Project: Proposed Residential Development
Former Gateacre School Site, Grange Lane, Liverpool

Client: Countryside Properties (UK) Ltd

Document: Transport Assessment

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1 Introduction

General

1.1 CBO Transport Ltd [CBO] has been commissioned by Countryside Properties (UK) Ltd to undertake an assessment of the potential transport issues arising from a proposed residential development at the former Gateacre School site off Grange Lane, Liverpool. This Transport Assessment represents a culmination of this work and is submitted with the planning application for the scheme.

Discussions with Liverpool City Council

1.2 With regard to the requirements of this report, CBO has held discussions with Liverpool City Council [LCC] Highway officers prior to undertaking the work. It has been agreed through these discussions that a full Transport Assessment is required in this instance. LCC have also requested / agreed the following:

- That consideration of the sustainable modes also includes the completion of their 'Minimum accessibility standard assessment';
- That access to the site be provided through a combination of new access roads and direct driveways off existing roads and that 2.4 x 43 metre visibility splays would be acceptable at the accesses;
- That an assessment year of application plus 5 years is appropriate for the traffic impact;
- That the Aldi scheme on Gateacre Park Drive to the north of the site be included as committed development. No other schemes have been identified;
- That consideration be given to perceived speeding on Gateacre Park Drive in the vicinity of the site and rat-running on Grange Lane and Cuckoo Lane;
- That the study area for traffic analysis include the site access(es), together with the Gateacre Park Drive / Grange Lane, Gateacre Park Drive / Cuckoo Lane, Barnham Drive / Childwall Valley Road, Gateacre Park Drive / Woolton Road, Woolton Road / Cuckoo Lane, Rose Brow / Gateacre Brow and Grange Lane / Belle Vale Road junctions.

1.3 It has also been agreed that a Travel Plan is not required.

Scope of Report

1.4 In light of the above, the purpose of this report is to provide LCC with the necessary information to support the proposals and consider their transport implications. In order to provide this information, this report has been produced in 8 sections including this introduction.

1.5 Section 2 reviews existing conditions and provides details of the study area from a highways perspective, whilst Section 3 considers the accessibility of the site by the sustainable modes and linkage to the surrounding area.

1.6 Section 4 then details the development proposals, whilst Section 5 considers the traffic generations associated with the scheme.

1.7 Section 6 includes details of the traffic flows used to assess the impact of the proposals, whilst Section 7 provides details of the findings of these assessments.

1.8 The conclusions and recommendations of the report are included in Section 8.

2 Existing Conditions and Study Area

Site Description

2.1 The site is located on the site of the former Gateacre School off Grange Lane, Liverpool and is bound by Gateacre Park Drive and Grange Lane to the north, residential properties to the south, Grange Lane to the east and Cuckoo Lane to the west. The location of the site is shown in **Figure 2.1**.

2.2 The site is currently vacant, with all school buildings having been cleared. There are three existing vehicular accesses to the site from Grange Lane, together with a pedestrian access. The southern most access is situated just to the north of Grange Way, whilst the northern most access is situated just to the north of Grangemeadow Road. The third access is central to the two. All three of these accesses, which join the Grange Lane carriageway via kerbed radii arrangements, are now closed.

2.3 There is also a dropped kerb access arrangement serving the site off Cuckoo Lane opposite Siskin Green. This too is now closed.

Highway Study Area and 2014 Observed Traffic Flows / Speeds

Traffic Flows

2.4 Through discussions with LCC, it has been agreed that the study area in terms of considering traffic impact be made up of the following 8 local junctions:

- The proposed site access(es);
- The Gateacre Park Drive / Grange Lane junction;
- The Gateacre Park Drive / Cuckoo Lane junction;
- The Woolton Road / Cuckoo Lane junction;
- The Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction;
- The Gateacre Park Drive / Woolton Road / Blackwood Avenue junction;
- The Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road junction; and (if there is a Grange Lane access)
- The Grange Lane / B5171 Belle Vale Road / Halewood Road / B5171 Gateacre Brow junction.

2.5 In order, therefore, to ascertain existing traffic flows at the junctions identified above, fully classified turning counts were undertaken by an independent survey company on Tuesday 3rd June 2014 between the hours 7:00 and 10:00 and 16:00 and 19:00. These surveys included queue length counts at the signal and roundabout junctions.

2.6 Based on these surveys, which identified the weekday morning and evening peak hours as being 8:00 - 9:00 and 16:45 - 17:45 respectively, the observed 2014 weekday morning and evening peak hour traffic flows are shown in **Figures 2.2** and **2.3**.

Traffic Speeds

2.7 In addition to the above and to allow due consideration of the perceived speeding on Gateacre Park Drive, a speed survey was undertaken between Grange Lane and Cuckoo Lane. The speed survey was carried out in accordance with Design Manual for Roads & Bridges [DMRB] TA 22/81: Vehicle Speed Measurements on All Purpose Roads. The data from this survey is included at **Appendix A.**

2.8 The results of the speed survey are set out below in Table 2.1. In considering the results of this survey in the context of visibility provision, DMRB requires that 85th percentile wet weather speeds be used and, where they are measured on a dry day as was the case here, that the recorded speeds be reduced by 4kph (2.5mph) to derive this wet weather value. Adopting this approach, Table 2.1 sets out the average speed, 85th percentile dry weather speed and 85th percentile wet weather speed observed past the proposed site.

Table 2.1: Gateacre Park Drive Speed Survey Results

Direction	Average (mph)	85th Percentile Dry (mph)	85th Percentile Wet (mph)
Northbound	30	32	29.5
Southbound	30	33	30.5

2.9 As can be seen from the above table, the average speed along Gateacre Park Drive in both directions is at the roads speed limit, with an average of 30mph in both directions. With regard to the adjusted wet weather 85th percentile speeds used when considering visibility provision at accesses, these are shown to be 29.5mph and 30.5mph in the northbound and southbound directions respectively.

2.10 Considering the dry weather 85th percentile speed, which is used to consider speed limits, these are shown to be 32mph northbound and 33mph southbound. These observed speeds are below the design speed for a 30mph speed limit (37.5mph). Furthermore, the recordings provided at Appendix A show that this design speed was only exceeded on 9 occasions of the 400 readings taken, with highest observed speeds of 40mph northbound and 41mph southbound.

2.11 Based on the above, it is evident that traffic is travelling at an appropriate speed for the road and is obeying the speed limit. As a result, it is considered that there is no speeding issue along Gateacre Park Drive in the vicinity of the site or requirement to slow traffic.

Highway Network

2.12 Grange Lane is effectively a straight road running northwest – southeast past the eastern side of the proposed site. It is in the order of 7 metres wide past the site frontage and links to Gateacre Park Drive to the north and Belle Vale Road / Halewood Road to the south. The route serves both frontage properties on Grange Lane itself as well as a number of residential side streets. It also links to Grangemeadow Road, which travels east towards Belle Vale. Grangemeadow Road and the other side streets join Grange Lane as the minor arms of simple priority junctions.

2.13 Cuckoo Lane is effectively a straight road running northwest – southeast past the western side of the proposed site. It is in the order of 6 metres wide past the site frontage and links to Gateacre Park Drive to the north and Woolton Road to the south. The route is a residential road serving both frontage properties on Cuckoo Lane itself as well as a number of residential side streets. It also links to Oakfield Avenue, which travels east and links to Grange Lane, joining both routes as the minor arm of a simple priority junction. To the west, Redwing Lane travels from Cuckoo Lane to Gateacre Park Drive.

2.14 Grange Lane and Cuckoo Lane both join Gateacre Park Drive as minor arms of simple priority junctions. Gateacre Park Drive runs north – south past the western side of the proposed site. It is in the order of 7.5 metres wide past the site frontage and links to the B5178 Childwall Valley Road / Bentham Road to the north and Woolton Road / Blackwood Avenue to the south, with both of these junctions taking the form of four arm signal controlled arrangements. The route again serves both frontage properties as well as a number of residential side streets.

2.15 Travelling from this local area, the B5178 Childwall Valley Road runs east – west travelling to Wavertree to the west and Belle Vale to the east. Bentham Drive continues north towards Broadgreen. At the south of Gateacre Park Drive, Woolton Road again travels to Wavertree to the west and Belle Vale to the east.

2.16 Travelling east, Woolton Road passes Cuckoo Lane, which joins the route as the minor arm of a ghost island priority arrangement, before turning south to become Rose Brow. Rose Brow then joins the B5171 Gateacre Brow and B5171 Acrefield Road via a three arm mini-roundabout arrangement. From here, the B5171 Acrefield Road continues south to Woolton, whilst the B5171 Gateacre Brow travels east towards Belle Vale, passing through Grange Lane and Halewood Road via a four arm signal controlled arrangement before becoming the B5171 Belle Vale Road.

2.17 All of these routes are lit and subject to a 30mph speed limit.

Highway Conditions

Gateacre Park Drive / Grange Lane / Cuckoo Lane area

2.18 Observations undertaken during the weekday morning peak period suggest that the Gateacre Park Drive, Grange Lane and Cuckoo Lane corridors are operating well within their capacity, with minimal delay being observed. There was also minimal queuing observed at the Gateacre Park Drive / Grange Lane, Gateacre Park Drive / Cuckoo Lane and Woolton Road / Cuckoo Lane priority junctions. Any queuing that did occur was limited to small numbers of vehicles and cleared very quickly. There is therefore no perceivable delay in these locations.

2.19 LCC have raised an issue of rat running on Grange Lane and Cuckoo Lane. However, the Grange Lane corridor is considered an appropriate route for traffic travelling between Barnham Drive and the Halewood Road area and the volumes of traffic it carries (two way flows of circa 600 pcu's during the peak hours) are not considered excessive for this type of road.

2.20 With regard to Cuckoo Lane, observations on site during the morning peak showed that any rat running travelling southbound seemed to occur when queuing extended back on Gateacre Park Drive from its traffic signal junction with Woolton Road. Some rat running was also seen to occur on Rockbourne Avenue during this period of queuing. However, this queuing was limited to a short period within the peak hour.

2.21 Travelling northbound on Cuckoo Lane, the observed flows shown in Figures 2.2 and 2.3 appear to show some traffic is using this route to avoid the signals at the Gateacre Park Drive / Woolton Road junction, despite there being no delay on this approach. However, as set out above, this rat running is having no impact on the operation of the junctions at either end of Cuckoo Lane, whilst flow along the route remains low (two way flows of no more than circa 350 pcu's during the peak hours).

Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction

2.22 It was not been possible to undertake observations of this location due to road works in the area at the time of the site visit. However, the queue length data collected as part of the 2014 turning counts (prior to this work commencing) shows that queuing, and subsequently delay, at this location is not significant on the B5178 Childwall Valley Road approaches. Queuing on Bentham Drive is more notable, particularly during the weekday morning peak. The LINSIG modelling presented later in this report is considered to closely replicate the queuing observed on the ground and, consequently, current operation.

Gateacre Park Drive / Woolton Road / Blackwood Avenue junction

2.23 Observations undertaken during the weekday morning peak period showed that, on the Woolton Road and Blackwood Avenue approaches, this junction operated without any material delay, with no notable queuing and traffic clearing the signals each cycle. However, there is a period from around 8:20 to 9:00 where the queue on the Gateacre Park Drive arm lengthens, resulting in traffic having to wait a number of cycles to pass through the junction. It was also evident that traffic was forming two lanes on the single lane approach and that, with the arm running on its own, vehicles were driving up the opposing lane to turn right once the signals went green. These observations are supported by the queue length data collected as part of the 2014 turning counts.

2.24 It is also apparent from the observations on site, and signal timing information provided by Liverpool UTC, that the existing junction timings are inefficient. The Gateacre Park Drive arm is currently limited to a maximum of 12 seconds green time per cycle, whilst there is no queuing on Woolton Road. As a result, this 12 second green time limit on the Gateacre Park Drive approach could be increased without affecting the operation of the other arms. As well as improving overall junction operation, this increased green time and resultant reduction in delay would also assist in making the route more attractive for any traffic that currently rat runs southbound on Cuckoo Lane as referred to above.

Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road junction

2.25 Observations undertaken during the weekday morning peak period suggest that the Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road roundabout is operating within its capacity, with minimal queuing or delay being observed. Any queuing that did occur was limited to small numbers of vehicles and cleared very quickly. There is therefore no perceivable delay at this junction. These observations are also supported by the queue length data collected as part of the 2014 turning counts.

Grange Lane / B5171 Belle Vale Road / Halewood Road / B5171 Gateacre Brow junction

2.26 Observations undertaken during the weekday morning peak period showed that queuing occurred on the approaches to this junction. Whilst the queuing on Grange Lane typically cleared each cycle, the queuing on Halewood Road is more extensive, with the high right turn movement resulting in these vehicles blocking ahead and left traffic.

Personal Injury Accident Record

2.27 Based on accident data that is freely available on the internet for the period 2009 to 2013, consideration has been given to the area of Gateacre Park Drive, Grange Lane and Cuckoo Lane immediately around the proposed site.

2.28 This data shows there have been no personal injury accidents recorded in the vicinity of the site along Cuckoo Lane or at its junctions with Gateacre Park Drive and Woolton Road.

2.29 On Gateacre Park Drive, there have been no recorded accidents on the length between Grange Lane and Redwing Lane.

2.30 With regard to Grange Lane, there have been four slight injury accidents recorded between Elmsfield Close and Gateacre Rise. One occurred in 2010 at the junction with Grange Way and involved a child / pedestrian. Two of the other accidents occurred in 2010 and 2011 and involved a child, whilst the final accident occurred in 2012 and involved a motor cycle.

2.31 Based on the small number of accidents referred to above over a five year period, all of which were slight in nature, and in the context of the small numerical and percentage increases in traffic flow as a result of the development as referred to later in this report, it is considered that the proposals would not materially impact on the areas existing highway safety record.

3 Accessibility by the Sustainable Modes

Pedestrian & Cycle Infrastructure

3.1 The proposed site has good accessibility for pedestrians and cyclists. Grange Lane, Cuckoo Lane and Gateacre Park Drive include good standard footways on both sides of the carriageway, as do the surrounding residential streets, all of which are conducive to cycle use.

3.2 There is a zebra crossing on Gateacre Park Drive to the south of its junction with Thurne Way, whilst the signal controlled junctions at Gateacre Park Drive / Woolton Road and Grange Lane / B5171 Belle Vale Road both include pedestrian crossing facilities. There are also dropped crossings, tactile paving and cycle lanes at the Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road roundabout.

3.3 In terms of cycle provision, Grange Lane past the site, Grangemeadow Road to the east, Gateacre Park Drive past the site and the B5171 Gateacre Brow / Belle Vale Road to the south are all recognised, carriageway based local cycle routes. To the east of the site and via Grange Lane, the B5171 Belle Vale Road links to the Trans Pennine Trail to the east.

Liverpool City Council 'Minimum Accessibility Standard Assessment'

3.4 At the request of LCC, the 'Minimum accessibility standard assessment' included in the LCC 'Ensuring a Choice of Travel' Supplementary Planning Guidance [SPD] has been completed.

3.5 Given the number of dwellings proposed, the site falls within the "Major" sized development category set out in the SPD. An assessment has therefore been completed on this basis and is included at **Appendix B** of this report for reference. Based on this completed assessment, Table 3.1 below summarises the initial scores for the site and compares them to the minimum scores quoted in the Ensuring Choice of Travel SPD.

Table 3.1: Initial Scores from the Minimum Accessibility Standard Assessment

Site / SPD Score	Min Score for Walking	Min Score for Cycling	Min Score for Public Transport	Min Score for Vehicle Access
SPD Minimum Standard	4	5	5	1
Proposed Site	-1	5	3	1

3.6 As can be seen from the above table, the site meets the minimum standard set out in the Ensuring Choice of Travel SPD in relation to accessibility for cycling and vehicular access. However, in relation to walking and public transport and based on initial scores, the site falls short of the suggested standard. These elements are therefore discussed below.

Accessibility by Walking

3.7 Table 3.1 shows that the site scores -1 in relation to access by walking. As can be seen from the completed assessment in Appendix B, this score is attributed to the site falling outside 500m of a local centre and the lack of dropped kerbs at crossings between the site and local facilities forming a barrier.

3.8 With regard to the site falling outside 500m of a local centre and as set out later in this section, the recently opened Aldi and its other consented retail and food uses is situated 580 metres from the site. Whilst these facilities therefore fall just outside the required 500 metres, the additional 80 metres (1 minute walk) is not considered a material increase on the 500 metres required. Furthermore and again as set out later in this section, Belle Vale local centre is 1.2km from the centre of the site (and much less for a large number of the dwellings), whilst Woolton local centre is within 1.5km. These are distances that are around what is considered acceptable in various guidance documents and which can be walked in around 15 to 20 minutes. As a result, it is suggested that walking to the Aldi and its other consented retail and food uses, together with the Belle Vale and Woolton local centres, would be possible from the site and that the site should score 2 points for being within an appropriate distance of both the local shops and local centres.

3.9 In terms of the dropped kerbs, with the exception of this one point there are no barriers at the site. However, in relation to this point, observations on site show that with very few exceptions none of the pedestrian routes within the pedestrian network in the vicinity of the site include dropped crossings of any description. As a result and given the number of route permutations afforded to the proposed site, it would be inappropriate to require the site to provide such facilities to all local centres. It is also suggested that too much weight is given in the assessment to the provision of dropped kerbs in the context of an overall analysis of site accessibility.

3.10 Notwithstanding the above, it is proposed to provide dropped crossings and tactile paving across the Grange Lane and Cuckoo Lane arms of the Gateacre Park Drive / Grange Lane and Gateacre Park Drive / Cuckoo Lane junctions. These provisions, coupled with the dropped crossings and tactile paving proposed at the site accesses referred to later in Section 4, would improve access to the Aldi and its other consented retail and food uses.

3.11 In light of the above improvements, it is considered that the identified barrier has been sufficiently removed and, as a result, the score shown in Table 3.1 should be amended to 1 for this element.

3.12 Taking account of the above points in relation to location and barriers, the site should be considered accessible by walking.

Accessibility by Public Transport

3.13 Table 3.1 shows that the site scores 3 in relation to access by public transport. As can be seen from the completed assessment in Appendix B, this score is partly down to the lack of dropped kerbs at crossings between the site and the bus routes and partly due to service frequency.

3.14 For the reasons set out above in relation to walking, the lack of dropped kerbs is not considered a barrier. However, in addition to the proposed provisions referred to above, it is also proposed to provide dropped crossings and tactile paving across the Oakfield Avenue arm of the Cuckoo Lane / Oakfield Avenue junction and on Grange Lane in the vicinity of the southbound bus stop north of Grangemeadow Road. These provisions, coupled with the dropped crossings and tactile paving proposed at the site accesses referred to later in Section 4, would improve access to the bus stops on Grange Lane and Rose Brow.

3.15 In light of the above improvements, it is considered that the identified barrier has been sufficiently removed and, as a result, the score shown in Table 3.1 should be amended to 1 for this element.

3.16 In relation to bus services, a route runs past the site on Grange Lane which, whilst not within 200 metres for some residents, is within 200 metres of the site and has therefore been scored 2 points for location and access. Despite this route running by the site this is a medium frequency service and not the high frequency service necessary to score the required 2 points for frequency. However, high frequency services run along Rose Brow to the south of the site, with stops on this route situated approximately 700 metres from the centre of the site. Whilst these stops are outside the 400 metres distance referred to in guidance, as set out in more detail later it is considered that the frequency of these services and the destinations they serve, coupled with the pedestrian environment within the site and along Cuckoo Lane, would mean future residents are likely to be prepared to walk this extra distance to access these services.

3.17 In light of the above, it is suggested that the site should score 2 points in relation to its proximity to bus routes.

Updated Minimum Accessibility Standard Assessment

3.18 Given the points raised above, Table 3.2 below summarises the updated scores for the site and compares them to the minimum scores quoted in the Ensuring Choice of Travel SPD.

Table 3.2: Updated Scores from the Minimum Accessibility Standard Assessment

Site / SPD Score	Min Score for Walking	Min Score for Cycling	Min Score for Public Transport	Min Score for Vehicle Access
SPD Minimum Standard	4	5	5	1
Proposed Site	4	5	5	1

3.19 As can be seen from the above table, if account is taken of local existing and proposed conditions in relation to the pedestrian network and a more appropriate walk distance is used to the local centres and bus stops, the site meets the minimum standard set out in the Ensuring Choice of Travel SPD in relation to accessibility.

General comments regarding SPD score

3.20 In deriving the above scores, there are a number of points worth elaborating on in relation to the completed sheets at Appendix B.

3.21 With regard to the internal layout in relation to access on foot and by cycle, the site has been scored a 1 as it has been designed in accordance with Manual for Streets and to keep speeds to 20mph.

3.22 In terms of cycle safety, as already identified Gateacre Park Drive and Grange Lane are designated local cycle routes, whilst the local signal controlled junctions will assist any cyclist undertaking turning movements. The other potential area with safety implications is the Gateacre Park Drive / Grange Lane junction, where cyclists could be required to turn right across a well trafficked route. However, considering the accident data referred to in Section 2, this shows that there have been no injury accidents at this location between 2009 and 2013 involving a cyclist. It is therefore considered that there are no unusual safety issues associated with cyclists turning right across Gateacre Park Drive. The site has therefore been assumed to have no cycle safety issues.

Accessibility Based on Recognised Guidance

Accessibility for Pedestrians

3.23 Notwithstanding the findings of the minimum accessibility standard assessment, it is commonly accepted that walking has the greatest potential to replace short car trips, particularly those under two kilometres, whilst the Institution of Highways and Transportation "Guidelines for Providing for Journeys on Foot" states that "*Walking accounts for over a quarter of all journeys and four fifths of journeys less than one mile*".

3.24 The "Guidelines for Providing for Journeys on Foot" also includes a table which suggests that 800 metres is an acceptable maximum walking distance in a town centre and that 1.2km is an acceptable maximum walking distance elsewhere. It also suggests a distance of 2km is an acceptable maximum for commuter and education journeys, although statutory guidance indicates that just over 3km is an acceptable walk distance for primary school pupils, with secondary school pupils being expected to walk up to 5km.

3.25 In the context of the above, **Figure 3.1** shows the 800m, 1.2km and 2km walking catchments for the site. The areas, services and facilities within these catchments, which are based on walking route distances from the centre of the site and not distances as the crow flies, are discussed below. It should be noted that, given the size of the site and its numerous frontages, the use of its centroid will overestimate the walk distance for a large number of the dwellings within the site. The distances shown in Figure 3.1 and discussed below are therefore considered robust.

Local Schools

3.26 As shown in **Figure 3.1**, at 1.2km Our Lady of Assumption Catholic Primary School is within the 1.2km catchment for the site, whilst Belle Vale Community Primary School is within 1.5km. To the south and west, Childwall C of E Primary School is within 1.7km, whilst Woolton Primary School is within 1.6km and Bishop Marton Primary School within 1.8km. Whilst most of these schools fall outside the 1.2km catchment, they are all within the 2km distance deemed acceptable by the IHT guidelines and well within the 3km statutory walk distance.

3.27 With regard to high schools, future pupils are likely to attend either Gateacre School, Woolton High School or St Julies Catholic High School. As shown in **Figure 3.1**, at around 1km Woolton High School falls within the 1.2km catchment, whilst Gateacre High School is just on the edge of this catchment. St Julies Catholic High School is just within the 2km catchment. All three of these schools are therefore within the 2km distance deemed acceptable by the IHT guidelines and well within the 5km statutory walk distance.

3.28 At 1.5km and 2.2km respectively, St Francis Xavier College and Liverpool Hope University are also within walking distance of the site.

3.29 In the context of the above, it is suggested that the site is well placed to allow future pupils to walk to and from school.

Aldi and its other consented retail and food uses

3.30 As shown in **Figure 3.1**, the recently opened Aldi and its other consented retail and food uses, which will include other retail units, a convenience store and a restaurant, are 580 metres from the site centre and therefore within the 0.8km catchment area. It is therefore suggested that the Aldi and its other future retail and food uses will allow for 'top up' shopping within an acceptable walk distance of the proposed site.

Post offices

3.31 As shown in **Figure 3.1**, Woolton Post office is around 1.7km from the site, whilst Belle Vale Post Office is around 1.6km from the site. Whilst these Post Offices therefore fall just outside the 1.2km catchment, they are considered accessible on foot.

Doctors / Health Facilities

3.32 As shown in **Figure 3.1**, Gateacre Doctors surgery is just over 1km from the site, whilst Gateacre Medical Centre and the Belle Vale Health Centre are both within 1.5km. There is therefore considered to be access to health facilities within walking distance of the site.

Belle Vale and Woolton Local Centres

3.33 As shown in **Figure 3.1**, the 1.2km catchment for the site reaches the western edge of the Belle Vale local centre, whilst at 1.5km Woolton local centre falls just outside this catchment but within the 2km catchment. These local centres are therefore within an acceptable distance for people undertaking retail, leisure and potentially employment trips to and from these locations.

Bus Stops

3.34 As shown in **Figure 3.1**, the closest bus stops to the site are situated on Grange Lane. These stops are circa 350 metres from the centre of the site travelling southbound and 500 metres from the site centre heading northbound. There are also stops situated on Rose Brow approximately 700 metres to the south of the site. As set out later in this section, these stops are considered accessible from the proposed site.

Summary

3.35 The above demonstrates that the site is well placed in terms of pedestrian connectively and that walking represents a very realistic alternative to the car for educational and 'top up' shopping trips, as well as some retail, leisure and potentially employment journeys to the Belle Vale and Woolton local centres.

Accessibility for Cyclists

3.36 Considering the site's accessibility by bicycle, it is commonly accepted that cycling also has the potential to substitute for short car trips, particularly those under five kilometres, and to form part of a longer journey by public transport. In this context, **Figure 3.2** shows the 5km cycling catchment for the site.

3.37 As can be seen from **Figure 3.2**, the local cycle routes around the site pick up cyclists travelling in all directions. They also link to national cycle route 56 which heads west into Liverpool and national cycle route 62 on the Trans Pennine Trail which links to the wider Liverpool and Merseyside area.

3.38 In terms of catchment, **Figure 3.2** shows that the eastern outlying areas of Liverpool are within the 5km distance, as is the Speke area to the south. Heading north and east, the 5km catchment takes cyclists to Knotty Ash and Huyton respectively.

3.39 The site is therefore ideally placed for residents to travel by bicycle for educational, employment, retail and leisure trips. Furthermore, a great number of these bicycle based journeys could be undertaken using designated cycle routes which are of a good standard, pass in close proximity to the proposed site and require no off site improvements to either enhance them as a facility or make them accessible to future residents.

Accessibility by Public Transport

3.40 As set out above and shown in **Figure 3.1**, the closest bus stops to the site are situated on Grange Lane. Whilst these stops are circa 350 metres from the centre of the site travelling southbound and 500 metres from the site centre heading northbound, they are much closer than this for the properties directly fronting Grange Lane and those located towards the northern end of the site. Conversely, they are outside these distances from some dwellings via the route to the stops. However, on the whole, these stops are considered to be within an acceptable distance of the site.

3.41 With regard to the two Grange Lane stops referred to above outside the site, it is proposed to retain them in their existing locations but upgrade them as part of the proposed development. With regard to the northbound stop, this would likely include the provision of raised kerbing, paving and an enclosed shelter. At the southbound stop, this too would include the provision of raised kerbing and paving and, if it can be accommodated whilst retaining the necessary footway width, a cantilever shelter. The details of these proposals will need to be discussed and agreed with Merseytravel.

3.42 In addition to these stops, there are also stops situated to the south on Rose Brow approximately 700 metres from the centre of the site. Whilst these stops are outside the 400 metres distance referred to in guidance, it is considered that the frequency of these services (they are effectively turn up and go services) and the destinations they serve, coupled with the pedestrian environment within the site and along Cuckoo Lane, would mean future residents are likely to be prepared to walk this extra distance, which equates to a total walk time of under 10 minutes, to access these services.

3.43 Based on the above, Table 3.3 below shows the buses serving the site.

Table 3.3: Local Bus Services (Monday to Saturday and Sunday)

Service	Route	AM Peak	Off Peak	PM Peak	Saturday	Sunday
Grange Lane						
174	Belle Vale - Allerton (Penny Lane)	Every 30mins	Every 30mins	Every 30mins	Every 30mins	Every 30mins
Rose Brow						
75	Liverpool – Allerton – Woolton - Halewood	Every 10mins	Every 10mins	Every 10mins	Every 15mins	Every 20mins
78	Liverpool – Edge Hill Wavertree – Woolton - Halewood	Every 30mins	Every 30mins	Every 30mins	Every 30mins	Every 30mins
81 / (81A) /181	(Liverpool Airport) – Speke – Hunts Cross – Broadgreen Hospital - Bootle	Every 10 mins, 20mins to airport	Every 10 mins, 20mins to airport	Every 10 mins, 20mins to airport	Every 15 mins, 30mins to airport	Every 20 mins, 30mins to airport

3.44 As can be seen from the above, the 174 passing the site provides a regular service between Belle Vale and Allerton. However, the short additional walk to Rose Brow takes in much more frequent services. These include:

- The 75 between Liverpool and Halewood. With a 10 minute frequency offering a 'turn up and ride' service and a travel time of just 30 minutes to Liverpool City Centre, this would be a highly attractive service for future residents undertaking a variety of journeys.
- The 81 between the airport, Speke and Bootle. With a 10 minute frequency offering a 'turn up and ride' service and a travel time of around 15 minutes to Speke, this would be a highly attractive service for future residents undertaking employment trips. The regular service with a journey time of just 20 minutes would also be attractive for trips to the airport.

3.45 The buses serving the site therefore offer an excellent opportunity for travel by bus, with regular services to local employment, retail and leisure destinations.

Summary

3.46 Allowing for a more realistic assessment in relation to the requirements of the Minimum Accessibility Standard Assessment that takes account of existing and proposed conditions, the minimum standard scores can be achieved based on the existing infrastructure and services. However, even without these allowances, it is considered that the site is highly accessible by the sustainable modes. There are numerous schools, shops and local facilities within walking distance of the site, whilst there are also nearby cycle routes and high frequency bus routes serving the site. Given these levels of provision, even if no allowance were made in relation to the Minimum Accessibility Standard Assessment, any shortfall against the scores set out in the Ensuring Choice of Travel SPD would not discourage sustainable travel to and from the site.

3.47 Furthermore, the site is situated in an established residential area of Liverpool. It is clearly highly sustainable and wholly appropriate for the proposed residential use in a transportation context.

4 Development Proposals

Development Proposals

4.1 The proposals include the development of a new residential scheme. The scheme will provide 200 residential units, made up of a mix of dwelling types and bedroom numbers as follows:

- 54 No. 3 bed dwellings;
- 114 No. 4 bed dwellings;
- 18 No. 4/5 bed; and
- 14 No. 5 bed dwellings.

4.2 The proposed site layout for the scheme is reproduced at **Appendix C**.

Site Access

4.3 As shown on the layout at **Appendix C**, access to the site would be provided by a new access off Gateacre Park Drive, a new access off Grange Lane and five new accesses off Cuckoo Lane. A number of properties would be served via direct driveways off Grange Lane (53 dwellings), Gateacre Park Drive (10 dwellings) and Cuckoo Lane (23 dwellings).

4.4 The principle of these accesses and direct driveway locations has been discussed and agreed with LCC highways at the pre- application meeting.

4.5 With regard to the new access roads, these would all take the form of simple priority junction arrangements, with 5.5 metre wide carriageways and 6 metre radii. Each access would include 2 metre wide footways to both sides, with the footways on the Cuckoo Lane accesses being separated from the carriageway by 2 metre planted areas.

4.6 With regard to visibility provision and considering the requirements set out in Manual for Streets [MfS], a 'y' distance of 59 metres should be provided based on a 30mph speed limit (a design speed of 37.5mph), whilst this can be reduced to 43 metres based on a design speed of 30mph. Based, therefore, on the speed surveys referred to in Section 2, the 43 metre 'y' distance is considered appropriate. This 'y' distance has also been agreed with LCC highways at the pre-application meeting. With regard to the 'x' distance and as set out in MfS, a 2.4 metre provision should be adopted.

4.7 Taking account of the above, the layout included at **Appendix C** shows required 2.4 x 43m visibility splays can be provided in both directions for vehicles leaving all site accesses at Cuckoo Lane. At the Gateacre Park Drive and Grange Lane accesses, the layout at Appendix C shows the more onerous 2.4 x 59m visibility splays can be achieved.

4.8 Based on the above, the proposed access arrangements off Gateacre Park Drive, Grange Lane and Cuckoo Lane are considered acceptable and appropriate from a design, safety and operational perspective. These junction forms, together with the direct driveways, are also considered to be in keeping with the surrounding highway network.

Internal Site Layout

4.9 Within the site and as shown on the layout at Appendix C, the new access from Gateacre Park Drive would effectively form a spine road through the site running north-west to south-east. The five accesses from Cuckoo Lane would then travel south-west to north-east to join this main route, whilst the Grange Lane access would join the route from the north.

4.10 The main spine road through the site running north–west to south-east from Gateacre Park Drive would be 5.5 metres in width. As shown on the layout at Appendix C, this would include raised table top junctions where it meets the other five access roads to the site. It would also include a vertical hump in the area of plot 108. These provisions are aimed at keeping traffic speeds on this road to 20mph.

4.11 With regard to the five access roads from Cuckoo Lane, these would also be 5.5 metres in width between Cuckoo Lane and the site spine road, as would the access road running from Grange Lane.

4.12 As part of the site layout, consideration has been given by Countryside's design team to the "Design for Access for All" in respect of the highway design and levels for this development.

4.13 With regard to access by refuse vehicles, the layout has been reviewed and can accommodate refuse vehicles within the confines of the carriageway.

Pedestrian, Public Transport and Cycle Provision

Pedestrian provision

4.14 As set out above, the main site accesses would include 2 metre footways to both sides and link the site to the surrounding pedestrian network off Gateacre Park Drive, Grange Lane and Cuckoo Lane. These footways would continue throughout the site on both sides of the highway network referred to above.

4.15 To help link the above provisions to the existing pedestrian network, all accesses off Grange Lane, Gateacre Park Drive and Cuckoo Lane would include dropped crossings and tactile paving across the site access arms. In addition and as set out in Section 3, it is also proposed to provide dropped crossings and tactile paving in the following off site locations:

- Across the Grange Lane arm of the Gateacre Park Drive / Grange Lane junction;
- Across the Cuckoo Lane arm of the Gateacre Park Drive / Cuckoo Lane junction;
- Across the Oakfield Avenue arm of the Cuckoo Lane / Oakfield Avenue junction; and
- On Grange Lane in the vicinity of the southbound bus stop north of Grangemeadow Road.

Public transport provision

4.16 As set out in Section 3 and shown on the layout at Appendix C, it is proposed to retain the two existing Grange Lane bus stops outside the site in their existing locations but upgrade them as part of the proposed development. With regard to the northbound stop, this would likely include the provision of raised kerbing, paving and an enclosed shelter. At the southbound stop, this too would include the provision of raised kerbing and paving and, if it can be accommodated whilst retaining the necessary footway width, a cantilever shelter. The details of these proposals will need to be discussed and agreed with Merseytravel.

Cycle provision

4.17 With regard to cycle provision, the internal site layout is considered to be conducive to cycle use, whilst the accesses to the site off Gateacre Park Drive and Grange Lane link directly to the existing cycle network. Furthermore, the accesses off Cuckoo Lane also allow cyclists to link to these existing routes.

4.18 In terms of cycle parking, dwellings will have garages and/or enclosed gardens where appropriate provision could be made by future residents for secure cycle parking.

Parking Provision

4.19 The Ensuring Choice of Travel SPD sets out minimum parking standards, in this case an average of 1.5 spaces per dwelling, for sites that fall outside Liverpool City Centre.

4.20 The proposals shown on the layout at Appendix C provide parking at 2 spaces per dwelling. This therefore accords with the standards set out in the SPD and the requirements of LCC highways and provides what is considered an appropriate level of provision for the proposed dwelling types to ensure that regular on street parking will not occur at the proposed site.

5 Traffic Generation and Assignment

TRICS Derived Trip Rates

5.1 In order to determine the trip rates associated with the proposed residential development, the TRICS database has been interrogated for the sub land use of 'Houses Privately Owned'. To achieve an accurate representation of the proposals, sites from London and Ireland have been removed and the sites chosen limited in size to closely relate to the 200 dwellings proposed. In addition, sites including flats or large elements of bungalows, or sites made up entirely of terraced properties, have also been removed.

5.2 Based on the methodology set out above, Table 5.1 below sets out the trip rates for the proposed scheme, whilst full TRICS Outputs are included at **Appendix D**.

5.3 It should also be noted that whilst these trip rates relate to the observed 8:00 – 9:00 weekday morning peak hour, for the weekday evening peak they relate to the period 17:00 – 18:00 and not the identified 16:45 – 17:45 peak hour. However, these trip rates are higher than those that would be derived for the observed peak hour and are therefore considered robust.

Table 5.1: Proposed Scheme Trip Rates

	Weekday Morning Peak			Weekday Evening Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Trip Rate (per dwelling)	0.155	0.479	0.634	0.440	0.249	0.689

Resultant Traffic Generation

5.4 Applying the above trip rates to the proposed 200 dwellings, Table 5.2 below sets out the resultant traffic generation for the proposed development.

Table 5.2: Proposed Development Traffic Generations

	Weekday Morning Peak			Weekday Evening Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Traffic Generation	31	96	127	88	50	138

Traffic Assignment

5.5 In order to distribute the above traffic movements and assign them to the highway network within the agreed study area, Journey to Work data has been utilised. This information provides details of the destination of journeys taking place and the numbers of people making those journeys via different modes. For the purpose of this exercise, only the number of car drivers was taken into account.

5.6 Having determined the destination of car driver based journeys, these journeys have then been manually assigned to the study network based on the following broad destinations:

- East via the B5171 Belle Vale Road;
- South east via Halewood Road;
- South via the B5171 Acrefield Road;
- South west via Blackwood Avenue;
- West via Woolton Road;
- North west via the B5178 Childwall Valley Road;
- North via Bentham Drive; and
- North east via the B5178 Childwall Valley Road.

5.7 Based on the methodology detailed above, Table 5.3 below shows the percentage of development related traffic assigned to each of the eight destinations.

Table 5.3: Proposed Development Traffic Origin / Destination

Route	Description	Percentage
1	East via the B5171 Belle Vale Road	10%
2	South east via Halewood Road	5%
3	South via the B5171 Acrefield Road	15%
4	South west via Blackwood Avenue	10%
5	West via Woolton Road	20%
6	North west via the B5178 Childwall Valley Road	15%
7	North via Bentham Drive	20%
8	North east via the B5178 Childwall Valley Road	5%

5.8 Using these percentages, traffic has been assigned to the study area network based on the following assumptions:

- The proposed site layout includes a total of 200 dwellings. 53 dwellings front Grange Lane, whilst 25 are situated around the Grange Lane access at the north of the site. These dwellings account for circa 25% of the development total (just Grange Lane dwellings) and circa 38% of the development total (the 53 plus 25 dwellings);
- Heading north, 38% of the traffic has therefore been assigned via Grange Lane to account for the 53 plus 25 dwellings referred to above. The remainder has then been split 50/50 between the new site access on Gateacre Park Drive and the Cuckoo Lane junction.
- Heading south, 25% of the traffic travelling on routes 1, 2 and 3 has been assigned via Grange Lane to account for the 53 dwellings fronting that route. For the remainder, traffic has been assigned via Cuckoo Lane.
- Heading west to Woolton Rd and Blackwood Ave, it has been assumed that all traffic travels down Gateacre Park Drive. 38% of these have again been assigned via the Grange Lane junction, with the remainder split 50/50 between the new Gateacre Park Drive access and Cuckoo Lane.
- For the Cuckoo Lane accesses, it has been assumed that all traffic uses just one access.

5.9 Adopting the above methodology, the percentage traffic assignments within the study area are shown graphically in **Figure 5.1**.

Resultant Development Traffic Flows

5.10 Based on the traffic generations shown in Table 5.2 and the assignments discussed above, the weekday morning and evening peak traffic flows associated with the proposed development are show diagrammatically in **Figures 5.2** and **5.3**.

6 Assessment Traffic Flows

Committed Development

6.1 Following discussions with LCC and as set out in the introduction, they have indicated that the only committed development that needs to be taken into account is the Aldi scheme on Gateacre Park Drive to the north of the site. As agreed with LCC, the traffic flows associated with this scheme have therefore been taken from its associated Transport Assessment.

6.2 The traffic flows for the weekday evening peak have been taken directly from the Transport Assessment for the scheme. However, with regard to the weekday morning peak, the flows included in the Aldi scheme Transport Assessment do not relate to the appropriate hour; they refer to the hour 9:00 – 10:00. As a result, traffic flows for the assessed 8:00 – 9:00 period have been determined using the trip rates and floor areas set out in the Aldi Scheme Transport Assessment.

6.3 Considering these flows, the Aldi scheme Transport Assessment merely lists total development traffic; it makes no allowance for pass-by or diverted trips and does not assign the traffic generation to the local highway network. As a result and in order to assign traffic to the study network for the purpose of this assessment, it has been assumed that, during the peak hours, 70% of the foodstore and retail units traffic generation is new trips, with 10% of the convenience store trips being new. It has then been assumed that these are split 50% north and 50% south at the site access, with traffic then assigned based on observed turning moments at the junctions remote from the site access.

6.4 Based on the above, **Figures 6.1** and **6.2** show the peak hour flows for this scheme during the weekday morning and evening peaks respectively.

Traffic Growth

TEMPRO Growth

6.5 Future year assessments are typically carried out based on a year either 5 years (local road network) or 10 years (strategic road network) after the year of registration of the planning application. On this basis and as agreed with LCC, assessment of the potential impact on surrounding highway network has been considered at a five year future year, i.e. 2020.

6.6 In order to derive future year flows, it is common practice to growth observed flows based on the 2009 National Transport Model [NTM] Indices, adjusted to local conditions using the geographical parameters within the TEMPRO program before adding committed development traffic flows. Adopting this approach and using the geographical parameter of 'Liverpool' and the 'all' roads parameter within TEMPRO 6.2, Table 6.1 below details the growth factors to be applied to 2014 observed traffic flows set out in Section 2 to derive a set of 2020 background traffic flows based on this methodology.

Table 6.1: TEMPRO Adjusted Growth Factors for Liverpool

	Weekday Morning Peak	Weekday Evening Peak
2014 - 2020	1.0811	1.0799

6.7 Based on the application of the above TEMPRO derived traffic growth factors to the 2014 observed traffic flows, **Figures 6.3** and **6.4** show the 2020 TEMPRO growthed background traffic flows for the weekday morning and evening peaks. Adding the committed development flows referred to above to these background flows, **Figure 6.5** and **6.6** show 2020 base traffic flows.

No Growth

6.8 Notwithstanding the above, evidence nationally is that traffic flows have stopped showing the year on year growth that was characteristic of the last few decade of the 20th Century. There is clear evidence across the Country that this year on year growth ceased in the early to mid 2000's when the economy was very strong. It is not considered therefore to be a recessionary effect but the result of a combination of factors including technology, an aging population and the relative cost of travel.

6.9 It is also apparent that the number of trips people are making has been in decline since the mid 1990's and people are now making fewer journeys than they were in 1970. This information is recorded in the National Travel Survey (NTS). The headline findings of the 2013 NTS are:

- The number of trips made per person per year has fallen from 1,094 in 1995/6 to 923 in 2013, a drop of 16%;
- The number of trips made per person in 2013 was 4% lower than in 1970;
- The number of journeys made by car has dropped by 12% since 1995/6. The other big decline is in walking trips which have dropped by 30%;
- The biggest falls since 1995/6 have been in journeys to work (18% fall); Shopping (24% fall) and visiting friends (28% fall).

6.10 Based on the above, it is suggested that the application of the TEMPRO growth factors, in addition to the committed development referred to above and the proposed development, is an overestimation of future traffic demand in the area. As a result, it is considered that the use of survey flows with just the committed developed added would be a more representative 2020 future year scenario upon which to consider the impact of the development.

2020 Assessment Traffic Flows

6.11 Notwithstanding the above and in order to provide a highly robust assessment, future year assessment traffic flows have been derived based on a scenario whereby background traffic growth does occur. Based on this approach, 2020 base plus proposed development traffic flows are shown in **Figures 6.7** and **6.8** for the weekday morning and evening peaks respectively.

7 Traffic Impact and Operational Assessments

General

7.1 As set out earlier in the report, it has been agreed that the study area include the site access(es), and the Gateacre Park Drive / Grange Lane, Gateacre Park Drive / Cuckoo Lane, Barnham Drive / Childwall Valley Road, Gateacre Park Drive / Woolton Road, Woolton Road / Cuckoo Lane, Rose Brow / Gateacre Brow and Grange Lane / Belle Vale Road junctions.

7.2 In light of the above, this section sets out the findings of the consideration of traffic impact and the results of operational assessments where considered necessary and appropriate.

Proposed Site Access

Operational Assessments

7.3 Based on the 2020 assessment traffic flows identified in Section 6, PICADY assessments have been carried out for the proposed site accesses.

7.4 With regard to the details of this model, only one model has been produced and run for both weekday morning and evening peak hours to represent the potential operation of each of the accesses proposed for the site. This model has been based on the Gateacre Park Drive access given that it has the highest flow past the access on the major arm. All other accesses would therefore operate below the level of this proposed access. As a result, this is considered to be a robust representation of potential site access operation.

7.5 Based on the above approach, Table 7.1 below shows the results of these operational assessments for the worst 15 minute period during each hour, whilst the full PICADY outputs are included at **Appendix E** for information.

Table 7.1: Proposed Site Access: PICADY Results

	2020 Base Plus Development			
	Weekday Morning Peak		Weekday Evening Peak	
	RFC	Q	RFC	Q
Site Access: Left & right	0.060	0	0.028	0
Gateacre Park Dr: Right turn	0.009	0	0.026	0

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

7.6 As can be seen from the above table the PICADY modelling indicates that at a five year future year, and despite the onerous traffic flows used in the assessments, the maximum RFC value at the site access would be 0.060 during the weekday morning peak and 0.028 during the weekday evening peak. These levels of RFC remain significantly below the traditional 0.850 design capacity.

7.7 Based on these results it is suggested that there would be no operational issues associated with the proposed site layout and that the access arrangements proposed would be more than sufficient to safely serve the proposed development.

Gateacre Park Drive / Grange Lane Junction

Traffic Impact

7.8 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 2.0% on the Gateacre Park Drive southbound approach, 7.2.% on the Gateacre Park Drive northbound approach and 8.1% on the Grange Lane approach.

7.9 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 5.8% on the Gateacre Park Drive southbound approach, 4.9% on the Gateacre Park Drive northbound approach and 5.7% on the Grange Lane approach.

7.10 Considering the impact on total flows into the junction, these would be 4.90% during the weekday morning peak and 5.46% during the weekday evening peak.

Operational Assessments

7.11 In light of the above impacts and based on the traffic flows identified in Sections 2 and 6 and the existing junction arrangement, PICADY assessments have been carried out for the Gateacre Park Drive / Grange Lane junction. Tables 7.2 and 7.3 below show the results of these operational assessments, whilst the full PICADY outputs are included at **Appendix F** for information.

Table 7.2: Gateacre Park Drive / Grange Lane: PICADY Results – Weekday Morning Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Grange Ln: Left & right	0.584	1	0.696	2	0.755	3
Gateacre Park Dr: Right turn	0.178	0	0.204	0	0.217	1

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

Table 7.3: Gateacre Park Drive / Grange Lane: PICADY Results – Weekday Evening Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Grange Ln: Left & right	0.449	1	0.551	1	0.594	1
Gateacre Park Dr: Right turn	0.192	0	0.242	1	0.276	1

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

7.12 As can be seen from the above tables, the PICADY modelling indicates that at a five year future year and even assuming the more onerous base flows with background traffic growth applied there would be no operational issues at the existing Gateacre Park Drive / Grange Lane junction with the proposed development in place. The maximum RFC value during the weekday morning peak hour would be 0.755, whilst during the weekday evening peak the maximum RFC value would be 0.594. These levels of RFC remain below the traditional 0.850 design capacity.

7.13 Based on the above, it is considered that the existing Gateacre Park Drive / Grange Lane junction arrangements are sufficient to accommodate the proposed development.

Gateacre Park Drive / Cuckoo Lane Junction

Traffic Impact

7.14 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 4.5% on the Gateacre Park Drive southbound approach, 3.0% on the Gateacre Park Drive northbound approach and 27.2% on the Cuckoo Lane approach.

7.15 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 5.6% on the Gateacre Park Drive southbound approach, 7.6% on the Gateacre Park Drive northbound approach and 13.3% on the Cuckoo Lane approach.

7.16 Considering the impact on total flows into the junction, these would be 6.02% during the weekday morning peak and 7.26% during the weekday evening peak.

Operational Assessments

7.17 In light of the above impacts and based on the traffic flows identified in Sections 2 and 6 and the existing junction arrangement, PICADY assessments have been carried out for the Gateacre Park Drive / Cuckoo Lane junction. Tables 7.4 and 7.5 below show the results of these operational assessments, whilst the full PICADY outputs are included at **Appendix G** for information.

Table 7.4: Gateacre Park Drive / Cuckoo Lane: PICADY Results – Weekday Morning Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Cuckoo Ln: Left & right	0.203	0	0.234	0	0.269	0
Gateacre Park Dr: Right turn	0.011	0	0.011	0	0.020	0

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

Table 7.5: Gateacre Park Drive / Cuckoo Lane: PICADY Results – Weekday Evening Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Cuckoo Ln: Left & right	0.217	0	0.257	0	0.276	0
Gateacre Park Dr: Right turn	0.015	0	0.016	0	0.040	0

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

7.18 As can be seen from the above tables, the PICADY modelling indicates that at a five year future year and even assuming the more onerous base flows with background traffic growth applied there would be no operational issues at the existing Gateacre Park Drive / Cuckoo Lane junction with the proposed development in place. The maximum RFC value during the weekday morning peak hour would be 0.269, whilst during the weekday evening peak the maximum RFC value would be 0.276. These levels of RFC remain below the traditional 0.850 design capacity.

7.19 Based on the above, it is considered that the existing Gateacre Park Drive / Cuckoo Lane junction arrangements are sufficient to accommodate the proposed development.

Woolton Road / Cuckoo Lane Junction

Traffic Impact

7.20 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 8.1% on the Cuckoo Lane approach and 1.1% on the Woolton Road northbound approach.

7.21 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 9.3% on the Cuckoo Lane approach and 3.6% on the Woolton Road northbound approach.

7.22 Considering the impact on total flows into the junction, these would be 1.95% during the weekday morning peak and 2.41% during the weekday evening peak. These low impacts are the result of total development flows through the junction of just 25 vehicles during the weekday morning peak and 27 vehicles during the weekday evening peak.

7.23 Based on the above, it is considered that the proposed development would have no significant impact on traffic conditions at the Woolton Road / Cuckoo Lane junction and that the operation of this junction would not be materially affected by the proposals during either the weekday morning or weekday evening peaks. Indeed, the increase in traffic at the junction is under the 30 two way trips that guidance bases the suggested thresholds below which a formal assessment may not be needed.

Operational Assessments

7.24 Notwithstanding the above, given that this is one of the developments first points of contact with the wider highway network and that the impact on the Cuckoo Lane arm is approaching 10%, operational assessments have been carried out for completeness. Based, therefore, on the traffic flows identified in Sections 2 and 6 and the existing junction arrangement, PICADY assessments have been carried out for the Woolton Road / Cuckoo Lane junction. Tables 7.6 and 7.7 below show the results of these operational assessments, whilst the full PICADY outputs are included at **Appendix H** for information.

Table 7.6: Woolton Road / Cuckoo Lane: PICADY Results – Weekday Morning Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Cuckoo Ln: Left & right	0.390	1	0.434	1	0.469	1
Woolton Rd: Right turn	0.214	0	0.240	0	0.252	0

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

Table 7.7: Woolton Road / Cuckoo Lane: PICADY Results – Weekday Evening Peak

	Existing		2020 Base		2020 Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q
Cuckoo Ln: Left & right	0.232	0	0.261	0	0.280	0
Woolton Rd: Right turn	0.333	0	0.376	1	0.412	1

RFC: Ratio of Flow to Capacity. Q: Queue length in PCUs

7.25 As can be seen from the above tables, the PICADY modelling indicates that at a five year future year and even assuming the more onerous base flows with background traffic growth applied there would be no operational issues at the existing Woolton Road / Cuckoo Lane junction with the proposed development in place. The maximum RFC value during the weekday morning peak hour would be 0.469, whilst during the weekday evening peak the maximum RFC value would be 0.412. These levels of RFC remain below the traditional 0.850 design capacity.

7.26 Based on the above, it is considered that the existing Woolton Road / Cuckoo Lane junction arrangements are sufficient to accommodate the proposed development.

Barnham Drive / Bentham Drive / B5178 Childwall Valley Road Junction

Traffic Impact

7.27 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 7.0% on the Barnham Drive approach, 1.1% on the B5178 Childwall Valley eastbound approach, 0.8% on the Bentham Drive approach and 0.4% on the B5178 Childwall Valley westbound approach.

7.28 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 4.3% on the Barnham Drive approach, 2.4% on the B5178 Childwall Valley eastbound approach, 2.6% on the Bentham Drive approach and 1.0% on the B5178 Childwall Valley westbound approach.

7.29 Considering the impact on total flows into the junction, these would be 2.24% during the weekday morning peak and 2.64% during the weekday evening peak.

7.30 Based on the above, it is considered that the proposed development would have no significant impact on traffic conditions at the Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction and that the operation of this junction would not be materially affected by the proposals during either the weekday morning or weekday evening peaks.

Operational Assessments

7.31 Notwithstanding the above, operational assessments have been carried out for completeness given that total development flows though the junction would be around 50 vehicles. Based, therefore, on the traffic flows identified in Sections 2 and 6 and the existing junction arrangement, LINSIG assessments have been carried out for the Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction. Tables 7.8 and 7.9 below show the results of these operational assessments, whilst the full LINSIG outputs are included at **Appendix I** for information.

7.32 With regard to the LINSIG model, this has been built based on signal timing information provided by Liverpool UTC. This signal timing information shows that, in combination, the pedestrian crossing stage and the stage associated with the accesses to properties 135, 137, 167 and 169 are called between 10 and 12 times during the peak hour. The model has therefore been built with a manual allowance to take account of these stages being called around 12 times per hour.

Table 7.8: Barnham Dr / Bentham Dr / Childwall Valley Rd: LINSIG Results – Weekday Morning Peak

	Existing		2020 Base		2020 Base Plus Dev	
	DoS	Q	DoS	Q	DoS	Q
Bentham Dr: Left, ahead & right	78.5%	21	86.4%	26	89.4%	27
Childwall Valley Rd (E): Left & ahead	42.9%	5	49.8%	6	50.1%	6
Childwall Valley Rd (E): Right & ahead	52.2%	7	56.9%	7	57.5%	7
Barnham Dr: Left, ahead & right	51.3%	10	54.8%	11	58.4%	12
Childwall Valley Rd (W): Left & ahead	45.1%	5	50.3%	6	50.3%	6
Childwall Valley Rd (W): Right & ahead	53.3%	6	60.6%	6	61.0%	6

DoS: Degree of Saturation. Q: Queue length in PCUs

Table 7.9: Barnham Dr / Bentham Dr / Childwall Valley Rd: LINSIG Results – Weekday Evening Peak

	Existing		2020 Base		2020 Base Plus Dev	
	DoS	Q	DoS	Q	DoS	Q
Bentham Dr: Left, ahead & right	72.9%	18	80.4%	22	82.2%	23
Childwall Valley Rd (E): Left & ahead	34.5%	5	37.5%	5	36.5%	5
Childwall Valley Rd (E): Right & ahead	38.2%	2	45.6%	3	45.6%	3
Barnham Dr: Left, ahead & right	46.6%	8	49.4%	9	51.5%	10
Childwall Valley Rd (W): Left & ahead	44.7%	6	48.7%	6	49.0%	6
Childwall Valley Rd (W): Right & ahead	52.5%	6	60.3%	7	61.2%	7

DoS: Degree of Saturation. Q: Queue length in PCUs

7.33 The results in the above tables relating to the existing scenario are considered to closely replicate the queuing observed on the ground and current operation. They therefore form an appropriate base against which to consider future operation and development impact.

7.34 Based on the above and as can be seen from tables 7.8 and 7.9, the LINSIG modelling indicates that the development would have no material impact on the operation of the existing Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction, with a maximum increase in degree of saturation [DoS] of 3.6% during the weekday morning peak and 2.1% during the weekday evening peak. This equates to maximum queue length increase of just 1 pcu during the weekday morning and evening peaks. Furthermore, at a five year future year and even assuming the more onerous base flows with background traffic growth applied, the junction continues to operate its traditional 90% design capacity with the development in place, with a maximum DoS of 89.4% during the weekday morning peak and 82.2% during the weekday evening peak.

7.35 Based on the above, it is considered that the existing Barnham Drive / Bentham Drive / B5178 Childwall Valley Road junction arrangements are sufficient to accommodate the proposed development.

Gateacre Park Drive / Woolton Road / Blackwood Avenue Junction

Traffic Impact

7.36 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 6.9% on the Gateacre Park Drive approach, 0.8% on the Blackwood Avenue approach and 1.2% on the Woolton Road eastbound approach.

7.37 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 5.2% on the Gateacre Park Drive approach, 2.5% on the Blackwood Avenue approach and 3.1% on the Woolton Road eastbound approach.

7.38 Considering the impact on total flows into the junction, these would be 2.14% during the weekday morning peak and 2.68% during the weekday evening peak.

Operational Assessments

7.39 Based on the traffic flows identified in Sections 2 and 6 and the existing junction arrangement, LINSIG assessments have been carried out for the Gateacre Park Drive / Woolton Road / Blackwood Avenue junction. Tables 7.10 and 7.11 below show the results of these operational assessments, whilst the full LINSIG outputs are included at **Appendix J** for information.

7.40 With regard to the LINSIG model, as set out in Section 2 observations on site show that traffic forms two lanes on the single lane Gateacre Park Drive approach and that, with the arm running on its own, vehicles were driving up the opposing lane to turn right once the signals went green. It is also considered that the existing junction timings are inefficient and that the 12 second green time limit on the Gateacre Park Drive approach could be increased without affecting the operation of the other arms. Whilst an existing LINSIG model has been prepared with the current 12 second limit, this does not replicate existing conditions given the two lanes being formed periodically on the ground and the traffic using the opposing lane. Given this point and the clear benefit of increasing the green time on Gateacre Park Drive, the model for which the results are presented below has been built assuming this limit is removed, with the junction being optimised under all assessment scenarios, including existing.

7.41 With regard to staging arrangements, the model has been built based on signal timing information provided by Liverpool UTC. This signal timing information shows that the pedestrian crossing stage is not called at all during the weekday morning peak and on only four occasions during the evening peak. Observations on site show this is due to pedestrians safely crossing the junction in natural breaks in traffic without the requirement for a green man. The model has therefore been run without the pedestrian crossing stage as this is considered most representative of junction operation.

Table 7.10: Gateacre Park Dr / Woolton Rd / Blackwood Ave: LINSIG Results – Weekday Morning Peak

	Existing		2020 Base		2020 Base Plus Dev	
	DoS	Q	DoS	Q	DoS	Q
Gateacre Park Dr: Left, ahead & right	80.8%	10	89.2%	12	90.0%	13
Woolton Rd (E): Left, ahead & right	79.8%	11	86.2%	13	90.3%	14
Blackwood Ave: Left	17.2%	1	18.5%	1	18.5%	1
Blackwood Ave: Ahead & right	78.7%	7	87.2%	9	88.1%	9
Woolton Rd (W): Left, ahead & right	70.2%	5	90.4%	8	90.5%	8

DoS: Degree of Saturation. Q: Queue length in PCUs

Table 7.11: Gateacre Park Dr / Woolton Rd / Blackwood Ave: LINSIG Results – Weekday Evening Peak

	Existing		2020 Base		2020 Base Plus Dev	
	DoS	Q	DoS	Q	DoS	Q
Gateacre Park Dr: Left, ahead & right	66.1%	6	70.3%	7	73.7%	7
Woolton Rd (E): Left, ahead & right	54.2%	6	61.5%	7	61.5%	7
Blackwood Ave: Left	11.2%	1	12.2%	1	12.2%	1
Blackwood Ave: Ahead & right	62.8%	6	71.1%	7	73.0%	8
Woolton Rd (W): Left, ahead & right	66.6%	6	74.8%	7	77.1%	7

DoS: Degree of Saturation. Q: Queue length in PCUs

7.42 The results in the above tables relating to the existing scenario show that, with the phase limit lifted on Gateacre Park Drive, the junction would continue to operate below its traditional 90% design capacity on the other three arms, whilst Gateacre Park Drive would also be operating below this threshold and with no material queuing.

7.43 Considering future operation and as can be seen from tables 7.10 and 7.11, the LINSIG modelling indicates that the development would have no material impact on the operation of the existing Gateacre Park Drive / Woolton Road / Blackwood Avenue junction. Whilst the maximum increase in degree of saturation [DoS] is 4.1% during the weekday morning peak on Woolton Road (E), this equates to an increase in queue length of just 1 pcu. During the weekday evening peak, the maximum increase in DoS is just 3.4%, with an increase in queue length of just 1 pcu.

7.44 Furthermore, at a five year future year and even assuming the more onerous base flows with background traffic growth applied, the junction continues to operate around or below its traditional 90% design capacity with the development in place, with a maximum DoS of 90.5% during the weekday morning peak and 77.1% during the weekday evening peak.

7.45 Based on the above, it is considered that the existing Gateacre Park Drive / Woolton Road / Blackwood Avenue junction arrangements are sufficient to accommodate the proposed development.

Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road Junction

Traffic Impact

7.46 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 2.5% on the Rose Brow approach, 1.5% on the B5171 Gateacre Brow approach and 0.7% on the B5171 Acrefield Road approach. The highest numerical increase on a single arm would be 19 vehicles on Rose Brow, which equates to around one vehicle every three minutes.

7.47 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 1.3% on the Rose Brow approach, 2.9% on the B5171 Gateacre Brow approach and 2.4% on the B5171 Acrefield Road approach. The highest numerical increase on a single arm would be 13 vehicles on Acrefield Road, which equates to around one vehicle every four minutes.

7.48 Considering the impact on total flows into the junction, these would be 1.66% during the weekday morning peak and 2.01% during the weekday evening peak. These low impacts are the result of total development flows through the junction of just 30 vehicles during the weekday morning peak and 33 vehicles during the weekday evening peak. These increases in traffic, which could be accounted for through daily variation, are around the 30 two way trips that guidance bases the suggested thresholds below which a formal assessment may not be needed.

Summary

7.49 The above shows two way traffic increases at this junction are around recognised thresholds, that the maximum single arm impact is 2.9% and the maximum numerical increase equates to one vehicle every three minutes. Considering these increases in the context of existing observations, which show there is no notable queuing or delay at the junction, it is considered that the proposed development would have no material impact on traffic conditions at the Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road junction. It is therefore concluded that no operational assessment is required at this location, that the operation of this junction would not be materially affected by the proposals and that the existing Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road junction arrangements are sufficient to accommodate the proposed development.

Grange Lane / B5171 Belle Vale Road / Halewood Road / B5171 Gateacre Brow Junction

Traffic Impact

7.50 Considering the weekday morning peak in the first instance and as can be seen from **Figure 7.1**, the proposed development would have a percentage impact on 2014 existing traffic flows of 3.0% on the Grange Lane approach, 0.5% on the B5171 Belle Vale Road approach, 0.4% on the Halewood Road approach and 2.2% on the B5171 Gateacre Brow approach. The highest numerical increase on a single arm would be 10 vehicles on Grange Lane and B5171 Gateacre Brow, which equates to around one vehicle every six minutes.

7.51 With regard to the weekday evening peak, **Figure 7.2** shows the proposed development would have a percentage impact on 2014 existing traffic flows of 1.3% on the Grange Lane approach, 1.4% on the B5171 Belle Vale Road approach, 1.1% on the Halewood Road approach and 1.9% on the B5171 Gateacre Brow approach. The highest numerical increase on a single arm would be 9 vehicles on the B517 Belle Vale Road and B5171 Gateacre Brow, which equates to around one vehicle every six and a half minutes.

7.52 Considering the impact on total flows into the junction, these would be 1.30% during the weekday morning peak and 1.42% during the weekday evening peak. These low impacts are the result of total development flows through the junction of just 25 vehicles during the weekday morning peak and 28 vehicles during the weekday evening peak. These increases in traffic, which could be accounted for through daily variation, are below the 30 two way trips that guidance bases the suggested thresholds below which a formal assessment may not be needed.

Summary

7.53 The above shows two way traffic increases at this junction are below the recognised threshold, that the maximum single arm impact is 3.0% and the maximum numerical increase equates to one vehicle every six minutes. Based on these minimal increases, it is considered that the proposed development would have no material impact on traffic conditions at the Grange Lane / B5171 Belle Vale Road / Halewood Road / B5171 Gateacre Brow junction. It is therefore concluded that no operational assessment is required at this location, that the operation of this junction would not be materially affected by the proposals and that the existing Grange Lane / B5171 Belle Vale Road / Halewood Road / B5171 Gateacre Brow junction arrangements are sufficient to accommodate the proposed development.

General Impact on Gateacre Park Drive / Cuckoo Lane

Gateacre Park Drive

7.54 The traffic flows presented in Figure 2.2 and 2.3 show that two way traffic flows on Gateacre Park Drive between the proposed site access and Grange Lane are 894 pcu's during the weekday morning peak and 800 pcu's during the weekday evening peak. The traffic flows presented in Figures 5.2 and 5.3 show the proposed development would at most increase flows on Gateacre Park Drive by 45 pcu's (5%) during the morning peak and 48 pcu's (6%) during the weekday evening peak. These increases, which do not even equate to one additional vehicle a minute, are not material and would not be perceivable on the ground.

7.55 Based on these figures it is considered that the additional traffic associated the proposed development would not impact on the ability of both existing and future residents to safely cross Gateacre Park Drive. It is also the case that, based on the walking catchments discussed in Section 3, the crossing of Gateacre Park Drive is not required in the vicinity of the site to reach the numerous key destinations identified for future residents.

Cuckoo Lane

7.56 As already identified in Section 2, it is considered that the optimisation of the Gateacre Park Drive / Woolton Road / Blackwood Avenue signals, which Liverpool UTC could undertake now, would make this route more attractive for any traffic that currently rat runs southbound on Cuckoo Lane. This optimisation, coupled with the introduction of five new accesses onto Cuckoo Lane and the associated activity generated in the area as a result of the proposed development, should assist in deterring the use of Cuckoo Lane by through traffic and making Gateacre Park Drive / Woolton Road the preferred route.

8 Summary, Conclusions and Recommendations

Summary and Conclusions

8.1 Based on the findings of this report it is concluded that:

Sustainability, Linkage and Pedestrian / Bus Enhancement

- The proposed site has good accessibility for pedestrians and cyclists. Grange Lane, Cuckoo Lane and Gateacre Park Drive include good standard footways on both sides of the carriageway, as do the surrounding residential streets, all of which are conducive to cycle use;
- There is a zebra crossing on Gateacre Park Drive to the south of its junction with Thurne Way, whilst the signal controlled junctions at Gateacre Park Drive / Woolton Road and Grange Lane / B5171 Belle Vale Road both include pedestrian crossing facilities. There are also dropped crossings, tactile paving and cycle lanes at the Rose Brow / B5171 Gateacre Brow / B5171 Acrefield Road roundabout;
- In terms of cycle provision, Grange Lane past the site, Grangemeadow Road to the east, Gateacre Park Drive past the site and the B5171 Gateacre Brow / Belle Vale Road to the south are all recognised, carriageway based local cycle routes. To the east of the site and via Grange Lane, the B5171 Belle Vale Road links to the Trans Pennine Trail to the east;
- To assist in promoting sustainable travel, it is proposed to provide dropped crossings and tactile paving across all site accesses and across off site locations on Grange Lane, Cuckoo Lane and Oakfield Avenue. It is also proposed to upgrade the two existing bus stops situated outside the site on Grange Lane. These measures will enhance links to the Aldi development and local bus services;
- Allowing for a more realistic assessment in relation to the requirements of the Minimum Accessibility Standard Assessment that takes account of local existing and proposed conditions, the minimum standard scores can be achieved based on the existing infrastructure and services;
- Even without these allowances, it is considered that the site is highly accessible by the sustainable modes. There are numerous schools, shops and local facilities within walking distance of the site, whilst there are also nearby cycle routes and high frequency bus routes serving the site. Given these levels of provision, even if no allowance were made in relation to the Minimum Accessibility Standard Assessment, any shortfall against the scores set out in the Ensuring Choice of Travel SPD would not discourage sustainable travel to and from the site;
- Furthermore, the site is situated in an established residential area of Liverpool. It is clearly highly sustainable and wholly appropriate for the proposed residential use in a transportation context.

Site Access and on site Pedestrian, Cycle & Parking Provision

- The proposed access arrangements off Gateacre Park Drive, Grange Lane and Cuckoo Lane are considered acceptable and appropriate from a design and safety perspective, whilst the junction forms are also considered to be in keeping with the surrounding highway network. Furthermore, assessments show there would be no operational issues associated with the proposed site layout and that the access arrangements proposed would be more than sufficient to adequately serve the proposed development;
- The internal highway arrangement is appropriate to suitably serve the proposed development;
- The main site accesses would include 2 metre footways to both sides and link the site to the surrounding pedestrian network off Gateacre Park Drive, Grange Lane and Cuckoo Lane. These footways would continue throughout the site on both sides of the highway network;
- With regard to cycle provision, the internal site layout is considered to be conducive to cycle use, whilst the accesses to the site off Gateacre Park Drive and Grange Lane link directly to the existing cycle network. Furthermore, the accesses off Cuckoo Lane also allow cyclists to link to these existing routes;
- In terms of cycle parking, dwellings will have garages and/or enclosed gardens where appropriate provision could be made by future residents for secure cycle parking;

- The proposed parking provision within the site accords with the standards set out in the SPD and the requirements of LCC highways and provides what is considered an appropriate level of provision for the proposed dwelling types to ensure that regular on street parking will not occur at the proposed site;

Traffic Impact

- Based on the existing accident record and in the context of the small numerical and percentage increases in traffic flow as a result of the development, it is considered that the proposals would not materially impact on the areas existing highway safety record;
- Speed surveys on Gateacre Park Drive show that traffic is travelling at an appropriate speed for the road and is obeying the speed limit. As a result, it is considered that there is no speeding issue along Gateacre Park Drive in the vicinity of the site or requirement to slow traffic;
- LCC have raised an issue of rat running on Grange Lane and Cuckoo Lane. However, the Grange Lane corridor is considered an appropriate route for traffic travelling between Barnham Drive and the Halewood Road area and the volumes of traffic it carries are not considered excessive for this type of road;
- With regard to Cuckoo Lane, observations on site during the morning peak showed that any rat running travelling southbound seemed to occur when queuing extended back on Gateacre Park Drive from its traffic signal junction with Woolton Road. Some rat running was also seen to occur on Rockbourne Avenue during this period of queuing. Travelling northbound on Cuckoo Lane, the observed flows show some traffic is using this route to avoid the signals at the Gateacre Park Drive / Woolton Road junction, despite there being no delay on this approach. However, this rat running is having no impact on the operation of the junctions at either end of Cuckoo Lane, whilst flow along the route remains low;
- The optimisation of the Gateacre Park Drive / Woolton Road / Blackwood Avenue signals, which Liverpool UTC could undertake now, would make this route more attractive for any traffic that currently rat runs southbound on Cuckoo Lane. This optimisation, coupled with the introduction of five new accesses onto Cuckoo Lane and the associated activity generated in the area as a result of the proposed development, should assist in deterring the use of Cuckoo Lane by through traffic and making Gateacre Park Drive / Woolton Road the preferred route;
- The increases in traffic on Gateacre Park Drive in the vicinity of the site as a result of the proposed development, which would not even equate to one additional vehicle a minute, are not material and would not be perceivable on the ground. The additional traffic associated with the proposed development would not therefore impact on the ability of both existing and future residents to safely cross Gateacre Park Drive. It is also the case that the crossing of Gateacre Park Drive is not required in the vicinity of the site to reach the numerous key destinations identified for future residents;
- The seven off site junctions identified by LCC for assessment have been considered based on a combination of numerical impact based on existing flows and, where appropriate, operational assessment at a future year which allows for traffic growth, committed development and the proposed development. The findings of this analysis show that the operation of the seven junctions would not be materially affected by the proposals and that the existing junction arrangements are sufficient to accommodate the proposed development.

Recommendations

8.2 In light of the above it is the recommendation of CBO Transport that there are no traffic or transportation grounds on which to refuse the application for the proposed residential development.