



Queensberry
DESIGN LIMITED
RESIDENTIAL AND COMMERCIAL DESIGN CONSULTANTS

miller homes

**Miller Homes Ltd
Victoria Road West
Hebburn**

Transport Assessment

6th February 2017

Issue Sheet

Prepared	Date		
KNH	July 2016		
Ref: c:\users\ken\documents\consultancy\kha sites\hebburn 1615\qd1183-ta-07 hebburn.docx			
Revisions.			Date
00	Draft for Textural Check		19 07 2016
01	Analysis added		27 07 2016
02	Amended to NLP comments		29 07 2016
03	Updated to STC comments and meeting		14 10 2016
04	Traffic Analysis Expanded		04 11 2016
05	Minor Revisions – Reissue		18 11 2016
06	Design Year and Growth assumptions amended		31 01 2017
07	Updated to Client comments		06 02 2017

NORTH EAST (Head Office)
 Suite 7D
 Netherton Park
 Stannington
 Northumberland
 NE61 6EF

www.queensberrydesign.co.uk

YORKSHIRE & NORTH WEST
 Blake House
 2A St Martin's Lane
 York
 YO1 6LN

Telephone: 01670 789834

Fax: 01670 789861

Managing Director : M D Paylor Company Secretary : S J Paylor
 Company No. 4568021

Telephone: 01904 500662

Fax: 01670 789861

Associate Directors : - A Lowdon - M Axtell
 VAT Registration number 828730609

Contents

Contents.....	1-3
1. Introduction	1-4
1.1 Background	1-4
1.2 Executive Summary.....	1-4
2. Policy	2-5
2.1 Introduction	2-5
2.2 Local Policy.....	2-5
2.3 National Guidance.....	2-6
2.4 Local Guidance and Comments.....	2-6
2.5 Summary	2-6
3. Existing Situation.....	3-7
3.1 Introduction	3-7
3.2 Planning History	3-7
3.3 Pedestrians.....	3-8
3.4 Cyclists.....	3-8
3.5 Public Transport	3-8
3.6 Existing Local Road Network.....	3-9
3.7 Current Developments.....	3-10
3.8 Consideration of Accident Patterns	3-11
3.9 Summary	3-11
4. Proposed Development	4-12
4.1 Proposal	4-12
4.2 Pedestrian Usage of Rail Crossing.....	4-12
4.3 Parking	4-13
4.4 Summary	4-13
5. Transport Aspects of Development	5-13
5.1 Introduction	5-13
5.2 Quantifying the Existing Use	5-13
5.3 Quantifying the Proposed Use	5-14
5.4 Analysis	5-14
5.5 Detailed discussion on junctions.....	5-17
5.6 Summary	5-18
6. Conclusion.....	6-18
APPENDIX A – Accessibility.....	
APPENDIX B – Cycling.....	
APPENDIX C – Accident Locations.....	
APPENDIX D – Accident Reports.....	
APPENDIX E – Network Figures.....	
APPENDIX F – TRICS and TEMPRO Data.....	
APPENDIX G – Junction Analysis.....	

1. Introduction

1.1 Background

Miller Homes Limited proposes to redevelop an industrial/employment site off Victoria Road, Hebburn for housing. Queensberry Design Limited has been instructed to prepare a statement on the transport aspects of the redevelopment.

The site is adjacent to (west of) Victoria Road West and south of South Drive & Parkside. It was in operation as Siemens' Trench UK plant and Laboratory until (we understand) summer of 2012. The development will comprise some three hundred and thirty-four (334) dwellings laid out off a principal loop which will have two points of access from Victoria Road West.

1.2 Executive Summary

This report considers the transport aspects of the redevelopment of this employment site off Victoria Road, Hebburn for housing. The site covers some ten hectares and includes the former buildings, parking areas and green space. It is currently vacant and all of the redundant buildings have been demolished.

National and local planning policy has a clear agenda to manage demand on the strategic and local road networks respectively. The proposed development has been designed in the light of these policies and guidance. The local authority requires these proposals to be supported by Transport Assessment because the size of this development.

The new site for 334 homes is in an accessible location close to the range of employment, education and leisure facilities offered by the South Tyneside area.

The site has an historic industrial use and is still allocated within the LDF. Parkside currently serves as the main access to this site for this established use.

The homes will be laid out off a principal loop with two points of access from Victoria Road West. The western kerb of Victoria Road will be slightly realigned to ensure that visibility provision is adequate at these junctions and provision will be included for pedestrians. The existing link to the site from Parkside will be closed. The changes to the road at the access will be carried out under agreement with the Local Highway Authority. This will include any required changes to signage and lining within Victoria Road West.

The proposed streets within the development will be laid out to current best practice for local streets. The straighter sections of internal street are of such length as to discourage excessive speeds. All streets could be encompassed by a 20mph Zone Order should this prove desirable. It is the intention to offer the new roads for adoption.

The development will result in the generation of a mix of traffic typical of residential development. Vehicle flow will be predominantly out of the site in the morning and back to the site in the afternoon. This differs from the existing industrial use classification.

The level of activity associated with the redevelopment for some three hundred and thirty-four homes will be most noticeable along Victoria Road West, near to the site and at the Mill Lane and Station Road junctions. Highways England have confirmed that the resultant vehicle trips generated would not have an impact on the wider surrounding network ('the impact on traffic at White Mare Pool is considered nominal'). Negotiations are ongoing on appropriate community infrastructure.

The redevelopment of this former industrial site for housing will not have a severe detriment to the operation of the local road network. It is, therefore, considered that there are no "highway" concerns raised by this proposal.

2. Policy

2.1 Introduction

The consideration of the transport implications of development is an integral part of the Government's aims to create safe, sustainable communities. Transport Assessments and Travel Plans are key tools to ensure these expectations are met and regional and local policies are complied with.

Planning policy, with respect to transport and land-use planning, seeks to support the promotion of accessibility by all travel modes. The proposed development has, therefore, to be viewed in the context of national and local Government planning policies, guidelines and strategies. A number of pertinent documents that relate specifically to transport in the context of the wider planning policy agenda are, also, summarised below.

2.2 Local Policy

South Tyneside Council has prepared a number of strategic plans that help create sustainable communities in terms of improved access to transport links, better connectivity between boroughs and main destinations as well as increased business and jobs.

The South Tyneside Local Development Framework (LDF) is the current local plan that consists of a number of action plans, strategies and proposals that will help create sustainable communities within the vicinity of South Tyneside area. The LDF document is split into a number of policies and standards each focussing on a different area, e.g. parking, development and highways. Those that are of significance are summarised below.

South Tyneside Vision 2011-2031 lists a number of improvements and measures of how sustainable, accessible and active communities will be created. The document is focussed on the following:

- Stable and independent families
- Healthier people
- Increased business and jobs
- Better housing and neighbourhoods

Hebburn, where the proposed Victoria Road development is located, is also included within the local council's plans to improve accessibility and local facilities within the area. This is highlighted in the Hebburn Town Centre Area Action Plan which sets out the following goals:

- Improve local shopping and leisure facilities
- Improve access between the neighbourhoods and the town centre
- Improve and promote sustainable modes of travel

SPD5 Planning Obligations and Agreements (2008) provides developers, landowners, the community and the Council with guidance on the planning obligations or agreements that will be required to ensure that new development can be accommodated in the Borough, with acceptable impact and within the principles of sustainable development.

SPD6 Parking Standards provide guidance and best practices on parking provision that is well integrated and creates a permeable environment for pedestrians, cyclists and motorists. The document looks closely at these key areas:

- Residential and non-residential parking provision
- Local and national standards that help achieve sustainable parking provision
- Vehicle and cycle parking facilities

Development Management Policy DM1 provides key guidance on sustainable development of highways in residential and non-residential areas; the fundamental points highlighted in the policy are as follows:

- Well-designed streets, public spaces and squares with natural surveillance
- Highway capacity and links to main destinations
- Safe routes to local destinations

South Tyneside Urban Design Framework provides key principles of best practice to sustainable urban developments and sets out the implementation steps of the design policy and guidance. The framework covers Hebburn area in more detail defining the key areas of improvement:

- Permeability within the area
- Develop new housing
- Build environmentally friendly communities

LTP3: The Third Local Transport Plan for Tyne and Wear provides a long-term strategy for the area that aims to achieve a fully integrated transport network that will provide a sustainable movement of people and goods, and create pedestrian and cycle friendly communities. The document is focused on sustainable transport provision and smarter travel choices that are reliable and easily accessible for all everyone.

2.3 National Guidance

The key reference work is the National Planning Policy Framework. This states that all developments which generate significant amounts of movement should be required to provide a Transport Statement assessing the consequences of that development.

Details of layout and design should be guided by the Manual for Streets 1 and 2.

2.4 Local Guidance and Comments

The area around this site is currently subject to increased investment and regeneration. The TA was originally submitted in Aug 2016 and applied best practice with respect to assessment and analysis, in line with 2.3 above and reflecting the approach taken and accepted in TAs that have supported previous local approved development.

The parameters of the original TA were robust, although the Council has requested alternative assumption should be applied. There have been ongoing discussion between the applicant and the Council since the application has been submitted; this report has been updated in line with those discussions. See also 3.7 and 5.2 below.

2.5 Summary

National and local planning policy has a clear agenda to manage demand on the strategic and local road networks respectively. The proposed development has been designed in the light of these policies, guidance and comments. The Local Authority requires these proposals to be supported by Transport Assessment because the size of this development.

3. Existing Situation

3.1 Introduction

This industrial and employment site is west of Victoria Road West (A185) to the south west of Hebburn. The site was in operational up to 2012 (we understand) and is currently cleared.

The site extends to approximately 10 hectares. It is a large rectangular site with its main vehicular access off Parkside (via South Drive) located to the north of the site. In addition, there is an access off Victoria Road West.

The site is located approximately 700m (south west) from the edge of Hebburn Town Centre. It is a previously developed site, located within the urban area and is accessible by a variety of modes of transport to/ from employment, shops and services.

The site is surrounded by residential development to the north and east and Victoria Industrial Estate to the south. The western boundary of the site abuts the Metro line, beyond which lies parcels of undeveloped land and Riverside Park.

The site's location and relationship with the surrounding area can be seen in the Accessibility Plan at **APPENDIX A**.

3.2 Planning History

There is no relevant planning history relating to the redevelopment of the site itself although it is assumed that there is significant planning history relating to the former industrial use.

A Pre-application consultation response from Aug 2014 (for 320 homes) sets out the following. 'A Strategic Transport improvements contribution is required as per section 8 of SPD5 at £200 per unit (£64,000 for the 320 homes considered).

'The affordable housing requirement was discussed under the heading of delivering sustainable communities.

'(Any) planning application submitted must address these requirements and include the heads of terms proposed for the Section 106 Agreement.

'Policy ST2 seeks to achieve sustainable development..... The approach to sustainability within the development should be explained.

'Policy A1 Improving Accessibility (LDF Core Strategy) seeks to support public transport, cycling and walking by ensuring that new developments are easily accessible. It requires transport assessments for major development proposals. Parking standards will apply to new development, as set out in SPD 6.

'Policy DM1 (G, H) Management of Development - Highways and Access (LDF Development Management Policies) seeks to ensure acceptable impact (or mitigation) of developments in relation to highway capacity and safety, that convenient and safe routes are facilitated.

'SPD6 Parking Standards: sets out the parking standards used in assessing proposals for new development.

'SPD7 Travel Plans: provides guidance on when Travel Plans should be produced and what they should contain.

'A Transport Assessment and Travel Plan will be required as part of the submission.

'Two new vehicular access points are proposed as part of the development directly onto Victoria Road West in addition to a further access via South Drive using an existing entrance

route into the site. The requirements for the visibility splays to the access points from Victoria Road West are 9m by 90m. The existing bus stop may need to be relocated if affected by the required visibility splay.

‘The junction shown to the south (original plan) would create a crossroad with Hartleyburn Avenue which is not acceptable in highway terms (reference Design Manual for Roads and Bridges guidance). Any proposed junctions should be staggered at least 40 metres north or south of any opposing junctions.

‘Victoria Road West is lined with mature highway trees which create an attractive avenue. These trees will be affected by the required visibility splay for the proposed new accesses to the site, resulting in the loss of the majority of the street trees. There is a strong desire to retain the tree lined avenue which provides an attractive environment along the main road.

‘Further consideration is required in relation to the position of any new access from Victoria Road West. An accurate plan of the existing trees and a survey of the health of the trees will be required to assist in this assessment.

‘It appears that there may be a difference in levels across the site with implications for providing a level access. A topographical survey will be required in the area of any new access point.

‘The maximum parking provision specified in SPD 6 is two spaces per dwelling plus one space per three dwellings for visitors, although it may be appropriate to provide additional space in the case of larger dwellings. The layout will need to indicate that sufficient space is provided within the site.’

3.3 Pedestrians

All local streets are provided with footways and street lighting. There are verges, containing mature trees, and footway along Victoria Road West.

Drop kerbs are provided at key pedestrian crossing points. In some locations this is supplemented by tactile paving. Pedestrian routes follow the street layout. There is a route across the railway line running from the western end of South Drive.

3.4 Cyclists

Cycling is a viable option for local trips to work in this area. In addition, it can be an effective form of transport for school children of an appropriate age (Secondary). A range of primary and secondary schools lie within 2km of the site.

There are a number of options for travel via less trafficked routes. Free cycle route leaflets are available from libraries, visitor centers and tourist information centers. An extract from one of these can be seen in **APPENDIX B**.

3.5 Public Transport

A substantial number of residents on the site will have the option to walk or cycle to work. For those that cannot, options to travel by public transport for all or part of the commuter journey are available.

The whole of the site is within 400m of the bus stops on Victoria Road West. There are other bus stops on Mill Lane.

Bus services available in the area run at least three per hour during peak hours (0800 – 0900 and 1700 – 1800).

Services include:

North Bound 515; 960; T529 to Bill Quay, Hebburn and South Shields

South Bound 515; 960; T529; S815; S821 to Bill Quay, Hebburn, Heworth and Barmston.

Metro Stations at Hebburn and Pelaw are both within 2km of the site. The comments from 3.2 above can now be read in conjunction a recent publication from Nexus on the future of Local Rail and Metro infrastructure for the area.

As set out above, the Local Authority has published an SPD5 (section 8) which sets out Strategic Transport Improvement contributions required from developers.

3.6 Existing Local Road Network

The A185 forms the main route through Hebburn. It runs, roughly parallel to the River Tyne linking A184 (near Heworth) in the west to A19 in the east (in Jarrow, just south of the Tyne Tunnel). Mill Lane (B1306) links Victoria Road West to the A194 Leam Lane and Campbell Park Road also links the area to the south east.

The junction between A184 and A194 is a grade separated roundabout known as Whitemare Pool.

The nature of local streets does provide permeability with alternatives to reach more local destinations. The FIGURES in **APPENDIX E** show the local road network diagrammatically.

The results of recent traffic survey (7th July 2016) are shown in FIGURE 1 (2016 Counts). The AM peak hour (07:45 to 08:44) vehicle flows are given in the clear boxes and the PM peak (16:15 to 17:14) in the shaded boxes.

We were asked to consider seasonal variation of a July count compared with (say) a September count. We examined NE Area Traffic information (V3502). 12hr Daily Flows for July were very similar to September. We would also point out that these counts were carried out on 7th July; clear of School Holidays. No adjustments to the surveyed flows were considered to be necessary.

A further PM flow count was carried out (26th Jan 2017) at the junction of Hartleyburn Avenue with A185 (also shown in FIGURE 1). This was specifically to check queue build up on the ghost island for right turners into Hartleyburn Avenue. Flows on VRW were similar to (slightly less than) those counted in July 16. At peak, there were only seven vehicles observed turning right into Hartleyburn in a fifteen minute period. This represents an average of one such manoeuvre every two minutes, max. At no time was more than one vehicle in the process of turning.

The bus stop between Hartleyburn Avenue and the proposed southern site access is currently provided with shelter, flag and yellow road markings. Passage past the stop is partially facilitated by widened lane marking and central hatching. There have been no reported accidents near this stop in five years. The frequency of usage is currently very low. The two hour survey (above) identified only one PSV in each direction.

It is concluded that there is no requirement for any additional stacking space to be provided in the ghost island which protects this right turn. It is considered that the situation at/near the bus stop does not cause concern and is similar to many elsewhere.

3.7 Current Developments

This section examines existing and committed development in the area.

The local flows are also shown in FIGURE 1 at **APPENDIX E**.

The survey results at the Victoria Road West junction with South Side were used (as an example of a local residential street) to predict flow distribution patterns. These percentages are shown in FIGURE 2.

Clearly the site itself has an established use for industrial/employment. This is further discussed in 5.2 below. There are redevelopment proposals for Hebburn Town Centre (See 2.2 above).

There are currently residential developments underway on a number of sites. These were supported by TAs during their planning stage. This TA takes these developments into account in the following way.

More recent applications reference the Aloysius 2003 ‘DM’ permission. Site observation indicate 40% of the final stage housing is yet to be occupied. These flows have been assigned to the network in accordance with Section 7 of the original TA. The flows are shown in FIGURE 4.

The Monkton Fell (Barratt Homes and Taylor Wimpey) TA uses Jacobs’ Tyne Tunnel 2 model. Site observation indicate 50% of the housing is yet to be occupied. These flows have been assigned to the network in accordance with Figures 7 and 8 of that TA. The flows are shown in FIGURE 5.

The former College, Mill Lane (by Bellway Homes) TA makes the ‘brownfield’ case that proposed traffic will be similar to or less than previous development activity. Site observation indicate 40% of the housing is yet to be occupied. These flows have been assigned to the network in accordance with that TA. The flows are shown in FIGURE 6.

The Bedewell Industrial (by Barratt Homes) TA, again, makes the ‘brownfield’ case that proposed traffic will be similar to or less than previous development activity. It sets out, in Figures 11 and 12, the net effect of development. The flows (on Victoria Road West) are shown in FIGURE 7.

The overall effect of these are shown in FIGURE 8 and the predicted flows with these committed developments ‘2017 Base’ are shown in FIGURE 9.

We initially tabled a design year with committed development and an appropriate growth factor. These figures are now referred to ‘Medium Growth’ in the FIGURES.

We were instructed to consider 2026 design year with growth for the region adjusted by predictions for South Tyneside. Whilst this was not considered to be necessary or appropriate, these flows were determined and are referred to as ‘High Growth’ in the FIGURES.

The TEMPRO V7 predictions used are shown in **APPENDIX F**.

3.8 Consideration of Accident Patterns

This section examines accident records which occurred on the public highway in the vicinity of site access within a five-year period. Road Accident Map (see **APPENDIX C**) identifies incidents within the area which includes the access points to the proposed development.

Table 3.8.1 Accident Severity and Detail.

Reference no.	Date of incident	Severity	Accident occurred at a junction	Details
1	03/08/2010	slight	Yes	Bus slowing down – passenger slightly injured
2	12/10/2012	serious	Yes	Pedestrian crossing road
3	06/08/2012	slight	Yes	Rider falls from cycle
4	13/11/2012	slight	Yes	2 vehicles – one turning right
5	27/05/2013	slight	Yes	2 vehicles – one turning right
6	14/08/2011	serious	Yes	Pedestrian crossing road
7	28/05/2011	serious	Yes	2 vehicles – one reversing
8	29/03/2011	slight	Yes	2 vehicles – one turning right
9	03/04/2013	slight	Yes	3 vehicles on main road – 2 vehicles held up
10	03/04/2010	slight	No	Rider falls from cycle
11	25/01/2011	slight	No	2 vehicles & cycle – right turning manoeuvres
12	06/12/2014	slight	Yes	2 vehicles – driver slightly injured
13	31/06/2013	slight	Yes	Rider falls from cycle
14	24/11/2014	slight	Yes	Pedal cycle changing lane
15	30/07/2012	slight	Yes	Rider falls from cycle
16	11/03/2010	slight	Yes	2 vehicles slowing down
17	19/06/2013	slight	No	Vehicle & cycle – vehicle turning right
18	26/12/2012	serious	No	1 vehicle on main road - driver injured

Source CrashMap

Details of the above are in **APPENDIX D**.

A total of eighteen incidents were recorded within the specified area within five years, i.e. 2010 – 2015 inclusive. Of these, four were serious and the rest slight injuries, with no fatal incidents recorded within the specified timescale and the identified area. There were two serious accidents recorded that involved pedestrians crossing a main road. Seven accidents involved cyclists with the injuries being reported as slight.

Most accidents occurred at junctions as vehicles were slowing down or performing a turning manoeuvre.

3.9 Summary

The new residential site is in an accessible location close to a range of employment, education and leisure facilities offered by the South Tyneside area.

With this number of homes, and options for travel by sustainable means available, there is significant potential for the new residents to shift away from private car use to more sustainable modes of travel for a range of trip types.

4. Proposed Development

4.1 Proposal

The proposal is to develop 334 homes on the site. The homes are to be a mix of terraced, semi-detached and detached 2, 3, 4 & 5 bedroom homes. Cycle and Car parking will be provided in plot or in small groups.

The existing site access from Victoria Road will be replaced by two new priority junctions. Visibility at these junctions will be 2.4m by 59m as recommended by STC and achieved by slight amendment (build-out) of the kerb line. A plan has been produced to show these proposals. This is yet to be agreed with STC. Given the number of units to be developed, two access points are considered to be appropriate. These will afford more flexible day-to-day operation and provide some redundancy for use in the case of emergency or if repairs need to be carried out.

The internal loop road will serve a number of culs-de-sac and courts as well as providing direct access to homes. The sections of street are of such length as to discourage excessive speeds. All streets could be encompassed by the 20mph zone should this prove desirable.

The existing vehicle/pedestrian link to the site from Parkside will be closed. It is understood that the north end of the site will not be permeable in any way to pedestrian access.

The proposed road markings are shown on Layout QD1183-20-11-B. The layout retains the existing features at Hartleyburn Avenue and past the bus stop. The road markings to the south of the bus stop links directly to the markings for the turn into the Southern Access. The proposed carriageway width at both Accesses is 8.50m comprising two 2.75m running lanes and a 3.0m wide central hatched reserve (with ghost islands).

4.2 Pedestrian Usage of Rail Crossing

There will be, therefore, no direct route between the site and Parkside/South Drive and so no route to the rail crossing. The shortest route from any dwelling on the site to the crossing would be via Victoria Road West and South Drive. The nearest dwelling would be over a quarter of a mile (425m) away, further away than 160 existing properties in South Drive, Parkside, Woodvale Drive and parts of North Drive and Victoria Road West. The furthest dwelling would be over 900m for the level crossing. Again, we would estimate that there are 1020 existing dwellings within a 425 to 900m distance band from the crossing (34 ha at 30 homes per ha). The site, therefore, would represent 340 homes of a total of 1,520 lying within 900m of the crossing. This would represent a 29% increase in the number of dwellings within 900m of the crossing.

The main reason for residents to use the crossing would be leisure (predominantly dog walking) in Riverside Park. Assuming ten minutes are spent in the Park, these distances would indicate that a walk would be between 20 and 30 minutes duration.

The alternative 'Park' destination for such trips would be Carr-Ellison Park or Monkton Mill Farm. The entrance to either of these open spaces is some 700m from the front of the development (24 mins plus as above).

Other reasons to cross the railway would be to get to the allotments and as a through route. Residents may take up an allotment although this would only be when one was vacated by another (local) resident.

The only 'attractor' for walking across the railway are the new works to the North West. These works are equally accessible along North Farm Road. We would assume that the footfall across

the rail line is something that would have been considered when the placement of the new works there was recently approved.

There are 334 houses currently proposed. These might generate 934 pedestrian trips (taken from TRICS; total 12hr in both directions - out or back). This figure forms an upper bound for pedestrian trips for all reasons, of all length and in all directions.

We refer to the TSP Report which highlights that only 10% of walking trips are further than 400m. This would give the number of all pedestrian trips reaching as far as the crossing to be 93.4 trips.

Referring then to National Travel Survey 2014 which sets out that 18% of walking trips are for 'leisure' and a further 19% are 'just walking'. Trips across the crossing would fall into these categories. Applying this, the number of trips that are 'leisure' or 'just walking' would be 34.6 trips. Clearly, the Park is not the only attractor for such trips. So, assuming there are four main destinations for this activity we'd predict that only 8.65 pedestrian trips (4 out and 4 back) generated by the new development would cross the level crossing in a 24hr period.

4.3 Parking

The site layout provides the majority of the car parking in-plot or in small shared courts and close to the front of houses. The spaces will be provided with safe access to and from the adjacent roads. Three bed (detached) and four bed dwellings will benefit from a garage in-plot and five bed dwellings will have a double garage. The proposed development will, therefore, have a 530 allocated car parking spaces. There will also be 112 visitor car parking spaces to meet current standards.

The development meets cycle parking standards, providing secure locations with natural surveillance.

4.4 Summary

The existing site access will be replaced by two new junctions onto Victoria Road West. The changes to the road at the access and visibility provision will be carried out under agreement with the Local Highway Authority. The proposed streets within the development will be laid out to current best practice for local streets.

5. Transport Aspects of Development

5.1 Introduction

In its initial comments the local authority requested that these proposals be supported by a Transport Assessment. 'The nature and level of additional trips would need to be clarified as well as the likely distribution of these trips amongst local streets.'

In its further comments the LA set out the assumptions that were to be included in the assessment and analysis.

5.2 Quantifying the Existing Use

The site contained mixed industrial uses. The use is understood to have been operational up to 2012. Trips generated had an immediate impact upon Parkside, South Drive, Victoria Road West and junctions to the north and south.

Clearly, trip type, direction and timing differ between industrial and residential uses. National Data (TRICS) has been used to estimate the likely vehicle trip generation. The industrial uses on a site of this area (10 ha) were likely to have generated a total of 1,643 (in or out) trips across

the working day. The peak occurrence of vehicle trips is in the morning with, typically, 224 trips between 7:30 and 8:30.

Although these flows might have been attracted to the site when in operation, South Tyneside Council has instructed that no account be taken, in this further analysis, of the potential to re-use this brown field site within its established use class.

5.3 Quantifying the Proposed Use

The site's location, within an established urban area, provides the opportunity for journeys to work and education from the site to be by sustainable modes. The site will, however, bring new residents with associated increase in activity. The new residents are likely to generate a total of 1,673 (in or out) vehicular trips across the weekday. The peak occurrence of vehicle trips is in the morning with, typically, 175 trips occurring between 08:00 and 09:00 and 199 between 16:00 and 17:00.

The Base Flows (with committed development) are shown in FIGURE 9 at **APPENDIX E**.

The Residential Development Flows are shown in FIGURE 10.

The 2017 Flows with Development are shown in FIGURE 11.

The Medium Growthed Base Flows with Consented for 2022 are shown in FIGURE 12. The 2022 Flows with Consented and Residential Development are shown in FIGURE 13. These FIGURES are included for completeness.

The Council required that alternative assumptions were applied and the junctions modelled for the 2026 situation. The High Growthed Base Flows for 2026 are shown in FIGURE 14.

The 2026 Flows with Development are shown in FIGURE 15.

A copy of the TRICS Data used is provide in **APPENDIX F**.

5.4 Analysis

The junctions most affected by the development and the proposed site accesses have been modelled using the Junctions9 suit of programmes (LINSIG and PICADY).

Table 5.4.1 Junction Analysis Mill Lane 2022

Mill Lane	AM Peak				PM Peak			
	2022		2022+Dev		2022		2022+Dev	
	DoS	Queue	DoS	Queue	DoS	Queue	DoS	Queue
Victoria Rd (N)	89.0%	22.9	91.5%	26.4	80.0%	12.7	76.3%	13.8
Mill Lane	93.4%	26.5	91.5%	31.0	96.8%	22.6	95.7%	21.9
Victoria Rd (S)	92.1%	22.7	93.1%	17.7	94.8%	23.5	92.9%	29.6
Reserve Capacity	-3.8%		-3.5%		-7.6%		-6.4%	
Total Delay (pcuHr)	31.4		31.0		35.3		34.0	
Cycle Time (s)	120		120		104		104	
File	Mill Ln.lsg3x							

Table 5.4.2 Junction Analysis Mill Lane 2022

Station Road	AM Peak				PM Peak			
	2022		2022+Dev		2022		2022+Dev	
	DoS	Queue	DoS	Queue	DoS	Queue	DoS	Queue
Victoria Rd West	72.6%	16.6	77.1%	18.4	87.1%	26.9	88.5%	27.7
Station Rd	73.6%	13.5	76.3%	14.3	94.8%	19.0	99.9%	25.2
Victoria Rd East	65.8%	13.9	58.3%	11.4	91.9%	15.1	96.7%	19.9
Hall Rd	12.8%	1.9	12.9%	1.9	14.8%	1.8	13.5%	1.8
Reserve Capacity	22.3%		16.7%		-5.3%		-11.0%	
Total Delay (pcuHr)	17.7		18.2		30.3		39.9	
Cycle Time (s)	120		120		120		120	
File	Station Rd.lsg3x							

Local surveys of a similar residential area (South Drive) has been used to determine the likely distribution of trips to and from the site. The percentage flow distributions, derived from the above, are shown in FIGURE 3 of **APPENDIX E**.

The resulting Development Flows are shown in FIGURE 10. The net effect of development is set out in Figures 11 and the With-development situation for 2017 is shown in FIGURE 12.

The Base situations with Consented Development for 2022 is shown in FIGURE 13 and the With-development situations for 2022 is shown in FIGURE 14.

It can be seen that the Mill Lane junction performs with the degree of saturation on approach arms in excess of 90%. The junction does, however, show an improvement in the AM and PM, with-redevelopment situation for 2022.

The Station Road junction continues to perform adequately in the AM with the degree of saturation on all approach arms being less than 90% without or with redevelopment. The junction performs with the degree of saturation on approach arms in excess of 90% but less than 100% in both PM situations. PRC is -5.3% pre the effect of redevelopment and -11.0% post redevelopment. The flow to capacity and consequent queue length are highest on the Station Road and Victoria Road East approaches. Predicted queuing increase of six and five vehicles respectively.

Applying the above reasoned assessment the junctions nearest to the proposed redevelopment will continue to perform adequately. Clearly, this area is currently subject to significant regeneration and growth. This development of a brown field site does not, however, cause sever detriment to the local highway network.

It is noted that background flows predicted in this model are higher than those predicted by the area-wide Tyne Tunnel (2) model for 2021. It is conceivable that some of the traffic is yet to re-assign within the area as predicted for TT2. This is particularly likely given the continued road work/ delays at the Lindisfarne Junction (A194 with A19) reconfiguration. The local roads will continue to experience high flows at peak times; a proportion of which may re-locate in line with the TT2 intentions.

Table 5.4.3 Junction Analysis Mill Lane 2026

Mill Lane	AM Peak				PM Peak			
	2026		2026+Dev		2026		2026+Dev	
	DoS	Queue	DoS	Queue	DoS	Queue	DoS	Queue
Victoria Rd (N)	96.2%	23.7	103.7%	46.4	82.5%	14.1	85.1%	15.4
Mill Lane	96.3%	23.6	102.9%	34.9	101.4%	27.8	105.0%	35.6
Victoria Rd (S)	94.1%	17.2	103.5%	27.7	103.9%	48.5	103.9%	48.5
Reserve Capacity	-7.0%		-15.2%		-15.4%		-16.7%	
Total Delay (pcuHr)	36.0		77.6		73.37		94.1	
Cycle Time (s)	90		90		90		90	

It can be seen that the Mill Lane junction performs with the degree of saturation on approach arms in excess of 90% in the AM and in excess of 100% in the PM for the flow conditions in the 2026 Base Model (reserve capacity is -15.2% in the PM). The junction show increased loading in the 'With Development' situation. The degree of saturation on approach arms are in excess of 100% in the AM and the PM for the flow conditions in the 2026 With Development Model (reserve capacity is -16.7% in the PM). Queuing and delay increase with development.

Table 5.4.4 Junction Analysis Station Road 2026

Station Road	AM Peak				PM Peak			
	2026		2026+Dev		2026		2026+Dev	
	DoS	Queue	DoS	Queue	DoS	Queue	DoS	Queue
Victoria Rd West	78.1%	18.5	83.0%	21.0	88.3%	27.7	91.0%	30.8
Station Rd	78.0%	15.2	82.4%	16.6	103.0%	30.4	118.1%	62.4
Victoria Rd East	62.1%	12.3	63.1%	12.8	105.0%	32.4	116.2%	60.0
Hall Rd	13.4%	2.0	13.9%	2.0	16.5%	2.0	17.5%	2.1
Reserve Capacity	15.2%		8.5%		-16.7%		-31.2%	
Total Delay (pcuHr)	19.2		21.4		58.2		118.3	
Cycle Time (s)	120		120		120		120	

The Station Road junction continues to perform adequately in the AM with the degree of saturation on all approach arms being less than 90% without or with redevelopment. The junction performs with the degree of saturation on some approach arms in excess of 100% in both 2026 PM situations. PRC is -16.7% pre the effect of redevelopment and -31.2% post redevelopment. The flow to capacity and consequent queue length are highest on the Station Road and Victoria Road East approaches. Predicted queuing increases by thirty-two and twenty-eight vehicles respectively with associated increases in overall delay.

It is noted that background flows predicted in this model are higher than those predicted by the area-wide Tyne Tunnel 2 model for 2021. It is conceivable that some of the traffic is yet to re-

assign within the area as predicted for TT2. This is particularly likely given the continued road work/ delays at the Lindisfarne Junction (A194 with A19) reconfiguration.

The site access were modelled with PICADY. The model was carried out on the narrowest road width (7.3m) and no right turn ghost; the most onerous of the options being considered.

Table 5.4.5 Access Analysis

	Access North				Access South			
	AM 2026+Dev		PM 2026+Dev		AM 2026+Dev		PM 2026+Dev	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
Victoria Rd West (N)	0.28%	0.4	0.16%	0.2	0.26%	0.4	0.14%	0.2
Site Access	0.07%	0.1	0.20%	0.7	0.07%	0.1	0.17%	0.5
File	VRW Picady							

It can be seen that the northern access will function adequately with the rate of flow to capacity no greater than 28% in any peak hour (2026 AM).

It can be seen that the southern access will function adequately with the rate of flow to capacity no greater than 26% in any peak hour (2026 AM).

The flow analysis results are given in detail in **APPENDIX G**.

5.5 Detailed discussion on junctions

Discussions are ongoing on the appropriate level of mitigation required to the local junctions. Looking at the gross effect of additional development traffic (Para. 5.4 above) it can be seen that the reserve capacity available at local junctions reduces post development. This factor, together with Degree of Saturation, Queuing and Delay gives an indication (based upon the 2026 figures presented as required by the local authority) of the associated level of mitigation works to local junctions. This section seeks to identify such works.

A185/Mill Lane

Looking at the gross effect of additional development traffic it can be seen that reserve capacity reduces by 8% in the AM peak and by over 1% in the PM peak. The degree of saturation increase 8% in the AM and almost 4% in the PM.

Subject to consultation and agreement with stakeholders and the land being made available, a straightforward option would be to create two lanes on the approach to the junction from Mill Lane. This would entail widening the carriageway on the north side by approximately 2.75m and the footway on that side into the verge/ open area. This would involve some reshaping of the planted area in front of the 'HEBBURN' plinth.

It would be the intention to achieve at least an 8% improvement in capacity with associated reduction in RFC etc.

A185/Station Road

Looking at the gross effect of additional development traffic it can be seen that reserve capacity reduces by 7% in the AM peak and over 14% in the PM peak. The degree of saturation increase 5% in the AM and up to 15% in the PM. The most affected arm will be the Victoria Road East and Station Road.

Given the limited scope for physical works here the most effective solution would be to investigate improvements the signalling system and information technology. Again, subject to consultation and agreement with stakeholders, there may also be scope to amend the layout/white linings to improve efficiency.

5.6 Summary

The development will result in the generation of a mix of traffic typical of residential development. This differs from the existing industrial use. Vehicle flow will be predominantly out of the site in the morning and back to the site in the afternoon. The level of activity associated with the redevelopment for some 334 homes will be most noticeable along Victoria Road West (A185) near to the site (Mill Lane and Station Road junctions) as described above. Highways England have confirmed that the resultant vehicle trips generated would not have an impact on the wider surrounding network saying ‘the impact on traffic at White Mare Pool is considered nominal’.

6. Conclusion

The development for some three hundred and thirty-four homes on this former industrial site will not have a severe detriment to the operation of the local road network. Negotiations are ongoing on appropriate community infrastructure. It is, therefore, considered that there are no “highway” concerns raised by this proposal.

Prepared by:



Ken Hay

Transportation Consultant

Queensberry Design Ltd.

Ken.Hay@QueensberryDesign.co.uk

www.queensberrydesign.co.uk

Miller Homes Ltd, Victoria Road West, Hebburn – Transport Assessment

Job No: QD1183-TA-07

Reference: Transport Reports

Date: 6th February 2017