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Prepared on behalf of

Westwood Wilson Ltd

Proposed Residential Development
Westwood Mill, Linthwaite, Huddersfield

Transport Assessment

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Acknowledgements:

National Geographic's MapMaker tool has been used to create images for illustrative purposes.

The TRICS database has been used in this report to calculate traffic generations.

www.crashmap.co.uk has been used to review local accident history.

www.nomisweb.co.uk has been used to obtain 2011 Census: Origin / Destination statistics and MSOA boundary information.

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates (Consulting Engineers) Ltd, unless otherwise expressly stated within this report.

This report was checked and approved on the 27th February 2020 and the Report is therefore valid on this date, circumstances, regulations and professional standards do change which could subsequently affect the validity of this Report.

Report Ref:	10821/001/04		February 2020
Author:	Brett Littlewood		
Checked & Approved:	Simon Burkinshaw	**Date:**	27th February 2020

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1 Introduction

1.1 Sanderson Associates (Consulting Engineers) Ltd. has been appointed by Westwood Wilson Ltd. to advise on traffic and transportation matters surrounding the residential development proposals at Westwood Mill, Linthwaite, Huddersfield. The general location of the site is highlighted in red below;

Figure 1 – Site Location ***(Map Source: NatGeo)***

1.2 The development proposals have been submitted to Kirklees Council (KC), who are also the local highway authority (LHA), under pre-planning ref: 2018/20130 and comprise the part demolition and part conversion of Westwood Mill to form 63 apartments and 64 dwellings.

1.3 Pre-application comments on the proposals have been provided by the LHA in a letter dated 24/04/2018. A copy of the letter is included at **Appendix A**.

1.4 A subsequent telephone conversation was held between Sanderson Associates and Ryan Kinder the Council's Highways Officer, during which the scope of assessment was agreed. It was confirmed that both a Transport Assessment and Travel Plan would be required to support the planning application.

1.5 This Transport Assessment considers the following aspects:

- The local highway network and its road traffic collision record;
- The access arrangements to the proposed development;
- The proposed development and its operational characteristics;
- The accessibility of the site in relation to sustainable transport, access to local facilities and measures to encourage the use of sustainable transport; and,
- The impact of the development on the local highway network in terms of highway capacity and safety.

1.6 For the benefit of the report, the site was visited on Wednesday 16th January 2019 in order to observe the prevailing highway conditions and take critical measurements and recordings.

2 Existing Situation

2.1 Site and Surrounding Area

2.1.1 The site is situated towards the northern extent of Linthwaite village, approximately 5.5km south-west of Huddersfield town centre. It is broadly bound by the Huddersfield Narrow Canal to the north, Low Westwood Lane / Titanic Mill to the east, the River Colne to the south and west.

2.1.2 The site contains the Westwood Mills Complex which comprises 5 Nº Grade II* listed buildings. The Mills have been vacant for a number of years and are currently in a state of dilapidation.

2.1.3 Vehicle access to the site is provided from two separate locations along Low Westwood Lane; one towards the southern end of the site frontage and one in a more central position. Both access points are currently blocked / gated to prevent vehicles entering.

2.2 Local Highway Network

2.2.1 Low Westwood Lane is an unclassified road with an approximate carriageway width of 7.5m. It is subject to a 30mph speed limit and is restricted to vehicles over 7.5t / 4.6m. In proximity to the site the road has street lighting and a footway along the western side of the carriageway only.

2.2.2 To the northern end of the site frontage, the road narrows as it passes over the canal. Traffic calming features in the form of single lane working chicanes are provided to manage traffic flows over the bridge. Signage is provided at both ends of the features instructing drivers to 'Give way to oncoming vehicles'.

2.2.3 In this direction (northbound), Low Westwood Lane leads toward the villages of Wellhouse and Golcar. This route is also used as an alternative route to / from J23/24 of the M62.

Photo of traffic calming feature (southbound view towards the site)

2.2.4 In the other direction (southbound towards Linthwaite and the A62), Low Westwood Lane becomes Bargate at the southern extent of the site frontage. Bargate serves a small number of residential properties as well as a vehicle salvage yard.

2.2.5 Bargate forms one arm of a 5-arm signalised junction with the A62 / Coldwell Street / Linthwaite Business Centre access. An uncontrolled access is also located within the junction which serves a single industrial unit: Nelson Roller & Rubber Company.

2.2.6 Signal controlled pedestrian crossing facilities are provided across the A62 and Bargate arms of the junction, whilst the remaining crossing points (Coldwell Street and Linthwaite Business Centre access) are uncontrolled.

2.3 Accident History

2.3.1 The Crashmap accident database has been reviewed in order to identify any existing accident trends on the local highway network. The extract below identifies all recorded incidents within the latest 5 year period as well as the severity of each event.

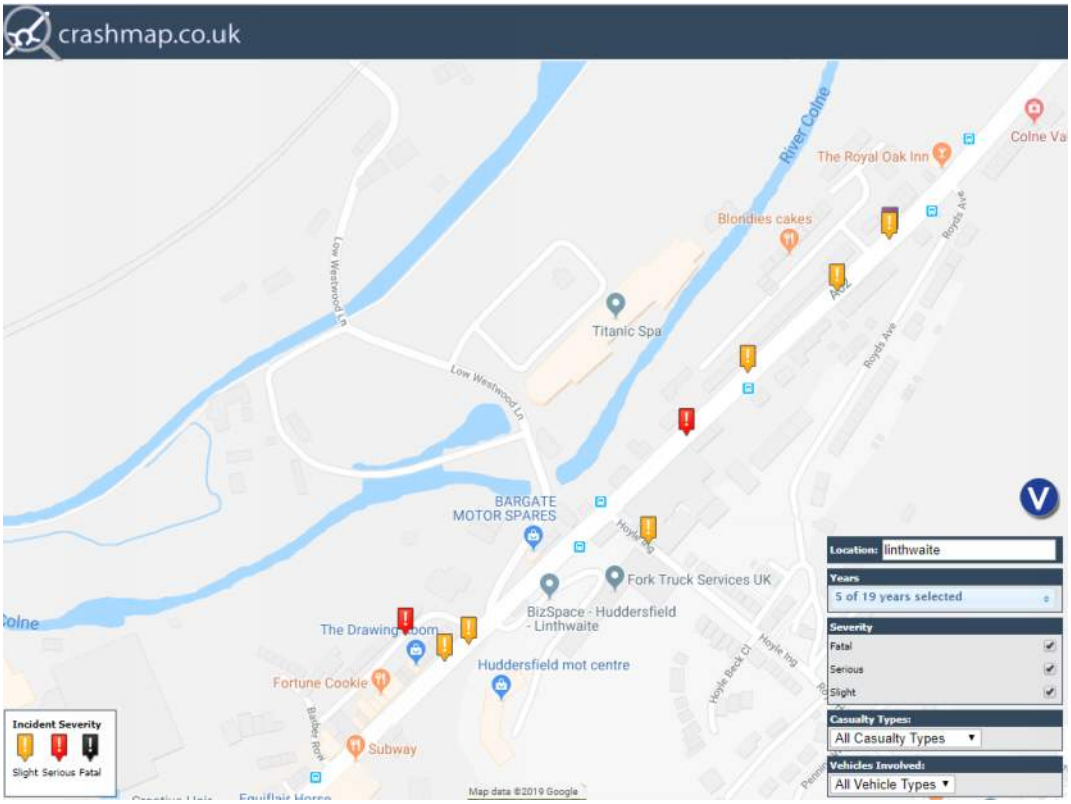


Figure 2 – Crashmap extract

2.3.2 Based on the available data, no incidents resulting in injury of any severity have been recorded along Bargate / Low Westwood Lane in the last 5 years. In proximity to the A62 / Bargate / Coldwell Street signalised junction, 2 incidents have been recorded; both of which took place on the A62 (SW) arm of the junction and were classified as being 'slight' in severity.

2.3.3 One incident (25/06/2014) involved a rear shunt collision between a car and a van / goods vehicle < 3.5t. The other incident (24/02/2013) was another rear shunt collision involving a motorcycle running into the back of a car.

2.3.4 Further away from the site (within 200m of the signal junction), recorded incidents include;

- 1 serious incident involving a vehicle and a pedestrian along Coldwell Street (16/03/2016)
- 1 slight incident between 2 vehicles, one of which was a parked vehicle at the side of the carriageway along Hoyle Ing (15/11/2016)
- 1 serious incident involving a vehicle and a pedestrian along the A62, approximately 175m north-east of the signal junction (22/09/2016). The pedestrian was noted to be crossing the road from the drivers nearside and was masked by a stationary / parked vehicle.

2.3.5 Full copies of the Crashmap reports are included to the rear of this report at **Appendix B**.

2.3.6 Following a review of the accident data it is considered that there are no apparent accident trends in terms of either type or location that would likely be exacerbated by the development proposals.

2.4 Traffic Flows

2.4.1 During visits to site on Wednesday 19th January 2019, fully classified traffic counts were undertaken at the A62 / Bargate / Coldwell Street signalised junction between the hours of 07:30 – 09:15 and in the AM and 16:30 – 18:00 in the PM. Following an analysis of the surveyed flows, the network peak hours were determined to be 08:00 – 09:00 in the AM and 16:45 – 17:45 in the PM.

2.4.2 With regards to pedestrian activity, the volume of people travelling on foot in proximity to the site during the survey periods was low. The pedestrian phase of the traffic signals was only called once during each (AM & PM) survey period.

3 Development Proposals

3.1 The development proposals comprise the part demolition and part conversion of Westwood Mill to form 63 apartments and 64 dwellings. An illustrative layout is provided at **Appendix C**.

3.2 The site's two existing points of access are to be retained, with the main vehicle access provided via the central access point. The secondary access, towards the south of the site will be used for emergency access only.

3.3 Parking

3.3.1 The layout provides a total of 235 car parking spaces, of which:

- 124 spaces are provided in the form of garage / drive spaces;
- 74 'open' spaces are provided around the site; and,
- 37 spaces are provided for visitor parking.

3.3.2 In addition to the above, a cycle store with a capacity for 50 cycles is proposed within the apartments.

3.3.3 The proposed parking provisions have been reviewed by the LHA and are in accordance with the Council's residential parking standards.

3.4 Servicing

3.4.1 The proposed layout has been designed to accommodate the swept path of an 11.85m refuse vehicle. This is illustrated on drawing 10821-001 Rev B at **Appendix D**.

4 Accessibility by Sustainable Travel Modes

4.1 With regards to sustainability, paragraph 11 of the NPPF (2018) states that:

'Plans and decisions should apply a presumption in favour of sustainable development.'

4.2 This section of the report seeks to demonstrate the accessibility of the site by sustainable travel modes; this includes both 'Active Transport' (walking and cycling) and 'Public Transport' (bus and rail travel).

4.3 Accessibility on Foot

4.3.1 Walking is the most common form of travel in Britain and has the greatest potential to replace short car trips, particularly those under 2km.

4.3.2 Further guidance on walking accessibility is provided in the Department for Transport's document 'Building Sustainable Transport into New Developments' (2008) which gives the following advice:

"Walkable neighbourhoods are typically characterised as having a range of facilities within 10 minutes walking distance (around 800m). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating."

4.3.3 The figure below identifies 800m and 2km walking radii from the site. It is noted that walking routes will not follow the simple radius of this plan and the plan is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

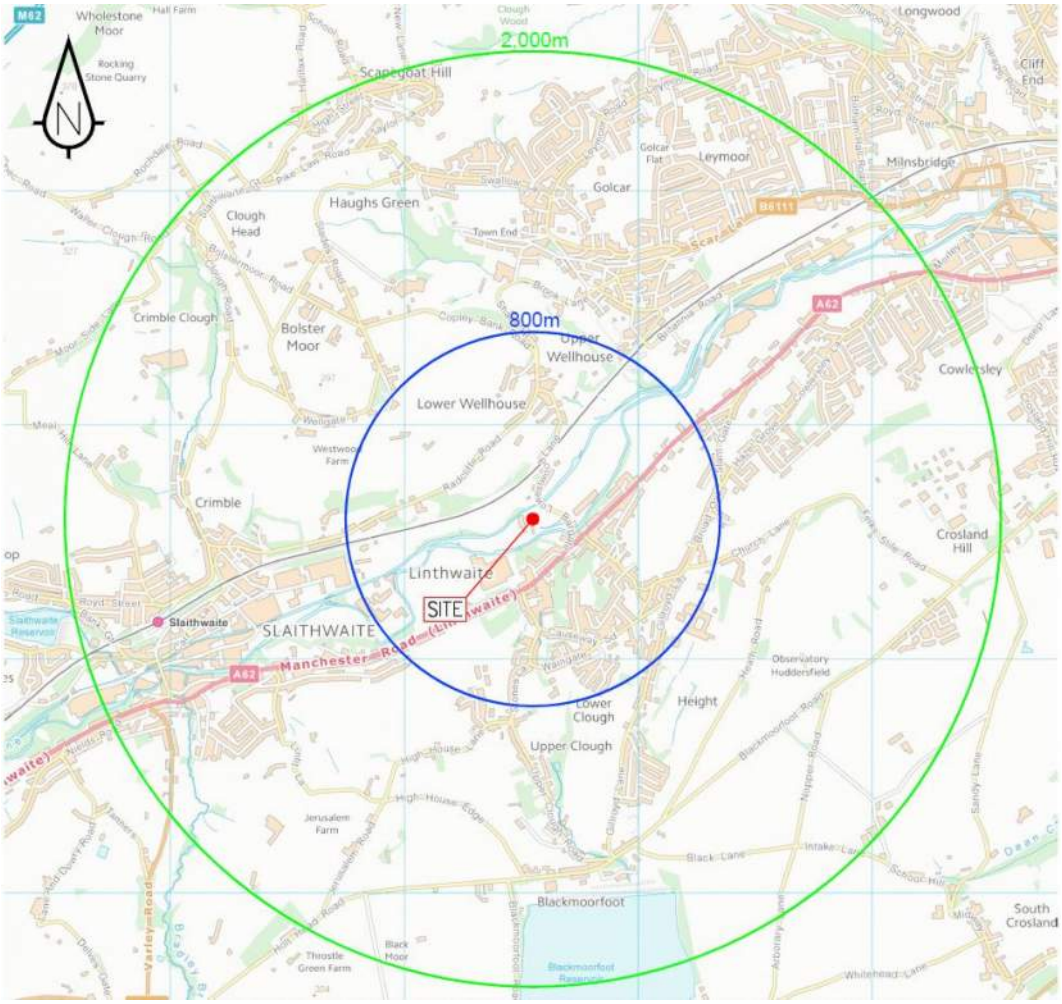


Figure 3 – Indicative 800m & 2km Walking Isochrones

4.3.4 CIHT's Planning for Walking (2015) report acknowledges that; "Academics have studied walkability without coming up with any generally accepted measure of what improves it, but factors considered important include the closeness and directness of routes to local services, the quality of footways and street crossings, perceived personal security and the good appearance of routes."

4.3.5 To this end, in the direction of Linthwaite village centre, direct, well defined and continuous street-lit footways are present with to aid pedestrian movements. Pedestrian links are also to be proposed throughout the site which will tie in with the existing infrastructure.

4.3.6 Some of the facilities and amenities located within a walkable distance of the site include:

Education

- Linthwaite Clough Junior Infant and Early Years School (800m)
- Linthwaite Ardon C of E VA Junior and Infant School (1,300m)
- Colne Valley High School (1,300m)

Retail

- HD7 Barber (390m)
- The Be You Ty Room and Drawing Room (400m)
- Dolce Gelato and Espresso Bar (410m)
- Costa's Captains Table, Traditional Fish and Chips (420m)
- Fortune Cookie, Chinese Takeaway (430m)
- Mr Happy Takeaway (440m)
- Didi's Pizza (440m)
- Hadfields Bakery (450m)
- Premier Convenience Store (490m)
- Subway (490m)
- Post Office (490m)
- Royal Curry and Pizza Bar (520m)
- Saffron Indian Restaurant (540m)
- Linthwaite Sandwich Bar (550m)
- Creative Hair (570m)
- Colne Valley Business Park (600m)

Health

- Phantom Head Dental Ltd (460m)
- Colne Valley Family Doctors (2,000m)

4.3.7 It is demonstrated that an array of facilities are available within reasonable walking distance to accommodate most typical journey purposes.

4.4 Accessibility by Cycle

4.4.1 Guidance indicates that cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport.

4.4.2 The following Figure 2 indicates destinations that lie within a 5km radius of the application site. Again it is noted that cycling will not follow the simple radius shown on this plan and it is provided to give an indication of where destinations lie and the general extent to which the site is accessible by cycle.

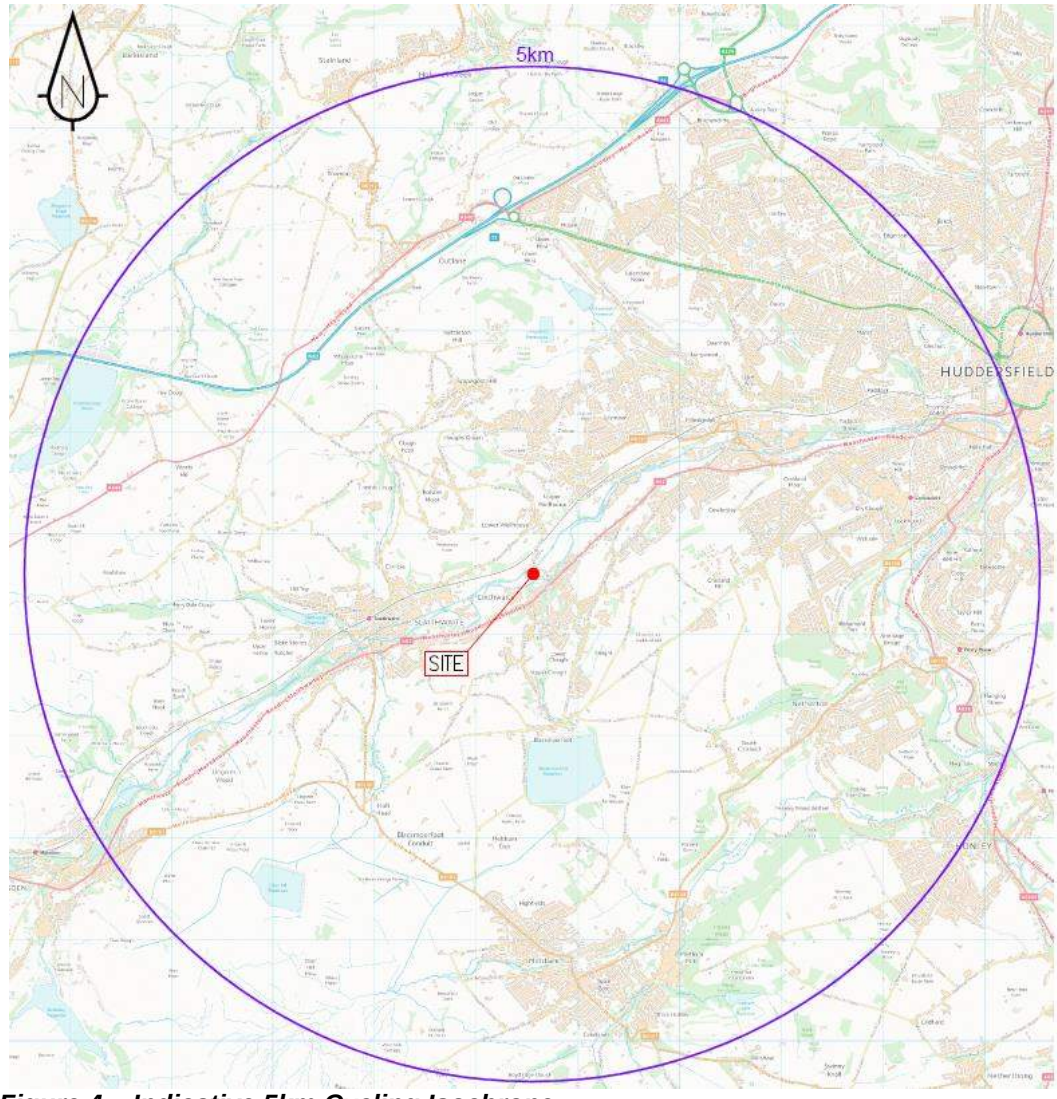


Figure 4 – Indicative 5km Cycling Isochrone

4.4.3 Figure 4 clearly indicates that most parts of the Colne Valley are located within 5km of the site.

4.4.4 As with walking, it is considered that the closeness and directness of routes to local services, as well as the quality of available infrastructure are important factors when it comes to accessibility. To this end, a traffic-free cycle route is available alongside the Huddersfield Narrow Canal (adjacent the site) providing a direct link between the site and the edge of Huddersfield town centre and to the local centre of Slaithwaite.

Photo of canal towpath / traffic free cycle route towards Huddersfield

4.4.5 It is considered that the site's proximity to surrounding local centres and facilities along with the available cycle infrastructure provides adequate incentive to encourage future residents to travel by cycle.

4.5 Accessibility by Bus

4.5.1 The closest bus stops are located approximately within a 400m walking distance east of the site on Manchester Road (A62) and Hoyle House Road. The general location of these stops are indicated on Figure 5, below:

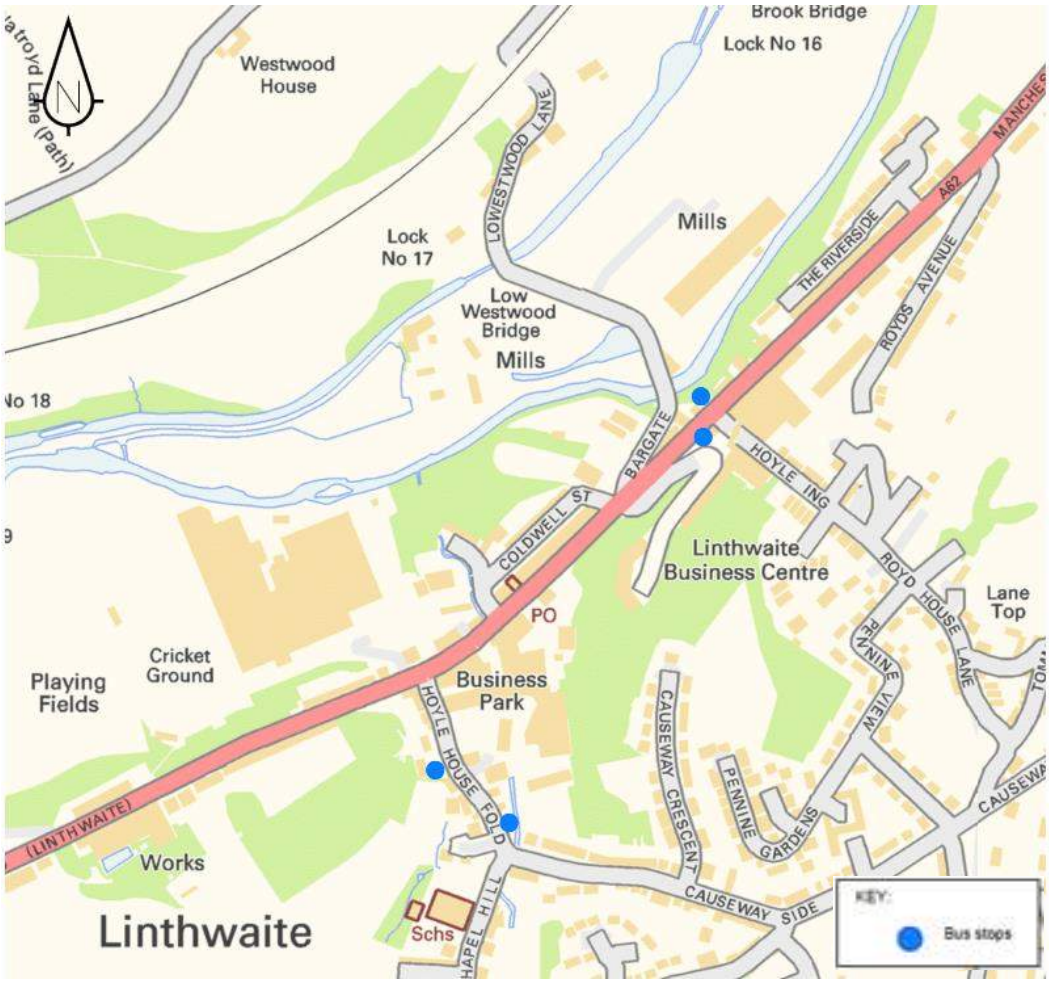


Figure 5 – Bus Stop Locations

4.5.2 Details of the facilities provided at the stops, along with the available services are provided overleaf.

Manchester Road (A62)

Bus stop reference:	45021704
Direction of Travel:	Northeast bound, toward Huddersfield
Facilities:	Shelter with seating, timetable information, raised bus kerbs, bus bay markings and pole with flag
Bus services:	183, 184 and 185

Bus stop reference:	45021703
Direction of travel:	Southwest bound, toward Slaithwaite
Facilities:	Raised bus kerbs, bus bay markings, timetable information and pole with flag
Bus services:	183, 184 and 185

Hoyle House Fold

Bus stop reference:	45019343
Direction of Travel:	Southbound, toward Meltham
Facilities:	Shelter with seating, timetable information, raised bus kerbs, bus bay markings and pole with flag
Bus services:	181, 183, 389 and 938

Bus stop reference:	45019344
Direction of travel:	Northbound toward Slaithwaite
Facilities:	Raised bus kerbs, bus bay markings, timetable information and pole with flag
Bus services:	181, 183, 186, 389 and 398

4.5.3 A summary of the available services from the stops above and their hourly frequencies are detailed in the following table;

Summary of Services		Frequency			
No	**Overall Route**	**Mon – Sat Daytime**	**Mon – Sat Evening**	**Sunday Daytime**	**Sunday Evening**
181	Willberlee to Huddersfield	60 mins	No Service	No Service	No Service
183	Marsden Hard End to Huddersfield	60 mins	60 mins	60 mins	60 mins
184	Manchester Piccadilly to Huddersfield	60 mins	Once approx. 19:40	120 mins	No Service
185	Marsden Dirker to Huddersfield	20 mins	60 mins	60 mins	60 mins
389	Meltham to Wilberlee	2 services at 08:31 & 15:20	No Service	No Service	No Service
938	Marsden to Blackmoorfoot	120 mins	No Service	No Service	No Service

Table 4/1 – Summary of bus services

4.5.4 The table shows that there are regular services available within a 400m walking distance of the site. During the Monday to Saturday daytime period there are up to 7 services per hour available whilst during the evening period there are up to 3 services per hour. During Sunday daytime period there are up to 3 services per hour available whilst in the evening periods there are 2 services per hour available.

4.5.5 It is considered that the proximity of bus stops to the site, combined with the quality of services available makes travel by bus a feasible alternative to travel by car.

4.6 Accessibility by Rail

4.6.1 The closest train station to the development site is Slaithwaite station which is located approximately 1.7km west of the site.

4.6.2 The station is accessible on foot and/or by cycle via the canal tow path footway or on street via Manchester Road. The distance from the site to the railway station via the canal tow path is 1.8km whilst the distance via Manchester Road is 2.5km.

4.6.3 The station is also accessible via bus with bus services 181 and 389 calling within the immediate vicinity of the railway station. Further to these buses the services 183, 184 and 185 all call at the bus stops on Manchester Road in Slaithwaite which are located within approximately 600m walking distance of the railway station.

4.6.4 Slaithwaite Railway Station is unstaffed and is under the management of Northern Rail. The station has sheltered bicycle parking in the form of stands with storage spaces for up the 10 bicycles. The station has CCTV which covers the cycle storage. The station has up to 15 car parking spaces. The station benefits from step free access and there is a ramp available at the station for train access.

4.6.5 A summary of the service operating on from the station is provided below;

Route	Hourly Frequency		
	Mon - Sat Daytime	Mon - Sat Evening	Sunday
Huddersfield to Manchester Piccadilly	1	1	1

Table 4/2 – Summary of services that operate from Slaithwaite and frequency

4.7 Summary

4.7.1 The site is located within walking and cycling distance of a range of amenities and is surrounded by a quality pedestrian and cycle infrastructure which will encourage the uptake of active travel. Furthermore, local public transport services are frequent and provide a connection between the site and Huddersfield town centre where additional public transport options are available.

5 Multimodal Trip Generations

5.1 In order to estimate the multimodal trip generation potential of the proposed development, trip rates have been derived using the TRICS database. To ensure that the forecast generations are representative of the development proposals, separate searches have been undertaken for the different elements of the development (apartments and dwellings). Full copies of the TRICS outputs are contained at **Appendix E**.

5.2 Based on a residential development comprising 63 apartments and 64 dwellings, the following network peak hour and daily multimodal traffic generations could be expected;

	Mode of Travel	Modal Split	Generations
AM Peak Period	Pedestrians	21.8%	24
	Cyclists	2.8%	3
	Public Transport Users	6.2%	7
	Vehicle Occupants	69.2%	78
	Total People Trips	100%	112
PM Peak Period	Pedestrians	20.2%	19
	Cyclists	2.2%	2
	Public Transport Users	5.0%	5
	Vehicle Occupants	72.6%	69
	Total People Trips	100%	95
Daily	Pedestrians	23.1%	201
	Cyclists	2.6%	23
	Public Transport Users	4.5%	39
	Vehicle Occupants	69.8%	608
	Total People Trips	100%	871

Table 5/1 –Multimodal Traffic Generations (63 apartments and 64 dwellings)

5.3 Based on the TRICS data the development could be expected to generate 30.8% travel by walking, cycling and public transport modes in the AM peak hour and 27.4% in the PM peak hour. Over a 12 hour weekday period 30.2% of travel could be by sustainable modes.

5.4 This modal split has been compared to the 2011 Census travel to work data for the 'Kirklees 049' Middle Super Output Area (MSOA), Kirklees and England, as summarised in the following table:

	Kirklees 049	Kirklees	England
Method of Travel to Work	**% working**	**% working**	**% working**
Work Mainly at or From Home	5.1%	4.5%	5.4
Underground, Metro, Light Rail, Tram	0.1%	0.1%	4.1
Train	6.3%	2.8%	5.3
Bus, Minibus or Coach	6.4%	7.9%	7.5
Taxi	0.5%	0.9%	0.5
Motorcycle, Scooter or Moped	1.1%	0.7%	0.8
Driving a Car or Van	64.9%	65.3%	57.0
Passenger in a Car or Van	5.1%	6.5%	5.0
Bicycle	1.4%	1.0%	3.0
On Foot	8.9%	9.9%	10.7
Other Method of Travel to Work	0.3%	0.5%	0.6

Table 5/2 – 2011 Census: Method of Travel to Work Data

5.5 It should be noted that the site is actually located on the western boundary of an adjacent MSOA (Kirklees 041). This area predominantly includes the villages of Golcar and Wellhouse on the northern side of the railway line, as illustrated below:

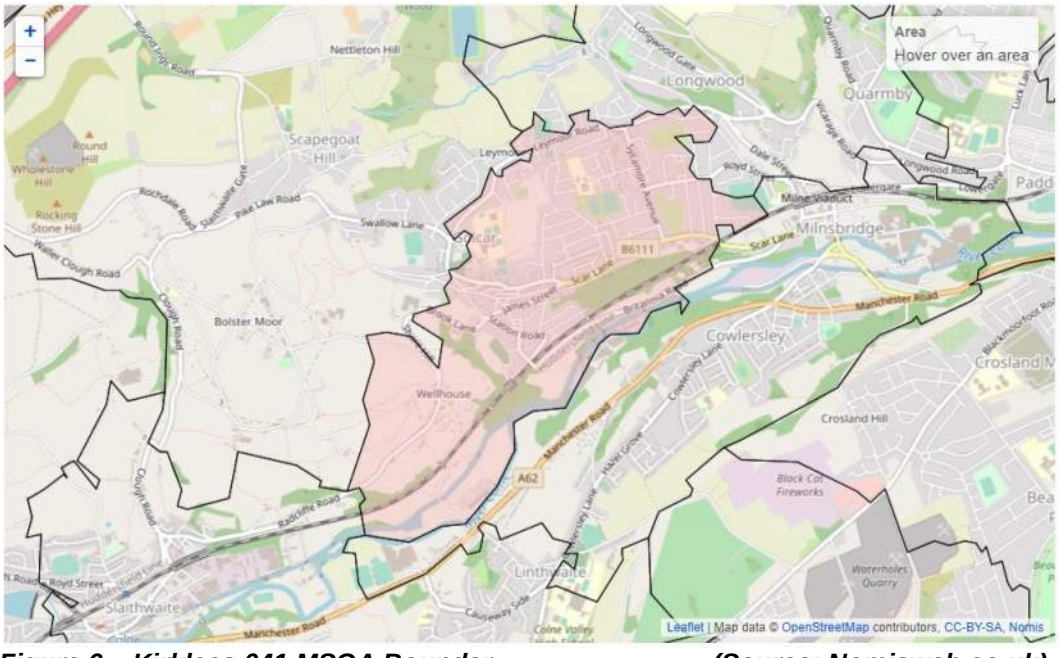


Figure 6 – Kirklees 041 MSOA Boundary ***(Source: Nomisweb.co.uk)***

5.6 With regards to predicting modal split and traffic distribution, it is considered that the site's location does not reflect the remainder of the MSOA and that a more representative assessment would be gained from evaluating the 'Kirklees 049' MSOA which includes the adjacent villages of Linthwaite and Slaithwaite, both of which are situated along the A62 corridor.

5.7 The data in the Table 5/2 indicates that in the 'Kirklees 049' MSOA, 70% of people travel to work as either the driver (64.9%) or passenger (5.1%) in a car / van. The daily modal split estimated by the TRICS data in Table 5/1 (69.8% daily vehicle occupants) is therefore considered to be indicative of existing travel patterns for the local area.

5.8 Actual peak hour demand from the development for walking, cycling and public transport is predicted to be modest and at a level which is unlikely to have a detrimental impact within the existing infrastructure provision.

6 Traffic Impact Assessment

6.1 This section of the report seeks to establish the potential number and distribution of vehicular traffic movements generated by the proposed residential development and their likely impact upon the local highway network.

6.2 Base Traffic Flows

6.2.1 For the purpose of this assessment Sanderson Associates conducted a fully classified traffic survey at the A62 / Bargate / Coldwell Street / Linthwaite Business Centre signalised junction. The network peak hours were observed to be 08:00-09:00 in the AM and 16:45-17:45 in the PM, and the surveyed flows are shown below:

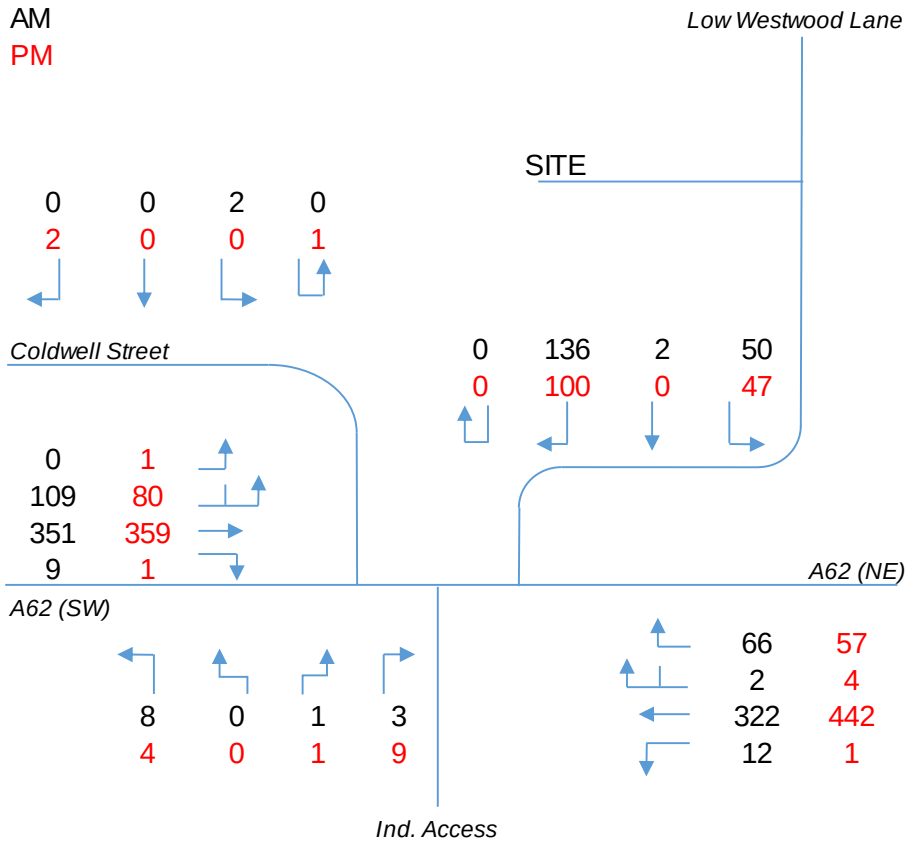


Figure 7 – 2019 Surveyed Traffic Flows (PCU's)

6.3 Development Traffic Generations

6.3.1 To give an indication of the potential number of vehicle trips generated by the development, average vehicle trip rates have been extracted from the TRICS data referred to in the previous section of this report. The resulting trip rates and generations for 63 apartments and 64 dwellings are shown in the following tables;

64 Dwellings	Trip Rate per dwelling			Trip Generations		
	Arrivals	Departures	Two-way	Arrivals	Departures	Total
AM Peak	0.137	0.406	0.543	9	26	35
PM Peak	0.319	0.126	0.445	20	8	28

Table 6/1 – Development Traffic Generations (64 dwellings)

63 Apartments	Trip Rate per dwelling			Trip Generations		
	Arrivals	Departures	Two-way	Arrivals	Departures	Total
AM Peak	0.073	0.263	0.336	5	17	22
PM Peak	0.263	0.119	0.382	17	7	24

Table 6/2 – Development Traffic Generations (63 apartments)

Total	Trip Generations		
	Arrivals	Departures	Total
AM Peak	14	43	57
PM Peak	37	15	52

Table 6/3 – Total Development Traffic Generations

6.3.2 Based on the TRICS data, the proposed development of 63 apartments and 64 dwellings could be expected to result in 57 vehicle movements (two-way) in the AM peak hour and 52 vehicle movements (two-way) in the PM peak hour.

6.3.3 However, as part of pre-application discussions with Kirklees Council, it was requested that an assessment be undertaken based upon a two-way trip rate of 0.7 per unit (dwelling / apartment) with a 60 / 40 split between arrivals and departures. The trip rates and resulting generations based on these assessment principles are summarised below:

127 units	Trip Rate per dwelling			Trip Generations		
	Arrivals	Departures	Two-way	Arrivals	Departures	Total
AM Peak	0.28	0.42	0.7	36	53	89
PM Peak	0.42	0.28	0.7	53	36	89

Table 6/4 – Development Traffic Generations (Kirklees Council Trip Rates)

6.3.4 As can be seen from the data in Table 6/4, based on Kirklees' assessment principles the development could potentially generate in the order of 89 vehicle movements (two-way) in each peak period.

6.3.5 In order to provide a robust assessment, the traffic flows identified in Table 6/4 are to be used for the purpose of the junction modelling (detailed in Chapter 7).

6.4 Development Traffic Distribution

6.4.1 With regards to distribution, Kirklees requested that the assessment should assume that 20% of traffic would travel to / from the north via Low Westwood Road and the remaining 80% would pass through the A62 / Bargate / Coldwell St signalised junction; distribution from this point should then be guided by surveyed traffic flows at the junction.

6.4.2 The resulting distributions are illustrated in Figure 8, overleaf.

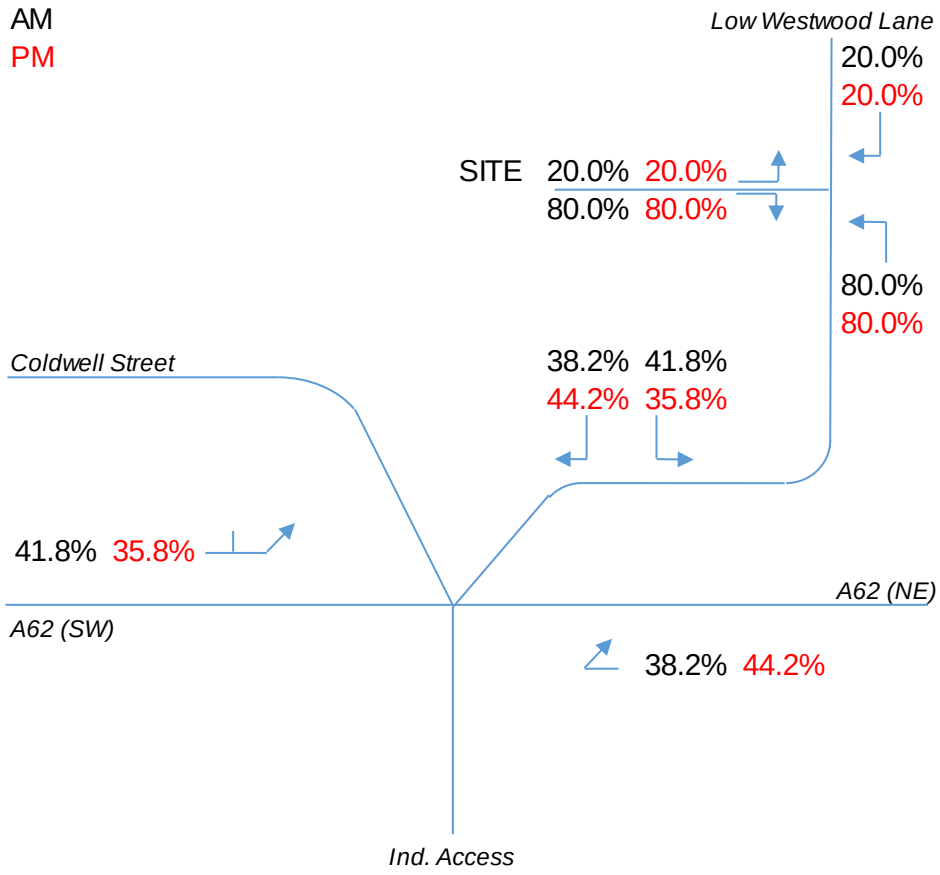


Figure 8 – Traffic Distribution (Kirklees assumptions)

6.4.3 As a sensitivity test, an additional traffic distribution assessment has been undertaken using 2011 Census: Origin / Destination statistics (Dataset: WU03EW) which identifies 'Location of usual residence and place of work by method of travel to work' at Middle Super Output Area (MSOA) level. This data identifies the existing travel to work patterns of people who reside within the sites representative MSOA, which as previously described is considered to be ‘Kirklees 049’.

6.4.4 As the MSOA data includes all nationwide destinations, the results of the search have been refined to exclude all MSOA's which generate less than 10 trips which equates to less than 0.8% of the overall sample. It is considered that this excluded information is not relevant in terms of establishing a 'likely' distribution of traffic.

6.4.5 The likely traffic route assignments between the site and the identified MSOA's have been determined using online route mapping and Population Centroid Data which identifies the centre of each MSOA based upon its residential population.

6.4.6 The table included at **Appendix F** details the percentage draw from each surrounding MSOA and identifies the suggested route assignment on the local highway network.

6.4.7 The Census based distribution assessment indicates that 21.5% would likely travel via Low Westwood Road and of the remaining 78.5%; 47.5% would travel to / from the north-east (towards Huddersfield) and 30.9% would travel to / from the south-west (towards Slaithwaite).

6.4.8 It is considered that the results of the Census based distribution assessment validate the assumptions made by Kirklees Council. Using the vehicle trip rates and distributions set out by the Council, the anticipated peak hour development traffic flows are as follows;

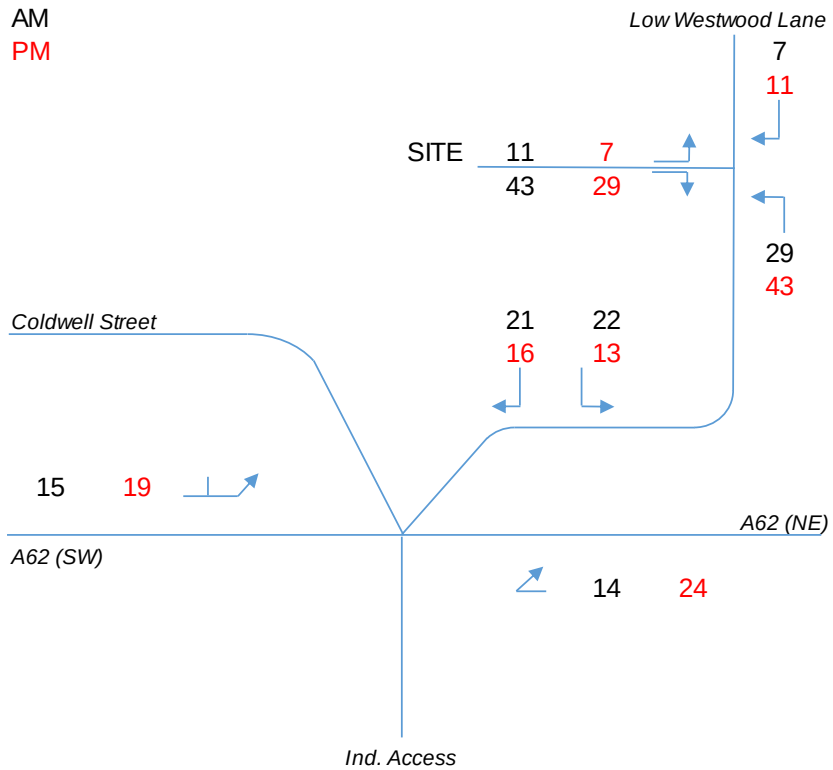


Figure 9 – Peak Hour Development Traffic Flows

6.5 Traffic Growth

6.5.1 It is proposed to assess the development impact at an opening year of 2019 and a design year of 2024 to account for 5 years base traffic growth.

6.5.2 To obtain the base future year traffic flows for the assessment of 2024, growth factors have been generated utilising TEMPRO (V.7.2) Table AF15 adjusted against NTEM Dataset 7.2 of the Department for Transport's National Traffic Model.

6.5.3 The local growth factors for the 5 year period are summarised below:-

	2019 – 2024
Weekday AM	1.0753
Weekday PM	1.0739

Table 6/5 – TEMPRO Growth Factors

6.6 Committed Development

6.6.1 During scoping discussions with Kirklees Council, no committed developments were identified for consideration within this assessment.

7 Junction Modelling

7.1 Using the base traffic flow data and the proposed development flows set out in Chapter 6 of this report, a capacity assessment has been undertaken of the A62 / Bargate / Coldwell Street signalised junction using the computer modelling program Linsig v3.2.

7.2 The controller specifications for the junction were obtained from Kirklees Council and details of the junction operation abstracted from them.

7.3 For assessment purposes the following development scenarios have been assessed:

- 2019 Base Traffic
- 2019 Base Traffic + Proposed Development
- 2024 Base Traffic + Proposed Development

7.4 The capacity threshold for a traffic signal controlled junction is a degree of saturation of 90%. This threshold is consistent with established traffic signal practice. It should be noted that this represents the practical rather than the absolute limit for the junction. The practical limit of 90% retains 10% spare capacity whereas the absolute limit stands at 100%.

7.5 The results of the scenarios modelled are summarised in the following tables with the full results included at **Appendix G**.

		2019 AM Base		2019 AM Base + Development		2024 AM Base		2024 AM Base + Development	
Item	**Lane Description**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**
Network: Westwood Mill Linthwaite	-	**63.00%**	-	**74.20%**	-	**70.10%**	-	**83.00%**	-
A62 Manchester Road / Bargate Linthwaite	-	**63.00%**	-	**74.20%**	-	**70.10%**	-	**83.00%**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	61.20%	8.3	72.50%	10.5	70.10%	9.3	77.10%	11.7
2/1	Ind Estate Left Right Ahead Right2	7.70%	0.3	7.70%	0.3	8.40%	0.3	8.40%	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	57.00%	9.6	60.50%	10.3	61.30%	10.6	63.10%	11.1
4/1	Coldwell St Right Ahead Left Left2	1.40%	0.1	1.40%	0.1	1.40%	0.1	1.40%	0.1
5/1	Bargate Right Left Left2 Right2	63.00%	5.1	74.20%	6.8	67.80%	5.7	83.00%	8.1
		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90	
		PRC Over All Lanes (%): 42.8		PRC Over All Lanes (%): 21.3		PRC Over All Lanes (%): 28.5		PRC Over All Lanes (%): 8.4	

Table 7/1 – AM LinSig Results

7.5.1 The modelling results for the AM assessment scenarios show that even with 5 years base traffic growth and the addition of development traffic, the junction would remain to operate with practical reserve capacity.

		2019 PM Base		2019 PM Base + Development		2024 PM Base		2024 PM Base + Development	
Item	**Lane Description**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**	**Deg Sat (%)**	**Mean Max Queue (pcu)**
Network: Westwood Mill Linthwaite	-	**60.9%**	-	**71.6%**	-	**65.7%**	-	**76.1%**	-
A62 Manchester Road / Bargate Linthwaite	-	**60.9%**	-	**71.6%**	-	**65.7%**	-	**76.1%**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	60.9%	10.2	71.6%	12.4	65.7%	11.3	75.6%	13.8
2/1	Ind Estate Left Right Ahead Right2	9.1%	0.4	9.1%	0.4	9.7%	0.4	9.7%	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	49.5%	8.3	53.0%	9.0	53.2%	9.1	55.4%	9.7
4/1	Coldwell St Right Ahead Left Left2	2.1%	0.1	2.1%	0.1	2.1%	0.1	2.1%	0.1
5/1	Bargate Right Left Left2 Right2	59.9%	4.1	67.5%	5.1	63.9%	4.5	76.1%	5.9
		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90	
		PRC Over All Lanes (%): 47.8		PRC Over All Lanes (%): 25.7		PRC Over All Lanes (%): 36.9		PRC Over All Lanes (%): 18.3	

Table 7/2 – PM LinSig Results

7.5.2 The modelling results for the PM assessment scenarios also show that with 5 years base traffic growth and the addition of development traffic, the junction would remain to operate with a material degree of practical reserve capacity.

8 Summary and Conclusions

8.1 Sanderson Associates (Consulting Engineers) Ltd. has been appointed by Westwood Wilson Ltd. to advise on traffic and transportation matters surrounding the residential development proposals at Westwood Mill, Linthwaite, Huddersfield.

8.2 This Transport Assessment has been prepared to support a full planning application for the proposals. The scope of the assessment has been agreed with Kirklees Council.

8.3 An analysis of accident data has identified that there are no apparent accident trends in terms of either type or location that would likely be exacerbated by the development proposals.

8.4 The site's existing access points are proposed to be retained.

8.5 A total of 235 car parking spaces are to be provided throughout the site, as well as a cycle store with a capacity for 50 cycles. The provisions have been reviewed by the LHA and are considered to be acceptable.

8.6 The site is considered to be sustainably located, providing a good level of accessibility to local amenities by both 'active' and public transport modes of travel.

8.7 The predicted level of additional demand for walking, cycling and public transport generated by the development proposals is modest and can be readily accommodated within the existing highway infrastructure.

8.8 In terms of vehicle movements, the overall development could potentially generate in the order of 89 additional vehicle trips (two-way) in the AM & PM peak periods.

8.9 A junction capacity assessments has been undertaken at the A62 / Bargate / Coldwell Street signalised junction. The results of the modelling predict that the junction will operate with reserve capacity in a future design year of 2024 with development traffic.

8.10 The conclusion drawn from this assessment is that the residual cumulative impact of the development proposals could not be classed as *"severe"* under the terms of the NPPF paragraph 109. It is, therefore, concluded that there is no highway related reason why the development should not gain planning approval. The LPA are requested to confirm the findings of this report.

APPENDIX A

Kirklees Council Pre-Application Consultation

KIRKLEES COUNCIL
TOWN AND COUNTRY PLANNING ACT 1990
HIGHWAYS DEVELOPMENT MANAGEMENT

PLANNING REF 2018/00/20130/W0/MW
CATEGORY PRE APP

PROPOSAL PRE APP FOR PART DEMOLITION AND PART CONVERSION TO FORM 64 APARTMENTS AND 62 DWELLINGS

LOCATION WESTWOOD MILL
LOWESTWOOD LANE
LINTHWAITE
HUDDERSFIELD
HD7 5UN

APPLICANT MALCOM SIZER PLANNING

HDC Ref. No. K2-2/12

Highway Officer Ryan Kinder
O. S. Ref. 095 145
Date Received 28/03/2018
Target Date 18/04/2018

Date Returned 24/04/2018
Decision

Route No. Unclassified
Road Name LOWESTWOOD LANE
Adopted Yes
Footpath No
Highway scheme No
CONSERVATION AREA
Potential Committee
Local Plan Allocation
Checked by / Sam Lewis 28/03/2018

2018/20130 Westwood Mill, Linthwaite.

Highway Development Management's (HDM) comments for the above application as follows:

Pre planning application for part demolition of listed building and part conversion to form 64 apartments and 62 dwellings.

The application is supported with an indicative layout (ref 538-01-PLA301).

In line with the councils parking policy the following parking provision should be provided:

2 - 3 bedroom dwelling: 2 spaces
4+ bedroom dwelling: 3 spaces
1 visitor space per 4 residential units
1 cycle space per residential unit (desirable)

Garage dimensions (Internal):

Single: 6.0m long x 3.0m wide
Double: 6.0m long x 5.0m wide

1 electric vehicle charging connection point per dwelling (normally within a garage).

Provision for the storage of waste to the rear/side of each property should be indicated, along with bin collection points at the end of all private driveways on communal collection points.

All turning heads within the site should be of a size to accommodate an 11.85m refuse collection vehicle, demonstrated via swept path analysis.

A stage 1 Road Safety Audit covering all aspects of the design would be required and submitted as part of the access and internal layout.

KIRKLEES COUNCIL
TOWN AND COUNTRY PLANNING ACT 1990 **PLANNING REF** 2018/00/20130/W0/MW
HIGHWAYS DEVELOPMENT MANAGEMENT **CATEGORY** PRE APP

A scoping brief for the Transport assessment and Travel Plan should be agreed fully with HDM prior to submission.

The provision for metro cards for the development should be taken into consideration, WYCA will be consulted at the planning application stage and will recommend a contributory sum accordingly.

UTC sections comments as follows:

Given the number of proposed units on the site, UTC would expect to see a quantitative assessment of the nearby A62 Manchester Road / Bargate traffic signal controlled junction undertaken in Linsig. The controller specification can be provided for a fee of £283.00.
A contribution of £8,400 towards four Bluetooth journey time detectors (£2,100 each) for A62 Manchester Road would be sought by UTC. These detectors would link into the existing Bluetooth journey time network to help provide information relating to route choices and for monitoring purposes.

Section 38 comments as follows:

Road to be designed to adoptable standard having a minimum width of 5.5m.

Gradients to be kept to maximum of 1:20, where possible.

Driveway and private drives to be 1:10 maximum gradient

Crossfalls to be 1:40.

All private drives and driveways that fall towards the public highway (or highway to be adopted) to have surface water drainage to avoid surface water running on to the public highway.

Where ramps are placed to demarcate different surfaces or road types, the footways should continue beyond the ramp to provide for level pedestrian crossing of the carriageway and appropriate tactile paving provided.

Where ramps or other traffic calming features are proposed, they should be positioned to avoid creating or exacerbating captive low points.

Any retaining structures prosed for adoption or in close proximity may be subject to a structural AIP. Please provide all information on any structures (retaining walls, large diameter pipes etc).

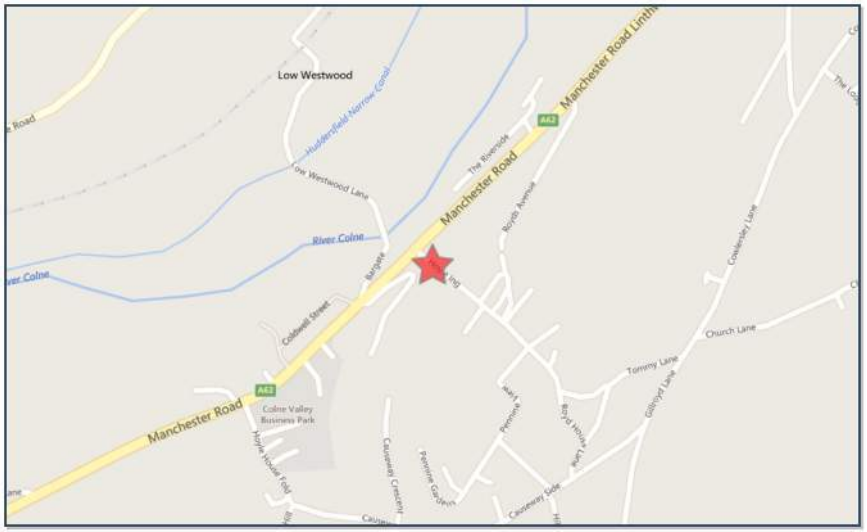
APPENDIX B

Crashmap Accident Data

crashmap.co.uk

Crash Date:	Tuesday, November 15, 2016	**Time of Crash:**	5:25:00 PM	**Crash Reference:**	**2016133BF1171**

Highest Injury Severity:	Slight	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	Kirklees			**Number of Vehicles:**	2
Local Authority:	Kirklees			**OS Grid Reference:**	409792 414505
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	12	Unknown	Unknown	Vehicle is parked in the carriageway	Nearside	Other	None	None
1	Car (excluding private hire)	6	Female	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	Wall or fence

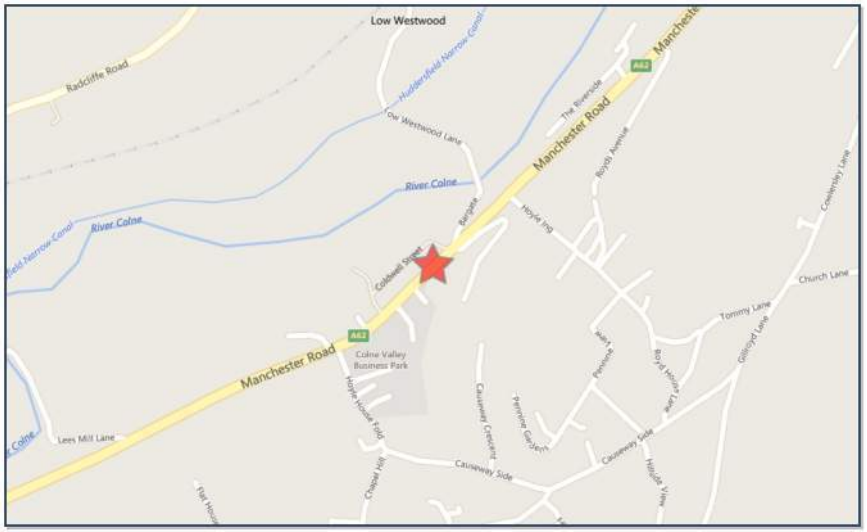
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

crashmap.co.uk

Crash Date:	Wednesday, June 25, 2014	**Time of Crash:**	4:15:00 PM	**Crash Reference:**	**20141316P0897**

Highest Injury Severity:	Slight	**Road Number:**	A62	**Number of Casualties:**	1
Highway Authority:	Kirklees			**Number of Vehicles:**	2
Local Authority:	Kirklees			**OS Grid Reference:**	409648 414422
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	1	Female	56 - 65	Vehicle is waiting to proceed normally but is held up	Back	Other	None	None
1	Van or goods vehicle 3.5 tonnes mgw and under	6	Male	21 - 25	Vehicle is slowing down or stopping	Front	Other	None	None

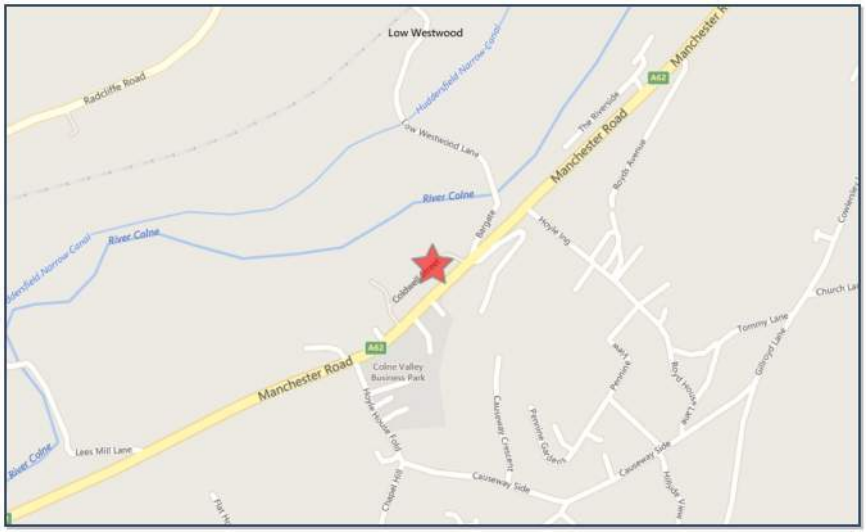
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	56 - 65	Unknown or other	Unknown or other

crashmap.co.uk

Crash Date:	Wednesday, March 16, 2016	**Time of Crash:**	6:15:00 PM	**Crash Reference:**	**20161333G1205**

Highest Injury Severity:	Serious	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	Kirklees			**Number of Vehicles:**	1
Local Authority:	Kirklees			**OS Grid Reference:**	409620 414440
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	13	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

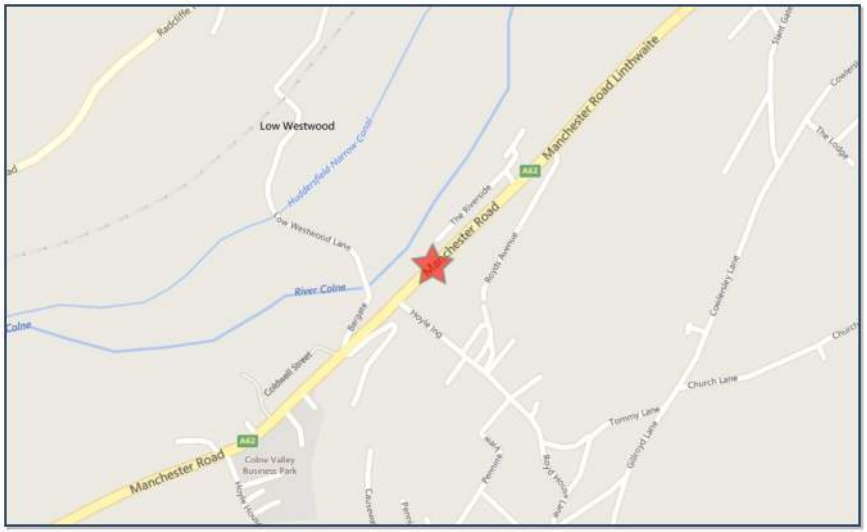
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Male	6 - 10	In carriageway, not crossing	In carriageway, stationary - not crossing (standing or playing)

crashmap.co.uk

Crash Date:	Thursday, September 22, 2016	**Time of Crash:**	3:24:00 PM	**Crash Reference:**	**20161339M1037**

Highest Injury Severity:	Serious	**Road Number:**	A62	**Number of Casualties:**	1
Highway Authority:	Kirklees			**Number of Vehicles:**	1
Local Authority:	Kirklees			**OS Grid Reference:**	409819 414581
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	12	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Commuting to/from work	None	None

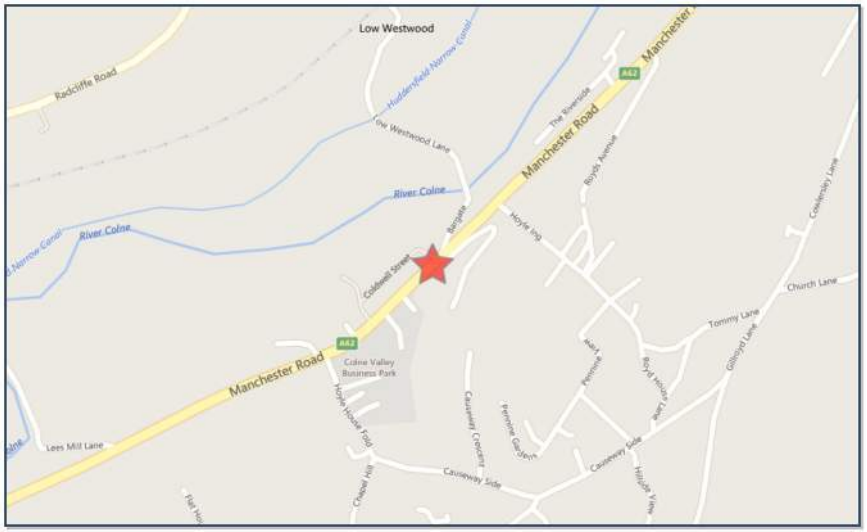
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Male	11 - 15	In carriageway, crossing elsewhere	Crossing from driver's nearside - masked by parked or stationary vehicle

crashmap.co.uk

Crash Date:	Sunday, February 24, 2013	**Time of Crash:**	1:28:00 PM	**Crash Reference:**	**2013130082686**

Highest Injury Severity:	Slight	**Road Number:**	A62	**Number of Casualties:**	1
Highway Authority:	Kirklees			**Number of Vehicles:**	2
Local Authority:	Kirklees			**OS Grid Reference:**	409665 414434
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/aboutthedata* and *www.crashmap.co.uk/home/definitions*

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Motorcycle over 50cc and up to 125cc	4	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Car (excluding private hire)	13	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Back	Other	None	None

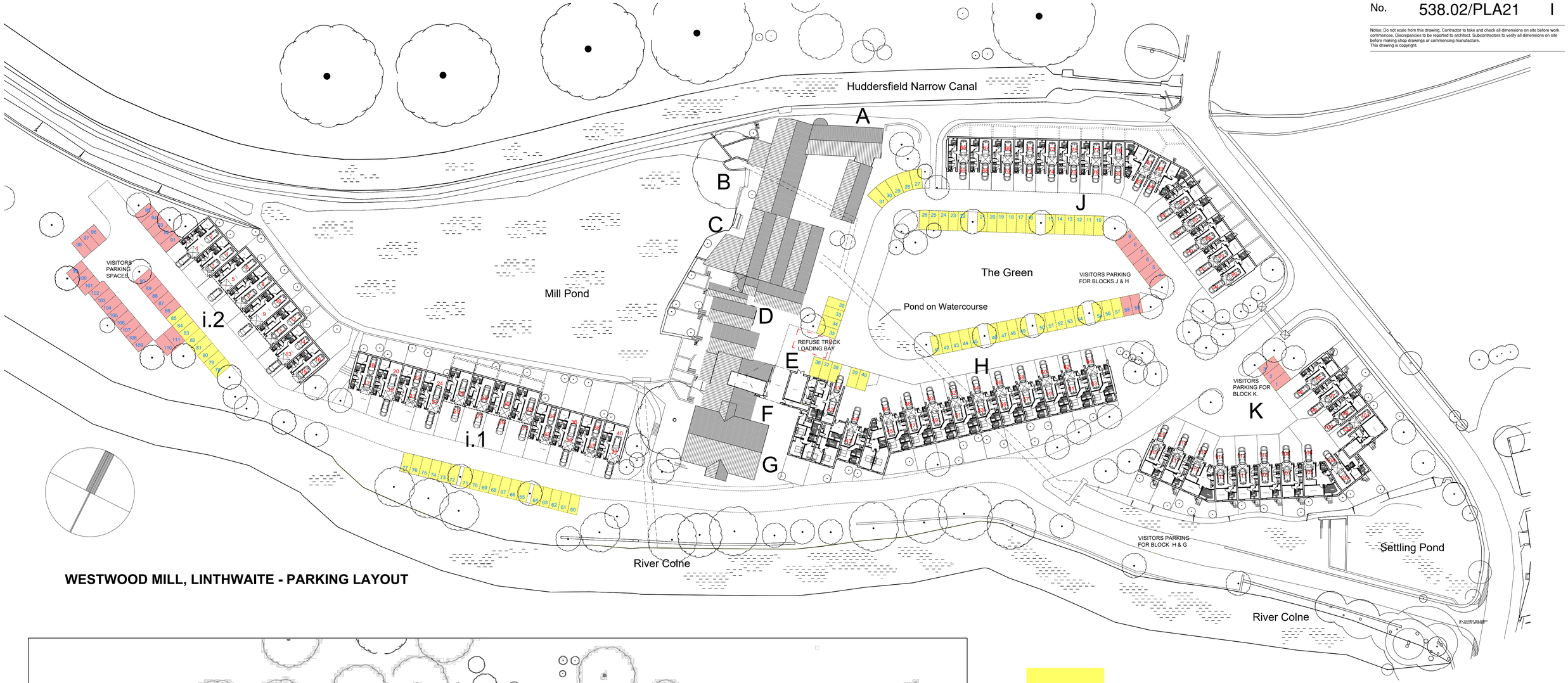
Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

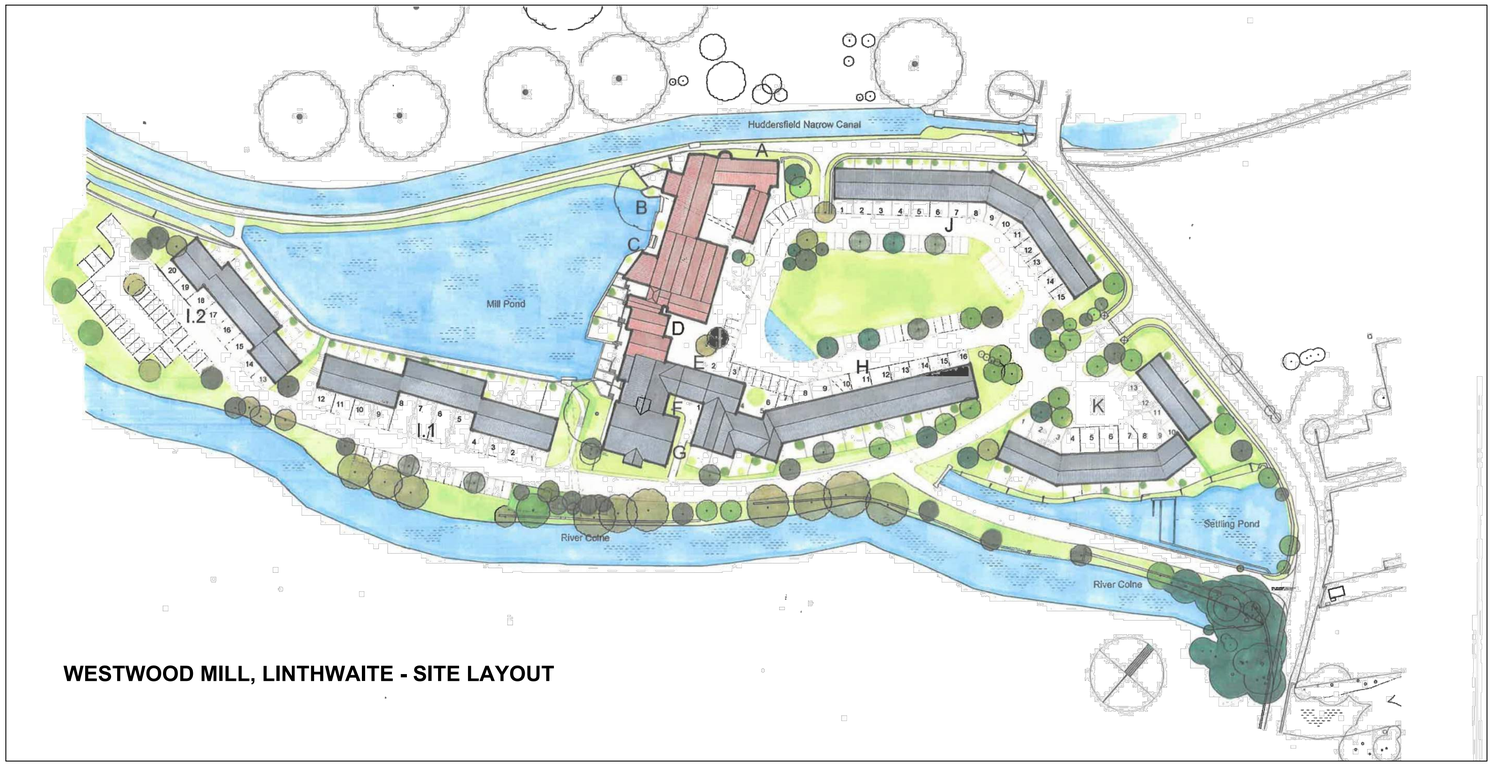
APPENDIX C

Proposed Site Layout

No. 538.02/PLA21 I



WESTWOOD MILL, LINTHWAITE - PARKING LAYOUT



WESTWOOD MILL, LINTHWAITE - SITE LAYOUT

Resident Parking Space

Visitors Parking Space. To be permeable shingles/ grass crate type material

0 5 10 15 25 50m
Scale 1:500

Rev	Description	Date	Initial
I	NEW KEY FOR VISITORS PARKING	24/02/20	DP
H	NEW TURNING HEAD	20/02/20	DP
G	NEW GF LAYOUT	30/01/20	DP
F	AMENDMENTS TO CARPARK AND ROAD	12/12/19	DP
E	NEW PARKING LAYOUT	14/11/19	DP
D	NEW VISUAL	14/03/19	DP
C	GENERAL AMENDMENTS	30/01/19	DP
B	NEW PAGE LAYOUT	19/12/18	DP
A	NEW COLOURED SCHEME	15/12/18	DP

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F 01749 34 66 77

Client: **WESTWOOD WILSON LTD.**

Project: **WESTWOOD MILL LINTHWAITE**

Title: **CARPARK ARRANGEMENT & OVERALL SITE PLAN**

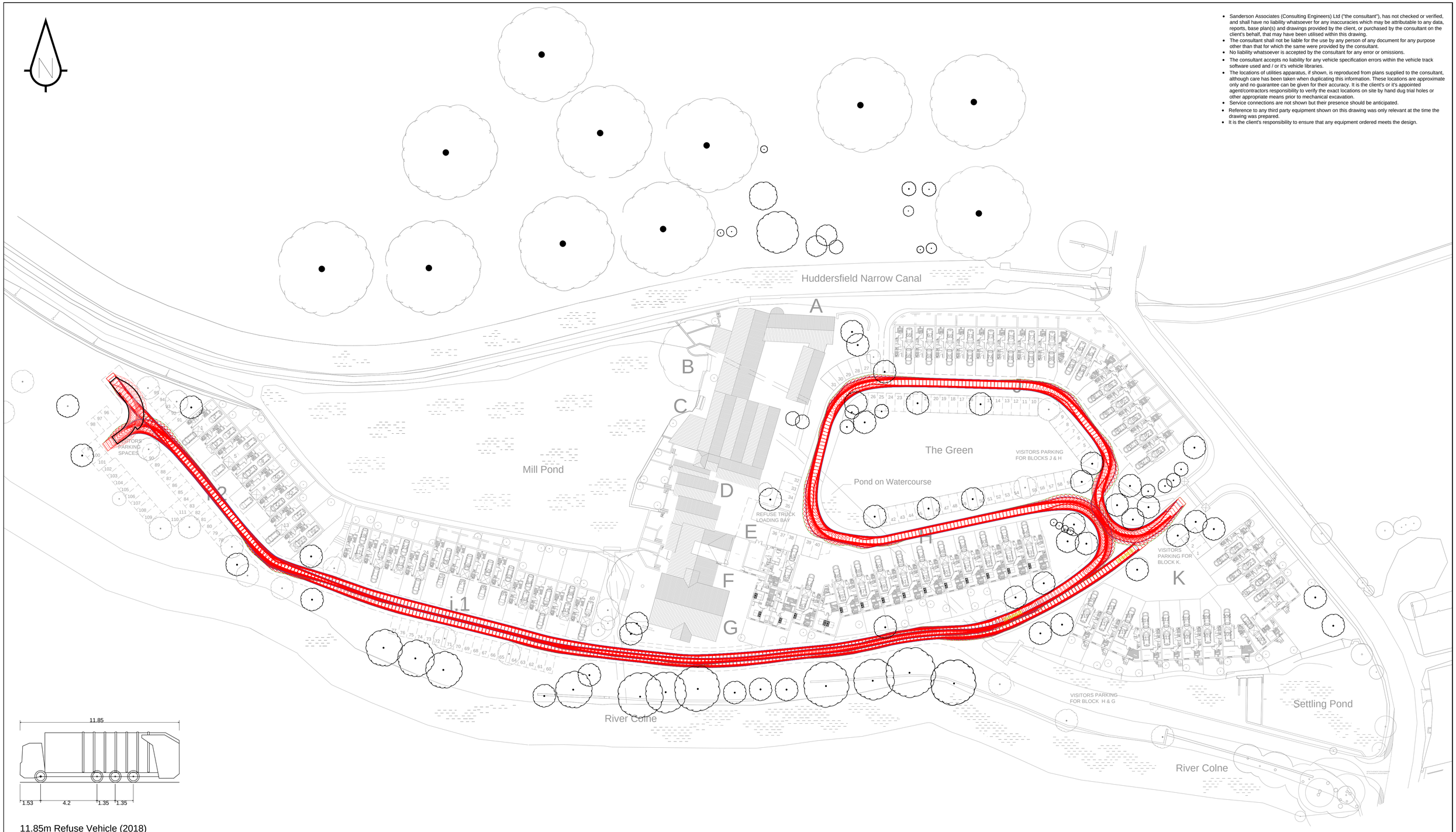
Date: DECEMBER '18
Scale: 1:500@A1
Drawn: DP

No. 538.02/PLA21 I

APPENDIX D

Drawing: 10821-001 Rev B - Swept Path of Large Refuse Vehicle

- Sanderson Associates (Consulting Engineers) Ltd ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.
- The locations of utilities apparatus, if shown, is reproduced from plans supplied to the consultant, although care has been taken when duplicating this information. These locations are approximate only and no guarantee can be given for their accuracy. It is the client's or it's appointed agent/contractors responsibility to verify the exact locations on site by hand dug trial holes or other appropriate means prior to mechanical excavation.
- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.



11.85m Refuse Vehicle (2018)	
Overall Length	11.850m
Overall Width	2.500m
Overall Body Height	3.749m
Min Body Ground Clearance	0.302m
Track Width	2.490m
Lock to lock time	4.00s
Wall to Wall Turning Radius	11.000m

sanderson associates (consulting engineers) ltd
Highways | Traffic | Transportation | Water
T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

Client: Westwood Wilson Ltd

Project Title: Westwood Mill, Linthwaite

Drawing Title: Swept Path of Large Refuse Vehicle

Rev	Amendment	Drawn	Date	Checked
B	Layout Amended	BL	Feb 2020	SB
A	Layout Amended	BL	Feb 2020	SB

Scale: 1:500	Drawn By: BL
Drawing Size: A1	Checked By: SB
Date: Jan 2019	Approved By: SB
	Drawing Number: 10821-001
	Rev: B

FILE REF:

APPENDIX E

TRICS data

Calculation Reference: AUDIT-109307-190108-0114

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
03	SOUTH WEST		
	DV	DEVON	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	2 days
	SF	SUFFOLK	2 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
	WK	WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	2 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
	GM	GREATER MANCHESTER	1 days
	MS	MERSEYSIDE	1 days
09	NORTH		
	DH	DURHAM	1 days
	TW	TYNE & WEAR	1 days
10	WALES		
	PS	POWYS	1 days
	VG	VALE OF GLAMORGAN	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	HI	HIGHLAND	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 7 to 71 (units:)
Range Selected by User: 6 to 805 (units:)

Parking Spaces Range: Selected: 24 to 104 Actual: 12 to 1726

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 20/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	6 days
Tuesday	6 days
Wednesday	6 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	25 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Suburban Area (PPS6 Out of Centre) 15

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	24
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	25 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	8 days
10,001 to 15,000	7 days
15,001 to 20,000	5 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	3 days
50,001 to 75,000	3 days
75,001 to 100,000	8 days
100,001 to 125,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	4 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	11 days
1.1 to 1.5	14 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	2 days
No	23 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	25 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CA-03-A-05 DETACHED HOUSES CAMBRIDGESHIRE
EASTFIELD ROAD
PETERBOROUGH

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY *17/10/16* *Survey Type: MANUAL*

2 CH-03-A-08 DETACHED CHESHIRE
WHITCHURCH ROAD
CHESTER
BOUGHTON HEATH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 11
Survey date: TUESDAY *22/05/12* *Survey Type: MANUAL*

3 CH-03-A-09 TERRACED HOUSES CHESHIRE
GREYSTOKE ROAD
MACCLESFIELD
HURDSFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 24
Survey date: MONDAY *24/11/14* *Survey Type: MANUAL*

4 DH-03-A-01 SEMI DETACHED DURHAM
GREENFIELDS ROAD
BISHOP AUCKLAND

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 50
Survey date: TUESDAY *28/03/17* *Survey Type: MANUAL*

5 DV-03-A-01 TERRACED HOUSES DEVON
BRONSHILL ROAD
TORQUAY

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 37
Survey date: WEDNESDAY *30/09/15* *Survey Type: MANUAL*

6 ES-03-A-02 PRIVATE HOUSING EAST SUSSEX
SOUTH COAST ROAD
PEACEHAVEN

Edge of Town
Residential Zone
Total Number of dwellings: 37
Survey date: FRIDAY *18/11/11* *Survey Type: MANUAL*

7 FA-03-A-01 SEMI-DETACHED/TERRACED FALKIRK
MANDELA AVENUE
FALKIRK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 37
Survey date: THURSDAY *30/05/13* *Survey Type: MANUAL*

8 GM-03-A-10 DETACHED/SEMI GREATER MANCHESTER
BUTT HILL DRIVE
MANCHESTER
PRESTWICH
Edge of Town
Residential Zone
Total Number of dwellings: 29
Survey date: WEDNESDAY *12/10/11* *Survey Type: MANUAL*

9 HC-03-A-17 HOUSES & FLATS HAMPSHIRE
CANADA WAY
LIPHOOK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 36
Survey date: THURSDAY *12/11/15* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 HI-03-A-14 SEMI-DETACHED & TERRACED HIGHLAND
KING BRUDE ROAD
INVERNESS
SCORGUIE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 40
Survey date: WEDNESDAY *23/03/16* *Survey Type: MANUAL*

11 LN-03-A-03 SEMI DETACHED LINCOLNSHIRE
ROOKERY LANE
LINCOLN
BOULTHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 22
Survey date: TUESDAY *18/09/12* *Survey Type: MANUAL*

12 MS-03-A-03 DETACHED MERSEYSIDE
BEMPTON ROAD
LIVERPOOL
OTTERSPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 15
Survey date: FRIDAY *21/06/13* *Survey Type: MANUAL*

13 NF-03-A-01 SEMI DET. & BUNGALOWS NORFOLK
YARMOUTH ROAD
CAISTER-ON-SEA

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 27
Survey date: TUESDAY *16/10/12* *Survey Type: MANUAL*

14 NF-03-A-03 DETACHED HOUSES NORFOLK
HALING WAY
THETFORD

Edge of Town
Residential Zone
Total Number of dwellings: 10
Survey date: WEDNESDAY *16/09/15* *Survey Type: MANUAL*

15 NY-03-A-08 TERRACED HOUSES NORTH YORKSHIRE
NICHOLAS STREET
YORK

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 21
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

16 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD
RIPON

Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY *17/09/13* *Survey Type: MANUAL*

17 PS-03-A-02 DETACHED/SEMI-DETACHED POWYS
GUNROG ROAD
WELSHPOOL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 28
Survey date: MONDAY *11/05/15* *Survey Type: MANUAL*

18 SF-03-A-04 DETACHED & BUNGALOWS SUFFOLK
NORMANSTON DRIVE
LOWESTOFT

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 7
Survey date: TUESDAY *23/10/12* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

19 SF-03-A-05 DETACHED HOUSES SUFFOLK
VALE LANE
BURY ST EDMUNDS

Edge of Town
Residential Zone
Total Number of dwellings: 18
Survey date: WEDNESDAY *09/09/15* *Survey Type: MANUAL*

20 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE
SANDCROFT
TELFORD
SUTTON HILL
Edge of Town
Residential Zone
Total Number of dwellings: 54
Survey date: THURSDAY *24/10/13* *Survey Type: MANUAL*

21 SH-03-A-06 BUNGALOWS SHROPSHIRE
ELLESMERE ROAD
SHREWSBURY

Edge of Town
Residential Zone
Total Number of dwellings: 16
Survey date: THURSDAY *22/05/14* *Survey Type: MANUAL*

22 SY-03-A-01 SEMI DETACHED HOUSES SOUTH YORKSHIRE
A19 BENTLEY ROAD
DONCASTER
BENTLEY RISE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY *18/09/13* *Survey Type: MANUAL*

23 TW-03-A-02 SEMI-DETACHED TYNE & WEAR
WEST PARK ROAD
GATESHEAD

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 16
Survey date: MONDAY *07/10/13* *Survey Type: MANUAL*

24 VG-03-A-01 SEMI-DETACHED & TERRACED VALE OF GLAMORGAN
ARTHUR STREET
BARRY

Edge of Town
Residential Zone
Total Number of dwellings: 12
Survey date: MONDAY *08/05/17* *Survey Type: MANUAL*

25 WK-03-A-02 BUNGALOWS WARWICKSHIRE
NARBERTH WAY
COVENTRY
POTTERS GREEN
Edge of Town
Residential Zone
Total Number of dwellings: 17
Survey date: THURSDAY *17/10/13* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.057	25	29	0.257	25	29	0.314
08:00 - 09:00	25	29	0.137	25	29	0.406	25	29	0.543
09:00 - 10:00	25	29	0.132	25	29	0.163	25	29	0.295
10:00 - 11:00	25	29	0.131	25	29	0.126	25	29	0.257
11:00 - 12:00	25	29	0.148	25	29	0.160	25	29	0.308
12:00 - 13:00	25	29	0.170	25	29	0.162	25	29	0.332
13:00 - 14:00	25	29	0.144	25	29	0.174	25	29	0.318
14:00 - 15:00	25	29	0.138	25	29	0.170	25	29	0.308
15:00 - 16:00	25	29	0.230	25	29	0.160	25	29	0.390
16:00 - 17:00	25	29	0.275	25	29	0.148	25	29	0.423
17:00 - 18:00	25	29	0.319	25	29	0.126	25	29	0.445
18:00 - 19:00	25	29	0.227	25	29	0.144	25	29	0.371
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.108			2.196			4.304

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	7 - 71 (units:)
Survey date date range:	01/01/10 - 20/11/18
Number of weekdays (Monday-Friday):	25
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.001	25	29	0.017	25	29	0.018
08:00 - 09:00	25	29	0.000	25	29	0.033	25	29	0.033
09:00 - 10:00	25	29	0.001	25	29	0.011	25	29	0.012
10:00 - 11:00	25	29	0.004	25	29	0.017	25	29	0.021
11:00 - 12:00	25	29	0.003	25	29	0.003	25	29	0.006
12:00 - 13:00	25	29	0.008	25	29	0.007	25	29	0.015
13:00 - 14:00	25	29	0.010	25	29	0.006	25	29	0.016
14:00 - 15:00	25	29	0.003	25	29	0.001	25	29	0.004
15:00 - 16:00	25	29	0.021	25	29	0.003	25	29	0.024
16:00 - 17:00	25	29	0.024	25	29	0.003	25	29	0.027
17:00 - 18:00	25	29	0.017	25	29	0.004	25	29	0.021
18:00 - 19:00	25	29	0.011	25	29	0.004	25	29	0.015
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.103			0.109			0.212

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.073	25	29	0.346	25	29	0.419
08:00 - 09:00	25	29	0.183	25	29	0.611	25	29	0.794
09:00 - 10:00	25	29	0.166	25	29	0.211	25	29	0.377
10:00 - 11:00	25	29	0.159	25	29	0.172	25	29	0.331
11:00 - 12:00	25	29	0.201	25	29	0.197	25	29	0.398
12:00 - 13:00	25	29	0.225	25	29	0.215	25	29	0.440
13:00 - 14:00	25	29	0.172	25	29	0.227	25	29	0.399
14:00 - 15:00	25	29	0.176	25	29	0.213	25	29	0.389
15:00 - 16:00	25	29	0.360	25	29	0.230	25	29	0.590
16:00 - 17:00	25	29	0.384	25	29	0.194	25	29	0.578
17:00 - 18:00	25	29	0.439	25	29	0.160	25	29	0.599
18:00 - 19:00	25	29	0.290	25	29	0.184	25	29	0.474
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.828			2.960			5.788

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.024	25	29	0.059	25	29	0.083
08:00 - 09:00	25	29	0.064	25	29	0.177	25	29	0.241
09:00 - 10:00	25	29	0.043	25	29	0.082	25	29	0.125
10:00 - 11:00	25	29	0.060	25	29	0.068	25	29	0.128
11:00 - 12:00	25	29	0.053	25	29	0.046	25	29	0.099
12:00 - 13:00	25	29	0.070	25	29	0.053	25	29	0.123
13:00 - 14:00	25	29	0.054	25	29	0.043	25	29	0.097
14:00 - 15:00	25	29	0.050	25	29	0.060	25	29	0.110
15:00 - 16:00	25	29	0.194	25	29	0.100	25	29	0.294
16:00 - 17:00	25	29	0.123	25	29	0.064	25	29	0.187
17:00 - 18:00	25	29	0.073	25	29	0.057	25	29	0.130
18:00 - 19:00	25	29	0.071	25	29	0.042	25	29	0.113
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.879			0.851			1.730

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.000	25	29	0.020	25	29	0.020
08:00 - 09:00	25	29	0.001	25	29	0.021	25	29	0.022
09:00 - 10:00	25	29	0.000	25	29	0.013	25	29	0.013
10:00 - 11:00	25	29	0.006	25	29	0.008	25	29	0.014
11:00 - 12:00	25	29	0.003	25	29	0.004	25	29	0.007
12:00 - 13:00	25	29	0.015	25	29	0.013	25	29	0.028
13:00 - 14:00	25	29	0.007	25	29	0.000	25	29	0.007
14:00 - 15:00	25	29	0.010	25	29	0.001	25	29	0.011
15:00 - 16:00	25	29	0.011	25	29	0.006	25	29	0.017
16:00 - 17:00	25	29	0.015	25	29	0.004	25	29	0.019
17:00 - 18:00	25	29	0.011	25	29	0.006	25	29	0.017
18:00 - 19:00	25	29	0.021	25	29	0.003	25	29	0.024
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.100			0.099			0.199

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	25	29	0.098	25	29	0.441	25	29	0.539
08:00 - 09:00	25	29	0.248	25	29	0.842	25	29	1.090
09:00 - 10:00	25	29	0.211	25	29	0.317	25	29	0.528
10:00 - 11:00	25	29	0.229	25	29	0.265	25	29	0.494
11:00 - 12:00	25	29	0.259	25	29	0.250	25	29	0.509
12:00 - 13:00	25	29	0.318	25	29	0.287	25	29	0.605
13:00 - 14:00	25	29	0.243	25	29	0.276	25	29	0.519
14:00 - 15:00	25	29	0.238	25	29	0.276	25	29	0.514
15:00 - 16:00	25	29	0.586	25	29	0.339	25	29	0.925
16:00 - 17:00	25	29	0.545	25	29	0.265	25	29	0.810
17:00 - 18:00	25	29	0.540	25	29	0.227	25	29	0.767
18:00 - 19:00	25	29	0.393	25	29	0.233	25	29	0.626
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.908			4.018			7.926

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-109307-190108-0157

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HF	HERTFORDSHIRE	1 days
	SC	SURREY	1 days
03	SOUTH WEST		
	BR	BRISTOL CITY	1 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	2 days
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	NT	NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days
09	NORTH		
	CB	CUMBRIA	2 days
	TV	TEES VALLEY	2 days
11	SCOTLAND		
	EB	CITY OF EDINBURGH	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 30 to 102 (units:)
Range Selected by User: 24 to 104 (units:)

Parking Spaces Range: Selected: 10 to 140 Actual: 10 to 140

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 05/06/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	3 days
Wednesday	6 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	12
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
Built-Up Zone	1
No Sub Category	6

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	13 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	1 days
10,001 to 15,000	2 days
20,001 to 25,000	3 days
25,001 to 50,000	7 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
125,001 to 250,000	4 days
250,001 to 500,000	6 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	10 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	13 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	13 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 BR-03-C-01 FLATS & TERRACED BRISTOL CITY
CLARENCE ROAD
BRISTOL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 102
Survey date: MONDAY *09/11/09* *Survey Type: MANUAL*

2 CA-03-C-02 BLOCK OF FLATS CAMBRIDGESHIRE
WESTFIELD ROAD
PETERBOROUGH
NETHERTON
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 44
Survey date: TUESDAY *18/10/11* *Survey Type: MANUAL*

3 CA-03-C-03 BLOCKS OF FLATS CAMBRIDGESHIRE
CROMWELL ROAD
CAMBRIDGE

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 82
Survey date: MONDAY *18/09/17* *Survey Type: MANUAL*

4 CB-03-C-02 BLOCK OF FLATS CUMBRIA
BRIDGE LANE
PENRITH

Edge of Town
No Sub Category
Total Number of dwellings: 35
Survey date: WEDNESDAY *11/06/14* *Survey Type: MANUAL*

5 CB-03-C-03 FLATS & BUNGALOWS CUMBRIA
LOUND STREET
KENDAL

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 33
Survey date: MONDAY *09/06/14* *Survey Type: MANUAL*

6 EB-03-C-01 BLOCKS OF FLATS CITY OF EDINBURGH
MYRESIDE ROAD
EDINBURGH
CRAIGLOCKHART
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 32
Survey date: TUESDAY *26/05/15* *Survey Type: MANUAL*

7 HF-03-C-02 FLATS HERTFORDSHIRE
BRIDGE ROAD EAST
WELWYN GARDEN CITY

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 86
Survey date: WEDNESDAY *16/07/08* *Survey Type: MANUAL*

8 NT-03-C-01 HOUSES (SPLIT INTO FLATS) NOTTINGHAMSHIRE
LAWRENCE WAY
NOTTINGHAM

Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 56
Survey date: TUESDAY *08/11/16* *Survey Type: MANUAL*

9 SC-03-C-02 FLATS SURREY
CONSTITUTION HILL
WOKING

Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Number of dwellings: 36
Survey date: WEDNESDAY *23/07/08* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 SF-03-C-03 BLOCKS OF FLATS SUFFOLK
TOLLGATE LANE
BURY ST EDMUNDS

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 30
Survey date: WEDNESDAY *03/12/14* *Survey Type: MANUAL*

11 ST-03-C-01 BLOCKS OF FLATS STAFFORDSHIRE
ETRURIA COURT
STOKE-ON-TRENT
HUMBERT ROAD
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 33
Survey date: WEDNESDAY *26/11/08* *Survey Type: MANUAL*

12 TV-03-C-01 APARTMENTS BLOCKS TEES VALLEY
OXFORD ROAD
MIDDLESBROUGH
LINTHORPE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 85
Survey date: MONDAY *06/10/08* *Survey Type: MANUAL*

13 TV-03-C-02 FLATS TEES VALLEY
ACKLAM ROAD
MIDDLESBROUGH
LINTHORPE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 85
Survey date: WEDNESDAY *29/06/11* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.050	13	57	0.157	13	57	0.207
08:00 - 09:00	13	57	0.073	13	57	0.263	13	57	0.336
09:00 - 10:00	13	57	0.083	13	57	0.127	13	57	0.210
10:00 - 11:00	13	57	0.087	13	57	0.111	13	57	0.198
11:00 - 12:00	13	57	0.085	13	57	0.089	13	57	0.174
12:00 - 13:00	13	57	0.088	13	57	0.088	13	57	0.176
13:00 - 14:00	13	57	0.100	13	57	0.103	13	57	0.203
14:00 - 15:00	13	57	0.108	13	57	0.110	13	57	0.218
15:00 - 16:00	13	57	0.133	13	57	0.092	13	57	0.225
16:00 - 17:00	13	57	0.139	13	57	0.103	13	57	0.242
17:00 - 18:00	13	57	0.263	13	57	0.119	13	57	0.382
18:00 - 19:00	13	57	0.194	13	57	0.134	13	57	0.328
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.403			1.496			2.899

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	30 - 102 (units:)
Survey date date range:	01/01/07 - 05/06/18
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.004	13	57	0.008	13	57	0.012
08:00 - 09:00	13	57	0.001	13	57	0.015	13	57	0.016
09:00 - 10:00	13	57	0.003	13	57	0.007	13	57	0.010
10:00 - 11:00	13	57	0.001	13	57	0.003	13	57	0.004
11:00 - 12:00	13	57	0.005	13	57	0.007	13	57	0.012
12:00 - 13:00	13	57	0.005	13	57	0.003	13	57	0.008
13:00 - 14:00	13	57	0.007	13	57	0.009	13	57	0.016
14:00 - 15:00	13	57	0.005	13	57	0.008	13	57	0.013
15:00 - 16:00	13	57	0.008	13	57	0.004	13	57	0.012
16:00 - 17:00	13	57	0.012	13	57	0.008	13	57	0.020
17:00 - 18:00	13	57	0.007	13	57	0.005	13	57	0.012
18:00 - 19:00	13	57	0.009	13	57	0.000	13	57	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.067			0.077			0.144

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.057	13	57	0.194	13	57	0.251
08:00 - 09:00	13	57	0.083	13	57	0.346	13	57	0.429
09:00 - 10:00	13	57	0.096	13	57	0.168	13	57	0.264
10:00 - 11:00	13	57	0.110	13	57	0.150	13	57	0.260
11:00 - 12:00	13	57	0.111	13	57	0.129	13	57	0.240
12:00 - 13:00	13	57	0.112	13	57	0.119	13	57	0.231
13:00 - 14:00	13	57	0.119	13	57	0.126	13	57	0.245
14:00 - 15:00	13	57	0.133	13	57	0.145	13	57	0.278
15:00 - 16:00	13	57	0.208	13	57	0.135	13	57	0.343
16:00 - 17:00	13	57	0.179	13	57	0.133	13	57	0.312
17:00 - 18:00	13	57	0.329	13	57	0.162	13	57	0.491
18:00 - 19:00	13	57	0.245	13	57	0.188	13	57	0.433
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.782			1.995			3.777

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.011	13	57	0.085	13	57	0.096
08:00 - 09:00	13	57	0.026	13	57	0.118	13	57	0.144
09:00 - 10:00	13	57	0.034	13	57	0.069	13	57	0.103
10:00 - 11:00	13	57	0.043	13	57	0.047	13	57	0.090
11:00 - 12:00	13	57	0.046	13	57	0.047	13	57	0.093
12:00 - 13:00	13	57	0.068	13	57	0.068	13	57	0.136
13:00 - 14:00	13	57	0.042	13	57	0.047	13	57	0.089
14:00 - 15:00	13	57	0.035	13	57	0.064	13	57	0.099
15:00 - 16:00	13	57	0.081	13	57	0.053	13	57	0.134
16:00 - 17:00	13	57	0.088	13	57	0.060	13	57	0.148
17:00 - 18:00	13	57	0.123	13	57	0.050	13	57	0.173
18:00 - 19:00	13	57	0.074	13	57	0.050	13	57	0.124
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.671			0.758			1.429

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.001	13	57	0.039	13	57	0.040
08:00 - 09:00	13	57	0.001	13	57	0.087	13	57	0.088
09:00 - 10:00	13	57	0.004	13	57	0.018	13	57	0.022
10:00 - 11:00	13	57	0.003	13	57	0.019	13	57	0.022
11:00 - 12:00	13	57	0.004	13	57	0.011	13	57	0.015
12:00 - 13:00	13	57	0.008	13	57	0.009	13	57	0.017
13:00 - 14:00	13	57	0.004	13	57	0.007	13	57	0.011
14:00 - 15:00	13	57	0.007	13	57	0.011	13	57	0.018
15:00 - 16:00	13	57	0.027	13	57	0.011	13	57	0.038
16:00 - 17:00	13	57	0.022	13	57	0.005	13	57	0.027
17:00 - 18:00	13	57	0.054	13	57	0.004	13	57	0.058
18:00 - 19:00	13	57	0.054	13	57	0.007	13	57	0.061
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.189			0.228			0.417

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	57	0.073	13	57	0.326	13	57	0.399
08:00 - 09:00	13	57	0.111	13	57	0.566	13	57	0.677
09:00 - 10:00	13	57	0.137	13	57	0.261	13	57	0.398
10:00 - 11:00	13	57	0.157	13	57	0.219	13	57	0.376
11:00 - 12:00	13	57	0.166	13	57	0.194	13	57	0.360
12:00 - 13:00	13	57	0.194	13	57	0.199	13	57	0.393
13:00 - 14:00	13	57	0.172	13	57	0.189	13	57	0.361
14:00 - 15:00	13	57	0.180	13	57	0.227	13	57	0.407
15:00 - 16:00	13	57	0.325	13	57	0.203	13	57	0.528
16:00 - 17:00	13	57	0.300	13	57	0.206	13	57	0.506
17:00 - 18:00	13	57	0.513	13	57	0.222	13	57	0.735
18:00 - 19:00	13	57	0.383	13	57	0.245	13	57	0.628
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.711			3.057			5.768

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

APPENDIX F

Census Based Distribution Assessment – Route Assignments

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
method of travel to work	Driving a car or van

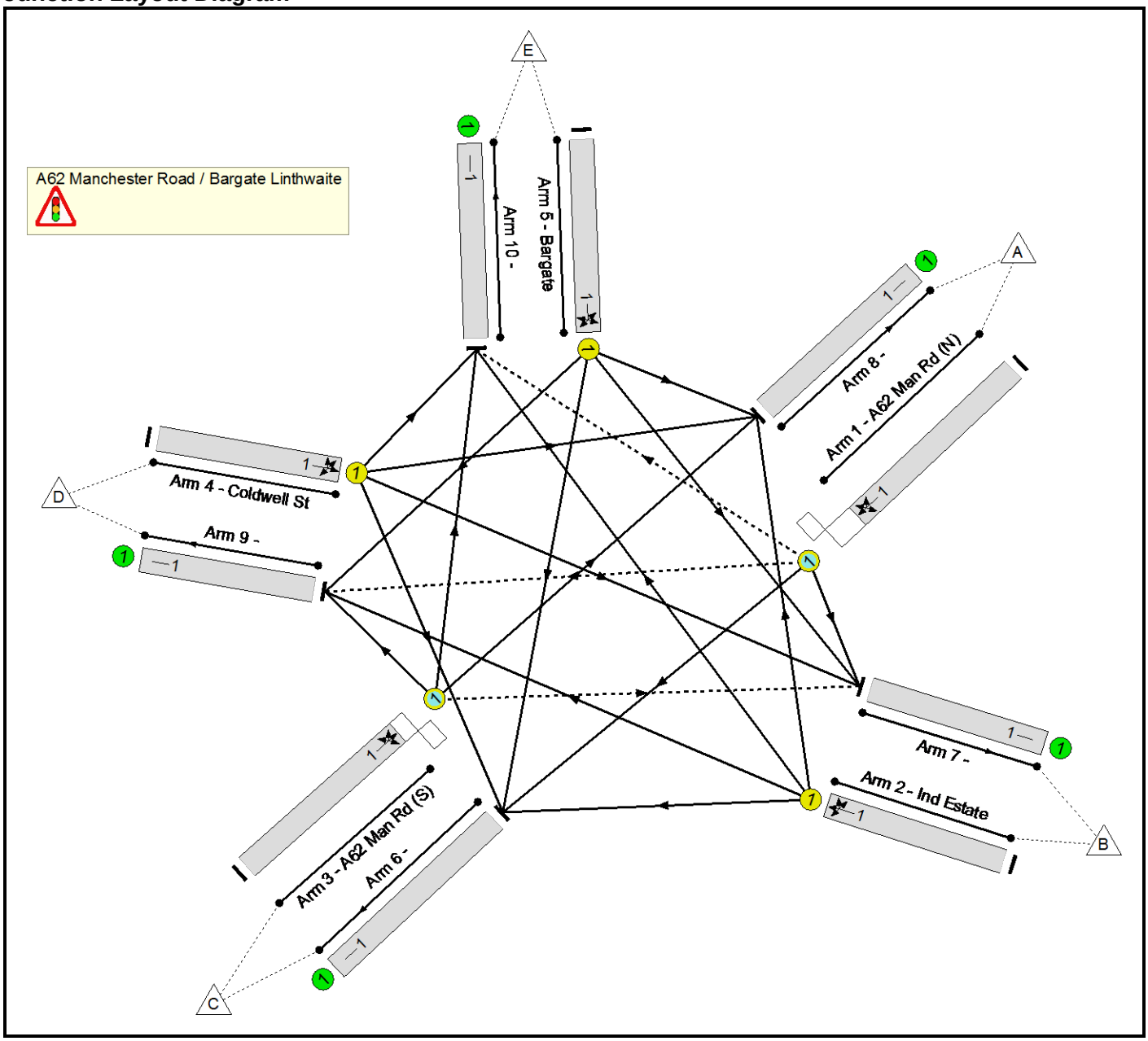
place of work : 2011 super output area - middle layer	usual residence E02002319 : Kirklees 049	%	Population Centroid LATITUDE	LONGITUDE	Suggested Routes A62 NE	A62 SW	Low Westwood Lane
Kirklees 029	213	16.1%	53.662793	-1.774482922	16.1%		
Kirklees 049	139	10.5%	53.62243473	-1.870764008		10.5%	
Kirklees 045	103	7.8%	53.63547017	-1.833404492	7.8%		
Kirklees 042	102	7.7%	53.63767906	-1.774200861	7.7%		
Kirklees 033	71	5.4%	53.65368664	-1.818793049			5.4%
Kirklees 052	55	4.2%	53.60381124	-1.922435613		4.2%	
Kirklees 055	52	3.9%	53.5930202	-1.8520789		3.9%	
Calderdale 025	51	3.9%	53.68276837	-1.839340735			3.9%
Kirklees 039	49	3.7%	53.64450637	-1.804512408	3.7%		
Calderdale 008	41	3.1%	53.730992	-1.861927794			3.1%
Kirklees 034	38	2.9%	53.65158955	-1.801115691	2.9%		
Kirklees 043	36	2.7%	53.63699514	-1.798262774		2.7%	
Kirklees 059	34	2.6%	53.57011979	-1.769208438		2.6%	
Kirklees 025	30	2.3%	53.67209457	-1.759159989	2.3%		
Kirklees 053	30	2.3%	53.60066202	-1.792815027		2.3%	
Kirklees 031	25	1.9%	53.65967639	-1.789816033	1.9%		
Kirklees 036	24	1.8%	53.64764511	-1.859338692			1.8%
Leeds 111	24	1.8%	53.79781511	-1.545775517			1.8%
Kirklees 050	22	1.7%	53.61624653	-1.80740724		1.7%	
Kirklees 041	21	1.6%	53.64050344	-1.845854137			1.6%
Calderdale 019	16	1.2%	53.70953965	-1.78738712			1.2%
Calderdale 015	15	1.1%	53.71907182	-1.779176744	1.1%		
Kirklees 038	15	1.1%	53.64796536	-1.833685082			1.1%
Kirklees 047	15	1.1%	53.63273377	-1.814052125		1.1%	
Kirklees 048	15	1.1%	53.6284573	-1.787310843	1.1%		
Kirklees 058	15	1.1%	53.56948961	-1.802769243		1.1%	
Calderdale 021	13	1.0%	53.705159	-1.863018349	1.0%		
Kirklees 022	13	1.0%	53.67991278	-1.755612624	1.0%		
Kirklees 005	11	0.8%	53.72419675	-1.718424652			0.8%
Kirklees 051	11	0.8%	53.61475209	-1.70996327	0.8%		
Kirklees 054	11	0.8%	53.59289016	-1.649788032		0.8%	
Bradford 039	10	0.8%	53.79808185	-1.746919373			0.8%
					A62 NE	**A62 SW**	**Low Westwood Lane**
Total	**1,320**	**100.0%**			**47.5%**	**30.9%**	**21.5%**

10821 Westwood Mills

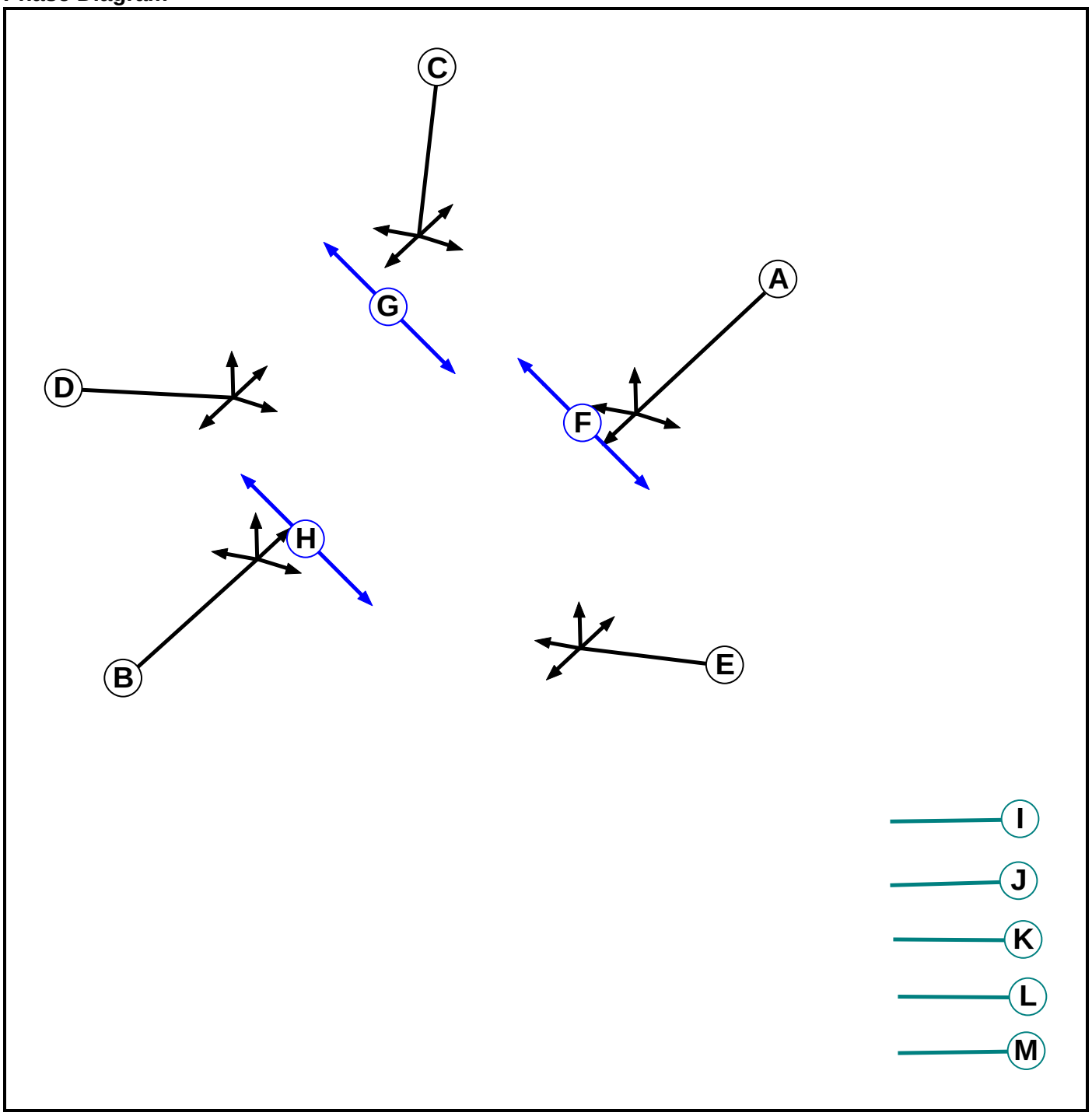
User and Project Details

Project:	**Westwood Mill Linthwaite**
Title:	**Westwood Mill Linthwaite**
Location:	A62 Manchester Road / Bargate, Linthwaite
Site Ref(s):	A62 / Bargate
Date Started:	January 2019
Date Completed:	January 2019
Flow Details:	2019 and 2024 models as agreed with Kirklees Council
Additional detail:	Junction is currently running VA as confirmed by Kirklees Council
File name:	A61 Manchester Rd Bargate, Linthwaite.lsg3x
Author:	Sanderson Associates
Company:	Sanderson Associates
Address:	

Junction Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		6	6
G	Pedestrian		8	8
H	Pedestrian		7	7
I	Dummy		2	2
J	Dummy		2	2
K	Dummy		2	2
L	Dummy		2	2
M	Dummy		7	7

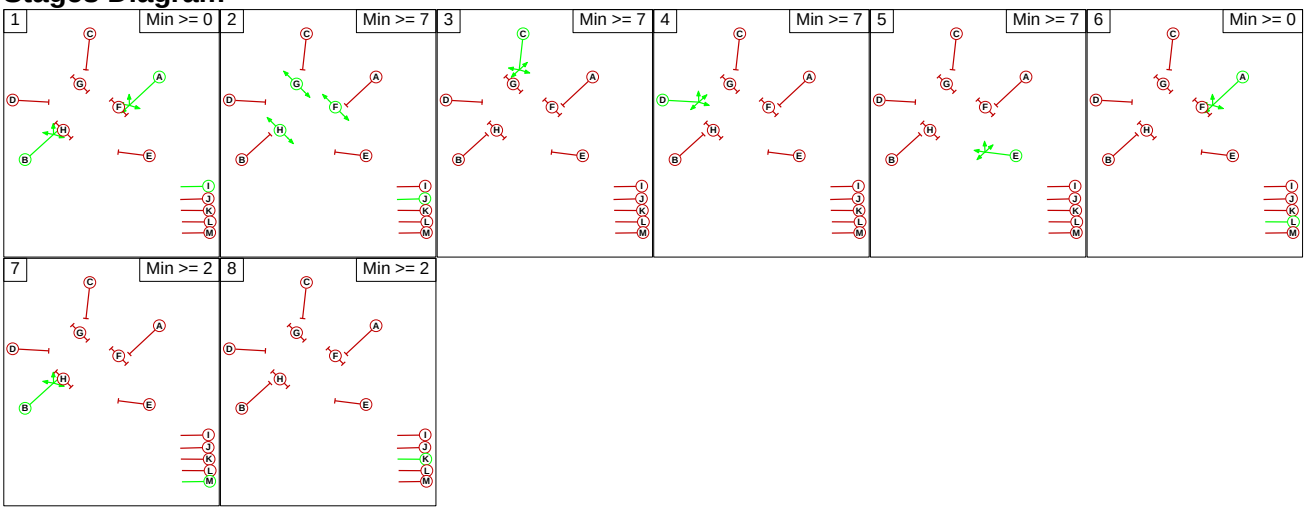
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M
A		-	6	8	7	7	7	9	-	9	3	-	6
B	-		5	5	5	9	9	9	-	5	3	6	-
C	7	7		7	7	9	8	10	7	8	3	3	3
D	5	5	5		5	8	8	6	5	6	3	3	3
E	5	5	5	5		8	7	7	5	7	3	3	3
F	6	4	4	5	5		-	-	5	-	3	3	3
G	5	5	5	6	6	-		-	5	-	3	3	3
H	4	8	4	6	6	-	-		5	-	3	3	3
I	-	-	3	3	3	3	3	3		3	3	3	3
J	8	8	5	6	6	-	-	-	8		3	3	3
K	3	3	3	3	3	3	3	3	3	3		3	3
L	-	8	3	3	3	3	3	3	3	3	3		3
M	8	-	3	3	3	3	3	3	3	3	3	3	

Phases in Stage

Stage No.	Phases in Stage
1	A B I
2	F G H J
3	C
4	D
5	E
6	A L
7	B M
8	K

Stages Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Changes

		To Stage							
		1	2	3	4	5	6	7	8
From Stage	1		9	6	8	7	6	6	3
	2	8		5	6	6	8	8	3
	3	7	10		7	7	7	7	3
	4	5	8	5		5	5	5	3
	5	5	8	5	5		5	5	3
	6	8	9	6	8	7		8	3
	7	8	9	5	5	5	8		3
	8	3	3	3	3	3	3	3	

Lane Input Data

Junction: A62 Manchester Road / Bargate Linthwaite

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A62 Man Rd (N))	O	A	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	5.00
											Arm 9 Right	25.00
											Arm 10 Right	7.00
2/1 (Ind Estate)	U	E	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 6 Left	12.00
											Arm 8 Right	10.00
											Arm 9 Ahead	Inf
											Arm 10 Right	13.00
3/1 (A62 Man Rd (S))	O	B	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 7 Right	15.00
											Arm 8 Ahead	Inf
											Arm 9 Left	9.00
											Arm 10 Left	Inf
4/1 (Coldwell St)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Right	10.00
											Arm 7 Ahead	Inf
											Arm 8 Left	10.00
											Arm 10 Left	6.00
5/1 (Bargate)	U	C	2	3	60.0	Geom	-	2.70	7.00	Y	Arm 6 Right	Inf
											Arm 7 Left	20.00
											Arm 8 Left	6.00
											Arm 9 Right	9.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 AM Base Flows '	08:00	09:00	01:00	
2: '2019 PM Base Flows '	16:45	17:45	01:00	
3: 'AM Development Traffic '	08:00	09:00	01:00	
4: 'PM Development Traffic '	16:45	17:45	01:00	
5: '2024 AM Base Flows '	08:00	09:00	01:00	F1*1.0753
6: '2024 PM Base Flows '	16:45	17:45	01:00	F2*1.0739
7: '2019 AM Base + Dev Flows '	08:00	09:00	01:00	F1+F3
8: '2019 PM Base + Dev Flows '	16:45	17:45	01:00	F2+F4
9: '2024 AM Base + Dev Flows '	08:00	09:00	01:00	F5+F3
10: '2024 PM Base + Dev Flows '	16:45	17:45	01:00	F6+F4

Link Results

Scenario 1: '2019 AM Base ' (FG1: '2019 AM Base Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**63.0%**	**6.7**	**9.2**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**63.0%**	**6.7**	**9.2**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	402	656	61.2%	2.2	3.1	8.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	12	155	7.7%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	469	823	57.0%	2.7	3.3	9.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	188	298	63.0%	1.7	2.6	5.1

C1 PRC for Signalled Lanes (%): 42.8 Total Delay for Signalled Lanes (pcuHr): 9.22 Cycle Time (s): 90
PRC Over All Lanes (%): 42.8 Total Delay Over All Lanes(pcuHr): 9.22

Scenario 2: '2019 PM Base ' (FG2: '2019 PM Base Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**60.9%**	**6.4**	**8.5**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**60.9%**	**6.4**	**8.5**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	504	827	60.9%	2.6	3.5	10.2
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	14	154	9.1%	0.1	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	441	890	49.5%	2.2	2.7	8.3
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	147	245	59.9%	1.4	2.2	4.1

C1 PRC for Signalled Lanes (%): 47.8 Total Delay for Signalled Lanes (pcuHr): 8.54 Cycle Time (s): 90
PRC Over All Lanes (%): 47.8 Total Delay Over All Lanes(pcuHr): 8.54

Scenario 3: '2024 AM Base ' (FG5: '2024 AM Base Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**70.1%**	**7.4**	**10.6**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**70.1%**	**7.4**	**10.6**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	432	617	70.1%	2.4	3.8	9.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	13	155	8.4%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	504	823	61.3%	2.9	3.7	10.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	202	298	67.8%	1.9	2.9	5.7

C1	PRC for Signalled Lanes (%):	28.5	Total Delay for Signalled Lanes (pcuHr):	10.59	Cycle Time (s):	90	
	PRC Over All Lanes (%):	28.5	Total Delay Over All Lanes(pcuHr):	10.59			

Scenario 4: '2024 PM Base ' (FG6: '2024 PM Base Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**65.7%**	**7.0**	**9.6**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**65.7%**	**7.0**	**9.6**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	541	823	65.7%	2.9	3.9	11.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	15	154	9.7%	0.2	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	474	890	53.2%	2.4	3.0	9.1
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	157	246	63.9%	1.5	2.4	4.5

C1	PRC for Signalled Lanes (%):	36.9	Total Delay for Signalled Lanes (pcuHr):	9.55	Cycle Time (s):	90	
	PRC Over All Lanes (%):	36.9	Total Delay Over All Lanes(pcuHr):	9.55			

Scenario 5: '2019 AM Base + Dev' (FG7: '2019 AM Base + Dev Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**74.2%**	**7.6**	**11.3**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**74.2%**	**7.6**	**11.3**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	35	-	416	574	72.5%	2.5	4.0	10.5
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	12	155	7.7%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	35	-	484	800	60.5%	2.9	3.6	10.3
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	18	-	231	311	74.2%	2.1	3.5	6.8

C1 PRC for Signalled Lanes (%): 21.3 Total Delay for Signalled Lanes (pcuHr): 11.31 Cycle Time (s): 90
PRC Over All Lanes (%): 21.3 Total Delay Over All Lanes(pcuHr): 11.31

Scenario 6: '2019 PM Base + Dev' (FG8: '2019 PM Base + Dev Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**71.6%**	**7.3**	**10.3**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**71.6%**	**7.3**	**10.3**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	38	-	528	738	71.6%	3.0	4.4	12.4
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	14	154	9.1%	0.1	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	38	-	460	868	53.0%	2.4	3.0	9.0
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	15	-	176	261	67.5%	1.7	2.7	5.1

C1	PRC for Signalled Lanes (%):	25.7	Total Delay for Signalled Lanes (pcuHr):	10.28	Cycle Time (s):	90	
	PRC Over All Lanes (%):	25.7	Total Delay Over All Lanes(pcuHr):	10.28			

Scenario 7: '2024 AM Base + Dev' (FG9: '2024 AM Base + Dev Flows ', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	**83.0%**	**8.2**	**13.2**	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	**83.0%**	**8.2**	**13.2**	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	446	579	77.1%	2.7	4.5	11.7
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	13	155	8.4%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	519	823	63.1%	3.0	3.9	11.1
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	245	295	83.0%	2.4	4.6	8.1

C1	PRC for Signalled Lanes (%):	8.4	Total Delay for Signalled Lanes (pcuHr):	13.22	Cycle Time (s):	90	
	PRC Over All Lanes (%):	8.4	Total Delay Over All Lanes(pcuHr):	13.22			

APPENDIX G

Linsig Outputs