MOLLISON AVENUE, ENFIELD

HIGHWAYS AND TRANSPORT : TECHNICAL NOTE

DOCUMENT CONTROL SHEET

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2	6/3/20	Final Version

1 INTRODUCTION

This Highways and Transport Technical Note has been commissioned by Gazeley, in response to Enfield Council's 'call for sites' request in the preparation of their new Local Plan, to support the promotion of land to the north of Mollison Avenue, Waltham Cross ("the site"), for allocation as employment land for industrial warehousing (Use Class B1(c), B2, B8).

The purpose of this technical note is to demonstrate that:

- Appropriate opportunities to promote sustainable transport modes can be taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

This technical note is to be submitted to Enfield Council to inform their assessment of the site from a highways and transport perspective. The findings of the note are intended to demonstrate to Enfield Council that development of the site would be acceptable in planning terms and deliverable, subject to appropriate mitigation.

In preparing this technical note, full consideration has been given to the national planning policy and guidance contained within the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG). Due consideration has also been given to the relevant local policy and guidance published by Enfield Council and Transport for London (TfL).

This technical note should be read in conjunction with the Cover Letter and Enfield Industrial Demand Report prepared by JLL, together with the supporting drawings. When read together, this information makes evident that development of the site is achievable, viable and deliverable.

2 PROPOSED ALLOCATION

In support of the proposed allocation, RPS has prepared two Masterplan Options which demonstrate the form and function of development that could take place on the site. The Masterplan Options are supported by an Opportunity and Constraints Plan which has influenced the layout and massing of the scheme. This exercise has demonstrated that the site can deliver between 400,000 to 500,000sqft of industrial warehouse floorspace in either 3 or 4 buildings.

3 LOCAL TRANSPORT NETWORK

Highway Network

The site is very well connected to the strategic highway network via Mollison Avenue (the A1055). This major 'A' road forms the southern boundary of the site, linking between the A110 and A1010. The road carries approximately 20,000 vehicles a day, of which a high proportion (>10%) are heavy goods vehicles.

Within the vicinity of the site, Mollison Avenue is a single-carriageway road, with one lane in either direction. The road is urban in character, subject to a 40mph speed limit, with street lighting present.

Adjacent to the southeast corner of the site, Mollison Avenue forms a three-arm normal roundabout with Solar Way, which provides access to Innova Park. To the east of this roundabout, Mollison Avenue heads southwards for approximately 4.5km before joining with Lea Valley Road (the A110).

To the west of the site, Mollison Avenue meets with Hertford Road (the A1010) and Bullsmoor Lane (the A105) at a four-arm signal-controlled junction. Further to the west, Bullsmoor Lane meets Great Cambridge Road (the A10) which provides access to Junction 25 of the M25. Highways England are currently developing a scheme to improve the capacity of M25 J25 by widening both the roundabout and the A10 southbound approach. Construction of the scheme is scheduled to begin in Winter 2020-21, with the aim of reducing congestion and delay on this part of the network, whilst also supporting future traffic demands, enabling development to take place.

Following the A10, A1010 or the A1055 southbound from the site provides access to the A406 North Circular Road.

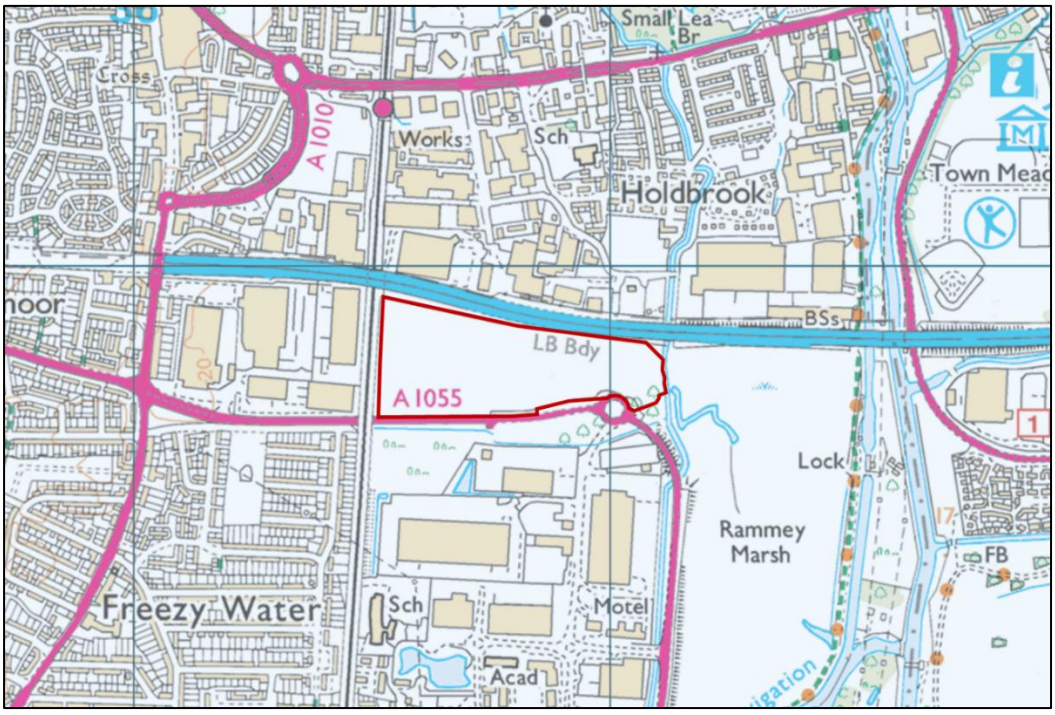
Pedestrian Network

To the west of the site, footways of approximate 2m width are provided along both sides of Mollison Avenue, which connect to Hertford Road and Bullsmoor Lane. Signal-controlled crossing facilities are provided at the Hertford Avenue / Mollison Avenue / Bullsmoor Lane Junction.

Along the frontage of the site itself, a footway is provided along the northern side of Mollison Avenue only. The footway is signed as a shared-use footway/cycleway.

To the east of the site, dropped kerbs and tactile paving are present at the Mollison Avenue / Solar Way Roundabout. The kerbed splitter islands are provided as uncontrolled pedestrian refuges. Beyond this, footways are provided along both sides of Mollison Avenue and Solar Way, connecting to the site to the pedestrian infrastructure in the wider area.

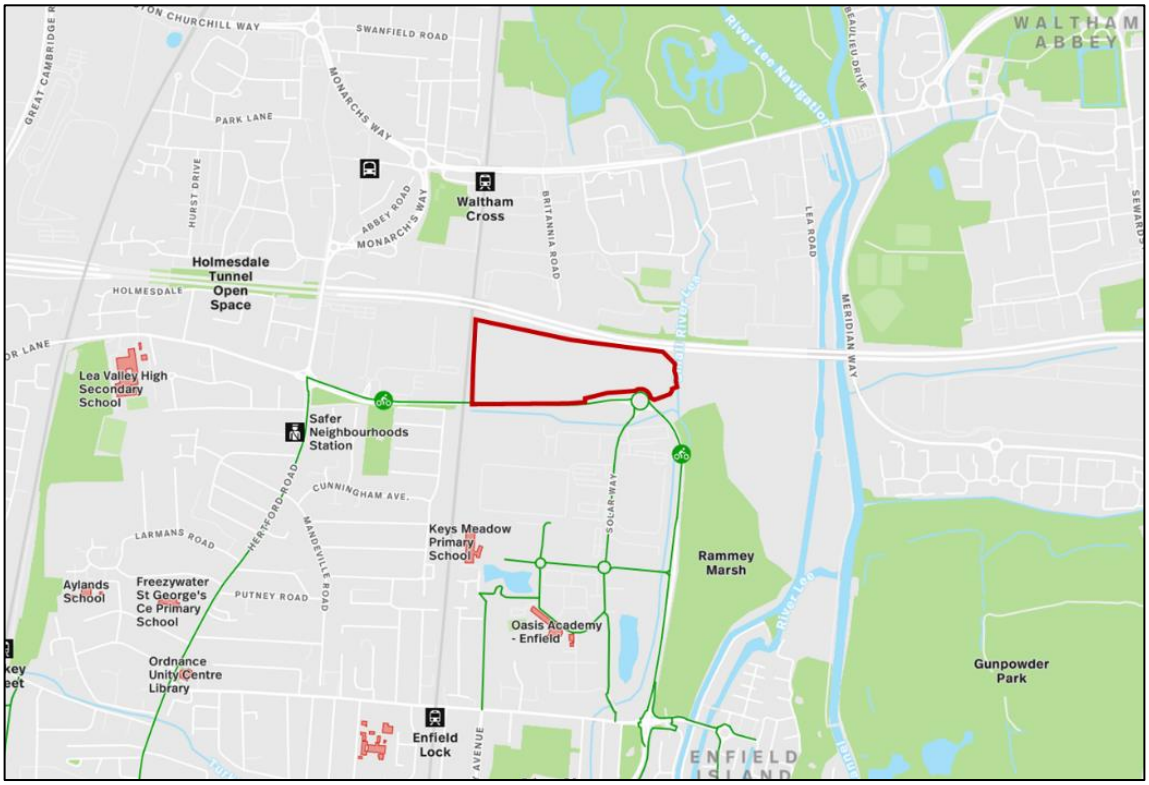
Screenshot 3.1, below, presents an extract from the OS Explorer Map. It shows that the site is not subject to any dedicated Public Rights of Way.



Screenshot 3.1: Extract from the OS Explorer Map

Cycle Network

Screenshot 3.2 presents an extract from the Enfield Active Travel Digital Map. It shows that the site is well connected to the local cycle network, with a signed off-road cycle route running along the southern boundary of the site.



Screenshot 3.2: Extract from the Enfield Active Travel Digital Map

The shared-use footway/cycleway on the northern side of Mollison Avenue connects to similar provision on Hertford Road to the west. To the east, the off-road cycle route continues for the full length of Mollison Avenue, intersecting with National Cycle Route 12. The site therefore benefits from convenient access to the National Cycle Network.

Public Transport Network

The site is well located in relation to existing public transport services, with a number of bus services stopping within reasonable walking distance of the site.

The closest bus stops in relation to the site are located on Solar Way, to the south of the site, within Innova Park. The walking distance from the southern boundary of the

site to the nearest bus stop is approximately 320m. The bus stop provides access to the Number 491 services which operates between Waltham Cross Bus Station and North Middlesex Hospital. A bus is provided every 20 minutes during peak periods.

Additional services can be accessed from other bus stops with reasonable walking distance of the site. In particular:

- The Number 217, 317 and 327 services can be accessed from bus stops on Bullsmoor Lane, located to the west of the site, close to the junction with Hertford Road. The walking distance from the western boundary of the site to the nearest bus stop is approximately 600m. The bus stop has a shelter with seating and timetable information.
- The Number 279 and N279 services are available from bus stops on Hertford Road, located to the west of the site, close to the junction with Mollison Avenue. The walking distance from the western boundary of the site to the nearest bus stop is approximately 630m. The bus stop has a full-width layby and shelter with seating and timetable information.

Table 3.1, below, provides a summary of the services available from the above bus stops, including details of the typical frequencies and destinations served.

Table 3.1
Summary of Bus Services

Bus Stop	Service Number	Route Description	Daytime Service Frequency		
			Monday to Friday	Saturday	Sunday
Solar Way	491	Waltham Cross – Innova Park – Enfield Island Village – Ponders End – Galliard Estate – Edmonton – North Middlesex Hospital	20 minutes	20 minutes	30 minutes
Bullsmoor Lane	217	Waltham Cross – Enfield Retail Park – Great Cambridge Road – Turnpike Lane Station	12 minutes	15 minutes	20 minutes
	317	Waltham Cross – Great Cambridge Road – Enfield Retail Park – Enfield	20 minutes	20 minutes	30 minutes
	327	Waltham Cross – Elsinge Estate – Turkey Street – Waltham Cross	40 minutes	40 minutes	No service
Hertford Road	279/N279	Waltham Cross – Ponders End – Edmonton – Tottenham – Manor House	7/8 minutes	7/8 minutes	10 minutes

Rail services can be accessed from Waltham Cross Station, which is located to the northwest of the site. The station can be easily accessed from the site on foot or by

cycle. The walking/cycling distance from the western boundary of the site to the rail station is approximately 1.5km. Covered cycle stands are present at the station.

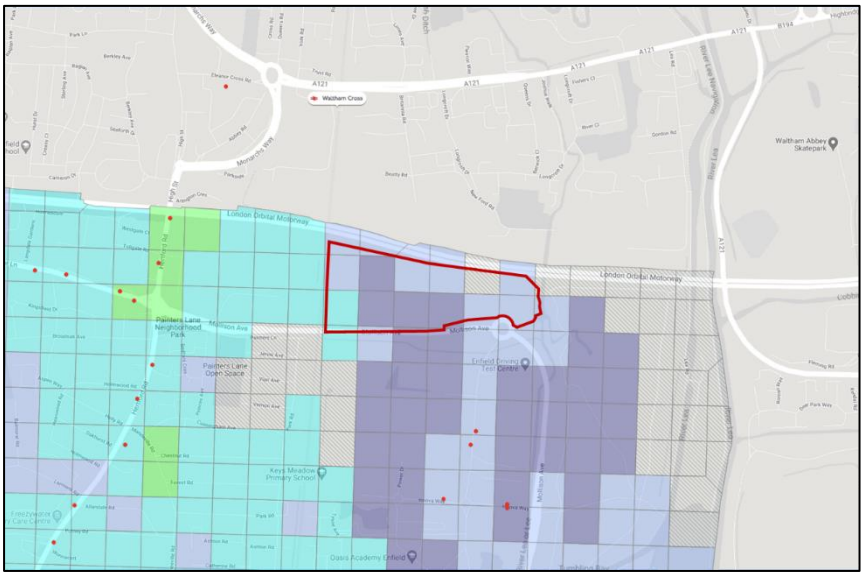
Waltham Cross Station is located on the West Anglia Main Line. The typical off-peak service is two trains per hour to London Liverpool Street (via Tottenham Hale), two trains per hour to Hertford East, one train per hour to Stratford and one train per hour to Bishops Stortford.

At Liverpool Street, connections are available to Central, Circle, Hammersmith and City, and Metropolitan underground lines and services operated by National Express East Anglia.

PTAL Rating

Public Transport Access Level (PTAL) assesses the connectivity (level of access) of a selected place to the public transport network, based on the walk time to public transport locations and service wait times.

Screenshot 3.3, below, presents an extract from the WebCAT planning tool. It shows that the site has a PTAL rating which ranges between 1a and 2. This is comparable to the existing industrial development at Innova Park.



Screenshot 3.3: Extract from the WebCAT planning tool

4 OUTLINE TRANSPORT STRATEGY

Vehicular Access

Vehicular access to the site could be provided from Mollison Avenue, within land under the control of Gazeley and/or the adopted public highway, and in accordance with the relevant design standards. In particular:

- A new fourth arm could be added to the existing three-arm roundabout of Mollison Avenue and Solar Way, at the southeast corner of the site (see figure 4.1). The junction changes would be designed in accordance of CD 116. A kerbed splitter island would be provided on the new roundabout arm, with flared two-lane entry and single-lane exit. Dropped kerbs and tactile paving would be provided to aid the crossing of pedestrians and cyclists; and/or
- A new ghost-island priority T-junction could be built on Mollison Avenue to provide access to the site. The junction would be located along the southern boundary of the site, at the point of an existing maintenance access. The junction would be designed in accordance of CD 123. A dedicated right-turn entry lane would be provided on Mollison Avenue. To deliver this, there would be a requirement to locally widen the kerbline of the northern side of the carriageway within the boundary of the adopted public highway.

The vehicular access proposals could be built to adoptable standards and there are no land ownership or topographical constraints which would affect its delivery.

The developer would enter into an agreement with the Local Highway Authority, under Section 278 of the Highways Act 1980, in order to deliver the works to the existing highway. The new road(s) into the site would be privately maintained.

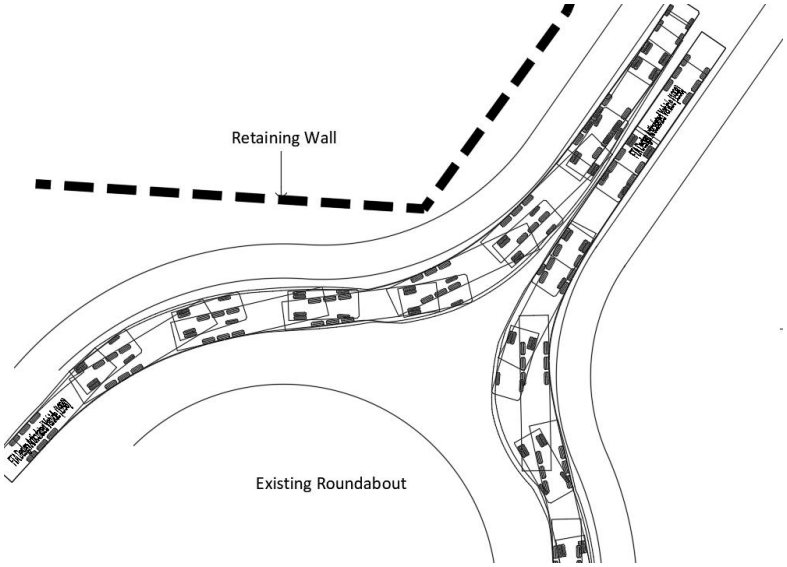


Figure 4.1: Indicative 4th arrangement on existing roundabout

Pedestrian and Cycle Access

The vehicular site access(es) onto Mollison Avenue (as described in the previous section) could be made available for use by pedestrians and cyclists. Minimum 2.0m wide shared-use footways/cycleways could be provided along both sides of the site access road(s). These would tie into the existing provision on the northern side of Mollison Avenue. Dropped kerbs and tactile paving would be provided to aid the crossing of pedestrians and cyclists. The pedestrian and cycle facilities could be built to adoptable standards and there are no land ownership or topographical constraints which would affect their delivery.

Following the provision of the above, the proposed allocation could be fully integrated with the local pedestrian and cycling infrastructure, with clearly defined routes providing convenient and safe access between the site and key destinations. Walking and cycling to and from the site would therefore be a realistic alternative to car-based travel for short-to-medium distance trips.

Public Transport Access

The proposed allocation could be designed to capitalise on the existing public transport services in the local area by ensuring that pedestrian connections are safe, convenient and direct. The existing bus stops on Solar Way, Bullsmoor Lane and Hertford Road, which are located within reasonable walking distance of the site, provide access to high-quality services which link to many parts of the Borough, including the town centre. To the north, all of the services terminate at Waltham Cross which provides opportunities for onwards interchange by bus or rail. The services patterns and frequencies would make travel by bus a viable mode of transport for accessing the proposed allocation. The potential patronage generated by the proposed allocation would also help to support their long-term viability.

Consideration could also be given to improving public transport access from the site through the provision of a new pair of bus stops on Mollison Avenue, adjacent to the site. The bus stops could be provided with a full-width layby and shelter, which would be equipped with facilities for passenger comfort and convenience (including seating, lighting and timetable information). There would also be raised kerbs to provide near level boarding with low floor buses.

It would not be necessary to route or divert either new or existing bus services through the site for the proposed allocation to be adequately served by public transport.

Delivery and Servicing Arrangements

The internal layout of the site would be designed to accommodate the efficient delivery of goods, and access by service and emergency vehicles. Swept path analysis would be undertaken in detail at the planning application stage to confirm that vehicles would be able to safely and satisfactorily undertake the required manoeuvres, without the requirement to reverse more than 20m.

Travel Planning

In accordance with national and local policy requirements, a Travel Plan would be prepared for the proposed allocation at the planning application stage. The content

and detail of the Travel Plan would be discussed and agreed with Enfield Council and TfL in the preparation of the document.

The Travel Plan would be based on best practice guidance. It would set out a range of initiatives to encourage trips to and from the site to be made by sustainable modes of transport.

5 DEVELOPMENT TRAFFIC FLOWS

Vehicle Trip Generation

For the purpose of this technical note, the vehicle trip generation associated with the proposed allocation has been estimated using average vehicle trip rates derived from the TRICS database (v7.6.4), based on an industrial warehouse development of 450,000sqft (41,806sqm) GFA in total. This represents a reasonable proxy of the scale and type of development that could be delivered on the site.

The vehicle trip generation has been considered for the weekday AM and PM peak periods (07:00-10:00 hours and 16:00-19:00 hours), as these peak periods are likely to represent the maximum impact on the local highway network from the proposed allocation, with regards to the known and anticipated peak patterns of demand for the transport system and development-generated trips.

The TRICS database was interrogated for survey sites based on the parameters set out in Table 5.1, below.

Table 5.1 TRICS Vehicle Trip Rate Calculation Selection Parameters	
Parameter Field	**Filtering Selection Criteria**
Land Use Category:	02 - Employment
Land Use Sub-Category:	F – Warehousing (Commercial)
Regions:	All regions in Great Britain
Parameter:	GFA
Actual Range:	20,400 to 76,000 (units: sqm)
Range Selected by User:	20,000 to 80,000 (units: sqm)
Date Range:	>01/01/2000
Survey Days:	Monday to Thursday
Locations:	Edge of Town
Calculation Factor:	100 sqm

In accordance with the principles set out in the TRICS Good Practice Guide 2016, the sites selected from TRICS were reviewed to ensure that the trip rates are comparable to the proposed allocation in terms of accessibility, scale and location.

The average vehicle trip rates are set out in Table 5.2 for the weekday AM and PM peak periods. The full TRICS output is attached to this report at Appendix A.

Table 5.2
Average Vehicle Trip Rates

Peak Period	Hour Start	Vehicle Trip Rate (Vehicles per 100sqm)								
		LGVs			OGVs			Total Vehicles		
		Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
Weekday AM	07:00	0.089	0.063	0.152	0.022	0.018	0.040	0.111	0.081	0.192
	08:00	0.089	0.041	0.130	0.023	0.023	0.046	0.112	0.064	0.176
	09:00	0.067	0.035	0.102	0.029	0.029	0.058	0.096	0.064	0.160
Weekday PM	16:00	0.045	0.110	0.155	0.025	0.022	0.047	0.070	0.132	0.202
	17:00	0.048	0.091	0.139	0.024	0.022	0.046	0.072	0.113	0.185
	18:00	0.033	0.060	0.093	0.019	0.020	0.039	0.052	0.080	0.132

The resulting vehicle trip generation associated with the proposed allocation is shown in Table 5.3, below, for the weekday AM and PM peak periods. The highest total hourly values during each peak period have been highlighted in red.

Table 5.3 Average Vehicle Trip Generation										
Peak Period	Hour Start	Vehicle Trip Generation (Vehicles)								
		LGVs			OGVs			Total Vehicles		
		Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total
Weekday AM	07:00	39	27	66	9	8	17	48	35	83
	08:00	38	18	56	10	10	20	48	28	76
	09:00	29	16	45	12	12	24	41	28	69
Weekday PM	16:00	19	48	67	11	9	20	30	57	87
	17:00	21	40	61	10	9	19	31	49	80
	18:00	14	25	39	8	9	17	22	34	56

The peak hours likely to be associated with the proposed allocation are identified to be:

- Weekday AM peak hour: 07:00 to 08:00 hours.
- Weekday PM peak hour: 16:00 to 17:00 hours.

Vehicle Trip Distribution

The vehicle trip distribution associated with the proposed allocation has been estimated using data from the 2011 Census. The origin of travel to work for people who work in Enfield 003 middle layer super output area (MSOA) has been considered, as the area within which the site is located. This area also covers Innova Park. Origins have been broken down into MSOAs for the districts of Enfield, Broxbourne, Waltham Forest and Epping Forest; for other destinations, the local authority district has been used.

The number of vehicle trips to each origin zone has been expressed as a percentage of the total and then assigned to routes on the highway network to give the vehicle trip distribution to and from the site. Where a choice of routes is available, the proportion of trips using each route has been split to reflect the likely preferred choice of travel time and distance during the weekday AM and PM peak hours.

Table 5.4 presents a summary of the forecast vehicle trip distribution associated with the proposed allocation during the weekday AM and PM peak hours. The detailed trip distribution calculations are available on request.

Table 5.4 Vehicle Trip Distribution for LGVs				
Route		**Sub-Route**		**Vehicle Trip Distribution**
A	Mollison Avenue (West)	1	Hertford Road (North)	33.6%
		2	Bullsmoor Lane	23.3%
		3	Hertford Road (South)	7.8%
B	Mollison Avenue (East)	N/A		35.3%
Total				**100.0%**

To reflect the different characteristics of the OGV trips, an alternative trip distribution has been applied. It is likely that the origin and destination of the OGV trips would be more strategic in nature and, thus, would be primary associated with routes on the strategic highway network (ie the M25, A10 and A406).

Table 5.5 presents a summary of the forecast vehicle trip distribution associated with the OGV trips during the weekday AM and PM peak hours.

Table 5.5 Vehicle Trip Distribution for OGVs				
Route		**Sub-Route**		**Vehicle Trip Distribution**
A	Mollison Avenue (West)	1	Hertford Road (North)	33%
		2	Bullsmoor Lane	33%
		3	Hertford Road (South)	0%
B	Mollison Avenue (East)	N/A		33%
Total				**100.0%**

Traffic Flows

The vehicle trip generation associated with the proposed allocation (from Table 5.3) has been assigned onto the local highway network on the basis of the vehicle trip distribution (from Tables 5.4 and 5.5).

Table 5.6 presents a summary of the predicted traffic flows which would be associated with the proposed allocation during the weekday AM and PM peak hours.

Table 5.6
Summary of Proposed Allocation Traffic Flows

Route		Vehicle Trips by Hour					
		Weekday AM Peak Hour			Weekday PM Peak Hour		
		Arr.	Dep.	Total	Arr.	Dep.	Total
A1	Hertford Road (North)	16	12	28	10	19	29
A2	Bullsmoor Lane	12	9	21	8	14	22
A3	Hertford Road (South)	3	2	5	1	4	5
B	Mollison Avenue (East)	17	12	29	10	20	30
Total		**48**	**35**	**83**	**30**	**57**	**87**

Table 5.6 identifies that the proposed allocation would likely generate a maximum of 87 two-way hourly vehicle trips during the weekday AM and PM peak periods.

All of the vehicle trips associated with the proposed allocation would access the site from Mollison Avenue. Beyond this point, most of the vehicles are forecast to head west towards the junction with Hertford Road and Bullsmoor Lane. At this junction, it is predicted that the vehicles would quickly disperse, with approximately:

- 29 vehicles heading north along Hertford Road, primarily for access to the A121, A10 (northbound) and M25 (eastbound);
- 22 vehicles heading west along Bullsmoor Lane, primarily for access to the A10 (southbound) and M25 (westbound); and
- 5 vehicles heading south along Hertford Road to access the local area.

The remaining 30 vehicles are forecast to head east along Mollison Avenue, principally to join the A110 and A406.

6 TRAFFIC IMPACT

Highway Operation

A threshold of 30 two-way peak hour vehicle trips is often used as a point of reference for identifying a potential material traffic impact on the operation of the highway network. This threshold has been applied to the forecast traffic flows to help identify where the proposed allocation has the potential to result in a material traffic impact.

It is predicted that the proposed allocation would result in an increase of approximately 57 two-way peak hour vehicle trips at the Hertford Avenue / Mollison Avenue / Bullsmoor Lane Junction. Across all other parts of the highway network, the traffic flows associated with the proposed allocation are predicted to be below the threshold of 30 two-way peak hour vehicle trips and, thus, the potential impact would be negligible.

The impact of the proposed allocation on the operation of the Hertford Avenue / Mollison Avenue / Bullsmoor Lane Junction would be assessed in detail at the planning application stage and the requirement for any mitigation would be identified, as necessary, to avoid any severe impacts. The methodology for the assessment would be discussed and agreed with Enfield Council in the preparation of a Transport Assessment.

Highway Safety

It is considered unlikely that the proposed allocation would give rise to any unacceptable impacts on highway safety. This is because:

- The proposed allocation is not expected to result in a material change in the volume, composition or speed of traffic on the highway network; and
- The proposed allocation would not significantly alter the character of the highway network.

Notwithstanding the above, the impact of the proposed allocation on highway safety would be assessed in detail at the planning application stage and the requirement for any mitigation would be identified, as necessary, to avoid any unacceptable impacts.

The methodology for the assessment would be discussed and agreed with Enfield Council in the preparation of a Transport Assessment. The assessment would include an analysis of the injury accident records on the public highway in the vicinity of the site for the most recent 5-year period.

7 SUMMARY AND CONCLUSION

Summary

This technical note has been prepared to support the promotion of land to the north of Mollison Avenue, Waltham Cross, for allocation as employment land for industrial warehousing (Use Class B1(c), B2, B8). It is to be submitted to Enfield Council to inform their assessment of the site, from a highways and transport perspective, in the preparation of their new Local Plan.

Included in this technical note is a review the baseline conditions on the local transport networks; an outline of how the proposed allocation could be safely and suitably accessed by the main modes of transport; a forecast of the traffic flows which would likely be associated with the proposed allocation; and an assessment of the resulting impact on the operation and safety of the highway network.

Based on the work undertaken, it is considered that the proposed allocation could be safely accessed by pedestrians, cyclists, public transport users and motorists, and there are no highways or transport reasons that would affect the future delivery of the site. In particular:

- The location of the site, adjacent to an established built-up area and close to Innova Park, is accessible by sustainable modes of travel (including walking, cycling and public transport).
- Vehicular access to the site could be provided from Mollison Avenue, within land under the control of Gazeley and/or the adopted public highway, and in accordance with the relevant design standards.

- Good quality pedestrian and cycle connections could be provided between the site and the surrounding areas, with the new routes fully integrated with the existing facilities on Mollison Avenue.
- The site is well located in relation to existing public transport services. This factor, in conjunction with the delivery of the proposed measures to improve pedestrian and cycle connectivity, would ensure that future users of the proposed allocation would benefit from a genuine choice of sustainable transport modes. The need to travel to and from the site by private car would therefore be minimised.
- A Travel Plan would be prepared for the proposed allocation at the planning application stage, with the intention of encouraging trips to be made by sustainable modes of transport.
- The traffic flows associated with the proposed allocation would be satisfactorily accommodated on the highway network. The impact of the proposed allocation on the operation of the Hertford Avenue / Mollison Avenue / Bullsmoor Lane Junction would be assessed in detail at the planning application stage and the requirement for any mitigation would be identified, as necessary, to avoid any severe impacts.

In summary, the proposed allocation of the site would accord with both national and local planning policy from a highways and transport perspective.

Delivery of the outline transport strategy presented in this report is considered to be achievable and viable, and would allow future users of the proposed allocation to benefit from sustainable modes of travel.

Conclusion

Paragraph 108 of the NPPF states that in assessing sites that may be allocated for development in plans, it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

In this case, it has been demonstrated that the site is in a sustainable location; safe and suitable access to the site can be achieved for all users; and the traffic flows associated with the proposed allocation can be appropriately managed without resulting in any unacceptable impacts on the operation and safety of the highway network. It is therefore concluded that the proposed allocation of the site would represent a sustainable form of development, in accordance with the NPPF and local planning policies, and it should be supported from a highways and transport perspective.

8 APPENDICES

A. TRICS Output

Calculation Reference: AUDIT-551501-200304-0338

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL)
VEHICLES

Selected regions and areas:

01	GREATER LONDON		
	BE	BEXLEY	1 days
02	SOUTH EAST		
	BU	BUCKINGHAMSHIRE	1 days
	HF	HERTFORDSHIRE	2 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
06	WEST MIDLANDS		
	WO	WORCESTERSHIRE	1 days

Secondary Filtering selection:

Parameter: Gross floor area
Actual Range: 20400 to 76000 (units: sqm)
Range Selected by User: 20000 to 80000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/00 to 03/04/19

Selected survey days:

Monday	1 days
Wednesday	1 days
Thursday	4 days

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	6

Selected Location Sub Categories:

Industrial Zone	2
Commercial Zone	2
No Sub Category	2

Secondary Filtering selection:

Use Class:

B1	1 days
B8	5 days

Population within 1 mile:

1,001 to 5,000	3 days
10,001 to 15,000	2 days
25,001 to 50,000	1 days

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	3 days

Travel Plan:

Not Known	3 days
No	3 days

PTAL Rating:

No PTAL Present	5 days
1a (Low) Very poor	1 days

LIST OF SITES relevant to selection parameters

1 BE-02-F-01 FRESH FRUIT DISTRIBUTOR BEXLEY
THAMES ROAD
CRAYFORD

Edge of Town
Industrial Zone
Total Gross floor area: 20400 sqm
Survey date: THURSDAY 20/09/18 Survey Type: MANUAL

2 BU-02-F-01 SUPERSTORE DISTRIB. BUCKINGHAMSHIRE
BLETCHAM WAY
MILTON KEYNES
BLETCHLEY
Edge of Town
Industrial Zone
Total Gross floor area: 52125 sqm
Survey date: THURSDAY 07/02/02 Survey Type: MANUAL

3 HF-02-F-01 SUPERSTORE DISTRIBUTION HERTFORDSHIRE
LONDON ROAD
BUNTINGFORD

Edge of Town
No Sub Category
Total Gross floor area: 47584 sqm
Survey date: WEDNESDAY 06/12/00 Survey Type: MANUAL

4 HF-02-F-03 DISTRIBUTION CEN. HERTFORDSHIRE

HATFIELD
HATFIELD BUSINESS CEN.
Edge of Town
Commercial Zone
Total Gross floor area: 80000 sqm
Survey date: THURSDAY 10/07/08 Survey Type: MANUAL

5 LN-02-F-01 BOOK SERVICE LINCOLNSHIRE
TRENT ROAD
GRANTHAM

Edge of Town
No Sub Category
Total Gross floor area: 32300 sqm
Survey date: MONDAY 29/11/10 Survey Type: MANUAL

6 WO-02-F-01 SUPERSTORE DIST. WORCESTERSHIRE
WAINWRIGHT ROAD
WORCESTER
SHIRE BUSINESS PARK
Edge of Town
Commercial Zone
Total Gross floor area: 31416 sqm
Survey date: THURSDAY 14/03/02 Survey Type: MANUAL

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)
VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	43035	0.111	6	43035	0.081	6	43035	0.192
08:00 - 09:00	6	43035	0.112	6	43035	0.064	6	43035	0.176
09:00 - 10:00	6	43035	0.096	6	43035	0.064	6	43035	0.160
10:00 - 11:00	6	43035	0.070	6	43035	0.066	6	43035	0.136
11:00 - 12:00	6	43035	0.085	6	43035	0.069	6	43035	0.154
12:00 - 13:00	6	43035	0.071	6	43035	0.090	6	43035	0.161
13:00 - 14:00	6	43035	0.204	6	43035	0.154	6	43035	0.358
14:00 - 15:00	6	43035	0.114	6	43035	0.186	6	43035	0.300
15:00 - 16:00	6	43035	0.091	6	43035	0.120	6	43035	0.211
16:00 - 17:00	6	43035	0.070	6	43035	0.132	6	43035	0.202
17:00 - 18:00	6	43035	0.072	6	43035	0.113	6	43035	0.185
18:00 - 19:00	6	43035	0.052	6	43035	0.080	6	43035	0.132
19:00 - 20:00	1	20400	0.044	1	20400	0.230	1	20400	0.274
20:00 - 21:00	1	20400	0.020	1	20400	0.029	1	20400	0.049
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.212			1.478			2.690

Parameter summary

Trip rate parameter range selected:	20400 - 76000 (units: sqm)
Survey date date range:	01/01/00 - 03/04/19
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0