1768-01-TA01b
July 2016

FULL PLANNING APPLICATION FOR RESIDENTIAL DEVELOPMENT COMPRISING 39 NEW DWELLINGS AND THE CONVERSION OF EXISTING BUILDINGS INTO 12 APARTMENT / MEWS PROPERTIES, WITH ACCESS FROM HARTHILL ROAD, PARKING, LANDSCAPING AND AMENITY SPACE

LAND AT HARTHILL ROAD, LIVERPOOL

TRANSPORT STATEMENT

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APPENDICES

1.0 INTRODUCTION

1.1 This Transport Statement has been prepared by Axis on behalf of Redrow Homes to consider highways and transport issues related to the development of up to 51 residential dwellings at land associated with Beechley House and Harthill Depot off Calderstones Park, Harthill Road, Liverpool. These land parcels represent current enclosed (not available for general public access) areas adjacent to Calderstones Park and include a number of buildings that are currently in a poor state of repair and / or require costly on-going maintenance. The sale and re-development of the land for residential land use will realise important funds to secure the continued maintenance and improvement of Calderstones Park.

1.2 The proposal scheme is spread across a number of land parcels that border Harthill Road to the south western boundary of Calderstones Park. The site masterplan has been carefully prepared through a detailed assessment of the site, its constraints, context and the overall aspiration to create a new, high quality sustainable residential development. The layout and use of the site seeks to respect the site's location within the setting of the Grade II listed Beechley House and Beechley Stables. In addition, the redevelopment of these buildings seeks to preserve and enhance their heritage value to the area. Key proposed development scheme elements are as summarised below:

- Re-development of the existing Liverpool City Council Harthill Maintenance Deport for up to 20 new private residential units.

- Development of land associated with the adjacent Park View site, and land to the south of Beechley House for up to 15 new private residential units.

- Restoration and re-development of the Beechley House property and associated stables and out-buildings to provide a total of up

to 16 private residential dwellings (via a mix of mews, apartment and new private house units).

1.3 The proposals are to be supported by a development access strategy that seeks to ensure suitable standard vehicle and pedestrian access to / from the adopted highway route of Harthill Road, as well as promoting improved footway & pedestrian connections to and through Calderstones Park.

1.4 This report has been prepared to appraise the Local Highway and Planning Authority, Liverpool City Council (LCC), of the extent of combined traffic demand expected to be generated by the proposed Harthill Road development elements and to set out the design and nature of site access arrangements. Key access points have been designed to minimise impact on the protected heritage wall feature that forms the main site boundary to Harthill Road. Whilst some minor wall removal work would be required to ensure safe and efficient vehicle and pedestrian access to the Beechley House site to meet modern standards, it is considered that this access improvement can be delivered whilst respecting the key heritage context.

1.5 The report has been prepared to reflect guidance set out in National Planning Policy Guidance “Travel Plans, Transport Assessments and Statements in Decision Taking”. This guidance notes that paragraph 32 of the National Planning Policy Framework (NPPF) identifies that developments that generate significant amounts of transport movements should be supported by a formal Transport Statement (TS) or Transport Assessment (TA). Traditionally such formal reports have typically been required to be prepared for new residential developments of greater than 50 dwellings. Pre-application scoping discussions with LCC planning & highways officers have taken cognisance of such historical guidance, along with further advice set out within LCC Supplementary Planning Document “Ensuring a Choice of Travel” and have identified that the preparation of a formal Transport Statement report would be appropriate

to consider the effects of the combined Harthill Road residential proposals.

1.6 The scope and nature of the matters considered in this Transport Statement report reflects the extent of issues that have been established as being of material interest to LCC highway officers during pre-application scoping discussions (see **Appendix TS1**). The core structure of the remainder of the document is therefore as follows:

- A description of the location and planning context of the land associated with the proposal scheme, including reference to extant planning approvals.

- A review of existing highway network conditions – including a description of the local highway network immediately adjacent to the proposal site areas, baseline traffic demand levels on Harthill Road and historical road safety records.

- An audit of the accessibility of the proposal site areas, including a review of opportunities to encourage the use of sustainable transport modes and proximity to everyday shops & services.

- A description of the development proposals – including a review of the proposed residential development mix, vehicle & pedestrian site access arrangements and proposed car parking provision across the sites.

- An assessment of the anticipated combined travel demand of the proposals and the predicted assignment of this development traffic over the immediate local highway network.

- Summary and conclusions.

2.0 SITE LOCATION AND RELEVANT PLANNING HISTORY

2.1 Site Location

2.1.1 The proposed development land parcels are located to the south western edge of Calderstones Park, a large public park in South East Liverpool. A plan illustrating the strategic location of the application sites in relation to Calderstones Park and the neighbouring areas of Calderstones, West Allerton, Childwall and Woolton is included as **Figure TS1** to this report. **Figure TS1** also highlights the main east-west district distributor road routes of A562 Menlove Avenue to the north of Calderstones Park and B5180 Mather Avenue to the south.

2.1.2 Details of the layout of the immediate local highway network to the application sites are illustrated in **Figure TS2** and **Figure TS3** to this report, with photographs of key existing layout features illustrated as **Appendix TS2**. Key immediate local road routes to the sites are the north-south route of Harthill Road and the east-west residential distributor roads of Calderstones Road (to the north of the park) and Allerton Road (to the south). Harthill Road forms the main western boundary to the identified proposal site land areas and also acts as the main access road serving Calderstones School, a state secondary school facility of circa 1,500 pupils and 150 staff.

2.2 Existing Site Elements and Planning History

Site Layout

2.2.1 **Figure TS4** to this report highlights the land parcels associated with the planning application scheme. These land parcels are summarised as follows:

- *Harthill Maintenance Depot Site* – land utilised by LCC for park maintenance purposes and the temporary storage of recyclable materials prior to onward transfer.

- *Park View Site* – land formerly used by a model railway club, the 'Calder Kids' adventure playground, and a Beechley Stables paddock.
- *Beechley Stables* – stables associated with the main Beechley House property and currently used for a community stables facility (this use to be relocated).
- *Beechley House* – a former care home facility (now unoccupied) with associated gardens and a Beechley Stables paddock

Relevant Planning History

2.2.3 A detailed review of the planning history of the proposal site is set out in the Planning Statement document prepared by Turleys and submitted in support of the planning application. This document identifies that the existing buildings / facilities on site have been subject to a number of historical planning applications and listed building consent applications in order to facilitate development. Beechley House has been the subject of a number of applications to facilitate its consented use as a care home and Beechley Stables as a riding centre. Further applications in relation to the Calder Kids Adventure Playground and the model railway have also been determined by the Council.

2.2.4 Whilst the application site land areas do enjoy consented use for a number of activities and land uses, in practice the current main day-to-day operations on the site are limited to the operation of the LCC maintenance depot and the community stables use. This low intensity existing use of the site is reflected in the low existing traffic volumes recorded to / from the site elements as part of the 2016 background traffic surveys (see section 3.2 to this report).

Site Designation

2.2.5 The Liverpool UDP Proposals Map shows that the site is allocated as Green Wedge (Policy OE3) and green space (Policy OE11). Policy OE3 is permissive of development but notes that where new built development

is permitted within the Green Wedges, the Council will require that such development:

- Has regard to the openness of the Green Wedge and the purposes of including land within it
- Should be in accordance with the criteria set down in Policy HD18 and, in particular, uses materials and built forms sympathetic to the character of the area
- Retains existing vegetation and special site features where appropriate, and
- Provides and maintains a high standard of landscaping.

2.2.4 Policy OE11 affords a general level of protection to all designated green space across the City. It seeks to protect the amenity value of the City's green space and takes a protective stance, which necessitates the consideration of any development proposals against a number of criteria, the combination of which together form the green space's 'amenity' value. The four criteria comprise the recreational function and visual amenity value of the site, its relationship to adjoining green spaces and any inherent nature conservation value that the site may have.

2.3 Relevant Transport Related Planning Policy

2.3.1 A review of key prevailing highways and transport related policies relevant to new residential development in Liverpool are summarised in the paragraphs below. This review includes guidance set out in both national planning policy and relevant local plan / action plan designations, as well as local transport infrastructure programming envisaged as part of Local Transport Plan / Local Transport Strategy schedules.

National Planning Policy Framework

2.3.2 The National Planning Policy Framework (NPPF) seeks to encourage development which accords with the sustainable transport objectives of minimising the need for travel, particularly road journeys and promoting

the efficient delivery of goods and supplies. Key sustainable policy objectives stated in the NPPF are as follows:

> ***"Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport"(Para 30)***
>
> ***"Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised…." (Para 34)***
>
> ***"Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:***
>
> - ***accommodate the efficient delivery of goods and supplies;***
> - ***give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;***
> - ***create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;***
> - ***incorporate facilities for charging plug-in and other ultra-low emission vehicles; and***
> - ***consider the needs of people with disabilities by all modes of transport." (Para 35).***
>
> ***"Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities." (Para 37)***

2.3.3 Paragraph 32 of NPPF also provides guidance on the nature and detail of development transport appraisal to be carried out to support development and those key matters to be considered when determining the suitability of development proposals:

> **"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:**
>
> - **the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;**
> - **safe and suitable access to the site can be achieved for all people; and**
> - **improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe." (Para 32).**

Local Transport Policy Set Out Within The Development Plan

2.3.4 The Liverpool Unitary Development Plan (UDP) was adopted in November 2002 and remains the extant Development Plan for the immediate area to the Harthill Road proposal site land parcels. Changes in planning legislation mean that the UDP will ultimately be replaced by the Liverpool Plan Core Strategy currently being developed by LCC, however, advice from LCC officers has confirmed that saved policies and guidance associated with the UDP remain valid.

2.3.5 The UDP aims to promote sustainable development via a long term land use strategy and through policies for development and environmental improvement. Key UDP policy with respect to transport and travel is Policy GEN6 which states:

> ***"A balanced provision of transport infrastructure will be provided which will:***
>
> - ***Provide access to employment, leisure, retail and other facilities for all the city's residents.***
> - ***Meet the transport needs of people who are economically and socially disadvantaged.***
> - ***Allow for the safe, efficient and easy access of goods into and throughout the city to help secure regeneration of the local economy.***

- ***Protect and enhance the environment through reducing reliance on the private car.***
- ***Promote investment in the public transport network and associated facilities.***
- ***Improve facilities for cyclists and pedestrians.***
- ***Provide a framework for investment in the efficiency of the road system.***
- ***Reduce the availability of car parking facilities which would attract car borne commuters."***

2.3.6 This general policy is supported by further specific policy objectives covering the following issues:

- Policy T6 – Cycling.
- Policy T7 – Walking and Pedestrians.
- Policy T8 – Traffic Management.
- Policy T9 – Road Safety.
- Policy T12 – Car Parking in New Developments.

2.3.7 As noted above, the UDP will ultimately be replaced by the Liverpool Plan Core Strategy. Draft policy guidance within this emerging document is consistent with the transport objectives set out within the UDP and seeks to maximise accessibility for all new development.

LCC Supplementary Planning Document (SPD): "Ensuring Choice of Travel"

2.3.8 The LCC "Ensuring Choice of Travel" SPD (Dec 2008) stands alongside the saved UDP policies and sets out detailed guidance on how development should satisfy the requirements of the Council's development specific policies. The main objective of the SPD is to ensure a practical choice of access by all travel modes is available to support new developments. The SPD is designed to support the objectives of the Merseyside Local Transport Plan (LTP) (see following section) by:

- Ensuring a reasonable choice of access by all modes of transport to new development;

- Reducing the environmental impact of travel choices, by reducing pollution, and improving the local environment;
- Improving road safety;
- Promoting healthier lifestyles by providing opportunities for people to walk or cycle to work or for leisure;
- Reducing the level of traffic growth and congestion on the local road network; and
- Encouraging opportunities to improve the quality of development by better use of space through the provision of less car parking spaces where appropriate.

2.3.9 The SDP also contains recommended guidance with regard to the provision of car parking, motorcycle and cycle parking facilities at new developments, plus appropriate standards for disabled parking facilities and servicing arrangements.

2.3.10 It should be recognised that the SPD, like the UDP, is now of some vintage and is anticipated that the document will be reviewed and updated as part of the emerging Liverpool Plan process. Notwithstanding this, the key principles of the document, i.e. ensuring new development is accessible by a range of travel modes, remains an important element of development planning in Liverpool.

Merseyside Local Transport Plan

2.3.11 The Merseyside LTP3 provides guidance on transport policy within the Merseyside administrative area for the period 2011 – 2025 and covers short term aims up to 2015 and long term goals between 2015 - 2025. The long term strategy for Merseyside is to support continuing economic development by managing growth in travel demand in order to ensure the efficient movement of people and goods.

2.3.12 Key objectives of LTP3 include:

- To ensure that transport supports sustainable economic development and regeneration;
- To moderate the upward trend in car use and secure a modal shift to sustainable forms of transport;
- To secure the most efficient and effective use of the existing transport network; and
- To enhance the quality of life for those living in, working in or visiting Merseyside.

Summary

2.3.13 The overriding theme of national and local transport policy is to manage travel demand (particularly by the private car) and to promote developments that is accessible by sustainable means of transport and all elements of the local community. It is considered that the proposal redevelopment at Harthill Road can be delivered to meet these key policy objectives through the provision of good highway design, the promotion of linkages to local facilities and the delivery of supporting infrastructure which will promote the use of sustainable transport modes.

3.0 REVIEW OF THE SURROUNDING LOCAL HIGHWAY NETWORK

3.1 Description of Local Network Features

3.1.1 The proposed development land at Harthill Road is located to the south western edge of Calderstones Park, a large public park located in South East Liverpool. It is proposed that all of the proposed development land parcels would be served via connections to Harthill Road, which forms the western boundary to the Calderstones Park estate and connects to Calderstones Road & A562 Menlove Avenue to the north east and Greenhill Road & B5180 Mather Avenue to the south west.

3.1.2 In the immediate vicinity of the proposed development, Harthill Road is of circa 5.5m operating width. This width is typically considered as being suitable to accommodate two-way vehicle movements, including occasional access by large goods vehicles (ref: Figure 7.1 of CIHT document “Manual for Streets”). The route is lit and subject to a 20mph urban speed limit, which is reinforced by gateway signage and regular vertical traffic calming features (flat topped speed humps) along its length.

3.1.3 Footways are provided to both sides of Harthill Road. To the site side, the footway is typically of a minimum 1.6m width, widening to 1.9m to 2.0m for the section opposite the main southern access to Calderstones School (see para 3.1.5 below) and to the frontage of Beechley House. On the school side, the footway is typically of 1.8m width, but narrows to circa 1.0m – 1.1m around the bend between the southern and central school access points. Typically a footway width of 1.5m is suitable to allow two persons to walk side by side safely, with a 1.0+m footway allowing minimum provision for disabled person access (see Figure 6.8 to “Manual for Streets”).

3.1.4 The immediate section of Harthill Road to the proposed development parcels is characterised by limited direct frontage development, with existing properties set back behind substantive boundary walls located to

the back of footway. The following side road access points are available to the eastern (site side) of Harthill Road (see **Appendix TS2**):

- Access to Harthill Council Depot – a circa 5.5m wide gated private access road with 8m – 9m left turn entry / exit radii. This road also provides local driveway access to the adjacent private gatehouse residential property and a gated access to public allotments.
- Gated dropped kerb access serving a small private car parking area associated with the Park View land parcel.
- Gated dropped kerb access serving a courtyard area associated with Beechley Stables.
- Wide set back vehicle access and manoeuvring area serving the Beechley House site.
- Dropped kerb drive access serving the private residential property of Allerton Vicarage.

3.1.5 Calderstones School forms a continuous boundary to the western side of Harthill Road. The school is currently served by four existing vehicle access points to Harthill Road as described below:

- *Sixth Form Centre access* – located to the junction of Harthill Road / Calderstones Road. This access point serves circa 30 – 40 parking spaces / vehicle store.
- *Staff access* - located approximately 85m to the south of the junction with Calderstones Road. This access point is restricted to staff vehicle access only and serves a car park of 100+ spaces.
- *Central access* – located almost opposite to the existing access road serving Harthill Depot. The access is now closed to day to day vehicle and pedestrian movements.
- *Southern access* - located approximately 70m to the south of the access road to Harthill Deport. This access point serves a small

(circa 20 vehicle) car parking area for school office staff and visitor vehicles.

3.1.6 Main school parking related traffic movements are focussed towards the north of the school site, away from the main application site land parcels considered in this report. Notwithstanding this, a substantive level of pupil drop off / pick up movements have been observed taking place along Harthill Road during key school demand periods, including close to the southern school access point.

3.1.7 In order to manage the locations at which school drop off / pick up activities occur, parts of the Harthill Road corridor to the immediate frontage of the proposal site land parcels are subject to formal parking restrictions. The extent of these restrictions are illustrated in **Figure TS3** to this report and include a combination of:

- Single yellow line parking controls – restricting parking between 08:00 – 9:30am and 3:00pm – 5:00pm Monday – Friday.
- School keep clear markings (No stopping 8:00am – 5pm Monday Friday) across the school southern access point.

In total, these combined yellow line restrictions cover an approximate 90m central section of Harthill Road - effectively between the existing Harthill Depot and Beechley Stables access points. Despite the provision of these parking restrictions, some short term vehicle waiting associated with child drop off / pick up movements has been noted to take place in this central area during peak school times.

3.1.8 No formal waiting restrictions are provided around any of the other school vehicle access points.

3.1.9 In addition to the yellow line parking restrictions a short length of disabled only marked parking bay is available to the site side of Harthill Road, immediately to the south of the Beechley Stables access point (see also **Figure TS3**). It is understood that this disabled parking

provision is mainly related to assisting disabled customer / visitor access to / from the current stables site.

3.1.10 As noted above, to the north of the proposal land, Harthill Road connects to Calderstones Road at a crossroads junction. To the southwest Calderstones Road operates as a one-way 'eastbound only' route, but allows two-way pedestrian and cycle access towards the Allerton Road local centre. To the northwest Calderstones Road provides local two-way access towards Woolton and A562 Menlove Avenue. Harthill Road to the north east also provides local road access to Menlove Avenue (via Green Lane).

3.1.11 To the south, Harthill Road forms a crossroads with the local residential distributor road of Allerton Road before continuing to terminate with the route of Greenhill Road. Greenhill Road / Allerton Road provide local connections to the Allerton Road local centre / commercial area to the west, with Greenhill Road connecting to B5180 Mather Avenue to the south east.

3.2 Baseline Traffic Conditions

Observed Baseline Traffic Demand

3.2.1 Baseline traffic flow patterns for the immediate section of Harthill Road to the proposed development land parcels have been established via the undertaking of bespoke 2016 weekday traffic surveys for the periods 07:30 – 09:30 and 14:30 – 18:00. These surveys included for the recording of through vehicle movements along Harthill Road at the existing Harthill Depot and Beechley House side road access points, as well as turning movements to / from the following side access connections (listed in order from north to south):

- Access to / from Harthill Depot
- Main access to / from Calderstones School;

- Access to / from existing private parking area on the proposed Park View land;
- Access to / from Beechley Stables
- Access to / from Beechley House.

The scope of the traffic surveys was discussed with officers of LCC Highways & representatives of Calderstones School, with the surveys undertaken on Tuesday 2 February 2016 by CTS Traffic Surveys Ltd using CCTV camera methodology. No extraordinary traffic conditions were recorded as taking place during the surveys, which were undertaken during school term time and included for the recording of critical school pick up / drop off periods. Details of the recorded traffic data is included as **Appendix TS3** to this report.

3.2.2 **Figure TS5(a-c)** to this report illustrates observed 2016 AM 'Rush Hour' / School Morning Peak (08:00-09:00), School Afternoon Peak (15:00-16:00) & PM 'Rush Hour' Peak(17:00-18:00) traffic flows recorded during the traffic survey exercise. Review of this information indicates that maximum flow on Harthill Road to the immediate north of the Harthill Depot access point took place during the AM peak period (08:00-09:00) and was of the order of 405 vehicles per hour (two-way, including U-turns) or circa 6 – 7 vehicle movements per minute. A substantive 'peak' in traffic demand was noted to take place during this identified maximum AM survey hour for the 15 minute period 08:30 – 08:45 (see **Figure TS6**), which is associated with pupil drop-off movements at Calderstones School immediately prior to the start of the timetabled school day.

3.2.3 Observed traffic demand on Harthill Road during the afternoon survey periods was noted to be much lower, being of the order of just 175 – 185 vehicles per hour (two-way) or circa 1 vehicle every three minutes. No substantive afternoon school peak 15 minute demand period was noted.

3.2.4 Large vehicle demand on Harthill Road route was noted to be generally low (27 HGV movements across the full five and a half hour survey period). Such HGV demand represents less than 2.5% of total recorded

traffic volumes (1121 movements). Many of the recorded HGV movements (12 trips out of 27 recorded) were noted as accessing the existing LCC Harthill Depot.

3.2.5 Traffic movements to / from all of the existing surveyed side road access points to Harthill Road were noted to be generally low, as illustrated by the summary table below:

Table TS3.1: Recorded Traffic Demand to / from Existing Side Road Access Points to Harthill Road

Side Road Location	AM Peak (08-09)	School PM Peak (15-16)	PM Peak (17-18)
LCC Harthill Depot	17	6	0
Calderstones School	12	13	11
Private Car Pk	0	0	3
Stables	0	1	0
Beechley House	1	2	1

Two-way traffic (in+out)

Observed Operating Speeds on Immediate Sections of Harthill Road

3.2.6 In addition to the above traffic volume information, a traffic speed survey adhering to national guidance TA22/81 "Vehicle Speed Measurement on All Purpose Roads" was undertaken on the section of Harthill Road immediately to the south of the existing southern Calderstones School access. Details of the recorded speed data are included as **Appendix TS4** to this report.

3.2.7 Review of the 2016 speed survey information identifies the following 'wet weather speeds' for key approach movements (i.e. calculated from dry-weather recorded speed data):

Harthill Road Southbound

- Average Speed: 16.5 mph / 26.5 kph
- 85th Percentile Speed: 19.5 mph / 31.4 kph

Harthill Road Northbound

- Average Speed: 17.5 mph / 28.1 kph
- 85th Percentile Speed: 21.5 mph / 34.6 kph

3.2.8 Such speed readings demonstrate that existing traffic conditions are broadly in accordance with the prevailing speed limit (20mph see paragraph 3.1.2) and are likely to be influenced by local vertical traffic management features. Reference to guidance set out in national design standard document 'Manual for Streets 2' identifies that new side road access points to roads demonstrating the observed 85th percentile approach speeds require the provision of the following minimum lateral sightlines (see **Appendix TS4**):

- Northbound traffic: 25.8m;
- Southbound traffic: 29.4m.

3.3 Road Safety: Review of Personal Injury Accident Records

3.3.1 An appraisal of the operational safety of the immediate local highway network adjacent to the proposed development sites has been carried out through reference to Personal Injury Accident (PIA) data records held by LCC Highways. A search was carried out for the most recent five year period available from the database (01/01/11 – 31/2/15) the results of this search are illustrated in **Figure TS7** to this report. The use of a five year study period accords with the search period criteria recommended in NPPG good practice guidance for highways assessment.

3.3.2 Review of the recorded accident data demonstrates that just three injury accidents were recorded within the immediate study area over the study period - all classified as 'slight' injury events. All of the incidents took place on weekday dates, during core daytime hours 07:00-19:00.

3.3.3 Review of the recorded accident incidents identifies that no accident events were recorded along the immediate frontage section to the Harthill Road proposal sites or at the Calderstones School access points. The distribution of accident incidents shows two accident locations, with recorded events being as follows:

- 1 * 'slight' incident at the junction of Harthill Road / Calderstones Road involving a pedestrian slipping off the kerb and clipping a car wing mirror.
- 1 * 'slight' incident at the junction of Harthill Road / Calderstones Road involving a stolen vehicle.

- 1 * 'slight' incident involving a right turn exit from Harthill Road at the junction with Allerton Road.

3.3.4 Analysis of accident details highlights that, discounting the incident involving a stolen vehicle, the remaining recorded incidents were both of a minor nature and involved slow moving traffic. It is not considered that either of the incidents identify any clear local road safety concern that would need to be addressed in order to support the proposed residential application scheme. Indeed the accident records suggest that, in general, road safety conditions on the immediate section of Harthill Road are good. No issues are highlighted with respect to local traffic patterns associated with the nearby Calderstones School, with the overall accident records perhaps highlighting the influence of the local traffic management features and parking restrictions in promoting low speed, safe operation of the route.

3.3.5 Given the location, nature and overall limited frequency of the recorded accident incidents, it is not considered that the review of road safety has identified any substantive road safety issues that would call the proposal scheme at Harthill Road into question.

4.0 SITE SUSTAINABILITY AND ACCESIBILITY

4.1 Introduction

4.1.1 As noted in the policy review set out in section 2.3 to this report, the proposed development scheme at Harthill Road is required to satisfy the key planning and transport related sustainability objectives of

- Reducing the need to travel, especially by private car;
- Ensuring accessibility to a range of sustainable travel options.

4.1.2 The nature of local sustainable transport connections available within the immediate catchment of the proposal site land parcels are summarised in the paragraphs below.

4.2 Access to Public Transport

4.2.1 The application land is located within 600m – 700m walk of a wide range of existing bus services, with stops available at the following locations (see also **Figure TS8** to this report):

- *A562 Menlove Avenue / Green Lane* (passenger shelters / bus boarder kerb / passenger information board);
- *B5180 Mather Avenue / Greenhill Road* (passenger shelter westbound (flagpost eastbound) / bus boarder kerb / passenger information board);
- *B5180 Allerton Road District Centre* (passenger shelters / bus boarder kerb / passenger information board).

4.2.2 All of these local stops lie just outside of the Chartered Institution of Transport (CIHT) preferred 400m maximum walk catchment to a local public transport stop, but are easily accessible on foot along quiet local residential streets and offer a wide range of regular frequency connections as summarised in the **Table TS4.1** below (see also **Figure TS9**).

Table TS4.1 – Available Local Bus Connections

A562 Menlove Avenue / Green Lane Bus Stops

No.	Route	Frequency (mins)				
		Mon-Fri		Sat		Sun
		Day	Eve	Day	Eve	All Day
Green Lane Stops						
61	Aigburth – Allerton – Wavertree – West Derby – Aintree - Bootle	12 mins	30 mins	15 mins	30 mins-	30 mins
75	Liverpool ONE – Allerton – Woolton – Halewood	10 mins	30 mins	15 mins	30 mins	20 mins
76	Liverpool ONE – Allerton – Woolton – Halewood	30 mins	30 mins	30 mins	30 mins	30 mins
86C	Liverpool – Childwall - Liverpool	12 mins	-	15 mins-	-	-

B5180 Mather Avenue / Greenhill Road

No.	Route	Frequency (mins)				
		Mon-Fri		Sat		Sun
		Day	Eve	Day	Eve	All Day
Liverpool Road South Stops						
86	Liverpool ONE – Allerton – South Liverpool Parkway	12 mins	15 mins	-15 mins	15 mines	15 mins
86	Liverpool ONE – Allerton – Garston	12 mins	15 mins	-15 mins	15 mines	15 mins
86A	Liverpool ONE – Allerton – South Liverpool Parkway - Airport	12 mins	15 mins	-15 mins	15 mines	15 mins

B5180 Allerton Road District Centre

No.	Route	Frequency (mins)				
		Mon-Fri		Sat		Sun
		Day	Eve	Day	Eve	All Day
Liverpool Road South Stops						
61	Aigburth – Allerton – Wavertree – West Derby – Aintree - Bootle	12 mins	30 mins	15 mins	30 mins-	30 mins
68 / 68A	Aigburth – Wavertree – Old Swan – Anfield – Walton – Bootle	15 mins	Hrly	20 mins	Hrly	30 mins / Hrly
80	Liverpool ONE – Allerton _ Garston – Speke – Airport	20 mins	-	30 mins	-	-
86	Liverpool ONE – Allerton – South Liverpool Parkway	12 mins	15 mins	-15 mins	15 mines	15 mins
86	Liverpool ONE – Allerton – Garston	12 mins	15 mins	-15 mins	15 mines	15 mins
86A	Liverpool ONE – Allerton – South Liverpool Parkway - Airport	12 mins	15 mins	-15 mins	15 mines	15 mins
174	Belle Vale – Gatacre – Childwall – Allerton Library	-	30 mins	-	30 mins	30 mins

4.2.3 Review of these available local bus services identifies opportunities for access to high frequency connections to key strategic destinations such as Liverpool City Centre, Liverpool South Parkway, Liverpool Airport, Halewood, Bootle and Childwall. In addition the B5180 Mather Avenue

corridor is designated as a 'Quality Bus Corridor', with bus connections to / from Liverpool City Centre available every 3 / 4 minutes across the core weekday and Saturday daytime periods. Such a high frequency 'turn up and go' nature of services, combined with good passenger infrastructure at the majority of local stopes is considered likely to encourage regular bus travel demand to / from the Harthill Road proposal sites, despite the slightly longer than typically preferred walk distance to local stops.

4.2.4 In addition to these immediate local bus connections Mossley Hill and West Allerton rail stations are located approximately 1250m and 1750m walk to the application sites respectively. Both stations are located on the Liverpool Lime Street – Liverpool South Parkway – Warrington – Manchester route and offer a 30 minute daytime frequency local service (Mon – Sat) between Liverpool and Liverpool South Parkway / Manchester, reducing to an hourly frequency during evenings and Sundays.

4.3 Accessibility to Local Facilities (Walking and Cycling)

4.3.1 In addition to available local public transport connections, the proposal sites at Harthill Road also provide the opportunity for access to a range of local shops & services by foot or cycle. National planning guidance notes that walking is the most important mode of travel at the local scale, offering the greatest potential to replace short distance car trips of under 2km. Guidance produced by the CIHT also notes that 800m represents an 'acceptable' walking distance to community facilities & shops, with 1200m representing a 'preferred maximum'.

4.3.2 **Figure TS10** to this report illustrates local walking catchments as measured from the centre of the proposed Harthill residential areas. A review of these catchments suggests that a wide range of 'everyday' type destinations lie within a convenient walking distance, including local supermarket shopping, medical facilities and primary & secondary education (see **Figure TS11**).

4.3.3 National Planning Guidance also notes that cycling has the potential to substitute for short car trips – particularly those journeys of less than 5km or forming part of a longer journey by public transport. The location of the application sites at Harthill Road allows access to a wide range of destinations including key employment opportunities at Wavertree, Edge Hill and Garston, along with surrounding residential areas such as Childwall, Woolton, Gatacre and Aigburth. A plan of dedicated local cycle infrastructure (as identified by Merseytravel) is illustrated in **Figure TS12** to this report with an indicative 5km cycle catchment illustrated in **Figure TS13**.

4.3.4 **Figure TS12** identifies that Calderstones Road close to the proposal sites represents a suitable on street 'quiet road' local cycling route and forms part of National Cycle Route (NCR) 56 'Trans Pennine Trail' long distance cycle path. Furthermore a dedicated traffic free cycle route is available through Calderstones Park linking Harthill Road / Calderstones Road to the signed on-road cycle route along Yew Tree Road.

4.4 Results of LCC SPD Accessibility Assessment

4.4.1 Section 2 to the LCC SPD document "Ensuring Choice of Travel' identifies that LCC encourages developers to complete and submit an Accessibility Assessment as part of a planning application for new development. The results of this accessibility assessment are included in the Council's decision making process when reviewing the suitability of an application scheme, with emphasis being placed on a site meeting as many sustainability targets as practical.

4.4.2 The SPD notes that where a proposed development is not immediately easily accessible or is considered likely to result in a material increase in traffic demand on the local highway network, LCC will seek to secure appropriate facilities to improve accessibility and / or increased network capacity either through planning conditions or voluntary agreements (developer contributions). Any developer contributions will be used to achieve the following strategic priorities for transport, with the extent of

any financial contribution sought related to the scale of development proposed and likely impact as identified within a supporting Transport Statement.

- Supporting the key transport infrastructure projects.
- Road improvements where capacity is likely to be exceeded as a result of the proposed development or the cumulative impact of several developments within an area.
- City centre car parking, car storage, car clubs.
- Public transport improvements.
- Coach Parking / Park and Ride facilities.
- Provision for pedestrians and cyclists; and
- Air Quality management controls including monitoring.

4.4.3 **Appendix TS5** to this report includes for a completed accessibility assessment for the proposed development areas off Harthill Road .This identifies that the site location and local network connections do not generate an audit score which fully meets LCC preferred minimum requirements for walking / cycling and public transport access. This lower value score is a reflection of the greater walking distances required to access core local shops & services and the main public transport routes. Given the high quality nature of connections (e.g. quality bus corridor, major local service centre) and that, at worst, they lie only just outside preferred walking distances, it is considered that, in practice, the application sites still represent a good location for new residential development in transport sustainability terms. This conclusion is further supported by the good accessibility score generated for the site when considering cycle connections.

4.4.4 It is therefore ultimately concluded that the proposed Harthill Road residential proposals deliver an acceptable level of accessibility to sustainable travel modes and which can be further enhanced by the improved walking connections proposed to support the application scheme.

4.5 Accessibility Summary

4.5.1 Overall it is concluded that the proposal land at Harthill Road represents a suitable location for residential development, being located within a reasonable walking distance of existing high frequency / high standard public transport services and an excellent range of everyday shops / services / facilities. Such locational characteristics assist in meeting the sustainable residential planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

5.0 REVIEW OF THE DEVELOPMENT PROPOSALS

5.1 Development Proposals

5.1.1 The application scheme for the land parcels at Harthill Road comprises the development of a total of 51 residential dwellings spread over the following development areas:

- Re-development of the existing Liverpool City Council Harthill Maintenance Deport for up to 20 new private residential units.

- Development of land associated with the adjacent Park View site, and land to the south of Beechley House for up to 15 new private residential units.

- Restoration and re-development of the Beechley House property and associated stables and out-buildings to provide a total of up to 16 private residential dwellings (via a mix of mews, apartment and new private house units).

5.1.2 A masterplan of the proposals is included as **Figure TS14** (Harthill Depot & Park View) & **Figure TS15** (Beechley House, Stables & Paddock) to this report. This plan illustrates the proposed development layout, including the location of proposed highway access points and car parking arrangements.

5.1.3 The development proposals have been carefully prepared through a detailed assessment of the site, its constraints, context and the overall aspiration to create a new, high quality sustainable residential development. The layout and use of the site seeks to respect the site's location within the setting of the Grade II listed Beechley House and Beechley Stables. In addition, the redevelopment of these buildings seeks to preserve and enhance their heritage value to the area.

5.2 Highway Access Arrangements

5.2.1 **Figures TS14 & TS15** illustrates the key principles of the access strategy proposed to support the different scheme elements. These proposed access arrangements are described in more detail below.

Former Harthill Depot Site (20 residential units)

5.2.2 The Harthill Depot development area would be served via an improvement to the existing depot access road connection to Harthill Road. The proposed access road route would be 5.0m width, a suitable operating standard to serve a residential development of up at least 50 units. Furthermore the connection to Harthill Road provides more than acceptable lateral visibility for safe side road access to a 20mph mainline route (2.4m by 33+m sightline available to the north and 2.4m by 33+m to the south – see **Figure TS16** to this report, which are suitable for access to routes operating at 25mph).

5.2.3 In order to support the residential re-development it is proposed that a new segregated 2.0m footway route would be provided to the north of the existing access road, providing a connection to the existing footway along Harthill Road. Further pedestrian access to Harthill Road to the south would be provided via dedicated footway access via connections through the adjacent Park View site. These new pedestrian links would also connect to existing internal park pedestrian / cycle routes, therefore providing improved access to Calderstones Park from Harthill Road.

5.2.4 Delivery of the new segregated footway along the proposed development access road would need to involve careful ‘minimum dig’ construction methods to avoid impact on local mature tree routes.

Park View Site & Land to the South of Beechley House (15 residential units)

5.2.5 The Park View development area and adjoining land to the south of Beechley House is proposed to be served by a new side road access connection to the improved former Harthill Depot access road. **Figure TS17** illustrates the location and nature of this proposed new access road route and demonstrates that the new junction would be located circa 35m away from the terminal connection with Harthill Road. Review of the layout of the proposed connection to Park View demonstrates a minimum 5.0m width roadway, with a segregated 2.0m footway to the northern side of the route, which connects to a dedicated southern through connection to Harthill Road via a speed table crossing point of the route. The remainder of the highway layout, serving the 15 proposed residential dwellings is proposed to delivered as a low speed 'shared surface' style layout.

5.2.6 Minimum lateral visibility from the new Park View access connection to the former depot access road would be provided at the levels set out below:

- Leading direction visibility (to the east): 2.4m by 25m
- Non-leading direction visibility (to the west): 2.4m by 25m.

Such sightlines are considered appropriate for a new vehicle access connection at this location given the low speed operation anticipated on the former depot access road (i.e. 20mph or less) - as a result of nearby traffic calming features and the proximity to the terminal junction connection to Harthill Road.

Beechley House, Paddock & Stables Site (access to 16 residential units)

5.2.7 Vehicle access to the redeveloped Beechley House & Stables site and the proposed new dwellings within the Paddock area would be served via an improvement to the retained Beechley House driveway access

connection to Harthill Road. The access point represents the only practical access option to serve the site given land ownership constraints and proximity to existing heritage assets.

5.2.8 **Figure TS18** to this report sets out the key principles of this access improvement, which will be delivered to ensure modern vehicle and pedestrian safety standards (ensuring two-way car access and a segregated safe pedestrian connection) whilst respecting and replicating the existing formal walled / pillar site access arrangement consistent with the heritage setting. The access plan illustrates the following key principles:

- Widening of proposed site access road connection to 4.8m;
- Minimum 6m left turn entry / exit radii;
- 2.0m footway to one side of the access way.

5.2.9 Minimum lateral visibility from the improved Beechley House access connection to the former depot access road would be delivered to achieve the minimum levels set out below:

- Leading direction visibility (to the east): 2.4m by 33m
- Non-leading direction visibility (to the west): 2.4m by 33m.

Such sightlines are considered appropriate for a new vehicle access connection at this location given the low speed operation recorded on Harthill Road in the vicinity of the application site.

5.2.10 In addition to the proposed site access arrangements, the existing internal access road routes would be enhanced as part of the re-development scheme to ensure suitable access for resident and service vehicles, along with an additional dedicated footway connection. It is intended that the central access road would operate as a clockwise circular one-way system around the central landscaping feature to minimise the potential for vehicle conflicts.

5.2.11 Details of the proposed layout of the Beechley Stables and Beechley House development areas are illustrated in **Figure TS15** to this report. This plan also demonstrates that the existing stables access to Harthill Road would be retained to provide an additional footway access point to / from this element of the development site.

Proposed Vehicle Servicing

5.2.12 **Appendix TS6** to this report illustrates typical vehicle movements within the development areas, including for occasional large vehicle servicing (delivery vehicles / refuse collection). Large vehicle servicing of the small number of properties forming part of the Beechley Stables development would either be served directly from Harthill Road or via connections from the adjacent Beechley House internal site access road.

5.3 Car Parking

5.3.1 Overall car parking provision across the different site elements would be provided at a level that at least accords with minimum local parking requirements and therefore would assist in avoiding the need for any on-street parking to take place associated with the proposed development.

- Car parking at the Harthill Depot and Park View elements of the scheme would be provided at a minimum ratio of 2 in-curtilage spaces per dwelling, reflecting the larger family home nature of properties proposed for these areas.

- Main car parking for the Beechley House development would be provided via a central communal car parking area - with spaces assigned to individual dwellings. Parking space provision has been based on the following parking ratios: a) Stable / Summer House Units = 2 spaces per dwelling, b) 1 bedroom apartment = 1 space, and; c) 2 bedroom apartment = 2 spaces. A total of 4 additional spaces would be reserved within this communal car

park for use by visitors. Each of the four new residential units to be provided in the Paddock area would be served by two spaces.

5.3.2 Conversion of the Beechley House and Beechley Stables site for residential land use would be supported by the following provision:

- 3 mews properties (stable conversion), summer house and duplex apartments 3 & 4 (Beechley House) in-dwelling cycle storage opportunities.
- Beechley House apartments (1, 2, 5, 6, 7, & 8) cycle parking opportunities in basement communal storage area served off the main stair and lobby area.

5.4 Supporting Highway Improvements

5.4.1 The application scheme has been designed to encourage walking accessibility to / from the adjacent Calderstones Park. Key elements of this approach include:

- The provision of a new 2.0m segregated footway along the north of the former depot site access road.
- Improvement of existing connections to footpath routes into the park from the former depot site access road, including the provision of a new traffic calming / speed table feature at the point where these footpath routes connect to the former depot access road.
- New connecting footpath route through part of the Park View site direct from Harthill Road to connect to park footpaths and the depot access road.

6.0 PREDICTED TRAVEL DEMAND ASSOCIATED WITH THE PROPOSALS

6.1 Introduction

6.1.1 This section of the Transport Assessment seeks to identify the levels of total traffic demand anticipated to be generated by the combined proposal scheme elements and the assignment of this traffic across the immediate study area to the Harthill Road sites.

6.2 Predicted Trip Demand Levels

6.2.1 **Appendix TS7** to this report illustrates the trip demand profile for appropriate private residential development sites held within the TRICS database. TRICS is a nationally regarded source of historical trip demand data and contains observed traffic survey data for a large number of development-type sites and, as such, can be considered to produce reliable base trip rate data.

6.2.2 The chosen sites from the TRICS database utilised in this assessment have been selected for their general locational factors similar to the Harthill Road proposals, viz:

- Suburban / Edge of Town sites;
- 15 - 50 dwellings;
- Not including sites in Greater London or the Republic of Ireland;
- Not including sites with Bungalow or Terraced residential units.

6.2.3 Average and 85th percentile trip rates per dwelling for the traditional AM & PM 'rush hour' time periods are illustrated in **Table TS6.1** below, along with trip rates for the identified afternoon school peak of 15:00-16:00.

Table TS6.1 – Predicted Residential Development Trip Rates

	Average Trip Rates (per dwelling)			**85th Percentile Trip Rates (per dwelling)**		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units	*(Trip Rates per dwelling)*					
AM Peak (08:00-09:00)	0.156	0.495	0.651	0.233	0.674	0.907
School Peak (15:00-16:00)	0.278	0.200	0.478	0.400	0.348	0.748
PM Peak (17:00-18:00)	0.414	0.149	0.563	0.542	0.246	0.788

6.2.4 These trip rates have been applied to the proposed residential development areas proposed across the Harthill Road land parcels, with the results set out in the tables below (adjusted for rounding).

Table TS6.2 – Predicted Development Traffic Demand

Harthill Depot Site (20 dwellings)

	Average Trip Demand (20 dwellings)			**85th Percentile Trip Demand (20 dwellings)**		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units						
AM Peak (08:00-09:00)	3	10	13	5	13	18
School Peak (15:00-16:00)	6	4	10	8	7	15
PM Peak (17:00-18:00)	8	3	11	11	5	16

(Vehicle Movements)

Park View Site (15 dwellings)

	Average Trip Demand (15 dwellings)			**85th Percentile Trip Demand (15 dwellings)**		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units						
AM Peak (08:00-09:00)	2	7	10	3	10	14
School Peak (15:00-16:00)	4	3	7	6	5	11
PM Peak (17:00-18:00)	6	2	8	8	4	12

(Vehicle Movements)

Stables Development (3 dwellings)

	Average Trip Demand (3 dwellings)			85th Percentile Trip Demand (3 dwellings)		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units						
AM Peak (08:00-09:00)	1	2	3	1	3	4
School Peak (15:00-16:00)	1	1	2	2	1	3
PM Peak (17:00-18:00)	1	1	2	2	1	3

(Vehicle Movements)

Beechley House Site (13 dwellings)

	Average Trip Demand (13 dwellings)			85th Percentile Trip Demand (13 dwellings)		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units						
AM Peak (08:00-09:00)	2	6	8	3	9	12
School Peak (15:00-16:00)	4	3	7	5	5	10
PM Peak (17:00-18:00)	5	2	7	7	3	10

(Vehicle Movements)

TOTAL COMBINED DEVELOPMENT (51 dwellings)

	Average Trip Demand (51 dwellings)			85th Percentile Trip Demand (51 dwellings)		
	Arrival	Departure	**Total**	Arrival	Departure	**Total**
Residential Units						
AM Peak (08:00-09:00)	**8**	**26**	**34**	**12**	**35**	**47**
School Peak (15:00-16:00)	**14**	**10**	**25**	**21**	**18**	**39**
PM Peak (17:00-18:00)	**22**	**8**	**29**	**28**	**13**	**41**

(Vehicle Movements)

6.2.4 The above analysis demonstrates that the proposed combined development scheme is not anticipated to generate a substantial level of additional peak hour travel, with maximum rush hour two-way (in + out) total traffic demand (adjusted for rounding) not anticipated to exceed 47 vehicles (AM peak based on 85th percentile trip rates). Such demand is the equivalent of less than one new vehicle trip movement per minute

and is unlikely to result in a material impact on local network operating conditions.

6.3 Development Traffic Assignment

6.3.1 Traffic demand associated with the proposed development parcels has been assigned to the surrounding highway network on the basis of observed traffic patterns on the section of Harthill Road immediately to the north of the existing Beechley House access point. This approach identifies the assignment proportions as summarised below:

AM Peak (08:00-09:00):

- Trips to / from North: 52.49% of total trips
- Trips to / from South: 47.51% of total trips

School Pick-Up Peak (15:00-16:00):

- Trips to / from North: 44.17% of total trips
- Trips to / from South: 55.83% of total trips

PM Peak (17:00-18:00):

- Trips to / from North: 51.79% of total trips
- Trips to / from South: 48.29% of total trips

6.3.2 Application of the predicted residential traffic demand levels identified in section 6.2 to these assignment proportions are illustrated in **Figure TS19(a-c)** and **Figure TS20(a-c)** for average and 85th percentile trip rate development traffic scenarios respectively. Review of these plans demonstrates that, in practice, development traffic levels are unlikely to be in excess of 25 vehicles per hour (two-way) over any part of Harthill Road and similarly less than 1 vehicle every two minutes at the terminal junctions of the route to either Allerton Road and Calderstones Road. In practice, such small levels of additional traffic are unlikely to result in any material changes in operating conditions at these locations.

7.0 NETWORK IMPACT ASSESSMENT

7.1 Key Assessment Parameters

7.1.1 As identified in section 3.2 to this report, review of background daily traffic demand patterns derived from the 2016 traffic surveys suggests that maximum background traffic levels over the local highway network are experienced during the following time periods:

- Local highway network AM Peak hour: 08:00-09:00;
- School pick up period peak hour: 15:00-16:00;
- Local highway network PM Peak hour: 17:00-18:00.

7.1.2 In practice the AM & PM 'rush hour' peak periods are also likely to broadly represent the maximum traffic demand periods associated with traffic demand to / from the application scheme (residential land use) and therefore these time periods have been utilised for the network capacity appraisals set out in the remainder of this TS report.

Future Year Traffic Growth Assumptions

7.1.3 Network impact assessments have been carried out for an estimated full development opening year of 2019. In order to provide additional comfort to the Local Highway Authority as to the capacity of the local highway network, an additional future year assessment has been carried out for a design year of 2023. Such a future year assessment date represents a period 7 years post the date of planning submission and therefore is in accordance with robust development assessment good practice (minimum 5 year future year assessment requirement).

7.1.4 In order to estimate background traffic conditions for these future year periods, regional growth factors derived from the National Transport Model (NTM) have been applied. NTM forecasts give traffic growth by region, road type and whether the area is built up or not. These regional forecasts have then been adjusted by local TEMPRO factors (for the

Liverpool (main) area) to reflect predicted future local traffic growth trends. **Table TS7.1** sets out the growth factors utilised for each of the assessment periods, with the TEMPRO outputs provided in **Appendix TS8.**

Table TA7.1: Opening Year and Future Year Growth Factors

Years	AM Peak	Off-Peak	PM Peak
2016-2019	1.0434	1.0439	1.0430
2016-2023	1.0990	1.1014	1.0986

7.2 Calculation of 'Do-Nothing' & 'Do-Something' Network Traffic Demand Estimates

'*Do-Nothing' Network Estimates*

7.2.1 The 2016 traffic survey data presented in **Figure TS5(a-c)** has subsequently been 'growthed' by the above locally adjusted factors to provide 2019 and 2023 'Do Nothing' Network flow estimates, as illustrated in **Figures TS21(a-c)** and **Figure TS22(a-c)** respectively.

'*Do-Something' Baseline + Development Network Estimates*

7.3.2 'Do-Something' (i.e. Baseline + Proposed Harthill Road Residential Development) traffic flow estimates have been calculated via the following methodology:

- Remove traffic demand associated with the current operation of the re-development parcels from the background estimates, in order to calculate a 'Baseline' traffic demand position. These Baseline estimates are illustrated in **Figure TS23(a-c)** and **Figure TS24(a-c)** for 2019 and 2023 future year scenarios respectively.

- Addition of the total predicted future residential development traffic demand to the modelled development full opening year (2019) and future design year (2023) baseline traffic flows to create 'Do Something' Baseline + Development traffic estimates.

7.3.3 Do-Something demand estimates for 2019 and 2023 are illustrated as follows:

- **Figure TS25(a-c)** 2019 Opening Year 'Do Something' traffic flows (85th percentile residential development traffic flows).

- **Figure TS26(a-c)** 2023 Future Assessment Year 'Do Something' traffic flows (85th percentile residential development traffic flows).

7.3 Link Impact Assessment

7.3.1 The paragraphs below set out an assessment of the likely network effects of the predicted development traffic movements. This assessment should be viewed in the context of advice regarding development traffic impact as set out in the National Planning Policy Framework (NPPF) document. Paragraph 32 to this document provides guidance on the nature and detail of development transport appraisal to be carried out to support development and those key matters to be considered when determining the suitability of development proposals:

> ***"All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:***
>
> - ***the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;***
> - ***safe and suitable access to the site can be achieved for all people; and***
> - ***improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe." (Para 32).***

7.3.2 The last bullet point of paragraph 32 to NPPF is considered to be of key importance in the context of the review of the Harthill Road proposal

scheme and the assessment of the operation of the immediate local highway network. NPPF clearly identifies that development should only be refused in those cases where highways impact would be 'severe' - which is typically understood to mean situations where development is likely to result in a material detrimental 'step change' change in circumstances when compared to predicted Baseline / 'Do-Nothing' conditions.

7.3.3 Reference to Chartered Institution of Highways and Transportation (IHT) 'Guidelines for Traffic Impact Assessment' suggests that more detailed analysis of highway impact and / or capacity improvements is only likely to be required where either:

- Traffic to / from the development exceeds 10% of existing two way traffic on the adjoining highway; or,

- Where traffic to / from the development exceeds 5% of the existing two way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

7.3.4 This position was reviewed and updated in March 2007 DfT "Guidelines for Transport Assessment" (also recently withdrawn during Autumn 2014) which notes:

> ***"If the TA confirms that a development will have material impact on the highway network, the level of impact at all critical locations on the network should be established. A particular example of material impact would be a worsening of congestion. In congested areas, the percentage traffic impact that is considered significant or detrimental to the network may be relatively low (possibly below the average daily variation in flow), and should have been determined in discussions with the relevant highway authorities. For the avoidance of doubt, the 1994 guidance regarding the assessment thresholds of 10 per cent and 5 per cent levels of development traffic relative to background traffic is no longer deemed an acceptable mechanism, since it creates an incentive in favour of***

locating development where high levels of background traffic already exist."

7.3.5 Notwithstanding the latest DfT advice, in the case of the immediate local highway network to the Harthill Road proposal sites, it is considered that the traditional 5% and 10% thresholds still represent a reasonable initial 'contextual guide' as to the level / extent of development traffic operational impact on immediate local routes.

7.3.6 Link flow operational assessments have therefore been carried out for the following local sections of the highway network to the development proposals:

- Harthill Road (Immediate North of Harthill Depot Access);
- Harthill Road (Immediate South of Harthill Depot Access):
- Harthill Road (Immediate South of Beechley House Access).

7.3.7 It is considered that these immediate sections of route network would experience the maximum traffic demand associated with the application scheme. Should link impact levels on these immediate sections of route prove to fall within acceptable criteria, then it can reasonably be concluded that development traffic at more remote network locations would also lie within suitable thresholds.

7.3.8 **Table TA7.2** and **Table TA7.3** below demonstrates the anticipated changes in 2019 and 2023 'Do-Nothing' traffic flows associated with the addition of the predicted Hartshill Road application scheme traffic. To ensure the most robust assessment of development traffic impact, the exercise has been carried out on the basis of 85th percentile development traffic estimates.

Table TA7.2 – Predicted Changes in 2019 Link Flow on Immediate Sections of the Local Highway Network to the Development Area

85th Percentile Trip Rates

	2019 AM Peak Period			2019 School Peak Period		
	Do-Nothing	Do-Something	% Change	Do-Nothing	Do-Something	% Change
Harthill Rd (N of Depot Site)	423	433	2.4%	198	210	5.9%
Harthill Rd (S of Depot Site	411	426	3.6%	194	212	9.3%
Harthill Rd (S of Beechley Mnr)	441	462	4.8%	217	237	9.2%

	2019 PM Peak Period		
	Do-Nothing	Do-Something	% Change
Harthill Rd (N of Depot Site)	180	201	11.5%
Harthill Rd (S of Depot Site	183	202	10.4%
Harthill Rd (S of Beechley Mnr)	177	195	10.2%

Two-way flow totals

Table TA7.3 – Predicted Changes in 2023 Link Flow on Immediate Sections of the Local Highway Network to the Development Area

85th Percentile Trip Rates

	2023 AM Peak Period			2023 School Peak Period		
	Do-Nothing	Do-Something	% Change	Do-Nothing	Do-Something	% Change
Harthill Rd (N of Depot Site)	445	454	2.0%	208	220	5.8%
Harthill Rd (S of Depot Site	434	448	3.2%	204	221	8.3%
Harthill Rd (S of Beechley Mnr)	464	486	4.7%	229	248	8.3%

	2023 PM Peak Period		
	Do-Nothing	Do-Something	% Change
Harthill Rd (N of Depot Site)	191	212	11.0%
Harthill Rd (S of Depot Site	192	212	10.4%
Harthill Rd (S of Beechley Mnr)	186	204	9.7%

Two-way flow totals

7.3.9 Review of the link flow assessment results demonstrates that application scheme related traffic is generally not anticipated to give rise to a substantive change in flow on the key study links. Maximum link impact could be expected to take place on the immediate section of Hartshill Road to the north of the proposed depot site access junction, which would experience a percentage change of circa 11.5% during the PM peak period. This predicted percentage increase level is associated with a 'net' change in traffic levels ('Do-Nothing' v 'Do-Something') of just 19 vehicle movements per hour or less than one additional vehicle movement every three minutes. It is not considered that such changes in flow are likely to result in a material / severe change in local operating conditions and that the relatively high percentage change value identified by this analysis is a function of low existing background traffic demand levels (see section 7.4 below).

7.4 Link Capacity Assessment

7.4.1 In order to provide a greater understanding of potential link flow impact issues, this report also includes for an appraisal of future link capacity on the immediate sections of routes close to the application land parcels.

7.4.2 Research to establish the operating capacity of local urban access roads affected by on-street parking is limited, with existing national guidance providing no clear capacity / impact threshold. DfT guidance note TA79/99 "Traffic Capacity of Urban Roads," for example, suggests that two-way link capacity for a 6.1m UAP4 standard route (street carrying predominately local traffic with frontage activity including loading and unloading i.e. similar to Harthill Road) could be of the order of 1250vph (two-way), or 500-750vph for individual one-way directional flows. The guidance does, however, note the following with respect to the influence of parking on these link flow capacity estimates (para 2.6 to the guidance):

> ***"The capacity of the lower width roads will be significantly reduced by parking and temporary***

> ***width restrictions caused by such activities as maintenance and Statutory Undertakers' Works. The lowest widths are unlikely to be suitable for bus routes or for significant volumes of heavy goods vehicles."***

7.4.3 It is therefore clear that the capacity of a local urban residential road of 5.5m in width and affected by some on-street parking or pick up / drop off conditions is potentially substantially lower than TA79/99 link flow estimates.

7.4.4 IHT Document "Transport in the Urban Environment" (1997) includes a chapter titled 'Alternative Concepts of Road Link Capacity' which includes a review of the concept of Environmental Capacity (section 32.4 to the document), which is defined as:

> ***"The capacity of a street or area to accommodate moving and stationary vehicles, having regard to the need to maintain the (chosen) environmental standards"***

7.4.5 Transport in the Urban Environment notes that the environmental capacity for an access road or local distributor route is typically likely to lie in the range 300–600vph (two-way), demonstrating that maximum traffic flow compatible with a good environment could be substantially lower than traffic capacity values merely determined by reference to the width and alignment of the carriageway or other constraints along its length.

7.4.6 The 1977 first edition of DB32 Residential Roads and Footways provides further support to this principle of lower operating capacity for narrower residential roads affected by on-street car parking. Appendix 4 to first edition DB32 included information relating to the calculation of delays to traffic on single-lane carriageways with passing places (which accords well to two-way roads reduced over sections to single direction operation due to on-street parking), with the information set out in DB32 based on TRL working paper TSN29R. The conclusions of this working paper, subsequently reflected in the DB32 Appendix 4 analysis, was that:

> ***"Single lane roads with passing places spaced at between 45m and 60m (centre to centre) would give satisfactory traffic operation in housing estates at two-way flows of up to 300 veh/h. The resulting average delay to traffic is unlikely to exceed 5 seconds per vehicle over 180m. A further experiment showed that networks of single-lane roads could operate satisfactorily at similar flows levels."***

7.4.7 Based on the above review of available analysis / research, it is concluded that local access routes experiencing traffic flow levels of less than a 300vph (two-way) 'threshold' would not typically demonstrate any material evidence of unacceptable congested / over-capacity operation and, therefore, could be considered to likely operate efficiently. In practice, however, it is possible that a higher threshold to this minimum 300vph (two-way) threshold, i.e. up to 600 vph, would still not result in unacceptable congestion / delay issues - particularly in the case of those routes with regular opportunities for the two-way passage of vehicles.

7.4.8 The assessment of development link flow impact set out in this TS report has been undertaken for the following sections of Harthill Road:

- Immediately to the north of the Harthill Depot Connection and,
- Immediately to the south of the Beechley House access point.

7.4.9 To ensure the most robust assessment of development traffic impact, the exercise has been carried out on the basis of 85th percentile development traffic estimates. Analysis has been carried out via reference to the following traffic demand scenarios and is summarised in **Table TS7.4** and **Table TS7.5** below:

- 2019 Background + Proposed Residential Development Traffic.
- 2023 Background + Proposed Residential Development Traffic

Table TS7.4: 2019 Baseline + Development Traffic

Harthill Road (North of Hartshill Depot Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	408	24	433
PM School Run	193	17	210
PM Peak	181	22	201

Harthill Road (South of Hartshill Depot Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	403	23	426
PM School Run	191	21	212
PM Peak	183	20	202

Harthill Road (South of Beechley House Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	440	23	462
PM School Run	215	22	237
PM Peak	175	20	195

Table TS7.5: 2023 Baseline + Development Traffic

Harthill Road (North of Hartshill Depot Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	430	24	454
PM School Run	203	17	220
PM Peak	191	22	212

Harthill Road (South of Hartshill Depot Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	425	23	448
PM School Run	201	21	221
PM Peak	192	20	212

Harthill Road (South of Beechley House Access)

	2019 Baseline 2-way traffic on Harthill Rd	Proposed Residential Development traffic on Harthill Rd	Baseline + Development
AM Peak	463	23	486
PM School Run	226	22	248
PM Peak	185	20	204

7.4.10 Review of **Table TS7.4** & **Table TS7.5** above demonstrates that even including for the traffic effects of general network traffic growth and direct 'worst case' 85th percentile development modelling, future year 'Do-Something' traffic levels are only anticipated to exceed lower traditional environmental capacity thresholds (300vph) during the combined school drop off / AM rush hour peak period. In practice such higher traffic levels during this AM peak period do not occur as a direct consequence of predicted development operation but rather are associated with school 'drop off' journeys and are not typical of general network conditions over the remainder of the day. Indeed, predicted development traffic related increases at this time are well below 5% of background traffic levels.

7.4.11 It should also be noted that re-development of the depot site for residential land use would result in the removal of a number of existing HGV movements serving the existing depot site – with a number of these HGV trips currently taking place during the AM peak hour. The delivery of the residential re-development would therefore likely provide some a degree of improvement in local highway network environmental conditions as a result of the removal of this heavy goods traffic from immediate local streets.

7.4.12 At all other times of the day, including afternoon school pick up conditions, future year 'Do-Something' traffic demand on Harthill Road could be expected to be less than 250 vehicles per hour (two-way), well below even the lowest environmental capacity thresholds. This suggests the potential for continued generally quiet network conditions following development and strictly limited potential for regular queuing, congestion or material traffic related environmental effects.

7.5 Local Junction Operation

7.5.1 Section 6.3 to this report identifies that, in practice, development traffic levels are unlikely to be in excess of one additional development traffic movement every two minutes at the terminal junctions of Harthill Road to Allerton Road and / or Calderstones Road. In practice, such small levels of additional traffic are less than traditional minimum thresholds above which more detailed assessment of network impact might typically be considered (30 or more two-way vehicle movements per hour). On this basis it can be concluded that the proposal scheme will not result in a material change in wider highway network performance.

7.6 Impact Summary

7.6.1 On the basis of the above review it is concluded that the local highway network to the Harthill Road application sites would typically provide sufficient spare operating capacity and that the limited additional traffic predicted to be generated by the development would not result in a material / severe detrimental change in operational conditions that would require the provision of specific network capacity improvements or result in unacceptable traffic related environmental effects.

8.0 SUMMARY AND CONCLUSIONS

8.1 This Transport Statement has been prepared by Axis on behalf of Redrow Homes to consider highways and transport issues related to the development of up to 51 residential dwellings at land associated with Beechley House and Harthill Depot, Harthill Road, Liverpool. The report has been prepared to appraise the Local Highway and Planning Authority, Liverpool City Council (LCC) as to the extent of combined traffic demand expected to be generated by the development proposals and to set out the design and nature of the site access arrangements.

8.2 The proposal scheme is spread across a number of land parcels that border Harthill Road adjacent to the south western boundary of Calderstones Park. These land parcels represent current enclosed (not available for public access) areas nect to Calderstones Park and include a number of buildings that are currently in a poor state of repair and / or require costly on-going maintenance. The sale and re-development of the land for residential land use will realise important funds to secure the continued maintenance and improvement of Calderstones Park.

Baseline Local Highway Network Conditions

8.3 In the immediate vicinity of the proposed development, Harthill Road is of circa 5.5m operating width. This width is typically considered as being suitable to accommodate two-way vehicle movements, including occasional access by large goods vehicles. Footways are provided to both sides of Harthill Road. To the site side, the footway is typically of a minimum 1.6m width, widening to 1.9m to 2.0m for the section opposite the main southern access to Calderstones School and to the frontage of Beechley House. Typically a footway width of 1.5m is suitable to allow two persons to walk side by side safely, with a 1.0+m footway allowing minimum provision for disabled person access.

8.4 Calderstones School forms a continuous boundary to the western side of Harthill Road. The school is currently served by four existing vehicle

access points. Main school on-site parking vehicle related traffic movements are focussed towards the north of the school site, away from the main proposal site land parcels considered in this report. Notwithstanding this, a substantive level of pupil drop off / pick up movements have been observed taking place along Harthill Road during key school demand periods, including close to the southern school access point - despite this area being subject to local waiting restrictions and 'school keep clear' markings.

8.5 Baseline traffic flow patterns in the immediate vicinity of the development area have been established via the undertaking of bespoke 2016 weekday traffic surveys of Harthill Road and critical side road access points. Review of this information indicates that maximum flow on Harthill Road to the immediate north of the Harthill Depot access point took place during the AM peak period (08:00-09:00) and was of the order of 405 vehicles per hour or circa 6 – 7 vehicle movements per minute. A substantive 'peak' in traffic demand was noted to take place during this identified maximum morning survey hour for the 15 minute period 08:30 – 08:45, which is likely to be associated with pupil drop-off movements at Calderstones School immediately prior to the start of the timetabled school day.

8.6 Observed traffic demand on Harthill Road during the afternoon survey periods was noted to be much lower, being of the order of just 175 – 185 vehicles per hour (two-way) or circa 1 vehicle every three minutes. No substantive afternoon school peak 15 minute demand period was noted.

8.7 Large vehicle demand on Harthill Road route was noted to be generally low (27 HGV movements across the full five and a half hour survey period). Such HGV demand represents less than 2.5% of total recorded traffic volumes (1121 movements). Many of the recorded HGV movements (12 trips out of 27 recorded) were noted as accessing the existing LCC Harthill Depot and thus would be removed from the immediate network should re-development of this site element take place.

8.8 In addition to the above traffic volume information, a traffic speed survey adhering to was undertaken on the section of Harthill Road immediately to the south of the existing southern Calderstones School access. This demonstrated that existing traffic conditions are broadly in accordance with the prevailing 20 mph speed limit.

8.9 An appraisal of the operational safety of the immediate local highway network adjacent to the proposed development sites has been carried out through reference to most recent 5-year Personal Injury Accident (PIA) data held by LCC Highways. This exercise identified that just three injury accidents were recorded within the Harthill Road study area, all 'slight' injury events and none along the immediate frontage section to the Harthill Road proposal sites or Calderstones School. Given the location, nature and overall limited frequency of the recorded accident incidents, it is not considered that the review of road safety has identified any substantive road safety issues that would call the proposal scheme at Harthill Road into question.

Site Sustainability

8.10 A detailed review of site accessibility suggests that the Harthill Road sites represent a suitable location for residential development, being located within a reasonable walking distance of existing high frequency public transport services, including a Quality Bus Corridor and everyday shops / services / facilities. Such locational characteristics would assist in meeting the sustainable residential planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

Development Proposals

8.11 The application scheme for the land parcels at Harthill Road comprises the development of a total of 51 residential dwellings spread over the following development areas:

- Re-development of the existing Liverpool City Council Harthill Maintenance Deport for up to 20 new private residential units.

- Development of land associated with the adjacent Park View site, and land to the south of Beechley House for up to 15 new private residential units.

- Restoration and re-development of the Beechley House property and associated stables and out-buildings to provide a total of up to 16 private residential dwellings (via a mix of mews, apartment and new private house units).

8.12 Vehicle access to the different site elements would be delivered by the retention and improvement of the existing main access connections to Harthill Road (via the former Harthill Depot access road and the main Beechley House access). The depot site access improvements would include the delivery of a new segregated footway connection, providing improved pedestrian connections to the Calderstones Park from Harthill Road.

8.13 Access to the Park View development element would be delivered via a new high standard highway access connection to the former depot site access road. Delivery of the Park View site would also be supported by a dedicated footway connection to Harthill Road, which would link to existing footway routes within Calderstones Park.

8.14 Vehicle access to the redeveloped Beechley House & Stables site and the proposed new dwellings within the entrance area of Beechley House would be served via an improvement to the retained Beechley House driveway access connection to Harthill Road. The access point

represents the only practical access option to serve the site given land ownership constraints and proximity to existing heritage assets. Whilst some minor wall removal work would be required to ensure safe and efficient vehicle & pedestrian access to the Beechley House site to meet modern standards and deliver safe two-way vehicle access without impacting on the operation of the public highway network, it is considered that this access improvement can be delivered to respect and replicate the existing formal walled / pillar site access arrangement consistent with the heritage setting.

8.15 Overall car parking provision across the different site elements would be provided at a level that at least accords with minimum local parking requirements and therefore which would avoid the need for any on-street parking to take place associated with the proposed development.

Predicted Development Traffic Generation and Assignment

8.16 Future traffic levels associated with the Harthill Road proposals has been estimated via reference to trip rate data from sites held within the TRICS database. TRICS is a nationally regarded source of historical trip demand data and contains observed traffic data for a large number of development-type sites and, as such, can be considered to produce reliable base trip rate data.

8.17 The trip generation exercise identifies that total traffic demand associated with the combined development proposals could be expected to be less 1 vehicle per minute, even for 'worst case' 85th percentile maximum demand scenarios and not much greater than 1 vehicle every 2 minutes under 'average' site demand.

8.18 Traffic demand associated with the proposed main residential element of the application scheme has been assigned to the surrounding highway network on the basis of observed traffic patterns on Hartshill Road. This demonstrates that traffic movements split broadly equally north – south, suggesting that, in practice, development traffic levels are unlikely to be

in excess of 25 vehicles per hour (two-way) over any part of Harthill Road. Such small levels of additional traffic are unlikely to result in any material changes in operating conditions over the wider local highway network.

Network Impact Assessment

8.19 Network impact assessments have been carried out for an estimated full development opening year of end of 2019. In order to provide additional comfort to the Local Highway Authority as to the capacity of the local highway network, an additional future year assessment has been carried out for a design year of 2023. Such a future year assessment date represents a period seven years post the date of planning submission and is in accordance with robust development assessment good practice.

8.20 Highway network capacity assessments have been undertaken for key immediate sections of Harthill Road. To ensure the most robust assessment of development traffic impact, the exercise has been carried out on the basis of 85th percentile development traffic estimates. The results of the network impact appraisal demonstrate:

Link Flow Impact / Link Capacity:

- Application scheme related traffic is generally not anticipated to give rise to a substantive change in flow on Harthill Road. Maximum link change could be expected to take place on the immediate section of Hartshill Road to the north of the proposed depot site access junction during the PM peak period (11.5%). This percentage increase level is associated with a 'net' change in traffic levels ('Do-Nothing' v 'Do-Something' of just 19 vehicle movements per hour or less than one additional vehicle movement every three minutes. It is not considered that such changes in flow are likely to result in a material / severe change in local operating conditions and that the relatively high percentage

change value identified by this analysis is a function of low existing background traffic demand levels on this route.

- IHT document, Transport in the Urban Environment notes that the environmental capacity for an access road or local distributor route is typically likely to lie in the range 300–600vph (two-way). Review of the future year 2023 traffic estimates demonstrates that even including for the traffic effects of general network traffic growth and direct 'worst case' 85th percentile development modelling, 'Do-Something' (Baseline + Development) traffic levels (432-462vph) are only anticipated to exceed lower traditional environmental capacity thresholds (300vph) during the combined school drop off / AM rush hour peak period, with such traffic levels being below the higher threshold of 600 vph. At all other times of the day, including afternoon school pick up conditions, future year 'Do-Something' traffic demand on Harthill Road could be expected to be less than 250 vehicles per hour (two-way), well below even the lowest environmental capacity thresholds.

- In practice, the higher traffic levels during the AM peak period are not as a direct consequence of predicted development trip demand but rather are associated with a peak in school 'drop off' journeys and therefore are not typical of general network conditions over the remainder of the day. Indeed, development traffic related increases during the AM peak period are well below 5% of background traffic levels.

- It should also be noted that re-development of the depot site for residential land use would result in the removal of a number of existing HGV movements serving the existing depot site – with a number of these HGV trips currently taking place during the AM peak hour. The delivery of the residential re-development would therefore likely provide some a degree of improvement in local highway network environmental conditions as a result of the removal of this heavy goods traffic from immediate local streets.

Local Junction Performance:

- Development traffic levels are unlikely to be in excess of one additional development traffic movement every two minutes at the terminal junctions of Harthill Road to Allerton Road and / or Calderstones Road. In practice, such small levels of additional traffic are less than traditional minimum thresholds above which more detailed assessment of network impact might typically be considered (30 or more two-way vehicle movements per hour). On this basis it can be concluded that the proposal scheme will not result in a material change in wider highway network performance.

Summary

8.21 Given the above review of issues, it is considered that the Harthill Road development proposals would not generate a material detrimental impact on local highway network operating conditions. Development traffic impact could be expected to be of generally limited scale and would not result in severe network operational effects that could be expected to trigger the requirement for specific network capacity improvements. Furthermore, the location of the Harthill Road sites are such that they lie within a reasonable walking distance of a range of high frequency public transport services, including a Quality Bus Corridor and provide opportunities for walking and cycling connections to local shops and facilities, thus meeting the key requirements of sustainable residential development.