

RECEPTOR	DESCRIPTION OF EFFECT	SCALE AND NATURE	SIGNIFICANT / NOT SIGNIFICANT	GEO	D / I	P / T	ST / MT / LT
Impact on retail (current and future residents)	The proposed local centre will provide a vibrant centre for the local community providing them with a diverse mix of shops, cafes, restaurants and services to cater for both employees and local residents.	Minor beneficial	Not significant	District	D	P	LT
Additional expenditure supported by operational workers (current and future businesses)	The Proposed Development would support additional worker expenditure of £9.1m.	Minor beneficial	Not significant	Local Area	D	P	LT
Provision of open space and public realm (current and future residents)	The Proposed Development will provide a significant uplift in open space and public realm.	Moderate/ minor beneficial	Not significant	Local Area	D	P	LT
Impact on leisure facilities (current and future residents)	The Proposed Development results in the loss of an onsite leisure facility including pool. However this is a small facility with low operating capacity. It is a private members facility and there are alternatives nearby.	Negligible	Not significant	District	D	P	LT
Impact on housing need and affordability (current and future residents)	The Proposed Development is expected to increase the housing need by 4% above the current standard method requirement at the district level. It represents up to a 1.4% increase on the existing stock. The resulting impact on affordability is difficult to ascertain due to the vast number of factors that impact affordability.	Minor adverse	Not significant	District	D	P	LT

Key: Geo: Geographical level of effect; Scale and Nature: combines the magnitude of impact with the sensitivity and assigns the scale and nature of effect using **Table 12.8**; D/I Direct or Indirect effect; P/T Permanent or Temporary effect ; ST/MT/ LT Short term, Medium term, or Long term effect.

Mitigation

Local employment and skills enhancement

- 12.181 The Applicant is committed to a coordinated and detailed **Employment and Skills Strategy**, which includes a range of commitments which will be secured in a Section 106 Agreement. These measures are likely to enhance the effect as it will directly address local issues in the labour market.

Residual Effects

12.182 The list below provides an evaluation of the residual effects, once mitigation or enhancement measures are in place. A description of the residual effect is provided, along with the assessment of its significance:

- Local employment and skills enhancement – from moderate to major beneficial impact on employment generation in the district. This would result in a moderate beneficial effect which is deemed significant.

Summary of Impacts

12.183 Please see **Table 12.25** for summary of impacts table submitted alongside this EIA chapter.

Table 12.23: Summary of Impacts: Socio-Economics

DESCRIPTION OF IMPACT		GEOGRAPHICAL IMPORTANCE	RECEPTOR SENSITIVITY	MAGNITUDE	IMPACT BEFORE MITIGATION				MITIGATION	IMPACT AFTER MITIGATION (RESIDUAL)			
					ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE		ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE
Displacement of existing workers and businesses		Site	Mod	Mod	Adv	Irrev	ST	Not Sig.	No mitigation	Mod./Min Adv	Irrev	ST	Not Sig
Operational employment generation		Sub-reg	Low	Neu	Ben	Irrev	LT	Not Sig	No mitigation	Neg	Irrev	LT	Not Sig
Operational employment generation		Dist	Low	Min	Ben	Irrev	LT	Not Sig	No mitigation	Min Ben	Irrev	LT	Not Sig
Local jobs and skills		Dist	Mod	Mod	Ben	Irrev	LT	Not Sig	Commitments by Applicant secured via S106 agreement.	Mod Ben	Irrev	LT	Sig
Additional contribution towards commercial floorspace		Dist	High	Maj	Ben	Irrev	LT	Sig	No mitigation	Maj/Mod Ben	Irrev	LT	Sig
Impact on retail		Dist	Mod	Min	Ben	Irrev	LT	Not Sig	No mitigation	Min Ben	Irrev	LT	Not Sig
Additional expenditure supported by operational workers		Loc	Mod	Min	Ben	Irrev	LT	Not Sig	No mitigation	Min Ben	Irrev	LT	Not Sig
Provision of open space and public realm		Loc	Mod	Mod	Ben	Irrev	LT	Not Sig	No mitigation	Mod./Min Ben	Irrev	LT	Not Sig

DESCRIPTION OF IMPACT		GEOGRAPHICAL IMPORTANCE	RECEPTOR SENSITIVITY	MAGNITUDE	IMPACT BEFORE MITIGATION				MITIGATION				IMPACT AFTER MITIGATION (RESIDUAL)			
					ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE					ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE
Impact on leisure facilities		Dist	Low	Neu	Adv	Irrev	LT	Not Sig	No mitigation				Neg	Irrev	LT	Not Sig
Impact on housing need and affordability		Dist	Mod	Min	Adv	Irrev	LT	Not Sig	No mitigation				Min Adv	Irrev	LT	Not Sig

Key:

Loc: Local Mod: Moderate Neu: Neutral Adv: Adverse Rev: Reversible ST: Short Term Neg: Negligible
Dist: District Min: Minor Maj: Major Ben: Beneficial Irrev: Irreversible LT: Long-Term Sig: Significant

Transport

13

13.0 Transport

Introduction

- 13.1 This chapter addresses the transport impacts of the Proposed Development. It has been prepared by Waterman Infrastructure and Environment Ltd (“Waterman”) to assess the impacts of the Proposed Development in relation to the effects it would have during the demolition and construction works and once the Proposed Development is completed. An assessment has also been undertaken should the construction and operational phases overlap. Mitigation measures and proposed monitoring arrangements are identified, where appropriate to avoid, reduce or offset any significant adverse impacts and / or enhance likely beneficial impacts. Taking into account the mitigation measures and proposed monitoring arrangements, the nature and significance of the likely residual effects of the Proposed Development are described.
- 13.2 This chapter is supported by the following technical appendices.
- **Appendix 13.1:** Transport Assessment (August 2023);
 - **Appendix 13.2:** Travel Plan (August 2023);
 - **Appendix 13.3:** Car Parking Management Plan (August 2023); and
 - **Appendix 13.4:** Delivery & Servicing Plan (August 2023).
- 13.3 The assessment is carried out with due regard to the following guidance:
- National Planning Policy Framework (NPPF) 2021;
 - Cambridge City Council Local Plan (2018);
 - Cambridgeshire and Peterborough Combined Authority (CPCA) Local Transport Plan (2015);
 - Cambridgeshire’s Active Travel Strategy (2023); and
 - Greater Cambridge Sustainable Design and Construction (2020).
- 13.4 A summary of the above guidance documents and legislative instruments is included in the Transport Assessment (TA) (**Appendix 13.1**).

Potential Impacts

- 13.5 This chapter addresses the effects of the construction and operational development upon:
- Traffic flows and impact on the local highway network;
 - Pedestrian and cycle journeys, accessibility and facilities;
 - Parking supply and demand; and
 - Access and servicing arrangements of the Site.

Construction Impacts

- 13.6 In this stage, construction staff and materials would need to access the Site. It is envisaged that staff movements would be managed through a Construction Phase Travel Plan, including measures to prioritise use of the existing Park & Ride and rail/bus regime. Deliveries of goods and materials that have to take place by road would be directed to use the principal road

network (i.e. via A1134 Newmarket Road) and to avoid residential areas and schools where possible. Timing of deliveries and exits to the network would also be implemented in line with a Construction Environmental Management Plan (CEMP). A copy of the draft CEMP can be found in **Appendix 4.2**.

13.7 The potential effects during the construction phase of the Proposed Development, including temporary disruption to pedestrians, cyclists and road vehicle users and temporary traffic generation in relation to HGVs during the construction works is considered.

13.8 Given the outline nature of the planning application, there is limited information available on the proposed construction works. The transport and access effects of the construction of the Proposed Development would be dependent on various factors including the phasing of construction works and construction processes adopted.

13.9 The development construction traffic flows would be used to determine the environmental impacts of the development in terms of transport during the construction phase.

Operational Impacts

13.10 The Proposed Development would operate a robust Monitor and Manage strategy through the Travel Plan (**Appendix 13.2**). This is predicated on limited on-site parking, and limited access to parking based on eligibility criteria, together with a robust public transport provision and supporting enhancements to the walking and cycling connections to/from the Site. The net effect of the strategy, applied from the outset, though all build out phases, is to reduce the number of vehicles associated with the Proposed Development compared to the existing use.

13.11 Junction capacities are not expected to be adversely affected due to a significant decrease in motor vehicle use from the Proposed Development.

Methodology

Baseline Data Collection

13.12 The baseline conditions are established through an extensive data collection exercise including:

- Accessibility audits of the existing transport networks surrounding the Site;
- Procurement of observed Manual Classified Count (MCC) and Automatic Traffic Count (ATC) data at key junctions and highway links associated with the Site;
- A review of collision data from the online Crashmap website for the most recent 3-year period (2019-2021); and
- A review of National Census 2011 travel and car ownership characteristics data.

Trip Generation

13.13 The existing vehicular trip generation for the Site is determined from an analysis of observed traffic data from surveys undertaken in 2022. The Proposed Development trip generation is informed by TRICS data and from comparable sites in the Cambridge area, including mode shares from the Census 2011 method of travel to work (workday population) dataset. The trip generation methodology has been discussed and agreed with Cambridgeshire County Council during pre-application discussions. Further details are set out in the TA (**Appendix 13.1**).

13.14 Daily vehicle trip profiles have been extracted for each land use from the TRICS database, for both weekdays and weekends where available, and the calculated peak hour operational traffic

flows have been factored to 18-hour AAWT and 24-hour AADT for the purposes of this chapter. These flows have then been used to determine the environmental impacts of the Proposed Development in terms of transport during the operational phase.

Scope of Methodology and Assessment

- 13.15 The main vehicular access to the Site, the junction with Coldhams Lane, would be retained and enhanced, improving the pedestrian and cycle facilities at the junction and creating a placemaking setting. The scope of the local and wider highway network to be assessed has been agreed during pre-application discussions.
- 13.16 The transport effects during the construction and operational phases are analysed according to the trip generation and the methodology set out above. The impacts of the construction phase are considered in greater detail as part of the CEMP.
- 13.17 The following scenarios would be considered within this ES Chapter in relation to the operational phase of the Proposed Development:
- Baseline 2022;
 - Opening Year Baseline without the Development (with committed 'cumulative' development); and
 - Opening Year with the Development (with committed 'cumulative' development).

Inherent Mitigation and Enhancement Measures

- 13.18 The transport strategy for the Proposed Development is based on the 'Decide & Provide' approach to assessment. This is also the method deployed by Cambridgeshire County Council in the Strategic Outline Business Case for the Eastern Corridor (A1138 Newmarket Road) proposals. The approach defines the preferred 'vision' for the strategy and establishes the necessary, committed, measures to achieve it. The approach also reinforces the road user hierarchy by ensuring walking, cycling and public transport are considered from the outset.
- 13.19 The Sustainable Travel Strategy (STS) is presented within the TA (**Appendix 13.1**) and Travel Plan (TP) (**Appendix 13.2**) with the overarching aim of minimising the effect of new vehicular trips associated with the Proposed Development through a range of sustainable, deliverable, transport measures and initiatives.
- 13.20 The TA (**Appendix 13.1**) is supported by a TP (**Appendix 13.2**) which details the opportunities for sustainable and active travel, as well as containing initiatives to encourage travel by these modes. The Travel Plan also outlines the health, social and economic benefits of walking and cycling.
- 13.21 An improved access junction would be provided at the Site access with Coldhams Lane, designed to accommodate the forecast trip generation associated with the Site alongside associated improvements to encourage walking/cycling trips. The junction would be designed to accommodate movements by all modes of travel, including cyclists and pedestrians.
- 13.22 This chapter follows the methodology provided within the IEA Guidelines which identifies the broad thresholds which typically trigger a level of assessment:
- Roads where traffic flow or HGV's would increase by more than 30% as a consequence of a Proposed Development; or

- Roads where traffic flows would increase by 10% and pass close to or through sensitive areas.
- 13.23 The routes to and from the Site are all considered sensitive given the Site's location relative to existing residential areas, the City Centre, its position within the Cambridge Air Quality Management Area, and the anticipated increase in walking and cycling movements.
- 13.24 The degree of each potentially significant effect would be considered, and an assessment would be made as to whether the Proposed Development would result in minor, moderate or major adverse impacts or would be beneficial. The criteria used to determine the significance of each of the traffic-related environmental effects is based on the advice given in the IEMA guidance and would consider the following topics related to general traffic and construction traffic:
- Changes in traffic flows - increase and / or decrease in road traffic flows resulting from the Development, compared to the baseline conditions;
 - Severance - the perceived division that can occur within a community when it becomes separated by a major traffic artery and is used to describe the factors that separate people from other people and places.
 - Driver Delay - delays to background traffic can occur on the network due to the introduction of additional traffic generated by a development. The guidelines note that these delays are only likely to be significant when the traffic on the network, in the vicinity of the Proposed Development, is already at or close to capacity.
 - Pedestrian Delay - changes in the volume, composition or speed of traffic may affect the ability of people to cross roads, and therefore, increases in traffic levels are likely to lead to greater increases in delay. Delays depend upon the general level of pedestrian activity, visibility and general physical conditions of the crossing location.
 - Pedestrian Amenity - is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic. In accordance with the guidelines, pedestrian amenity should only be considered significant in locations where the traffic flows are doubled.
 - Fear and Intimidation - the scale of fear and intimidation experienced by pedestrians is dependent on the volume of traffic, its HGV composition, its proximity to people or the lack of protection caused by such factors as narrow pavement widths, as well as factors such as the speed and size of vehicles; and
 - Accidents and Safety - where a development is expected to produce a change in the character of the traffic on the local road network, as a result of increased HGV movement for example, the guidelines state the implications of local circumstances or factors which may elevate or lessen risks of accidents, such as junction conflicts, would require assessment in order to determine the potential significance of accident risk. Professional judgment and reference to the above is therefore used to determine whether accidents and safety impacts are minor, moderate or major significance (and adverse and beneficial).
- 13.25 The transport impacts of the Proposed Development on noise and vibration and air quality are considered in Chapters 6 and 11.
- 13.26 Mitigation measures necessary to ensure that the potential impacts of the development remain within acceptable parameters would be determined, having due regard to the assessment and operation of the transportation network. Residual effects would also be reported.

Significance Criteria

Receptor Sensitivity

- 13.27 The IEMA guidelines identify groups and special interests which should be considered:
- people at home;
 - people in workplaces;
 - sensitive groups including children, the elderly and disabled;
 - sensitive locations e.g. hospitals, churches, schools, historical buildings;
 - people walking;
 - people cycling;
 - open spaces, recreational sites, shopping areas;
 - sites of ecological / nature conservation value; and
 - sites of tourist / visitor attraction.
- 13.28 Categories of receptor sensitivity have been defined from the principles set out in the Guidelines for the Environmental Assessment of Road Traffic. They include the following:
- the need to identify particular groups or locations which may be sensitive to changes in traffic conditions;
 - the list of affected groups and special interests set out in the guidance;
 - the identification of links or locations where it is felt that specific environmental problems may occur; and
 - such locations "...would include accident blackspots, conservation areas, hospitals, links with high pedestrian flows etc."
- 13.29 These categories have been used to outline in broad terms the sensitivity of receptors to traffic for the categories of impact assessed in this chapter, although in detail, each receptor assessed would have a different sensitivity to each specific impact.
- 13.30 High sensitivity receptors include:
- schools, colleges and other educational institutions;
 - retirement / care homes for the elderly or infirm;
 - roads used by pedestrians with no footways; and
 - road safety blackspots.
- 13.31 Medium sensitivity receptors include:
- hospitals, surgeries and clinics;
 - parks and recreation areas;
 - shopping areas; and
 - roads used by pedestrians with narrow footways.

13.32 Low sensitivity receptors include:

- open space;
- tourist / visitor attractions;
- historical buildings; and
- churches.

Geographical Scope

13.33 The 'Guidelines for the Environmental Assessment of Road Traffic' provides a general rule that can be used as a screening process to establish the extent of the assessment. The proposed study area for the transport and movement assessment would comprise links using these rules:

- 'Rule 1 - Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2 - Include any other specifically sensitive areas where traffic flows have increased by 10% or more'.

13.34 2022 baseline 18-hour average annual weekday traffic (AAWT) and 24-hour average annual daily traffic (AADT) flows for roads surrounding the Site have been calculated using the traffic survey data.

Assessing Significance

13.35 The Guidelines were reviewed in order to identify the significance criteria applicable to the assessment. For a number of likely significant impacts, there are no ready thresholds of significance. In such cases, interpretation and judgement is applied, based on knowledge of the Site, professional judgement and experience.

13.36 All assessments state whether each effect is either significant or not significant. As a guide, effects that are assessed as Moderate or greater are regarded as significant in (Environmental Impact Assessment (EIA) terms. The significance criteria used for the purpose of this assessment are set out below:

- adverse: meaning that changes produce dis-benefits in terms of transportation and access (such as increase of traffic, travel time, patronage or loss of service or facility); or
- beneficial: meaning that the changes produce benefits in terms of transportation and access (such as reduction of traffic, travel time or patronage, or provision of a new service, access or facility); or
- negligible: meaning there is no significant change in terms of transportation and access.

13.37 All effects identified can either be classified as beneficial or adverse. The significance of either a beneficial or adverse impact is assessed as being:

- impact of low significance: slight, very short or highly localised impact of no material consequence (e.g. traffic flow change of 10% to 30%); or
- impact of medium significance: limited impact (by extent, duration or magnitude) which may be considered significant, (e.g. a traffic flow change of 30% to 60%); or
- impact of high significance: considerable impact (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards, (e.g. a traffic flow change of greater than 60%).

- 13.38 Magnitude of impact, based on the change that the Proposed Development would have upon the resource/receptor, is considered within the range of high, medium, low, negligible. Consideration is given to scale, duration of impact/effect and extent of Proposed Development with reference to the definitions in **Table 13.1**.

Table 13.1: Magnitude of Impact

DESCRIPTION	IMPACT	LOW	MEDIUM	HIGH
HIGHWAY NETWORK	Change in flow on highway network	Increase or decrease in flow of 10-30%	Increase or decrease in flow of 30-60%	Increase or decrease in flow of more than 60%
PEDESTRIAN SEVERANCE	Increase in Average Annual Daily Traffic Flows	As set out in Table 13.2 .		
DRIVER DELAY	Increase in traffic flows can impact upon the operation of junctions on the highway network with queueing and congestion experienced	No prescribed quantitative significance criteria with judgement made on RFC values from the junction assessments.		
PEDESTRIAN DELAY	Increases in traffic flows can lead to increases in delay for pedestrians seeking to cross the road	No prescribed quantitative significance criteria for pedestrian delay within IEMA guidelines. Professional judgement has therefore been used.		
PEDESTRIAN AMENITY	Relative pleasantness of a route in respect of increases in vehicular traffic associated with the Development	Tentative Threshold applied in judging significance of changes in pedestrian amenity where traffic flow (or lorry composition) is halved or doubled.		
PEDESTRIAN FEAR AND INTIMIDATION	Increases in hourly traffic flow, HGV composition and narrow footways	As set out in Table 13.2 .		
ACCIDENTS & SAFETY	Where a Development is expected to change the character of the traffic on the road network, for example increased HGV movements, consideration of the potential accident / safety risks should be considered	No prescribed quantitative significance criteria for accidents and safety within the Guidelines. Professional judgement is therefore to be used.		

- 13.39 Fear and intimidation criteria are considered in the IEMA guidelines to be dependent on the volume of traffic, composition of traffic, proximity to people and design measures such as width of pavements. For the purposes of this assessment, the level of fear and intimidation associated with traffic is set out in **Table 13.2**.

Table 13.2: Pedestrian Severance and Fear / Intimidation

LEVEL	PEDESTRIAN SEVERANCE (AADT)	FEAR AND INTIMIDATION		
		AVERAGE FLOW OVER 18HR DAY AV FLOW (VEH/HR – TWO-WAY)	TOTAL 18HR HGV FLOW (VEH/HR – TWO-WAY)	AVE 18HR VEH SPEED
HIGH	>16,000	+ 1,800	+3,000	+ 20mph
MEDIUM	8,000 – 16,000	1,200 – 1,800	2,000 – 3,000	+15–20 mph
LOW	<8,000	600 – 1,200	1,000 – 2,000	+10–15 mph
NEGLIGIBLE		< 600	<1,000	<10mph

13.40 The criteria in **Table 13.1** and the level of fear and intimidation associated with traffic as set out in **Table 13.2** have been combined using professional judgement to indicate the likely significance of the impacts from the Proposed Development in terms of fear and intimidation.

13.41 The predicted level of effect is based upon the consideration of magnitude of impact and sensitivity of the resource/receptor to come to a professional judgement of how important this effect is.

Table 13.3: Level of Effect

RECEPTOR SENSITIVITY	MAGNITUDE OF IMPACT			
	MAJOR	MODERATE	MINOR	NEGLIGIBLE
HIGH	Major	Major	Moderate	Negligible
MEDIUM	Major	Moderate	Minor	Negligible
LOW	Moderate	Minor	Minor	Negligible
NEGLIGIBLE	Negligible	Negligible	Negligible	Negligible

Limitations and Assumptions

13.42 At this stage a formal programme of works and timescale for the development are still under consideration. This is due to the project still being in preplanning stage. Once final designs and approvals from the Local Planning Authority have been received and a Principal Contractor has been appointed, then confirmation of the timescales can be assigned to the relevant activities and an overall project schedule would be formulated.

13.43 We expect the overall sequence of the project to follow a phased programme of works, with works expected to commence in 2025 (subject to planning) and to be completed by 2034 (10-year build rate).

13.44 The peak construction traffic environmental impact is expected during month 78.

13.45 The construction traffic has been determined based on the number of operatives and management staff required on site and the material quantities to be imported through the duration of the works. It is anticipated that there would be an average of 50 two-way HGV movements per day during the normal construction phase, with 159 two-way HGV movements per day during the peak development phase (month 78). An additional 10 two-way LGV movements are anticipated on average per day, with 31 two-way LGV movements predicted per day during the peak development phase.

- 13.46 This construction traffic would be routed via strategic roads to avoid the use of more sensitive roads. This would be managed through the implementation of a CEMP that would stipulate construction traffic routes and times. Contractors working on the Site would have to comply with this during construction.
- 13.47 The construction process would require work to be undertaken in several different areas at the same time utilising a range of skills from general labourers and skilled operatives through to professionals and managers. It is envisaged that workers are likely to originate from a variety of areas and that some would travel together to and from the Site.
- 13.48 Based on the above assumptions, it is estimated that the peak construction period would require approximately 270 operative and 50 management staff on the Site (320 total). Given the location of the Site, operatives and site management staff would be encouraged to arrive by public transport and or by other means such as cycling. A cycle to work scheme would be encouraged and secure bicycle storage and showers would be provided on site. Parking on Site would not be permitted and parking in the local area around the Site or close by to the development would be discouraged. The use of official commercial car parks away from site is to be encouraged. The Principal Contractor would also promote a car sharing scheme.
- 13.49 Given typical working hours on a construction site, construction worker trips are likely to occur outside the peak hours, i.e. before 08:00 and after 18:00. Similarly, HGV traffic would travel to the Site outside the peak hours i.e. between 09:30 and 16:30. Therefore, the construction phase is not expected to have an impact on the local road network during the critical highway peak hours.
- 13.50 In summary, as a worst-case assessment, the total construction traffic generated would be 190 two-way HGV/LGV trips per day.

Existing Baseline Conditions

Current Baseline

- 13.51 The Site, known as the Beehive Centre, is approximately 7.58 hectares (ha) in size and comprises a mid-sized retail park with mixed uses and associated ground level car park which includes a total of 885 car parking spaces and generates high levels of car-borne traffic.
- 13.52 The Site is located east of Cambridge city centre, along the west side of the railway line. The Site is accessed via Coldhams Lane which forms the northern site boundary and connects to Newmarket Road, which is a main vehicular route into the city, whilst to the east the road leads to Coldhams Common. The Site is located circa 1.9km to the west of Cambridge City Centre. The eastern extent of Cambridge City Centre can be accessed via a 650m walk. The Site's location can be found in the Site location plan in **Appendix 4.1**.
- 13.53 The Site lies between two key road corridors, namely A1134 Newmarket Road and Coldhams Lane. The A1134 Newmarket Road forms part of the principal road network, catering for significant levels of movement. Coldhams Lane is predominantly residential in character but caters for a significant east-west movement. There is a higher density of retail units to the west end of Coldhams Lane by the Site. Both roads give rise to degrees of severance for non-car modes.
- 13.54 The Proposed Development changes the use of the Site to a predominantly employment destination favouring sustainable modes, resulting in a reduced reliance on private cars. The Site also accommodates the alignment of, and connections to the Chisholm Trail.

- 13.55 Through engagement with Cambridgeshire County Council, a suite of traffic and pedestrian/cycle counts has been collected to inform the assessment and resulting junction modelling on the network.
- 13.56 The Proposed Development also aligns with emerging policies and programmes being promoted by Cambridgeshire County Council, C&PCA and the Greater Cambridge Partnership. These all seek to limit car use and traffic levels in the City.

Existing Pedestrian & Cycle Facilities

- 13.57 Footway/path provision is currently provided through the Site, however there are sections/desire lines within the Site where there are no dedicated pedestrian facilities (i.e. no footway along the eastern side of the Site access road). There are existing pedestrian accesses from Coldhams Lane, St Mathews Gardens, York Street and Sleaford Street, however many of the accesses are narrow and unattractive for pedestrians. The Proposed Development seeks to retain and significantly improve the pedestrian environment on these access points.
- 13.58 Coldhams Lane has a good quality existing pedestrian environment with footways wider than 2m on either side, with tactile paving, dropped kerbs and street lighting provided at crossing points and along its length. A Zebra crossing is located circa 50m to the west of the Coldhams Lane access and a toucan crossing is located adjacent to a pedestrian cut-through from Coldhams Lane. The Coldhams Lane Bridge across the rail line provides a dedicated pedestrian/cycle path as well as a footway on the northern side of the bridge.
- 13.59 St Matthew's Gardens, York Street and Sleaford Street are residential roads with footways on either side of the carriageway. The footways on these roads are circa 1.5m wide and include street lighting. The speed limit on these roads and the connecting residential roads is 20mph which allows for safe informal pedestrian crossing.
- 13.60 The wider area includes an existing high-quality pedestrian environment.
- 13.61 The Site is well located within the existing Cambridge cycle network. An extract from the Cambridge cycle map is shown in the TA (**Appendix 13.1**).
- 13.62 Coldhams Lane to the east of the Site is a marked primary on-road cycle route, as well as York Street, Ainsworth Street, Hooper Street and Gwydir Street which provides a direct cycle route from the Site to Cambridge Station.
- 13.63 The Site provides an existing off-road cycle link between Coldhams Lane and York Street and Sleaford Street. There is also an existing off-road cycle link over the rail line on the Coldhams Lane Bridge. Sleaford Street and New Street are designated as local links which provide links to routes towards the town centre. A cycle link is also provided through the Cambridge Retail Park.
- 13.64 National cycle routes (NCR) 11 and 51 run through Cambridge and connect Cambridge and nearby population centres by cycle. NCR 11 runs between Ely and Saffron Walden and connects Cambridge to Duxford, Sawston, Great Shelford as well as Ely and Saffron Walden and can be picked up from Riverside. NCR 51 runs from St Ives and Felixstowe and connects Cambridge to Ipswich, Needham Market, Stowmarket, Thurston, Bury St Edmunds, Newmarket as well as St Ives and Felixstowe. NCR can also be picked up from Riverside.
- 13.65 The Chisholm Trail is a new 3.5km walking and cycling route which is a mostly off-road and traffic free route between Cambridge Rail Station and Cambridge North Rail Station. Phase 1

of the Chisholm Trail was complete in 2022 and starts at Cambridge North Station and ends at Coldhams Lane. A new shared cycle/foot bridge was provided over the River Cam as part of Phase 1. The route for Phase 2 has yet to be agreed, however it is proposed that the cycle connections through the Proposed Development could form part of Phase 2 of the Chisholm Trail towards Cambridge Station. Phase 2 is expected to be complete by 2025.

- 13.66 A new cycle store has been provided at Cambridge Station which provides 2,850 cycle parking spaces on a mixture of stands and racks. The cycle store is both sheltered and has CCTV coverage for security. Cycle hire is available 7 days a week from Rutland Cycling located next to the cycle store. Cambridge North also has a secure and covered store adjacent to the station building with 1,000 cycle parking spaces which are provided on a mixture of racks and compounds.
- 13.67 Voi is a mobile app which allows for short term hire of e-scooters and e-bikes within Cambridge. Bikes and scooters can be left in parking zones and there are low-speed zones and no-riding zones to restrict use in heavily pedestrianised areas. There are circa 50 Voi bikes and 300 Voi scooters within Cambridge.

Existing Public Transport Facilities

- 13.68 A bus stop is provided within the Site which is served by bus route 19 and 114 which offer services to Addenbrookes, Chesterton, Landbeach and central Cambridge.
- 13.69 Additional bus services can be accessed from bus stops along Newmarket Road. The bus stop on Newmarket Road is located 300m to the north-west of the Site and provides access to bus routes 3, 11, 12, 19, 114 and Park & Ride route 2.
- 13.70 **Table 13.4** summarises the frequent bus services accessible from the stops mentioned above. Bus route 19 operates circa two services a day towards Cambridge Bus Station along with two services a day to Landbeach. Route 114 operates circa four services a day towards Cambridge Bus Station and four services a day towards Addenbrooke's Hospital Bus Station.

Table 13.4: Frequent Bus Services Accessible from the Site

SERVICE	ROUTE	DAY	FREQUENCY
3	Thorpe Way – Newmarket Road – Emmanuel Street – Cambridge Station – Cherry Hinton	Mon-Fri Sat Sun	15 mins 20 mins 30 mins
	Cherry Hinton – Cambridge Station – St Andrews Street – Newmarket Road – Thorpe Way – Fison Road	Mon-Fri Sat Sun	15 mins 15 mins 30 mins
11	Newmarket – Burwell – Swaffham – Stow cum Quy – Marshalls Airport – Newmarket Road – Drummer Street Bus Station	Mon-Fri Sat	60 mins 60 mins
	Drummer Street Bus Station – Newmarket Road – Marshalls Airport – Stow cum Quy – Swaffham – Burwell - Newmarket	Mon-Fri Sat	60 mins 60 mins
12	Drummer Street Bus Station – Newmarket Road – Marshalls Airport – Bottisham - Newmarket	Mon-Fri Sat	60 mins 60 mins
	Newmarket – Bottisham – Marshalls Airport – Newmarket Road – Drummer Street Bus Station	Mon-Fri Sat	60 mins 60 mins

SERVICE	ROUTE	DAY	FREQUENCY
PR2 (Park & Ride)	Drummer Street Bus Station – Newmarket Road Park & Ride	Mon-Fri Sat Sun	10 mins 10 mins 15 mins
	Newmarket Road Park & Ride – Drummer Street Bus Station	Mon-Fri Sat Sun	10 mins 10 mins 15 mins

- 13.71 Cambridge has five Park and Rides (P&R) which allow commuters/ visitors to park on the outskirts of Cambridge and get a frequent bus into central Cambridge. The two closest P&R's to the site are the Milton and Newmarket Road P&R. A summary of the full P&R provision for Cambridge is provided in **Table 13.5**.

Table 13.5: Cambridge Park and Ride Provision

PARK & RIDE LOCATION	PARKING	MON-SAT BUS FREQUENCY	SUN BUS FREQUENCY
Babraham Road	1,458 spaces plus 250 cycle spaces	Every 10 mins	Every 15 mins
Madingley Road	930 spaces plus 40 cycle spaces	Every 10 mins	Every 15 mins
Trumpington	1,600 plus 250 cycle spaces	Every 10 mins	Every 15 mins
Milton	792 spaces plus 50 cycle spaces	Every 10 mins	Every 15 mins
Newmarket Road	873 spaces plus 60 cycle spaces	Every 10 mins	Every 15 mins
Total	5,653 spaces plus 650 cycle spaces		

- 13.72 Cambridge Train Station is located 1.3km to the south of the Site and can be accessed via footways and existing signed cycle routes along the residential roads between the Site and Cambridge Rail Station. Cambridge Station provides access to CrossCountry, Great Northern, Thameslink and Greater Anglia Rail services to destinations such as London Liverpool Street, London Kings Cross Brighton, Norwich, Stansted Airport, Ipswich, Ely, Birmingham New Street and others.
- 13.73 As outlined earlier in paragraph 13.66, Cambridge Rail Station provides extensive cycle parking facilities. In addition, Cambridge Station has step-free access to all platforms, ramps for train access and accessible toilets.
- 13.74 Cambridge Train Station provides circa 16 services an hour mid-week which would be higher during peak hours.
- 13.75 Cambridge North Train Station is located 2.7km to the north of the Site and can be accessed via phase 1 of the Chisholm Trail from the Site. Cambridge North is served by Great Northern and Greater Anglia services to destinations such as London Kings Cross, Ely, London Liverpool Street, Norwich, Stansted Airport and Ely. As outlined earlier, Cambridge North Train Station

provides extensive cycle parking facilities. In addition, Cambridge North Train Station has step-free access to all platforms and ramps for train access.

- 13.76 Cambridge North Train Station provides circa 8 services an hour mid-week which would be higher during peak hours.

Collision Data

- 13.77 Analysis of the collision data between January 2017 to April 2023 is detailed in Chapter 3 of the TA (**Appendix 13.1**). Please note, the collision data for 2022 and 2023 is currently provisional and is therefore subject to change.

- 13.78 The TA (**Appendix 13.1**) provides a summary of the collisions recorded on links / junctions within the immediate area surrounding the site and identified that:
- There have been two reported collisions within the existing Site, both of which were recorded as slight severity. One collision involved a car colliding with a pedestrian on the access road. The pedestrian was in the carriageway at the time of collision but was not crossing. The other collision involved a car colliding with a cyclist within the car park; and
 - There have been no collisions at the York Street, Sleaford Street or St Matthew's Gardens access in the previous 3 years.

- 13.79 A cluster analysis has been undertaken for the study area using an indicator of either:
- 6 or more injury collisions (any severity) within 100m or at a junction, in the most recent 3 calendar year period; or
 - 3 or more higher severity injury collisions (fatal or serious injuries) within 100m or at a junction, in the most recent 3 calendar year period.

- 13.80 The analysis identified 5 clusters, namely:
- Coldhams Lane / A1134 traffic signal-controlled junction;
 - Coldhams Lane / Henley Road (Cambridge Retail Park) Roundabout;
 - Coldhams Lane / A1134 (Barnwell Road) / Brooks Road Roundabout;
 - A1303 (Newmarket Road) / A1134 (Barnwell Road) Roundabout; and
 - A1134 (Newmarket Road) / A603 (East Road) / A1134 (Elizabeth Way) / Newmarket Road Roundabout.

- 13.81 Improvements have been identified and are proposed on Site and on the local highway network as part of the development proposals i.e. on Coldhams Lane, Newmarket Road, Coldhams Lane Roundabout etc. The proposed mitigation is discussed towards the end of this chapter. These measures would be secured by condition/obligation.

Baseline Traffic Flows

- 13.82 The existing Beehive Centre retail park site, of 7.05 hectares in size, consists of several large format retail units including Asda, B&M Home Store, Go Outdoors, M&S Foodhall, Next and TX Max. There is a total of 885 parking spaces across the Site. The Site also contains six separate access points, with the only vehicular access being provided via a roundabout junction on Coldhams Lane.

- 13.83 Baseline traffic surveys were undertaken in November 2022 to capture the current use of the Site and the local highway network.
- 13.84 The surveys undertaken of the Site in November 2022 captured all vehicular and non-vehicular movements entering and departing the Site for a 24-hour period on two weekdays and on both a Saturday and Sunday. This allowed calculations to be made to derive the existing peak hour / daily trip rates and for the purposes of this ES, baseline AAWT and AADT flows. This resulted in the following number of vehicle trips to/from the Site.
- 18-hour AAWT – 10,974 vehicles two-way (0.31% HGV's); and
 - 24-hour AADT – 11,215 vehicles two-way (0.43% HGV's).
- 13.85 Baseline traffic surveys for the local highway network were undertaken at 13 off-site junctions. A plan is provided in the TA (**Appendix 13.1**) which illustrates the locations of each of the junctions within the study area. The resulting AAWT and AADT flows for the local highway network are provided in **Table 13.6**. It is noted that an analysis of the November 2022 surveyed traffic data at the nearby junctions on the local highway network showed the surveyed Wednesday to have marginally higher traffic flows than the surveyed Thursday, and the Wednesday has therefore been used going forward for the purposes of the traffic flow assessments.

Table 13.6: Baseline Average Two Way Daily/Weekday Traffic Flows - Two Way Flows

LINK	TWO-WAY AAWT (ALL TRAFFIC)	TWO-WAY AAWT HGV %	TWO-WAY AADT (ALL TRAFFIC)	TWO- WAY AADT HGV %
Link 1: Site Access	10,974	0%	11,215	0%
Link 2: Coldhams Lane	17,061	2%	17,433	2%
Link 3: Coldhams Lane	16,640	2%	16,971	2%
Link 4: Newmarket Road	26,290	4%	27,153	4%
Link 5: Newmarket Road	17,003	4%	17,537	4%
Link 6: Coldhams Lane	17,784	1%	17,512	1%
Link 7: Brooks Road	27,231	1%	26,815	1%
Link 8: A1134 Barnwell Road	18,328	1%	18,048	1%
Link 9: Coldhams Lane	13,131	1%	12,930	1%
Link 10: Wadloes Road	5,555	1%	5,470	1%
Link 11: Newmarket Road	29,878	1%	29,421	2%
Link 12: Barnwell Road	18,395	1%	18,114	1%
Link 13: Newmarket Road	16,382	1%	16,131	2%
Link 14: A1134 Newmarket Road	12,102	1%	11,917	2%
Link 15: Elizabeth Way	28,551	1%	28,114	1%
Link 16: A603 East Road	21,654	1%	21,323	2%

Receptors

- 13.86 A review of the road links in the study area as listed in **Table 13.6** has been undertaken to identify their level of sensitivity.

13.87

Table 13.7 provides a summary of the links where sensitive receptors are located, with reference to the criteria set out in the approach section of this chapter. A plan showing the locations of each of the links listed in **Table 13.7** is provided as **Figure 13.1** for ease of reference.

Table 13.7: Link Receptor Sensitivity - Two Way Flows

LINK	HIGH SENSITIVITY	MEDIUM SENSITIVITY	LOW SENSITIVITY	SPEED LIMIT MPH
Link 1: Site Access		Shopping Area		20
Link 2: Coldhams Lane		Shopping Area	People in Residential Areas	30
Link 3: Coldhams Lane			People in Residential Areas	30
Link 4: Newmarket Road		Shopping Area	People in Residential Areas	20
Link 5: Newmarket Road			People in Residential Areas	30
Link 6: Coldhams Lane	St Philips Primary School		People in Residential Areas	30
Link 7: Brooks Road		Supermarket	People in Residential Areas C3 Church	30
Link 8: A1134 Barnwell Road			People in Residential Areas Open space	40
Link 9: Coldhams Lane			People in Residential Areas Open space	30
Link 10: Wadloes Road		McDonalds	People in Residential Areas	30
Link 11: Newmarket Road			People in Residential Areas Christ the Redeemer Church	30
Link 12: Barnwell Road			People in Residential Areas	40
Link 13: Newmarket Road			People in Residential Areas	30
Link 14: A1134 Newmarket Road			People in Residential Areas	30
Link 15: Elizabeth Way			People in Residential Areas	30
Link 16: A603 East Road		Shopping Area	People in Residential Areas	30

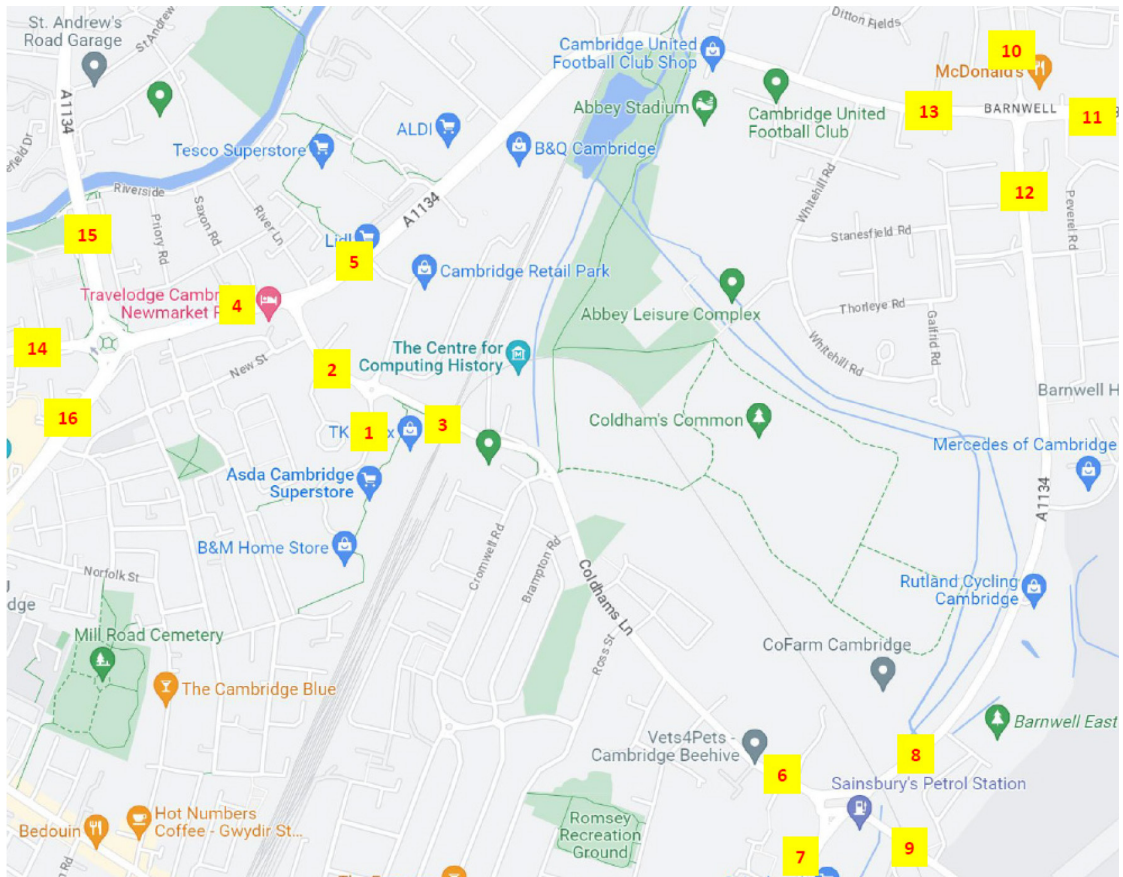


Figure 13.1: Link Location Plan

- 13.88 A judgement has been made in accordance with this guidance, as to the sensitivity of these receptors within this chapter in terms of severance, driver and pedestrian delay, pedestrian amenity, fear and intimidation and accidents and safety.

Baseline Severance

- 13.89 Based on the criteria set out in **Table 13.2** the existing levels of severance and fear / intimidation on the road network surrounding the Site are considered within **Table 13.8**. All the link flows considered are as two-way flows on a particular link.

Table 13.8: Base Levels of Severance and Fear / Intimidation along Links - Two Way Flows

LINK	24HR FLOWS		FEAR AND INTIMIDATION						
			A) AV HOURLY FLOWS OVER 18HR DAY		B) TOTAL 18HR HGV FLOWS		C) TRAFFIC SPEED (MPH)		D) WEIGHTED ASSESSMENT OF A-C
	FLOW	SEVERANCE	FLOW	SEVERANCE	FLOW	SEVERANCE	FLOW	SEVERANCE	
Link 1: Site Access	11,215	Medium	610	Low	28	Negligible	20	High	Medium
Link 2: Coldhams Lane	17,433	High	948	Low	379	Negligible	30	High	Low
Link 3: Coldhams Lane	16,971	High	924	Low	339	Negligible	30	High	Low
Link 4: Newmarket Road	27,153	High	1461	Medium	992	Negligible	30	High	Medium
Link 5: Newmarket Road	17,537	High	945	Low	613	Negligible	30	High	Low
Link 6: Coldhams Lane	17,512	High	988	Low	142	Negligible	30	High	Medium
Link 7: Brooks Road	26,815	High	1513	Medium	199	Negligible	30	High	Medium
Link 8: A1134 Barnwell Road	18,048	High	1018	Low	182	Negligible	40	High	Medium
Link 9: Coldhams Lane	12,930	Medium	730	Low	68	Negligible	30	High	Medium
Link 10: Wadloes Road	5,470	Low	309	Negligible	51	Negligible	30	High	Low

LINK	24HR FLOWS		FEAR AND INTIMIDATION						
			A) AV HOURLY FLOWS OVER 18HR DAY		B) TOTAL 18HR HGV FLOWS		C) TRAFFIC SPEED (MPH)		D) WEIGHTED ASSESSMENT OF A-C
	FLOW	SEVERANCE	FLOW	SEVERANCE	FLOW	SEVERANCE	FLOW	SEVERANCE	
Link 11: Newmarket Road	29,421	High	1660	Medium	205	Negligible	30	High	Medium
Link 12: Barnwell Road	18,114	High	1022	Low	188	Negligible	40	High	Medium
Link 13: Newmarket Road	16,131	High	910	Low	330	Negligible	30	High	Medium
Link 14: A1134 Newmarket Road	11,917	Medium	672	Low	136	Negligible	30	High	Medium
Link 15: Elizabeth Way	28,114	High	1562	Medium	256	Negligible	30	High	Medium
Link 16: A603 East Road	21,323	High	1203	Medium	301	Negligible	30	High	Medium

13.90

The following links experience high levels of pedestrian and cycle severance due to the volume of traffic exceeding 16,000 AADT:

- Link 2: Coldhams Lane;
- Link 3: Coldhams Lane;
- Link 4: Newmarket Road;
- Link 5: Newmarket Road;
- Link 6: Coldhams Lane;
- Link 7: Brooks Road;
- Link 8: A1134 Barnwell Road;
- Link 11: Newmarket Road;
- Link 12: Barnwell Road;

- Link 13: Newmarket Road;
- Link 15: Elizabeth Way; and
- Link 16: A603 East Road.

13.91 It is concluded that locally, the existing level of severance experienced is in most cases high.

Baseline Driver Delay

13.92 There are no prescribed quantitative significance criteria for pedestrian delay within IEMA guidelines. Professional judgement has therefore been used to determine the effect, with consideration given to the junction capacity assessment results contained within the TA (**Appendix 13.1**) and the theoretical link capacity of the local highway network.

13.93 As set out in Chapter 8 of the TA (**Appendix 13.1**), the Beehive site access / Coldhams Lane / Cambridge Retail Park roundabout currently operates without a detrimental impact during the network peak hours, in terms of driver delay and ratio to flow capacity (RFC). Driver delay at the Beehive site access / Coldhams Lane / Cambridge Retail Park roundabout is concluded to be Low.

13.94 The site access roundabout is the only junction assessed within the TA (**Appendix 13.1**). This approach has been agreed with Cambridgeshire County Council as there is predicted to be significant reductions in car / van driver trips when the development is complete.

13.95 Elsewhere on the local highway network, most notably Coldhams Lane, Newmarket Road, Brooks Road, A1134 Barnwell Road, Elizabeth Way and A603 East Road (where traffic flows are all in excess of 16,000 vehicles AADT), some driver delay is expected as the traffic flows are high on these links.

13.96 Overall, it is concluded that locally, the existing level of driver delay experienced is in most cases Moderate or less.

Baseline Pedestrian & Cycle Delay

13.97 Only a small number of published qualitative methods exist for assessing pedestrian delay. The IEMA guidance suggests a range of pedestrian crossing times of ten seconds (lower threshold) to 40 seconds (higher threshold), which equate to a link with no crossing facilities and a two-way flow of approximately 1,400 vehicles in the peak periods. However, the guidance also recommends that assessments should be based on judgement rather than specific thresholds to determine whether or not there is a significant pedestrian delay. Notwithstanding this, the thresholds described in the guidance have been used as a starting point for this assessment. No specific guidance exists for the assessment of cyclist delay.

13.98 For the purpose of this assessment, and in combination with professional judgement, pedestrian and cyclist delay was classed as:

- Low, where traffic flows are less than 1,400 two-way vehicles per hour;
- Medium, where flows are between 1,400 and 2,800 two-way vehicles per hour; and
- High, where traffic flows exceed 2,800 two-way vehicles per hour.

13.99 Whilst a number of links experience medium levels of pedestrian and cycle severance (due to the volume of traffic), i.e. Brooks Road, Newmarket Road and Elizabeth Way, all other links

experience low levels of pedestrian/cycle delay (where flows are less than 1,400 two-way vehicles per hour).

- 13.100 It is concluded that locally, the existing level of pedestrian/cycle delay experienced within the vicinity of the Site on the local roads is in most cases Moderate or less.

Baseline Pedestrian Amenity

- 13.101 Pedestrian amenity is broadly defined as the relative pleasantness of a journey and is affected by traffic flows, traffic composition, footway width and the degree of segregation from traffic.
- 13.102 The existing level of pedestrian amenity along Coldhams Lane is generally good, the speed limit is 30mph and there is a footway along both sides of the road.
- 13.103 Although the local highway links (such as the A1134 Newmarket Road) have high levels of traffic flow, there is limited pedestrian and cyclist demand to cross. There are also railings and controlled/uncontrolled crossing points at key locations.
- 13.104 Overall pedestrian Amenity in the vicinity of the Site is considered to be good. A rating of Low has therefore been assigned.

Baseline Fear and Intimidation

- 13.105 Fear and intimidation criteria are considered in the IEMA guidelines to be dependent on the volume of traffic, composition of traffic, proximity to people and design measures such as width of pavements. These indicators are then combined using professional judgment to indicate the likely significance of the impacts from the Proposed Development in terms of fear and intimidation.
- 13.106 In this instance there are no local links which currently experience high levels of fear and intimidation. This is primarily due to the low to medium average 18 hourly flows and the negligible amount of HGV's on the local highway network. Whilst average vehicle speeds do exceed 20mph (which results in a rating of high) this is not considered to be to the detriment of pedestrian/cyclist fear and intimidation levels due to the volume of traffic and the existing pedestrian/cycle facilities that are currently available.
- 13.107 It is concluded that locally, the existing level of pedestrian severance experienced within the vicinity of the Site on the local roads is in most cases Moderate or less.

Baseline Accidents / Safety

- 13.108 Analysis of the collision data between January 2017 to April 2023 is detailed in Chapter 3 of the TA (**Appendix 13.1**). Collision data for 2022 and 2023 is currently provisional and is therefore subject to change. The TA (**Appendix 13.1**) provides a summary of the collisions recorded on links and junctions in the study area. This assessment identified that there are trends and causational factors related to the recorded collisions.
- 13.109 A cluster analysis has been undertaken using an indicator of either:
- 6 or more injury collisions (any severity) within 100m or at a junction, in the most recent 3 calendar year period; or
 - 3 or more higher severity injury collisions (fatal or serious injuries) within 100m or at a junction, in the most recent 3 calendar year period.

- 13.110 The analysis identified 5 clusters, namely:
- Coldhams Lane / A1134 traffic signal-controlled junction;
 - Coldhams Lane / Henley Road (Cambridge Retail Park) Roundabout;
 - Coldhams Lane / A1134 (Barnwell Road) / Brooks Road Roundabout;
 - A1303 (Newmarket Road) / A1134 (Barnwell Road) Roundabout; and
 - A1134 (Newmarket Road) / A603 (East Road) / A1134 (Elizabeth Way) / Newmarket Road Roundabout.
- 13.111 Improvements have been identified and are proposed at the Coldhams Lane Roundabout. These works aim to provide improved provision for active travel modes along with additional public realm. These improvements would be secured by condition/obligation.
- 13.112 Overall, there are no apparent road safety issues on the local highway network. The existing accident and safety assessment is therefore Moderate or less.

Evolution of the Baseline Conditions without Development

- 13.113 The existing Beehive Retail Centre occupies the entire Site and consists of several large format retail units. Should the Proposed Development not be undertaken there would not be a significant change in baseline conditions on Site.
- 13.114 The baseline conditions on the local highway network would be affected by the following schemes:
- Land North of Cambridge North - 22/02771/OUT - A development of three new residential blocks providing for up to 425 residential units and providing flexible Class E and Class F uses on the ground floor (excluding Class E (g) (iii)), and two commercial buildings for Use Classes E(g) i(offices), ii (research and development) providing flexible Class E and Class F uses on the ground floor (excluding Class E (g) (iii)), together with the construction of basements for parking and building services, car and cycle parking and infrastructure works. The development would also include three commercial buildings for Use Classes E(g) i (offices) ii (research and development), providing flexible Class E and Class F uses on the ground floor (excluding Class E (g) (iii)) with associated car and cycle parking, the construction of a multi storey car and cycle park building, together with the construction of basements for parking and building services, car and cycle parking and associated landscaping, infrastructure works and demolition of existing structures;
 - Land North of Cherry Hinton Coldhams Lane Cambridge Cambridgeshire - 18/0481/OUT - A development of a maximum of 1200 residential dwellings (including retirement living facility (within Use Class C2/C3)), a local centre comprising uses within Use Class A1/A2/ A3/A4/A5/B1a/D1/D2, primary and secondary schools, community facilities, open spaces, allotments, landscaping and associated infrastructure;
 - Greater Cambridge Planning Service (GCP) are currently proposing to transform Newmarket Road to prioritise walking, cycling and bus use to form part of the Cambridge Eastern Access. The proposals would run from the Newmarket Road/Elizabeth Way/East Road/ Roundabout to Junction 35 with the A14. A dedicated cycle route would be provided in each direction of Newmarket Road as well as cycle improvements at junctions (such as Cyclops roundabouts). The GCP Newmarket Road improvements are provided in the TA (**Appendix 13.1**); and

- As part of the GCP Eastern Access proposals, the Newmarket Road P&R is proposed to be relocated to an area south-east of the Airport Way Roundabout and would provide an increased provision of 1,750 car parking spaces.

Predicted Impacts

- 13.115 The Proposed Development consists of demolition of the existing buildings onsite and redevelopment of the Site providing new buildings comprising a new local centre as well as office and laboratory space and associated infrastructure.

Construction Phase

- 13.116 The construction of the Proposed Development would be carried out in accordance with the indicative phasing strategy, noted on the planning phasing drawings in **Appendix 4.1**. This would comprise the following key stages, which may vary depending on the stage of the phasing being applied:
- Pre-Construction Planning
 - Site establishment
 - Demolition & Site Clearance
 - Site Strip/Bulk Excavations
 - Infrastructure/Highway works
 - Piling and substructure
 - Superstructure
 - Envelope and cladding Primary M.E.P
 - Internal Fit Out
 - Pre-Commissioning
 - Final Commissioning, Architects/Consultant/Client Inspections
 - External Works/Landscaping
 - Final Inspections and Practical Completion
- 13.117 The CEMP assumes a start on site date at the start of Q3 2025, with full vacant possession at the end of Q2 2026.
- 13.118 At this stage the formal programme of works and timescales for the development are still under consideration. This is due to the project still being in the pre-planning stage.
- 13.119 Once final designs and approvals from the Local Planning Authority have been received and a Principal Contractor has been appointed, then timescales can be assigned to the relevant activities and an overall project schedule can be formulated by the Principal Contractor. At this stage the construction phasing detailing above is indicative and would be fixed at the Reserved Matter Stage (per phase).
- 13.120 The peak construction traffic environmental impact is expected during month 78. It is anticipated that there will be an average of 50 two-way HGV movements per day during the normal construction phase, with 159 two-way HGV movements per day during the peak development phase (month 78). An additional 10 two-way LGV movements are anticipated on average per day, with 31 two-way LGV movements predicted per day during the peak development phase.

- 13.121 A maximum total of 190 vehicle trips per day are anticipated to/from the Proposed Development during the peak construction phase.

Operational Phase

- 13.122 The Site currently attracts a high proportion of car / van driver vehicle trips with a total of:
- 18-hour AAWT – 10,974 vehicles two-way (0.31% HGV's); and
 - 24-hour AADT – 11,215 vehicles two-way (0.43% HGV's).
- 13.123 Following completion and operation of the Proposed Development, the primary vehicular site access from Coldhams Lane would be retained and improved. There would also be pedestrian and cycle accesses into the Site from the York Street, Sleaford Street, St Matthew's Gardens and Coldhams Lane.
- 13.124 A total of 460 car parking spaces would be provided as part of the Proposed Development, of which 428 would be provided within a multi-storey car park along with 32 disabled spaces (which would be located close to the respective buildings). The Proposed Development would result in a reduction of 425 spaces when compared to the existing retail park (885 spaces) and also a reduced intensity of use across the day. The Proposed Development trip generation figures are as follows (referred to as Scenario 1):
- 18-hour AAWT – 629 vehicles two-way (0% HGV's); and
 - 24-hour AADT – 529 vehicles two-way (0% HGV's).
- 13.125 At the request of Cambridgeshire County Council, a 'Test Scenario' was also undertaken which utilises a higher car driver percentage (23.3%). Further justification and reasoning behind the test scenario is provided in the TA (**Appendix 13.1**). The resulting trip generation for the Proposed Development is as follows:
- 18-hour AAWT – 2,789 vehicles two-way (0% HGV's); and
 - 24-hour AADT – 2,344 vehicles two-way (0% HGV's).
- 13.126 The trip generation by sustainable transport modes is detailed within the TA (**Appendix 13.1**).
- 13.127 The resultant net vehicle trip generation has been calculated by subtracting the observed existing trip generation for the Site from the estimated trip generation for the Proposed Development (including the Test Scenario). These are shown below in **Table 13.9**.

Table 13.9: Net Trip Generation

SCENARIO	TWO-WAY AAWT (ALL TRAFFIC)	TWO-WAY AAWT HGV %	TWO-WAY AADT (ALL TRAFFIC)	TWO-WAY AADT HGV %
Scenario 1	-10,345	0%	-10,686	0%
Test Scenario	-8,185	0%	-8,870	0%

- 13.128 As shown in **Table 13.9** above, the vehicle trip generation shows a substantial net reduction in each of the scenarios assessed. Even the test scenario with a notably higher car / van driver mode share of up to 23.3%, the Site would produce a significant reduction in car / van driver vehicle arrival trips than the existing Site (a reduction of 8,185 AAWT and 8,870 AADT).

- 13.129 Given the estimated large reduction in car / van driver vehicle trips due to the implementation of the Proposed Development, Cambridgeshire County Council have agreed that off-site junction capacity assessments are not required (except for the Site access roundabout). This is due to the Proposed Development having a beneficial impact upon the operation of the local highway network. For example, there would be a significant reduction in vehicle trips on Coldhams Lane and Newmarket Road.
- 13.130 The vision of the Proposed Development is to also significantly reduce car travel at the Site through improving existing and providing new infrastructure and services for sustainable travel modes, while also restricting the amount of car parking available to further encourage a shift from car use to public transport and walking and cycling travel.
- 13.131 The vision to promote and achieve high usage of sustainable travel modes at the Proposed Development is reflected by the target mode shares and the subsequent net trip generation for walking, cycling, bus and rail modes, which would all increase significantly at the Site.
- 13.132 The key driver for mode share at the Site is the proposed constrained nature of car parking provision on-site, which includes a total of 460 spaces. Based on the originally estimated figure of 7,495 Full-Time Equivalents (FTE) referenced by the project economic consultants, this results in a required maximum mode share of 6.1% for car driver trips. The target travel mode shares for the Proposed Development have therefore been formulated to consider this maximum 6.1% car mode share along with previously set targets within Cambridge for specific modes. An updated report from the project economic consultants suggests the Site would now have 6,710 employees, which relates to a maximum car mode share of 6.8%.
- 13.133 The target travel mode shares for the Proposed Development have therefore been formulated to consider this maximum 6.8% car mode share along with previously set targets within Cambridge for specific modes, and are as follows:
- Train – A target figure of 16% has been used based on the 12% figure for 2035 included within the North East Cambridge Area Action Plan Working Draft Strategy (2019) plus an increase due to closer proximity of the Site than the majority of the NE Cambridge area to the City Centre and Cambridge railway station;
 - Bus - A target figure of 16% has been used based on the 12% figure for 2035 included within the North East Cambridge Area Action Plan Working Draft Strategy (2019) plus an increase due to the volume and high frequency of bus services proposed to serve the Site;
 - Cycle – A target figure of 40% has been used based on the target cycle share for Cambridge by 2023 included within the ‘Greater Cambridge City Deal’, which was signed by representatives from central government, council leaders, businesses and the University of Cambridge in June 2014. It is understood from Cambridgeshire County Council that no other targets for cycle mode share have been set since, and given that the cycle mode share across Cambridge in 2011 was circa 30%, this target figure is considered reasonable.
 - Walking – A target figure of 15.5% has been used based on the 16% figure for 2035 included within the North East Cambridge Area Action Plan Working Draft Strategy (2019), while this is considered a reasonable future target for a city with an existing overall 10% walking mode share and with aspirations to increase walking and cycling through several initiatives.
 - Other Method of travel to work – A target figure of 1.5% has been adopted as it is anticipated that growth in use of electric scooters and e-bikes would continue and provide a means of commuting for many people using the Site.

- 13.134 The target mode shares for each mode used is shown below in **Table 13.10**.

Table 13.10: Target Travel Mode Shares for Proposed Development

JOURNEY TO WORK MODE	TARGET MODE SHARE
Underground / Metro / Light Rail / Tram	0.0%
Train – to Bus	14.0%
Train – to Cycle	2.0%
Bus / Minibus / Coach	8.0%
Car to P&R and use P&R service	8.0%
Taxi	0.5%
Motorcycle / Scooter / Moped	1.1%
Car / Van Driver	4.8%
Car / Van Passenger	4.6%
Bicycle	40.0%
Pedestrian	15.5%
Other method of travel to work	1.5%

- 13.135 A target car / van driver mode share of 4.8% has therefore been used, which is below the maximum 6.8% mode share as based on the estimated number of employees and parking space provision.

Overlap of Construction and Operational Phases

- 13.136 If the construction and operational phases overlap, the overlap would have the potential to impact upon the local highway network.
- 13.137 As already demonstrated, construction of the Proposed Development would generate HGV traffic on the local highway network which would likely result in a temporary, local, adverse impact of minor significance with regard to the disruption to pedestrians, cyclists and road vehicle users on and immediately surrounding the Site. However, the Proposed Development would result in a significant reduction of car parking spaces and subsequent reduction in vehicle movements, in annual average daily traffic, when compared to the existing site. The overall effect during the overlap of construction and operation would be a minor increase in HGV trips (associated with the demolition and construction activities) and a significant reduction in vehicle trips (associated with the Proposed Development).
- 13.138 Overall, the potential impact of construction and operational vehicles would result in a temporary, local, adverse effect of minor significance during the construction period. Mitigation measures are therefore required to ensure that the adverse impacts of construction traffic are controlled.

Evaluation of Predicted Impacts

Construction Phase

- 13.139 The elements of the Proposed Development during the construction phases that are likely to generate traffic & transport-related effects are identified and summarised below:
- 13.140 No links within the study area would exceed the 10% or 30% thresholds for total traffic increases but a number of links would exceed these thresholds for heavy vehicles. However, it should be noted that although there would be an increase in HGV trips there would be a substantial net reduction in the overall number of vehicle trips.
- 13.141 The links which would experience an increase in HGV trips include the Site access road and Coldhams Lane. Beyond Coldhams Lane the route construction vehicles would take is unknown at this stage and would be agreed/managed through the implementation of a CEMP. Contractors working on the Site would have to comply with this during construction.
- 13.142 HGV traffic would travel to the Site outside the peak hours i.e. between 09:30 and 16:30. Similarly, construction worker trips are likely to occur outside the peak hours, i.e. before 08:00 and after 18:00. Given the location of the Site, operatives and site management staff would be encouraged to arrive by public transport and or by other means such as cycling. A cycle to work scheme would be encouraged and secure bicycle storage and showers would be provided on site. Parking on Site would not be permitted and parking in the local area around the Site or close by to the development would be discouraged. The use of official commercial car parks away from site is to be encouraged. The Principal Contractor would also promote a car sharing scheme. Construction worker trips are expected to be **negligible**.

Severance

- 13.143 No significant effects are expected in terms of severance during this phase; it is expected that the total construction traffic generated during the peak construction month would be 190 two-way HGV trips per day. Therefore, it is considered that the Proposed Development is unlikely to generate significant traffic flows during the construction stage. The overall effect is therefore considered **negligible (not significant)**.

Driver Delay

- 13.144 Construction of the improved site access on Coldhams Lane would cause minor adverse effects in terms of driver delay along Coldhams Lane and at the existing site access roundabout (whilst the roadworks are in place). However, these effects would be both localised and temporary throughout the duration of the works. To limit the effect, local residents would be informed prior to the works and an appropriate diversion would be in place. Pedestrian Delay
- 13.145 **No significant** effects are expected in terms of pedestrian delay, as the Proposed Development is unlikely to generate significant traffic flows during the construction stage.

Pedestrian Amenity

- 13.146 **No significant** effects are expected in terms of pedestrian amenity as traffic flows generated in the construction stage are unlikely to be significant.

Fear and Intimidation

- 13.147 Although the Proposed Development would generate HGV trips during the construction stage, it is anticipated that these would comprise a total of 190 HGV movements per day during the

peak construction period. Therefore, **no significant** effects are expected in terms of fear and intimidation.

Accidents and Safety

- 13.148 Traffic flows generated in the construction phase are not likely to be significant to the extent that there would be a significant effect on accidents and safety.

Summary

- 13.149 The demolition and construction works would result in some disruption to users of the Site and local highway network. Therefore, it is considered that the demolition and construction works of the Proposed Development, together with the associated increase in construction traffic, would likely result in a temporary, local, adverse impact of **minor significance** with regard to the disruption to pedestrians, cyclists and road vehicle users (driver delay) on and immediately surrounding the Site.

Operational Phase

- 13.150 As none of the links would incur an increase in traffic (and instead a substantial decrease would be experienced), the impact of vehicle and HGV traffic would be **major beneficial**. This impact would be long-term.
- 13.151 The following paragraphs consider the implications of the Proposed Development upon the key environmental effects, as detailed earlier in this chapter.

Severance

- 13.152 As shown in **Table 13.9**, the vehicle trip generation shows a substantial net reduction in each of the scenarios assessed.
- 13.153 Given the estimated large reduction in car / van driver vehicle trips due to the implementation of the Proposed Development, a **significant beneficial** effect is expected in terms of severance during this phase. The overall impact of the Proposed Development is expected to be long-term beneficial. The overall effect is therefore considered to be a **major beneficial** impact on all sensitive receptors.

Driver Delay

- 13.154 The decrease in traffic flows associated with the Proposed Development would have a long-term beneficial impact on all the junctions within the study area. The overall effect is therefore considered to be **major beneficial** impact on all sensitive receptors.

Pedestrian Delay

- 13.155 The decrease in traffic flows associated with the Proposed Development along with the proposed new infrastructure and services for sustainable travel modes, would have a long-term significant beneficial impact on the pedestrian delay within the study area. The overall effect is therefore considered to be **major beneficial** impact on all sensitive receptors.

Pedestrian Amenity

- 13.156 The decrease in traffic flows associated with the Proposed Development along with the proposed new infrastructure and services for sustainable travel modes, would have a long-term significant beneficial impact on the pedestrian amenity within the study area. The overall effect is therefore considered to be **major beneficial** impact on all sensitive receptors.

Fear and Intimidation

- 13.157 The decrease in traffic flows associated with the Proposed Development along with the proposed new infrastructure and services for sustainable travel modes, would have a long-term significant beneficial impact on fear and intimidation. The overall effect is therefore considered to be **major beneficial** impact on all sensitive receptors.

Accidents and Safety

- 13.158 As set out in the existing condition section of this Chapter, highway safety concerns have been identified and junction improvements are proposed at:
- Beehive site access / Coldhams Lane / Cambridge Retail Park Roundabout (see paragraph 13.21); and
 - Greater Cambridge Planning Service (GCP) are currently proposing to transform Newmarket Road to prioritise walking, cycling and bus use to form part of the Cambridge Eastern Access. The proposals would run from the Newmarket Road/Elizabeth Way/East Road/ Roundabout to Junction 35 with the A14. A dedicated cycle route would be provided in each direction of Newmarket Road as well as cycle improvements at junctions (such as Cyclops roundabouts). The GCP Newmarket Road improvements are provided in the TA (**Appendix 13.1**).
- 13.159 The significant decrease in traffic flows associated with the Proposed Development along with the proposed new infrastructure and services for sustainable travel modes, would have a long-term beneficial impact on accidents and safety. The overall effect is therefore considered to be **major beneficial** impact on all sensitive receptors.

Summary

- 13.160 Overall, the Proposed Development would have a long-term **major beneficial** impact regarding the disruption to pedestrians, cyclists and road vehicle users on and immediately surrounding the Site.

Overlap of Construction and Operational Phases

- 13.161 It is predicted the overlap of the construction and operational phases of the Proposed Development would not exceed the level of effects already identified in the Construction and Operational Development assessments set out above.

Mitigation

- 13.162 This section considers a range of mitigation measures which have been identified where the impact of Proposed Development is considered to be adverse.

Construction Phase

- 13.163 Demolition and construction of the Proposed Development would generate traffic on the local highway network which would likely result in a temporary, local, adverse impact of minor significance with regard to the disruption to pedestrians, cyclists and road vehicle users on and immediately surrounding the Site.
- 13.164 The development of a comprehensive CEMP by the applicant would ensure that any potential adverse traffic and transport impacts during the temporary demolition and construction phases are mitigated and carefully monitored.

- 13.165 The CEMP would include, amongst other things:
- Agreement of appropriate construction vehicle routes with Cambridgeshire County Council;
 - Agreement of days and hours of Site operation to manage construction vehicle movements and minimise nuisance;
 - Provision of wheel-wash facilities on-Site to minimise dust and dirt generation; and
 - Use of a banksman to ensure safe vehicular access/egress to/from the Site.

13.166 The measures to mitigate the impact of the Proposed Development during the construction phase would concentrate the traffic effects upon Coldhams Lane. This traffic would be limited to daytime periods of operation.

13.167 The CEMP would be agreed / approved by Cambridgeshire County Council.

Operational Phase

13.168 The vision of the Proposed Development is to significantly reduce car travel at the Site through improving existing and providing new infrastructure and services for sustainable travel modes, while also restricting the amount of car parking available to further encourage a shift from car use to public transport and walking and cycling travel. The vision to promote and achieve high usage of sustainable travel modes at the Proposed Development is reflected by the target mode shares and the subsequent net trip generation for walking, cycling, bus and rail modes, which would all increase significantly at the Site. With the inclusion of these mitigation measures the Proposed Development would have a long-term major beneficial impact regarding the disruption to pedestrians, cyclists and road vehicle users on and immediately surrounding the Site.

13.169 To achieve these targets a Transport Strategy has been developed for the Proposed Development, which would be implemented through a TP (**Appendix 13.2**). A Travel Plan Co-ordinator (TPC) would be appointed to be responsible for the overall implementation of the TP. The TPC would be supported by a Sustainable Transport Managers (STM) from each company leased on-site. The role of the STM's would be to act as a liaison between staff within their company and the TPC and ensure personalised travel planning is delivered for each company on-site. They would manage and coordinate the TP incentive programme and be a point of contact within their block for staff. The STM would also be responsible for ensuring the requirements from the Delivery and Servicing Management Plan (pre-booking and consolidating deliveries) and Parking Management Plan (issuing parking permits and registering staff numberplates to become authorised to access the Site).

13.170 The STM's would support the TPC with the implementation of the TP, its measures and ongoing monitoring and review. The STM would be a named individual for each company leased on-site. Each company would be required to have a named STM as part of their lease agreement.

13.171 The TP would be monitored and it is proposed to use the TRICS Standard Assessment Methodology (SAM). A SAM-based Monitoring Strategy would provide an independent, objective and robust data collection programme. SAM surveys are held every two years, with surveys proposed at the end of years 1, 3 and 5 from Site occupation.

13.172 The Proposed Development includes a comprehensive range of proposals to ensure safe and convenient access for all modes of travel and, in particular, seeks to encourage sustainable (i.e. low carbon, active) travel modes (i.e. walking, cycling and public transport trips), wherever possible.

- 13.173 The transport strategy for the Proposed Development is based upon maximising the use of sustainable transport modes. At its core, this is achieved by reducing reliance on private car use by limiting the availability of parking, closely managing access to it, and providing a suite of measures on and off-site to support use of non-car modes.
- 13.174 The restriction and control of car parking is a key factor in encouraging people to use sustainable modes of transport and is seen as a 'push' factor in the modal shift to sustainable modes. A total of 460 car parking spaces would be provided as part of the Proposed Development, of which 428 would be provided within a multi-storey car park along with 32 disabled spaces (which would be located close to the respective buildings. The Proposed Development would result in a reduction of 425 spaces when compared to the existing retail park (885 spaces) and also a reduced intensity of use across the day. The Proposed Development has a parking ratio of 0.068 spaces per employee. It is therefore essential that the on-site parking is used in accordance with its purpose (i.e. is available for disabled users and staff with no sustainable transport alternatives).
- 13.175 In total there would be parking for a maximum for 6.8% of staff, however the proposals target for not all of the on-site parking to be utilised at all times. A target modal split of 4.8% is identified for car trips to/from the Proposed Development.
- 13.176 Principal components of the Transport Strategy are identified by mode in the following paragraphs:
- 13.177 As outlined in the TA (**Appendix 13.1**) not all of the below measures would have to be implemented to mitigate the impact of the development. Instead, they represent a comprehensive package of measures which the Proposed Development would draw upon to decrease car use and achieve the modal shift towards walking, cycling and bus trips. The concept and locations of the measures have been agreed with Cambridgeshire County Council.

Measures to Decrease Car Use

- 13.178 Measures to discourage driving to and from the Site have been outlined within the Car Parking Management Plan (PMP). An outline of the measures are outlined below:
- All vehicles accessing the Site are required to pre-register before entering the Site. Repeat entry from an unregistered vehicle would be issued with a warning and a follow up fine for repeat unauthorised entry. STM's would ensure new staff members register their vehicles during their induction. Vehicles entering the Site would be split into two groups, Greenlist (pre-registered vehicles, blue badge holders and known deliveries) and redlist (unregistered deliveries and unscheduled deliveries);
 - Vehicle access would be monitored via ANPR. The Site access ANPR would allow for monitoring of vehicle access, noting unregistered access to and TP monitoring;
 - Companies would be issued with a maximum amount of parking permits based on floor area. These would be allocated on a need-basis. Permits would be offered according to priority, 1) Blue Badge holders, 2) family/carer needs (to be means tested) 3) late night workers, 4) electric vehicles and 5) car sharers;
 - Parking within the Site would be charged at £8 a day and subject to obtaining a parking permit (price to be monitored and adjusted in-line with car park use and modal shift);
 - Proposals would support the implementation of a CPZ on the surrounding residential roads and the Sustainable Travel Zone Charge being proposed by GCP;

- Provision of car-clubs on-site. The location and number of car club bays need to be agreed with a car club operator. Free membership would be offered to all companies on-site for five years and a pre-determined amount of driving credit would be provided; and

On-site Cycle Improvements

13.179 On-site cycle improvements would be made including:

- LTN1/20 cycle route provided through the Site connecting Sleaford Street, York Street, St Matthew's Gardens and Coldham's Lane. The cycle route through the Site may be adopted within Phase 2 of the Chisholm Trail. The cycle route would be segregated from pedestrians and other road users;
- Cycle parking facilities in excess of Cambridge City Councils standards provided on two-tier racks and Sheffield stands for larger/adapted cycles such as cargo bikes. Cycle parking would be provided for 63% of employees which is in excess of 40% cycle mode target;
- On-site locker, shower and changing facilities in each block for staff walking and cycling to the Site. A drying room would also be provided within each block;
- A cycle maintenance centre would be provided within cycles stores and also at the Mobility Hub. On-site staff would offer free or subsidised cycle maintenance and services; and
- Cycle access points from Sleaford Street and York Street and St Matthew's Gardens would be significantly improved, widened and provided with segregated pedestrian and cycle access with wayfinding signage to indicate through routes.

Off-site Cycle Improvements

13.180 As part of the STS, the development would provide a financial contribution towards several off-site cycle improvements. These cycle improvements include:

- Supporting GCP proposals on Newmarket Road. The proposals on Newmarket Road would provide fundamental changes on Newmarket Road from the roundabout with Elizabeth Way and East Road to Junction 35 of the A14. Walking, cycling and public transport would be prioritised and segregated cycle routes would be provided. The proposals would also provide a direct cycle link to the existing and proposed Newmarket Road P&R;
- A series of cycle improvements are being explored along Coldhams Lane to the north of the Site which the Applicant would contribute towards, subject to agreement with GCP and CCC. Improvements along Coldhams Lane includes removing right-hand turn lanes to widen on-street cycle lanes, Toucan crossings on the Site access roundabout, explore the potential to widen the bridge over the rail line to provide a cycle lane each way, improve the Coldhams Way/Cromwell Road junction to link to the Chisholm Trail, upgrade to the Coldhams Lane/Brooks Road/Barnwell Road roundabout to provide a Cyclops roundabout plus other small improvements;
- A series of cycle improvements on roads towards Cambridge Station which the Applicant would contribute towards, subject to agreement with GCP and CCC. These measures include providing cycle priority across side roads, speed calming measures, marking Devonshire Road one-way to provide a segregated cycle lane plus additional measures; and
- Improvements would be suggested towards Cambridge City Centre which the Applicant would contribute towards which can be agreed, subject to agreement with GCP and CCC. These include 'early start' cycle signals at the East Road/Mill Road/Parkside signalised junction, cycle lane protections, signage and markings along East Road and connectivity with cycle lanes along the River Cam.

On-site Walking Improvements

- 13.181 As part of the sustainable transport strategy the Proposed Development would be provided with an excellent pedestrian environment throughout the site, which would provide pedestrians routes with shade, shelter and places to stop and rest, priority pedestrian crossing points, pedestrianised routes, wayfinding signage, wide footways, street lighting, passive surveillance for safety and dropped kerbs and tactile paving.
- 13.182 Maps and advice for walking to work would be provided within the mobility hub and through Maas. Pedestrian access points from Sleaford Street, York Street, St Matthew's Garden and Coldhams Lane would be maintained and improved.
- 13.183 In addition, there would be a mix of uses along the ground floor plane throughout the Site (7,488sqm mixed use GIA) which would provide an attractive active frontage throughout the Site. These mixed uses would provide day-to-day facilities for staff, such as a place to buy lunch, reducing the need to travel greater distances for personal purposes.

Off-site Walking Improvements

- 13.184 The Proposed Development would contribute towards a number of off-site pedestrian improvements, subject to approval with CCC and GCP. These improvements would provide additional capacity for pedestrians walking to and from the Site and include:
- Contributing to improved pedestrian facilities on Newmarket Road as part of the GCP proposals. Including providing wide footways and dedicated crossing points with pedestrian priority.
 - Contribute towards improvements on Coldhams Lane, including pedestrian crossing facilities on the Site access junction and along the bridge over the rail line.
 - Contribute towards enhanced pedestrian facilities along roads towards Cambridge Rail Station and Cambridge town centre.

Park and Ride Proposals

- 13.185 The Proposed Development would support the proposals to relocate and extend the Newmarket Road P&R, increasing the capacity of the P&R from 873 spaces to 1,750 spaces. The use of the P&R would be supported through Maas and the TPC would explore with bus operators the potential to provide site users with a discount to use the P&R, which is currently charged at £3.50 a day.
- 13.186 There are also indicative future proposals to provide a 'bus-way' through land currently controlled by Cambridge Airport. If the 'bus-way' is provided, this would reduce the bus journey time from the Site to the Newmarket Road P&R.

Mobility as a Service (Maas)

- 13.187 Mobility as a Service (Maas) would be facilitated through a dedicated transport brokerage located within the Mobility Hub which would be a structure provided centrally within the Site, to optimise transportation for employees working on and off-site. Maas brings together different transport options from different providers into a single intuitive online/mobile application, which can be used to plan for all modes of partnered public and private transportation. Existing providers of Maas systems include Go Travel Solutions and Better Points.
- 13.188 Maas uses a digital interface to source and manage the provision of transport services in order to meet the mobility requirements of its users.

13.189 Maas also allows for easier monitoring through the TP and also enable incentives to be gained by companies, employees, and/or occupiers of each building. Demonstrating positive reductions in car use can be incentivised by financial savings for local businesses, further sustainable travel measures, access to public transport etc.

13.190 Maas could encompass a range of potential components including:

- Car sharing;
- Voi cycle and scooter hire;
- Integrated fare management;
- Real-time travel information;
- Point to point car rental,
- Personal travel assistant applications;
- Multi-modal transportation solutions; and
- Incentives, discounts and travel vouchers.

Improved Bus Services/Facilities

13.191 The development proposals would contribute to increase the 'commuter' bus frequencies to nearby population centres outside of Cambridge to support employees who live outside of Cambridge to travel to the Site sustainably. The TPC would be in regular contact and discussions with bus operators on how to improve bus services and connectivity to the Site. A summary of bus service improvements are provided below:

- Milton P+R = 2 new vehicles (potential increase from 300 seats per hour to 375 seats per hour in peak hours one-way)
- Newmarket P+R = 2 new vehicles which would provide an additional two services an hour (increase from 450 seats per hour to 600 seats per hour in peak hours one-way); and
- Out of town = 6 new vehicles, providing two journeys on three routes at occupation rising to 9 new vehicles and three journeys on three routes (total increase of 675 seats per hour in each direction).

13.192 The bus improvements above would result in a net increase of 225 P+R bus seats an hour in each direction from the Milton Road/Newmarket Road P&R's and an additional 675 bus seats for out of town bus services. The Proposed Development would therefore provide an increase in bus seat capacity 'towards' the Site by 825 bus seats in each peak hour, potentially rising to 900 seats an hour towards the Site. An additional 825 - 900 bus seats towards the Site equates to an additional bus seat for 13.4% - 12.2% of staff. These additional bus seats would account for the majority of the target 11.6% increase in bus mode share, with the remaining trips being made on the existing extensive service. The bus proposals would therefore provide sufficient capacity to meet the target mode share.

13.193 In addition, the existing bus stop within the Site would be relocated centrally along the one-way loop for ease of access for all site users. The relocated bus stop would be provided with high quality waiting areas, including a raised kerb to aid access for those with mobility issues, large shelters with seating, lighting and live arrival information and bins and nearby bins. The new bus stop would be included within the re-print of bus route maps.

Other Measures Provided within the TP Include:

- Season ticket loans – Season ticket loans can be offered to employees for bus and rail services. This would allow employees to purchase a season ticket tax-free, which would then be paid back to the employer weekly or monthly via their pay package.
- Cycle to work scheme – Employers would be encouraged to offer the cycle to work scheme for all employees. The cycle to work scheme allows employees to purchase a bike tax-free using a loan from their employer, which could provide a saving of up to 48.25% on a new bike and safety equipment.
- Travel information pack – The TPC would prepare a suite of travel information which would be provided in the form of a Travel Information Pack and access to an electronic version of the TIP would be provided to all employees and occupiers on the Site as well as accessible through the Site's web page and media.
- Noticeboards – Travel information would be provided on a noticeboard in the foyer of each block and within the Mobility Hub. The noticeboard would display maps of the local walking and cycling network and would display information on any changes to public transport services.
- Websites – Details on how to access the Site by active and sustainable forms of travel would be provided on The Beehive website and STM's would encourage occupiers to display travel information on their respective websites. Details on the requirement to pre-register vehicles and the parking charge for the Site would also be provided.
- Walk to work week – The TPC, alongside the STM's would organise walking events such as 'walk to work' day (Walk to Work Day (April 7th, 2023) | Days Of The Year). To encourage participation with 'walk to work' day, a free breakfast can be offered to all staff who partake in the 'walk to work' day.
- Set us Walking User Groups (WUG) – The TPC and STM can set up WUG's, where employees who walk to work can meet to discuss issues and suggest improvements which can be reported by a STM or the TPC. These issues or suggestions can then be taken forward and addressed. WUG meetings could be undertaken through the day and free refreshments can be provided to encourage participation.
- Cycle training – The TPC and STM's can organise Bi-annual cycle training courses on-site which would be free for staff. These cycle training sessions can be run by existing cycle training organisations such as Outspoken Training based in Cambridge. This would give all employees the chance to learn to cycle or improve their cycling skills. Dr bike maintenance sessions can also be set up bi-annually to teach employees about bike maintenance.
- Bicycle User Groups (BUG's) – The TPC and STM's can set up BUG's, where employees who cycle to work can meet to discuss issues and suggest improvements which can be reported by a STM or the TPC. These issues or suggestions can then be taken forward and addressed by the TPC and site management. BUG meetings could be undertaken through the day and free refreshments can be provided to encourage participation.
- Voi cycles and scooters – Voi operates a fleet of bikes and scooters for short journeys. There would be space provided with the Site to allow Voi bikes and scooters to be parked within the Site. The use of Voi bikes would be supported through Maas and TIP's. Provision of discounted monthly subscriptions can be explored.
- Cycle discounts – The TPC would negotiate discounts for staff from local cycle retailers. This would be included with MaaS

- Delivery and Servicing Measures – A Delivery and Servicing Plan would be submitted alongside this TP and includes measures to reduce the impact of the delivery and servicing strategy. These measures included:

13.194 A table listing the above measures is also included in the TP (**Appendix 13.2**).

Overlap of Construction and Operational Phases

13.195 No further mitigation measures from those set out above would be required to mitigate against the overlap of the construction and operational phases of the Development.

Residual Effects

13.196 There are a small number of adverse residual effects of significance in terms of transport-related environmental effects. A range of mitigation measures have been identified where the impact of construction and operational phase was considered to be adverse.

Construction Phase

13.197 The demolition and construction of the Proposed Development would generate additional HGV traffic on the local highway network. To effectively manage this, a CEMP would be developed and implemented, which would set out measures to minimise construction traffic and any disruption. As part of this, construction traffic routes, access and egress to the Site would be agreed with Cambridgeshire County Council.

13.198 The proposed measures to mitigate the impact of the demolition and construction phase would include, amongst other things:

- Agreement of appropriate construction vehicle routes with Cambridgeshire County Council;
- Agreement of days and hours of Site operation to manage construction vehicle movements and minimise nuisance;
- Provision of wheel-wash facilities on-Site to minimise dust and dirt generation; and
- Use of a banksman to ensure safe vehicular access/egress to/from the Site.

13.199 Notwithstanding the above, the demolition and construction works would result in some residual disruption to users of the Site and local area. Therefore, it is considered that the demolition and construction works of the Proposed Development, together with the associated increase in construction traffic, would likely result in a temporary, local, adverse impact of **minor** significance with regard to the disruption to pedestrians, cyclists and road vehicle users on and immediately surrounding the Site.

Operational Phase

13.200 The vision of the Proposed Development is to significantly reduce car travel at the Site through improving existing and providing new infrastructure and services for sustainable travel modes, while also restricting the amount of car parking available to further encourage a shift from car use to public transport and walking and cycling travel.

13.201 The vision to promote and achieve high usage of sustainable travel modes at the Proposed Development is reflected by the target mode shares and the subsequent net trip generation for walking, cycling, bus and rail modes, which would all increase significantly at the Site. A comprehensive STS has been identified through the TP to achieve this.

- 13.202 With the inclusion of these mitigation measures the level of residual effects of the Proposed Development, would be **minor beneficial** during the operation phase.

Overlap of Construction and Operational Phases

- 13.203 No further mitigation measures are required to mitigate against the overlap of the construction and operational phases.

Monitoring

- 13.204 A 'Monitor and Manage' approach is a core element of the STS, setting the framework and protocol for the management of vehicle use to access the site and associated parking demand. The Monitor and Manage approach would be enforced through a range of measures including conditions of employment, registration of all vehicles used by staff and/or organisations using the site, pre-booking of parking spaces within the multi-story car park and streetscape provision and monitoring of car park use through ANPR.
- 13.205 The Monitor and Manage approach would set out a framework for delivery of the mode share targets for the site. It would also provide a mechanism for monitoring vehicular access to the site and car park demand and for reviewing the mode share targets in the future.
- 13.206 The Monitor and Manage strategy includes the provision of a 'Mode Share Incentive Scheme' (MSIS), which would be secured through a Section 106 Agreement, comprising a financial penalty to incentivise achievement of mode share targets within identified timeframes. The value of the MSIS and specific timeframes for delivery of mode share targets would be agreed with the Local Authority as part of the planning process.
- 13.207 Should mode share targets not be met with specified timeframes, the Applicant and/or appointed TPC would discuss and agree a plan of action with the Local Authority, to determine how any deficiencies in the operation of the Travel Plan would be met.

Summary of Impacts

- 13.208 Demolition and construction of the Proposed Development would generate HGV traffic on the local highway network. To effectively manage this, a CEMP would be developed and implemented, which would set out measures to minimise construction traffic and any disruption. As part of this, construction traffic routes, access and egress to the Site would be agreed with Cambridgeshire County Council.
- 13.209 The Proposed Development, once completed and operational, would provide permeability and connectivity across the Site through the provision of roads, footpaths and cycleways. In addition, the Proposed Development would include the provision of secure cycle facilities for users within the Proposed Development and encourage the use of sustainable modes of transport through a comprehensive package of sustainable transport measures.
- 13.210 A significant net decrease in traffic generated from the Proposed Development would be managed through a significant decrease in parking provision along with the implementation of a TP, that would set out the broad principles to be adopted to promote sustainable travel and aim to encourage more people to use sustainable modes of transport such as cycling, walking and public transport. The TP would be promoted and supported by the appointment of a TPC and STM who would champion the use of sustainable modes of transport and seek to support a change in modal shift away from single occupied cars.

- 13.211 Overall, the assessment included within this chapter demonstrate that no significant transport effects are anticipated during the construction phase of the Proposed Development. During the operational phase of the Proposed Development significant beneficial effects are anticipated due to the substantial net reduction in traffic flows.

Table 13.11: Summary of Impacts: *Transport*

DESCRIPTION OF IMPACT	GEOGRAPHICAL IMPORTANCE	RECEPTOR SENSITIVITY	MAGNITUDE	IMPACT BEFORE MITIGATION				MITIGATION	IMPACT AFTER MITIGATION (RESIDUAL)			
				ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE		ADVERSE/BENEFICIAL	REVERSIBLE/IRREVERSIBLE	SHORT-TERM/LONG TERM	SIGNIFICANCE
Impact of Construction Traffic	Loc	High	Low	Adv	Rev	ST	Min	The development of a comprehensive CEMP by the applicant would ensure that any potential adverse traffic and transport impacts during the temporary demolition and construction phases are mitigated and carefully monitored. The CEMP would be agreed / approved by Cambridgeshire County Council.	Neg	Irrev	ST	Neg
Impact of Operational Traffic	Loc	High	High	Ben	Rev	LT	Maj	The restriction and control of car parking is a key factor in encouraging people to use sustainable modes of transport. A comprehensive suite of sustainable transport measures are proposed within the Travel Plan which include on and off-site measures to support the use of non-car modes.	Ben	Irrev	LT	Maj

Key:

Loc: Local Min: Minor Rev: Reversible Adv: Adverse LT: Long-Term
 Maj: Major Ben: Beneficial Irrev: Irreversible Neg: Negligible ST: Short Term

Cumulative Effects

14

14.0 Cumulative Effects

Introduction

- 14.1 This chapter describes the scope of the cumulative effects in the locality of the Site as considered by this assessment. Each technical chapter of this ES (chapters 6 to 13) includes a detailed assessment of the likely cumulative environmental effects, therefore, this chapter provides a summary of the cumulative assessment conclusions for each of the ES technical topics.

Methodology

- 14.2 There is no accepted methodology for cumulative assessment, although guidance is available in the form of EC (May 1999) Guidelines for the Assessment of Indirect and Cumulative Impacts.
- 14.3 There are two main forms of cumulative effects:
- Inter-project effects: The combined effect of the Proposed Development together with other reasonably foreseeable or committed developments (taking into consideration effects at both the construction and operational phases); and
 - Intra-project effects: The combined effects caused by the combination of a number of impacts on a particular receptor (taking into consideration impacts at both the construction and operational phases), which may collectively cause a more significant effect than individually. For example, the combination of noise and air quality impacts.

Inter-project Effects

- 14.4 Inter-project cumulative effects relate to multiple Proposed Developments giving rise to significant effects at a receptor. For example, a number of developments in close proximity to one another may, for example, give rise to significant landscape and traffic effects cumulatively.
- 14.5 There is no guidance which defines the appropriate study area for considering cumulative effects of identified consented and pending developments. A set of screening criteria has therefore, been developed to identify which cumulative schemes should be subject to assessment in combination with the Proposed Development; this was agreed with CCC through the EIA scoping process.
- 14.6 Projects were considered for cumulative effects where they meet the following criteria:
- Development which is within a zone of influence of the Proposed Development. This zone has been set at 2km;
 - Planning applications during the last two years;
 - Development which is expected to be constructed at the same time as the Proposed Development;
 - EIA development (which is likely to have significant effects in its own right);
 - Development which introduces sensitive receptors in close proximity to the Site (acknowledging that the agent of change principle means the introducer of any sensitive receptors is responsible for assessing impacts on those receptors); and
 - Major Development and infrastructure projects which have a reasonable prospect of coming forward before or at the same time as the Proposed Development. This includes:

- Major developments where a planning application has been submitted and information is in the public domain, but the application has not yet been determined; and
- Major development proposals currently at Scoping Stage.

14.7 Major Development is classified as development involving one or more of the following:

- The winning or working of minerals or the use of land for mineral-working deposits;
- Waste development;
- The provision of dwelling houses where:
 - The number of dwelling houses to be provided is 10 or more; or
 - The development is to be carried out on a site having an area of 0.5 hectares or more.
- The provision of a building or buildings where the floor space to be created is 1,000 square metres or more.
- Development carried out on a site having an area of 1 hectare or more.

Intra-Project Effects

14.8 There is no established EIA methodology for assessing and quantifying the combined effects of individual effects on sensitive receptors. It should, however, be noted that cumulative effects can generally only be broadly identified and assessed qualitatively and where possible, quantified. The assessment has been undertaken in accordance with the following stages:

- Identification of sensitive receptors;
- A review of the residual effects reported in Chapters 6 to 13 to identify the potential for effect interactions and, therefore, combined cumulative effects; and
- Identification of appropriate mitigation of the identified effects, as required.

14.9 The criteria for identifying those receptors that are considered to be potentially sensitive include the nature of the receptor, proximity to the works, and extent of exposure to impacts. It should also be noted that different stages of construction works will result in different effect magnitudes. It may be that for some environmental topics, there are no interactions with other individual effects and, therefore, there are no combined cumulative effects.

Results

Inter-Project Effects

14.10 Based on criteria set out earlier in this chapter and following a planning search across CCC and SCDC local authority areas, the following projects were identified and are listed in **Table 14.1**.

Table 14.1: Development Commitments

PROJECT	PLANNING REFERENCE	KEY ELEMENTS OF PROPOSAL	REASONS FOR INCLUSION/EXCLUSION BASED ON CRITERIA PROVIDED ABOVE
Projects to be Included in the Cumulative Assessment			
Land North of Cambridge North Station Milton Avenue Cambridge Cambridgeshire	22/02771/OUT	A hybrid planning application for: a) An outline application for the construction of three new residential blocks providing for up to 425 residential units and two commercial buildings b) A full application for the construction of three commercial buildings	This project is approximately 1.8km north of the Proposed Development and has not yet been granted planning permission. If this project is granted planning permission, there may be overlap with the construction of the Proposed Development which could contribute to additional vehicles trips on the local road network. There could also be some operational effects once the Proposed Development is operational. This project has therefore been included within the cumulative assessment.
Land North of Cherry Hinton Coldhams Lane Cambridge Cambridgeshire	18/0481/OUT	Outline planning application for a maximum of 1200 residential dwellings a local centre primary and secondary schools, community facilities, open spaces, allotments, landscaping and associated infrastructure.	This project is approximately 1.5km east of the Proposed Development and was granted outline permission in December 2020. Reserved matters applications for the project were submitted in July and September 22/03140/REM (landscaping, layout and scale) and 22/04037/REM (show homes) respectively. Given this is a major development and 1,200 dwellings will take many years to be built, there could be some overlap in with the construction of the Proposed Development which could contribute to additional vehicles trips on the local road network. This project has therefore been included within the cumulative assessment.

PROJECT	PLANNING REFERENCE	KEY ELEMENTS OF PROPOSAL	REASONS FOR INCLUSION/EXCLUSION BASED ON CRITERIA PROVIDED ABOVE
230 Newmarket Road Plot 1	N/A	Development comprising retail and F&B unit on the ground floor, with commercial office space on upper floors. Site area is approximately 1.2 ha	This project is currently being prepared so not yet a committed development, however, given the close proximity to the Proposed Development (circa 100m), this has been included within the cumulative assessment.
Projects to be Excluded from the Cumulative Assessment			
230 Newmarket Road Plot 2	23/00419/FUL	Erection of a food and beverage unit ("F&B") (Use Class E(b)) along with associated revisions to the car park layout, provision of cycle parking, associated infrastructure and landscaping	This project is approximately 200m north of the Proposed Development. Given the small scale of this project, there are unlikely to be any cumulative impacts with the Proposed Development. This project has therefore been excluded from the Proposed Development.
Development Land At 75 Cromwell Road Cambridge Cambridgeshire	19/0288/FUL	Erection of 295 dwellings	This project is approximately 160m east of the Proposed Development and was granted permission in October 2019. This project is already under construction and given the application for the Proposed Development is for an outline application, there is unlikely to be an overlap in the construction works. Given the residential nature of the Project, there are unlikely to be any operational cumulative effects with the Proposed Development. This project has therefore been excluded from the cumulative assessment.