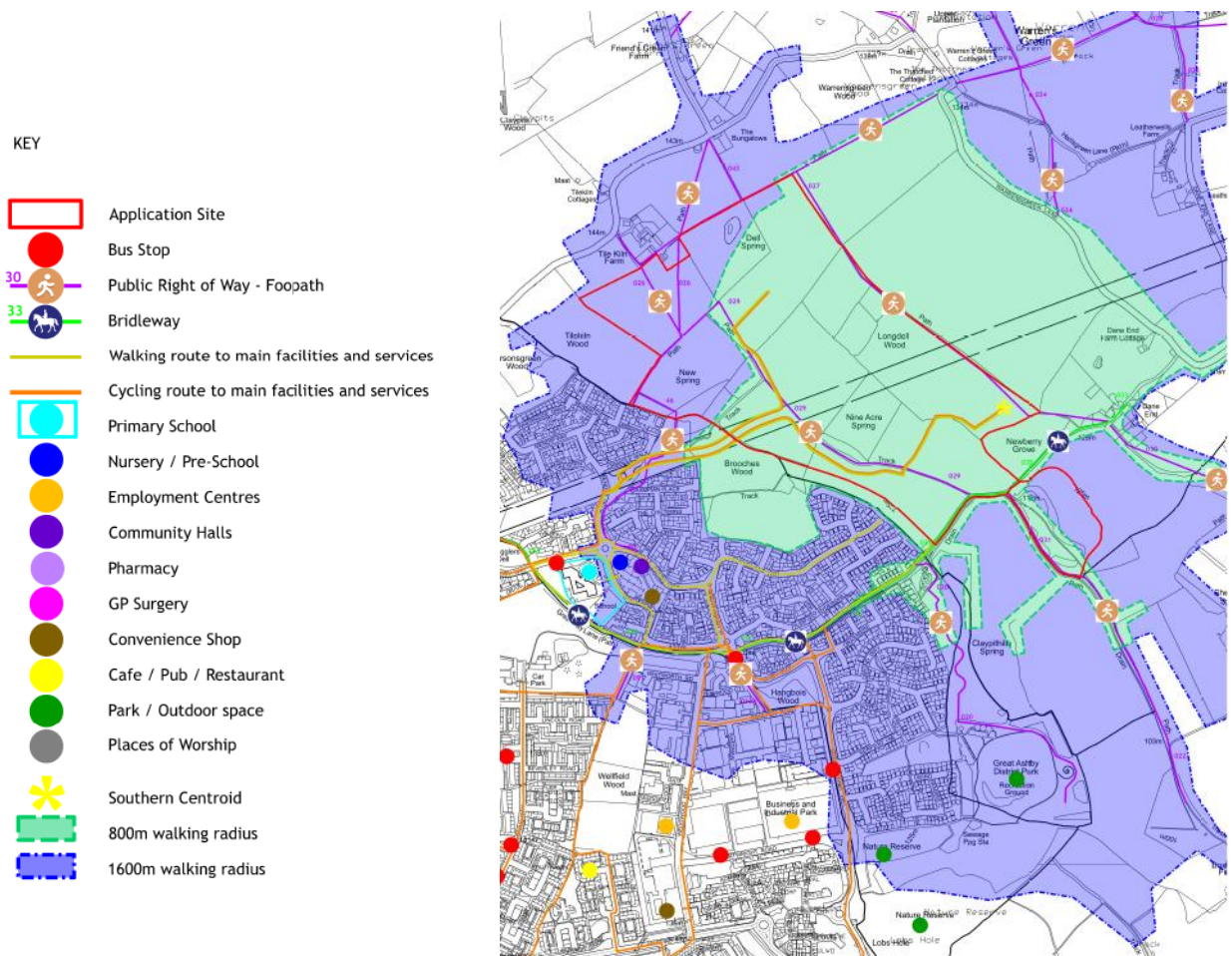


Figure 4.3. 800m and 1600m walking distance Southern Centroid

4.27 For further information, refer to the Facilities and Services plans within **Appendix C** of the Accessibility Audit.

Table 4.2: Destinations Accessible within 1600m of the site access as shown in the Facilities and Services Plans

Facility Type	Destinations
Educational	• Round Diamond Primary School • Busy Bees at Stevenage (Nursery) • Martins Wood Primary • Trotts Hill Primary School • Almond Hill Junior School
Convenience Stores / Shops	• Budgens • Shell Garage • Co-Op Food
Outdoor / Leisure Spaces	• Mendip Way Playground • North Shore Open Space Park • The Great Ashby District Park • St Martins Wood Play Area • Pryors Wood • Sishes Wood
Other Amenities	• Great Ashby Community Centre • Fortunes Palace Chinese takeaway • Jhoots Pharmacy • No Bull Fitness • Employment / Industrial Centre • The oval cluster of amenities (including; All Saints Church, The Times Club (Sports Club), Stevenage Family Butchers, St Nicholas & Martins Wood Centre, The Oval Wines Off License, The Oval Alphega Pharmacy, Recycling Bank) • The Neighbourhood Centre, Whitehorse Lane (Including; Blade Barbers, Great Ashby Vets) • Canterbury Way cluster of amenities (including; St Nicholas Community Centre, St Nicholas Pharmacy, Saint Nicholas Pub, Canterbury Way Surgery, Martins Convenience shop)

Existing Pedestrian Behaviour

- 4.28 2011 Census data shows that 4.6% (333) of the residents that regularly commute to work as recorded for the output area of 'E02004913 : North Hertfordshire 005' in which the site is located; do so by foot. This is less than the national average of 10.8%.
- 4.29 Census data from 2011 also shows that 5.9% (359) of 'E02004913 : North Hertfordshire 005' commuters live within 2km of their place of work. This suggests that approximately 92.7% of residents who could reasonably be expected to walk to work, already do so. Although this figure is encouraging, there is still potential for this mode of travel to increase.
- 4.30 It is important to note that commuting only accounts for a proportion of all trips made, therefore as part of the site's transport strategy, the ways in which other trips can be made sustainable will be assessed and suitable transport interventions will be proposed accordingly.

Cyclists

- 4.31 Cycling is second only to walking in terms of sustainability and is similarly an excellent way of keeping fit.
- 4.32 As mentioned in Section 3 of this report, cycle parking for residents and their visitors will be provided on site in accordance with the guidance contained within the North Hertfordshire Council Vehicle Parking at New Development SPD, Sept 2011. As noted previously, the aforementioned document is dated and parking provision must therefore be agreed with North Hertfordshire District Council on a case by case basis. Nonetheless, sufficient and secure cycle parking will be provided for residents and visitors as part of development proposals.
- 4.33 As part of the site's strategy for maximising trips by sustainable modes, the TPC will promote bicycle user groups, where these exist. If none are available within the immediate area, a site-specific user group will be promoted amongst future residents. This has the potential to ensure that as many residents as possible will work together to achieve the site's overall GTP objective. Bicycle user groups allow both cyclists and potential cyclists to meet and discuss the best routes in and around their frequented areas of travel, as well as any problems they might encounter.
- 4.34 Within the Residents' Travel Information Pack, details on the local or national cycle networks will be provided showing the safest and most convenient routes to / from the site and within the surrounding area, in turn promoting cycling as a sustainable leisure activity. Further information on this will be detailed in the GTP.

- 4.35 The Travel Pack will promote national initiatives such as 'Bike Week' and 'Cycle to Work Day.'
- 4.36 Details of cycle training groups, Bikeability schemes and safety information will be provided in the Resident's Travel Information Pack to ensure cycling is accessible to all.

Existing Cycling Infrastructure

- 4.37 It is widely recognised that cycling has the potential to substitute for short car trips, particularly those of less than 5km. It can be appreciated that the entirety of Great Ashby, in addition to Stevenage, Shephall, Broadwater, Little Wymondley, Gravelly and Walkern are accessible within a 25 minute cycle of the site access.
- 4.38 Cycling is well suited to form part of longer journeys made by public transport. Therefore, it is important to note that Stevenage Train Station, which is situated approximately 5km (24 minute cycle) to the west of the site provides 266 secure cycle storage spaces.
- 4.39 National Cycle Route 12 is the closest formal cycle route to the site and is located to the west of the site. The route runs in a north / south direction through the western extents of Stevenage. At its closest point, route 12 can be joined along Lytton Way which is accessible within 5km from the site access.
- 4.40 National Cycle Route 12 runs in sections from Enfield Lock in north London to Spalding via Stevenage, St Neots and Peterborough. More locally, route 12 facilitates access to Letchworth, Sandy, Huntingdon and Peterborough.
- 4.41 As previously noted, the North Hertfordshire District Council General Guidance on Masterplans (DRAFT, March 2023), suggests a range of recommended cycling times depending on a range of average cycling speeds. For clarity, a separate Facilities and Services Plans Cycling Isodistance drawing showing 2km and 4km cycling isodistance from the site was prepared and it is included in Figure 4.4 on the next page and also in **Appendix C** of the Accessibility Audit. The drawing is based on the centroid located approximately 800m into the journey from either end of the site using the main site access.

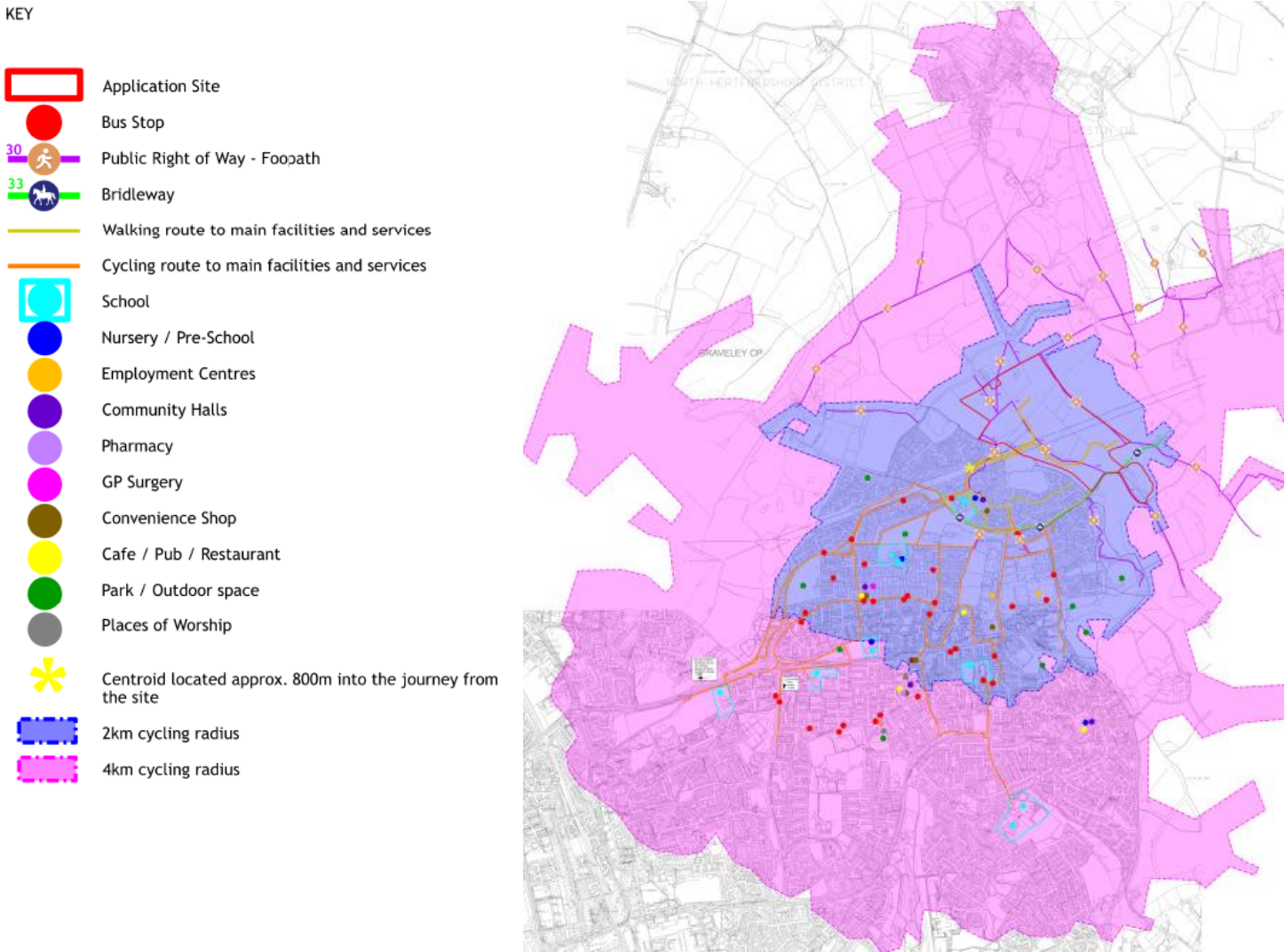


Figure 4.4 Facilities and Services Plan Cycling Isodistance Map.

4.42 A list of destinations considered to be accessible within a 25-minute cycling journey from the development site, together with the corresponding journey distances and times are shown in Table 4.3 on the following page.

Table 4.3: Destinations Accessible within 2, 4 & 8km distance from the proposed site access off Mendip Way

Destinations	Journey Distance and Time
Round Diamond Primary School, Busy Bees at Stevenage (Nursery), Budgens, Mendip Way Playground, Great Ashby Community Centre, Fortunes Palace Chinese Takeaway, Jhoots Pharmacy, North Shore Open Space Park, No Bull Fitness, Employment / Industrial Centre, Martins Wood Primary School, Shell Garage, The Great Ashby District Park, St Martins Wood Play Area.	Up to 2km
Trotts Hill Primary School, Co-Op Food, Pryors Wood, The Oval cluster of amenities (including; All Saints Church, The Times Club (Sports Club), Stevenage Family Butchers, St Nicholas & Martins Wood Centre, The Oval Wines Off License, The Oval Alphega Pharmacy, Recycling Bank), Stevenage Lytton Players Theatre, SMCC Mosque, The Thomas Alleye Academy (Sixth Form), Millie Spinny Park & Playground, Bury Mead, Barclay Academy (Secondary School), Almond Spring Woods, The Almond Tree Pub, Lonsdale Express Convenience Store, Hampson Park & Skatepark, Moss Bury Primary School and Nursery, Best One Convenience Store, Domino's Pizza, Lodge Farm Primary School.	Up to 4km
Tiny Toes Day Nursery, Shells Scout Hut, Swan Gymnastic Academy, Chells Café, Camps Hill Primary School, The Glebe Parade of shops (Including; Tesco Express, Walton Lodge Veterinary Group, Gangnam Korean Restaurant, St Hugh and St John's Church, Stevenage Halal Meats & Groceries Butchers, Golden Fry Fish & Chips, Nisa Local, Gate of India Indian Restaurant, Stevenage Cycles Bike Shop), Emperors Gate Parade of Shops (Including; Emperors Head Pub, Hasan Balti Indian Takeaway, Chells Manor Community Centre, Stevenage Pharmacy), Stevenage town centre (including; Stevenage train station, various shops, pubs, bars, restaurants, banks, hairdressers, opticians, a bus station and various supermarkets).	Up to 8km

4.43 A list of destinations that fall within the radius accounted for within the aforementioned Facilities and Services Plan for the northern and southern centroids are noted in Table 4.4 and 4.5 below.

Table 4.4: Distances to the services and facilities, approximate journey times for walking and cycling
Northern Centroid

Services and Facilities accessible by foot or by bicycle within the vicinity of the site.

Service		Approximate journey times using HCC Guidance						Approximate journey times using Google Maps	
Educational Facilities	Distance ¹	Walking speeds and times			Cycling speeds and times			Distance ⁸	Approximate Journey Time (using Google Maps) ⁹
		4kph / 2.5mph (mm:ss) ²	5kph / 3.1mph (mm:ss) ³	6kph / 3.7mph (mm:ss) ⁴	12kph / 7.5mph (mm:ss) ⁵	16kph / 10mph (mm:ss) ⁶	20kph / 12.4 mph (mm:ss) ⁷		
Round Diamond Primary School	1.09 km	16:35	13:34	11:30	05:45	04:09	03:27	210 m	3 minute walk / 1 minute cycle
Busy Bees at Stevenage (Nursery)	1.14 km	17:10	13:54	11:40	06:10	04:28	03:42	260 m	3 minute walk / 1 minute cycle
Martins Wood Primary School	2.78 km	42:10	33:01	28:20	14:30	10:43	08:34	1.9 km	23 minute walk / 8 minutes cycle
Trotts Hill Primary School	3.48 km	52:21	41:33	35:20	17:40	13:05	10:44	2.6 km	32 minute walk / 9 minute cycle
Almond Hill Junior School	3.58 km	54:01	41:51	35:80	18:30	13:43	11:04	2.7 km	32 minute walk / 9 minute cycle
Convenience Stores / Shops									
Budgens	1.18 km	18:10	14:01	12:20	06:30	04:43	03:54	300 m	4 minute walk / 2 minute cycle
Shell Garage	2.58 km	39:10	31:04	26:20	13:30	10:08	08:04	1.7 km	22 minute walk / 6 minute cycle
Co-Op Food	3.18 km	48:10	38:06	32:20	16:30	12:33	09:54	2.3 km	28 minute walk / 10 minute cycle
Outdoor / Leisure Spaces									
Mendip Way Playground	1.33 km	20:35	15:09	13:30	07:05	05:39	04:39	450 m	5 minute walk / 2 minute walk
North Shore Open Space Park	1.98 km	30:10	23:51	20:20	10:30	07:43	06:34	1.1 km	12 minute walk / 4 minute cycle
The Great Ashby District Park	2.68 km	40:20	32:23	27:20	13:40	10:05	08:04	1.8 km	22 minute walk / 7 minute cycle
St Martins Wood Play Area	2.88 km	43:20	34:20	29:20	14:40	11:20	09:04	2.0 km	26 minute walk / 10 minute cycle
Pryors Wood	3.08 km	46:20	36:58	31:20	15:40	11:55	09:24	2.2 km	28 minute walk / 13 minute cycle
Sishes Wood	3.48 km	52:21	41:33	35:20	17:40	13:05	10:44	2.6 km	33 minute walk / 8 minute cycle
Other Amenities									
Great Ashby Community Centre	1.16 km	17:40	14:18	12:00	06:20	04:35	03:48	300 m	4 minute walk / 2 minute cycle
Fortunes Palace Chinese Takeaway	1.16 km	17:40	14:18	12:00	06:20	04:35	03:48	300 m	4 minute walk / 2 minute cycle
Jhoots Pharmacy	1.18 km	18:10	14:01	12:20	06:30	04:43	03:54	300 m	4 minute walk / 2 minute cycle
Ilo Bull Fitness	2.38 km	36:10	28:26	24:20	12:30	09:33	07:14	1.5 km	18 minute walk / 5 minute cycle
Employment / Industrial Center	2.38 km	36:10	28:26	24:20	12:30	09:33	07:14	1.5 km	18 minute walk / 5 minute cycle
The Oval Cluster of amenities (including: All Saints Church, The Times Club (Sports Club), Stevenage Family Butchers, St Nicholas & Martins Wood Center, The Oval Wines Off License, The Oval Alpha Pharmacy, Recycling Bank)	3.18 km	48:10	38:06	32:20	16:30	12:33	09:54	2.3 km	28 minute walk / 10 minute cycle
Stevenage Lytton Players Theatre	3.18 km	48:10	38:06	32:20	16:30	12:33	09:54	2.3 km	28 minute walk / 10 minute cycle
SMCC Mosque	3.18 km	48:10	38:06	32:20	16:30	12:33	09:54	2.3 km	28 minute walk / 10 minute cycle

¹ Walking and cycling distances noted have been measured from the approximate position of the furthest dwelling from the proposed site access on Mendip Way

² Average walking times noted are based on an average walking speed of 4kph / 2.5mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

³ Average walking times noted are based on an average walking speed of 5kph / 3.1mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁴ Average walking times noted are based on an average walking speed of 6kph / 3.7mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁵ Average cycling times noted are based on an average walking speed of 12 kph / 7.5 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁶ Average cycling times noted are based on an average walking speed of 16 kph / 10 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁷ Average cycling times noted are based on an average walking speed of 20 kph / 12.4 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁸ Walking and cycling distances noted have been measured from the approximate position of proposed site access on Mendip Way

⁹ Walking and cycling times noted have been measured approximately using Google Maps data

Table 4.5 : Distances to the services and facilities, approximate journey times for walking and cycling
Southern Centroid

Services and Facilities accessible by foot or by bicycle within the vicinity of the site.

Service		Approximate journey times using HCC Guidance						Approximate journey times using Google Maps	
Educational Facilities	Distance ¹	Walking speeds and times			Cycling speeds and times			Distance ⁸	Approximate Journey Time (using Google Maps) ⁹
		4kph / 2.5mph (mm:ss) ²	5kph / 3.1mph (mm:ss) ³	6kph / 3.7mph (mm:ss) ⁴	12kph / 7.5mph (mm:ss) ⁵	16kph / 10mph (mm:ss) ⁶	20kph / 12.4 mph (mm:ss) ⁷		
Round Diamond Primary School	1.37 km	21:05	16:33	14:15	7:28	5:16	4:13	210 m	3 minute walk / 1 minute cycle
Busy Bees at Stevenage (Nursery)	1.43 km	21:40	17:32	14:25	7:13	5:34	4:28	260 m	3 minute walk / 1 minute cycle
Martins Wood Primary School	3.06 km	46:02	36:40	31:05	15:33	11:49	9:20	1.9 km	23 minute walk / 8 minutes cycle
Trotts Hill Primary School	3.77 km	56:53	45:17	38:05	19:23	14:12	11:30	2.6 km	32 minute walk / 9 minute cycle
Almond Hill Junior School	3.87 km	58:03	46:30	39:05	19:33	14:49	12:00	2.7 km	32 minute walk / 9 minute cycle
Convenience Stores / Shops									
Budgens	1.47 km	22:00	17:40	15:05	7:33	5:49	4:40	300 m	4 minute walk / 2 minute cycle
Shell Garage	2.87 km	43:02	34:02	29:05	14:33	11:14	9:00	1.7 km	22 minute walk / 6 minute cycle
Co-Op Food	3.45 km	52:03	41:15	35:05	17:33	13:39	10:40	2.3 km	28 minute walk / 10 minute cycle
Outdoor / Leisure Spaces									
Mendip Way Playground	1.62 km	34:25	19:18	16:15	8:08	6:06	5:25	450 m	5 minute walk / 2 minute walk
North Shore Open Space Park	2.27 km	34:01	27:30	30:05	11:33	8:49	7:20	1.1 km	12 minute walk / 4 minute cycle
The Great Ashby District Park	2.97 km	44:52	35:21	34:05	15:23	11:12	9:30	1.8 km	22 minute walk / 7 minute cycle
St Martins Wood Play Area	3.17 km	47:52	37:58	38:05	16:23	12:27	10:20	2.0 km	26 minute walk / 10 minute cycle
Pryors Wood	3.37 km	50:53	40:36	32:05	17:23	13:12	10:10	2.2 km	28 minute walk / 13 minute cycle
Sishes Wood	3.77 km	56:53	45:11	38:05	19:23	14:12	11:30	2.6 km	33 minute walk / 8 minute cycle
Other Amenities									
Great Ashby Community Centre	1.45 km	22:10	17:16	14:45	7:23	5:42	4:32	300 m	4 minute walk / 2 minute cycle
Fortunes Palace Chinese Takeaway	1.45 km	22:10	17:16	14:45	7:23	5:42	4:32	300 m	4 minute walk / 2 minute cycle
Jhoots Pharmacy	1.47 km	22:00	17:40	15:05	7:33	5:49	4:40	300 m	4 minute walk / 2 minute cycle
No Bull Fitness	2.67 km	40:02	32:05	27:05	13:33	10:39	8:00	1.5 km	18 minute walk / 5 minute cycle
Employment / Industrial Center	2.67 km	40:02	32:05	27:05	13:33	10:39	8:00	1.5 km	18 minute walk / 5 minute cycle
The Oval Cluster of amenities (including: All Saints Church, The Times Club (Sports Club), Stevenage Family Butchers, St Nicholas & Martins Wood Center, The Oval Wines Off License, The Oval Alpha Pharmacy, Recycling Bank)	3.47 km	52:03	41:15	35:05	17:33	13:39	10:40	2.3 km	28 minute walk / 10 minute cycle
Stevenage Lytton Players Theatre	3.47 km	52:03	41:15	35:05	17:33	13:39	10:40	2.3 km	28 minute walk / 10 minute cycle
SMCC Mosque	3.47 km	52:03	41:15	35:05	17:33	13:39	10:40	2.3 km	28 minute walk / 10 minute cycle

¹ Walking and cycling distances noted have been measured from the approximate position of the furthest dwelling from the proposed site access on Mendip Way to the south of the site

² Average walking times noted are based on an average walking speed of 4kph / 2.5mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

³ Average walking times noted are based on an average walking speed of 5kph / 3.1mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁴ Average walking times noted are based on an average walking speed of 6kph / 3.7mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁵ Average cycling times noted are based on an average walking speed of 12 kph / 7.5 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁶ Average cycling times noted are based on an average walking speed of 16 kph / 10 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁷ Average cycling times noted are based on an average walking speed of 20 kph / 12.4 mph as stated in the North Herts Council General Guidance on transport in masterplans (2023)

⁸ Walking and cycling distances noted have been measured from the approximate position of proposed site access on Mendip Way

⁹ Walking and cycling times noted have been measured approximately using Google Maps data

Existing Cycling Behaviour

- 4.44 2011 Census data shows that 1.3% (91) of the residents that regularly commute to work as recorded for the area of 'E02004913 : North Hertfordshire 005' ; do so by bicycle. This is less than the national average of 3.2%.
- 4.45 Census data from 2011 also shows that 23.0% (1,400) of 'E02004913 : North Hertfordshire 005' commuters live within 5km of their place of work; where some 10.5% (253) are considered to live within a walkable commuting distance. Therefore, 17.1% (1,041) of residents from the aforementioned area could reasonably take up cycling as a main mode of travel whilst maintaining a journey time that does not exceed 25 minutes.

Public Transport

- 4.46 As part of the strategy for maximising trips by sustainable modes, the GTP prepared alongside this document seeks to encourage use of bus and rail services as an alternative to driving among residents of the site by promoting the several potential benefits to driving which include:
- Ability to relax or work while travelling.
 - A chance to meet with neighbours and friends.
 - No need to park or run a car.
 - Travel option if under 17 or unable to drive.
 - Overall reduction in cost when compared to owning and running a personal car.

4.47 In order to maximise the public transport uptake by residents, the following will be undertaken by the TPC:

- The 'Residential Travel Information Pack' to be provided to the future residents upon occupation of the new houses, will contain up-to-date details of bus and rail services, including route and fare information, service frequencies and real time mobile apps.
- The TPC will liaise regularly with the bus operators to ensure that the information remains valid.
- Inform details of any changes to the public transport operators' websites and contact details.

4.48 TPC will provide information on the benefits of season ticket purchase schemes (including Railcard discounts and Concessionary Travel) for bus and rail and will promote these within the Travel Pack.

4.49 The Residents' Travel Pack will include information on the benefits of public transport over driving to help residents make more informed travel choices.

4.50 The TPC will also promote any government initiatives e.g. bus fare caps to encourage the use of public transport.

Bus Services

4.51 In accordance with paragraph 10.4.1 of the North Hertfordshire District Council's General Guidance on Masterplans (DRAFT, March 2023), existing bus routes and services must be identified and maps provided. These routes are presented on the Bus Routes and Services Plans, which are presented in Figure 4.5 on the following page, these maps are included in **Appendix D** of the Accessibility Audit.

KEY

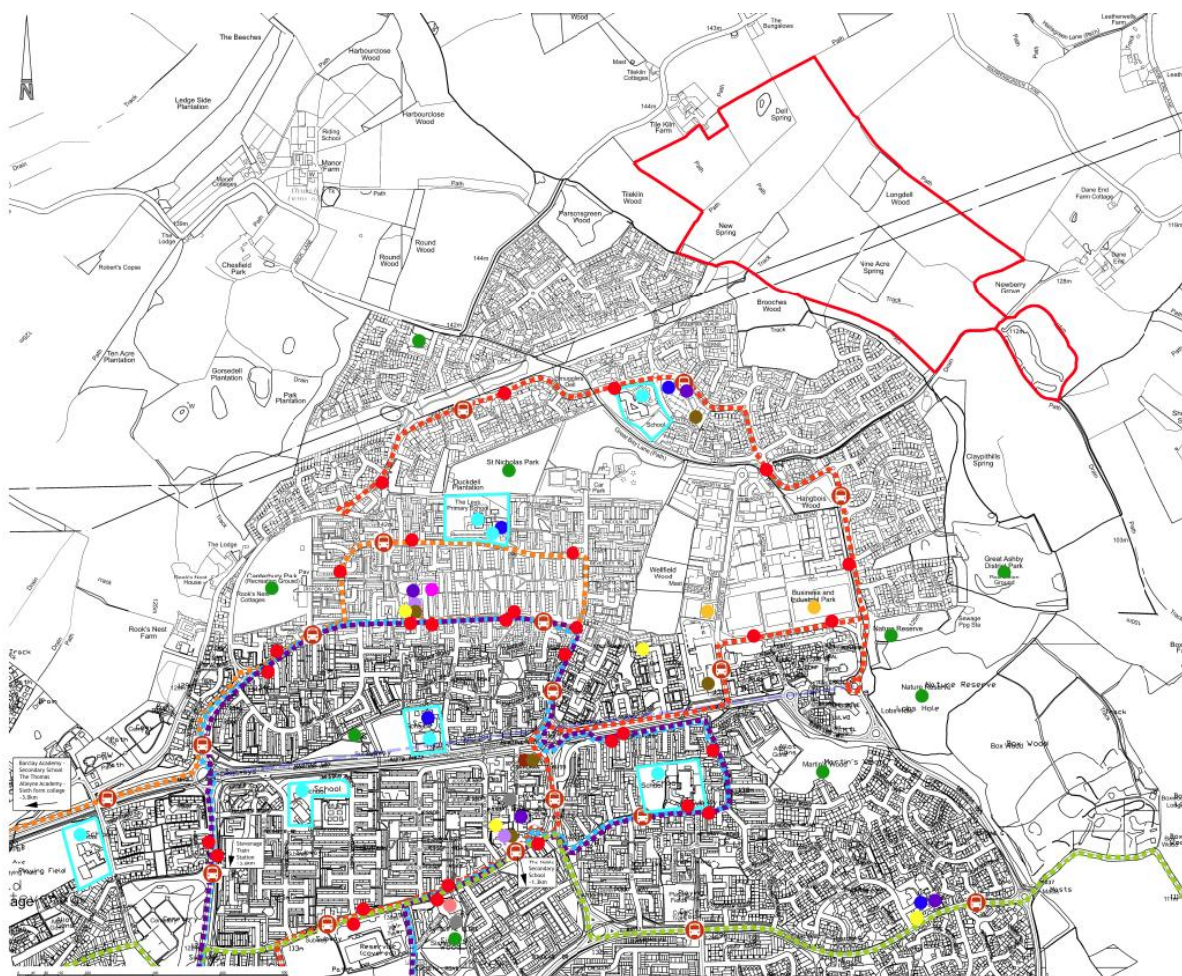
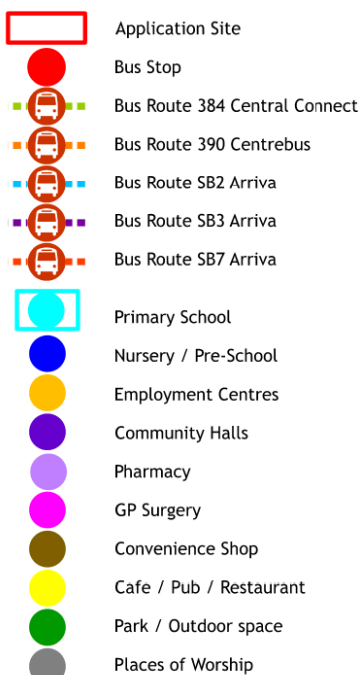


Figure 4.5: Bus Routes and Services Plan

4.52 The pedestrian infrastructure along Mendip Way facilitates quick and convenient access to public transport services; and a bus stop named 'The Beacons', which is located to the south west of the site. 'The Beacons' bus stop is the closest bus stop to the northernmost part of the site and is situated approximately 300m to the southwest of the site access. 'The Beacons' bus stop is accessible within a 4 minute walk or a 2 minute cycle. The Beacons' bus stop is served by Arriva route SB7 which facilitates access into and around Stevenage.

- 4.53 The pedestrian infrastructure along Great Ashby Way also facilitates quick and convenient access to the public bus stop named: The 'Fairfield Way', which is located to the south of the site. The 'Fairfield Way' bus stop is the closest bus stop to the southernmost part of the site and is situated approximately 700m to the south of the site access. The 'Fairfield Way' bus stop is accessible within a 10 minute walk or a 4 minute cycle. The 'Fairfield Way' bus stop is served by Arriva route SB7 which facilitates access into and around Stevenage.
- 4.54 As noted above, there are two main bus stops located in proximity to the site, which are served by different bus services. A summary of the closest bus stops; their respective distances and journey times from the site, and a summary of the bus services that they offer are outlined in Table 4.6 below.

Table 4.6: Bus information - Distances and travelling times are taken from the proposed site access off Mendip Way.

Stop Name	Distance from Site Access	Walking Journey Time	Services
The Beacons	400m	4 minute walk / 2 minute cycle	SB7
The Fairfield Way	700m	10 minute walk / 4 minute cycle	SB7
The Leys School	1.2km	15 minute walk / 4 minute cycle	390
St Nicholas Centre	1.6km	20 minute walk / 5 minute cycle	SB2, SB3, 390

- 4.55 As can be appreciated from the information shown in Table 4.6 above, the site is located in proximity to a number of local bus stops which serve a wide variety of bus services.
- 4.56 All of the aforementioned bus stops include a sign post highlighting the location of the stop, the bus routes being served, and copies of the relevant route's timetables. The bus stops also benefit from being located along footpaths with the presence of street lighting.
- 4.57 In line with paragraph 13.2.2 of the North Hertfordshire District Council's General Guidance on Masterplans (DRAFT, March 2023), the walking/ cycling routes to the bus stops appear to be; safe, direct, adequately lit (appropriate for the environment), naturally surveilled (active frontages or fairly busy road within clear sight), well-maintained.

- 4.58 To access a wider range of bus services, Stevenage Bus Station provides access to an extensive network of bus routes. Stevenage Bus station is located approximately 5km to the south of the site access and can be accessed within a 19 minute cycle or a 13 minute bus journey from 'The Beacons' Bus stop (using route SB7).
- 4.59 Bus services from Stevenage bus station provide access to the following destinations; Hertford (Route 384 / 390), Ware (Route 390), St Albans (Route 301), Bragbury End (Route SB8), Watford (Route 635), Hatfield (Route 635), Pin Green (Route SB11 / SB10), Poplars (Route SB6), Chells (Route 856), Martins Wood (Route SB3), St Nicholas (Route SB2), Great Ashby (Route SB7), Bishops Stortford (Route 386), Hitchin (Route 635/ Route 80), Luton (Route 100), Broadwater (Route SB4), Weston (Route 391).
- 4.60 Additionally, the 'Stevenage Railway Station' bus stop is located approximately 4.8km to the south of the site and is accessible within an 18 minute cycle or an 11 minute bus journey from the site (using route SB7). Routes from here provide access to a range of destinations including St Nicholas (Route SB2), Bragbury End (B8), Coreys Mill (Route 301), Martins Wood (Route SB3), Hitchin (Route 80 / Route 635), Grange Estate (Route 55), Great Ashby (Route SB7), Luton (Route 100), Bishops Stortford (Route 386) and Pin Green (Route SB11).
- 4.61 Similar to the assessments carried out for walking and cycling; it can be concluded from the above paragraph that a journey time of approximately 25 to 30 minutes for commuting purposes by a single mode of travel is generally the preferred acceptable limit. An outline of the available bus services are shown in Table 4.7. on the following page.

Table 4.7: Bus Service Information

No.	Route	Operator	Frequency
SB2	Stevenage (Circular)	Arriva Herts and Essex	Monday - Friday Every 20 mins. Saturdays - 1 service per half an hour. Sundays - 1 service per hour
SB3	Stevenage - Stevenage	Arriva Herts and Essex	Monday - Friday - Every 20 mins Saturdays - Every 30 mins Sundays - 1 service per hour
SB7	Stevenage - Stevenage	Arriva Herts and Essex	Monday - Friday - Every 30 mins Saturdays - 1-2 services per hour Sunday - 1 service per hour
390	Ware - St Nicholas Ware, Hertford, Stevenage, Coreys Mill, St Nicholas	Centrebus	Monday - Friday - 1 service per hour Saturdays - 5 services per day *Times taken from the Stevenage Railway Station (Stop N)

- 4.62 Similar to the assessments carried out for walking and cycling and in accordance with paragraph 13.1.5 of NHC General Guidance on Transport in Masterplans (DRAFT, 2023), as part of the Accessibility Audit, Public Transport Isodistance Plans have been prepared to illustrate the distance accessible within one hour of travel time. These plans are included within **Appendix D** of the Accessibility Audit, for ease of reference these plans are also included in Figure 4.6 - 4.8 on the following pages.

KEY

-  Application Site
-  Bus Stop
-  Public Right of Way - Footpath
-  Bridleway
-  Bus Route 384 Central Connect
-  Bus Route 390 Centrebus
-  Bus Route SB2 Arriva
-  Bus Route SB3 Arriva
-  Bus Route SB7 Arriva
-  1hour Public Transport Isochrone Arrival 9am Weekday
-  Public Transport Centroid located approx. 8min walking into the journey from the site
-  Primary School
-  Nursery / Pre-School
-  Employment Centres
-  Community Halls
-  Pharmacy
-  GP Surgery
-  Convenience Shop
-  Cafe / Pub / Restaurant
-  Park / Outdoor space
-  Places of Worship

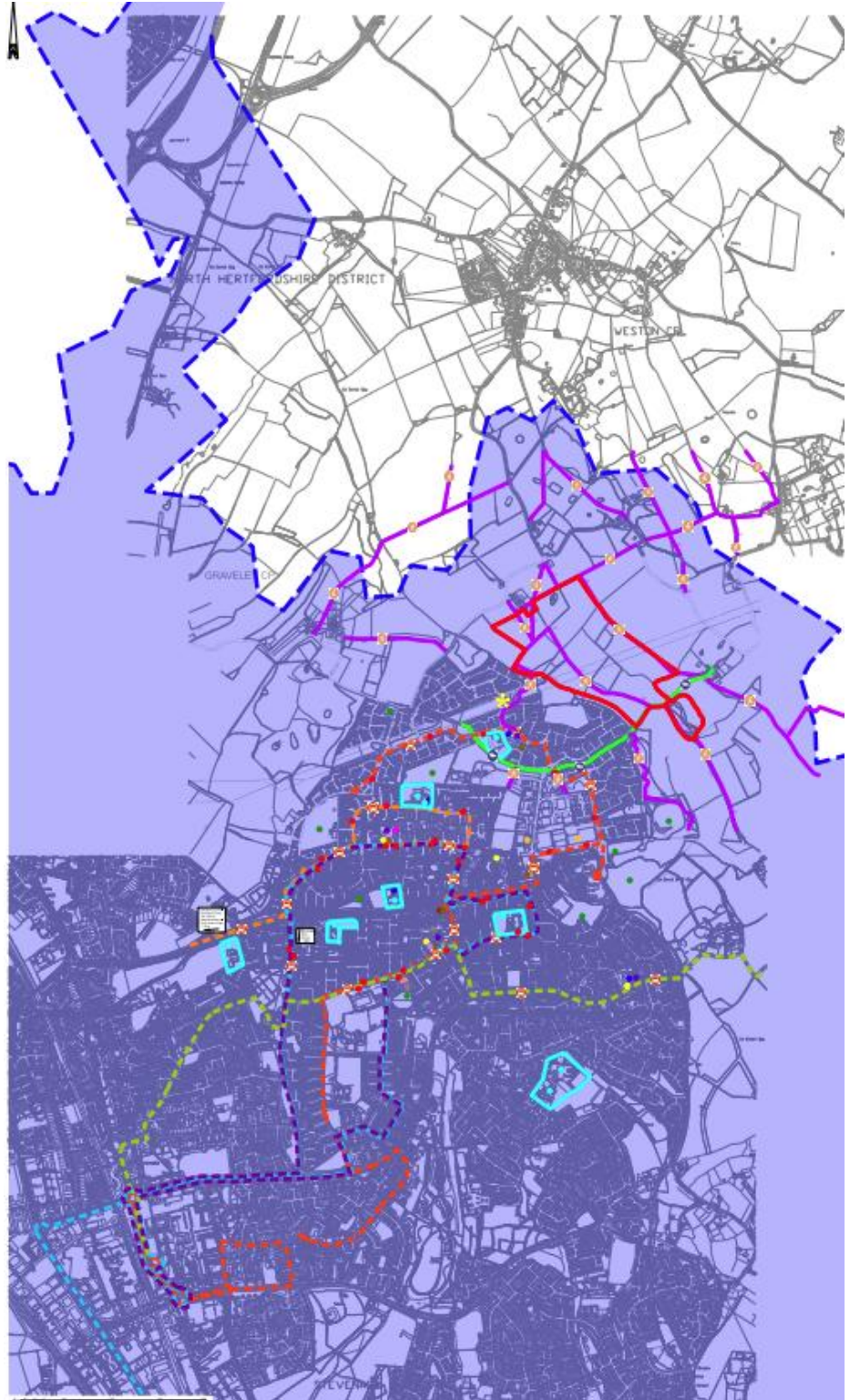


Figure 4.6: Bus Routes and Public transport Isochrone Arrival 9am Weekday

KEY

- Application Site
- Bus Stop
- 30 ⤵ Public Right of Way - Footpath
- 33 ⤵ Bridleway
- ⤵ Bus Route 384 Central Connect
- ⤵ Bus Route 390 Centrebus
- ⤵ Bus Route SB2 Arriva
- ⤵ Bus Route SB3 Arriva
- ⤵ Bus Route SB7 Arriva
- 1hour Public Transport Isochrone Departure 5:30pm Weekday
- ✱ Public Transport Centroid located approx. 8min walking into the journey from the site
- Primary School
- Nursery / Pre-School
- Employment Centres
- Community Halls
- Pharmacy
- GP Surgery
- Convenience Shop
- Cafe / Pub / Restaurant
- Park / Outdoor space
- Places of Worship

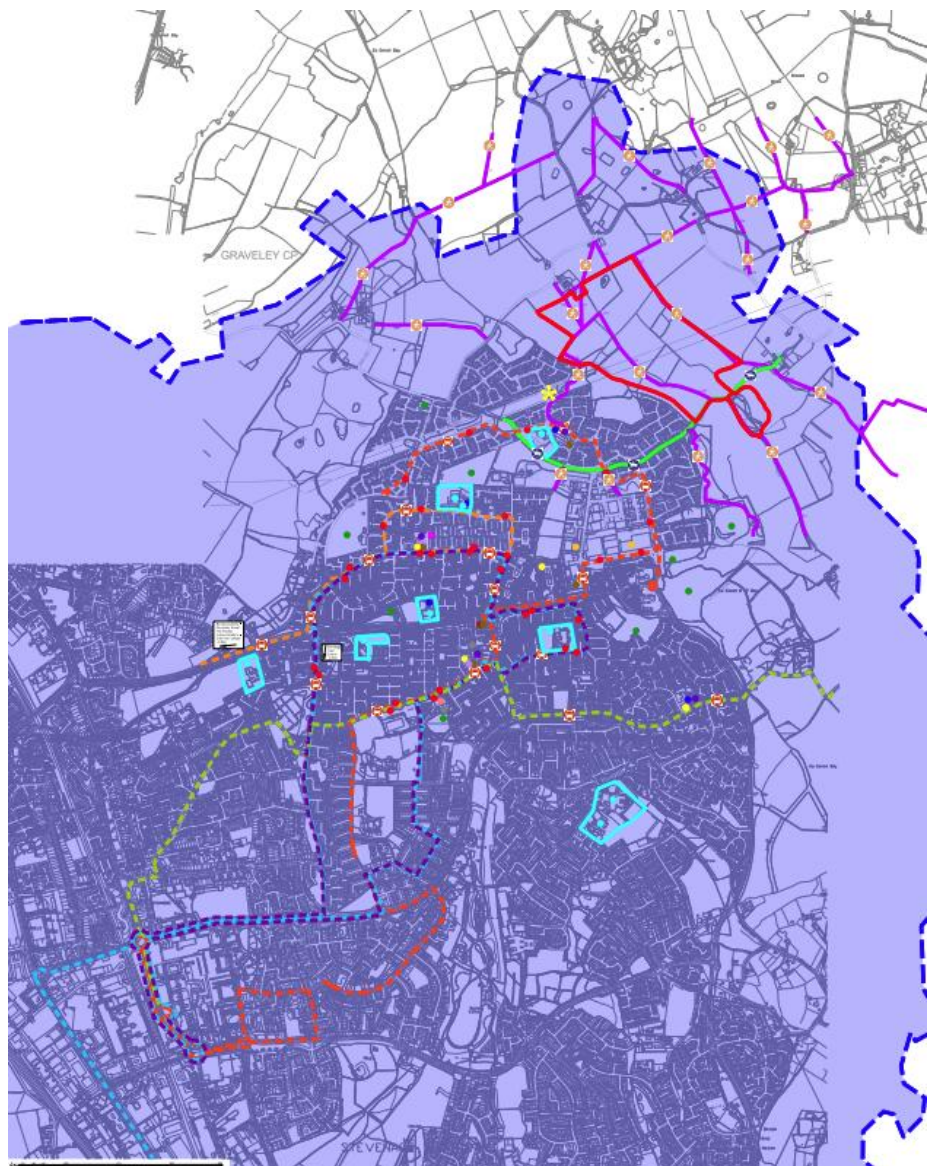


Figure 4.7: Bus Routes and Public transport Isochrone Departure 17:30 Weekday

KEY

-  Application Site
-  Bus Stop
-  Public Right of Way - Footpath
-  Bridleway
-  Bus Route 384 Central Connect
-  Bus Route 390 Centrebus
-  Bus Route SB2 Arriva
-  Bus Route SB3 Arriva
-  Bus Route SB7 Arriva
-  1hour Public Transport Isochrone Arrival 10am Sunday
-  Public Transport Centroid located approx. 8min walking into the journey from the site
-  Primary School
-  Nursery / Pre-School
-  Employment Centres
-  Community Halls
-  Pharmacy
-  GP Surgery
-  Convenience Shop
-  Cafe / Pub / Restaurant
-  Park / Outdoor space
-  Places of Worship

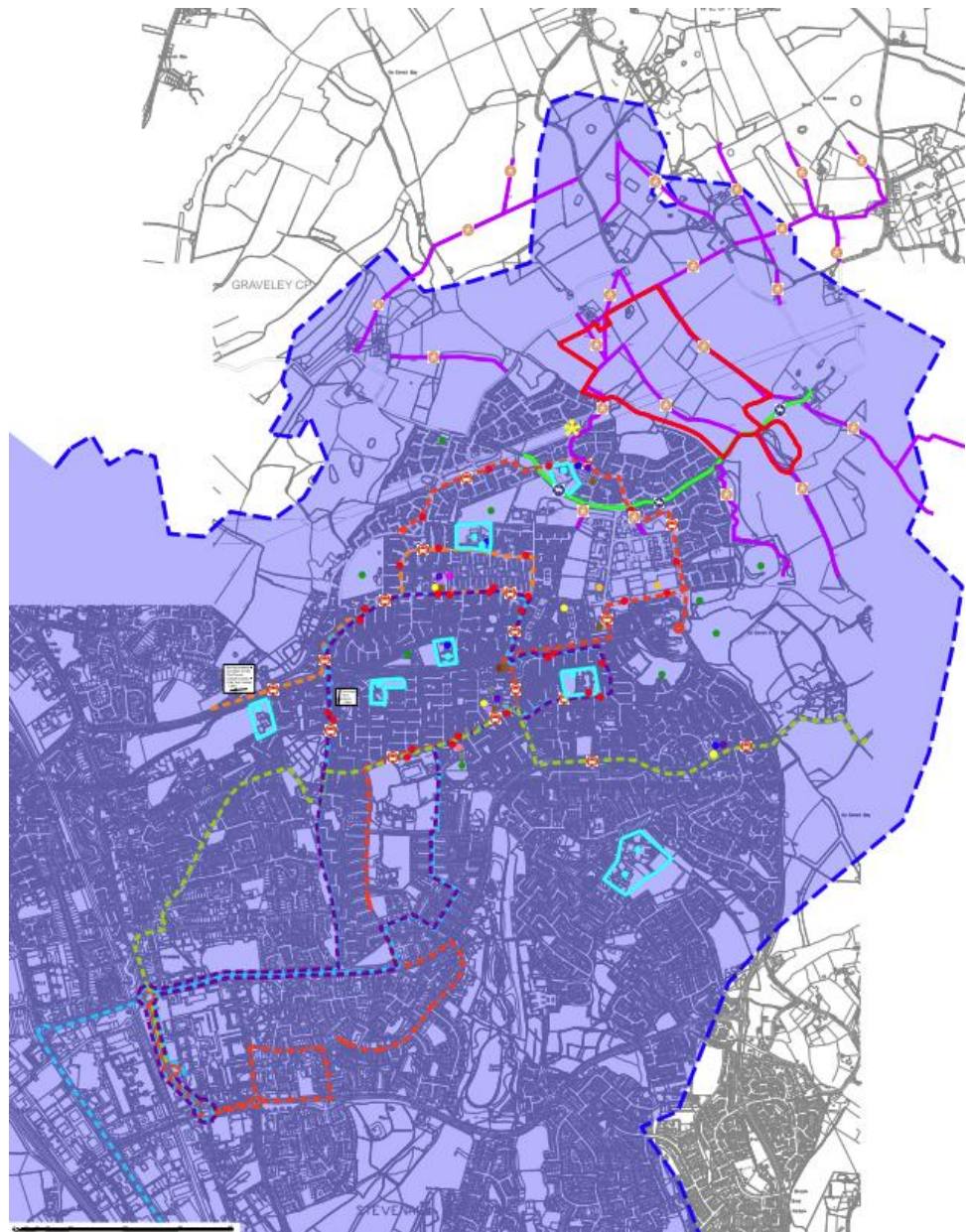


Figure 4.8: Bus Routes and Public transport Isochrone Arrival 10am Sunday

Existing Bus Patronage

- 4.63 2011 Census data shows that 2.1% (149) of residents that regularly commute to work from within the area of 'E02004913 : North Hertfordshire 005'; do so by bus. This is less than the national average of 7.5%.
- 4.64 Census data from 2011 also shows that 37.5% (2,268) of 'E02004913 : North Hertfordshire 005' commuters live within 10km of their place of work; where some 33.7% (809) are considered to live within a reasonable walking and/or cycling distance. Therefore, 14.3 (868) of the residents from the aforementioned Parish area are considered to live a sufficient distance from their place of work that would specifically benefit from travel by public bus.
- 4.65 It can be appreciated that from the 16.4% (394) of residents who could benefit from travelling by bus as part of their daily commute; approximately 2.1% already do so. There is therefore significant potential for the use of this mode of travel to increase. It is considered that the development of the application site would increase the connectivity by foot and bicycle to multiple bus stops, which would thus help to increase the use of this mode of travel in the local area.

Proposed Bus Service

- 4.66 Detailed discussions have been held with Arriva regarding the new proposed bus route of SB12 through the proposed development. Arriva reviewed a number of options and concluded that the best option is for the service to be provided such that on its inward journey it enters the development site.
- 4.67 As shown in Figure 4.9 on the following page, the route would travel westbound along Great Ashby Way and then enter Bray Drive and travel eastbound along Mendip Way until it reaches the proposed development. This is also illustrated on Proposed TRO and Parking Provision drawing, which is included in **Appendix E**.
- 4.68 Upon entry to the site the service would perform a loop around the internal site spine road. Arriva have prepared a draft timetable for the diverted service that achieves a frequency of 30 minutes. The journey time to Stevenage Bus Station is 26 minutes, from the Bus Station Stevenage Railway Station can be reached within a 5 minute walk. A copy of the draft timetable is included within **Appendix E**.

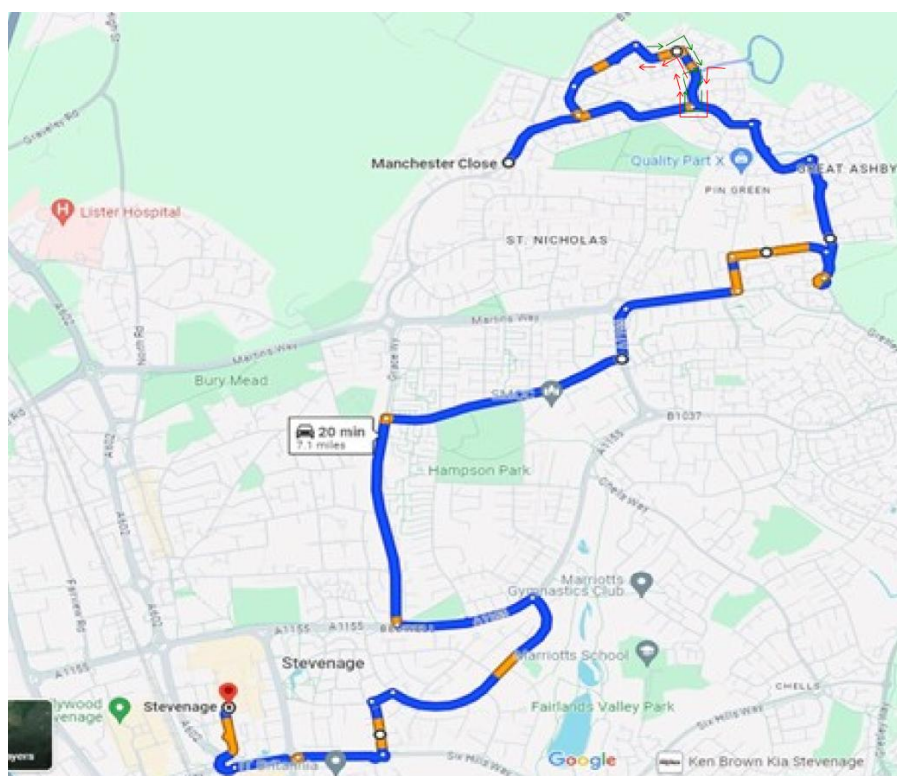


Figure 4.9 Proposed SB12 Bus Route

- 4.69 The proposed route is such that it passes in close proximity to the GA1 site allocation which it would also serve. It has been noted by both the bus operator and the Highway Authority that existing parking along Mendip Way may present difficulties for a bus travelling along this route.
- 4.70 The Highway Authority requested that parking surveys are undertaken along the route and where necessary parking restrictions are proposed to ensure the bus can pass through safely. A coordinated approach to the surveys and mitigation was taken, given that the proposed route will also serves the GA1 allocation.
- 4.71 At present, the GA1 development bus route extends up to Mendip Way / Haybluff Drive / Cotswold Drive roundabout at which point it was anticipated the bus would use the roundabout as a means of turning prior to returning along the same route.

- 4.72 It is now proposed that this route is further diverted via Mendip Way to the GA2 development, as it is illustrated on Proposed TRO and Parking Provision drawing, which is included in **Appendix E**.
- 4.73 In order to bring the bus along this route, it is proposed that a Traffic Regulation Order (TRO) in the form of yellow lining will be provided along Mendip Way, to provide a clear route for the proposed service, the proposals are illustrated on Proposed TRO and Parking Provision drawing.
- 4.74 It is acknowledged that in relation to the GA1 allocation a “Monitor and Manage approach” has been adopted for the bus service on Mendip Way. In the first instance a Temporary TRO (TTRO) will be implemented during construction and monitored to determine if this is sufficient. If monitoring indicates that this approach is not sufficient, then a TRO to introduce yellow lining will be proposed and implemented. If this remains insufficient the next option will be to propose parking bays. The developer for GA1, Croudace, are proposing that a sum is set aside within the S106 Agreement, which would cover the worst-case scenario (parking bays). If that money is not spent after 5 years of final occupancy it will be returned to them.
- 4.75 The applicant of GA2 will take a similar approach, it is proposed that a “Monitor and Manage approach” will also be adopted for the proposed GA2 site. With regards to the construction traffic for GA2 site, the case is slightly different than GA1, as the construction vehicles would not be using the proposed bus route, they would be arriving from the south from Mendip Way / Great Ashby roundabout. Given that the proposed TRO for the GA2 is to help with the proposed bus services rather than construction traffic, the temporary TRO would not be a viable option for the GA2. Therefore, no temporary TRO is to be proposed, the proposed TRO is to be permanent. If monitoring indicates that this approach is not sufficient, then some further TRO could be proposed. If this remains insufficient as a last option, the parking bays can be introduced as a worst case scenario.
- 4.76 In the event that the new SB12 bus service is not provided, the diversion of the existing bus service (SB7 route) will be considered as a fall-back option.

Proposed Bus Service - Parking Surveys

- 4.77 To determine the location of the proposed Traffic Regulation Order (TRO), the parking survey beat data was obtained from GA1 site and reviewed in greater detail. The parking surveys taken place over a period of 3 days in both months : January 2023 and May 2024. The surveys recorded, among others, the number of cars parked along the proposed bus route. The parking survey results are also included in **Appendix E**.

- 4.78 Based on the busiest day of the parking surveys - Saturday 21.01.2023, the TRO and Parking Provision drawing was prepared. The drawing illustrates the location of the cars parked during that day. The cars are shown in the drawing in green and red - the green-coloured cars would not be affected by the proposed TRO along Mendip Way, while the red-coloured cars would require relocation. Based on the information contained in the parking surveys, those affected cars can be safely relocated on the other side of the Mendip Way and Whernside Drive, as shown by pink-coloured cars in the drawing. Therefore, as it can be seen on the drawing, all affected cars could be relocated within the near distance in a safe manner.
- 4.79 In addition to the above, another traffic survey has been conducted on 26-27th November 2024 at parking courts, in the vicinity of the proposed bus route. The survey was conducted during night and early morning hours (00:30-05:30), when the highest level of parked cars is anticipated. The survey was conducted at 26 parking courts along Mendip Way, Whernside Drive, Merrick Close, Fairfield Cres and Great Gables, the parking survey results along with the map showing all surveys locations are included in Appendix E.
- 4.80 The survey calculated the capacity at all surveyed parking courts, and it have been determined that a total of 292 spaces are available, amongst which 23 are unallocated bays and minimum of 18 are visitor spaces - it was impossible to determine the exact number of visitors spaces due to cars parked over the markings. Most of the parking courts capacities were recorded below 80%, with only 4 parking courts out of 26 reaching 100% capacity.
- 4.81 The survey shows the occupied parking levels on both days at 69%, which equates to 201 vehicles parked, therefore some 91 vehicles could still park within the parking courts before they would reach their capacities. While it is noted that not all 91 spaces are either unallocated or visitor spaces, it is appreciated that a vast majority of the cars parked on the road would belong to its residents parking there out of convenience, the cars could therefore be relocated to its assigned space.
- 4.82 From the above analysis it can be seen that parking courts remain under capacities and could therefore provide parking spaces for additional vehicles if those were required. The parking courts would also provide additional level of parking spaces, in case of any increases in the future.
- 4.83 Based on the information contained above it can be concluded that, while the proposed TRO would result in a loss of a few car parking spaces, in order to bring the bus to the site via this route; the current parking provision along Mendip Way and nearby streets is sufficient to accommodate all the cars currently utilising those spaces and vehicles could still park in a safe manner along Mendip Way on the other side of the carriageway. In case of any further increases in parking level, 91 additional parking spaces are also available in nearby parking courts, where cars could be relocated.

- 4.84 As it was mentioned the GA2 allocation, will adopt a “Monitor and Manage approach” for the bus service on Mendip Way, similar to GA1. A Traffic Regulation Order (TRO) in the form of yellow lining will be provided along Mendip Way, if deemed sufficient, to provide a clear route for the proposed service. The undertaken parking surveys confirmed the level of occupancy and capacity of the street network and nearby parking courts within the vicinity of the proposed bus route and it was concluded that there is sufficient capacity for the displaced cars to be relocated nearby in a safe manner. If monitoring indicates that this approach is not sufficient, then some further TRO could be proposed. If this remains insufficient as a last option, the parking bays can be introduced as a worst case scenario.
- 4.85 From the evidence provided above, there is no reason in Highways and Transportation terms, why the proposed Traffic Regulation Order (TRO) at ‘Land North of Great Ashby’ site should not be fully supported.
- 4.86 In the event that the proposed TRO would not come forward, the fallback option would be to bring the bus provision to the site via Great Ashby Way / Mendip Way route, allowing the bus to access the site from the south.

Train Services

- 4.87 The nearest train station to the site, Stevenage Train Station, is located in the western extents of Stevenage approximately 5km to the south of the proposed site.
- 4.88 From the site access, Stevenage Train Station can be accessed by bicycle within 25 minutes (5.8km) or by bus, using route SB7 which can be taken from ‘The Beacons’ bus stop which is situated approximately 300m to the southwest of the site access along Great Ashby Way. The bus journey from ‘The Beacons’ bus stop to Stevenage Train Station takes approximately 12 minutes.
- 4.89 Stevenage Train Station is served by predominantly London North Eastern Railway (LNER), Great Northern and Thameslink Trains. Key destinations accessible from Stevenage Train Station include; Brighton, London Kings Cross, Moorgate, Horsham, Peterborough, Harrogate, Cambridge, Leeds and Letchworth Garden City.
- 4.90 Stevenage Train Station benefits from a number of amenities including; a ticket office, ticket machine and collection facilities, refreshments facilities, toilet, free WI-FI, waiting room and seated area, an ATM, shops, cycle storage, car and cycle parking and a taxi rank. The presence of these amenities is expected to encourage the use of this mode of transport.

- 4.91 Additionally, Stevenage train station has step-free access to all platforms which ensures this mode of transport is accessible to all.
- 4.92 When travelling by train it is appreciated that a number of patrons will combine this journey with another form of transport such as the public bus or private car. Therefore, it is important to note that Stevenage Train Station benefits from 266 secure cycle storage spaces and a number of car parks, these are as follows; Railway North 622 spaces, Railway South 123 Spaces, Daneshill 75 spaces and Dansegate 76 spaces. The cycle parking provided at Stevenage Train Station offers long and short term parking and is covered by CCTV.
- 4.93 The weekday average frequency and journey times for direct trains between Stevenage Train Station and key destinations are given in Table 4.8.

Table 4.8: Service Information for Direct Trains from Stevenage Train Station

Destination	Frequency of Peak Hour Service	Journey Time
Three Bridges	4	1 hour 35 minutes
Moorgate	2	40 minutes
Cambridge	3	44 minutes
London Kings Cross	3	26 - 41 minutes
Peterborough	2	50 minutes
Leeds	1	1 hour 1 minute

- 4.94 The onward travel provision from Stevenage Train Station is considered to be good. The train station works in partnership with a number of local Taxi companies (Stevenage Taxis, ABC Taxis Stevenage Ltd, Gold Star Taxis), and local bus operators (including Arriva, Central Connect and Centrebus).
- 4.95 Additionally, the Stevenage cycleway system and National Cycle Route 12 extends along the frontage of Stevenage train station, facilitating safe and convenient onward travel via bicycle. The Stevenage Cycle Map is included in **Appendix F**.

- 4.96 Walking and cycling routes from the site access to Stevenage Train Station are safe, direct, adequately lit (appropriately for the environment) and naturally surveyed (active frontages or fairly busy roads are within clear sight). Where possible, cycleways provide a direct and traffic-free route to the Train Station.

Existing Train Patronage

- 4.97 2011 Census data shows that 11.4% (818) of residents that regularly commute to work from within the area of 'E02004913 : North Hertfordshire 005' ; do so by train. This is greater than the national average of 7.5%.
- 4.98 Census data from 2011 also shows that 62.7% (3,812) of 'E02004913 : North Hertfordshire 005' commuters live further than 10km from their place of work. Therefore up to 62.7% (3,812) of the aforementioned area could reasonably be able to travel to their place of work via train as part of their daily commute. Given the number of residents living in this commutable area, there is potential for the use of this mode of travel to increase. As previously mentioned, commuting only accounts for a proportion of all trips made, therefore as part of the site's transport strategy, the ways in which other trips can be made sustainable will be assessed and suitable transport interventions will be proposed accordingly.

Reducing Car Use

- 4.99 Car Sharing offers a more sustainable method of travel than single-occupancy car journeys, whilst still offering the convenience that a car provides.
- 4.100 As part of the site's strategy for reducing SOV trips, car sharing and its benefits will be promoted to residents through the Resident's Information Travel Pack.
- 4.101 Identified benefits of car sharing over driving are:
- Saving money.
 - Time to relax without driving.
 - Opportunity to socialise.
 - Reducing overall journey time by reducing the overall number of vehicles, and therefore congestion on the roads.

- 4.102 In the Resident's Travel Pack the TPC will promote the Liftshare website which offers a car sharing online platform.
- 4.103 Car sharers should decide among themselves how they wish to split the cost of travel. Costs should be agreed in advance and could be split in one of the following ways:
- Sharers can take turns in driving their cars and no financial transactions will be necessary.
 - The driver charges for the share of the cost of petrol.
 - The driver charges on the basis of a mileage rate to cover petrol; in addition to depreciation, wear and tear.
 - Details of the car share scheme and any relevant links will be provided to all residents upon occupation, in their 'Residents Travel Information Pack'.

Services and Facilities Accessible by Non-Vehicular Modes of Transport

Accessibility

- 4.104 Accessibility includes access to all those land uses that are required to sustain day to day living. These will include employment opportunities, retail facilities, education establishments and recreation facilities.
- 4.105 The location of the site in relation to the surrounding area ensures that it is well placed with regards to the mix of services, facilities and employment opportunities within a 2km walk and 5km cycling distance.
- 4.106 Key destinations for the site have been identified in accordance with paragraph 23.1 of Appendix A to the North Herts Council General Guidance on Transport in Masterplans (DRAFT, 2023) and they are presented on the Facilities and Services Plans included in **Appendix C** of the Accessibility Audit.
- 4.107 In accordance with Chapter 12 of NHDC General Guidance on Transport in Masterplans (DRAFT, 2023) the Facilities and Services Plans also include walking isodistances for an 800m walking radius and a 1600m walking radius. Due to the size of the site, two separate plans have been identified based on two centroids located in the most remote areas of the site; the first for the northernmost part of the site, by the school entrance and the second for the southernmost built area of the site.
- 4.108 The Facilities and Services Plans also includes the information on the distances to the services and facilities, approximate journey times for walking and cycling using the guidance contained in Table 1 and Table 2 of NHC General Guidance on Transport in Masterplans and also approximate journey times using Google Maps.

- 4.109 In accordance with paragraph 10.4.1 of the North Hertfordshire District Council's General Guidance on Masterplans (DRAFT, March 2023), existing Bus Routes and services has also been identified and they will be presented on the Bus Routes and Services Plans, included within Appendix D of the Accessibility Audit.
- 4.110 Similar to the assessments carried out for walking and cycling and in accordance with paragraph 13.1.5 of NHC General Guidance on Transport in Masterplans (DRAFT, 2023) Public Transport Isodistance Plans have been prepared to illustrate the distance accessible within one hour of travel time. These plans are included within **Appendix D** of the Accessibility Audit.

Access to Employment

- 4.111 Main commercial centres tend to contain the main employment opportunities within an area. Large employment areas such as London, Cambridge, Peterborough and Stevenage are all available by bus or rail from the site.

Access to Education

- 4.112 Access to education is considered to be particularly important on the site as it is anticipated that young families will acquire a number of the properties. Therefore, trips for educational purposes will potentially account for a large proportion of the overall site trip generation.
- 4.113 As part of development proposals, a 2FE Primary School will be provided on site which will be accessible by foot or bicycle for all residents of the development. Sustainable routes will be designed to facilitate walking/ cycling to onsite education provision. Details regarding the exact location of this will be confirmed at the detailed design stage.
- 4.114 The site is well served by existing educational facilities, as outlined below:

*Please note the distances are taken from the approximate position of the proposed access on Mendip Way and walking / cycling distances are based off Google Maps.

- Round Diamond Primary School - 210m; accessible in a 3 minute walk or a 1 minute cycle
- Busy Bees at Stevenage (Nursery) - 260m; accessible in a 3 minute walk or a 1 minute cycle
- Martins Wood Primary School - 1.9km; accessible in a 23 minute walk or an 8 minute cycle
- Trotts Hill Primary School - 2.6m; accessible in a 32 minute walk or a 9 minute cycle
- Almond Hill Junior School - 2.7km; accessible in a 32 minute walk or a 9 minute cycle.

Access to Shopping Facilities

- 4.115 In respect of convenience goods, although it is anticipated that many will seek opportunities to purchase convenience goods on the way home from work (particularly with regards to ‘top-up’ shopping), the presence of the Budgens, Morrisons Daily, Co-Op Food and the Shell garage ensures that accessibility to such facilities remains local and convenient.

Leisure and Recreation

- 4.116 Within the vicinity of the site, there are a number of leisure and recreation opportunities available within a reasonable walking or cycling distance including Mendip Way Playground, North Shore Open Space Park, The Great Ashby District Park, St Martins Wood Play Area, Pryors Wood, Sishes Wood.
- 4.117 The local bus services and cycle provision also provide direct access to a number of other leisure opportunities including retail stores, cinemas, cafes and restaurants in the wider area of Stevenage.

Travel Targets

- 4.118 The following paragraphs set out the proposed targets to be achieved by the site as an outcome of the measures outlined in this document and the Green Travel Plan. All targets proposed are subject to agreement with the TPC, residents and North Hertfordshire Council.
- 4.119 The UK Government’s Framework Document ‘**Active Travel England**’ (ATE) (2022) sets out its primary objective of delivering increases in active travel 50% of journeys in towns and cities. To aid with achieving this, ATE have identified a number of aims which are paramount to increasing levels of walking and cycling. These include;
- Creating better streets and networks for cycling and walking that are built to the ‘key design principles’ as set out in Gear Change and Local Transport Note 1/20;
 - Putting walking and cycling at the heart of transport, place-making, and health policy so travelling without a car is easy and accessible utilising a long-term walking and cycling programme and budget;
 - Empowering and encouraging local authorities who manage their roads to incorporate active travel improvements into all aspects of their functions. This includes access to new powers to manage the highway effectively for active travel and training on all aspects of active travel best practice;

- Enabling people to cycle and protecting them when they do by reducing road danger through the creation of safe infrastructure based on the key design principles and working with the department and relevant bodies to ensure that the rules of the road work to protect people travelling actively.

- 4.120 The site's strategy has been designed with this in mind and it is recognised that objectives, targets and indicators are all important parts of encouraging a modal shift. The setting and monitoring of targets allow the success of the plan to be measured.
- 4.121 Travel targets for the site will take the form of a percentage modal shift away from single occupancy car use towards the more sustainable modes of travel, by implementing measures detailed in Section 4 of Green Travel Plan.
- 4.122 Setting SMART (Specific, Measurable, Achievable, Relevant and Timebound) targets is paramount to ensuring a modal shift away from SOV trips towards sustainable trips.
- 4.123 It is considered that the precise nature of the target is a matter best agreed between the appointed TPC and North Hertfordshire District. This approach will ensure that all parties are committed towards achieving the same goal.
- 4.124 At this early stage of the planning process, it is anticipated that the agreed overarching target will be that 50% of all journeys will be made by sustainable modes of transport.
- 4.125 It is proposed that the target is set / revised based upon the findings of the Travel Questionnaire, which will ensure that the resources are targeting the most appropriate modes of travel and that the overall target can be considered to be realistic.
- 4.126 Due to the sustainable location of the site and the availability of sustainable modes of transport within the locality; it is envisaged that the effects will be far-reaching and that its benefits will extend beyond the development site.

Accessibility Audit

- 4.127 In order to assess the current sustainable infrastructure and to identify areas of improvements, as part of the Accessibility Audit, key walking routes from the site have been assessed using the Walking Route Audit Tool (WRAT). Routes are ranked based on the following criteria; attractiveness, comfort, directness, safety and coherence. Once ranked routes can be accurately categorised and key areas for improvement can be identified. Three main routes have been identified:
- Route 1 - Main site access off Mendip Way to Round Diamond School and cluster of facilities including among others Busy Bees Nursery school, Great Ashby Community Centre and Budgens supermarket
 - Route 2 - Bridleway site access via Fairfield Way Bus Stop, Round Diamond School and cluster of facilities; to equestrian crossing on Great Ashby Way
 - Route 3 - Cleveland Way access via Fairfield Way Bus Stop, Round Diamond School and cluster of facilities; to equestrian crossing on Great Ashby Way
- 4.128 All the above-mentioned routes have been audited using the WRAT tool, Routes 1 and 2 described were further divided into smaller sections Route 1.0 and 1.1 and Route 2.0, 2.1 and 2.2, to better represent the existing conditions and to understand where the improvements are needed the most. Further information on this and the full WRAT analysis is included in the Accessibility Audit. For ease of reference the routes audited as part of the WRAT analysis are included in Table 4.9 on the following page.

Table 4.9: Accessibility Audit Walking Routes

Route Number	Distance	Key destinations	WRAT Score and %	Possible Improvement Options
Route 1.0	350m	Round Diamond School; cluster of facilities including among others Busy Bees Nursery school, Great Ashby Community Centre and Budgens supermarket	24/40 60.0%	• Upgrade existing crossings at Mendip Way/Great Ashby roundabout to zebra crossing • Widening of footway along Mendip Way • Provide the shelter for the existing cycle stands near the Budgens supermarket • Remove the overgrown vegetation along eastern footway on Mendip Way • Replace the existing coloured carriageway surfacing and road markings near the pedestrian crossing by Round Diamond School • Replace the surfacing where required
Route 1.1	600m	Mendip Way	36/40 90.0%	• This non existing route has been audited as it is proposed to be constructed, in accordance with the HCC standards
Route 2.0	800m	The Fairfield Way Bus Stop, St Nicolas Park	29/40 72.5%	• Lighting improvements near the Fairfield Way bus stop • Provide raised kerb for the bus stop • Consider providing benches along the route • Consider providing more signage for the existing Bridleway • Provide / Replace the surfacing where required
Route 2.1	350m	St Nicolas Park, Equestrian crossing on Great Ashby Way	19/40 47.5%	• Widening of footway could be provided along the back of St Nicolas Park • Remove the overgrown vegetation along St Nicolas Park route • Lighting improvements along St Nicolas Park • Provide / Replace the surfacing where required
Route 2.2	250m	Round Diamond School and cluster of facilities including among others Busy Bees Nursery school, Great Ashby Community Centre and Budgens supermarket	25/40 62.5%	• Consider providing more signage for the existing Bridgeway and other public rights of way
Route 3.0	1000m	The Beacons Bus Stop, Round Diamond School and cluster of facilities (as above); equestrian crossing on Great Ashby Way	31/40 77.5%	• Remove the overgrown vegetation where required • Provide / Replace the surfacing where required

- 4.129 The findings of the WRAT audit tool analysis show, that the primary focus on the improvements should be given to Route 2, which is the PROW Bridleway. The possible route improvements are presented in Table 4 below. This could include, but it is not limited to resurfacing and widening of the route along all its length to 3.0m wide, improving the street lighting particularly in the areas of St Nicolas Park and near the Fairfield Way bus stop and removing the overgrown vegetation. The raised kerb for the Fairfield Way bus stop could also be provided.
- 4.130 The findings of the WRAT audit tool analysis also show, that improvements are required for Route 1.0, which is a route from the main site access on Mendip Way to Round Diamond School and nearest supermarket.
- 4.131 The possible route improvements to Route 1.0 are also presented in Table 4.9. This could include, but it is not limited to resurfacing and widening of the route along all its length on eastern side, removing the overgrown vegetation and replacing the surfacing where required. The existing coloured carriageway surfacing and road markings near the pedestrian crossing by Round Diamond School and the dropped kerb paving on Mendip Way arm could also be replaced.
- 4.132 The proposed improvements are illustrated on the Accessibility Audit Walking Routes Possible Improvements drawing, which is included in **Appendix G**.
- 4.133 Further details including the ownership land search, the budget cost estimate and photographs showing exact location of the proposed improvements are presented in Accessibility Audit.
- 4.134 Based on the information above, key areas of improvements can be identified. It is anticipated that if the aforementioned improvements are implemented, the walking routes are likely to be more sustainable and attractive for pedestrians and other users, thus increasing the number of sustainable trips made by walking.

- 4.135 Similarly to the walking route audit, as part of the Accessibility Audit key cycling routes from the site that have been identified and audited using the Cycling Level of Service Tool and Junction Assessment Tool provided in LTN 1/20 Appendix A and B. Three main routes have been identified:
- Route 1 -Site access to The Leys Primary and Nursery School, Giles Junior Sand Nursery and Infants' School, Trotts Hill School and Almond Hill Junior School
 - Route 2 - Site access to The Oval Community Centre, Co-op Food - Stevenage - The Oval, Shell Petrol Station, Martins Wood Primary School and The Noble School Secondary School
 - Route 3 - Site access to Employment Area, Martins Wood Primary School and The Noble School Secondary School
- 4.136 These three main routes described above were further divided into the separate routes, to better represent the existing conditions and to understand where the improvements are needed.
- 4.137 The map illustrating the audited routes is included in **Appendix G** of the Accessibility Audit. The results of the Cycling Level of Service Tool are presented in Table 4.10 on the following page.
- 4.138 It should be noted that Route 1 follows the Great Ashby to Stevenage Central/Gunnels Wood (Route 2 indicated in the Local Cycling and Walking Infrastructure Plan 2019), except for the final non-existing connection between Great Ashby Way and Mendip Way. It was identified that at present a triangular shaped attenuation basin associated with the existing residential development is located underneath the electric pylons, at the location of the proposed link, therefore this non existing section was excluded from the audit.
- 4.139 The proposed improvements are illustrated on the Accessibility Audit Cycling Routes Possible Improvements drawing, which is included in **Appendix G**.
- 4.140 Further details including the ownership land search, the budget cost estimate and photographs showing exact location of the proposed improvements are presented in Accessibility Audit.
- 4.141 Based on the information above, key areas of improvements can be identified. It is anticipated that if the aforementioned improvements are implemented, the cycling routes are likely to be more sustainable and attractive for cyclists and other users, thus increasing the number of sustainable trips made by cycling.

Table 4.10: Accessibility Audit Cycling Routes

Route Number	Distance	Key destinations	LTN 1/20 Score and %	Possible Improvement Options
Route 1.0	2.4km	Almond Hill Junior School	41/50 82%	- Two road dropped crossings on Bray Drive (existing crossing is 3.6m wide; 6.8m long) and with good signage and tactile provision on Orwell Avenue (existing crossing is 3.2m wide; 5.75m long), consider the zebra crossing at this location to give the priority to pedestrians and cyclists - Remove the overgrown vegetation near Almond Hill Junior School and Weston Road bridge - Improve lighting - Clean / Replace the surfacing near the Almond Hill Junior School where required
Route 1.1	2.4km	Almond Hill Junior School	14/50 28%	The grass verge could be improved /repaired where required
Route 1.2	3.2km	The Leys Primary and Nursery School, Giles Junior Sand Nursery and Infants' School, Trotts Hill School, Almond Hill Junior School	31/50 62%	- Resurfacing of existing track to provide shared cycleway / footway; approx. 175m long route between St Nicolas Park and Weston Road - Widening and resurfacing of existing 1.5m wide track to provide 3.0m wide shared cycleway / footway; approx. 440m long route along St Nicolas Park - Clean / Replace the surfacing near St Nicolas Playground and Canterbury Lane - Trim the hedge near St Nicolas Playground and York Road - Relocate bin from the footway on the turn to cycleway by Giles School - Replace the surfacing under the Martins Way / Canterbury Way / Grace Way roundabout, along Martins Way and from St Nicolas Park into Great Ashby Way - Replace the paving slabs with bituminous surfacing by St Nicolas Playground - Improve lighting near the school
Route 2.0	2.0km	The Oval Community Centre, Co-op Food - Stevenage - The Oval, Shell Petrol Station,	26/50 52%	- Widening of cycleway in St Nicolas Park could be provided along the central crossing link approx. 230m long currently 1.0/1.2m wide track - Improve lighting along the central crossing link approx. 230m - Remove the overgrown vegetation near St Nicolas Park; - Clean / Replace the surfacing near St Nicolas Park.

Route 2.1	1.7km	The Oval Community Centre, Co-op Food - Stevenage - The Oval, Shell Petrol Station, Martins Wood Primary School and The Noble School Secondary School	32/50 64%	• Widening of existing 1.0m wide track to provide 3.0m wide shared cycleway / footway; approx. 145m long route on the eastern boundary of St Nicolas Park • Improve lighting of approx. 575m of route along St Nicolas Park and Forest • Clean / Replace the surfacing behind the dwellings near St Nicolas Park Forest and towards Martins Way • Remove the overgrown vegetation as required
Route 3.0	2.5km	Employment Area, Martins Wood Primary School and The Noble School Secondary School	39/50 78%	• Widening and resurfacing of approx. 700m long 1.0/2.0m wide route along Wedgwood Way to provide 3.0m wide shared cycleway/footway • Improve lighting near schools • Clean / Replace the surfacing behind the dwellings near St Nicolas Park Forest and towards Martins Way • Remove the overgrown vegetation as required
Route 3.1	1.4km	Employment Area, Martin's Wood	34/50 68%	• Replace old tactile paving • Trim the overgrown vegetation as required

- 4.142 Taking into account the findings of the cycling routes audit tool analysis and the location of routes in relation to facilities (e.g. Route 3 is a route to the nearest Secondary School), it is considered that the primary focus on the improvements should be given to Route 3. The possible route improvements could include, but it is not limited to cleaning, resurfacing, and widening of the route (particularly through Industrial Estate on Wedgewood Way), improving the street lighting particularly near schools and removing the overgrown vegetation.
- 4.143 Given the findings of the cycling routes audit tool analysis it is considered that the focus on the improvements should also be given to Route 1, which forms a part of a cycleway to the Stevenage Train Station and also a wider cycleway network.
- 4.144 The possible route improvements to Route 1.0 are also presented in Table 4.10. This could include, but it is not limited to cleaning and resurfacing the route, providing two zebra crossing, improving the street lighting particularly near schools and removing the overgrown vegetation.
- 4.145 The proposed improvements are illustrated on the Accessibility Audit Cycling Routes Possible Improvements drawing, which is included in Appendix G.
- 4.146 Further details including the ownership land search, the budget cost estimate and photographs showing exact location of the proposed improvements are presented in Accessibility Audit.
- 4.147 Based on the information contained above, it can be appreciated which possible improvements are likely to make the cycling routes more sustainable and attractive for cyclists and other users.
- 4.148 Table 4.11 on the following page summaries the outcome of the audit conducted and identifies four primary improvement locations, where based on the results of this Audit for the site and WRAT and Cycling Level of Service Tool and Junction Assessment Tools improvements would be required the most. It is anticipated that the areas outlined below, and the outcome of the aforementioned interventions proposed will aid the site in achieving the target that 50% of journeys will be made by sustainable modes of transport. For further information on the walking and cycling route analysis please refer to the Accessibility Audit.

Table 4.11: Audit Summary and proposed improvement locations

Improvement Location	Proposed Transport Intervention	Analysis
Walking Route 1 : Main site access off Mendip Way to Round Diamond School and cluster of facilities including among others Busy Bees Nursery school, Great Ashby Community Centre and Budgens supermarket	Resurfacing and widening of the route along all its length on eastern side, upgrading existing crossing at Mendip Way/Great Ashby roundabout to zebra crossing, removing the overgrown vegetation and replacing the surfacing where required. The existing coloured carriageway surfacing and road markings near the pedestrian crossing by Round Diamond School and the dropped kerb paving on Mendip Way arm could also be replaced.	The cluster of amenities, located within 400m of the proposed site access off Mendip Way. Due to the proximity to the site a large number of residents will seek to reach the facilities including the supermarket and the nursery. The proposed intervention will ensure the route is more convenient for walking and other users, encouraging sustainable trips for a large proportion of residents from the site.
Walking Route 2 : Bridleway site access via Fairfield Way Bus Stop, Round Diamond School and cluster of facilities; to equestrian crossing on Great Ashby Way	Resurfacing and widening of the route along all its length to 3.0m wide, improving the street lighting particularly in the areas of St Nicolas Park and near the Fairfield Way bus stop and removing the overgrown vegetation. The raised kerb for the Fairfield Way bus stop could also be provided.	The least scoring walking route, with the lowest results. As Route 1, this route is the closest cluster of amenities, including the supermarket and the nursery, from the proposed Bridleway site access. The proposed intervention will ensure the route is more convenient for walking and other users.
Cycling Route 1 : Site access to The Leys Primary and Nursery School, Giles Junior Sand Nursery and Infants' School, Trotts Hill School and Almond Hill Junior School	Cleaning, resurfacing, and widening of the route, consider the zebra crossing at road dropped crossings on Bray Drive and Orwell Avenue, improving the street lighting particularly near schools and removing the overgrown vegetation. More direct route by St Nicolas Playground could also be provided, while the bin from the footway on the turn to cycleway by Giles School could also be relocated.	Route 1 forms a part of a cycleway to the Stevenage Train Station and also wider cycleway network
Cycling Route 3 : Site access to Employment Area, Martins Wood Primary School and The Noble School Secondary School	Cleaning, resurfacing, and widening of the route (particularly through Industrial Estate on Wedgewood Way), improving the street lighting particularly near schools and removing the overgrown vegetation.	Route to the nearest Secondary School, it is considered that the primary focus on the improvements should be given to this route.
Additional Improvements	New Bus Service 'SB12' to be provided on every half an hour basis from the site to provide new direct links to Lister Hospital, Stevenage Old Town, John Henry Newman school and Stevenage Interchange.	

- 4.149 It should be mentioned that the proposed Wedgwood Way improvements are also included in the Local Cycling and Walking Infrastructure Plan 2019 document in the Network Planning for Cycling section as Route 2 - Great Ashby to Stevenage Central. The final decision about the proposed improvements that will be undertaken will be agreed at a later date.

Conclusion

- 4.150 In line with the UK Government's Framework Document '**Active Travel England**' (ATE) (2022), in order to achieve a shift in sustainable modes of travel, a step change is required.
- 4.151 At this stage of the planning process, it is anticipated that the agreed overarching target for the development site will be that 50% of journeys will be made by sustainable modes of transport.
- 4.152 The key walking routes from the site that have been identified above have been audited using the Walking Route Audit Tool (WRAT). The findings of the WRAT analysis shows, that the primary focus of the improvements should be given to Route 1 which is a route from the main site access on Mendip Way to Round Diamond School and the nearest supermarket and also Route 2, which is the PROW Bridleway.
- 4.153 The key cycling routes from the site that have been identified and audited using the Cycling Level of Service Tool and Junction Assessment Tool provided in LTN 1/20 Appendix A and B. Given the findings of the cycling routes audit tool analysis and the fact that Route 3 is a route to the nearest Secondary School, it is considered that the primary focus of the improvements should be given to Route 3. Further analysis considered that the focus on the improvements should also be given to Route 1, which forms a part of a cycleway to the Stevenage Train Station and also wider cycleway network.
- 4.154 The aforementioned suggestions for improvement are proposed with primarily improving and extending the existing pedestrian and cyclist infrastructure to key destinations such as; education, shopping and employment centres. Interventions have been proposed as part of a wider strategy for the site for maximising trips by sustainable modes.
- 4.155 The extent of contribution to be made by the developer to the interventions described above is subject to further discussions with the planning authority.

Recorded Collision Data



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Recorded Collision Data

The following paragraphs consider the available recorded collision data from Hertfordshire County Council on the surrounding highway network.

5.1 An analysis of highway collision data has been undertaken for the most recent 5 year period for which data is available. This data has been obtained from Hertfordshire County Council's Transport and Accident database. The road collision database uses collision data (STATS19) supplied by the police and has been taken from 1st January 2018 - 31st December 2022.

5.2 An extract of this data including a map that plots the locations of each collision is included in **Appendix H**. This data shows the area of concern highlighting collision locations. The study area considers the whole of the site frontage in addition to Great Ashby Way and Mendip Way and encapsulates the junctions within the vicinity of the site which have been assessed within the Junction Assessment. A summary of this data is provided below.

Junction 1 - Mendip Way (in vicinity of Site Access)

5.3 No collisions have occurred along Mendip Way in the vicinity of the proposed site access junction.

Junction 2 - Mendip Way / Great Ashby Way / Whitehorse Lane / Great Ashby Way

5.4 One collision occurred at this junction. This junction occurred in 2018 and was classed as 'slight' in nature; involving 1 vehicle and 1 casualty.

Junction 3 - Cleveland Way / Great Ashby Way / Great Ashby Way

5.5 No collisions have occurred along on or in the vicinity of this junction.

Junction 4 - Great Ashby Way / Fairfield Way / Great Ashby Way / Whitehorse Lane

5.6 No collisions have occurred along on or in the vicinity of this junction.

Junction 5 - Grasmere / Great Ashby Way / Great Ashby Way

5.7 No collisions have occurred along on or in the vicinity of this junction.

Junction 6 - Great Ashby Way / Lomond Way / Great Ashby Way

5.8 No collisions have occurred along on or in the vicinity of this junction.

Junction 7 - Great Ashby Way / Gresley Way / Glanville Crescent

- 5.9 No collisions have occurred along on or in the vicinity of this junction.

Junction 8 - Great Ashby Way / Cartwright Road / Great Ashby Way

- 5.10 One collision occurred in the immediate vicinity of this junction. The collision occurred on the Granville Crescent arm of the roundabout in 2019. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.

Junction 9 - Gresley Way / Gresley Way / Martins Way

- 5.11 No collisions have occurred along on or in the vicinity of this junction.

Junction 10 - Pilgrims Way / Martins Way / Verity Way / Martins Way

- 5.12 One collision occurred in the immediate vicinity of this junction. The collision occurred between the Martins Way (eastern) arm and Verity Way arm of the roundabout in 2020. The collision was classed as 'slight' in nature; involving 3 vehicles and 2 casualties.

Junction 11 - Canterbury Way / Martins Way / Grace Way / Martins Way

- 5.13 Eight collisions occurred on or in the immediate vicinity of this junction. A summary of the collisions is provided below:
- A collision occurred on the Canterbury Way (northern) arm of the roundabout in 2022. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.
 - A collision occurred on the Martins Way (eastern) arm of the roundabout in 2022. The collision was classed as 'slight' in nature; involving 1 vehicle and 1 casualty.
 - A collision occurred on the Martins Way (eastern) arm of the roundabout in 2020. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.
 - A collision occurred on the Martins Way (eastern) arm of the roundabout in 2021. The collision was classed as 'slight' in nature; involving 2 vehicles and 3 casualties.
 - A collision occurred on the Grace Way (southern) arm of the roundabout in 2022. The collision was classed as 'slight' in nature; involving 1 vehicle and 2 casualties.

- A collision occurred on the Grace Way (southern) arm of the roundabout in 2022. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.
- A collision occurred on the Martins Way (western) arm of the roundabout in 2019. The collision was classed as 'slight' in nature; involving 1 vehicle and 1 casualty.
- A collision occurred on the Martins Way (western) arm of the roundabout in 2022. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.

Junction 12 - Canterbury Way / Canterbury Way / Great Ashby Way

- 5.14 One collision occurred in the immediate vicinity of this junction. The collision occurred on the Canterbury Way (eastern) arm of the roundabout in 2019. The collision was classed as 'slight' in nature; involving 2 vehicles and 1 casualty.

Junction 13 - Great Ashby Way / Orwell Avenue / Great Ashby Way

- 5.15 No collisions have occurred along on or in the vicinity of this junction.

Junction 14 - Bray Drive / Great Ashby Way / Wansbeck Close / Great Ashby Way

- 5.16 No collisions have occurred along on or in the vicinity of this junction.

Summary

- 5.17 From the collision data obtained from HCC and the details presented above, it can be appreciated that the number of recorded incidents and corresponding severities does not appear to be extreme for the highway network.
- 5.18 The results show that the collisions that have occurred are all classed as 'slight' in nature; and occur intermittently over the 5 year period. It is also important to note that nine of the fourteen junctions being assessed has not experienced any collisions within the last 5 years.
- 5.19 In conclusion, it is not anticipated that the safety of road users on the surrounding highway network will not be placed at an unacceptable risk as a result of the development proposals.

Impact Assessment



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Impact Assessment

The following paragraphs provide a detailed review of the proposed development's resultant impact on the surrounding highway network.

- 6.1 This chapter of the report outlines the existing and proposed trip generation associated with the development and explains how suitable trip rates for the site have been derived to assess the impact of the proposed development on the surrounding highway network.
- 6.2 Due to the nature and location of the site, guidance was sought from HCC regarding the proposed trip rates, growth rates and proposed capacity assessment locations. Through scoping with HCC, the main parameters contained within this chapter including traffic generation, distribution and impacts on the local road network were agreed in principle.

Proposed Trip Generation

Residential Trip Generation

- 6.3 During the scoping with HCC the trip rates for all aspects of the site were agreed.
- 6.4 The agreed trip rates are outlined below in Tables 6.1, 6.2, 6.3 and 6.4 respectively. Confirmation of the agreed trip rates are included in the HCC Pre-Application advice contained in **Appendix C**.

Table 6.1: Trip Rates and Trip Generation for 650 Dwellings

Peak Hour	Trip Rates		Trip Generation		
	Arrivals	Departures	Arrivals	Departures	Total
AM (08:00-09:00)	0.154	0.548	100	356	456
PM (17:00-18:00)	0.412	0.194	268	126	394

- 6.5 From the figures presented in Table 6.1, it can be concluded that the proposed residential development has been calculated to generate a total of 456 two-way trips during the AM peak hour, and 394 two-way trips during the PM peak hour.
- 6.6 It should be noted that 650 dwellings were accounted for within the assessment calculations, which provides slight overestimate as the current proposals are for 640 dwellings.

2FE Primary School Vehicular Trip Generation

- 6.7 Through the scoping with the Highway Authority, the trip rates for the 2FE Primary School aspect of the site were also agreed, these are presented in Table 6.2 below.

Table 6.2: Trip Rates and Trip Generation for 2FE Primary School

Land Use	Size	Unit	AM (0800-0900) Peak Trip Generation			PM (1700-1800) Peak Trip Generation		
			Arrivals	Departures	Total	Arrivals	Departures	Total
2FE Primary School	420	Pupil	76	76	152	0	0	0
	50	Staff	16	0	16	0	0	0
Total			92	76	168	0	0	0

- 6.8 From the figures presented in Table 6.2, it can be concluded that the proposed 2 FE Primary School has been calculated to generate a total of 168 two-way trips during the AM peak hour, and 0 two-way trips during the PM peak hour.
- 6.9 The vehicle movements from the school in the PM hour will occur during the school pick up times at 15:00-16:00, therefore it is not anticipated that any vehicle movement from the school should be included in the PM peak hour.
- 6.10 The external Primary School trips will be distributed using the same methodology, which is explained in more detail in the following 'Traffic Distribution' section. This is however considered to overestimate the overall trip generation of the site given that the majority of the trips to and from the primary school will be internal and undertaken using sustainable modes.

4FE Secondary school

- 6.11 Scoping with the Highway Authority also confirmed the trip generation for the 4FE Secondary School. The agreed trip rates are outlined in Table 6.3 below.

Table 6.3: Trip Rates and Trip Generation for 4FE Secondary School

Land Use	Size	Unit	AM (0800-0900) Peak Trip Generation			PM (1700-1800) Peak Trip Generation		
			Arrivals	Departures	Total	Arrivals	Departures	Total
4 FE Secondary School	720	Pupil	52	52	108	0	0	0
	100	Staff	32	0	32	0	0	0
Total			84	52	136	0	0	0

- 6.12 From the figures presented in Table 6.3, it can be concluded that the proposed 4FE Secondary School has been calculated to generate a total of 136 two-way trips during the AM peak hour, and 0 two-way trips during the PM peak hour.
- 6.13 As previously mentioned, vehicle movements from the school in the PM hour will occur during the school pick up times at 15:00-16:00, therefore it is not anticipated that any vehicle movement from the school should be included in the PM peak hour.

Total Vehicular Trip Generation

- 6.14 To summarise as agreed through scoping with HCC, the total vehicular trip generation for the proposed development including 650 residential dwellings, a 2 FE Primary School and a 4 FE Secondary school is presented in Table 6.4 on the next page. It should be noted that 650 dwellings were accounted for within the assessment calculations, which provides slight overestimate as the current proposals are for 640 dwellings.
- 6.15 From the figures presented in Table 6.4, it can be concluded that the proposed development has been calculated to generate a total of 760 two-way trips during the AM peak hour, and 394 two-way trips during the PM peak hour.
- 6.16 In addition to the above, it should be noted that the trip generation from the retail, food and beverage, medical and social element of the site have been assumed to be internal and pass by trips

and therefore will not be accounted for within the assessment.

Table 6.4: Total Trip Rates and Trip Generation for the entire proposed development.

Land Use	Size	Unit	AM (0800-0900) Peak Trip Generation			PM (1700-1800) Peak Trip Generation		
			Arrivals	Departures	Total	Arrivals	Departures	Total
2 FE Primary School	420 50	Pupil Staff	92	76	168	0	0	0
4 FE Secondary School	720 100	Pupil Staff	84	52	136	0	0	0
Residential	650	dwellings	100	356	456	268	126	394
Total			276	484	760	268	126	394

Traffic Impact

6.17 Through scoping with HCC Highway Authority, it was agreed to take into account traffic generation, distribution and impacts on the local highway network. It was therefore considered appropriate to undertake capacity assessments at the junction locations listed below. Junction capacity assessments were requested at Junctions 1-14 during pre-application discussions. The assessments at Junctions 16-18 were requested at a later stage following assessments of the wider area through the Highway Authority's Comet model.

- Junction 1 - Site Access / Mendip Way
- Junction 2 - Mendip Way / Great Ashby Way / Whitehorse Lane / Great Ashby Way
- Junction 3 - Cleveland Way / Great Ashby Way / Great Ashby Way
- Junction 4 - Great Ashby Way / Fairfield Way / Great Ashby Way / Whitehorse Lane
- Junction 5 - Grasmere / Great Ashby Way / Great Ashby Way
- Junction 6 - Great Ashby Way / Lomond Way / Great Ashby Way
- Junction 7 - Great Ashby Way / Cartwright Road / Great Ashby Way
- Junction 8 - Great Ashby Way / Gresley Way / Glanville Crescent
- Junction 9 - Gresley Way / Gresley Way / Martins Way
- Junction 10 - Pilgrims Way / Martins Way / Martins Way
- Junction 11 - Canterbury Way / Martins Way / Grace Way / Martins Way
- Junction 12 - Canterbury Way / Canterbury Way / Great Ashby Way
- Junction 13 - Great Ashby Way / Orwell Avenue / Great Ashby Way
- Junction 14 - Bray Drive / Great Ashby Way / Wansbeck Close / Great Ashby Way
- Junction 16 - Church Street / High Street (Graveley)
- Junction 17 - High Street / Gravely Lane (Graveley)
- Junction 18 - Damask Green Rd / Hitchin Road (Weston)

- 6.18 Existing traffic data for junctions 2-14 was obtained through Manual Classified Counts (MCC) undertaken by Streetwise Services in the 3rd week of June 2023; copies of the datasets can be viewed in Appendix I. The MCC survey data was recorded by installing temporary telescopic cameras at locations which monitored all vehicle movements at all junctions. The surveys recorded the number of vehicles, vehicle classifications and corresponding movements made at each junction in question.
- 6.19 The flow information obtained from the MCC surveys will be used for the junction modelling of the offsite junctions within this report. Traffic flow information from the ATC survey will be used in the modelling of the proposed site access junction, Junction 1.
- 6.20 For Junctions 16-18 traffic data used in the assessments was obtained from the Comet Model Local Plan Run 7 Hertfordshire County Council, copies of the datasets can be viewed in **Appendix I**. This traffic was distributed through the junctions using the Gravity Model based on Census Data.
- 6.21 It has been noted that the obtained trip generation data for the site from Comet Model Local Plan Run 7 seems low. Therefore, for Junctions 16-18, additional trip generation was added on the top of Comet Model Local Plan Run 7 to account for a higher trip generation from the site.
- 6.22 It should however be noted that the junction modelling assessment at junctions 1-14 and 16-18 has been undertaken in Junctions 10 (with higher trip generation based on TRICS data), which may be a more robust representative of the traffic conditions. The standard junction modelling was undertaken using higher trip generation than those used in the Comet model based on TRICS, and accounts for all committed developments in the area.
- 6.23 All of the aforementioned junctions are assessed for the traditional AM and PM peak hours of 08:00-09:00 and 17:00-18:00 respectively and have been modelled using the TRL software Junctions 10.
- 6.24 7-day ATC surveys were also undertaken along Mendip Way within the vicinity of the proposed site access (50m either side of the site access); this data has been used in the modelling of the proposed site access junction. Copies of the ATC surveys undertaken by Streetwise Services are included in **Appendix J**.
- 6.25 The total number of vehicles which make up the HGV classification were recorded separately during the traffic counts and so the exact HGV turning proportion recorded at each of the existing junctions will be used in the modelling of background traffic.

6.26 The junction modelling includes ten separate scenarios for modelling which were agreed with the Highway Authority, all of which are listed below:

- Demand Set 1 - Do Nothing 2023, AM
- Demand Set 2 - Do Nothing 2023, PM
- Demand Set 3 - Do Nothing 2030, AM
- Demand Set 4 - Do Nothing 2030, PM
- Demand Set 5 - Do Something 2030, AM
- Demand Set 6 - Do Something 2030, PM
- Demand Set 7 - Do Nothing 2035, AM
- Demand Set 8 - Do Nothing 2035, PM
- Demand Set 9 - Do Something 2035, AM
- Demand Set 10 - Do Something 2035, PM

Definition of Scenarios used

- 6.27 **Do Nothing 2023** - for all junctions this scenario includes the traffic data recorded during the Manual Classified Counts (MCC) undertaken in June 2023. These traffic flows represent the baseline traffic flows.
- 6.28 **Do Nothing 2030** - This scenario is made up of the MCC survey data multiplied by the appropriate TEMPro growth factors to represent the 2030 flows. This scenario also included any committed development data.
- 6.29 **Do Something 2030** - This scenario will be the summation of the 'Do Nothing 20230' scenario and the proposed development traffic flows generated by the site.
- 6.30 **Do Nothing 2035** - This scenario is made up of the MCC survey data multiplied by the appropriate TEMPro growth factors to represent the 2035 flows. This scenario also included any committed development data.
- 6.31 **Do Something 2035** - This scenario will be the summation of the 'Do Nothing 2035' scenario and the proposed development traffic flows generated by the site.

- 6.32 As noted above, the scope of assessment agreed at the pre-application stage included Junctions 1-14. Following the outcome of the Comet strategic model which was commissioned by the developer and a comparison of the results with the results of the Local Plan run of the model previously undertaken by the highway authority it was requested that capacity assessments were also undertaken at junctions 16-18 in order to provide a more detailed understanding of the potential impact of the development on the villages of Weston and Gravely to the north.
- 6.33 For Junctions 16-18 traffic data used in the assessments was obtained from Comet Model Local Plan Run 7 Model Hertfordshire County Council. The assessment at those junctions was carried out for two different future 2036 scenarios, the first scenario (AM and PM) was based on traffic flows provided solely in LP7 run, while the second scenario adds the data provided in LP7 and the trip generation difference calculated between LP7 trip generation and TRICS assessment. The cumulative impact of LP7 junction data and higher site trip generation based on the TRICs data (rather than lower LP7 trip generation for the site) provides robustness, assessing the worst-case scenario for those junctions.

Committed Developments

- 6.34 It is considered important to include the impact of schemes in the vicinity of the site that are likely to generate more than 30 additional two-way vehicular trips onto the junctions being assessed within the TA that will support a future planning application.
- 6.35 As noted in the Pre-App response from HCC (dated December 2016), the 'North Hertfordshire District Council's Strategic Housing Land Availability Assessment: 2013 Update, March 2014' lists potential residential developments in and around Stevenage.
- 6.36 In order to be consistent with the cumulative developments to be accounted for in the Environmental Impact Assessment scoping the potential traffic flows associated with the schemes listed below will also be considered:
- **GA1 (old reference of NES3) - Stevenage North East development at Roundwood (357 dwellings) (16/01713/1)**

The proposed development of the site to accommodate 281 units of housing - The new application 23/02492/FP

- **NS1 - (23/02935/OP) - Land To The East Of High Street And North Road, Graveley**

Erection of up to 900 dwellings , provision of a primary school, provision of a neighbourhood centre including community building.

- **Land North of Highover Farm to Stotfold Road, Highover Way, Hitchin (18/01154/OP)**

Residential led development of up to 700 dwellings of use class C3 (dwellings), approximately 500 sqm of neighbourhood-level facilities, a new 2FE primary school.

- **HO3 - Land to The North of Stevenage, Weston Road, Stevenage (22/00810/RMM) - (HO3 in the draft Stevenage Local Plan / Land south of NS1)**

The North Stevenage proposals comprise up to 800 dwellings, the creation of a new local centre including provision of up to 1,800sqm of flexible commercial floorspace (Use Classes A1 / A2 / A3 / A4 / B1 / D1 / D2), and up to a 2 form entry primary school.

- **EOS1 - Land East of Stevenage , Gresley Way, Stevenage (3/22/2657/REM)**

Up to 618 homes, 2 FE primary school (including a pre-school), up to 80 bed care home, up to 50 assisted living homes, Neighbourhood Hub comprising up to 658m2 of A1 - A5 uses, community facilities up to 400m2 of D1 use, site for Travelling Showpeople.

- **21/00529/FPM (21/01555/ADJ) - Land West Of North Road Stevenage Hertfordshire**

Development for Use Class E (g) (iii) B2 and B8.

Wider impact- Comet Model

- 6.37 As advised by HCC during the scoping, and as mentioned above, the wider impact of the proposals has also been assessed by commissioning a run of HCC's most recent Comet Model, which accounts for the most likely growth and transport infrastructure proposals and will look at the longer-term situation. The Comet Model report showing the flow differences, trip distribution and changes in link delays is included within **Appendix K**.
- 6.38 The Comet Model is the most sophisticated, comprehensive and accurate traffic model available within Hertfordshire and is recommend by HCC Highway Authority for assessing large scale developments.

- 6.39 Prior to modelling commencing up to date traffic data was collected and incorporated into the model, particularly for the road network in and around Great Ashby local to the site. Recorded speeds are also incorporated into the model to ensure that accurate assumptions are made in relation to anticipated journey times which influences route selection. Road widths have also been checked to ensure that assumptions made in relation to capacity are accurate.
- 6.40 The modelling has been undertaken over several months to ensure that the findings are as accurate as possible.
- 6.41 The study area includes the whole of Stevenage as well as surrounding areas and therefore provides a detailed analysis on potential impacts based upon recorded travel patterns.
- 6.42 The NTEM constrained version of the Comet model contains those developments that are committed.
- 6.43 The assessment of the development traffic's impact has been run through the model by WSP on behalf of HCC Highway Authority. The report shows that the trips to/from the development are mostly within Stevenage and that the main increases in flow are on Great Ashby Way and Grace Way.
- 6.44 Following their review of the modelling, it was requested by HCC that a further sensitivity test considering all local plan sites is undertaken. The comparison was undertaken by HCC and compared the outcome of the model commissioned by the developer to the model previously undertaken by HCC to inform the local plan (Local Plan Run 7).
- 6.45 Following the review it was requested that further assessment was undertaken at three locations within the villages of Weston and Gravely to the north, these junctions are referred to as junctions 16-18 within this report.
- 6.46 It has been noted while obtaining the additional traffic flow information for Junctions 16-18, that the obtained vehicle trip generation data for the site from Comet Model Local Plan Run 7 seems low. The additional active travel trip generation was also obtained from the Comet Model and it is included within **Appendix K**.
- 6.47 It should however be noted that the junction modelling assessments undertaken at the 17 junctions using the Junctions 10 software (with higher trip generation based on TRICS), are likely to be a better representative of the traffic conditions.

- 6.48 The results of the modelling which relate to the forecast year of 2036 where the 'Do Something' (with development) flows are compared to the 'Do Minimum' scenario (without development) for the AM (08:00 -09:00) and PM (17:00-18:00) peak hours.
- 6.49 The results indicate that the development would increase traffic flows in the Great Ashby area, predominantly along Great Ashby Way either side of Mendip Way.
- 6.50 Grace Way/Fairlands Way and St George's Way towards the west side of the development access road is also expected to experience an increase in traffic flows.
- 6.51 Increases in traffic flows are inevitable and to be expected in relation to development of the scale proposed. However, it is important to note that the modelling demonstrates that the increases are within acceptable limits which would not lead to capacity issues along the routes where the increase are anticipated.
- 6.52 The greatest increase in delay anticipated as a result of the development at any location is 19 seconds along Martins Way during the AM peak hour. Such a minor increase in delay would not be perceptible and indeed the existing day to day fluctuation in journey times would exceed this time.
- 6.53 In relation to anticipated public transport use the modelling confirmed that a comparison of the Do Something scenario against the Do Minimum scenario shows that the main increase in passenger flows is in the AM peak, with an increase in passenger flows northbound on Grace Way and Great Ashby Way and A1155 showing an increase in trips in both north and southbound direction.
- 6.54 The report concludes that the increase in passenger flow is within the capacity provided on the bus services being proposed for the trips to and from the development. The modelling accounts for the proposed diversion of a half hourly service into the site.

Growth Factors

- 6.56 As previously mentioned, the base traffic flows from the MCC surveys will be multiplied by AM and PM peak growth factors using TEMPro Version 7.2.
- 6.57 The site is located in the 2011 Census Merged Local Authority area of 'North Hertfordshire 005', however it was requested by the HCC, that the trips distribution is based on the Great Ashby South MSOA 'Stevenage 002', which will provide the most accurate information for the site. As such, the growth factors will be taken from the TEMPro database based on this area as well.
- 6.58 Through scoping, it was agreed with HCC that Growth Factors will be assessed using TEMPro for the site's opening year (2030) and again 5 years after that (2035).
- 6.59 A summary of the TEMPro criteria used to determine the growth factors for 2030 and 2035 are shown in Table 6.5. Growth factors for a future years 2030 and 2035 were agreed with the Highway Authority during scoping. A full copy of the TEMPro Outputs are included in **Appendix L**.

Table 6.5: TEMPro Criteria Growth 2030 and 2035

NTEM 7.2	Version 7.2
Geographic Regions	Stevenage 002 (E02004945)
Result Type	Trip ends by time period
Base Year	2023
Future Year(s)	2030 2035
Trip Purpose Definition	Car Driver
Trip End Type	Origin / Destination
Time Periods	Weekday AM peak period (0700 - 0959) Weekday PM peak period (1600 - 1859)
Local Growth Figure 2023 - 2030	1.0344 (AM Peak Hour) 1.0369 (PM Peak Hour)
Local Growth Figure 2023 - 2035	1.0528 (AM Peak Hour) 1.0563 (PM Peak Hour)

Traffic Distribution

- 6.60 The distribution of the trip generation of the site within the wider highway network will be determined using a gravity model based upon the 'WU03EW - Location of usual residence and place of work by method of travel to work' 2011 UK Census Data for Region: Stevenage 002 (E02004945). The data used identifies the workplace locations for people living within the area at the time that travelled to work driving a car or a van when the census was undertaken. Although the site is located in the 2011 Census Merged Local Authority area of 'North Hertfordshire 005', it was requested by HCC, due to limitations on the datasets and geographical areas, that the trips distribution is based on the Great Ashby South MSOA 'Stevenage 002', which will provide the most accurate information for the site.
- 6.61 A total of 346 workplace destinations were identified, where 3,257 residents were recorded to commute. This is an average of 9 per destination. In order to narrow down the number of locations to the most popular workplace destinations, only the destinations which received equal or greater than the average of 9 resident journeys were considered for the analyses in this report. Using this filtering method, 27 destinations were identified. This was further reduced to 21, as 7 of the destinations were located in London and were therefore grouped together.
- 6.62 Although the number of workplace destinations has been reduced; all of the above locations still account for around 94.23% of all work related journeys. A summary of the destinations and the proportion of commuters travelling to each destination is shown in Table 6.6 and also contained in **Appendix M**.

Table 6.6 Workplace Destinations according to 2011 UK Census Data

Place	Population	%
Luton	69	2.2%
Bedford	29	0.9%
Central Bedfordshire	64	2.1%
Cambridge	15	0.5%
Huntingdonshire	15	0.5%
South Cambridgeshire	21	0.7%
Epping Forest	17	0.6%
Harlow	41	1.3%
Broxbourne	51	1.7%
Dacorum	19	0.6%
East Hertfordshire	170	5.5%
Hertsmere	69	2.2%
North Hertfordshire	467	15.2%
St Albans	97	3.2%
Stevenage	1,276	41.6%
Three Rivers	17	0.6%
Watford	31	1.0%
Welwyn Hatfield	416	13.6%
London	157	5.1%
Milton Keynes	19	0.6%
Aylesbury Vale	9	0.3%

- 6.63 The quickest route to/from each town/city were determined using the Google Maps journey planner tool, and the route through the junctions that were suggested were placed into a 'gravity model' table using Junction Arm Naming Conventions to determine the distribution patterns.
- 6.64 A full copy of the Gravity Model showing the trip distribution alongside the corresponding arrival and departure routes is contained in **Appendix N**. An example of how this was determined is shown in Table 6.7.

- 6.65 Each destination was allocated its individual traffic flow based on the percentage of the resident population currently travelling to each destination. The total number of vehicles which make up the HGV classification were recorded separately during the traffic counts so the exact turning proportion recorded at each of the existing junctions has been used in the modelling of background traffic.

Table 6.7 Example of Trip Distribution

Example of Trip Distribution based on Arm Naming Conventions for Individual Junctions	
Destination:	Luton
Expected Departure Route using Arm Naming Conventions:	J1CA-J2CB Junction 1 (Arm C to Arm A) > Junction 2 (Arm C to Arm B)
Expected Departure Route using Road Names:	Junction 1: The Site Access Exit to Mendip Way (South) Then onto Junction 2: Mendip Way to Great Ashby Way (West)

- 6.66 It should be noted that for Junctions 13, 16-18, the Gravity Model was based on all traffic travelling from/to the site to/from: North Hertfordshire (15% of total site's traffic), Cambridge (0.4%) and South Cambridgeshire (0.6%); using the Calder Way / Back Lane to travel to those destination, while it would only be a portion of traffic traveling to North Hertfordshire that could use this route as a shortcut.
- 6.67 It should be highlighted that given the constraints on Calder Way / Back Lane, this assessment overestimates the trips that would use this route and therefore it would be unlikely to happen.

Network Diagrams

- 6.68 The vehicle network diagrams showing how the site generated trips have been distributed throughout the local highway network being modelled are enclosed in **Appendix N**.
- 6.69 From the network diagrams it can be appreciated that in the AM peak hour, the development is anticipated to generate a total of 484 vehicles departing from the site and 276 vehicles arriving to the site. In the PM peak hour, 126 vehicles are anticipated to depart from the site and 268 vehicles are anticipated to arrive to the site.

Junction Modelling

Junctions 10

- 6.70 The capacity of a non-signalised junction is usually expressed in terms of its Ratio of Flow to Capacity (RFC) value. The calculated capacities are an average and the values can vary about this from day to day.
- 6.71 An RFC value typically lies between 0 and 1. An RFC of 1 indicates that the junction is operating at its maximum theoretical capacity, although it is commonly accepted that junctions do continue to operate above this level, albeit with some delays. Where RFC values remain less than 0.85, the junction in question is considered to remain within operating capacity. An RFC value of 0.85 is the preferred maximum for operational capacity typically accepted by LHA's. Where developments cause junctions to operate over this preferred upper limit, mitigation measures may be considered.
- 6.72 The junction modelling assesses the traditional AM and PM peak hours of 08:00-09:00 and 17:00-18:00 respectively, split into 15-minute segments. The proposed development traffic flow has been split evenly across each time segment. A summary of the analyses undertaken for all junctions are provided below. Full copies of the Junctions 10 Outputs are included in **Appendix O**.

Validation of the model

- 6.73 Existing traffic data for the offsite junctions was obtained through Manual Classified Counts (MCC) undertaken in the 3rd week of June 2023. The MCC survey data recorded in addition to the number of vehicles also recorder the queue length every 5 minutes at each lane on the junctions. This data was used to compare the existing queues with the base year model results and queues. It is noted that the results of assessments are aligned with existing queue at junctions and therefore the results can be considered valid.

Junction 1

Arm A - Mendip Way (South)

Arm B - Mendip Way (North)

Arm C - Site Access

Table 6.8: Summary of Junction 1 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	Do Something 2030							
Stream B-AC	1.3	18.04	0.57	C	0.3	9.26	0.22	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	Do Something 2035							
Stream B-AC	1.3	18.37	0.58	C	0.3	9.30	0.22	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

- 6.74 Site Access Junction has been calculated to operate within capacity in all scenarios. The worst-case scenario for this junction occurs during 'Do Something 2035 AM' scenario with an RFC value of 0.58 on Stream B-AC.
- 6.75 The results above demonstrate that the junction operates within capacity in all scenarios and remains below the preferred maximum for operational capacity.
- 6.76 Based on the results presented in Table 3, it can be concluded that Site Access Junction provides sufficient capacity to accommodate the development traffic and that the proposed junction is a suitable form of access to the site. It will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond.

Junction 2

Arm A - Mendip Way (North)

Arm B - Great Ashby Way (East)

Arm C - Whitehorse Lane

Arm D - Great Ashby Way (West)

Table 6.9: Summary of Junction 2 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	Do Nothing 2023							
Arm A	0.3	4.82	0.22	A	0.1	4.59	0.10	A
Arm B	0.6	6.29	0.37	A	0.3	5.36	0.25	A
Arm C	0.3	5.56	0.26	A	0.2	5.13	0.20	A
Arm D	0.4	5.42	0.30	A	0.9	7.45	0.49	A
	Do Nothing 2030							
Arm A	0.4	5.14	0.26	A	0.1	4.79	0.13	A
Arm B	0.7	6.62	0.40	A	0.4	5.62	0.28	A
Arm C	0.4	5.74	0.27	A	0.3	5.37	0.23	A
Arm D	0.5	5.59	0.31	A	1.0	8.00	0.51	A
	Do Something 2030							
Arm A	3.2	15.11	0.77	C	0.4	5.75	0.27	A
Arm B	1.3	11.40	0.57	B	0.5	6.56	0.34	A
Arm C	0.6	8.89	0.37	A	0.3	6.03	0.25	A
Arm D	1.3	9.21	0.57	A	3.3	17.65	0.78	C
	Do Nothing 2035							
Arm A	0.4	5.19	0.27	A	0.1	4.83	0.13	A
Arm B	0.7	6.71	0.41	A	0.4	5.68	0.29	A
Arm C	0.4	5.79	0.28	A	0.3	5.41	0.23	A
Arm D	0.5	5.64	0.32	A	1.1	8.18	0.52	A
	Do Something 2035							
Arm A	3.3	15.47	0.78	C	0.4	5.80	0.28	A
Arm B	1.3	11.67	0.58	B	0.5	6.64	0.35	A
Arm C	0.6	9.02	0.38	A	0.3	6.08	0.25	A
Arm D	1.4	9.34	0.58	A	3.5	18.50	0.79	C

- 6.77 Junction 2 has been calculated to operate within capacity in all scenarios. The worst-case scenario for Junction 2 occurs during 'Do Something 2035 PM' scenario with an RFC value of 0.79 on Arm D.
- 6.78 Although there is a notable increase in the RFC value as a result of the development traffic, the results above demonstrate that the junction operates within capacity in all scenarios and remains below the preferred maximum for operational capacity.
- 6.79 Based on these results, it can be concluded that Junction 2 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.
- 6.80 Junction 3 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 3 occurs on the 'Do Something 2035 AM' scenario on Arm C where the RFC value is 0.51.
- 6.81 The addition of the development traffic causes a maximum increase in the RFC value by 0.09; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arm C. An increase in the RFC value of this level is not considered to produce a material impact.
- 6.82 Based on these results, it can be concluded that Junction 3 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 3

Arm A - Cleveland Way

Arm B - Great Ashby Way (East)

Arm C - Great Ashby Way (West)

Table 6.10: Summary of Junction 3 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
	Do Nothing 2023							
Arm A	0.2	4.37	0.18	A	0.1	3.79	0.07	A
Arm B	0.2	4.26	0.17	A	0.3	4.39	0.21	A
Arm C	0.5	6.66	0.35	A	0.5	6.79	0.35	A
	Do Nothing 2030							
Arm A	0.2	4.43	0.19	A	0.1	3.82	0.07	A
Arm B	0.2	4.30	0.17	A	0.3	4.44	0.22	A
Arm C	0.6	6.78	0.36	A	0.6	6.93	0.36	A
	Do Something 2030							
Arm A	0.2	4.64	0.20	A	0.1	3.86	0.07	A
Arm B	0.3	4.52	0.21	A	0.3	4.67	0.26	A
Arm C	0.8	7.80	0.45	A	0.6	7.18	0.39	A
	Do Nothing 2035							
Arm A	0.2	4.46	0.19	A	0.1	3.83	0.07	A
Arm B	0.2	4.41	0.18	A	0.3	4.47	0.22	A
Arm C	0.7	7.61	0.42	A	0.6	7.00	0.37	A
	Do Something 2035							
Arm A	0.2	4.67	0.20	A	0.1	3.87	0.07	A
Arm B	0.3	4.65	0.22	A	0.4	4.70	0.26	A
Arm C	1.0	8.94	0.51	A	0.6	7.26	0.39	A

Junction 4

Arm A - Great Ashby Way (North)

Arm B - Fairfield Way

Arm C - Great Ashby Way (South)

Arm D - Whitehorse Lane

Table 6.11: Summary of Junction 4 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	0.4	4.30	0.28	A	0.2	3.77	0.16	A
Arm B	0.1	5.37	0.13	A	0.1	4.48	0.05	A
Arm C	0.2	3.41	0.17	A	0.3	3.62	0.23	A
Arm D	0.1	4.05	0.10	A	0.1	4.18	0.08	A
Do Nothing 2030								
Arm A	0.4	4.37	0.29	A	0.2	3.80	0.16	A
Arm B	0.2	5.45	0.14	A	0.1	4.51	0.05	A
Arm C	0.2	3.44	0.18	A	0.3	3.66	0.24	A
Arm D	0.1	4.08	0.10	A	0.1	4.21	0.08	A
Do Something 2030								
Arm A	0.5	4.77	0.35	A	0.2	3.88	0.18	A
Arm B	0.2	5.75	0.14	A	0.1	4.56	0.05	A
Arm C	0.3	3.57	0.21	A	0.4	3.81	0.27	A
Arm D	0.1	4.18	0.11	A	0.1	4.31	0.09	A
Do Nothing 2035								
Arm A	0.4	4.40	0.30	A	0.2	3.82	0.16	A
Arm B	0.2	5.49	0.14	A	0.1	4.53	0.06	A
Arm C	0.2	3.45	0.18	A	0.3	3.68	0.24	A
Arm D	0.1	4.09	0.11	A	0.1	4.23	0.09	A
Do Something 2035								
Arm A	0.5	4.81	0.36	A	0.2	3.90	0.18	A
Arm B	0.2	5.80	0.15	A	0.1	4.58	0.06	A
Arm C	0.3	3.59	0.21	A	0.4	3.84	0.27	A
Arm D	0.1	4.19	0.11	A	0.1	4.34	0.09	A

- 6.83 Junction 4 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 4 occurs on the 'Do Something 2035 AM' scenario on Arm A where the RFC value is 0.36.
- 6.84 The addition of the development traffic causes a maximum increase in the RFC value by 0.06; this occurs in the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arm A. An increase of this level is not considered to produce a material impact on the junction.
- 6.85 Based on these results, it can be concluded that Junction 4 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 5

Arm A - Grasmere

Arm B - Great Ashby Way (South)

Arm C - Great Ashby Way (North)

Table 6.12: Summary of Junction 5 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	0.1	7.67	0.07	A	0.0	5.86	0.04	A
Arm B	0.4	5.90	0.28	A	0.6	6.58	0.37	A
Arm C	0.5	4.03	0.32	A	0.2	3.46	0.20	A
Do Nothing 2030								
Arm A	0.1	7.84	0.07	A	0.0	5.92	0.04	A
Arm B	0.4	5.98	0.29	A	0.6	6.72	0.38	A
Arm C	0.5	4.10	0.33	A	0.3	3.50	0.20	A
Do Something 2030								
Arm A	0.1	8.72	0.08	A	0.0	6.04	0.04	A
Arm B	0.5	6.41	0.34	A	0.7	7.26	0.43	A
Arm C	0.6	4.45	0.39	A	0.3	3.56	0.22	A
Do Nothing 2035								
Arm A	0.1	7.94	0.08	A	0.0	5.95	0.04	A
Arm B	0.4	6.02	0.30	A	0.6	6.80	0.39	A
Arm C	0.5	4.13	0.34	A	0.3	3.51	0.21	A
Do Something 2035								
Arm A	0.1	8.84	0.08	A	0.0	6.07	0.04	A
Arm B	0.5	6.46	0.35	A	0.7	7.35	0.43	A
Arm C	0.6	4.49	0.39	A	0.3	3.58	0.22	A

- 6.86 Junction 5 has been calculated to operate well within capacity for all scenarios. The worst-case scenario for Junction 5 occurs on the 'Do Something 2035 PM' scenario on Arm A where the RFC value is 0.43.
- 6.87 The addition of the development traffic causes a maximum increase in the RFC value of 0.05; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arms B and C. In all scenarios, Junction 5 operates well below the preferred upper maximum operational capacity of RFC 0.85 on all arms. An increase in the RFC value of this level is not considered to produce a material impact on the functioning of the junction.

- 6.88 Based on these results, it can be concluded that Junction 5 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 6

Arm A - Great Ashby Way (North)

Arm B - Lomond Way

Arm C - Great Ashby Way (South)

Table 6.13: Summary of Junction 6 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	0.6	4.41	0.37	A	0.2	3.60	0.20	A
Arm B	0.1	3.97	0.11	A	0.1	3.24	0.05	A
Arm C	0.2	3.04	0.18	A	0.3	3.33	0.26	A
Do Nothing 2030								
Arm A	0.6	4.50	0.38	A	0.3	3.64	0.20	A
Arm B	0.1	4.03	0.11	A	0.1	3.26	0.06	A
Arm C	0.2	3.06	0.19	A	0.4	3.37	0.27	A
Do Something 2030								
Arm A	0.8	4.93	0.43	A	0.3	3.71	0.22	A
Arm B	0.1	4.21	0.12	A	0.1	3.29	0.06	A
Arm C	0.3	3.17	0.22	A	0.4	3.50	0.29	A
Do Nothing 2035								
Arm A	0.6	4.57	0.39	A	0.3	3.66	0.21	A
Arm B	0.1	4.06	0.11	A	0.1	3.27	0.06	A
Arm C	0.2	3.07	0.19	A	0.4	3.40	0.27	A
Do Something 2035								
Arm A	0.8	5.00	0.44	A	0.3	3.73	0.22	A
Arm B	0.1	4.25	0.12	A	0.1	3.30	0.06	A
Arm C	0.3	3.18	0.22	A	0.4	3.53	0.30	A

- 6.89 Junction 6 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 6 occurs on the 'Do Something 2035 AM' scenario for Arm A where the RFC value is 0.44.

- 6.90 The addition of the development traffic causes a maximum increase in the RFC value of 0.05; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arm A. In all scenarios, Junction 5 operates well below the preferred upper maximum operational capacity of RFC 0.85 on all arms.
- 6.91 Based on these results, it can be concluded that Junction 6 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.
- 6.92 The layout of junction 7 is not a conventional junction arrangement and it has been considered that the most appropriate way to model this junction is to treat it as two separate priority junctions. These junctions are referred to as '7a' and '7b' below.

Junction 7a (left turn only)

Arm A - Great Ashby Way (South)

Arm B - Cartwright Road

Arm C - Great Ashby Way (North)

Table 6.14: Summary of Junction 7a Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Stream B-AC	0.2	6.63	0.17	A	0.4	7.60	0.27	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2030								
Stream B-AC	0.2	6.70	0.18	A	0.4	7.73	0.28	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2030								
Stream B-AC	0.2	6.80	0.18	A	0.4	7.87	0.28	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2035								
Stream B-AC	0.2	6.73	0.18	A	0.4	7.81	0.28	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2035								
Stream B-AC	0.2	6.84	0.18	A	0.4	7.95	0.29	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

Please note this junction is left turn only.

- 6.93 Junction 7a has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 7a occurs in the 'Do Something 2035 PM' scenario on Stream B-AC where the RFC value is 0.29.
- 6.94 The addition of the development traffic causes a maximum increase in the RFC value of 0.01; this occurs between the 'Do Nothing 2035 PM' and the 'Do Something 2035 PM' scenarios. An increase of this level is considered to be negligible.
- 6.95 Based on these results, it can be concluded that Junction 7a provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 7b (right turn only)

Arm A - Great Ashby Way (South)

Arm B - Cartwright Road

Arm C - Great Ashby Way (North)

Table 6.16: Summary of Junction 7b Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Stream B-AC	0.0	7.75	0.02	A	0.3	8.80	0.22	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2030								
Stream B-AC	0.0	7.81	0.02	A	0.3	8.91	0.22	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2030								
Stream B-AC	0.0	7.95	0.02	A	0.3	8.96	0.23	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Nothing 2035								
Stream B-AC	0.0	7.83	0.02	A	0.3	8.97	0.23	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Do Something 2035								
Stream B-AC	0.0	7.98	0.02	A	0.3	9.02	0.23	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A

- 6.96 Junction 7b has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 7b occurs in the 'Do Something 2035 PM' scenario on Stream B-AC where the RFC value is 0.23.
- 6.97 The addition of the development traffic causes a maximum increase in the RFC value of 0.01; this occurs between the 'Do Nothing 2030 PM' and the 'Do Something 2030 PM' scenarios. An increase of this level is considered to be negligible.
- 6.98 Based on these results, it can be concluded that Junction 7b provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 8

Arm A - Great Ashby Way (North)

Arm B - Great Ashby Way (South)

Arm C - Granville Crescent

Table 6.17: Summary of Junction 8 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	Do Nothing 2023							
Arm A	1.1	5.58	0.52	A	0.4	3.63	0.26	A
Arm B	0.3	3.66	0.21	A	0.4	4.13	0.30	A
Arm C	0.1	3.01	0.07	A	0.0	3.03	0.04	A
	Do Nothing 2030							
Arm A	1.2	6.05	0.56	A	0.4	3.73	0.28	A
Arm B	0.3	3.73	0.22	A	0.5	4.27	0.33	A
Arm C	0.1	3.05	0.08	A	0.0	3.07	0.05	A
	Do Something 2030							
Arm A	1.5	6.84	0.61	A	0.4	3.80	0.30	A
Arm B	0.3	3.90	0.26	A	0.5	4.32	0.33	A
Arm C	0.1	3.11	0.08	A	0.1	3.18	0.08	A
	Do Nothing 2035							
Arm A	1.3	6.19	0.57	A	0.4	3.76	0.29	A
Arm B	0.3	3.75	0.23	A	0.5	4.31	0.33	A
Arm C	0.1	3.06	0.08	A	0.0	3.09	0.05	A
	Do Something 2035							
Arm A	1.6	7.02	0.62	A	0.4	3.83	0.30	A
Arm B	0.4	3.92	0.26	A	0.5	4.36	0.33	A
Arm C	0.1	3.12	0.08	A	0.1	3.20	0.08	A

6.99 Junction 8 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 8 occurs in the 'Do Something 2035 AM' scenario on arm A, where the RFC value is 0.62.

6.100 The addition of the development traffic causes a maximum increase in the RFC value of 0.05; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario. An increase of this level is considered to be negligible.

- 6.101 Based on these results, it can be concluded that Junction 8 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 9

Arm A - Gresley Way (North)

Arm B - Gresley Way

Arm C - Martins Way

Table 6.18: Summary of Junction 9 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	Do Nothing 2023							
Arm A	1.2	5.91	0.55	A	0.4	3.86	0.28	A
Arm B	0.6	4.01	0.38	A	0.6	3.76	0.37	A
Arm C	0.3	3.34	0.21	A	0.3	3.59	0.24	A
	Do Nothing 2030							
Arm A	1.4	6.49	0.59	A	0.4	4.00	0.30	A
Arm B	0.7	4.18	0.40	A	0.6	3.92	0.40	A
Arm C	0.3	3.40	0.22	A	0.3	3.69	0.25	A
	Do Something 2030							
Arm A	1.8	7.40	0.65	A	0.5	4.08	0.32	A
Arm B	0.7	4.39	0.43	A	0.7	4.06	0.42	A
Arm C	0.3	3.49	0.23	A	0.4	3.80	0.26	A
	Do Nothing 2035							
Arm A	1.5	6.66	0.60	A	0.4	4.04	0.31	A
Arm B	0.7	4.25	0.41	A	0.7	3.97	0.40	A
Arm C	0.3	3.43	0.23	A	0.3	3.73	0.26	A
	Do Something 2035							
Arm A	1.9	7.63	0.66	A	0.5	4.12	0.32	A
Arm B	0.8	4.46	0.43	A	0.7	4.12	0.42	A
Arm C	0.3	3.51	0.24	A	0.4	3.84	0.27	A

- 6.102 Junction 9 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 9 occurs on the 'Do Something 2035 AM' scenario on Arm A where the RFC value is 0.66.

- 6.103 The addition of the development traffic causes a maximum increase in the RFC value of 0.06, this occurs between the 'Do Nothing 2035 AM' and the 'Do Something 2035 AM'. An increase in the RFC value is not considered to produce a material impact on the functioning of the junction.
- 6.104 Based on these results, it can be concluded that Junction 9 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 10

Arm A - Pilgrims Way

Arm B - Martins Way (East)

Arm C - A1155

Arm D - Martins Way (West)

Table 6.19: Summary of Junction 10 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	0.5	3.84	0.34	A	0.3	3.59	0.25	A
Arm B	0.6	2.97	0.38	A	0.5	2.81	0.34	A
Arm C	0.8	4.26	0.43	A	0.8	4.16	0.44	A
Arm D	0.8	3.45	0.43	A	1.2	4.01	0.54	A
Do Nothing 2030								
Arm A	0.5	3.99	0.36	A	0.4	3.72	0.27	A
Arm B	0.7	3.10	0.40	A	0.6	2.92	0.36	A
Arm C	0.8	4.46	0.45	A	0.8	4.35	0.46	A
Arm D	0.8	3.60	0.45	A	1.3	4.25	0.56	A
Do Something 2030								
Arm A	0.6	4.02	0.36	A	0.4	3.75	0.27	A
Arm B	0.7	3.14	0.41	A	0.6	2.93	0.36	A
Arm C	0.8	4.51	0.46	A	0.9	4.37	0.46	A
Arm D	0.8	3.63	0.45	A	1.3	4.27	0.57	A
Do Nothing 2035								
Arm A	0.6	4.06	0.36	A	0.4	3.78	0.27	A
Arm B	0.7	3.15	0.41	A	0.6	2.97	0.37	A
Arm C	0.9	4.56	0.46	A	0.9	4.45	0.47	A
Arm D	0.9	3.67	0.46	A	1.3	4.38	0.58	A
Do Something 2035								
Arm A	0.6	4.10	0.37	A	0.4	3.81	0.28	A
Arm B	0.7	3.19	0.42	A	0.6	2.98	0.37	A
Arm C	0.9	4.61	0.47	A	0.9	4.47	0.47	A
Arm D	0.9	3.70	0.46	A	1.4	4.40	0.58	A

- 6.105 Junction 10 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 10 occurs in the 'Do Something 2035 PM' scenario where the RFC value is 0.58 on Arm D.

- 6.106 The addition of the development traffic causes a maximum increase in the RFC value of 0.01, this occurs between the 'Do Nothing 2035 PM' scenario and the 'Do Something 2035 PM' scenario on Arms A, B, D. An increase in the RFC value of this level is not considered to produce a material impact on the functioning of the junction.
- 6.107 Based on these results, it can be concluded that Junction 10 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 11

Arm A - Canterbury Way

Arm B - Martins Way (East)

Arm C - Grace Way

Arm D - Martins Way (West)

Table 6.20 Summary of Junction 11 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	Do Nothing 2023							
Arm A	1.1	3.83	0.52	A	0.5	3.32	0.34	A
Arm B	0.5	2.17	0.36	A	0.4	1.71	0.26	A
Arm C	0.3	2.65	0.21	A	0.4	2.97	0.30	A
Arm D	0.5	2.20	0.33	A	1.6	3.91	0.62	A
	Do Nothing 2030							
Arm A	1.4	4.39	0.58	A	0.6	3.63	0.39	A
Arm B	0.6	2.33	0.38	A	0.4	1.78	0.28	A
Arm C	0.3	2.88	0.26	A	0.5	3.29	0.35	A
Arm D	0.5	2.33	0.35	A	2.0	4.62	0.67	A
	Do Something 2030							
Arm A	3.0	7.14	0.75	A	0.8	3.98	0.44	A
Arm B	0.7	2.76	0.42	A	0.4	1.84	0.29	A
Arm C	0.4	3.40	0.31	A	0.6	3.53	0.38	A
Arm D	0.7	2.59	0.42	A	2.8	5.86	0.74	A
	Do Nothing 2035							
Arm A	1.5	4.53	0.60	A	0.5	2.65	0.32	A
Arm B	0.6	2.38	0.39	A	0.4	1.80	0.29	A
Arm C	0.4	2.93	0.26	A	0.6	3.35	0.36	A
Arm D	0.6	2.36	0.36	A	0.7	2.58	0.40	A
	Do Something 2035							
Arm A	3.2	7.49	0.77	A	0.8	4.09	0.45	A
Arm B	0.8	2.82	0.43	A	0.4	1.86	0.30	A
Arm C	0.5	3.46	0.31	A	0.6	3.61	0.39	A
Arm D	0.7	2.63	0.42	A	3.0	6.22	0.76	A

- 6.108 Junction 11 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 11 occurs in the 'Do Something 2035 AM' scenario Arm A where the RFC value is 0.77.
- 6.109 The addition of the development traffic causes a maximum increase in the RFC value of 0.36; this occurs between the 'Do Nothing 2035 PM' scenario and the 'Do Something 2035 PM' scenario.
- 6.110 Although there is a notable increase in the RFC value as a result of the development traffic, the results above still demonstrate that the junction operates within capacity in all scenarios and remains below the preferred maximum for operational capacity.
- 6.111 Based on these results, it can be concluded that Junction 11 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 12

Arm A - Canterbury Way (North)

Arm B - Canterbury Way (South)

Arm C - Great Ashby Way

Table 6.21: Summary of Junction 12 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	0.6	5.49	0.39	A	0.3	3.87	0.23	A
Arm B	0.5	3.70	0.35	A	2.3	7.76	0.70	A
Arm C	1.4	6.46	0.58	A	0.7	5.10	0.43	A
Do Nothing 2030								
Arm A	0.7	6.19	0.43	A	0.3	4.08	0.25	A
Arm B	0.6	3.90	0.38	A	3.1	9.74	0.76	A
Arm C	1.9	7.89	0.66	A	0.9	5.68	0.48	A
Do Something 2030								
Arm A	1.1	9.13	0.53	A	0.4	4.34	0.26	A
Arm B	1.0	4.90	0.51	A	6.6	17.65	0.89	C
Arm C	8.2	24.43	0.92	C	1.2	6.56	0.55	A
Do Nothing 2035								
Arm A	0.8	6.35	0.44	A	0.3	4.13	0.26	A
Arm B	0.6	3.94	0.39	A	3.3	10.31	0.78	B
Arm C	2.0	8.16	0.67	A	1.0	5.81	0.49	A
Do Something 2035								
Arm A	1.2	9.45	0.54	A	0.4	4.40	0.27	A
Arm B	1.0	4.98	0.51	A	7.4	19.31	0.90	C
Arm C	9.1	26.67	0.93	D	1.3	6.73	0.56	A

- 6.112 Junction 12 has been calculated to operate within capacity for all scenarios, but slightly above the preferred maximum for operational capacity in the 'Do Something 2030 AM' and 'Do Something 2035 AM' scenario on Arm C; and 'Do Something 2030 PM' and 'Do Something 2035 PM' scenario on Arm B.
- 6.113 The worst-case scenario for Junction 12 occurs in the 'Do Something 2035 AM' scenario on Arm C with an RFC value of 0.93. The addition of the development traffic causes a maximum increase in the RFC value of 0.26; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arm C.

- 6.114 Although there is an increase in the RFC value as a result of the development traffic, the results in Table 6.22 remain below the maximum theoretical capacity: and therefore, the junction still operates, albeit with some delays.
- 6.115 Based on these results, it can be concluded that Junction 12 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. Although the results for Arm B and C are slightly above the preferred maximum for occupational capacity they remain below the maximum theoretical capacity and therefore the junction is still deemed to operate albeit with some delays.
- 6.116 It is therefore not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity, particularly given that the preferred approach of the Highway Authority and Planning Authority is to reduce vehicular traffic through promotion of sustainable alternatives as opposed to providing additional capacity for vehicular traffic.

Junction 13

Arm A - Great Ashby Way (South)

Arm B - Orwell Avenue

Arm C - Great Ashby Way (North)

Table 6.22: Summary of Junction 13 Performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Stream B-AC	1.1	18.38	0.54	C	0.7	14.32	0.42	B
Stream C-AB	1.6	6.32	0.44	A	0.3	6.77	0.17	A
Do Nothing 2030								
Stream B-AC	2.0	27.36	0.69	D	1.1	18.73	0.53	C
Stream C-AB	2.2	6.97	0.52	A	0.4	6.93	0.21	A
Do Something 2030								
Stream B-AC	15.3	136.02	1.18	F	2.4	34.44	0.73	D
Stream C-AB	46.1	104.68	1.11	F	0.8	7.58	0.31	A
Do Nothing 2035								
Stream B-AC	2.2	28.92	0.71	D	1.1	19.47	0.54	C
Stream C-AB	2.3	7.15	0.53	A	0.4	6.96	0.21	A
Do Something 2035								
Stream B-AC	17.2	150.09	1.22	F	2.6	36.90	0.75	E
Stream C-AB	49.5	117.99	1.12	F	0.8	7.65	0.32	A

- 6.117 Junction 13 has been calculated to operate within capacity for the majority of the analysed scenarios. The worst-case scenario for Junction 13 occurs in the 'Do Something 2035 AM' scenario on Stream B-AC where the RFC value is 1.22.
- 6.118 The addition of the development traffic causes a maximum increase in the RFC value of 0.53; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Stream B-AC.
- 6.119 Based on these results and under the worst case scenario, it can be concluded that Junction 13 will operate above capacity in the future growth years of 2030, 2035 as a result of the development traffic.
- 6.120 When a junction operates above capacity one of the options is to consider physical mitigation works. However during pre-application discussions, the Highway Authority and Planning Authority have made clear that the current approach is to encourage the use of sustainable modes of travel as opposed to junction improvement works that would provide additional capacity and therefore make it more convenient for motor vehicles. Following discussions with Highway Authority, it has been concluded that no mitigation measures are required at this location, given that the worst case scenario has been overestimated beyond any reasonable realistic assumption.
- 6.121 It should be highlighted that given the proposed trip distribution and existing constraints on Calder Way / Back Lane, this assessment overestimates the trips that would use this junction and therefore the results presented would be the worst-case scenario, unlikely to happen.
- 6.122 The planning application is accompanied by an Accessibility Audit which identifies improvements to the walking and cycling infrastructure and it is considered that the funds that would otherwise have been directed towards junction capacity improvements are instead directed towards delivering improvements to the sustainable travel infrastructure. Therefore, it is not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity, particularly given that the preferred approach of the Highway Authority and Planning Authority is to reduce vehicular traffic through promotion of sustainable alternatives as opposed to providing additional capacity for vehicular traffic.

Junction 14

Arm A - Great Ashby Way (East)

Arm B - Wansbeck Close

Arm C - Great Ashby Way (West)

Arm D - Bray Drive

Table 6.23: Summary of Junction 14 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
Do Nothing 2023								
Arm A	1.0	6.86	0.50	A	0.3	4.25	0.26	A
Arm B	0.1	4.39	0.06	A	0.0	3.33	0.03	A
Arm C	0.5	4.75	0.32	A	1.1	6.92	0.54	A
Arm D	0.4	5.49	0.31	A	0.2	5.10	0.15	A
Do Nothing 2030								
Arm A	1.1	7.57	0.54	A	0.4	4.41	0.28	A
Arm B	0.1	4.64	0.06	A	0.0	3.40	0.03	A
Arm C	0.5	4.94	0.35	A	1.4	7.65	0.58	A
Arm D	0.6	6.04	0.37	A	0.2	5.35	0.18	A
Do Something 2030								
Arm A	9.8	31.07	0.95	D	0.6	5.08	0.37	A
Arm B	0.1	6.51	0.09	A	0.0	3.62	0.03	A
Arm C	1.2	7.27	0.56	A	3.5	14.61	0.79	B
Arm D	0.7	7.60	0.42	A	0.3	6.51	0.21	A
Do Nothing 2035								
Arm A	1.2	7.76	0.55	A	0.4	4.44	0.29	A
Arm B	0.1	4.70	0.07	A	0.0	3.42	0.03	A
Arm C	0.5	4.98	0.36	A	1.4	7.85	0.59	A
Arm D	0.6	6.11	0.37	A	0.2	5.41	0.18	A
Do Something 2035								
Arm A	10.8	33.22	0.96	D	0.6	5.12	0.38	A
Arm B	0.1	6.59	0.09	A	0.0	3.64	0.03	A
Arm C	1.3	7.37	0.57	A	3.7	15.31	0.80	C
Arm D	0.7	7.72	0.43	A	0.3	6.60	0.21	A

- 6.123 Junction 14 has been calculated to operate within capacity for all scenarios, with the exception of the 'Do Something 2030 AM' scenario and the 'Do Something 2035 AM' scenario on Arm A. The worst-case scenario for Junction 14 occurs in the 'Do Something 2035 AM' scenario with an RFC value of 0.96 on Arm A.

- 6.124 The addition of the development traffic causes a maximum increase in the RFC value of 0.41; this occurs between the 'Do Nothing 2035 AM' scenario and the 'Do Something 2035 AM' scenario on Arm A. Junction 14 operates well below the preferred upper maximum operational capacity of RFC 0.85 on all arms except for Arm A. An increase in the RFC value is not considered to produce a material impact on the functioning of the junction.
- 6.125 Although there is a notable increase in the RFC value as a result of the development traffic, the results above demonstrate that the junction operates within capacity in all scenarios and remains below the maximum theoretical capacity and therefore operates with some delays.
- 6.126 Based on these results, it can be concluded that Junction 14 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2030, 2035 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.

Junction 16

Arm A - B197 (S) High Street

Arm B - Church Street

Arm C - B197 (S) High Street

Table 6.24: Summary of Junction 16 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
2036								
Stream B-AC	3.2	79.11	0.78	F	0.8	22.96	0.43	C
Stream C-AB	0.2	8.09	0.09	A	0.9	6.41	0.31	A
2036 + GA2								
Stream B-AC	13.3	266.94	1.00	F	0.8	24.22	0.45	C
Stream C-AB	0.2	8.15	0.09	A	0.9	6.46	0.32	A

- 6.128 Junction 16 has been calculated to reach its capacity in the AM scenario with an RFC of 1.0 for Stream B-AC, indicating that the junction is operating at its maximum theoretical capacity, although it is commonly accepted that junctions do continue to operate above this level, albeit with some delays. The worst-case scenario for Junction 16 occurs in the 'Do Something 2036 AM' scenario on Stream B-AC with an RFC value of 1.0. The addition of the development traffic causes a maximum increase in the RFC value of 0.22.
- 6.129 Although there is an increase in the RFC value as a result of the development traffic, the junction still operates, albeit with some delays.
- 6.130 Based on these results, it can be concluded that Junction 16 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2036. Although the results for Stream B-AC are slightly above the preferred maximum for occupational capacity they remain within the maximum theoretical capacity and therefore the junction is still deemed to operate albeit with some delays.
- 6.131 It should be highlighted that given the proposed trip distribution and existing constraints on Calder Way / Back Lane, this assessment overestimates the trips that would use this junction and therefore the results presented would be the worst-case scenario, unlikely to happen.
- 6.132 It is therefore not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity, particularly given that the preferred approach of the Highway Authority and Planning Authority is to reduce vehicular traffic through promotion of sustainable alternatives as opposed to providing additional capacity for vehicular traffic.

Junction 17

Arm A - B197 (S) High Street

Arm B - Graveley Lane

Arm C - B197 (N) High Street

Table 6.25: Summary of Junction 17 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
	2036							
Stream B-AC	2.7	38.73	0.74	E	1.0	18.77	0.50	C
Stream C-AB	0.7	11.02	0.40	B	0.9	14.22	0.47	B
	2036 + GA2							
Stream B-AC	3.7	51.41	0.80	F	1.2	21.25	0.55	C
Stream C-AB	0.7	11.32	0.41	B	0.9	14.29	0.47	B

- 6.133 Junction 17 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 17 occurs in the 'Do Something 2036 AM' scenario on Stream B-AC with an RFC value of 0.80. The addition of the development traffic causes a maximum increase in the RFC value of 0.06, this occurs between the 'Do Nothing 2036 AM' scenario and the 'Do Something 2036 AM' scenario. An increase in the RFC value of this level is not considered to produce a material impact on the functioning of the junction.
- 6.134 Based on these results, it can be concluded that Junction 17 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2036 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.
- 6.135 It should be highlighted that given the proposed trip distribution and existing constraints on Calder Way / Back Lane, this assessment overestimates the trips that would use this junction and therefore the results presented would be the worst-case scenario, unlikely to happen.
- 6.136 It is therefore not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity.

Junction 18

Arm A - Damask Green Rd (S)

Arm B - Hitchin Road

Arm C - Damask Green Rd (N)

Table 6.26: Summary of Junction 18 Performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	LOS	Q (Veh)	Delay (s)	RFC	LOS
2036								
Stream B-AC	2.6	26.92	0.73	D	3.9	34.61	0.80	D
Stream C-AB	0.2	6.74	0.15	A	0.1	7.09	0.06	A
2036 + GA2								
Stream B-AC	2.9	29.74	0.75	D	4.1	36.03	0.81	E
Stream C-AB	0.3	6.75	0.16	A	0.1	6.95	0.06	A

- 6.137 Junction 18 has been calculated to operate within capacity for all scenarios. The worst-case scenario for Junction 17 occurs in the 'Do Something 2036 PM' scenario on Stream B-AC with an RFC value of 0.81. The addition of the development traffic causes a maximum increase in the RFC value of 0.02, this occurs between the 'Do Nothing 2036 AM' scenario and the 'Do Something 2036 AM' scenario. An increase in the RFC value of this level is not considered to produce a material impact on the functioning of the junction.
- 6.138 Based on these results, it can be concluded that Junction 18 provides sufficient capacity to accommodate the development traffic and will continue to have spare capacity for future growth in the years of 2036 and beyond. It is therefore not considered necessary to undertake any further assessment at this junction.
- 6.139 It should be highlighted that given the proposed trip distribution and existing constraints on Calder Way / Back Lane, this assessment overestimates the trips that would use this junction and therefore the results presented would be the worst-case scenario, unlikely to happen.
- 6.140 It is therefore not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity.

Summary

- 6.141 As can be seen from the aforementioned results, junctions 1-11 and 17-18, have been calculated to operate with an RFC value which remains less than 0.85, indicating that junctions are considered to remain well within operating capacity.
- 6.142 Junctions 12, 14 and 16 have been calculated to operate within the RFC value equal or below 1.0, which indicates that junctions are still operating within its capacity, albeit with some delays.
- 6.143 Junction 13 has been calculated to operate with an RFC value above the maximum theoretical capacity of RFC 1 in the AM Do Something scenario, during PM peak hours the junction would operate with an RFC value which remains less than 0.85.
- 6.144 It should be reiterated that the assessments undertaken at Junctions 16-18 were requested following a comparison of the results of the strategic traffic 'Comet' model commissioned in relation to the development and a previous run of the model commissioned by the Highway Authority to inform the Local Plan.
- 6.145 Through the comparison it was noted that the predicted traffic figures used in the Local Plan run for the development were lower than those used in this TA for the development. As a sensitivity test it was therefore requested that junctions 16-18 were assessed using Junctions 10. The assessments at these junctions used the figures used at the other junctions within this TA ensuring the assessment is robust and represents the worst case scenario.
- 6.146 As previously mentioned, when a junction operates above capacity to this extent it is traditionally considered necessary to consider physical mitigation works. However during pre-application discussions, the Highway Authority and Planning Authority have made clear that the current approach is to encourage the use of sustainable modes of travel as opposed to junction improvement works that would provide additional capacity and therefore make it more convenient for motor vehicles.
- 6.147 Therefore, it is not considered to be necessary to provide physical mitigation measures at this location to provide additional capacity, particularly given that the preferred approach of the Highway Authority and Planning Authority is to reduce vehicular traffic through promotion of sustainable alternatives and improvements to sustainable transport links, as opposed to providing additional capacity for vehicular traffic.

Summary and Conclusion



Woods Hardwick

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Summary and Conclusion

The following paragraphs summarise the findings of this report and provides a factually conclusive recommendation for whether the development should be supported through the planning process.

- 7.1 This Transport Assessment (TA) has been prepared by Woods Hardwick Ltd (WH) on behalf of Picture Estates Ltd in support of the Hybrid application for a residential-led development comprising residential (Use Class C3), educational use (Use Class F1), a community hub (Use Class F2) with associated new internal roads, access, parking, cycling infrastructure, landscaping and other associated infrastructure on land known as 'Land off Mendip Way, Great Ashby' in Stevenage.
- 7.2 Detailed application comprises the construction of vehicle access and an active travel link via Mendip Way, with associated landscaping and drainage works. Detailed permission is also sought for the creation of an emergency vehicle access point off Warrengreen Lane, and active travel connection off Merrick Close.
- 7.3 The outline application area, for which all matters are reserved for future determination, comprises the erection of up to 640 dwellings (Use Class C3), a site for a primary school, further land reserved for educational use (Use Class F1), a site for a community hub (Use Class F2), with associated infrastructure.
- 7.4 As identified within the adopted North Hertfordshire Local Plan (2011 - 2031), the site, GA2, is allocated under Policy SP18 as a Strategic Housing Site for a new neighborhood of approximately 600 homes.
- 7.5 The development proposals consist of the following:
- Up to 640 residential units;
 - Up to 500sqm retail, food and beverage, and medical and social floorspace;
 - 4ha of land to make provision for 2FE primary/ 4FE secondary school; and
 - Suitable parking infrastructure designed in line with local car parking standards.
 - Principle access to the Site is to be provided via Mendip Way, with provision for sustainable modes of transport in alignment with the Stevenage Mobility Strategy. The access road to the Site will be designed to effectively integrate into the nearby existing road networks.

- 7.6 Vehicular access to the site will be provided in the form of a priority junction from Mendip Way, the site carriageway width will be set at 6.2m. This width would be appropriate to accommodate bus services. Carriageway widths on the site will be designed in accordance with guidance contained in Chapter 8 of the Herts Design Guide and HCC guidance obtained through scoping. It is proposed that the new access road would become major arm extension of Mendip Way, changing priority on the junction for the northern section of Mendip Way, which would become a minor arm of the proposed junction.
- 7.7 The major access road will form a loop within the site. Minor access roads, shared surface streets, footways and cycleways will join them to create a transport network within the site, with provision for sustainable modes of transport in alignment with the Stevenage Mobility Strategy. The access road to the site will be designed to effectively integrate into the nearby existing road networks.
- 7.8 Non-vehicular access for pedestrians and cyclists will be via the same primary site access off Mendip Way. This access will be constructed as a 6.2m carriageway with a 3.0m cycleway and a 2m footway on the southern side of the spine road and a 2.0m footway on the northern side of the spine road which will tie into the existing provision on Mendip Way to the west of the site.
- 7.9 It is also proposed that a non-vehicular link will be provided into the Public Bridleway 033, within the southwestern corner of the site, which is to be retained within the site as part of the development proposals. Several non-vehicular links will also be provided to tie into the existing Public Rights of Way and infrastructure.
- 7.10 An Accessibility Audit has been prepared to assess the routes from the site to key local services and facilities on foot, by bicycle and by public transport. This document incorporates the findings of the Accessibility Audit to identify gaps in sustainable travel networks, propose improvement measures and interventions and to set site specific targets.
- 7.11 A detailed audit of the sustainable travel options which will be available to the site has been conducted in addition to an Accessibility Assessment. The detailed audit demonstrated that the site can be considered to lie in a sustainable location in terms of walking, cycling and accessibility to public transport services; in addition to access to services and facilities.
- 7.12 At this early stage of the planning process, it is anticipated that the agreed overarching target for the development site will that 50% of journeys will be made by sustainable modes of transport.

- 7.13 The key walking routes from the site that have been identified above have been audited using the Walking Route Audit Tool (WRAT). The findings of the WRAT analysis show, that the primary focus on the improvements should be given to Route 1 which is a route from the main site access on Mendip Way to Round Diamond School and nearest supermarket and also Route 2, which is the PROW Bridleway.
- 7.14 The key cycling routes from the site that have been identified and audited using the Cycling Level of Service Tool and Junction Assessment Tool provided in LTN 1/20 Appendix A and B. Given the findings of the cycling routes audit tool analysis and the fact that Route 3 is a route to the nearest Secondary School, it is considered that the primary focus on the improvements should be given to Route 3. Further analysis considered that the focus on the improvements should also be given to Route 1, which forms a part of a cycleway to the Stevenage Train Station and also wider cycleway network. Further information on the walking and cycling analysis is included in the Accessibility Audit.
- 7.15 The pedestrian infrastructure along Mendip Way facilitates quick and convenient access to public transport services; the closest bus stop to the northernmost part of the site named 'The Beacons' is situated approximately 300m to the southwest of the site access and it is accessible within a 4 minute walk or a 2 minute cycle. The pedestrian infrastructure along Great Ashby Way also facilitates quick and convenient access to the closest bus stop to the southernmost part of the site named: The 'Fairfield Way', which is located approximately 700m to the south of the site access. The 'Fairfield Way' bus stop is accessible within a 10 minute walk or a 4 minute cycle. Both bus stop is served by Arriva route SB7 which facilitates access into and around Stevenage. Additionally, the 'Stevenage Railway Station' bus stop is located approximately 4.8km to the south of the site and is accessible within an 18 minute cycle or an 11 minute bus journey from the site (using route SB7).
- 7.16 Detailed discussions have been held with Arriva regarding the new proposed bus route SB12 through the proposed development. Arriva reviewed a number of options and concluded that the best option is for the service to be diverted such that on its inward journey it enters the development site.

- 7.17 As it was mentioned the GA2 allocation, will adopt a “Monitor and Manage approach” for the bus service on Mendip Way, similar to GA1. A Traffic Regulation Order (TRO) in the form of yellow lining will be provided along Mendip Way, if deemed sufficient, to provide a clear route for the proposed service. The undertaken parking surveys confirmed the level of occupancy and capacity of the street network and nearby parking courts within the vicinity of the proposed bus route and it was concluded that there is sufficient capacity for the displaced cars to be relocated nearby in a safe manner. If monitoring indicates that this approach is not sufficient, then some further TRO could be proposed. If this remains insufficient as a last option, the parking bays can be introduced as a worst case scenario. The developer is proposing that a sum is set aside within the S106 Agreement, which would cover the worst-case scenario (parking bays). If that money is not spent after 5 years of final occupancy it will be returned.
- 7.18 In order to assess the impact of the proposed development on the wider highway network WSP were commissioned to run HCC’s most recent strategic Comet Model, which accounts for the most likely growth and transport infrastructure proposals and looks at the potential longer-term situation. The modelling includes all sites, which had received planning permission by 2023. The model covers the whole of Stevenage and beyond. The model has been updated and calibrated using up to date traffic count data and speed data to ensure that the findings are as accurate as possible.
- 7.19 The results show that the trips to/from the development are mostly within Stevenage and that the main increases in flow are on Great Ashby Way and Grace Way. The results also confirm that there are no major delays increases predicted due to the development proposals.
- 7.20 The modelling demonstrates that minor increases are predicted at locations on the local road network within Stevenage, however, importantly the modelling confirms that any increases will be within acceptable limits which would not lead to capacity issues along the routes where the increase are anticipated.
- 7.21 Notwithstanding the above, it should be reiterated that the assessments undertaken at Junctions 16-18 were requested following a comparison of the results of the strategic traffic ‘Comet’ model commissioned in relation to the development and a previous run of the model commissioned by the Highway Authority to inform the Local Plan.
- 7.22 Through the comparison it was noted that the predicted traffic figures used in the Local Plan run for the development were lower than those used in this TA for the development. As a sensitivity test it was therefore requested that junctions 16-18 were assessed using Junctions 10. The assessments at these junctions used the figures used at the other junctions within this TA ensuring the assessment is robust and represents the worst case scenario.

- 7.23 The assessment undertaken through the various runs of the Comet model and the above sensitivity testing confirmed that the development proposals are not predicted to give rise to capacity issues within Stevenage or the villages of Gravelly and Weston to the north.
- 7.24 An impact assessment has been undertaken to calculate the likely vehicular trip generation of the proposed development site. Based upon the figures agreed through scoping with HCC proposed development of up to 650 residential dwellings, a 2FE Primary School and a 4FE Secondary School has been calculated to generate a total of 760 two-way trips during the AM peak hour and 394 two-way trips during the PM peak hour; therefore, an assessment has been undertaken for robustness in order to ensure that the impact of the proposed development on the local highway network is not significant.
- 7.25 The impact assessment exercise has been undertaken for the AM (08:00-09:00) and PM (17:00-18:00) peak hours at the following junction locations:
- Junction 1 - Site Access / Mendip Way
 - Junction 2 - Mendip Way / Great Ashby Way / Whitehorse Lane / Great Ashby Way
 - Junction 3 - Cleveland Way / Great Ashby Way / Great Ashby Way
 - Junction 4 - Great Ashby Way / Fairfield Way / Great Ashby Way / Whitehorse Lane
 - Junction 5 - Grasmere / Great Ashby Way / Great Ashby Way
 - Junction 6 - Great Ashby Way / Lomond Way / Great Ashby Way
 - Junction 7 - Great Ashby Way / Cartwright Road / Great Ashby Way
 - Junction 8 - Great Ashby Way / Gresley Way / Glanville Crescent
 - Junction 9 - Gresley Way / Gresley Way / Martins Way
 - Junction 10 - Pilgrims Way / Martins Way / Martins Way
 - Junction 11 - Canterbury Way / Martins Way / Grace Way / Martins Way
 - Junction 12 - Canterbury Way / Canterbury Way / Great Ashby Way
 - Junction 13 - Great Ashby Way / Orwell Avenue / Great Ashby Way
 - Junction 14 - Bray Drive / Great Ashby Way / Wansbeck Close / Great Ashby Way
 - Junction 16 - Church Street / High Street (Graveley)
 - Junction 17 - High Street / Gravelly Lane (Graveley)
 - Junction 18 - Damask Green Rd / Hitchin Road (Weston)
- 7.26 The distribution of the trip generation of the site within the wider highways network was based upon the 2011 UK Census Data for Output Area of 'Stevenage 002'. This data used identifies the work place locations for people living within the 'Stevenage 002' area at the time the Census data was recorded.

- 7.27 The modelling confirms that all junctions, with the exception of junction 13 under an extreme worst case scenario, have been calculated to operate with an RFC value below 1.0, indicating that the junctions are considered to remain within operating capacity. Junctions 13 has been calculated to operate with an RFC value above the maximum theoretical capacity in the AM Do Something scenario, however it should be noted that this worst case is based on a likely overestimation of the realistic number of vehicles using this junction as reported in para 6.120, while in all other scenarios the junction would operate with an RFC value which remains within capacity.
- 7.28 From the evidence provided within this Transport Assessment, there is no reason in Highways and Transportation terms, why the proposed development at 'Land off Mendip Way, Great Ashby', should not be fully supported through the planning process.
- 7.29 Moreover, as detailed in Section 4 of this report and the supporting Accessibility Audit, a number of interventions have been proposed to optimise policy compliance to maximise the number of trips made by sustainable modes.

