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FLOCKTON GREEN WMC

TRANSPORT ASSESSMENT

MARCH 2016

WSP | PARSONS BRINCKERHOFF

FLOCKTON GREEN WMC

TRANSPORT ASSESSMENT

Barratt Homes And David Wilson Homes

Project no: 70019919
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1 INTRODUCTION

1.1 OVERVIEW

1.1.1 This Transport Assessment has been prepared by WSP | Parsons Brinckerhoff on behalf of Barratt Homes and David Wilson Homes to consider the traffic and transport implications of a planning application for a residential development on land occupied by Flockton Green Working Men's Club (FGWMC), Flockton.

1.1.2 The proposed development comprises of a residential scheme of some 87 units to be accessed by way of a new access from A637 Barnsley Road.

1.1.3 The applicant has engaged with the local Highway Authority, Kirklees Council (KC) and has attended pre-application meetings with both the planning and highways departments.

1.1.4 The Transport Assessment has been prepared to appraise the site in terms of the likely transport implications of the development on the local highway network and the accessibility of the site by sustainable modes including walking, cycling and public transport.

1.1.5 It estimates the traffic likely to be generated by the development, distributes it onto the local highway network and assesses its impact.

1.1.6 The Transport Assessment concludes that there is no traffic or highways related reason why planning permission should not be granted for this scheme.

1.2 POLICY BACKGROUND

1.2.1 The preparation of this TA is consistent with national transport policy guidance set out in the National Planning Policy Framework (NPPF) which advocates the submission of such documents to support applications for new developments which generate significant amounts of movement.

1.2.2 The NPPF also notes that:

> "In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport." (paragraph 30)
>
> "Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe." (paragraph 32)
>
> "Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised." (paragraph 34)

Kirklees Local Plan

1.2.3 The Kirklees Local Plan consultation process started on the 9th November 2015 and finished on 1st February 2016. The Local Plan which will supersede the Local Development Framework is the new development plan for Kirklees and will become the main planning policy document for the district, setting out the areas strategic objectives for development up to 2031. Relevant draft policy within the LP includes:

- Policy DLP 20: Sustainable Travel. New development will be located in areas where the need to travel is reduced and where essential travel needs can be met by forms of sustainable transport other than the private car;
- Policy DLP 21: Highways and access. Proposals shall demonstrate that they can be accessed safely by all users and accommodate sustainable modes of transport; and
- Policy DLP 22: Parking. Parking provision will be allocated based on the availability of public transport, the accessibility of the site, location of the development, local car ownership levels abd the type, mix and use of the development.

West Yorkshire Local Transport Plan

1.2.4 The West Yorkshire Local Transport Plan is a 15 year plan which sets out West Yorkshire's transport needs and aspirations up to 2026. The plan covers all forms of local transport including buses, trains, roads, cycling and walking. The plan was adopted on 1st April 2011.

1.2.5 This is the Third Local Transport Plan for West Yorkshire and is branded as 'My Journey West Yorkshire'. The plan has been prepared in partnership by Metro, and the district councils of Bradford, Calderdale, Kirklees, Leeds and Wakefield.

1.2.6 The Plan has been developed through widespread consultation with the people of West Yorkshire, and has three main objectives:

- **Economy** To improve connectivity to support economic activity and growth in West Yorkshire and the Leeds City Region;
- **Low Carbon** To make substantial progress towards a low carbon, sustainable transport system for West Yorkshire, while recognising transport's contribution to national carbon reduction plans;
- **Quality of Life** To enhance the quality of life of people living in, working in and visiting West Yorkshire.

1.2.7 The Plan sets out to tackle congestion and a lack of transport investment which are key contributory factors to lower than average economic performance in West Yorkshire. It also aims to prepare for the predicted, post-recession growth in employment, population and housing and their impact on the reliability of the transport network.

1.2.8 Four themes run through the Plan to help ensure it achieves its aims:

- **Transport Assets** focusing on the existing components of the transport network such as roads, bus stations & stops and traffic lights to ensure we are getting the most value out of them;
- **Travel Choices** enabling customers to make the most sustainable choices about when and how they travel;
- **Connectivity** ensuring people can make integrated and safe journeys using transport networks on which they can rely;
- **Enhancements** improving the overall network to make it more fit for journeys in the future.

1.2.9 Additionally the Plan also concentrates on ensuring equality and safety, improving the county's natural and built environment, and appropriate decision-making processes.

1.2.10 In accordance with both the relevant national and local planning policy identified, it is considered that the proposed development adheres to the principles of sustainable development.

1.2.11 The site is located within a sustainable location with access to existing public transport links as well as local pedestrian and cycle links.

1.2.12 It is therefore considered that the application proposals are acceptable and consistent with current national and local transport policies. Further details of the relevant planning policy background are set out in the planning statement which also accompanies the application.

1.3 STRUCTURE OF REPORT

1.3.1 As well as traffic impact issues, this Transport Assessment also considers the sustainability and accessibility of the site. The report is therefore structured as follows:-

- Section 2 provides a description of the existing use of the site, a description of the highway network surrounding the site and a review of the personal injury accident records.
- Section 3 examines the accessibility of the site by different travel modes.
- Section 4 describes the site location and development proposals with regard to the proposed quantum of development and broad layout of the site, the proposed means of access to the site and also the proposed parking provision and servicing requirements.
- Section 5 summarises the assessment parameters that have been adopted within this Transport Assessment and provided an estimate of the trips by various different modes of travel.
- Section 6 examines the impact of development traffic on the local highway network and presents the results of the future year junction assessments to determine the potential impact of the proposals.
- The report summary and conclusions are drawn together in Section 7.

2 EXISTING CONDITIONS

2.1 THE SITE

2.1.1 The site is approximately rectangular in shape and fronts on to A637 Barnsley Road. It slopes down from the north to the A637. To the east, it is bounded by the rear of properties which front onto Park Side. There is a football pitch and cricket pitch to the north of the site which are also owned by FGWMC as well as a children's playground. To the west, the site is bounded by Flockton C of E First School. There is also a small beck which runs between the school and the site. The site location plan is outlined in Figure 1.

2.1.2 The existing FGWMC occupies the south-east corner of the site and is accessed via a track along the eastern boundary of the site to the rear of the Club where the car park is located.

2.1.3 No 159 Barnsley Road is a large residential property which is bounded on three sides by the site. It is served by a private drive and fronts onto A637. This property does not form part of the site.

2.1.4 The site has a limited frontage on the A637. This consists of the frontage to the WMC clubhouse and a short length to the west of No 159 Barnsley Road.

2.2 SURROUNDING HIGHWAY NETWORK

2.2.1 A plan of the local highway network is shown in Figure 6.

2.2.2 A637 Barnsley Road runs along the southern frontage to the site. It runs between the roundabout to the north-west of the site where it meets A642, past the site, through the roundabout with A636 and in a south easterly direction to the M1 and Barnsley.

2.2.3 As the A637 passes through the village of Flockton there are a number of properties which reduce the carriageway width. These are not close to the site and have been accommodated by installing traffic signals and priority working. There are no proposals to amend any of these traffic management measures as part of this planning application.

2.2.4 A637 Barnsley Road varies in widths between 6m in the visibility of the site. It has a continuous footway which runs along the site frontage. This is generally 1.5m in width but it narrows down to approximately 1m in width towards the south-east end of the site.

2.2.5 Pinfold Lane runs from A637 at the south-west corner of the site. It forms a priority junction where emerging traffic on Pinfold Lane must give way. There is a zebra crossing to the west of this junction. There is also a zebra crossing between the eastern corner of the site and Park Side.

2.2.6 The existing access to FGWMC is located at the extreme eastern side of the site frontage. The visibility to the right for vehicles emerging out of the FGWMC car park is poor.

2.2.7 There is a lay-by on the site frontage which has capacity for approximately 7 cars. There is also a lay–by on the north side of A637 between the access to the FGWMC car park and Park Side. Both of these lay-bys appear to be used by residents of nearby houses.

2.3 PERSONAL INJURY ACCIDENT RECORDS

2.3.1 A review of personal injury accident (PIA) records for the area surrounding the site has being undertaken for the period from 2010 to 2014, which represents the most recent period available.

2.3.2 The accident record for the surrounding area is good, with a relatively low incidence of injury accidents. During the assessment period, one serious accident has been recorded at the eastern end of the site. There has also been a slight accident further to the east.

2.3.3 A plan showing the location of the accidents referred to above can be found in Figure 7

2.3.4 Given the traffic flows on Barnsley Road, it is therefore considered that there is no existing safety problems associated with the road network surrounding the development site. It is not anticipated that the modest increase in traffic flows associated with the proposed development would result in any significant safety implications for the adjacent highway network.

3 EXISTING SUSTAINABLE TRANSPORT PROVISION

3.1.1 As identified in Section 1.2, the Government's objectives set out in the NPPF are to ensure that new developments are provided in sustainable locations, where the need to travel is minimised and the use of sustainable modes can be maximised.

3.1.2 The site has a good level of accessibility by sustainable modes of transport. Travel by non-car modes will be encouraged at the site and as outlined in Section 3 the proposals include pedestrian and cycle connections across the site, linking into the surrounding facilities.

3.1.3 This section outlines the existing walking, cycling and public transport facilities within the vicinity of the development site and describes the accessibility of the site in terms of its proximity to key services and destinations.

3.2 WALKING AND CYCLING

3.2.1 Whilst superseded by the NPPF, the transport policies set out in the former PPG13 set out specific guidance related to walking and cycling:

> "Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly under 2 kilometres" (Para 74) and
>
> "Cycling also has potential to substitute for short car trips, particularly those under 5 kilometres, and to form part of a longer journey by public transport" (Para 77)

3.2.2 These walking and cycling catchments have been used in the consideration of the accessibility of the site set out below.

3.2.3 Walking is recognised as the most important mode of travel at a local level and it offers the greatest potential to replace short car trips, particularly under two kilometres. As such, consideration has been given to the existing pedestrian facilities in the vicinity of the proposed development.

3.2.4 There are existing footways provided on both sides of Barnsley Road to the south of the site which provide links to adjacent residential areas and Flockton's local facilities. These footways extend to the east and west of the site. The footpath eastbound after Pinfold Lane terminates on the southern side of the carriageway with a single footpath provided on the northern side of the carriageway for the extent of the village. The footpaths provided vary from 3m in width to 1m in width.

3.2.5 Two zebra crossings are provided in the vicinity of the site. One of these is located to the west of the site adjacent to Pinfold Lane with the second zebra crossing located to the east of the site adjacent to Park Side.

3.2.6 Figure 2 shows the 2km walking catchment area from the site access including key facilities in the locality such as schools and healthcare facilities. The 2km walking catchment includes the entirety of the village of Flockton and its associated facilities which includes Flockton C of E First School and Flockton Surgery. Flockton also provides a local newsagent, a takeaway and two public houses which are accessible by foot.

3.2.7 A distance of up to 800m (approximately a 10 minute walk) is considered an acceptable walking journey for accessing local facilities and accords with the 'walkable neighbourhood' referred to in Manual for Streets. A journey of up to 2km is considered a reasonable distance to walk in order to access education and to commute to places of work.

3.2.8 Many of Flockton's facilities are within an 800m walk distance from the centre of the site and will therefore be within the 'walkable neighbourhood' as described in MfS.

3.2.9 A network of footways and footpaths will be provided within the site and pedestrian access to and from the proposed residential units from the wider footway/ footpath network and the new FGWMC car park have being given careful consideration.

3.2.10 Footways in the surrounding area generally accord with standards, with dropped/low kerbs at appropriate junctions. The footways along the site frontage does decrease in width as it approaches the adjacent school,

3.2.11 Cycling has the potential to substitute for short car trips, particularly those less than five kilometres in length. As such, all areas and facilities within a reasonable walking distance can also be considered to be within a reasonable cycling distance. Figure 3 shows a 5km cycling catchment area from the centre of the site which includes the surrounding villages of Overton, Middlestown, Grange Moor, Elmley and Midgley.

3.2.12 Although there is no dedicated cycling provision within Flockton, the 30mph speed limit in force along A637 throughout the village means that it is appropriate for use by cyclists.

3.2.13 Beyond the site the closest local cycle routes are found the north of the site on the A642 and extend northbound along Denby Grange Lane. The West Yorkshire Cycle Route is located approximately 5km to the east of the site.

3.2.14 Figure 3 shows a five kilometre cycling catchment area from the centre of the site and Figure 4 shows the local cycle routes within the catchment.

3.3 PUBLIC TRANSPORT

3.3.1 The proposed development site is well located in terms of its proximity to public transport services which run adjacent to the site on Barnsley Road. Stops are located on both sides of Barnsely Road within the recommended 400m walking distance from the proposed development. Details of the existing provision are set out below.

3.3.2 The bus stops on A637 are served by bus numbers 231 and 232 which are summarised in Table 4.1.

Table 3-1 - Local Bus Services

		Daytime		Evening	
Service	**Route**	**Monday - Saturday**	**Sunday**	**Monday - Saturday**	**Sunday**
231	Huddersfield – Wakefield	Every 60 minutes	Every 60 minutes	Every 120 minutes	Every 60 minutes
232	Huddersfield – Wakefield	Every 60 minutes	Every 60 minutes	Every 120 minutes	Every 60 minutes

3.3.3 Table 3.1 demonstrates that the buses serving the stops on A637 provide regular and direct connections from the site to both Huddersfield town centre and Wakefield city centre which provide further facilities and transport links to wider destinations.

3.3.4 The stops within the vicinity of the site provide seating, shelter and timetable information. The existing public transport infrastructure in the vicinity of the site is therefore considered to be good. Existing bus stops in the vicinity of the site are shown on Figure 5.

3.4 LOCAL FACILITIES

3.4.1 As well as considering the accessibility of the site by a range of non-car modes consideration has also been given to existing access to local facilities.

3.4.2 Walking is the most important mode of travel at a local level and that it offers the greatest potential to replace short car trips, particularly under two kilometres. Consideration has therefore been given to the range of facilities located within 2km of the site.

3.4.3 There are a range of local facilities in Flockton within walking distance of the site including a primary school, a surgery, a convenience store / newsagents, a local hair salon and fast food takeways within walking distance of the site. Further details of the local facilities are provided below.

3.4.4 Flockton C of E First School is located within 200m of the site, within walking distance of the site. As indicated in Section 3.2 there are also existing pedestrian facilities within Flockton providing routes from the development site to the local school.

3.4.5 Flockton surgery is located approximately 400m to the west of the development site. In addition to the health facility located within Flockton. There is a hospital available in Huddersfield that can be accessed by existing public transport services.

3.4.6 A local newsagent / convenience store is located approximately 140m to the east of the site which is within a convenient walking distance.

3.4.7 It is therefore considered that there are a range of local facilities including education, healthcare and convenience shopping within the area surrounding the proposed development site that would be accessible by a range of modes other than the private car.

3.5 SUMMARY

3.5.1 The development site is within a reasonable walking distance of the bus stops located on Barnsley Road which are served by frequent and direct services both Huddersfield town centre and Wakefield city centre and surrounding towns and villages.

3.5.2 The site is situated within walking and cycling distance of various residential settlements providing potential for employees and visitors to travel to and from the site on foot or by cycle.

3.5.3 Overall, the site provides convenient access to potential employment areas by sustainable modes of transport. It is therefore considered that the location of the site is consistent with national and local policy objectives.

4 DEVELOPMENT PROPOSALS

4.1 SITE LAYOUT PROPOSALS

4.1.1 As outlined in the introduction, the proposals are for the provision of a residential scheme consisting of 87 units of two, three and four bed properties in the village of Flockton, Kirklees. The properties are variety of detached, semi-detached and terraced dwellings. A copy of the indicative masterplan layout for the site is provided in Appendix A.

4.1.2 It is proposed that the development will be accessed via a new purpose built, simple, priority junction which will emerge onto A637. Footways will be provided on both sides of the new site access and extend into the site to provide pedestrian connections onto the existing footpath network. The proposed layout therefore seeks to maximise the permeability of the site layout for pedestrian / cycle movements in order to encourage the use of non-car modes.

4.1.3 The planning layout shows a hierarchy of access roads throughout the site taken from Barnsley Road. It also includes for a number of private drives which providing access to individual properties.

4.1.4 The internal access roads have been designed to achieve low vehicle speeds within the site, incorporating appropriate changes in the road alignment which assist in providing a safe environment for pedestrians and cyclists. The site layout proposals include a network of footways across the site.

4.1.5 It is proposed that the main access spine road will have a 5.5m wide carriageway with 2m wide footways to both sides and street lighting provided along its length.

4.1.6 Access for pedestrians will be provided to the cricket pitch, football pitch and children's playground to the north. Subject to the agreement of the school, a pedestrian access from the internal cul-de-sac will be created to provide access to the rear of the Flockton C of E First School. Parents and carers will be able to park in the new FGWMC car park and walk along the footway directly to and from the school along a quiet residential cul-de-sac.

4.1.7 Parking for the residential units has been provided in line with Kirklees Council's Maximum Parking Standards, on the basis of two parking space for dwellings with two and three bedrooms and three parking spaces for dwellings with four or more bedrooms.

4.1.8 Cycle parking will be provided on the basis of one space per unit. Provision of appropriate parking within individual plots will minimise the potential for any on street parking within the development or on the surrounding highway network.

4.1.9 It is considered that the proposed level of parking provides an appropriate balance between the need to promote sustainable modes of transport, meeting residents' demands and minimising on-street parking.

4.1.10 The residential planning application will be submitted with a separate but complementary planning application for the new Clubhouse, the construction of which will be funded by the sale of the residential site.

4.1.11 The clubhouse will include for 28 car parking spaces accessed from Barnsley Road. It will also provide a flight of steps which will provide pedestrian access between the clubhouse car park and the southernmost access road on the residential scheme. The car parking spaces will be available for the use of parents and carers dropping off and picking up children from the adjacent primary school. They will be able to park in the clubhouse car park, walk up the steps along the access road to the school and back again.

4.1.12 Whilst it is not ideal that steps are required from the car park, the steep levels across the site do not allow for a ramp to be provided. However, the considerable benefit of these works is that they will avoid school children from having to walk to and from school along the north footway of Barnsley Road and provide a safer route along a lightly trafficked residential access road.

4.2 VEHICULAR ACCESS

4.2.1 Access for vehicles will be taken from the proposed site access junction onto Barnsley Road.

4.2.2 A speed survey has been carried out to verify actual traffic speeds which is included at Appendix C. This shows that the 85th percentile wet weather speed in a westbound direction is 31 mph and that in an eastbound direction it is 30mph. Hence Manual for Streets recommends that visibility splays of 2.4m x 43m to the right and 2.4m x 45m to the left are provided.

4.2.3 The drawing at Appendix B shows how visibility splays can be provided which accord with the above requirement.

4.2.4 The visibility to the left for emerging vehicles of 2.4m x 45m will be provided. This is measured to the channel line which runs along Barnsley Road. There is lay-by alongside the main running lane of the carriageway which is used by parked cars. There is a possibility that a if a car parks at the end of the lay-by, it may obscure 4m of the end of the visibility splay However, parked cars are only a temporary minor obstruction. Manual for Streets advises at 7.8.5 that ‘parking in visibility splays in built up areas is quite common, yet it does not appear to create significant problems in practice’. In practice, it is the major road distance to oncoming traffic which is the key issue and this can be achieved irrespective of whatever parking takes places in the lay-by. This is shown at Appendix B

4.2.5 The access to the new clubhouse as has also been considered. Visibility splays to the left and right have been provided as per the speed survey access to the residential development and are shown in Appendix B

4.2.6 It is proposed that the road markings are amended to accommodate the access to the clubhouse and visibility splays of 2.4m x 43m to the right and 2.4m x 45m to the left will be provided. In order to form the access, some minor road marking will be required to ensure that the access is kept clear and the car parking in the existing lay-by is hatched out to prevent cars perking close to the access.

5 ASSESSMENT PARAMETERS

5.1 EXISTING TRAFFIC FLOWS

5.1.1 Details of the existing traffic flows on the surrounding highway network have been derived from traffic count surveys undertaken in March 2016. A copy of the count data is included within Appendix C.

5.1.2 The traffic count surveys were undertaken between the hours of 07:30 – 09:30 and 16:00 – 18:00 on Barnsely Road at the proposed site access location.

5.1.3 The AM and PM peak hours were derived from the traffic count data and are 07:30 – 08:30 for the AM peak and 16:30 – 17:30 for the PM peak. The 2016 base traffic flows are shown on Figure 8.

5.2 PROPOSED DEVELOPMENT TRAFFIC GENERATION

5.2.1 In accordance with the government's Guidance on Transport Assessment, the trip generation of the proposed residential development has been assessed in order to consider the impact of the proposals upon the surrounding highway network.

5.2.2 Consideration has been given to appropriate trip generation rates for 'Residential – Houses Privately Owned' in order to assess the multi-modal trip generation of the site. Average total person trips rates have been obtained from the TRICS database for a range of similar sites. Sites have been selected based on the following parameters:

- Greater London, South East and Ireland sites excluded;
- Sites selected between 50-150 units
- Town centre and edge of town centre locations excluded; and
- Weekdays only.

5.2.3 These selected parameters provide a representative sample of sites in order to determine the potential trip generation of the proposed development (based on 87 units). The total person trip rates derived from the TRICS database are summarised in Table 5.1 and a copy of the TRICS output is contained in Appendix E.

Table 5-1 - TRICS Average Total Person Trip Rates and Generation

	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Arrivals	**Departures**	**Arrivals**	**Departures**
Trip Rates	0.210	0.737	0.571	0.363
Trip Generation	18	64	50	32

Source : TRICS

5.2.4 In order to derive the trip generation by mode, local mode split data for Kirklees 046 MSOA, in which the development site is situated has been obtained from the NOMIS official labour market statistics website. Journey to work mode split data (2011) has been obtained in order to identify the likely mode split for development generated during the AM and PM peak periods. The labour market statistics mode split data is summarised in Table 5.2. A copy of the census data output is contained in Appendix F.

Table 5-2 - Labour Statistics Mode Split Data for Kirklees 046 MSOA

MODE	PERCENTAGE
Pedestrian	5%
Bicycle	0%
Motorcycle	1%
Car Driver*	79%
Car Passenger	6%
Bus	7%
Train	2%
Total Person Trips	100%

**Source : Car driver includes taxis, as these are additional car trip on the road network*

5.2.5 Based on the total person trip generation from TRICS shown in Table 5.1 and the local mode split data shown in Table 5.2 the trip generation by mode for the site has been derived and is summarised in Table 5.3.

Table 5-3 - Trip Generation by Mode

	AM Peak		PM Peak	
Mode	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Pedestrian	1	3	3	2
Bicycle	0	0	0	0
Motorcycle	0	0	0	0
Car Driver*	15	51	39	25
Car Passenger	1	4	3	2
Bus	1	5	4	2
Train	0	1	1	1
Total Person Trips	**18**	**64**	**50**	**32**

**Source : Car driver includes taxis, as these are additional car trip on the road network*

5.2.6 The information set out in Table 5.3 demonstrates that the development proposals (based on 87 residential dwellings) are forecast to generate some 66 and 64 two-way vehicle trips during the AM and PM peak hours, respectively. This equates to an increase in vehicular trips on the local highway network of circa one every minute in both the AM and PM peak periods.

5.3 DEVELOPMENT TRAFFIC DISTRIBUTION AND ASSIGNMENT

5.3.1 The development trips have been distributed based on the average percentage split of traffic passing the site in the AM and PM peak hours which has been taken from the traffic survey data. This can be considered a robust approach. The resultant turning proportions are as follows:

- → Barnsley Road East:53%
- → Barnsley Road West:47%

5.3.2 The above traffic distribution has been applied to the forecast trip generations to estimate the change in traffic flows on the highway network as a result of the development. The distribution patterns are shown on Figure 10.

5.4 TRAFFIC GROWTH

5.4.1 The National Traffic Model (NTM) within the TEMPRO software has been interrogated to provide AM and PM peak growth factors for rural Kirklees, which is considered to be the most appropriate location available within TEMPRO. The resultant growth factors are set out within Table 5.4. These growth factors make allowance for planned development growth within an area in order to provide a robust assessment.

Table 5-4 - Rural Kirklees Traffic Growth Factors

PERIOD	AM PEAK	PM PEAK
2017 - 2022	*1.0811*	*1.0833*

Source : NTM (Tempro)

5.4.2 These growth factors have been applied to the 2016 base flows and the resultant 2020 base flows are illustrated on Figure 9.

5.4.3 The development generated traffic flows, shown on Figure 11, have been added to the 2020 base traffic flows, shown in Figure 9, to produce the 2020 predicted scenario (base + development traffic flows) shown in Figure 12. These traffic flows have been used to assess the potential impact of the development proposals upon the surrounding highway network, as set out in Section 6.

5.5 SUMMARY

5.5.1 Traffic generation for the proposed development has been derived based on average total person trip rates which have been obtained from the TRICS database. The trip generation assumptions do not take account of proposed reductions in car driver mode splits as result of the Travel Plan for the site and are therefore considered robust.

5.5.2 An assessment of the multi-modal trip generation of the proposed development has been carried out. Multi-modal trips have been derived based on local mode split information for Kirklees 046 MSOA for Journey to Work trips.

5.5.3 The development traffic has been distributed onto the surrounding network also based on journey to work census data for the Kirklees 046 MSOA. This provides a representative distribution of the proposed development traffic based on existing journey to work trips from surrounding areas.

6 DEVELOPMENT IMPACTS

6.1 INTRODUCTION

6.1.1 This section of the report summarises the assessment of the operation of the proposed site access junction.

6.2 FUTURE YEAR JUNCTION CAPACITY ANALYSES

6.2.1 Future year junction capacity assessments have been undertaken at the proposed site access / Barnsley Road priority junction for the 2022 predicted traffic flow scenario, for both the AM and PM peak hours. No committed development traffic has been identified in the discussions with local highways officers and therefore is not included in the assessment.

6.2.1 Full details of the assessment results are set out within Appendix F and the results are summarised in Table 6.1. The results in Table 6.1 summarise the maximum Ratio of Flow to Capacity (RFC) values for the peak periods and the maximum queue length in vehicles. An RFC value below 0.85 is generally considered to represent satisfactory operation with RFC values between 0.85 and 1.00 reflecting links that are approaching their theoretical capacity.

Table 6-1 - Site Access Junction Results

	BARNSLEY ROAD EAST		SITE ACCESS		BARNSLEY ROAD WEST	
Scenario	RFC	Q	RFC	Q	RFC	Q
2022 AM Base + Development	0.07	0	0.02	0	0.11	0
2022 PM Base + Development	0.03	0	0.05	0	0.05	0

6.2.2 The results in Table 6.1 demonstrate that the proposed junction layout is predicted to operate with substantial spare capacity under the future year traffic flow scenarios in both the AM and PM peak periods. The maximum RFC value of 0.11 is well below the threshold value of 0.85 above which continuous queuing is likely to occur. The impact of the development will be negligible with minimal queuing forecast as a result of development traffic.

6.3 SUMMARY

6.3.1 The purpose built site access junction would have sufficient capacity to accommodate the forecast development traffic flows.

6.3.2 The impact of the development-generated traffic on the surrounding highway network is shown to be negligible with the junction forecast to operate well within capacity under the future year development flow scenario.

7 SUMMARY AND CONCLUSIONS

7.1.1 WSP | Parsons Brinckerhoff have been commissioned by Barratt and David Wilson Homes to prepare a Transport Assessment in support of a detailed planning application to provide 87 dwellings on the site of the existing Flockton Green Working Men's Club in Flockton.

7.1.2 The site is approximately rectangular in shape and fronts on to A637 Barnsley Road. It slopes down from the north to the A637. To the east, it is bounded by the rear of properties which front onto Park Side. There is a football pitch and cricket pitch to the north of the site which are also owned by FGWMC as well as a children's playground.

7.1.3 The proposed development comprises of a residential scheme of some 87 units to be accessed by way of a new access from A637 Barnsley Road.

7.1.4 A Travel Plan has also been prepared which sets out measures to encourage sustainable travel patterns and reduce the reliance on private car use.

7.1.5 The report has shown that the development proposals will be accessible by a range of travel modes and have been developed to accord with current national and local transport policies.

7.1.6 It is concluded that a range of key facilities and services, including employment, retail, health and education uses will be accessible from the site.

7.1.7 The development is predicted to generate some 66 and 64 vehicle trips in the morning and evening peak hours respectively.

7.1.8 An assessment of the operation of the local highway network in the vicinity of the site has been undertaken. The assessment has shown that even with the development traffic, the local highway network will continue to operate efficiently.

7.1.9 Both the site access and the new clubhouse access will have visibility splays which accord with the requirement of Manual for Streets.

7.1.10 In conclusion, it has been shown that the proposed residential scheme will not have a severe impact and consequently there are no material highways or traffic reasons why planning permission should not be granted.

7.1.11 The report has shown that the development proposals will be accessible by a range of travel modes and have been developed to accord with current national and local transport policies, including those set out within the Third Local Transport Plan for West Yorkshire and NPPF.

7.1.12 Overall it is considered that the site is a suitable location for the proposed residential development and there are no supportable highways or transport reasons that should prevent the granting of planning consent for the proposals.

FIGURES

Date Modified:

Drawn By:

File:

Key

Site Boundary

Grange Park
GRANGE LANE
Grange Lane Farm
DENBY GRANGE LANE
The Rookery
PH
The Rough
New Park
Hillhouse Wood
HARDCASTLE LANE
MANOR DR
MANOR HOUSE
Caravan Park
Manor House
Pav
Cricket Ground
PARK SIDE
ASH BROW
RUTLAND ROAD
HILL TOP RD
HAZEL G
CHESSINGTON D
A637
Pol Sta
BARNSLEY ROAD
Lady Beatrice Plantation
Recn Gd
Flockton Green
PW
Hill Top
Mill Lane (Track)
El Sub Sta
Ppg Sta
COACHGATES
Vic
PINFOLD CL
Flockton
MILL LANE
Langley Holmes Stables
Lane End Farm
BECK SIDE
Sawmill
Millhouse Farm
Mill Beck
Palace Wood
Palace Farm
Haigh Bridge
Westfield Farm
Bond Farm
Doctor Lane Bridge
DOCTOR LANE
COMMON END
PINFOLD LANE
Flockton Beck
HAIGH LANE
Common End
Highfield House
Caravan Site
Nether
Nursery
Crawshaw Lane (Track)
COMMON LANE
Kirkby Wood
Six Lanes End
Mouse House Dike
Epley Wood
Kirkby Grange
CLOUGH ROAD
Kirkby Grange Farm

0 0.25 0.5 Kilometres

WSP | PARSONS BRINCKERHOFF

TITLE:

DEVELOPMENT SITE

FIGURE No:

FIGURE 1

Date Modified:

Drawn By:

File:

Key

Site Boundary

Walk Speed: 4.8kph

- 0 to 5 Minutes (0 - 400 Metres)
- 5 to 10 Minutes (400 - 800 Metres)
- 10 to 15 Minutes (800 - 1200 Metres)
- 15 to 20 Minutes (1200 - 1600 Metres)
- 20 to 25 Minutes (1600 - 2000 Metres)

Healthcare Services

- GP Practice
- Sports and Fitness

Education

- Primary
- Other Educational Facility

0 0.5 1 Kilometres

WSP | PARSONS BRINCKERHOFF

TITLE:

2KM PEDESTRIAN ISOCHRONE

FIGURE No:

FIGURE 2

Date Modified:

Drawn By:

File:

Key

Site Boundary

Cycle Speed: 15kph

- 0 to 5 Minutes (0 - 1250 Metres)
- 5 to 10 Minutes (1250 - 2500 Metres)
- 10 to 15 Minutes (2500 - 3750 Metres)
- 15 to 20 Minutes (3750 - 5000 Metres)

0 1 2 Kilometres

WSP | PARSONS BRINCKERHOFF

TITLE:

5KM CYCLE ISOCHRONE

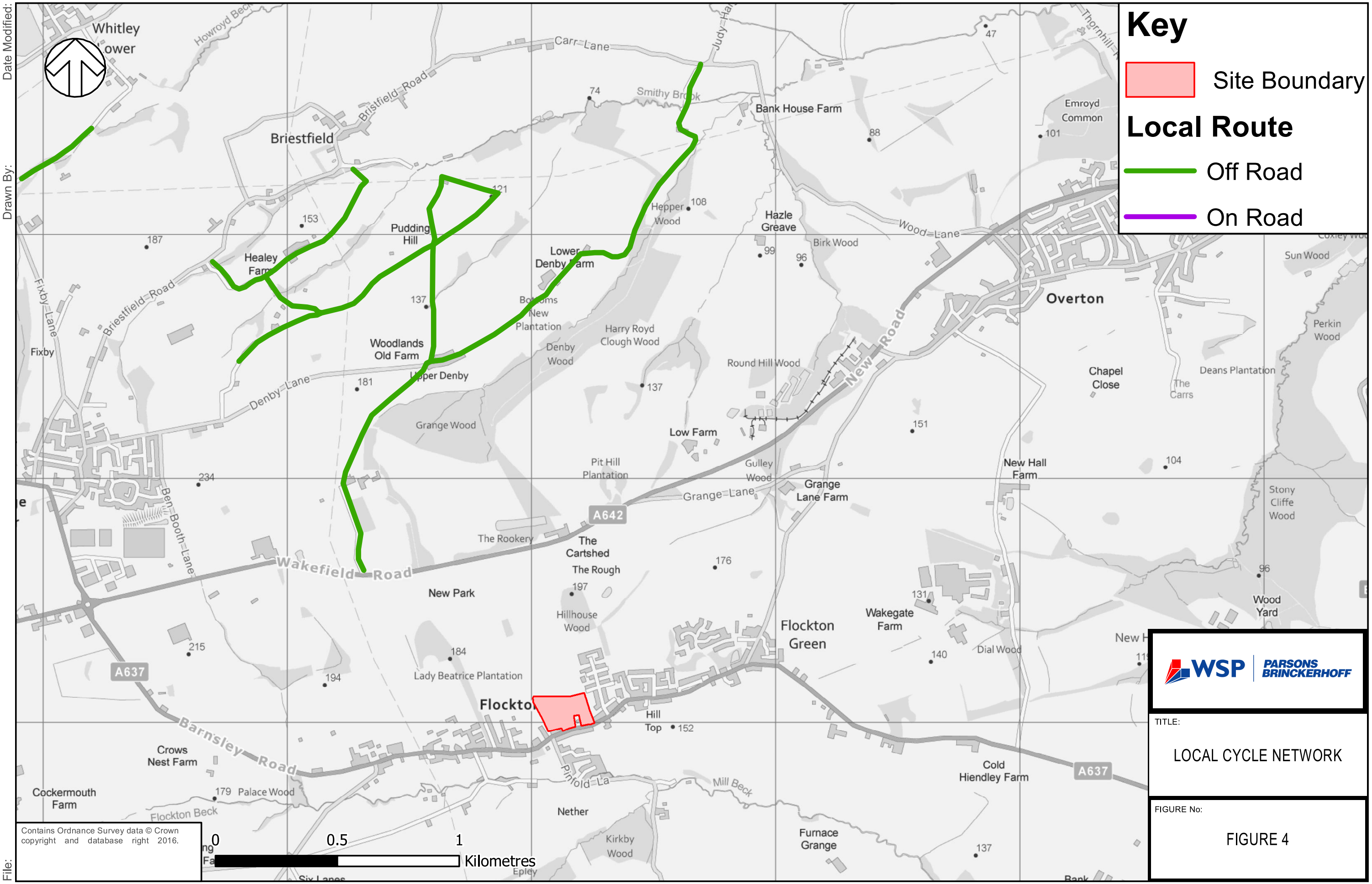
FIGURE No:

FIGURE 3

Date Modified:

Drawn By:

File:



WSP | PARSONS BRINCKERHOFF

TITLE:

LOCAL CYCLE NETWORK

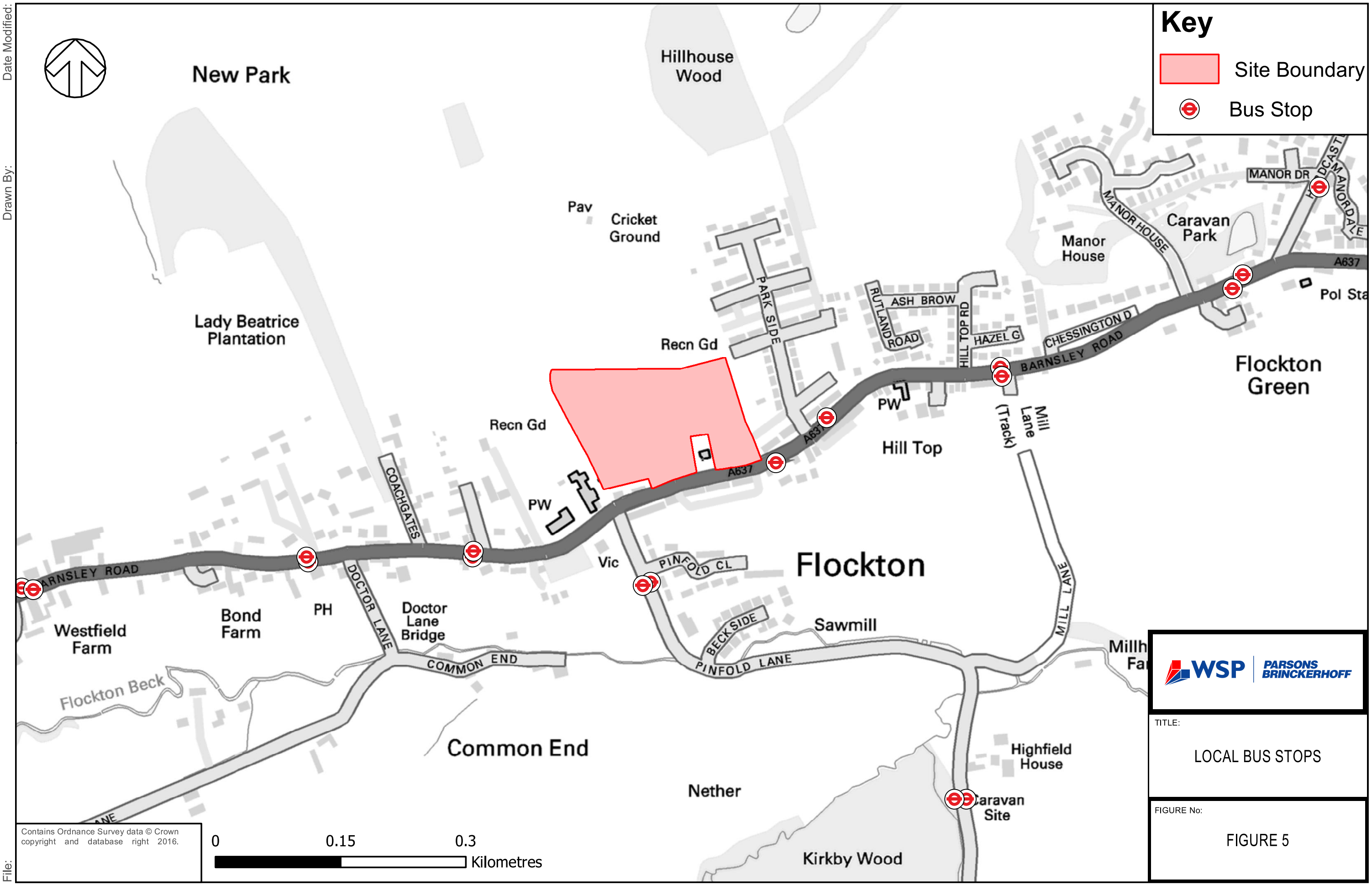
FIGURE No:

FIGURE 4

Date Modified:

Drawn By:

File:



WSP | PARSONS BRINCKERHOFF

TITLE:

LOCAL BUS STOPS

FIGURE No:

FIGURE 5

Date Modified:

Drawn By:

File:

Key

Site Boundary

Middlestown

Overton

Netherton

Grange Moor

A642

A637

Flockton

Lepton

A636

Emley

KIRKBURTON

0 1 2 Kilometres

WSP | PARSONS BRINCKERHOFF

TITLE:

LOCAL HIGHWAY NETWORK

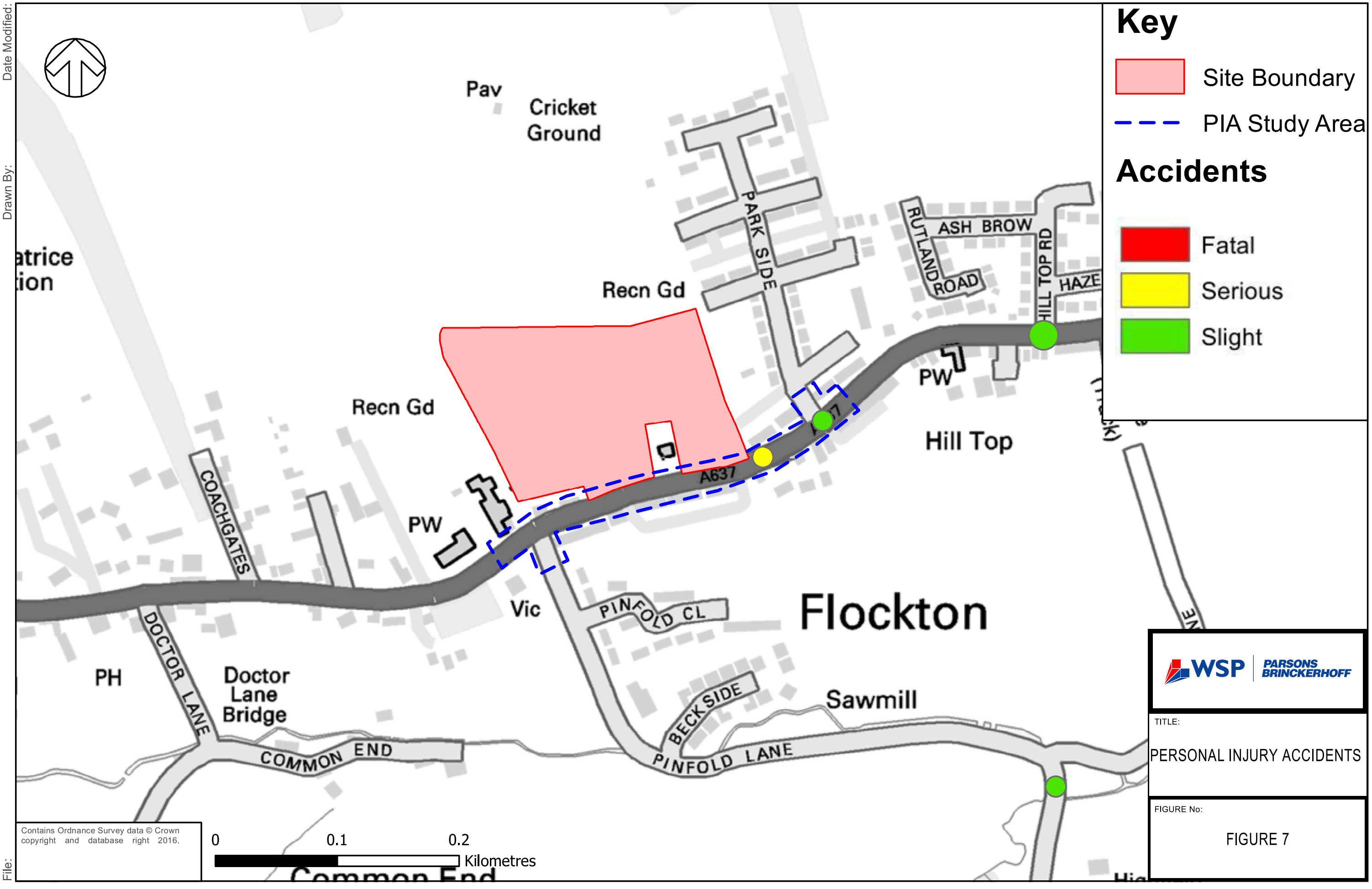
FIGURE No:

FIGURE 6

Date Modified:

Drawn By:

File:



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Key

- Site Boundary
- PIA Study Area

Accidents

- Fatal
- Serious
- Slight

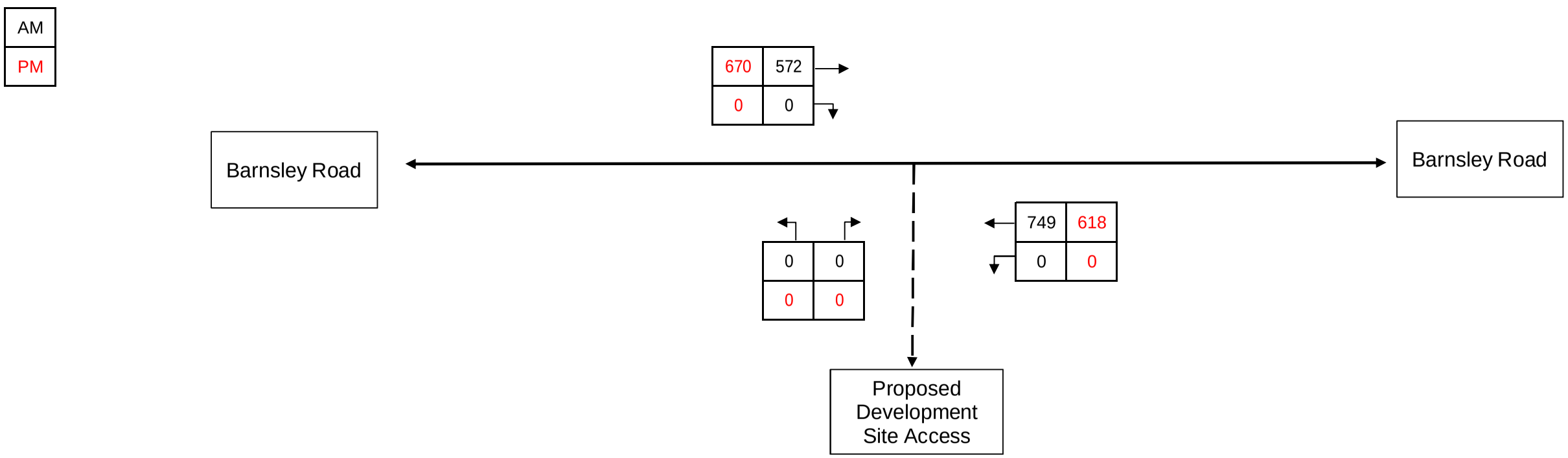
WSP | PARSONS BRINCKERHOFF

TITLE:

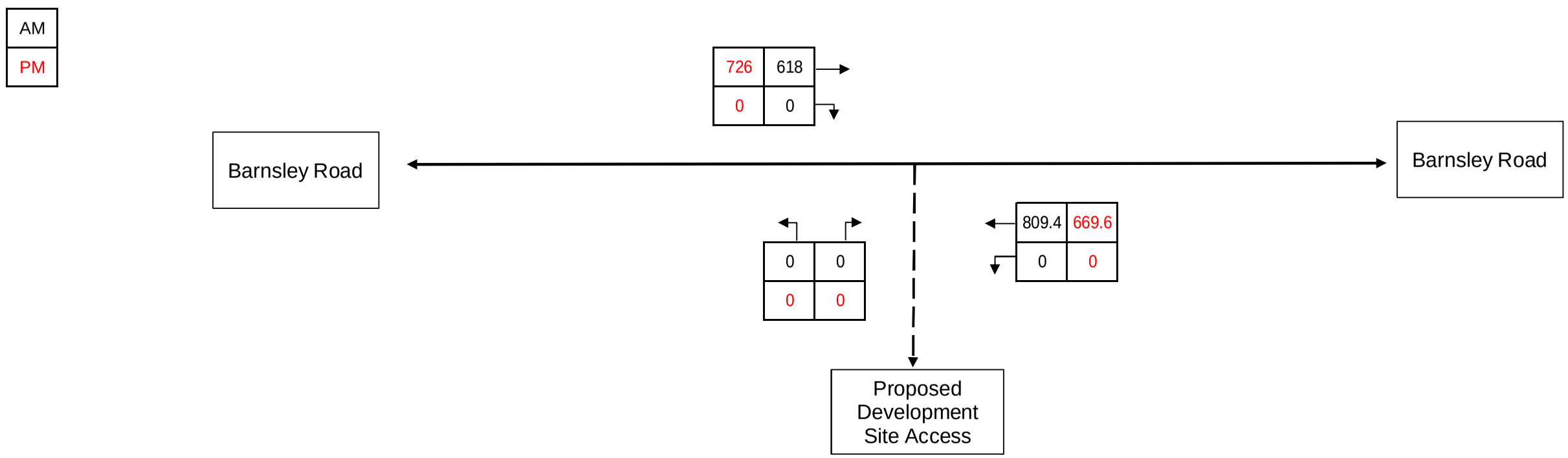
PERSONAL INJURY ACCIDENTS

FIGURE No:

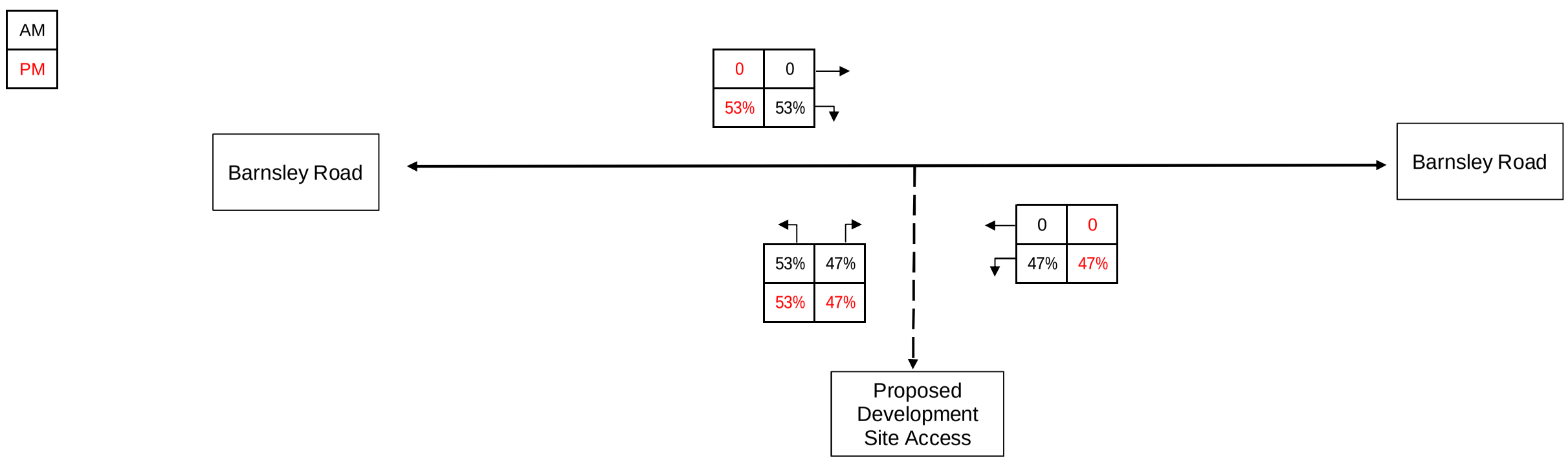
FIGURE 7



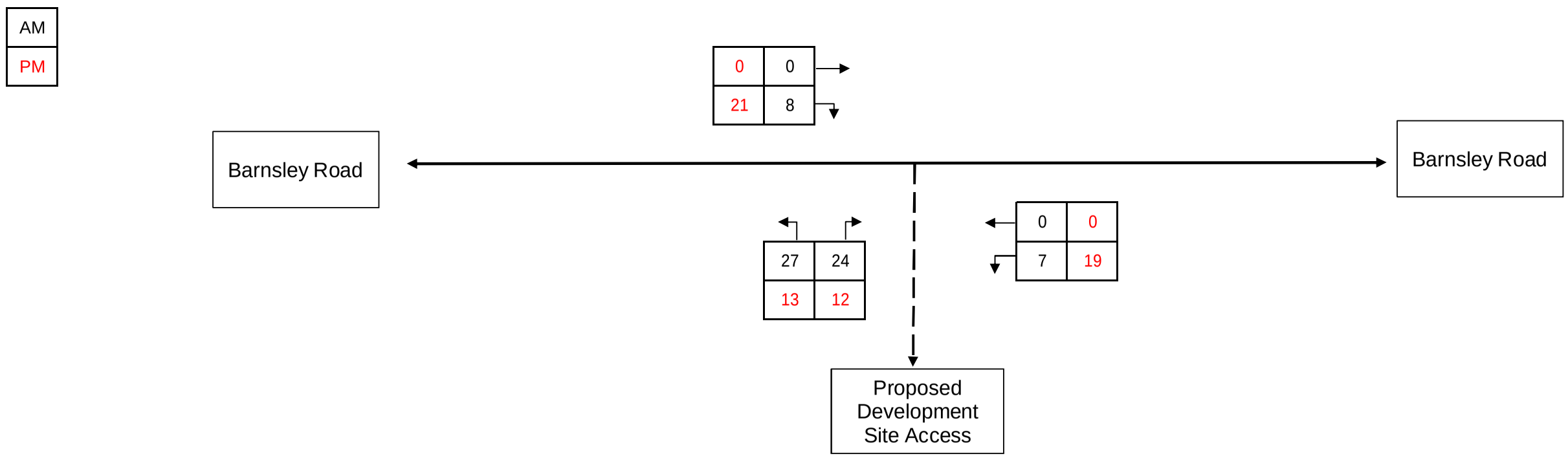
WSP | PARSONS BRINCKERHOFF	Barnsley Road, Flockton 2016 Base Traffic Flows	Figure No. 8



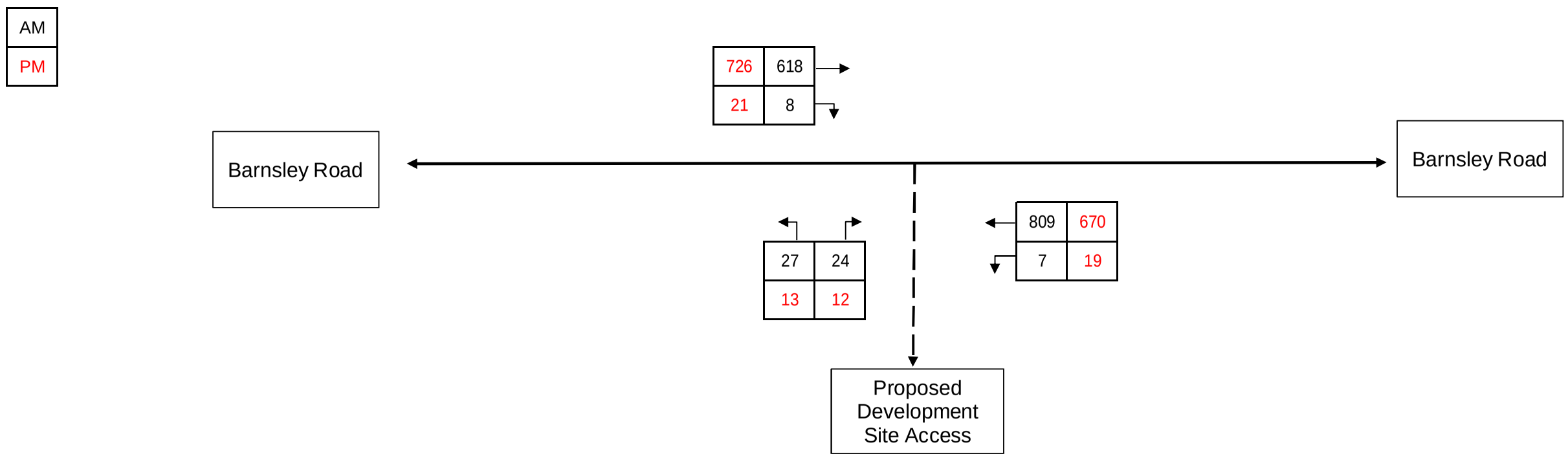
WSP | PARSONS BRINCKERHOFF	Barnsley Road, Flockton 2022 Base Traffic Flows	Figure No. 9



WSP | PARSONS BRINCKERHOFF	Barnsley Road, Flockton Development Distribution	Figure No. 10



WSP | PARSONS BRINCKERHOFF	Barnsley Road, Flockton Forecast Development Traffic Flows	Figure No. 11



WSP | PARSONS BRINCKERHOFF	Barnsley Road, Flockton 2022 Predicted Traffic Flows	Figure No. 12

Appendix A

PROPOSED SITE LAYOUT

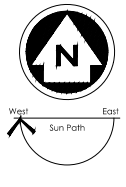
Barnsley Road, Flockton
Planning Layout

house type schedule

type			Sq. Ft	No.	
SH27	Darwin	2 Bed semi/terrace	750	13	9750
SH39	Selwood	3 bed semi/terrace	926	4	3704
P315	Oakfield	3 bed semi/terrace	950	6	5700
T322	Greenwood	4 bed semi/terrace	1188	24	28512
H346	Folston	3 Bed detached	938	2	1876
P341	Hadley	3 bed detached	1001	8	8008
H404	Irving	4 Bed detached	1167	2	2334
H452	Mitchell	4 Bed detached	1240	7	8680
H433	Cornell	4 Bed detached	1374	8	10992
H408	Drummond	4 bed detached	1444	8	11552
H469	Holden	4 bed detached	1536	5	7680
		TOTAL		87	98788

Legend

- Existing Dwellings
- Existing School (Flockton Primary School)
- Proposed Dwellings
- Proposed Working Mens Club
- Private Drive
- 1.8m high timber screen fence
- 1.8m high screen wall
- 1.2m high timber post and rail fence
- Front entrance door
- Affordable housing
- Indicative Landscaping
- Existing trees and hedges to remain. Refer to JCA details for species and condition

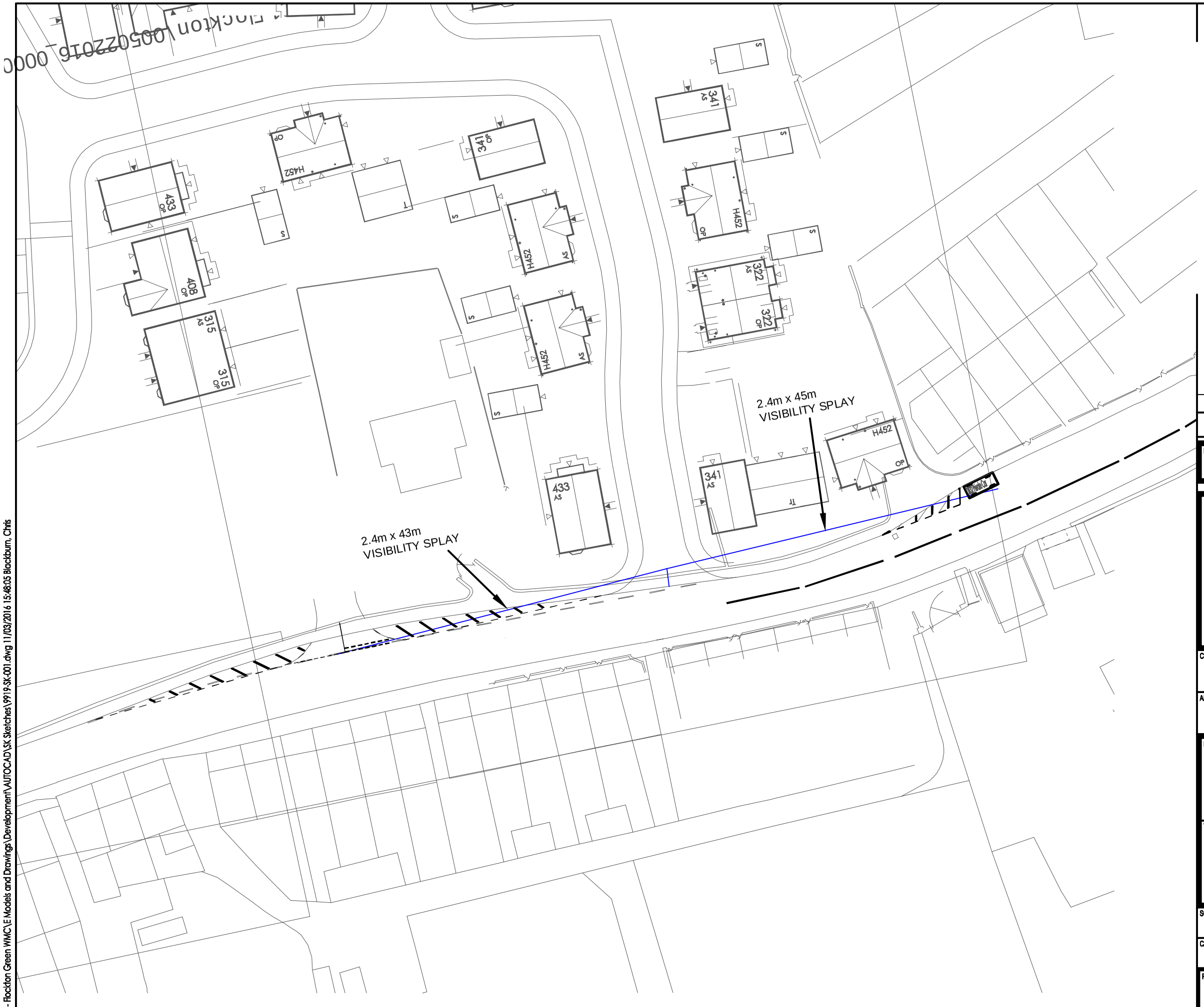


Development :	Barnsley Road
Location:	Flockton
Marketing Name:	
Drawing Title:	Planning Layout
Drawing Number:	FL-PL / 01
Revision:	-
Scale @ A1:	1:500
Drawn By:	KL
Date Started:	March 2016

Space to live.
David Wilson Homes
Vico Court, Ring Road, Lower Wortley, Leeds, LS12 6AN
Tel: 0113 279 0099 Fax: 0113 279 0038

Appendix B

SITE ACCESS VISIBILITY SPLAYS



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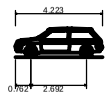

DB32 Private Car

Overall Length	4.223m
Overall Width	1.715m
Overall Body Height	1.392m
Min Body Ground Clearance	0.233m
Max Track Width	1.629m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.780m

REV	DATE	BY	DESCRIPTION	CHK	APD
A	11/03/2016	CTB	FIRST ISSUE	GB	GB

DRAWING STATUS:
FOR INFORMATION ONLY

WSP | PARSONS BRINCKERHOFF
Three White Rose Office Park, Millshaw Park Lane, Leeds LS11 0DT
Tel: +44 (0)113 395 6200 Fax: +44 (0)113 395 6201
www.wspgroup.com www.pbworld.com

CLIENT:
BARRATT HOMES & DAVID WILSON HOMES

ARCHITECT:

PROJECT:
FLOCKTON GREEN WMC

TITLE:
VISIBILITY SPLAY

SCALE @ A3:	CHECKED:	APPROVED:
1:500	GB	GB
CAD FILE:	DESIGN-DRAWN:	DATE:
9919-SK-001	CTB	March 2016

PROJECT No:	DRAWING No:	REV:
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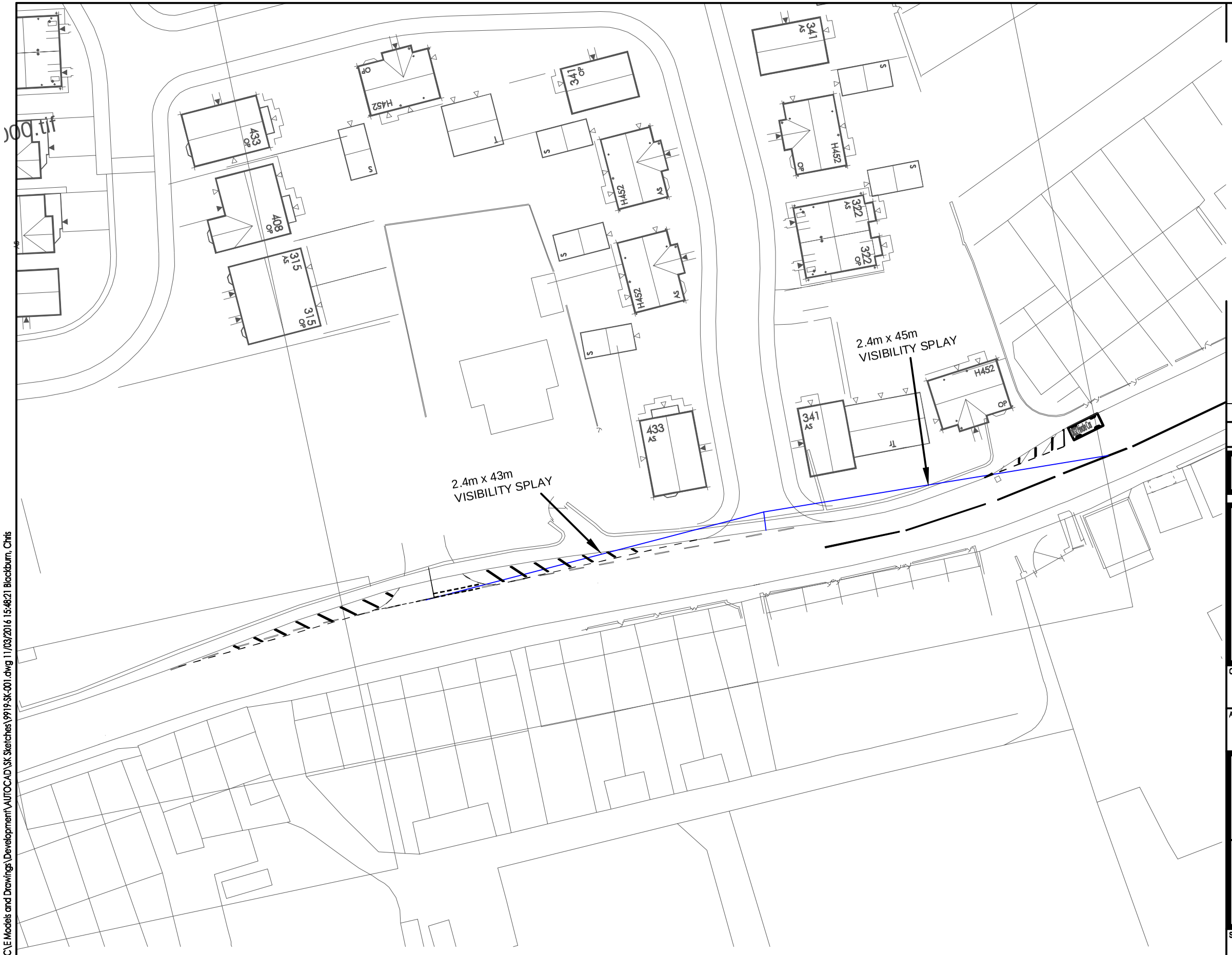

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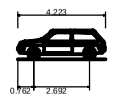

DB32 Private Car	
Overall Length	4.223m
Overall Width	1.715m
Overall Body Height	1.392m
Min Body Ground Clearance	0.233m
Max Track Width	1.629m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.780m

Visibility Splay turning left out of the junction is towards oncoming vehicles from the left.

REV	DATE	BY	DESCRIPTION	CHK	APD
A	11/03/2016	CTB	FIRST ISSUE	GB	GB

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CLIENT: BARRATT HOMES & DAVID WILSON HOMES

ARCHITECT:

PROJECT: FLOCKTON GREEN WMC

TITLE: VISIBILITY SPLAY

SCALE @ A3:	CHECKED:	APPROVED:
1:500	GB	GB
CAD FILE: 9919-SK-001	DESIGN-DRAWN: CTB	DATE: March 2016

PROJECT No:	DRAWING No:	REV:
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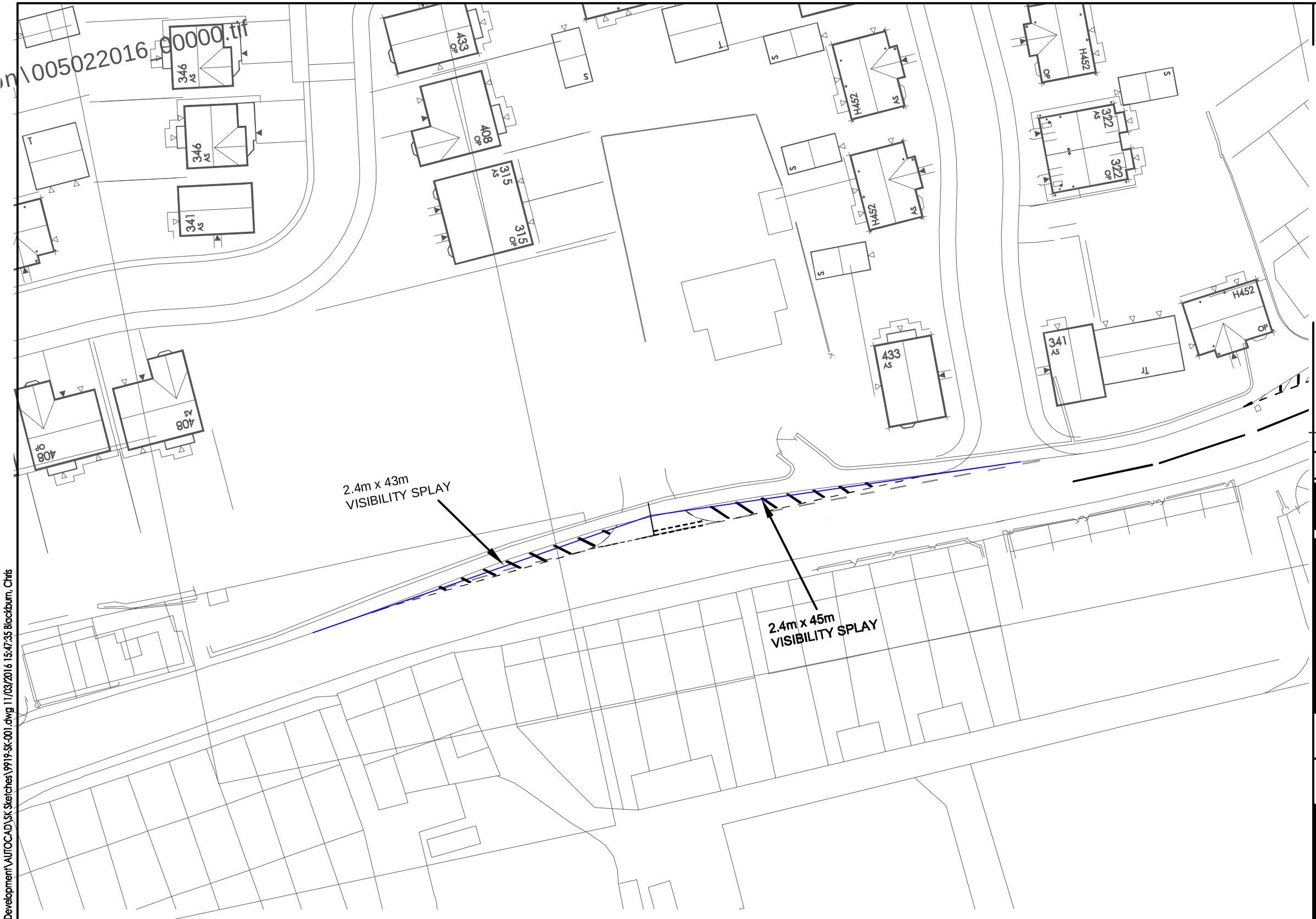

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REV	DATE	BY	DESCRIPTION	CHK	APD
A	11/03/2016	CTB	FIRST ISSUE	GB	GB

DRAWING STATUS:
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WSP | PARSONS BRINCKERHOFF
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www.wspgroup.com www.pbworld.com

CLIENT:
BARRATT HOMES & DAVID WILSON HOMES

ARCHITECT:

PROJECT:
FLOCKTON GREEN WMC

TITLE:
VISIBILITY SPLAY

SCALE @ A3:	CHECKED:	APPROVED:
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CAD FILE:	DESIGN-DRAWN:	DATE:
9919-SK-001	CTB	March 2016

PROJECT No:	DRAWING No:	REV:
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Appendix C

COUNT DATA & SPEED SURVEY

Road:	**A637 Barnsley Road, Flockton**	**A:**	**Westbound**
Day:	**Tuesday**	**B:**	**Eastbound**
Date:	**8 March 2016**		
Weather:	**Fine & Drizzle AM/Fine & Cloudy PM**		

	A								B							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
07:30	105	29	1	1	1	1	0	138	155	21	3	0	0	1	1	181
07:45	109	27	7	0	0	0	2	145	170	26	2	1	0	1	0	200
08:00	100	23	6	1	0	1	1	132	150	26	2	2	0	0	2	182
08:15	116	17	3	3	0	0	1	140	142	19	9	0	0	0	1	171
0730-0830 TOTAL	**430**	**96**	**17**	**5**	**1**	**2**	**4**	**555**	**617**	**92**	**16**	**3**	**0**	**2**	**4**	**734**
08:30	111	21	4	5	0	0	0	141	111	19	4	0	0	3	1	138
08:45	104	25	6	1	0	1	0	137	105	21	7	0	0	0	0	133
09:00	88	14	3	0	1	0	1	107	101	17	5	1	0	0	2	126
09:15	78	8	3	1	0	1	1	92	78	15	3	0	0	2	0	98
Total	**1241**	**260**	**50**	**17**	**3**	**6**	**10**	**1587**	**1629**	**256**	**51**	**7**	**0**	**9**	**11**	**1963**
16:00	114	25	7	0	0	1	3	150	99	32	3	0	0	2	2	138
16:15	119	32	6	0	0	0	0	157	61	21	3	1	0	1	1	88
16:30	143	29	8	0	0	1	1	182	129	26	5	1	0	0	0	161
16:45	140	24	3	1	0	1	0	169	121	24	1	0	0	0	1	147
17:00	132	25	1	1	1	0	0	160	133	21	0	0	0	0	1	155
17:15	123	24	2	0	0	0	1	150	129	16	2	0	0	2	0	149
1630-1730 TOTAL	**538**	**102**	**14**	**2**	**1**	**2**	**2**	**661**	**512**	**87**	**8**	**1**	**0**	**2**	**2**	**612**
17:30	110	26	2	0	0	0	0	138	121	17	0	0	1	0	1	140
17:45	129	18	2	0	0	0	2	151	117	14	0	0	0	0	0	131
Total	**1548**	**305**	**45**	**4**	**2**	**5**	**9**	**1918**	**1422**	**258**	**22**	**3**	**1**	**7**	**8**	**1721**

A637 Barnsley Road, Flockton - Speed Survey (Thursday 29th January 2016)

Weather - Mainly Fine, Sunny and Windy but occassional Shower

Westbound

27	25	31	28	31	27	29	27	28	26
28	31	29	34	31	28	25	28	26	25
27	29	26	27	32	26	29	20	36	25
26	25	28	26	31	25	30	25	23	25
22	28	26	24	30	27	32	28	21	26
22	31	30	26	31	30	27	21	25	22
24	28	22	28	32	27	28	27	23	26
25	29	23	25	27	30	26	29	27	25
30	28	32	28	21	24	30	26	28	26
25	24	30	23	26	27	33	28	27	31
27	29	26	31	29	23	30	34	31	23
24	26	24	23	26	28	31	28	24	26
23	26	29	25	29	31	26	30	27	31
27	29	27	32	27	23	27	28	30	29
28	24	27	29	26	32	29	26	28	26
25	30	28	26	28	31	29	25	30	29
25	29	25	27	33	29	25	32	26	27
30	28	30	24	27	31	28	30	29	27
31	28	31	28	30	26	31	29	26	28
33	27	29	26	28	30	28	30	27	29

Max - 36 **Min - 20** **85% - 31** **Ave - 28** **Sp. Limit - 30**

27 - Cars/LGV's **26 - HGV's/PSV's**

A637 Barnsley Road, Flockton - Speed Survey (Thursday 29th January 2016)

Weather - Mainly Fine, Sunny and Windy but occassional Shower

Eastbound

26	25	32	26	33	21	29	25	27	25
25	28	23	32	25	25	26	24	33	29
31	26	31	20	26	28	30	26	24	26
27	25	28	30	26	31	32	28	27	29
25	28	25	30	26	28	30	27	28	27
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21	24	22	26	27	27	34	22	26	23
24	27	25	27	31	29	22	28	27	27
24	21	26	29	27	29	33	29	27	31
27	25	30	28	30	26	27	30	29	28
29	27	23	27	30	26	30	19	27	22
25	23	31	28	27	20	28	27	34	27
35	30	24	31	27	26	24	29	25	27
30	28	25	27	29	27	29	32	30	28
31	29	32	29	27	30	26	31	25	27
35	27	25	23	30	27	23	30	32	26
30	28	32	29	26	30	26	27	31	29

Max - 35 **Min - 19** **85% - 30** **Ave - 27** **Sp. Limit - 30**

26 - Cars/LGV's **25 - HGV's/PSV's**

Appendix D

TRICS OUTPUTS

Calculation Reference: AUDIT-100304-160307-0321

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	SOUTH WEST		
	CW	CORNWALL	1 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	2 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
11	SCOTLAND		
	AD	ABERDEEN CITY	1 days
	HI	HIGHLAND	1 days
	SR	STIRLING	1 days

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

Filtering Stage 2 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: 52 to 129 (units:)
Range Selected by User: 50 to 150 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 24/10/13

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	3 days
Tuesday	2 days
Wednesday	2 days
Thursday	1 days
Friday	3 days

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

Selected survey types:

Manual count	11 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)	11

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	9
No Sub Category	2

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.

Filtering Stage 3 selection:

Use Class:

C3	11 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	2 days
5,001 to 10,000	2 days
10,001 to 15,000	1 days
15,001 to 20,000	4 days
20,001 to 25,000	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	1 days
50,001 to 75,000	2 days
75,001 to 100,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	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	1 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	11 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.

LIST OF SITES relevant to selection parameters

1 AD-03-A-01 SEMI-DETACHED ABERDEEN CITY
SPRINGFIELD ROAD

ABERDEEN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 59
Survey date: FRIDAY *18/05/12* *Survey Type: MANUAL*

2 CH-03-A-06 SEMI-DET./BUNGALOWS CHESHIRE
CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 129
Survey date: TUESDAY *14/10/08* *Survey Type: MANUAL*

3 CW-03-A-02 SEMI D./DETATCHED CORNWALL
BOSVEAN GARDENS

TRURO
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 73
Survey date: TUESDAY *18/09/07* *Survey Type: MANUAL*

4 HI-03-A-14 SEMI-DETACHED HIGHLAND
CALEDONIAN ROAD
DALNEIGH
INVERNESS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 73
Survey date: FRIDAY *13/05/11* *Survey Type: MANUAL*

5 NF-03-A-02 HOUSES & FLATS NORFOLK
DEREHAM ROAD

NORWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 98
Survey date: MONDAY *22/10/12* *Survey Type: MANUAL*

6 NY-03-A-06 BUNGALOWS & SEMI DET. NORTH YORKSHIRE
HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY *14/10/11* *Survey Type: MANUAL*

7 NY-03-A-09 MIXED HOUSING NORTH YORKSHIRE
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY *16/09/13* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

8 SF-03-A-01 SEMI DETACHED SUFFOLK
A1156 FELIXSTOWE ROAD
RACECOURSE
IPSWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 77
Survey date: WEDNESDAY *23/05/07* *Survey Type: MANUAL*

9 SH-03-A-04 TERRACED SHROPSHIRE
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108
Survey date: THURSDAY *11/06/09* *Survey Type: MANUAL*

10 SR-03-A-01 DETACHED STIRLING
BENVIEW
STIRLING
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: MONDAY *23/04/07* *Survey Type: MANUAL*

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	11	87	0.060	11	87	0.254	11	87	0.314
08:00 - 09:00	11	87	0.135	11	87	0.360	11	87	0.495
09:00 - 10:00	11	87	0.151	11	87	0.205	11	87	0.356
10:00 - 11:00	11	87	0.142	11	87	0.152	11	87	0.294
11:00 - 12:00	11	87	0.156	11	87	0.165	11	87	0.321
12:00 - 13:00	11	87	0.163	11	87	0.158	11	87	0.321
13:00 - 14:00	11	87	0.176	11	87	0.169	11	87	0.345
14:00 - 15:00	11	87	0.161	11	87	0.168	11	87	0.329
15:00 - 16:00	11	87	0.233	11	87	0.190	11	87	0.423
16:00 - 17:00	11	87	0.264	11	87	0.157	11	87	0.421
17:00 - 18:00	11	87	0.316	11	87	0.199	11	87	0.515
18:00 - 19:00	11	87	0.217	11	87	0.146	11	87	0.363
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.174			2.323			4.497

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:	52 - 129 (units:)
Survey date date range:	01/01/07 - 24/10/13
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

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 TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	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	11	87	0.110	11	87	0.425	11	87	0.535
08:00 - 09:00	11	87	0.210	11	87	0.737	11	87	0.947
09:00 - 10:00	11	87	0.258	11	87	0.350	11	87	0.608
10:00 - 11:00	11	87	0.247	11	87	0.269	11	87	0.516
11:00 - 12:00	11	87	0.246	11	87	0.285	11	87	0.531
12:00 - 13:00	11	87	0.259	11	87	0.283	11	87	0.542
13:00 - 14:00	11	87	0.260	11	87	0.288	11	87	0.548
14:00 - 15:00	11	87	0.272	11	87	0.283	11	87	0.555
15:00 - 16:00	11	87	0.494	11	87	0.345	11	87	0.839
16:00 - 17:00	11	87	0.502	11	87	0.308	11	87	0.810
17:00 - 18:00	11	87	0.571	11	87	0.363	11	87	0.934
18:00 - 19:00	11	87	0.391	11	87	0.247	11	87	0.638
19:00 - 20:00	1	73	0.000	1	73	0.000	1	73	0.000
20:00 - 21:00	1	73	0.000	1	73	0.000	1	73	0.000
21:00 - 22:00	1	73	0.000	1	73	0.000	1	73	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.820			4.183			8.003

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:	52 - 129 (units:)
Survey date date range:	01/01/07 - 24/10/13
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

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.

Appendix E

MODE SPLIT DATA

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
usual residence : E02002316 : Kirklees 046 (2011 super output area - middle layer)

place of work : 2011 super output area - middle layer	All categor	Train	Bus, minib	Taxi	Motorcycle	Driving a c	Passenger	Bicycle	On foot
E02002299 : Kirklees 029	273	1	43	1	1	203	19	2	3
E02002312 : Kirklees 042	112	0	23	0	0	80	9	0	0
E02002316 : Kirklees 046	157	0	3	1	0	71	13	0	69
E02002321 : Kirklees 051	94	0	8	0	0	60	8	1	17
E02002454 : Wakefield 017	60	0	4	0	0	52	3	1	0
E02006875 : Leeds 111	83	26	1	0	0	48	8	0	0
E02002303 : Kirklees 033	58	0	9	1	1	43	3	0	1
E02002302 : Kirklees 032	65	0	7	2	0	38	5	1	12
E02002456 : Wakefield 019	36	0	2	0	1	33	0	0	0
E02002294 : Kirklees 024	34	0	0	0	0	32	2	0	0
E02002268 : Calderdale 025	34	0	2	0	0	31	0	1	0
E02002329 : Kirklees 059	40	0	4	0	0	30	3	0	3
E02002327 : Kirklees 057	39	0	5	0	1	30	2	0	1
E02002295 : Kirklees 025	35	0	1	1	0	30	1	0	2
E02002326 : Kirklees 056	36	0	1	0	0	29	5	0	1
E02002472 : Wakefield 035	33	0	1	0	0	27	4	1	0
E02002251 : Calderdale 008	31	0	0	0	0	27	4	0	0
E02002323 : Kirklees 053	31	0	0	0	2	27	2	0	0
E02002304 : Kirklees 034	38	0	9	0	0	26	3	0	0
E02002309 : Kirklees 039	34	0	8	0	0	25	1	0	0
E02002287 : Kirklees 017	30	1	2	0	0	24	3	0	0
E02002301 : Kirklees 031	24	0	1	0	0	23	0	0	0
E02002318 : Kirklees 048	24	0	1	0	0	22	1	0	0
E02002465 : Wakefield 028	23	0	1	0	0	20	2	0	0
E02002296 : Kirklees 026	23	0	0	1	0	19	2	1	0
E02002313 : Kirklees 043	29	0	3	0	2	19	0	1	4
E02002324 : Kirklees 054	23	1	0	0	0	17	5	0	0
E02002293 : Kirklees 023	22	0	0	0	2	17	2	0	1
E02002307 : Kirklees 037	20	0	1	0	0	17	1	0	1
E02002291 : Kirklees 021	18	0	0	0	0	17	1	0	0
E02006876 : Leeds 112	18	1	0	0	0	17	0	0	0
E02002451 : Wakefield 014	17	0	0	0	0	17	0	0	0
E02002468 : Wakefield 031	17	0	0	0	0	17	0	0	0
E02002458 : Wakefield 021	18	0	0	0	1	16	1	0	0
E02002305 : Kirklees 035	19	0	1	1	0	14	2	0	1
E02002319 : Kirklees 049	15	0	1	0	0	14	0	0	0
E02002450 : Wakefield 013	15	0	0	0	1	14	0	0	0
E02002315 : Kirklees 045	20	0	0	0	2	13	2	1	2
E02002314 : Kirklees 044	16	1	1	0	0	13	0	0	1
E02002325 : Kirklees 055	15	1	0	0	1	13	0	0	0
E02002292 : Kirklees 022	15	0	1	0	0	12	2	0	0
E02002262 : Calderdale 019	16	0	2	0	0	12	1	1	0
E02002419 : Leeds 090	12	1	0	0	0	11	0	0	0
E02002258 : Calderdale 015	12	0	1	0	0	11	0	0	0
E02002459 : Wakefield 022	11	0	0	0	0	11	0	0	0
E02002435 : Leeds 106	13	0	1	0	0	10	2	0	0
E02002306 : Kirklees 036	11	0	1	0	0	10	0	0	0
E02002384 : Leeds 055	10	0	0	0	0	10	0	0	0
E02002298 : Kirklees 028	11	0	0	0	0	9	2	0	0
E02002264 : Calderdale 021	10	0	0	0	0	9	0	0	1
E02002272 : Kirklees 002	10	0	1	0	0	9	0	0	0
E02002275 : Kirklees 005	9	0	0	0	0	9	0	0	0
E02002462 : Wakefield 025	9	0	0	0	0	9	0	0	0
E02002466 : Wakefield 029	11	0	0	0	0	8	3	0	0
E02002467 : Wakefield 030	12	0	1	0	0	8	2	1	0
E02002328 : Kirklees 058	12	0	2	0	0	8	1	0	1
E02002221 : Bradford 039	11	0	2	0	0	8	1	0	0
E02002308 : Kirklees 038	9	0	0	0	0	8	1	0	0
E02002297 : Kirklees 027	10	0	1	0	0	8	0	0	1
E02002226 : Bradford 044	8	0	0	0	0	8	0	0	0
E02002281 : Kirklees 011	8	0	0	0	0	8	0	0	0
E02002411 : Leeds 082	8	0	0	0	0	8	0	0	0
E02002473 : Wakefield 036	8	0	0	0	0	8	0	0	0
E02002320 : Kirklees 050	10	0	2	0	0	7	1	0	0
E02002283 : Kirklees 013	8	0	0	0	0	7	1	0	0
E02002445 : Wakefield 008	8	0	0	0	0	7	1	0	0
E02002285 : Kirklees 015	9	0	1	0	0	7	0	0	1
E02001521 : Barnsley 013	8	0	0	0	0	7	0	0	1
E02002286 : Kirklees 016	10	0	3	0	0	7	0	0	0
E02002289 : Kirklees 019	8	0	1	0	0	7	0	0	0
E02002300 : Kirklees 030	8	0	1	0	0	7	0	0	0
E02001520 : Barnsley 012	7	0	0	0	0	7	0	0	0
E02002317 : Kirklees 047	7	0	0	0	0	7	0	0	0
E02002453 : Wakefield 016	7	0	0	0	0	7	0	0	0
E02002311 : Kirklees 041	8	1	0	0	0	6	0	0	1
E02002392 : Leeds 063	7	1	0	0	0	6	0	0	0
E02002280 : Kirklees 010	7	0	1	0	0	6	0	0	0
E02002443 : Wakefield 006	7	0	1	0	0	6	0	0	0
E02002227 : Bradford 045	6	0	0	0	0	6	0	0	0
E02002259 : Calderdale 016	6	0	0	0	0	6	0	0	0
E02004064 : Chesterfield 010	6	0	0	0	0	6	0	0	0
E02002310 : Kirklees 040	13	0	5	0	0	5	2	0	1
E02002422 : Leeds 093	6	0	1	0	0	5	0	0	0
E02001524 : Barnsley 016	5	0	0	0	0	5	0	0	0
E02001532 : Barnsley 024	5	0	0	0	0	5	0	0	0
E02006843 : Sheffield 073	5	0	0	0	0	5	0	0	0
E02002239 : Bradford 057	5	0	0	0	0	5	0	0	0
E02002255 : Calderdale 012	5	0	0	0	0	5	0	0	0
E02002273 : Kirklees 003	5	0	0	0	0	5	0	0	0
E02002284 : Kirklees 014	5	0	0	0	0	5	0	0	0
E02002290 : Kirklees 020	5	0	0	0	0	5	0	0	0
E02002415 : Leeds 086	5	0	0	0	0	5	0	0	0
E02002431 : Leeds 102	5	0	0	0	0	5	0	0	0
E02002444 : Wakefield 007	5	0	0	0	0	5	0	0	0
E02002279 : Kirklees 009	5	0	0	0	0	4	1	0	0
E02005780 : Harrogate 020	4	0	0	0	0	4	0	0	0
E02001513 : Barnsley 005	4	0	0	0	0	4	0	0	0
E02002261 : Calderdale 018	4	0	0	0	0	4	0	0	0
E02002393 : Leeds 064	4	0	0	0	0	4	0	0	0
E02002424 : Leeds 095	4	0	0	0	0	4	0	0	0
E02002425 : Leeds 096	4	0	0	0	0	4	0	0	0
E02002469 : Wakefield 032	4	0	0	0	0	4	0	0	0
E02002470 : Wakefield 033	4	0	0	0	0	4	0	0	0
E02003785 : South Cambridgeshire 011	4	0	0	0	0	4	0	0	0
E02002475 : Wakefield 038	6	0	0	0	0	3	2	0	1
E02002230 : Bradford 048	4	0	0	0	0	3	1	0	0
E02002336 : Leeds 007	4	0	0	0	0	3	1	0	0
E02000997 : Bolton 014	3	0	0	0	0	3	0	0	0
E02001059 : Manchester 015	3	0	0	0	0	3	0	0	0
E02001229 : Tameside 001	3	0	0	0	0	3	0	0	0
E02005818 : Selby 010	3	0	0	0	0	3	0	0	0
E02001523 : Barnsley 015	3	0	0	0	0	3	0	0	0
E02001525 : Barnsley 017	3	0	0	0	0	3	0	0	0
E02001527 : Barnsley 019	3	0	0	0	0	3	0	0	0
E02001541 : Doncaster 003	3	0	0	0	0	3	0	0	0
E02001628 : Sheffield 018	3	0	0	0	0	3	0	0	0
E02001632 : Sheffield 022	3	0	0	0	0	3	0	0	0
E02001650 : Sheffield 040	3	0	0	0	0	3	0	0	0
E02002208 : Bradford 026	3	0	0	0	0	3	0	0	0
E02002219 : Bradford 037	3	0	0	0	0	3	0	0	0
E02002228 : Bradford 046	3	0	0	0	0	3	0	0	0
E02002254 : Calderdale 011	3	0	0	0	0	3	0	0	0
E02002257 : Calderdale 014	3	0	0	0	0	3	0	0	0
E02002334 : Leeds 005	3	0	0	0	0	3	0	0	0
E02002395 : Leeds 066	3	0	0	0	0	3	0	0	0
E02002400 : Leeds 071	3	0	0	0	0	3	0	0	0
E02002416 : Leeds 087	3	0	0	0	0	3	0	0	0
E02002420 : Leeds 091	3	0	0	0	0	3	0	0	0
E02002433 : Leeds 104	3	0	0	0	0	3	0	0	0
E02006861 : Leeds 110	3	0	0	0	0	3	0	0	0
E02002439 : Wakefield 002	3	0	0	0	0	3	0	0	0
E02002463 : Wakefield 026	3	0	0	0	0	3	0	0	0
E02004105 : North East Derbyshire 001	3	0	0	0	0	3	0	0	0
E02003259 : Luton 002	3	0	0	0	0	3	0	0	0
E02002322 : Kirklees 052	5	0	1	0	0	2	1	0	1
E02002276 : Kirklees 006	3	0	0	0	0	2	1	0	0
E02002277 : Kirklees 007	3	0	0	0	0	2	1	0	0
E02002412 : Leeds 083	3	0	0	0	0	2	1	0	0
E02002271 : Kirklees 001	3	0	0	0	0	2	0	0	1
E02002288 : Kirklees 018	5	0	3	0	0	2	0	0	0
E02002331 : Leeds 002	4	0	2	0	0	2	0	0	0
E02002396 : Leeds 067	3	0	1	0	0	2	0	0	0
E02004344 : County Durham 063	2	0	0	0	0	2	0	0	0
E02001752 : North Tyneside 015	2	0	0	0	0	2	0	0	0
E02001114 : Oldham 017	2	0	0	0	0	2	0	0	0
E02001117 : Oldham 020	2	0	0	0	0	2	0	0	0
E02001186 : Salford 030	2	0	0	0	0	2	0	0	0
E02005256 : Preston 004	2	0	0	0	0	2	0	0	0
E02005313 : West Lancashire 010	2	0	0	0	0	2	0	0	0

E02001512 : Barnsley 004	2	0	0	0	0	2	0	0	0
E02001538 : Barnsley 030	2	0	0	0	0	2	0	0	0
E02001586 : Rotherham 009	2	0	0	0	0	2	0	0	0
E02001591 : Rotherham 014	2	0	0	0	0	2	0	0	0
E02001611 : Sheffield 001	2	0	0	0	0	2	0	0	0
E02002199 : Bradford 017	2	0	0	0	0	2	0	0	0
E02002201 : Bradford 019	2	0	0	0	0	2	0	0	0
E02002216 : Bradford 034	2	0	0	0	0	2	0	0	0
E02002220 : Bradford 038	2	0	0	0	0	2	0	0	0
E02002235 : Bradford 053	2	0	0	0	0	2	0	0	0
E02002267 : Calderdale 024	2	0	0	0	0	2	0	0	0
E02002278 : Kirklees 008	2	0	0	0	0	2	0	0	0
E02002335 : Leeds 006	2	0	0	0	0	2	0	0	0
E02002348 : Leeds 019	2	0	0	0	0	2	0	0	0
E02002350 : Leeds 021	2	0	0	0	0	2	0	0	0
E02002362 : Leeds 033	2	0	0	0	0	2	0	0	0
E02002373 : Leeds 044	2	0	0	0	0	2	0	0	0
E02002377 : Leeds 048	2	0	0	0	0	2	0	0	0
E02002394 : Leeds 065	2	0	0	0	0	2	0	0	0
E02002397 : Leeds 068	2	0	0	0	0	2	0	0	0
E02002402 : Leeds 073	2	0	0	0	0	2	0	0	0
E02002436 : Leeds 107	2	0	0	0	0	2	0	0	0
E02006852 : Leeds 109	2	0	0	0	0	2	0	0	0
E02002441 : Wakefield 004	2	0	0	0	0	2	0	0	0
E02002442 : Wakefield 005	2	0	0	0	0	2	0	0	0
E02002446 : Wakefield 009	2	0	0	0	0	2	0	0	0
E02002457 : Wakefield 020	2	0	0	0	0	2	0	0	0
E02002461 : Wakefield 024	2	0	0	0	0	2	0	0	0
E02002474 : Wakefield 037	2	0	0	0	0	2	0	0	0
E02005450 : Lincoln 009	2	0	0	0	0	2	0	0	0
E02002970 : Stoke-on-Trent 020	2	0	0	0	0	2	0	0	0
E02006722 : Redditch 002	2	0	0	0	0	2	0	0	0
E02002242 : Bradford 060	3	0	0	0	0	1	2	0	0
E02001141 : Rochdale 010	2	0	0	0	0	1	1	0	0
E02002269 : Calderdale 026	3	0	1	0	0	1	0	0	1
E02002246 : Calderdale 003	2	1	0	0	0	1	0	0	0
E02002399 : Leeds 070	2	1	0	0	0	1	0	0	0
E02002452 : Wakefield 015	2	1	0	0	0	1	0	0	0
E02002573 : Darlington 015	1	0	0	0	0	1	0	0	0
E02003858 : Cheshire East 006	1	0	0	0	0	1	0	0	0
E02003988 : Carlisle 002	1	0	0	0	0	1	0	0	0
E02001025 : Bury 007	1	0	0	0	0	1	0	0	0
E02001029 : Bury 011	1	0	0	0	0	1	0	0	0
E02001031 : Bury 013	1	0	0	0	0	1	0	0	0
E02001034 : Bury 016	1	0	0	0	0	1	0	0	0
E02001038 : Bury 020	1	0	0	0	0	1	0	0	0
E02001045 : Manchester 001	1	0	0	0	0	1	0	0	0
E02001063 : Manchester 019	1	0	0	0	0	1	0	0	0
E02001066 : Manchester 022	1	0	0	0	0	1	0	0	0
E02006902 : Manchester 054	1	0	0	0	0	1	0	0	0
E02001099 : Oldham 002	1	0	0	0	0	1	0	0	0
E02001103 : Oldham 006	1	0	0	0	0	1	0	0	0
E02001116 : Oldham 019	1	0	0	0	0	1	0	0	0
E02001128 : Oldham 031	1	0	0	0	0	1	0	0	0
E02001129 : Oldham 032	1	0	0	0	0	1	0	0	0
E02001131 : Oldham 034	1	0	0	0	0	1	0	0	0
E02001132 : Rochdale 001	1	0	0	0	0	1	0	0	0
E02001148 : Rochdale 017	1	0	0	0	0	1	0	0	0
E02001177 : Salford 021	1	0	0	0	0	1	0	0	0
E02001184 : Salford 028	1	0	0	0	0	1	0	0	0
E02001211 : Stockport 025	1	0	0	0	0	1	0	0	0
E02001225 : Stockport 039	1	0	0	0	0	1	0	0	0
E02001230 : Tameside 002	1	0	0	0	0	1	0	0	0
E02001248 : Tameside 020	1	0	0	0	0	1	0	0	0
E02001264 : Trafford 006	1	0	0	0	0	1	0	0	0
E02001273 : Trafford 015	1	0	0	0	0	1	0	0	0
E02001301 : Wigan 015	1	0	0	0	0	1	0	0	0
E02005198 : Chorley 010	1	0	0	0	0	1	0	0	0
E02005219 : Hyndburn 008	1	0	0	0	0	1	0	0	0
E02005247 : Pendle 008	1	0	0	0	0	1	0	0	0
E02002705 : East Riding of Yorkshire 022	1	0	0	0	0	1	0	0	0
E02002682 : Kingston upon Hull 031	1	0	0	0	0	1	0	0	0
E02002759 : North Lincolnshire 011	1	0	0	0	0	1	0	0	0
E02002764 : North Lincolnshire 016	1	0	0	0	0	1	0	0	0
E02002784 : York 013	1	0	0	0	0	1	0	0	0
E02005754 : Hambleton 005	1	0	0	0	0	1	0	0	0
E02005774 : Harrogate 014	1	0	0	0	0	1	0	0	0
E02005775 : Harrogate 015	1	0	0	0	0	1	0	0	0
E02005790 : Ryedale 003	1	0	0	0	0	1	0	0	0
E02005809 : Selby 001	1	0	0	0	0	1	0	0	0
E02001509 : Barnsley 001	1	0	0	0	0	1	0	0	0
E02001515 : Barnsley 007	1	0	0	0	0	1	0	0	0
E02001518 : Barnsley 010	1	0	0	0	0	1	0	0	0
E02001519 : Barnsley 011	1	0	0	0	0	1	0	0	0
E02001529 : Barnsley 021	1	0	0	0	0	1	0	0	0
E02001531 : Barnsley 023	1	0	0	0	0	1	0	0	0
E02001536 : Barnsley 028	1	0	0	0	0	1	0	0	0
E02001552 : Doncaster 014	1	0	0	0	0	1	0	0	0
E02001554 : Doncaster 016	1	0	0	0	0	1	0	0	0
E02001560 : Doncaster 022	1	0	0	0	0	1	0	0	0
E02001566 : Doncaster 028	1	0	0	0	0	1	0	0	0
E02001571 : Doncaster 033	1	0	0	0	0	1	0	0	0
E02001577 : Doncaster 039	1	0	0	0	0	1	0	0	0
E02001585 : Rotherham 008	1	0	0	0	0	1	0	0	0
E02001594 : Rotherham 017	1	0	0	0	0	1	0	0	0
E02001598 : Rotherham 021	1	0	0	0	0	1	0	0	0
E02001608 : Rotherham 031	1	0	0	0	0	1	0	0	0
E02001614 : Sheffield 004	1	0	0	0	0	1	0	0	0
E02001616 : Sheffield 006	1	0	0	0	0	1	0	0	0
E02001624 : Sheffield 014	1	0	0	0	0	1	0	0	0
E02001640 : Sheffield 030	1	0	0	0	0	1	0	0	0
E02001649 : Sheffield 039	1	0	0	0	0	1	0	0	0
E02001652 : Sheffield 042	1	0	0	0	0	1	0	0	0
E02001656 : Sheffield 046	1	0	0	0	0	1	0	0	0
E02001673 : Sheffield 063	1	0	0	0	0	1	0	0	0
E02006844 : Sheffield 074	1	0	0	0	0	1	0	0	0
E02002190 : Bradford 008	1	0	0	0	0	1	0	0	0
E02002200 : Bradford 018	1	0	0	0	0	1	0	0	0
E02002202 : Bradford 020	1	0	0	0	0	1	0	0	0
E02002207 : Bradford 025	1	0	0	0	0	1	0	0	0
E02002209 : Bradford 027	1	0	0	0	0	1	0	0	0
E02002215 : Bradford 033	1	0	0	0	0	1	0	0	0
E02002217 : Bradford 035	1	0	0	0	0	1	0	0	0
E02002236 : Bradford 054	1	0	0	0	0	1	0	0	0
E02002240 : Bradford 058	1	0	0	0	0	1	0	0	0
E02002241 : Bradford 059	1	0	0	0	0	1	0	0	0
E02002250 : Calderdale 007	1	0	0	0	0	1	0	0	0
E02002252 : Calderdale 009	1	0	0	0	0	1	0	0	0
E02002260 : Calderdale 017	1	0	0	0	0	1	0	0	0
E02002263 : Calderdale 020	1	0	0	0	0	1	0	0	0
E02002266 : Calderdale 023	1	0	0	0	0	1	0	0	0
E02002270 : Calderdale 027	1	0	0	0	0	1	0	0	0
E02002274 : Kirklees 004	1	0	0	0	0	1	0	0	0
E02002282 : Kirklees 012	1	0	0	0	0	1	0	0	0
E02002333 : Leeds 004	1	0	0	0	0	1	0	0	0
E02002340 : Leeds 011	1	0	0	0	0	1	0	0	0
E02002343 : Leeds 014	1	0	0	0	0	1	0	0	0
E02002345 : Leeds 016	1	0	0	0	0	1	0	0	0
E02002354 : Leeds 025	1	0	0	0	0	1	0	0	0
E02002356 : Leeds 027	1	0	0	0	0	1	0	0	0
E02002357 : Leeds 028	1	0	0	0	0	1	0	0	0
E02002359 : Leeds 030	1	0	0	0	0	1	0	0	0
E02002361 : Leeds 032	1	0	0	0	0	1	0	0	0
E02002374 : Leeds 045	1	0	0	0	0	1	0	0	0
E02002376 : Leeds 047	1	0	0	0	0	1	0	0	0
E02002385 : Leeds 056	1	0	0	0	0	1	0	0	0
E02002389 : Leeds 060	1	0	0	0	0	1	0	0	0
E02002391 : Leeds 062	1	0	0	0	0	1	0	0	0
E02002403 : Leeds 074	1	0	0	0	0	1	0	0	0
E02002407 : Leeds 078	1	0	0	0	0	1	0	0	0
E02002408 : Leeds 079	1	0	0	0	0	1	0	0	0
E02002410 : Leeds 081	1	0	0	0	0	1	0	0	0
E02002428 : Leeds 099	1	0	0	0	0	1	0	0	0
E02002429 : Leeds 100	1	0	0	0	0	1	0	0	0
E02002434 : Leeds 105	1	0	0	0	0	1	0	0	0
E02002464 : Wakefield 027	1	0	0	0	0	1	0	0	0
E02002471 : Wakefield 034	1	0	0	0	0	1	0	0	0
E02002476 : Wakefield 039	1	0	0	0	0	1	0	0	0
E02002481 : Wakefield 044	1	0	0	0	0	1	0	0	0
E02002869 : Nottingham 002	1	0	0	0	0	1	0	0	0
E02002895 : Nottingham 028	1	0	0	0	0	1	0	0	0
E02006905 : Nottingham 040	1	0	0	0	0	1	0	0	0
E02005350 : Charnwood 006	1	0	0	0	0	1	0	0	0
E02005399 : North West Leicestershire 003	1	0	0	0	0	1	0	0	0
E02005645 : Kettering 007	1	0	0	0	0	1	0	0	0
E02005860 : Broxtowe 011	1	0	0	0	0	1	0	0	0
E02006044 : Shropshire 037	1	0	0	0	0	1	0	0	0
E02006157 : Lichfield 012	1	0	0	0	0	1	0	0	0

E02006161 : Newcastle-under-Lyme 004	1	0	0	0	0	1	0	0	0
E02006218 : Tamworth 002	1	0	0	0	0	1	0	0	0
E02001876 : Birmingham 050	1	0	0	0	0	1	0	0	0
E02001982 : Coventry 025	1	0	0	0	0	1	0	0	0
E02002014 : Dudley 015	1	0	0	0	0	1	0	0	0
E02002143 : Walsall 034	1	0	0	0	0	1	0	0	0
E02003270 : Luton 013	1	0	0	0	0	1	0	0	0
E02003246 : Peterborough 010	1	0	0	0	0	1	0	0	0
E02000113 : Brent 021	1	0	0	0	0	1	0	0	0
E02000531 : Hounslow 006	1	0	0	0	0	1	0	0	0
E02003463 : Milton Keynes 005	1	0	0	0	0	1	0	0	0
E02004743 : Gosport 003	1	0	0	0	0	1	0	0	0
E02005071 : Maidstone 004	1	0	0	0	0	1	0	0	0
E02005153 : Tonbridge and Malling 005	1	0	0	0	0	1	0	0	0
E02002991 : Bath and North East Somerset 007	1	0	0	0	0	1	0	0	0
E02003106 : South Gloucestershire 017	1	0	0	0	0	1	0	0	0
E02006692 : Wiltshire 042	1	0	0	0	0	1	0	0	0
E02006076 : South Somerset 002	1	0	0	0	0	1	0	0	0
W02000030 : Conwy 004	1	0	0	0	0	1	0	0	0
E02001592 : Rotherham 015	2	0	0	0	0	0	2	0	0
E02001061 : Manchester 017	1	0	0	0	0	0	1	0	0
E02002414 : Leeds 085	1	0	0	0	0	0	1	0	0
E02002449 : Wakefield 012	1	0	0	0	0	0	1	0	0
E02001113 : Oldham 016	1	0	0	0	0	0	0	0	1
E02003135 : Plymouth 014	1	0	0	0	0	0	0	0	1
E02006912 : Manchester 055	1	1	0	0	0	0	0	0	0
E02002700 : East Riding of Yorkshire 017	1	1	0	0	0	0	0	0	0
E02002337 : Leeds 008	1	1	0	0	0	0	0	0	0
E02002404 : Leeds 075	1	1	0	0	0	0	0	0	0
E02004072 : Derbyshire Dales 005	1	1	0	0	0	0	0	0	0
E02000604 : Kingston upon Thames 007	1	1	0	0	0	0	0	0	0
E02001615 : Sheffield 005	2	0	2	0	0	0	0	0	0
E02001247 : Tameside 019	1	0	1	0	0	0	0	0	0
E02002792 : York 021	1	0	1	0	0	0	0	0	0
E02001579 : Rotherham 002	1	0	1	0	0	0	0	0	0
E02005203 : Fylde 001	1	0	0	0	0	0	0	0	0
E02005783 : Richmondshire 002	1	0	0	0	0	0	0	0	0

Appendix F

PROPOSED SITE ACCESS JUNCTIONS 8 MODEL OUTPUT

Junctions 8

PICADY 8 - Priority Intersection Module

Filename: Flockton Site Access 2022.arc8
Path: Z:\70019919 - Flockton Green WMC\D Design and Analysis\Development\PICADY
Report generation date: 11/03/2016 14:55:14

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Base 2022 + Development							
Stream B-C	0.07	8.51	0.07	A	0.03	7.41	0.03	A
Stream B-A	0.12	16.85	0.11	C	0.05	14.76	0.05	B
Stream C-AB	0.02	8.12	0.02	A	0.05	7.47	0.05	A
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D3 - Base 2022 + Development, AM " model duration: 07:15 - 08:45
"D4 - Base 2022 + Development, PM" model duration: 16:15 - 17:45

Run using Junctions 8.0.4.487 at 11/03/2016 14:55:14

File summary

Title	(untitled)
Location	
Site Number	
Date	08/03/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	UKSEC002
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - Base 2022 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
Base 2022 + Development, AM	Base 2022 + Development	AM		ONE HOUR	07:15	08:45	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	A,B,C	11.84	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Barnsley Road West		Major
B	B	Site Access		Minor
C	C	Barnsley Road East		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	180.00	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane plus flare				9.00	3.00	2.75	2.75	2.75	✓	1.00	50	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	621.806	0.113	0.286	0.180	0.409
1	B-C	713.692	0.109	0.277	-	-
1	C-B	678.203	0.263	0.263	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	816.00	100.000
B	ONE HOUR	✓	51.00	100.000
C	ONE HOUR	✓	626.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	7.000	809.000
	B	24.000	0.000	27.000
	C	618.000	8.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.01	0.99
	B	0.47	0.00	0.53
	C	0.99	0.01	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.07	8.51	0.07	A
B-A	0.11	16.85	0.12	C
C-AB	0.02	8.12	0.02	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (07:15-07:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	20.33	20.17	0.00	537.81	0.038	0.04	6.953	A
B-A	18.07	17.86	0.00	360.58	0.050	0.05	10.497	B
C-AB	6.09	6.04	0.00	520.63	0.012	0.01	6.995	A
C-A	465.20	465.20	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	609.06	609.06	0.00	-	-	-	-	-

Main results: (07:30-07:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	24.27	24.23	0.00	502.67	0.048	0.05	7.524	A
B-A	21.58	21.49	0.00	310.04	0.070	0.07	12.471	B
C-AB	7.31	7.30	0.00	491.43	0.015	0.02	7.435	A
C-A	555.45	555.45	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	727.27	727.27	0.00	-	-	-	-	-

Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	29.73	29.65	0.00	452.89	0.066	0.07	8.505	A
B-A	26.42	26.23	0.00	239.89	0.110	0.12	16.834	C
C-AB	9.08	9.06	0.00	452.27	0.020	0.02	8.122	A
C-A	680.16	680.16	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	890.73	890.73	0.00	-	-	-	-	-

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	29.73	29.73	0.00	452.70	0.066	0.07	8.510	A
B-A	26.42	26.42	0.00	240.09	0.110	0.12	16.848	C
C-AB	9.08	9.08	0.00	452.27	0.020	0.02	8.124	A
C-A	680.16	680.16	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	890.73	890.73	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	24.27	24.35	0.00	502.39	0.048	0.05	7.530	A
B-A	21.58	21.76	0.00	310.50	0.069	0.08	12.475	B
C-AB	7.31	7.34	0.00	491.43	0.015	0.02	7.438	A
C-A	555.45	555.45	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	727.27	727.27	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	20.33	20.37	0.00	537.54	0.038	0.04	6.963	A
B-A	18.07	18.16	0.00	361.03	0.050	0.05	10.503	B
C-AB	6.09	6.10	0.00	520.63	0.012	0.01	6.998	A
C-A	465.20	465.20	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	609.06	609.06	0.00	-	-	-	-	-

(Default Analysis Set) - Base 2022 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	Arm B - Minor Arm Geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
Base 2022 + Development, PM	Base 2022 + Development	PM		ONE HOUR	16:15	17:45	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Site Access	T-Junction	Two-way	A,B,C	9.31	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Barnsley Road West		Major
B	B	Site Access		Minor
C	C	Barnsley Road East		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	180.00	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane plus flare				9.00	3.00	2.75	2.75	2.75	✓	1.00	50	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	626.499	0.114	0.288	0.181	0.412
1	B-C	712.506	0.109	0.276	-	-
1	C-B	678.203	0.263	0.263	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	689.00	100.000
B	ONE HOUR	✓	25.00	100.000
C	ONE HOUR	✓	747.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	19.000	670.000
	B	12.000	0.000	13.000
	C	726.000	21.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.03	0.97
	B	0.48	0.00	0.52
	C	0.97	0.03	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.03	7.41	0.03	A
B-A	0.05	14.76	0.05	B
C-AB	0.05	7.47	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:15-16:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.79	9.72	0.00	568.23	0.017	0.02	6.445	A
B-A	9.03	8.94	0.00	373.69	0.024	0.02	9.867	A
C-AB	16.28	16.15	0.00	552.95	0.029	0.03	6.704	A
C-A	546.11	546.11	0.00	-	-	-	-	-
A-B	14.30	14.30	0.00	-	-	-	-	-
A-C	504.41	504.41	0.00	-	-	-	-	-

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	11.69	11.67	0.00	539.71	0.022	0.02	6.817	A
B-A	10.79	10.75	0.00	324.77	0.033	0.03	11.462	B
C-AB	19.75	19.72	0.00	532.28	0.037	0.04	7.023	A
C-A	651.78	651.78	0.00	-	-	-	-	-
A-B	17.08	17.08	0.00	-	-	-	-	-
A-C	602.32	602.32	0.00	-	-	-	-	-

Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	14.31	14.28	0.00	499.84	0.029	0.03	7.413	A
B-A	13.21	13.13	0.00	256.92	0.051	0.05	14.762	B
C-AB	24.98	24.93	0.00	506.60	0.049	0.05	7.473	A
C-A	797.48	797.48	0.00	-	-	-	-	-
A-B	20.92	20.92	0.00	-	-	-	-	-
A-C	737.68	737.68	0.00	-	-	-	-	-

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	14.31	14.31	0.00	499.72	0.029	0.03	7.415	A
B-A	13.21	13.21	0.00	257.09	0.051	0.05	14.760	B
C-AB	24.98	24.98	0.00	506.60	0.049	0.05	7.474	A
C-A	797.48	797.48	0.00	-	-	-	-	-
A-B	20.92	20.92	0.00	-	-	-	-	-
A-C	737.68	737.68	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	11.69	11.71	0.00	539.51	0.022	0.02	6.820	A
B-A	10.79	10.86	0.00	325.16	0.033	0.03	11.458	B
C-AB	19.75	19.81	0.00	532.28	0.037	0.04	7.024	A
C-A	651.78	651.78	0.00	-	-	-	-	-
A-B	17.08	17.08	0.00	-	-	-	-	-
A-C	602.32	602.32	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	9.79	9.81	0.00	568.03	0.017	0.02	6.451	A
B-A	9.03	9.07	0.00	374.09	0.024	0.03	9.865	A
C-AB	16.28	16.31	0.00	552.95	0.029	0.03	6.710	A
C-A	546.11	546.11	0.00	-	-	-	-	-
A-B	14.30	14.30	0.00	-	-	-	-	-
A-C	504.41	504.41	0.00	-	-	-	-	-