Broadwater Gardens

Transport Assessment

Client: HG Group

i-Transport Ref: NM/MD/AT/ITL16195-004C

Date: 17 December 2020

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SECTION 1 Introduction

1.1 Overview

1.1.1 HG Group has appointed i-Transport LLP to provide highways and transport advice in relation to their planning application for the redevelopment of the BioPark site in Welwyn Garden City for 289 dwellings. This Transport Assessment (TA) has been prepared to support the planning submission. The planning application is for the following:

> ***"Demolition of existing buildings and construction of residential units (Use Class C3) and community hub (Use Class E/F.2), with public realm and open space, landscaping, access, associated car and cycle parking, refuse and recycling storage and supporting infrastructure".***

1.1.2 The site is located within Welwyn Hatfield Borough Council (WHBC) and Hertfordshire County Council (HCC) is the local highway authority. The site is within the Broadwater Road West Opportunity Area (BWOA) which is covered in the Broadwater Road West Supplementary Planning Document (SPD) (December 2008). The SPD did not propose the redevelopment of this application site.

1.1.3 The site is bordered to the north and east by the remainder of the BWOA, comprising a distribution warehouse, vacant land ready for construction of the proposed Shredded Wheat Quarter for housing, the recently completed Penn Way residential area to the east, existing housing to the south, and a lorry trailer park ancillary to the distribution centre and railway lines to the west. Access to the site is via BioPark Drive from the A1000 Broadwater Road. A site location plan is provided at Image 1.1.

Image 1.1: Site Location Plan

Source: Alan Camp Architects

1.2 Proposed Development

1.2.1 The proposal is for the redevelopment of the site for the construction of 289 residential dwellings, accessed via BioPark Drive, with an ancillary on-site community hub (land use class E/F.2). The proposal includes a mix of townhouses and flats and will be supported by car and cycle parking spaces, including a car club space.

1.3 Pre-Application Discussion with HCC

1.3.1 A transport scoping note (i-Transport report ref: ITL16195-001a) has been prepared and issued to highways offices at HCC, in order to set out and agree the scope and structure of this TA. A follow up pre-application meeting was held in September 2020 to discuss the scoping note and key parameters in further detail.

1.3.2 The main comments raised by HCC on the scoping note and within the pre-application meeting are summarised below:

- A potential secondary pedestrian/ cyclist/ emergency route needs to be considered and provided where applicable;
- Access to the nearby Sustrans routes to be considered;
- A detailed review of local facilities in the areas to be undertaken;

- A residential Travel Plan will be secured via S106, a Framework Travel Plan to be submitted with the application;
- Road safety study to be extended slightly to the north and south of the access to Broadwater Road;
- A reduced level of parking provision is considered acceptable at this site due to its sustainable location and similar provision of local developments;
- Vehicles should not dominate the landscape or development, with the site designed to encourage walking and cycling;
- Visitor parking spaces to be provided alongside cycle parking and electric vehicle charging point provision;
- The existing trip attraction to be based on similar 'Business Park' trip rates from TRICS rather than 'offices';
- The local Census mode share data and total person trip rates to be used to calculate the multi-modal trip generation of the site;
- Distribution assumptions to be taken from the Census travel to work data for local area;
- A number of committed developments to be assessed including the Wheat Quarter, 29 Broadwater Road, 45 Broadwater Road, and 37 Broadwater Road; and
- The proposal is anticipated to result in a reduction of traffic at the site and therefore strategic modelling is considered not necessary.

1.3.3 This TA therefore refers back to, and had regard to, the requests of HCC.

1.4 Structure

1.4.1 The remainder of this TA is structured as follows:

- Section 2 - Policy Context Review;
- Section 3 - Baseline Conditions;
- Section 4 - Development Proposal;
- Section 5 – Opportunities for Sustainable Travel;
- Section 6 – Traffic Impact; and
- Section 7 – Summary and Conclusions.

SECTION 2 Policy Context

2.1 Overview

2.1.1 This section sets out a review of the national and local transport policy to provide the context for the Transport Assessment.

2.2 National Policy

2.2.1 The National Planning Policy Framework (NPPF), published in February 2019, sets out the Government's planning policies for England and how these are expected to be applied. It also constitutes guidance for local planning authorities and decision makers both in drawing up plans and as material consideration in determining applications.

2.2.2 Paragraph 11 of the NPPF stresses that at the forefront of planning is the 'presumption in favour' of sustainable development. Regarding planning applications, paragraph 11(d) states:

> ***"…For decision-taking this means:***
>
> ***c) Approving development proposals that accord with an up-to-date development plan without delay; or***
>
> ***d) Where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:***
>
> ***i) The application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or***
>
> ***ii) Any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole."***

2.2.3 In this case WHBC's adopted Local Plan is out of date and therefore the presumption in favour of sustainable development applies as set out in the second bullet point of paragraph 11 of the NPPF.

2.2.4 There is therefore a demanding test for preventing development from coming forward – this should only happen where any adverse impacts "**significantly and demonstrably outweigh the benefits**".

2.2.5 The specific transport policies are contained within Section 9 of the NPPF. This sets out the importance of facilitating sustainable development by reducing the need to travel and offering a 'genuine' choice of transport in favour of sustainable modes.

2.2.6 The NPPF requires all developments that generate significant amounts of movement provide a travel plan and be supported by either a Transport Statement or Transport Assessment (ref: NPPF, Paragraph 111).

2.2.7 The three key transport tests are set out in Paragraph 108:

> ***"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:***
>
> ***a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;***
>
> ***b) safe and suitable access to the site can be achieved for all users; and***
>
> ***c) 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."*** (ref: NPPF, Paragraph 108)

2.2.8 When it comes to highways matters, ***"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."*** (ref: NPPF, Paragraph 109)

2.3 Local Policy

WHBC Draft Local Plan Proposed Submission (2016)

2.3.1 The WHBC draft Local Plan was published in 2016 and is currently under examination and therefore carries some weight in the determination of applications. The Plan sets out the Council's planning framework for the borough and includes a number of policies to achieve their visions. A summary of some of the key policies from a highways and transport perspective is provided below:

- Policy SP1 Delivering Sustainable Development – the Council will support new developments that contribute to the creation of mixed and sustainable communities and promote health and active lifestyles which ensuring inclusive and safe access for all.

- Policy SADM 2 Highway Network and Safety – this policy seeks to ensure development proposals will not an have unacceptable impact on the local highway network or on highway safety and that access is provided for all;
- Policy SADM 2 Sustainable Travel for All – all developments above a threshold (set by HCC) will be required to submit a Travel Plan to encourage and support sustainable travel for all new developments; and
- Policy SADM 12 Parking, Servicing and Refuse – vehicle and cycle parking is to be provided in accordance with the Council's parking standards. Developments will need to promote sustainable forms of travel and electric vehicle charging points should be incorporated into parking areas. With regards to refuse and servicing, new developments should ensure that access to refuse storage and services areas are appropriately sited and designed.

2.3.2 The Plan also includes Policy SP 17 – Mixed use development site at Broadwater Road West which includes the site. This sets out the Broadwater Road West allocation which will accommodate and seek to deliver approximately 1,020 new homes alongside employment and leisure uses.

Welwyn Hatfield District Plan (2005)

2.3.3 The Welwyn Hatfield District Plan is the current adopted Local Plan in the borough. The Plan includes a number of saved policies, which include:

- Integrating transport and land use (Policy M1);
- Transport assessment (Policy M2);
- Green travel plans (Policy M3);
- Developer contributions (Policy M4);
- Pedestrian facilities (Policy M5); and
- Cycle routes and facilities (Policy M6).

Welwyn Hatfield District Plan Review Supplementary Planning Guidance Parking Standards (2004)

2.3.4 WHBC's parking standards are set out in the Welwyn Hatfield District Local Plan Review – Car Parking Standards (2004). The standards are subject to zonal areas whereby more accessible zones are able to provide a lower car parking provision. The residential car parking standards,

which are to be used as guidelines rather than maximums[1], and cycle parking standards are summarised in Table 2.1.

Table 2.1: Residential Car and Cycle Parking Standards – WHBC

		Car Parking Standards		Cycle Parking Standards
		Zones 1 and 2	Elsewhere	
Residential	1 bedroom dwellings	0.75 spaces per dwelling	1.25 spaces per dwelling	1 long term space per unit if no garage or shed provided.
	2 bedroom dwellings	1 space per dwelling	1.5 spaces per dwelling	
	3 bedroom dwellings	1.5 spaces per dwelling	2.25 spaces per dwelling	
	4 bedroom dwellings	2 spaces per dwelling	3 spaces per dwelling	

Source: WHBC Car Parking Standards 2004

2.3.5 The majority of the site is located within Zone 2 which the standards state should only provide 25-50% of the maximum parking standard outlined above. This is the equivalent of between 0.2-0.4 spaces per dwelling for 1 beds, 0.25-0.5 spaces per dwelling for 2 beds, 0.4 - 0.75 spaces for 3 beds, and 0.5-1 spaces for 4 beds. A small section of the southern part of the site is located within Zone 3 which states that car parking should be provided at 50-75% of the maximum standard.

Broadwater Road West Supplementary Planning Document (2008)

2.3.6 The Broadwater Road West Supplementary Planning Document (SPD) outlines the Council's visions for the future of Broadwater Road West and sets out a masterplan for a comprehensive redevelopment of this area.

2.3.7 It is noted that the application site was not considered for redevelopment in the SPD. Nevertheless, the key aims for the area include:

- Creating a sustainable neighbourhood with a mix of uses;
- To establish connections between the east of the town and the town centre, through the site;
- To enhance the local environment;

[1] As set out in the WHBC's Interim Policy for Car Parking Standards and Garage Sizes (2014).

- To minimise traffic generation and parking through exploiting the site's sustainable location; and
- To improve the local pedestrian areas, including the pedestrian bridge to the station and town centre (currently under construction).

Hertfordshire Local Transport Plan 4 (2018)

2.3.8 The Hertfordshire Local Transport Plan (LTP) 4 sets out how future developments will need to consider all modes of travel, including walking, cycling and public transport, and wider County projects aimed at creating a more sustainable County.

2.3.9 The LTP includes the following notable proposals:

- Sustainable travel towns – comprehensive packages of improvements for walking, cycling and public transport;
- East west bus rapid transit – a scheme between Hemel Hempstead and Welwyn Garden city for a future rapid bus network with potential future connections to Hertford and Harlow; and
- A414 highway improvements.

2.4 Summary

2.4.1 Transport policy at the national and local level is directed towards promoting sustainable modes of transport at residential developments, giving occupiers real choice of travel according to a site's setting. In urban locations, with good access by walking and cycling to a range of services and facilities, as well as high quality public transport networks, sustainable modes should be promoted, and overall car parking supply should be limited.

2.4.2 Policy is also clear that development should only be refused on transport grounds where the residual impact of a proposal on transport networks is severe.

2.4.3 The remainder of this report will consider the scheme in the contact of the planning policy background.

SECTION 3 Baseline Conditions

3.1 Overview

3.2 This section sets out the existing transport and highway conditions in the vicinity of the site.

3.3 Site Location and Existing Use

3.3.1 The site is bordered to the north by the Shredded Wheat Quarter development, the southern parcel of which is currently under construction for high density residential development. To the east, the site is adjacent to the recently completed residential development around Penn Way. To the south, the site is surrounded by the residential uses on Broadwater Crescent, and to the west, the site is adjacent to lorry trailer park ancillary to the distribution centre to the northwest, and beyond the parking area, the railway lines on the approach to Welwyn Garden City railway station.

3.3.2 The site is currently occupied by a vacant employment site known as the BioPark, a research and development (B1b land use) complex formerly owned and occupied by the University of Hertfordshire.

3.3.3 The existing floor area of the site is 13,972 sqm with some 160 associated car parking spaces (in a mixture of surface level parking in the vicinity of Broadwater Crescent and a two storey basement beneath the main building). The only access to the site is provided via BioPark Drive, a 9.0m wide private road (consisting of 7.6m wide carriageway, 0.2m wide service strip, and 1.8m wide footway). BioPark Drive joins the A1000 Broadwater Road to the east via a simple crossover.

3.4 Opportunities to Travel by Walking and Cycling

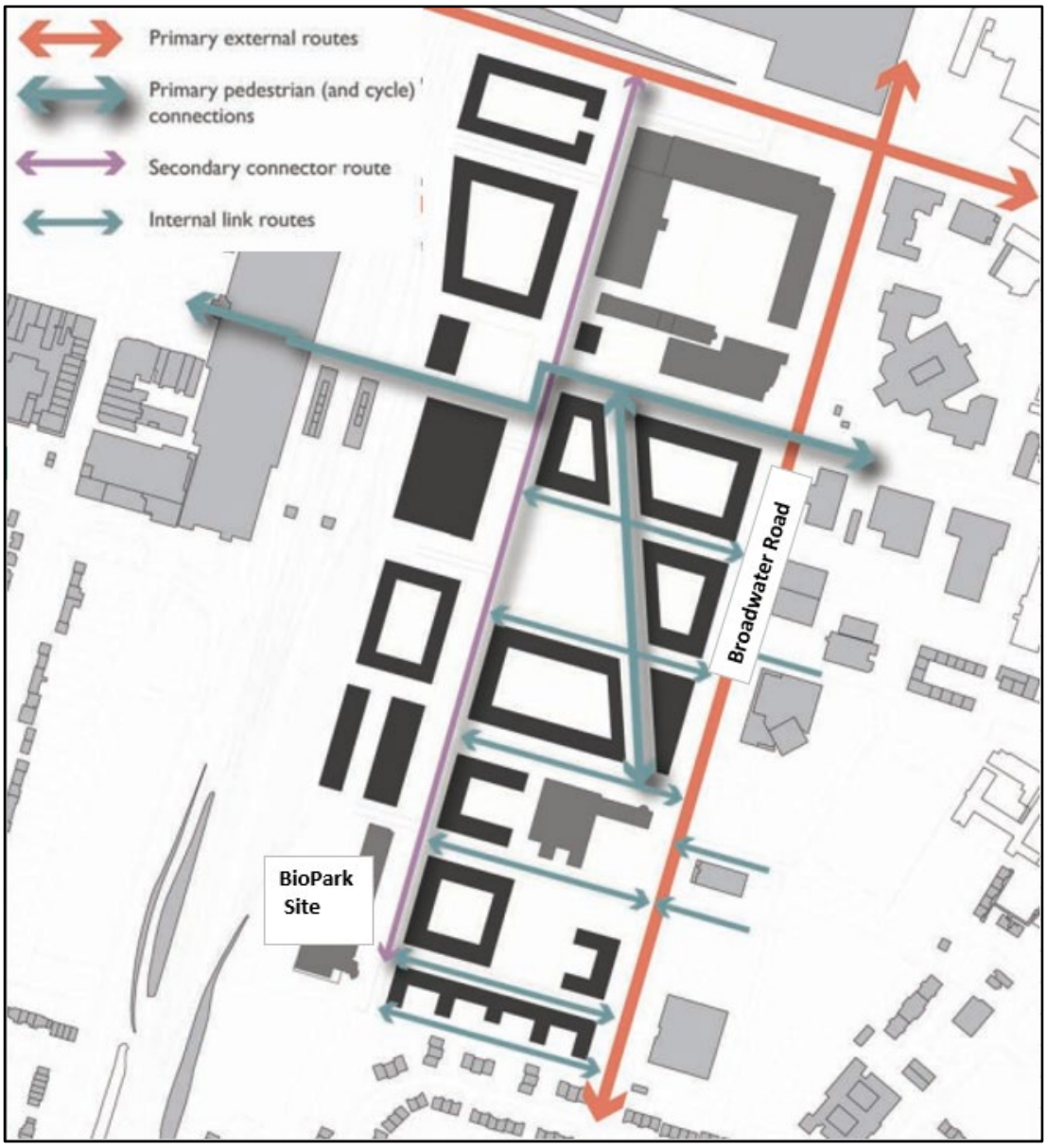
Walking

3.4.1 The site is surrounded by a high quality pedestrian network. At the site's boundary to Broadwater Road, wide footways (in excess of 3m) are located on both sides of the carriageway. Dropped kerbs and tactile paving are provided across the minor accesses along Broadwater Road. A pelican crossing is provided across Broadwater Road just north of the junction with Otto Road, to aid safe pedestrian passage.

3.4.2 The high quality footway provision continues along Broadwater Road. At the next major junction (to Hydeway) the footway continues west along Hydeway towards a bridge over the railway.

3.4.3 As part of the BWOA, the SPD sets out the future access strategy and vision through the opportunity area which is extracted and provided at Image 3.1. This includes a new pedestrian route from the Wheat Quarter over the railway and towards Welwyn town centre.

Image 3.1: Access Strategy – BWOA



Source: Broadwater Road West Supplementary Planning Document

3.4.4 It is noted that the plans include a potential pedestrian link from the site north towards the Wheat Quarter site. Further details on this link are provided in Section 4.

3.4.5 A footbridge at Welwyn Garden City railway station, which links the station to the east of Welwyn Garden City, has just undergone a £1 million refurbishment. Further, additional phases of the works, including new lifts and improved stairs, will be delivered by the Wheat Quarter.

Cycling

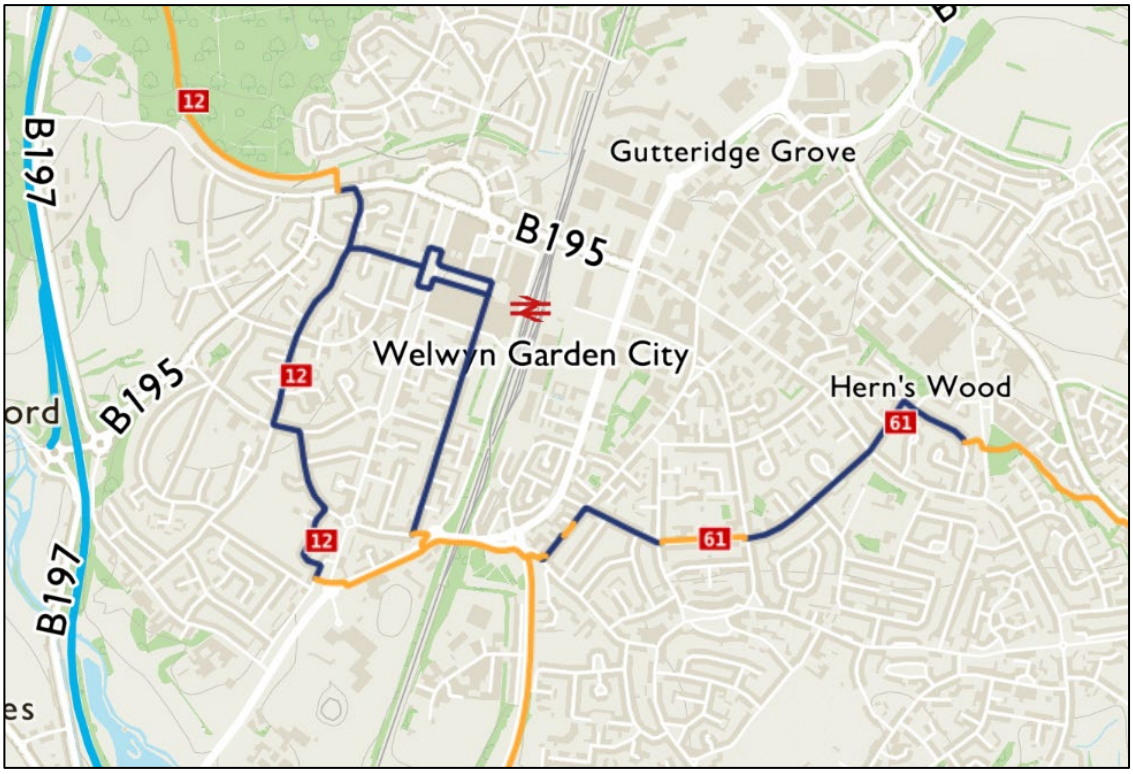
3.4.6 There are high quality cycle routes provided in the vicinity of the site. The length of Broadwater Road consists of an off-carriageway shared pedestrian / cycle route on its eastern side. A toucan crossing is provided just to the south of the Hydeway junction, with the shared pedestrian / cycle route following the southern side of Hydeway, where a large number of cycle parking racks are provided for use by those making onward journeys from the railway station. North of Hydeway, the shared foot/cycle way is located on the western side of Broadwater Road, which is connected to a recently improved segregated on-carriageway route on Bridge Road.

3.4.7 There are also a number of numbered cycle routes in the vicinity of the site. Route 12 can be joined on the A6129 which is 400m to the south via the off-carriageway cycle lane along the eastern side of Broadwater Road. Route 12 runs in sections from Enfield Lock in north London to Spalding via Stevenage, St Neots and Peterborough.

3.4.8 Route 61 routes between Maidenhead to Hatfield, Welwyn Garden City and Hertford and terminates near Hoddesdon. Again, this is accessible via the Broadwater Road shared foot/cycle lane, and a short on-carriageway section Holwell Road.

3.4.9 Image 3.3 provides a capture from the Sustrans website.

Image 3.3: National Cycle Network Routes



Source: Sustrans

3.5 Public Transport

Bus

3.5.1 The Penn Way bus stops are located outside the site access on Broadwater Road (northbound adjacent to the access and southbound circa 50m to the north). Both stops are served by the 601 AlbanWay bus route. The 601 bus service routes between Welwyn Garden City and Borehamwood via Hatfield and St Albans, and there are two services per hour across the weekday.

3.5.2 Both of the bus stops provide a shelter, seating, and timetable information. Passengers accessing the northbound bus stop will be required to cross Broadwater Road.

3.5.3 Additional bus stops and services are available within a short walk of the site, including the 403 and 404 services available on Peartree Lane, circa 450m from the site access. In addition, a range of bus services are available from the bus stops on Bridge Road, opposite the station and located within a 10 minute walk from the site (circa 750m). The additional bus services within the local area are shown on the map at Appendix A.

Rail

3.5.4 Welwyn Garden City railway station is located circa 1km walking distance, via BioPark Drive and Broadwater Road, from the site (equivalent to a 12-minute walk).

3.5.5 The station is served by Great Northern and Thameslink rail services. A summary of the principal rail services that operate from the station is provided in Table 3.1.

Table 3.1: Summary of Rail Services – Welwyn Garden City Railway Station

Destination	Approximate Journey Time	Typical Off-Peak Frequency
Moorgate	48 mins	4 per hour
London Kings Cross	28 mins	2 per hour
Cambridge	58 mins	1 per hour
Royston	37 mins	2 per hour

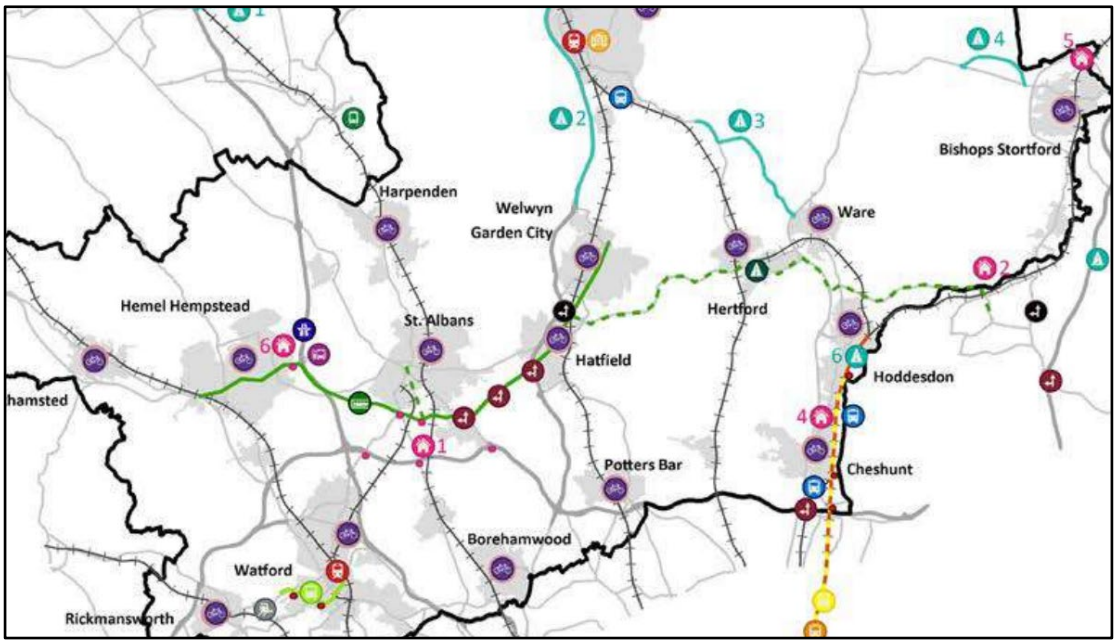
Source: National Rail (Accessed November 2020)

3.5.6 It can be seen from Table 3.1 that a number of fast and frequent rail services operate from Welwyn Garden City to key destinations, with around six services per hour to London.

Future Bus

3.5.7 HCC's Local Transport Plan 4 includes the aspiration for a Bus Rapid Transport (BRT) network across Hertfordshire from Hemel Hempstead and Welwyn, via St Albans. The BRT seeks to promote bus travel through a range of bus priority measures to deliver improved journey times and enhance journey reliability. An extract of the proposed route is shown on green in Image 3.4.

Image 3.4: Local Transport Plan – Transport Proposals Map Extract



Source: Hertfordshire County Council Local Transport Plan 5

3.5.8 The proposed routing illustrates the BRT routing to the east of the railway lines in Welwyn and therefore it may have a potential routing along Broadwater Road. The BRT will therefore provide a key east to west public transport link across Hertfordshire in addition to the existing north-south rail link.

3.6 Local Highway Network

3.6.1 BioPark Drive, which is the site's only existing link to the wider highway network, is a private road and subject to a signed 15mph speed limit. The access forms a simple crossover to Broadwater Road.

3.6.2 Broadwater Road is a two-way single carriageway road subject to a 30mph speed limit. It is street-lit and there are foot/cycleways on both sides of the road. Broadwater Road runs north towards Welwyn and access to the A1 (M) and south towards Hatfield and the A414. There are single yellow lines present on Broadwater Road, in the vicinity of the site which indicates that parking is prohibited between 0800-1800 Monday to Saturday. In addition, there are loading restrictions on Broadwater Road which prohibit loading between 0800-0900 and 1700-1800 Monday to Friday.

3.7 Existing Traffic Conditions

3.7.1 An Automatic Traffic Counter (ATC) was installed to record traffic speeds, classifications, and volumes on Broadwater Road for a period of seven days (8 November 2020 to 14 November 2020).

3.7.2 Whilst the primary aim of the collect of data was to understand speeds, to inform site access design, a review of the traffic volumes along Broadwater Road has also been undertaken.

Vehicle Speeds

3.7.3 A summary of the 85th percentile (85thile) design speeds recorded along Broadwater Road is summarised in Table 3.2.

Table 3.2: Summary of Traffic Speeds – Broadwater Road

Direction	85th %tile Design Speeds (mph)
Northbound	28.8 mph
Southbound	28.5 mph

Source: Intelligent Data and Consultant's Estimates

Note: 85thile speeds recorded Monday to Friday between 1000-1200 and 1400-1600.

3.7.4 The 85thile design speeds have been calculated in accordance with DMRB methodology with the 85thile speeds based on the free flows speeds recorded Monday to Friday between 1000-1200 and 1400-1600. The 85thile speed is 29 mph both north and southbound. This demonstrates the 85%tile speeds (that which the majority of vehicles travel at or below) are below the posted speed limit of 30mph along Broadwater Road. It is considered that the speed surveys, which captured sufficient vehicles for a representative sample, are reflective of normal behaviour and not affected by the Covid-19 travel restrictions.

Vehicle Counts

3.7.5 Due to the current Covid-19 pandemic, traffic patterns and levels are not representative of a historic 'neutral' traffic periods or reflect the typical traffic flows and network operation. A review of the daily national traffic volumes in during the week commencing 8 November 2020 against

2019's daily traffic reveals that during this week traffic volumes were circa 67% of the traffic flows experienced in the same week in 2019[2].

3.7.6 As such, the ATC traffic volume data has been factored by an uplift of 33% to November 2019 levels. A summary of the average hourly weekday flows observed and with the uplift is presented in Table 3.3.

Table 3.3: Summary of Broadwater Road Traffic Flows

	Total Vehicles – Observed			Total Vehicles – Factored by 33%		
	North-bound	South-bound	Two-Way	North-bound	South-bound	Two-Way
Morning Peak Hour (0800-0900)	454	360	814	604	478	1,083
Evening Peak Hour (1700-1800)	366	423	789	487	563	1,050
Daily (0700-1900)	4,553	4,399	8,952	6,055	5,851	11,906

Source: Intelligent Data and Consultant's Estimates

Based on average Monday to Friday data

Note: Numbers may not sum due to rounding.

3.7.7 Applying the DfT factor and uplifting the flows by 33% (to November 2019 levels) reveals the following:

- Up to 1,0833 (two-way) vehicle flows along Broadwater Road during the network peak hours; and
- Some 11,906 (two-way) vehicle flows along Broadwater Road across the 12 hour day (0700-1900).

3.7.8 The factored traffic flows are shown on Figures 3.1 and 3.2 for the morning and evening peak hour respectively.

3.8 Local Travel Characteristics

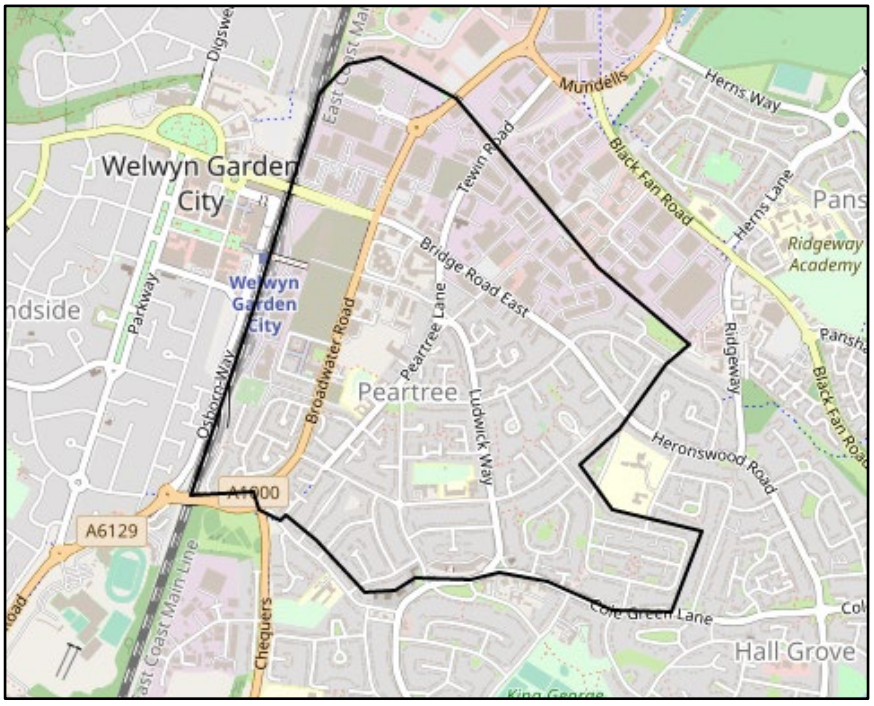
3.8.1 The site is located within the 2011 Census Middle Super Output Area (MSOA) 'Welwyn and Hatfield 007'. Future residents are likely to demonstrate similar travel patterns to residents

[2] Traffic data obtained from the DfT's 'Transport use by mode since 1 March 2020' (https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic

[3] These flows have been compared to the observed two-way flows along Broadwater Road within the Wheat Quarter application and are considered comparable.

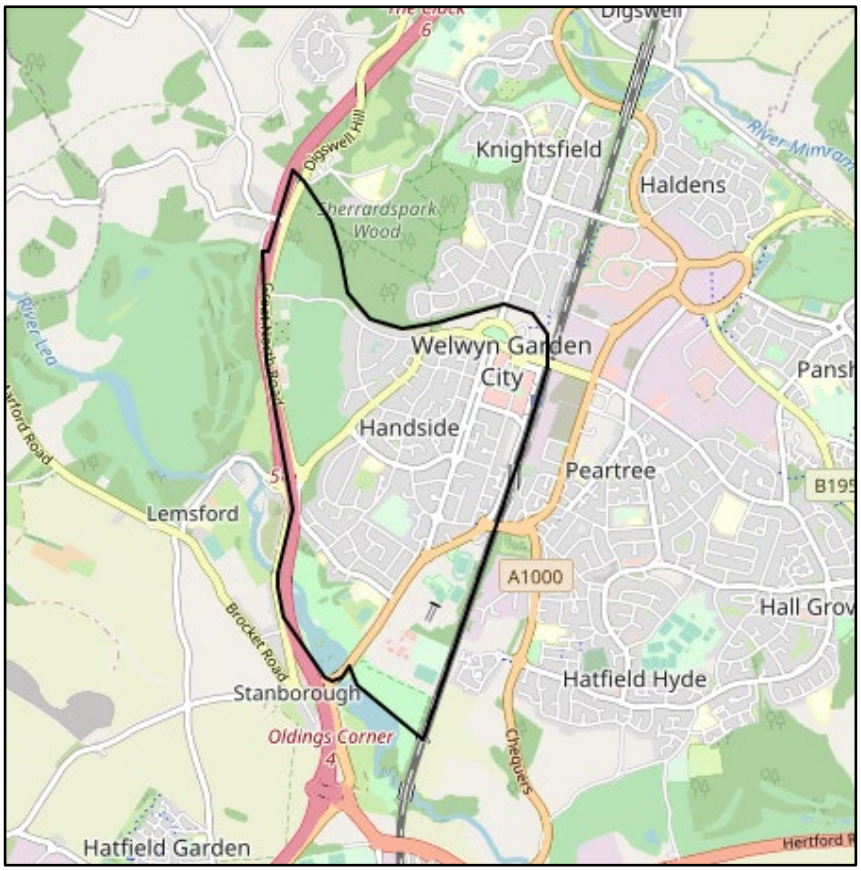
already contained with this MSOA. The MSOA boundary is shown at Image 3.5. It is noted that the site is located at the far western side of the MSOA, adjacent to the town centre and railway station, whilst much of the MSOA contains the low density residential areas of Peartree, some approaching 2km from the station. As such, the MSOA 006 (to the west of the railway line) has also been reviewed, with its boundary shown at Image 3.6.

Image 3.5: Middle Super Output Area Welwyn and Hatfield 007



Source: Nomis

Image 3.6: Middle Super Output Area Welwyn and Hatfield 006



Source: Nomis

Method of Travel to Work - Mode Share

3.8.2 The method of travel to work data has been extracted from the 2011 Census for residents in the local area of both MSOAs. A summary of the modal split data for each of the MSOAs and the average across the two is summarised in Table 3.4.

Table 3.4: Method of Travel to Work – MSOAs Welwyn and Hatfield 006 and 007

Mode	MSOA 007		MSOA 006		Average	
	Count	%	Count	%	Count	%
Driving a Car or Van	1,941	57%	1,650	57%	3,591	**57%**
On Foot	563	17%	384	13%	947	**15%**
Train	329	10%	523	18%	852	**14%**
Bicycle	175	5%	77	3%	252	**4%**
Passenger in a Car or Van	170	5%	103	4%	273	**4%**
Bus, Minibus, Coach	121	4%	81	3%	202	**3%**
Motorcycle, scooter	37	1%	17	1%	54	**1%**
Underground, metro, light rail	33	1%	32	1%	65	**1%**
Taxi	24	1%	12	0%	36	**1%**
Other	12	0%	16	1%	28	**0%**
Total	3,405	100%	2,895	100%	6,300	**100%**

Source: 2011 Census and Consultant's Estimates.

Note: Excludes those who work from home and not in employment.

3.8.3 The data demonstrates that existing residents in the local area predominately travel to work by car (57%) with a further 19% walking or cycling and 17% by public transport.

Car Ownership

3.8.4 The level of local car ownership rates for the Welwyn and Hatfield MSOAs 007 and 006 has also been obtained from the 2011 census data. A summary of the car ownership data is outlined in Table 3.5.

Table 3.5: Local Car Ownership Data – MSOA Welwyn and Hatfield 006 and 007

Car or Van Availability	MSOA Welwyn and Hatfield 007		MSOA Welwyn and Hatfield 007	
	Households	Cars	Households	Cars
No cars or vans in household	803	0	721	0
1 car or van in household	1,373	1,373	1,271	1,271
2 cars or vans in household	622	1,244	813	1,626
3 cars or vans in household	107	321	148	444
4 or more cars or vans in household	30	130	44	204
All households	2,935	-	2,997	-
All cars or vans in area	-	3,068	-	3,545
Car Ownership	1.05 per household		1.18 per household	

Source: 2011 Census and Consultant's Estimates

3.8.5 The data demonstrates that the average car ownership level across the two MSOAs is 1.11 cars/vans per household. Table 3.5 also demonstrates that on average circa 26% of the total households in these areas live car free whilst on average 45% have access to one car.

Car Ownership for Flats

3.8.6 The 2011 Census data for the car ownership levels in the immediate area has been examined further to obtain the car ownership rates for flats/maisonettes within the MSOAs Welwyn and Hatfield 007 and 006. A summary of the number of cars or vans available to the flats/maisonettes within the MSOA and subsequent car ownership level for flats is provided in Table 3.6.

Table 3.6: Accommodation Type by Car or Van Availability

Car or Van Availability	MSOA Welwyn and Hatfield 007		MSOA Welwyn and Hatfield 006	
	No. of Flats or Maisonettes	No. of Cars	No. of Flats or Maisonettes	No. of Cars
No cars or vans in household	271	0	446	0
1 car or van in household	297	297	325	325
2 or more cars or vans in household	65	145	52	118
Total	633	442	823	443
Car Ownership for flats/maisonettes	0.70 per flat/maisonette		0.54 per flat/maisonette	

Source: 2011 Census and Consultant's Estimates

Note: The car ownership for 2 or more cars is 2.23 for MSOA 007 and 2.26 for MSOA 006.

3.8.7 The data demonstrates that the average car ownership for flats/ maisonettes across the two MSOAs Welwyn and Hatfield 007 and 006 is 0.62 cars per unit per unit. This figure therefore illustrates that there is a demand for significantly less than one car/van per flat/maisonette in the area. Further, the data demonstrates that, on average, nearly half (49%) of residents residing in a flat live car free.

3.9 Road Safety

3.9.1 The most recently available (at the time of request) Personal Injury Accident (PIA) data has been obtained from HCC from 1 July 2015 to 30 June 2020. The study area includes the length of Broadwater Road from its junction with Bridge Road to the north to the A6129 in the south as agreed with HCC.

3.9.2 The PIA data details there were a total of 21 PIAs recorded. This included eight PIAs resulting in serious injuries and 13 PIAs resulting in slight injuries. There were no fatal PIAs recorded. The full data, including a map highlighting the locations of the PIAs is provided at Appendix B.

3.9.3 A review of the data reveals no accidents were recorded at the existing access junction, despite it being in use for much of the study period. Further, the majority of accidents causes are classed as a result of:

- Driver failing to look properly;
- Misjudged speed of other road user;
- Reckless driving; or
- Traveling to close.

3.9.4 Whilst any accident is regrettable, the number and severity recorded is not unusual for an urban road network. The majority of accidents were recorded at junctions where conflicting movements occur and as a result of driver error rather than highway constraints. There are no significant cluster of accidents and no clear consistent pattern of contributory factors.

3.10 Committed Development

3.10.1 This TA includes an assessment of the following committed developments in the vicinity of the area. the scope of committed developments was agreed with HCC during the pre-application discussions.

Wheat Quarter

3.10.2 The Wheat Quarter is a mixed use, residential development comprising of the following:

- Up to 1,340 dwellings;
- 114 extra car homes;
- Civic building including heal and community uses;
- Offices;
- Retail/ leisure including coffee shop, restaurant;
- Internal art centre; and
- Gym.

3.10.3 The development will provide vehicular access via Bridge Road and Broadwater Road, including pedestrian links and a pedestrian bridge towards Welwyn Garden City railway station.

29 Broadwater Road

3.10.4 The development at 29 Broadwater Road is for the construction of 128 flats with car and cycle parking. The site was previously occupied by an office block.

45 Broadwater Road

3.10.5 The development at 45 Broadwater Road is for the redevelopment of the site (a former office block) to a 104 unit care home.

37 Broadwater Road

3.10.6 The 37 Broadwater Road development is also a redevelopment of the previous site (a previous office block) for the construction of 24 flats with car and cycle parking provision.

3.11 Summary

3.11.1 The site is located on the edge of an opportunity area, where significant growth is proposed and enhancements to a site that already has access to a high quality network of walking, cycling, and public transport services. This is reflected in the low car ownership levels of existing residents in the area.

SECTION 4 Development Proposal

4.1 Overview

4.1.1 The development proposal is for the redevelopment of the site to provide 289 residential units with some ancillary commercial (community hub) space (110 sqm).

4.1.2 The following section sets out the development proposal with regard to access arrangements, parking and servicing.

4.2 Schedule of Accommodation

4.2.1 The proposed schedule of accommodation is presented in Table 4.1.

Table 4.1: Proposed Schedule of Accommodation

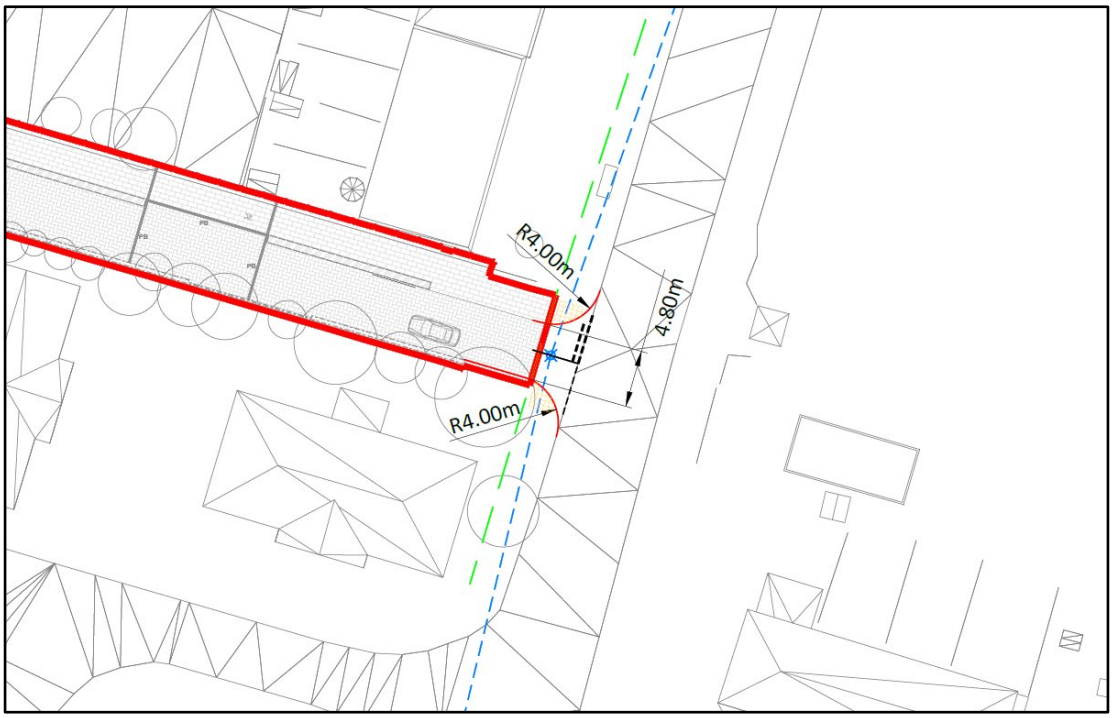
	Unit Nos.
Flats	
1 bed	129
2 bed	126
3 bed	26
4 bed	0
Sub-total	281
Houses	
4 bed	8
Sub-total	8
Commercial / Community Hub	
Class E/F	110 sqm

Source: Alan Camp Architects

4.3 Proposed Access Arrangements

4.3.1 The development will be accessed via the existing BioPark Drive access. The proposed access arrangements include modifications to the existing access to accommodate a residential development. The proposed access arrangements are shown in Drawing ITL16195-GA-005 with an extract at Image 4.1.

Image 4.1: Proposed Access – BioPark Drive



4.3.2 The proposed access arrangement has been designed with the following:

- 4.8m carriageway with localised widening to 5.5m;
- 3.1m shared footway/cycleway on the northern side of the access road;
- Landscaped verge between the foot/cycleway and the carriageway with "breaks" in the landscape to enable wider vehicles to pass, and for emergency vehicles to utilise the shared foot/cycleway to bypass any obstructions that may occur in the main carriageway; and
- 2.4m X 43m visibility splays at the access to Broadwater Road in accordance with the posted speed limit.

4.3.3 The proposal will also safeguard a potential pedestrian and cycle route to the north of the site to connect with the emerging Wheat Quarter development. This would provide future residents and visitors a more direct route towards Welwyn Garden City railway station and Welwyn town centre for access for additional services and facilities.

4.4 Secondary Pedestrian/ Cyclist/ Emergency Access

4.4.1 Paragraph 6.1 of the Chapter 6 of Section 2 of the Roads in Hertfordshire Highway Design Guide 3rd Edition (2011) states that ***"there will be a general presumption that not more than 300***

dwellings (or equivalent size of development) should be served from a single point of access to the wider road network". Therefore, with the site providing less than 300 dwellings, from a single point of access, the proposal meets the overall principle of the design guidance. However, during the pre-application discussions, HCC requested a review of the potential to provide a secondary pedestrian/ cyclist and emergency access point to the site. A review of options has been undertaken and is summarised below:

4.4.2 **Penn Way**

4.4.3 HCC initially suggested a route from the site towards Penn Way. However, Penn Way is a private road and therefore no rights exist over this land.

Broadwater Crescent

4.4.4 A review of a potential opportunity to provide a connection to the south of the site has been undertaken. As part of this review, the highway boundary in this area was obtained. The search revealed some third party land between the back of the highway extent and the application site and land within the applicant's control. As such this option would also be unfeasible due to land ownership constraints.

Wheat Quarter

4.4.5 The proposal will safeguard a potential pedestrian/cyclist route to the north of the site to connect with the Wheat Quarter site. However, as above, such a route is over third party land and therefore not within the applicant's control.

Access Road

4.4.6 It is noted during the pre-application discussions with HCC that their main concern is emergency access should the main access road be blocked. As such, the 3.1m shared footway/ cycleway on the northern side of the access road will also act as a potential emergency access route, should the main carriageway be blocked. The landscaping has been designed to accommodate a fire tender vehicle using the shared footway/ cycleway in case of an emergency. This is shown in Drawing ITL16195-GA-004.

4.5 Parking Provision

4.5.1 Appendix C includes colour coded plans illustrating the location and form of car, cycle, and motorcycle parking across the development, at two basement levels and at ground. The division of spaces is detailed further in this section.

Residential

Vehicles

4.5.2 The development proposal includes some 219 car parking spaces across the site for residents. This includes the following:

- 190 standard car parking spaces located as follows:
  - 148 – basement residents
  - 22 – basement visitors; and
  - 20 – surface level (including townhouse provision).
- 29 disabled parking spaces in the basement.

4.5.3 In addition, the proposal includes one car club space at the surface level and 15 motorcycle parking spaces within the basement.

4.5.4 The proposed parking provision equates to an overall parking ratio of 0.76 spaces per dwelling. As set out in Table 2.1, the site is located within Zone 2 and 3 of WHBC's parking standards which allows a reduction in car parking provision to take account of the site's good accessibility via non-car modes. In addition, this level of provision is in accordance with existing provision of local residents (see Table 3.6) which has an average car ownership of 0.62 cars/dwellings. It is noted that many of these will be older properties without design constraints, i.e. owners will likely have access to more parking spaces than required or have unrestricted parking available on neighbouring streets. Section 7 of this report provides a car parking management strategy, providing further support for their being an appropriate provision of car parking on site.

Electric Vehicle Charging Provision

4.5.5 The site will provide electric vehicle charging provision across the parking spaces. The proposal includes 22 spaces within the basement (including two disabled spaces) equipped with active

charging provision and a further 22 spaces (including a further two disabled spaces) with passive provision. This equates to an active provision of 10% and a further 10% of passive provision.

Car Club

4.5.6 Car clubs are attractive to people who make only occasional use of a vehicle and provide an alternative to residents to private car ownership. Car clubs contribute to sustainable transport because they provide a less car dependent way of urban living.

4.5.7 CoMo (a charity supporting the introduction of sustainable transport modes) have calculated that for every car club vehicle, it leads to a removal of 10.5 private cars from the road network as a result of member selling/not replacing private vehicles[4].

4.5.8 The proposal includes one dedicated space for a car club vehicle with an electric charging point. As part of the Travel Plan measures, and during the sales processes of the units, future residents will be provided with information regarding the car clubs, membership, and benefits.

Cycle

4.5.9 The proposal also includes cycle parking for all residential units. The cycle parking will be provided at a rate of one cycle parking space per home, in accordance with WHBC's standards (i.e. a total of 289 cycles). These are included in secure stores at the base of the cores to each of the apartment buildings. The proposal includes an additional 10 cycle parking spaces within a secure bike shelter for visitors. Each of the town houses will have a private store in their gardens.

Community Hub

4.5.10 The community hub includes six vehicular parking spaces at the ground floor, opposite the unit. This includes one disabled parking space. The provision of these spaces was requested by WHBC.

4.5.11 In addition, the community hub will be provided with one cycle parking space within the unit for long-stay (employees). A further eight cycle parking spaces will be located adjacent to the community hub within a covered area for visitors. This level of provision is in line with WHBC's standards.

[4] https://como.org.uk/shared-mobility/shared-cars/why/

4.6 Servicing and Deliveries

4.6.1 The proposal includes dedicated servicing and delivery turning areas for vehicles. The turning areas will be used by the community hub unit as well as any deliveries to the residential units and refuse servicing.

4.6.2 Swept path analysis has been undertaken at the site to illustrate servicing vehicles ability to sufficiently and safely manoeuvre to and from the site. Drawing No. ITL16195-GA-001 demonstrates a large refuse vehicle turning at the site, and Drawing ITL16195-GA-006 provides turning manoeuvres for a 7.5t box van which is considered the most common vehicle type to service a residential development.

4.6.3 In addition, a fire tender vehicle has been illustrated accessing the site. This is shown in Drawing ITL16195-GA-004. The fire and emergency arrangements have been reviewed and agreed with an appointed fire consultant as detailed in a separate planning document. However, the general approach is that the flatted elements will be serviced by dry risers, with the inlets located within the landscaped grounds, within 18m of the fire appliance. The town houses will have a sprinkler system and therefore a fire appliance only requires access to within 75m of all parts of the building.

SECTION 5 Opportunities for Sustainable Travel

5.1 Overview

5.1.1 This section sets out the sustainable transport strategy for the proposed development, including a review of the opportunities for future residents of the site to travel by sustainable travel modes.

5.2 Key Destinations

Journey Purpose

5.2.1 In promoting sustainable transport, it is important to consider the reasons why future residents of the proposed development will make journeys. The Department of Transport's National Travel Survey (NTS) identifies the proportion of all trips by purpose as set out in Table 5.1 below.

Table 5.1: Proportion of Trips per Year by Journey Purpose

Journey Purpose	Proportion of Trips
Leisure	26%
Shopping	19%
Commuting / Business	18%
Education/Escort Education	13%
Personal Business	9%
Other Escort	9%
Other (Including Just Walk)	6%

Source: Table NTS0409 Average number of trips (trip rates) by purpose and main mode: England, 2019, National Travel Survey 2019

5.2.2 The main reasons for travelling are therefore for leisure, shopping, commuting/ business, and education.

5.3 Local Facilities

5.3.1 The NTS data also identifies the mode share of journeys of different lengths. The data identifies that the vast majority (81%) of trips up to one mile (1.6km) are undertaken on foot. The data also shows that 30% of journeys between one and two miles will be on foot, i.e. a significant proportion of people are prepared to walk for journeys of up to 2 miles (3.2km). With regards to cycling, 8km is considered an acceptable cycling distance.

5.3.2 On this basis, the following walking and cycling distances have been used in this assessment:

- 1.6km – a comfortable walking distance where most people (circa 81%) will walk;
- 3.2km – an acceptable walking distance where walking is a realistic alternative to car use and where some people (circa 31%) are still prepared to walk; and
- 8km – an acceptable cycling distance.

5.3.3 A review of the existing local facilities in the vicinity of the site has been undertaken and is summarised in Table 5.2, including the walking and cycling journey times. A plan highlighting the location of these facilities to the site is provided at Figure 5.1 with an extract at Image 5.1.

Table 5.1: Summary of Local Facilities

Destination	Approx. Distance from Site	Walking Time	Cycling Time
Retail			
One Stop Convenience Store	500m	7 mins	2 mins
Aldi Supermarket	850m	11 mins	2 mins
Welwyn Garden City town centre	950m	12 mins	4 mins
The Howard Shopping Centre	950m	12 mins	4 mins
The Co-Operative Supermarket	1.1km	14 mins	4 mins
Cole Green Lane Local Shops	1.1km	14 mins	4 mins
Waitrose & Partners Supermarket	1.2km	15 mins	5 mins
Sainsbury's Supermarket	1.2km	15 mins	5 mins
Iceland Foods Supermarket	1.2km	15 mins	5 mins
Education			
Peartree Primary School	500m	8 mins	2 mins
Oaklands College	1.3km	16 mins	5 mins
Stanborough School	1.8km	23 mins	7 mins
Leisure			
Anytime Fitness Welwyn Garden City	1.1km	14 mins	4 mins
Gosling Sports Park	1.3km	16 mins	5 mins
Campus West Cinema	1.6km	20 mins	7 mins
Health			
Peartree Lane Surgery	500m	6 mins	2 mins
Boots Pharmacy	500m	7 mins	2 mins
Church Road Dental Practice	1.3km	16 mins	5 mins

Destination	Approx. Distance from Site	Walking Time	Cycling Time
Employment			
Burrowfield Business Park	850m	11 mins	3 mins
Bessemer Road Business Park	850m	11 mins	3 mins
Quadrant Park/ Mundells Employment Area	1.5km	19 mins	6 mins
Hatfield Business Park	4.9km	61 mins	20 mins
Other			
Welwyn Garden City railway Station	1.0km	13 mins	4 mins

Key:

Within a 'Walkable Neighbourhood' (800m)

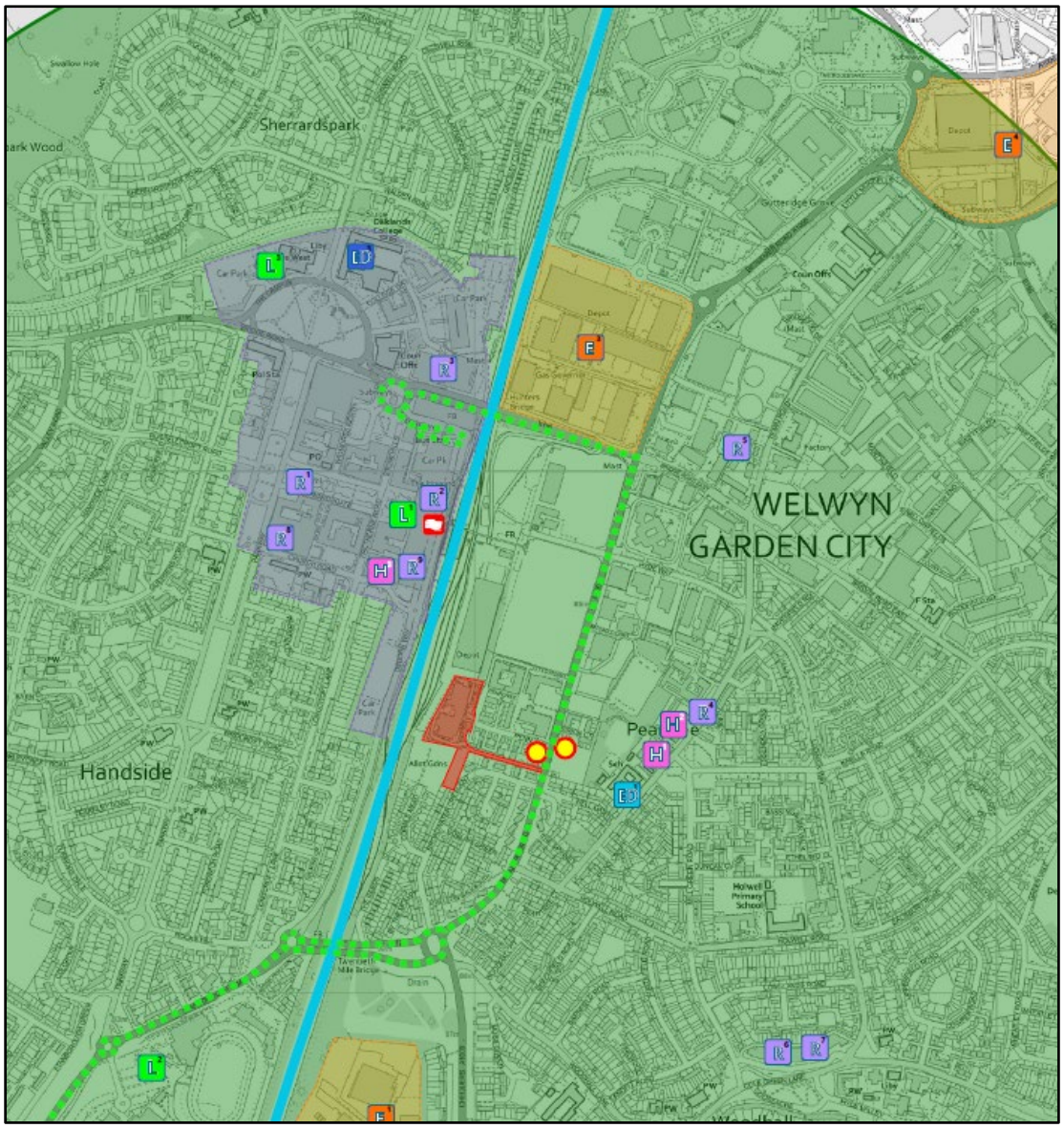
Within a distance where most people (circa 81%) will walk (1,600m)

Within a distance where walking is a realistic alternative to car use and where some people (circa 31%) are still prepared to walk (3,200m)

Source: Consultant's Estimates
Note: Distanced measured include full length of BioPark Drive – distances to the north may be reduced by circa 400m subject to access via Wheat Quarter site.
Walking speed – 1.33m/s
Cycling speed – 15km per hour

5.3.4 Table 5.1 demonstrates that there is a huge array of everyday local services and facilities within a reasonable walking and cycling distance of the site. These include leisure, retail, health and employment destinations with the majority of the services located within a 20 minute walk of the site. This provides real opportunities for future residents of the site to travel by sustainable modes and access key services without the need for access to a private vehicle.

Image 5.1: Local Facilities Plan Extract



Source: Figure 5.1

5.4 Framework Travel Plan

5.4.1 A Framework Travel Plan (FTP) has been produced (report ref: ITL16195-005) and should be read in conjunction with this TA. The FTP is produced in line with HCC Travel Plan Guidance and sets out a number of measures that will be implemented at the site to encourage sustainable travel, such as:

- A resident's travel information pack, including:
  - Information leaflet of local bus and rail services;

- Information regarding local facilities, including a map and walking and cycling times; and
- Details of local walking and cycling routes;
- Information and details to residents on the car club and its benefits; and
- Details of local cycle training information.

5.5 Summary

5.5.1 The site's urban location ensures it benefits from close proximity to a wide range of everyday services and facilities, the majority within a reasonable walking and cycling distance. These are accessible via the existing high quality foot and cycle facilities available, and may be assisted further by the BWOA enhancements.

5.5.2 Future residents will be informed of these sustainable travel options, which will be actively advertised to them, by way of the Travel Plan measures to be secured as part of the development.

SECTION 6 Traffic Impact

6.1 Overview

6.1.1 This section of the note sets out the estimated traffic impact of the development.

6.2 Existing Trip Attraction

6.2.1 The site is currently occupied by a vacant employment site known as the BioPark, a research and development (B1b land use) complex formerly owned and occupied by the University of Hertfordshire. The existing floor area of the site is some 13,972 sqm.

6.2.2 The potential trip attraction of the site as a research and development centre has been estimated using the TRICS database. The site has been vacant since the beginning of 2020 and therefore existing multi-modal surveys of the site are unavailable.

6.2.3 The trip rates for the existing land use have been extracted from the TRICS database based on the following parameters:

- Land use category: Employment (Office);
- Size Range: up to 20,000 sqm;
- Date range: January 2012 onwards; and
- Location: Town Centre and Edge of Town Centre sites within England (excluding Greater London) were included.

6.2.4 The extracted trip rates and resultant trip attraction (based on the existing floor area of 13,972sqm) is summarised in Table 6.1. The full trip rate report is provided at Appendix D.

Table 6.1: Existing Office Trip Rates and Trip Attraction

	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)			12 Hour (0700-1900)		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
Total Persons									
Trip Rates (per 100 sqm)	1.61	0.13	1.74	0.13	1.51	1.64	8.84	8.72	17.56
Trip Attraction (13,972 sqm)	225	18	243	18	211	229	1,235	1,218	2,453
Vehicles									
Trip Rates (per 100 sqm)	0.87	0.11	0.98	0.09	0.76	0.85	3.36	3.28	6.64
Trip Attraction (13,972 sqm)	122	15	137	13	106	119	469	458	928

Source: TRICS and Consultant's Estimates

Note: Numbers may not sum due to rounding.

6.2.5 Table 6.1 demonstrates the following:

- Up to 243 two-way total person trips and up to 137 two-way vehicle trips during the morning peak hour;
- Some 229 two-way total person trips and up to 119 two-way vehicle trips during the evening peak hour; and
- Circa 2,453 two-way total person trips and some 928 two-way vehicle trips across the 12 hour (0700-1900) weekday.

Business Park Trip Attraction – Sensitivity Test

6.2.6 During the pre-application scoping discussions, HCC requested that the site also be assessed as a 'Business Park' land use to take into account additional B1(b) sites within this land use in the TRICS database.

6.2.7 A review of the TRICS database has been undertaken for similar Business Park surveys based on the above comparable parameters. This has been undertaken as a sensitivity test. i-Transport consider the 'Office' trip rates the most comparable for the existing unit based on the single building and occupier that previously occupied the building.

6.2.8 It is noted that there are only a few sites within the 'Business Park' land use category that are comparable to the site, based on the above parameters. Further the sites selected in the Business Park land use predominately include B1(a) land uses, with few B1(b) sites requested by HCC.

6.2.9 The resultant trip rates and attraction of the site, as a Business Park, is summarised in Table 6.2. The full TRICS report is provided at Appendix E.

Table 6.2: Existing Business Park Trip Rates and Trip Attraction

	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)			12 Hour (0700-1900)		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
Total Persons									
Trip Rates (per 100 sqm)	2.26	0.44	2.70	0.40	1.56	1.95	10.54	10.88	21.41
Trip Attraction (13,972 sqm)	316	61	377	56	218	272	1,473	1,520	2,991
Vehicles									
Trip Rates (per 100 sqm)	1.53	0.3	1.83	0.24	0.96	1.22	6.94	7.00	13.94
Trip Attraction (13,972 sqm)	214	42	256	34	134	170	970	978	1,948

Source: TRICS and Consultant's Estimates

Note: Numbers may not sum due to rounding.

6.2.10 Table 6.2 demonstrates the Business Park total person and vehicle trip rates are considerably higher when compared to the office survey sites.

6.3 Proposed Trip Generation

6.3.1 In order to derive the trip generation for the proposed residential development, trip rates have been obtained from the TRICS trip generation database for comparable residential sites with the following selection criteria:

- Land use category: Residential (flats privately owned);
- Size Range: 100-500 dwellings;
- Date range: Only recent surveys since January 2012 were included; and
- Location: Edge of Town Centre and Suburban sites within England (excluding Greater London) were included.

6.3.2 Table 6.3 summarises the residential trip rates for the morning and evening peak hour obtained from the TRICS trip generation database and the subsequent total person and vehicular trip generation. This section assesses a proposed development of up to 300 residential dwellings. The full TRICS output is included as Appendix F.

Table 6.3: Proposed Residential Trip Rates and Trip Generation – Private Flats

	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)			12 Hour (0700-1900)		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
Total Persons									
Trip Rates (per dwelling)	0.10	0.50	0.60	0.43	0.21	0.64	2.65	2.72	5.37
Trip Generation (300 Units)	30	150	180	130	62	191	795	817	1,612
Vehicles									
Trip Rates (per dwelling)	0.06	0.18	0.24	0.18	0.10	0.28	1.18	1.22	2.40
Trip Generation (300 Units)	17	54	71	54	29	83	355	365	721

Source: TRICS and Consultant's Estimates.

Note: Numbers may not sum due to rounding.

6.3.3 Table 6.3 demonstrates that the proposal is expected to generate the following:

- Up to 180 two-way total person trips and up to 71 two-way vehicle trips during the morning peak hour;
- Some 190 two-way total person trips and up to 83 two-way vehicle trips during the evening peak hour; and
- Circa 1,612 two-way total person trips and some 721 two-way vehicle trips across the 12 hour (0700-1900) weekday.

Modal Split Trip Generation

6.3.4 The proposed multi-modal trip generation of the site has been estimated using the TRICS data and the local modal split data (see Table 3.4). This methodology of multi-modal trip attraction from the site was requested by HCC during the pre-application discussions to ensure local characteristics are reflected. The resultant multi-modal trip generation of the proposed development is summarised in Table 6.4.

Table 6.4: Residential Multi-Modal Trip Generation

Mode and Modal Split		Trips Generation					
		AM Peak Hour (0800 – 0900)			PM Peak Hour (1700 – 1800)		
		In	Out	Two-Way	In	Out	Two-Way
Car or Van Driver	57%	17	85	103	74	35	109
On Foot	15%	5	23	27	20	9	29
Train	14%	4	20	24	18	8	26
Bicycle	4%	1	6	7	5	2	8
Passenger in a Car or Van	4%	1	6	8	6	3	8
Bus, Minibus, Coach	3%	1	5	6	4	2	6
Motorcycle, Scooter	1%	0	1	2	1	1	2
Underground, Metro, Light Rail	1%	0	2	2	1	1	2
Taxi	1%	0	1	1	1	0	1
Other	0%	0	1	1	1	0	1
Total Persons	100%	30	150	180	130	62	191

Source: Consultant's Estimates Note: Numbers may not sum due to rounding.

6.3.5 The estimated multi-modal trip generation of the site, using TRICS trip generation and the local mode share (from the 2011 Census), reveals the site has the potential to generate the following:

- Up to 121 (two-way) vehicular trips (including car/ van driver, taxi, motorcycle and passenger in a car or van) during the peak hours;
- Circa 36 (two-way) walking and cycling trips in the peak hours; and
- Some 36 (two-way) trips by public transport during the network peak hours.

6.3.6 A comparison between the vehicular trip generation of the proposal using the TRICS trip rates and the vehicular mode share using the Census data reveals the vehicular trips using the Census data will result in up to 32 additional (two-way) vehicles when compared to the trip generating estimates using the TRICS data.

6.3.7 As such, the following assessments use the multi-modal trip generation estimates set out using the total persons and mode share estimates from the Census. This presents a 'worst case' assessment scenario of the proposed development.

Community Use

6.3.8 The proposal also includes a small (less than 100 sqm) community use unit. The unit is anticipated to be an ancillary use to the development and therefore has not been specifically assessed. Any small number of external trips attracted to it would be no more than the "over" assessment of 300 dwellings assessed for the residential element (compared to the actual proposal of 289 dwellings).

6.4 Net Impact

6.4.1 The net impact of the development proposal at the site, with regard to total persons and vehicles, across the network peak hours and across the 12 hour day is demonstrated in Table 6.5. For a robust assessment (as the proposed use for residential use results in lower trip rates than both of the existing trip estimate provided), the existing trip attraction of the site is assessed against the 'office' trip rates as this results in the lowest net change.

Table 6.5: Net Impact

	Morning Peak Hour (0800-0900)			Evening Peak Hour (1700-1800)			12 Hour (0700-1900)		
	Arr	Dep	Two-Way	Arr	Dep	Two-Way	Arr	Dep	Two-Way
Total Persons									
Existing	225	18	243	18	211	229	1,235	1,218	2,453
Proposed	30	150	180	130	62	191	795	817	1,612
Difference	-195	+132	-63	+112	-149	-38	-440	-401	-841
Vehicles									
Existing	122	15	137	13	106	119	469	458	928
Proposed	17	85	103	74	35	109	453	466	919
Difference	-105	+70	-34	+61	-71	-10	-16	+8	-9

Source: Consultant's Estimates

6.4.2 As would be expected, there is a significant reduction in inbound trips at the site in the morning peak as a result of the proposal changing the site from the being a net "attractor" as an employment use, and a net "generator" as a residential use. The opposite patterns also occur, as to be expected, in the evening peak hour.

6.4.3 Overall, the results demonstrate that the development proposal will result in the following:

- an overall reduction in the total two-way person trips across the day, including a reduction of up 60 two-way total person trips during the network peak hours;
- an overall reduction in two-way vehicle trips across the day and during the network peak hours, including:
- a reduction of over 30 vehicles during the morning peak hour;
- circa 10 fewer vehicles during the evening peak hour; and
- no significant change in overall vehicle trips across a 12 hour day.

6.4.4 This is also a "doubled" worst case as it assumes higher vehicle trips from the residential element using the Census data as opposed to the TRICS data. As such, the assessment considers the highest residential trip rate estimates for the proposal, compared to the lowest vehicle trip rate from the existing use, therefore minimises the difference between the existing and proposed vehicle trips at the site. Despite this, it remains clear that the proposal results in a lower vehicular generation at the site in the morning and evening peak hours, as well as across the day, compared to its recent historic occupation.

6.5 Trip Distribution

6.5.1 It is likely that future residents will experience similar travel patterns to existing residents in the local area, and as such, in order to determine where people will travel to for work from the development, the 2011 Census journey to work (WU03EW) data has been obtained for the MSOA Welwyn and Hatfield 007[5], within which the site is situated. From this data the top workplace destinations, by car, have been compiled, as presented in Table 6.6.

[5] During the pre-application scoping process, HCC requested the travel to work data be used for the output area 'Welwyn and Hatfield 007A'. However it is noted that the travel to work dataset from the 2011 Census does not provide the data for this level of detail.

Table 6.6: Top Workplace Destinations – Car Driver

Destination	%
Welwyn Hatfield	28%
Stevenage	8%
St Albans	8%
East Hertfordshire	8%
North Hertfordshire	8%
Central Bedfordshire	5%
North	6%
South	28%
Total	100%

Source: WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level) – Welwyn and Hatfield MSOA 007

Note: Numbers may not sum due to rounding.

6.5.2 Table 6.6 demonstrates that nearly a third of people residing in the MSOA Welwyn and Hatfield 007 work within the Welwyn and Hatfield district with four of the five other top destinations within Hertfordshire. The proposed distribution of vehicles from the site access, based on the data outlined in Table 6.6, is presented in Figure 6.1.

6.5.3 The resultant development assignment of the proposed dwellings onto the local highway network is shown in Figures 6.2 and 6.3 for the morning and evening peak hours respectively.

6.6 Committed Development

6.6.1 During the scoping discussions, HCC requested the following developments to be considered as committed developments:

- Wheat Quarter – 1,340 dwellings and commercial uses;
- 29 Broadwater Road – 128 dwellings;
- 45 Broadwater Road – 104 unit care home; and
- 37 Broadwater Road – 24 dwellings.

6.6.2 The supporting Transport Assessment or Statement, where applicable, for each application has been reviewed and the estimated traffic impacts extracted. The extracted traffic flows for each development along Broadwater Road have been distributed onto the proposed site access and is shown in Figures 6.4 to 6.13.

6.6.3 Where no traffic flow data is presented in the submissions (i.e. the 29, 45 and 37 Broadwater Road applications), the proposed development trip generation has been distributed onto Broadwater Road based on the proposed trip rates and/or distribution set out for this application site.

6.7 Future Design Year

6.7.1 The applicant considers that it is appropriate to test development impacts at the initial year of opening of the development, which is the year when the first part of the development is open for occupation and when the development would have the largest impact on the highway network in percentage terms (as it would not be "diluted" by any background growth). In this case, the year of opening will be 2023. The assessment takes account of traffic associated with the full development proposal taking into account appropriate background traffic growth to 2023.

6.7.2 The local growth rates for Welwyn and Hatfield have been obtained from TEMPRO for the period 2020 to 2023 and are summarised in Table 6.7.

Table 6.7: Local TEMPRO Growth Rates

	2020-2023
Morning Peak Period	1.051
Evening Peak Period	1.051
Average Weekday	1.053
Average Day	1.054

Source: TEMPRO

6.7.3 The TEMPRO flows show a circa 5% growth in vehicle flows between 2020 to 2023. In the context of the Covid 19 pandemic, it is considered that applying such growth is extremely robust, with increases likely to be minimal over the next three years. Most growth locally will also be from the BWOA and neighbouring sites, which are accounted for in the modelling separately. As a result, there will be a degree of double counting of such new residential occupiers on Broadwater Road.

6.7.4 The 2023 morning and evening peak hour flows, without the proposed development, are illustrated in Figure 6.14 and 6.15 respectively.

6.7.5 The development assignment (see Figures 6.2 and 6.3) have been added to the 2023 without development traffic flows to create the 2023 with development flows. These are shown in Figures 6.16 and 6.17 for the morning and evening peak hours respectively. This too captures a robust assessment of the estimated committed development traffic generation noting that the applications at 29, 37 and 45 Broadwater Road all result in a net reduction, as a result of their proposals. However, for the purposes of this assessment the 'gross' proposed development traffic has been added onto the local highway network, and thus these figures are very much a 'worst case' assumption.

6.8 Assessment Scenarios

6.8.1 The three assessment scenarios to be tested are summarised below:

- 2020 observed traffic flows (with Covid-19 adjustment) – (Figures 3.1 and 3.2);
- 2023 future year 'without development' – including 'growthed' traffic and committed development – (Figures 6.14 and 6.15); and
- 2023 future year 'with development of up 300 dwellings' – including 'growthed' traffic, committed development and development assignment (Figures 6.16 and 6.17).

6.9 Proportional Impact

6.9.1 As set out in Table 6.5, the development is anticipated to result in a net reduction in vehicular flows on Broadwater Road compared to the recent historic position of the site occupied by the research and development user. With two-way vehicular flows in 2023 on Broadwater Road at the site access anticipated to be circa 1,500 in the morning peak hour, and 1,650 in the evening peak hour, the proposal would actually result in a circa 2% and 1% reduction in flows in the morning and evening peak hours respectively.

6.9.2 However, to provide a like for like analysis, the proportional increase in traffic flows as a result of the development in the 2023 design year compared to traffic flows without development in 2023 is summarised in Table 6.8.

Table 6.8: Proportional Increase in Total Traffic Flows – 2023

Junction	Total Peak Hour Traffic Flows (PCUs)					
	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	2023 Base	2023 Base With Dev't	% Increase	2023 Base	2023 Base With Dev't	% Increase
Broadwater Road (northbound)	709	757	*6.8%*	799	855	*7.0%*
Broadwater Road (southbound)	808	862	*6.7%*	856	909	*6.2%*

Source: Consultant's Estimates

6.9.3 Table 6.8 summarises that the proposal would result in a maximum increase in traffic flows of 7% on Broadwater Road during the peak hours. However, this assumes that the site would remain unoccupied in its current state and takes no account of the recent historic position of it attracting a greater number of trips than would occur under its redevelopment. The proportional impact of the development when assessed as the 'net impact' is summarised in Table 6.9.

Table 6.9: Proportional Increase in Total Traffic Flows – 2023 – Net Impact

Junction	Total Peak Hour Traffic Flows (PCUs)					
	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	2023 Base	2023 Base With Dev't	% Increase	2023 Base	2023 Base With Dev't	% Increase
Broadwater Road (northbound)	709	693	*-2.3%*	799	795	*-0.5%*
Broadwater Road (southbound)	808	790	*-2.2%*	856	851	*-0.6%*

Source: Consultant's Estimates

6.9.4 Table 6.9 demonstrates that when applying the net impact (see Table 6.5) to the future traffic flows on Broadwater Road, the development proposal will actually result in a circa 2% reduction in flows during the morning peak hour and up a 1% reduction in the evening peak hour.

6.10 Operational Assessments

6.10.1 The assessment scenarios have been tested using JUNCTIONS 9 software. This is an industry standard software package that models capacity, queuing and delay at junctions.

6.10.2 Due to the relatively minor increase in flows along Broadwater Road, and the overall reduction in vehicular trips at the site, as a result of the proposal, operational assessments have only been undertaken at the site access junction.

6.10.3 As agreed during the pre-application discussion with HCC, no further testing or modelling of the wider highway network is required.

6.10.4 A summary of the operational assessment results for the site access junction for three assessment scenarios is provided in Table 6.10. It is noted that at the time of the 2020 traffic surveys, the site was vacant. As such, the existing trip attraction estimates (see Table 6.1) have been added to the 2020 base flows.

6.10.5 The full operational assessment results are presented in Appendix G.

Table 6.10: Operational Assessments – Site Access/ Broadwater Road

	Morning Peak Hour			Evening Peak Hour		
	RFC	Queue (PCUs)	Delay (s/PCU)	RFC	Queue (PCUs)	Delay (s/PCU)
2020 'Observed'						
Site Access	0.05	0	11	0.31	0	14
Broadwater Road (North)	0.18	1	5	0.02	0	4
2023 Without Development						
Site Access	0.07	0	15	0.48	1	28
Broadwater Road (North)	0.27	1	5	0.03	0	4
2023 With Development						
Site Access	0.40	1	26	0.20	0	23
Broadwater Road (North)	0.04	0	4	0.19	1	4

Source: Junctions 9

6.10.6 Table 6.10 demonstrates the existing site access operates well within capacity during the network peak hours, with minimal queueing and delays. The operation of the junction with the 'with development' traffic also demonstrates the junction will operate within capacity, with an overall betterment in the evening peak hour.

SECTION 7 Parking Management Strategy

7.1 Overview

7.1.1 The proposal will provide a total of 226 car parking spaces across the site as illustrated in the plan at Appendix C. A breakdown of these spaces is provided in Table 7.1.

Table 7.1: Proposed Car Parking Provision

	Parking Spaces
Residential	
Basement	
Standard	148
Disabled	29
Visitor	22
Surface	20
Residential Total	***219***
Community	
Surface	
Standard	5
Disabled	1
Car Club	1
Community Total	***7***
Total Site	**226**

7.2 Residential Parking Spaces

7.2.1 The proposal includes 219 spaces for residents. This includes a mix of spaces within the basement car park and at surface. Of the 219 residential spaces, 197 will be allocated to specific residential units.

7.2.2 The spaces within the basement will be numbered and allocated to specific residents. Residents with an allocated basement space will be provided with a fob/ electronic key to permit vehicular access. Residents without an allocated space will not be provided a fob for vehicular entry.

Residential Parking Provision

7.2.3 The residential parking standards are set out in Table 2.1. Based on the proposed development schedule and the WHBC's standards, the proposal should provide between 77 to 285 spaces. This is summarised in Table 7.2.

Table 7.2: Proposed Parking Provision based on WHBC Standards

Bedroom	Car Parking Standards		Proposed Units		Maximum Parking Demand	With Parking Reduction
	Zones 1 and 2	Elsewhere	Zones 1 and 2	Elsewhere		
1 bedroom dwelling	0.75 spaces per dwelling	1.25 spaces per dwelling	129*	0	97	24-48
2 bedroom dwelling	1 space per dwelling	1.5 spaces per dwelling	124	3	129	33-65
3 bedroom dwelling	1.5 spaces per dwelling	2.25 spaces per dwelling	23	2	39	11-21
4 bedroom dwelling	2 spaces per dwelling	3 spaces per dwelling	0	8	24	12-18
Total			276	13	289	80-152

Source: Consultant's Estimates * includes studios – standards allows a 25-50% provision in Zone 2, and 50-75% in Zone 3

7.2.4 The proposal will provide a parking ratio for the residential units of 0.76 spaces per unit. As set out in Section 2, the WHBC parking standards allow for a reduction in car parking provision for developments in sustainable locations. The provision of 219 spaces compared to the maximum permissible 289 spaces equates to the site providing an overall 76% of the total maximum permissible.

7.2.5 This level of car parking is considered suitable given the provision is provided in accordance with local standards, which allow for a reduction in sustainable locations;

- The Manual for Streets (MfS) states that a reduced parking provision can work successful when it is possible for residents to reach day-to-day destinations, such as jobs, schools and shops, without the use of a car. This is highlighted within the accessibility section (see Section 5);

- MfS goes on to state that this will normally be in town and city centres where "there will be good public transport and places that can be accessed easily on foot and by cycle. For residents who choose not to own a car, living in such an area may be an attractive proposition";
- The site is located 1km (equivalent to a 12 minute walk) from Welwyn Garden City rail station and less than 100m (equivalent to a two minute walk from the closest bus stops);
- The site is extremely well located to a number of everyday services and facilities within Welwyn town centre;
- The 2011 Census car ownership data demonstrates 49% of local residents in flats do not own a car (applying this to the development proposal would equate to 142 units living 'car free');
- The average car ownership per flatted unit in the local area, taken from the 2011 Census is 0.62 cars per unit and as such illustrates a provision of less than one car parking space per unit;
- Parking permits will be available to all flats via a 'first come, first served' basis with a maximum of one car parking permit will be issued to each unit. Those units without car parking will not be issued with a vehicle garage fob;
- Future residents will be made fully aware during the sales process if the unit has allocated parking; and
- All units will be provided with a residential travel information pack which sets out local walking and cycling maps of the area, public transport information and details of the local car parking charges and information.

7.3 Visitor Parking Spaces

7.3.1 The proposal includes some 22 visitor spaces across the site. These will be provided on the ground floor, surface area parking as well as within the basement car park. The spaces will be managed by the on-site management team who will implement the following measures:

- Allow access for visitor vehicles;
- Instruct visitors to what parking space to use;
- Ensure there is a turnover of the visitor spaces, with a maximum stay of 24 hours per bay; and

- Liaise with residents regarding the use of visitor spaces.

7.4 Community Hub Parking Space

7.4.1 The proposal includes six parking spaces for the community hub unit. This level of provision was requested by WHBC during the pre-application discussions. The spaces will be marked for use by visitors and staff of the community hub only.

7.5 Car Club Space

7.5.1 The proposal includes provision of one space, dedicated for us by a car club operator. The space will be demarcated as use by the car club only. During the sales process, future residents will be informed of the car club, including the benefits of a membership, as well as the parking arrangements for the space.

SECTION 8 Summary and Conclusions

8.1 Summary

8.1.1 HG Group has appointed i-Transport LLP to provide highways and transport advice in relation to their forthcoming planning application and redevelopment of the BioPark site in Welwyn Garden City. The planning application is for the following:

> ***"Demolition of existing buildings and construction of residential units (Use Class C3) and community hub (Use Class E/F.2), with public realm and open space, landscaping, access, associated car and cycle parking, refuse and recycling storage and supporting infrastructure".***

8.1.2 The proposal is for the construction of 289 residential dwellings, accessed via BioPark Drive with an ancillary on-site community hub (land use class E/F.2). The proposal includes a mix of townhouses and flats and will be supported by car and cycle parking spaces, including car club spaces.

8.1.3 The site is located within Welwyn Hatfield Borough Council (WHBC) district and Hertfordshire County Council (HCC) is the local highway authority. The site is within the southern end of the Broadwater West Opportunity Area (BWOA). Access to the site is via BioPark Drive from the A1000 Broadwater Road.

8.1.4 The site is currently occupied by a vacant employment site known as the BioPark, a research and development (B1b land use) complex formerly owned and occupied by the University of Hertfordshire.

8.1.5 There are wide footways located on both sides of Broadwater Road in the vicinity of the site. Dropped kerbs and tactile paving are provided along the majority of accesses, aiding pedestrian connectivity. In addition, there are a number of cycle routes in the vicinity of the site, including a dedicated off-carriageway pedestrian/cycleway on the eastern side of Broadwater Road providing onward links to the town centre via Bridge Road to the north and National Cycle Networks 12 and 61 to the south.

8.1.6 The Penn Way bus stops are located adjacent to the site access on Broadwater Road. Both stops are served by the 601 AlbanWay bus route. The 601 bus service routes between Welwyn Garden City and Borehamwood via Hatfield and St Albans. Welwyn Garden City railway station is located circa 1km walking distance, via BioPark Drive and Broadwater Road, from the site (equivalent to

a 12-minute walk). The station provides access to frequent services serving destinations such as London Kings Cross, Cambridge and Royston.

8.1.7 An Automatic Traffic Counter (ATC) was installed to record traffic speeds, classifications and volumes on Broadwater Road for a period of seven days (8 November 2020 to 14 November 2020). The 85th%tile speed is 29 mph both north and southbound. This demonstrates the 85%tile speeds are below the posted speed limit of 30mph along Broadwater Road. A review of the traffic volumes has also been undertaken with the data factored to reflect 2019 levels as a result of Covid-19 restrictions.

8.1.8 The local Census data has been reviewed for residents in the local area. The data demonstrates that existing residents in the local area predominately travel to work by car (57%) with a further 19% walking or cycling and 17% by public transport. The local car ownership levels have also been extracted which demonstrates that the average car ownership for flats/ maisonettes is 0.62 cars per unit per unit. Further, the data demonstrates that, on average, nearly half (49%) of residents residing in a flat live car free.

8.1.9 A review of the recent road safety data for the latest five year period does not demonstrate any existing issues on the local highway network. The data reveals no PIAs have occurred at the site access in the latest five year period.

8.1.10 The proposed access arrangements include modifications to the existing access to accommodate a residential development and improvements to the access on Broadwater Road, including tactile paving and dropped kerbs.

8.1.11 The proposal includes a 3.1m shared footway/ cycleway along the northern side of the access road into the site. This route will also be used as an emergency access, should the main carriageway be obstructed.

8.1.12 The development proposal also includes a safeguarded potential future route to the north of the site connecting through to the Wheat Quarter.

8.1.13 The development includes some 219 car parking spaces across the site for residents. This equates to a parking ratio of 0.76 spaces per resident. In addition, the site will provide allocated visitor parking, disabled parking, a car club space and 22 spaces equipped with active electric vehicle charging provision and a further 22 with passive provision. The provision is in accordance with the WHBC's parking standard in sustainable Zone 2 and 3 locations such as this.

8.1.14 Cycle parking will also be provided for residents and visitors with one space per residential dwelling and 10 additional visitor spaces.

8.1.15 The community hub unit will include six car parking spaces, including one disabled parking space, for staff and residents, as agreed with WHBC, and three cycle parking spaces.

8.1.16 The site layout has been designed to accommodate a large refuse vehicle, 7.5t box van and fire tender. The layout includes dedicated turning heads to allow for these, occasional, larger vehicles to enter and exit in forward gear.

8.1.17 A review of the site's accessibility to key destinations, such as retail, leisure, employment and education facilities has been undertaken. The site is extremely well located, and within a reasonable walking and cycling distance, of a range of everyday services and facilities. Further, the site is accessible by railway and local bus for journeys further afield.

8.1.18 A Framework Travel Plan has been prepared to support the submission and sets out a range of measures that will be implemented to encourage and support future residents and visitors to travel to and from the site by sustainable modes as well as mode shift targets.

8.2 Conclusions

8.2.1 With reference to the key transport tests set out in paragraphs 108 and 109 of the NPPF, the main conclusions of the transport assessment are that:

- The site is in a highly sustainable location in transport terms. The proposed development is located where the need to travel will be minimised and well located for residents to 'take up' the opportunities for sustainable travel in the context of its location;
- The site will provide safe and appropriate access to the site for all people; and
- The transport impact will be negligible in terms of capacity and congestion and would have a beneficial impact on highway safety through the reduction in site traffic and an improved access on Broadwater Road.

8.2.2 Against this background, the development proposal is considered acceptable in transport and highways terms, can be accommodated within the existing highway infrastructure, and the cumulative impact would be considered not severe.

DRAWINGS

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OLYMPUS (WITH ELITE 6 - 8X4MS CHASSIS)

Overall Length	11.375m
Overall Width	2.550m
Overall Body Height	3.500m
Min Body Ground Clearance	0.304m
Track Width	2.550m
Lock to lock time	6.50s
Kerb to Kerb Turning Radius	10.329m

i-Transport
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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: FOR INFORMATION

TITLE: VEHICLE TRACK ANALYSIS - REFUSE VEHICLE

PROJECT: BROADWATER GARDENS

CLIENT: WELWYN PARK HOMES LTD

DRAWN:	CHECKED:	APPROVED:
JMc	MD	NM
PROJECT No: ITL16195	SCALE @ A2: 1:500	DATE: 30.11.20

DRAWING No: ITL16195-GA-001 REV: C