BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT

ROSSETT ROAD

ROSSETT

Transport Assessment

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1 INTRODUCTION

1.1 Introduction

1.1.1 Croft have been commissioned by Bellis Bros Ltd to produce a Transport Assessment and Travel Plan to support a planning application relating to proposals to develop two sites off Rossett Road in Rossett for residential development.

1.1.2 The application site comprises two separate parcels of land, bisected by the B5102 Rossett Road, which are located approximately 800 metres to the north-east of the village and approximately 10.5 kilometres to the north of Wrexham town centre.

1.1.3 Following comments received from the highway officer at the Council during the pre-application process, the report has been revised to take account of the issues raised.

1.2 Summary of Proposals

1.2.1 It is proposed to develop both sites, to deliver a combined total of 132 residential dwellings, along with associated car parking, landscaping and areas of public open space.

1.2.2 Vehicular access to both sites is proposed via two new priority controlled junctions directly off Rossett Road, thus forming a staggered crossroads arrangement.

1.3 Scope of Report

1.3.1 This report has been prepared to consider the proposed development in transport and highways terms, in order to provide the necessary reassurance to the local highway authority that the proposals can be delivered in a sustainable manner and be accommodated by the local transport network.

1.3.2 A Framework Travel Plan has also been prepared to ensure that travel to and from the site by sustainable modes is maximised.

1.3.3 In light of the above, the scope of this Transport Assessment has been agreed with the local highway authority, Wrexham County Borough Council, (WCBC).

1.4 Structure of Report

1.4.1 Following this introduction, Section 2 of the Report details the existing site conditions and describes the adjacent highway network. Section 3 provides details of the proposed development including vehicular access.

1.4.2 Section 4 of the report briefly considers the aspects of national and local planning policy which are relevant to the proposals, while Section 5 considers the accessibility of the site by non-car modes, including walking, cycling and public transport.

1.4.3 Section 6 considers the trip generation and traffic impact assessment of the local highway network, while Section 7 provides an analysis of road safety in the vicinity of the site.

1.4.4 Section 8 contains details of the Framework Travel Plan and Section 9 draws together the Report's findings and conclusions.

2 EXISTING CONDITIONS

2.1 Introduction

2.1.1 This section of the report provides an overview of the current conditions on the highway network within the vicinity of the sites.

2.2 Existing Site

2.2.1 The application refers to land either side of the B5102 Rossett Road, located approximately 800 metres to the north-east of the centre of the village and approximately 10.5 kilometres to the north of Wrexham town centre, as shown in **Plan 1**.

2.2.2 The site is split into two parcels of land, one north of Rossett Road, which extends to around 6.9 hectares and one to the south, comprising approximately 8.5 hectares. The two sites are identified in **Figure 2.1** below.

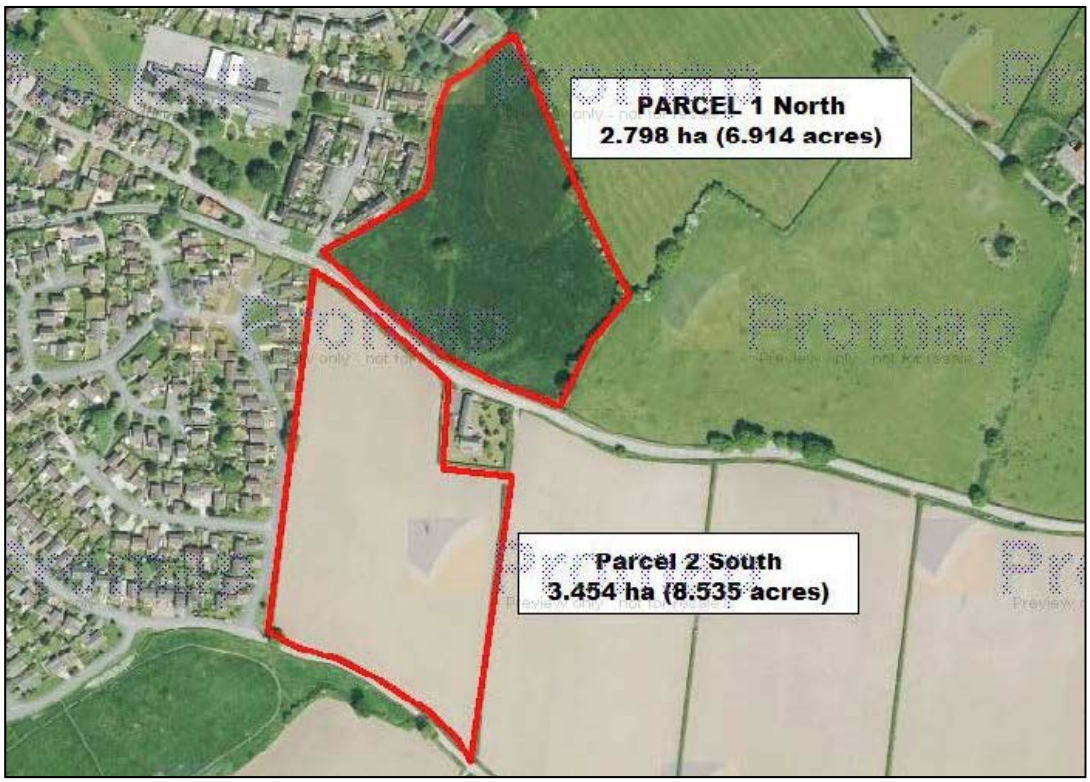


Figure 2.1 – The Application Sites

2.2.3 For the purpose of this report, the sites will be referred to as the northern site and the southern site.

2.2.4 The northern site is bordered to the south by the B5102 Rossett Road, while existing residential properties on Waverley Crescent are situated along the site's western boundary. Open land lies to the north and north-east of the site.

2.2.5 Rossett Road forms the northern border of the southern site, while a single residential dwelling (Lane Farm) is located in the north-eastern corner. Residential properties along Trevalyn Way are situated directly to the west of the site, while Harwood's Lane forms the sites boundary to the south. Undeveloped open land lies to the immediate east of the site.

2.3 Adjacent Highway Network

2.3.1 The B5102 Rossett Road runs in a broadly east-west alignment and borders each of the sites, as detailed above. From the east of the site, the B5102 continues in a south-easterly direction and links to Holt and Farndon approximately 6 kilometres away, while to the west, the B5102 links the site to Llay and beyond that, Cefn-y-Bedd, which is approximately 5 kilometres from the site.

2.3.2 A gateway entry feature and associated traffic calming is located on Rossett Road, adjacent to Lane Farm, as shown in **Figure 2.2** below.



Figure 2.2 – View along Rossett Road (looking west)

2.3.3 The existing 30mph speed limit commences just to the west of both sites, and the carriageway between the two sites is subject to further traffic calming, as shown in **Figure 2.3** below.



Figure 2.3 – View further along Rossett Road (looking west)

2.3.4 The traffic calming takes the form coloured surfacing along the carriageway centreline and road humps for a distance of approximately 200 metres. Just prior to the 30mph speed limit, there are high-sided containment kerbs and *'dragons-teeth'* carriageway markings, although it is noted that these are in a poor state of repair.

2.3.5 However, the speed limits in the area are currently under review and the new limit at this location will be 20mph.

2.3.6 Following discussions with the Traffic Management officer at the Council, there is potential for the 20mph limit to commence to the south of the application site boundary and continue along the site frontage, but this will need to be discussed and agreed with WCBC further along the planning process.

2.3.7 From the site, the B5102 Rossett Road, continues in a westerly direction and forms the major arm of a priority junction with a short stretch of road which links to the B5445 Chester Road.

2.3.8 From this point, it continues westwards before forming the minor arm of another priority controlled junction with the B5445 Chester Road, adjacent to The Butchers Arms Public House.

2.4 Baseline Transport Data

2.4.1 The two sites are currently undeveloped, and so apart from any associated agricultural traffic, do not generate any traffic movements.

3 CONSIDERATION OF PLANNING POLICY

3.1 Introduction

3.1.1 The national policy presented in this document focuses on the Planning Policy Wales document which was published in November 2012 and sets out the Welsh Assembly's planning policies for achieving sustainable development.

3.1.2 In addition to the above, further reference has been made to the following documents;

- Technical Advice Note 18: Transport' and North Wales Regional Transport Plan;
- North Wales Regional Transport Plan, TAITH 2009; and
- North Wales Regional Transport Plan, Walking & Cycling Strategy.

3.1.3 This section will briefly review relevant transportation policy and demonstrate that the proposed development will be accordance with that policy.

3.2 National Policy

Planning Policy Wales

3.2.1 The 'Planning Policy Wales' (PPW) document sets out the planning policies on the delivery of sustainable development through the planning system.

3.2.2 With regard to transport policy it aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change.

3.2.3 Within the Transport chapter of the PPW it states that land-use planning can help achieve the Welsh Government's objectives for transport through the following;

- Reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;

- Locating development near other related uses to encourage multi-purpose trips to reduce the length of journeys;
- Improving accessibility by walking, cycling and public transport;
- Ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people.
- Promoting walking and cycling.
- Supporting the provision of high quality public transport;
- Supporting traffic management measures;
- Promoting sustainable transport options for freight and commerce;
- Supporting sustainable travel options in rural areas;
- Supporting necessary infrastructure improvements; and
- Ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.

Technical Advice Note 18 (TAN 18) - Transport

3.2.4 Technical Advice Note 18 (TAN 18) Transport document which was published in March 2007 and is a supplementary document to 'Planning Policy Wales'. TAN 18 provides national policy guidance relating to a variety of transport related issues including the preferred location for new development and transport guidance on how the objectives of the PPW should be achieved.

3.2.5 In terms of guidance specifically related to the proposed development, it states that;

"Development in rural locations should embody sustainable principles, balancing the need to support the rural economy, whilst maintaining and enhancing the environmental, social and cultural quality of rural areas".

3.2.6 The site's accessibility credentials are detailed in Section 5, but in summary, the site is well placed to provide residents a choice about how they travel with good opportunities for sustainable travel. The proposed upgraded and new footpath links to St Peters Primary School and Darland High School will assist in delivering this goal, improve connectivity to existing infrastructure and provide a safe continuous walking route to the local public transport network and local facilities.

3.2.7 The proposed 3 metre pedestrian/cycleway running along the sites western boundary will create an attractive route and further enhance the existing pedestrian and cyclist infrastructure.

3.2.8 TAN 18 discusses the general importance of promoting the integration between transport and land use plannmg, so as to contribute to the delivery of the key objective of sustainability.

3.2.9 In order to facilitate better integration, TAN 18 discusses the importance of managing parking provision and ensuring that new development appropriately provides for pedestrians and cyclists.

3.2.10 As already stated above, Section 5 of this TA discusses access to the proposed site via different modes of transport and details the proposed improvements to pedestrian infrastructure.

3.2.11 Section 6 of TAN 18 explains that it is imperative that local councils take walking and cycling into consideration when assessing planning applications. This will be addressed in Sections 4 and 5 of this Transport Assessment and the implementation of the Travel Plan at both sites will allow the use of sustainable travel modes to be encouraged and maximised, thus assisting to deliver a highly sustainable development.

3.2.12 Section 9 of TAN 18 confirms the need for Transport Assessments (TA) to be produced when a development is likely to result in significant trip generation. As such, the preparation of this TA to accompany the planning application is fully compliant with these requirements.

North Wales Regional Transport Plan, TAITH 2009

3.2.13 The North Wales Regional Transport Plan (NWRTP) was adopted in September 2009 and outlines the strategic vision for transport of six Local Authorities in the North Wales area; namely Anglesey, Conwy, Denbighshire, Gwynedd, Flintshire and Wrexham Councils.

3.2.14 The document outlines the local authorities' transport strategy for the next 25 years in the context of national policy as well as the social and economic aspirations of the six local authorities. The overall vision of the NWRTP is summed up as follows *"TAITH will deliver safe, sustainable and efficient transport networks to support the economic and social activities of North Wales' diverse communities and businesses having regard to its strategic European role"*.

3.2.15 The document includes seven main objectives, two of which are directly relevant to the proposed development and are to:-

- *"Optimise accessibility to employment, education, health and services for all the diverse communities in North Wales".* This TA demonstrates that the proposed site is suitably located for residents to access local facilities, services and areas of employment in the local area.

- *"Provide, promote and improve sustainable forms of transport and infrastructure to minimise the negative impacts of transport on the local and global environment".* The TP submitted in conjunction with this TA helps to support this objective by actively promoting and encouraging the use of sustainable modes of transport to travel to and from the site".

North Wales Regional Transport Plan, Walking & Cycling Strategy

3.2.16 The overall aim of the strategy is to encourage more people to walk or cycle for journeys, such as the commute to work and school, trips to local shops, leisure and health facilities and for leisure activities.

3.2.17 The document discusses *'smarter choices'* which are defined as *'imaginative ways of encouraging efficient and sustainable ways of travel'*. Section 3 of the TP submitted in support of this outline planning application proposes a variety of measures that may be implemented to support sustainable transport choices and, in turn, support the overall aim of the NWRTP walking and cycling strategy.

3.2.18 The document states that *"the facilitation of the needs of pedestrian and cyclists should be given priority over those of other road users for local trips and it should never be something that is just considered as an after-thought"*. Again, Chapter 3 of the TP demonstrates a commitment to promoting the use of cycle and pedestrian access to the site.

3.2.19 One of the objectives of the strategy is to *"Encourage modal shift to healthier forms of transport to contribute towards climate change targets and reduction in C02 emissions".* Section 4 of the TP considers a modal shift target for the proposed development.

3.2.20 As already stated the provision of 3 metre shared pedestrian/cycleways within the site behind the hedgerows will create safe routes for residents and the proposed off-site improvement works and new zebra crossing will enhance road safety and provide benefit not only for new residents but for the wider

3.3 Planning Policy Summary

3.3.1 Reference to national guidance has helped to establish that the site is well related to the surrounding area and will contribute towards the creation of a sustainable development.

3.3.2 The proposed pedestrian and cyclist improvements will improve connectivity and the new zebra crossing will have a positive benefit on road safety. This will be assisted further by the Councils intended implementation of a 20mph zone along Rossett Road and Chapel Lane.

3.3.3 A Travel Plan for residents will be implemented at both sites to ensure the use of non-car modes is maximised while reducing dependence on the private car.

3.3.4 It can therefore be concluded that the proposed development accords with national policy and will assist in delivering a highly sustainable development.

4 PROPOSED DEVELOPMENT

4.1 Development Proposals

4.1.1 It is proposed to develop the two sites to provide a total of approximately 132 residential dwellings across the two sites, with associated car parking and landscaping. The proposed Masterplan for the site showing the internal layout is shown in **Plan 2**.

4.1.2 More specifically, it is proposed to develop the northern site with around 61 dwellings comprising the following mix of house types;

- Two bed terrace - 10 units;
- Three bed terrace - 28 units;
- Three bed semi-detached - 4 units; and
- Four bed detached - 19 units.

4.1.3 The southern site will be developed in a similar manner and will comprise approximately 71 units. The proposed mix of dwellings includes;

- Two bed terrace - 2 units;
- Three bed terrace - 32 units;
- Three bed semi-detached - 9 units; and
- Four bed detached - 28 units.

4.2 Vehicular Access

4.2.1 Vehicular access to the site will be taken from two locations on Rossett Road, with one serving the northern site and the other serving the site to the south. The proposed priority controlled site access junctions and other off-site works including footpath improvements and a new zebra crossing are shown in **Plan 3**.

4.2.2 The proposed junction layouts show that visibility splays of 2.4 metres by 70 metres can be achieved in both directions from each access, which are commensurate with traffic speeds of 30mph based on the guidance set out in DMRB.

4.2.3 As already stated, it is proposed to implement the 20mph speed limit to the south of our site, meaning the splays shown are more than adequate. The frontage development and introduction of the new points of access on Rossett Road are also likely to have a positive effect on this part of the road network, as it will change the nature of the road and surroundings and help to create a more residential/street feel to the local environment.

4.2.4 The re-location of the speed limit further away from the village and the introduction of the two new junctions, will mean vehicle speeds will be reduced sooner than they are at present, meaning vehicles will have significantly reduced in speed by the time they approach the village.

4.2.5 It is therefore considered that the development proposals will have a beneficial impact on overall traffic conditions and provide a more conducive environment for pedestrians, thus enhancing overall road safety in the area.

4.3 Servicing

4.3.1 In order to demonstrate that the site can be adequately serviced, a swept path analysis for an 11.2 metre refuse vehicle (confirmed by WCBC as being the appropriate vehicle) has been undertaken and shown in **Plan 4**. The internal layout has been designed to facilitate such vehicles and allow them to enter the site, turn around and exit in a forward gear. This will ensure there is no detrimental impact to the adjoining highway or result in any road safety issues.

4.4 Pedestrian and Cycle Access

4.4.1 The main point of pedestrian and cycle access will be from the main access points on Rossett Road, although to maximise permeability at the southern site, further pedestrian/cyclist access is proposed at two locations off Trevalyn Way, with a further one being provided directly onto Harwood Lane, located on the southern boundary.

4.4.2 The internal layout of both sites has been designed to provide a safe environment for pedestrians and cyclists with clearly defined walkways, crossing points and speed reducing features where appropriate.

4.4.3 Shared pedestrian/cycleways of 3 metres in width will be provided along each site frontage, within the site, to the rear of the existing hedgerow. In addition, the proposals include the provision of 3 metres shared pedestrian/cycle links to St Peters Primary School and Darland High School, as shown on Plan 3. Another 3 metre shared ped/cycleway is proposed to run along the sites western boundary, which will extend all the way with a link being provided into Darland View and Darland High School.

4.4.4 It has been established that some of the land required is currently under the ownership of the Councils' Housing Department and so these works have been discussed and agreed in principle with the relevant officers at WBC, as confirmed in correspondence within **Appendix 1**. The correspondence also confirms that the improved footpaths would be dedicated over as highway land, so they can be maintained by the Council. It is anticipated that the works will be implemented via a combination of Section 278 and Section 38 agreements, although the precise details will need to be discussed and agreed with the local planning and highway authority.

4.4.5 In addition to the above, a new zebra crossing is proposed as shown in Plan 3, which will replace the existing sub-standard crossing point on Holt Road.

4.4.6 This provision will ensure there is safe route to St Peter's Primary School, not just for residents at the development but the wider community as well and will allow the potential for walking and cycling trips to and from the site to be maximised, as will be promoted through the Travel Plan for the site. The improvements proposed will ensure that existing pedestrian infrastructure is substantially improved in this area.

4.4.7 A public right of way runs along the eastern boundary of the southern site and extends in a north-south direction from Lane Farm, all the way down to Trevalyn Lane. This will be retained as part of the proposals, with a link from the development being provided via a kissing gate or similar.

5 ACCESSIBILITY BY NON CAR MODES

5.1 Introduction

5.1.1 The Welsh Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by;

"Encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel. This will be achieved through integration:

- *within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation".*

5.1.2 Land use planning can help to achieve the Welsh Government's objectives for transport through:

- *reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;*
- *locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;*
- *improving accessibility by walking, cycling and public transport;*
- *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*
- *promoting walking and cycling;*
- *supporting the provision of high quality public transport;*
- *supporting traffic management measures;*
- *promoting sustainable transport options for freight and commerce;*
- *supporting sustainable travel options in rural areas;*

- *supporting necessary infrastructure improvements; and*
- *ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.*

5.1.3 New proposals should therefore attempt to influence the mode of travel to the development in terms of gaining a shift in modal split towards non-car modes, thus assisting in meeting the aspirations of current national and local planning policy.

5.1.4 To demonstrate the above, the accessibility of the proposed site has been considered by the following modes of transport:

- Accessibility on foot.
- Accessibility by cycle.
- Accessibility by bus.
- Accessibility by rail.

5.2 Accessibility on Foot

5.2.1 It is important to create a choice of direct, safe and attractive routes between where people live and where they need to travel in their day-to-day life. This philosophy clearly encourages the opportunity to walk whatever the journey purpose and also helps to create more active streets and a more vibrant neighbourhood.

5.2.2 Footways of 2 metres in width will be provided within the development and will connect in to the existing provision at the Rossett Road/Chapel Lane junction. The provision of a new zebra crossing at this location will significantly improve the current provision, which is substandard and have a positive impact on road safety.

5.2.3 During the pre-application process, the highway officer raised concerns over the availability of safe walking routes in the vicinity of the site and stated that;

"The main bus stop serving Wrexham and Chester are located on the B5445 Chester Road. It is highly likely that anyone wishing to access these bus stops on foot from the proposed development sites (north and south) will walk along the B5102 Holt Road or Chapel Lane".

Both Holt Road and Chapel Lane have limited footway provision leading to Chester Road and some sections have no footway provision which is a concern in highway/pedestrian safety terms.

During a site visit on 07/03/2016 between 08:20 – 09:00, a significant number of schoolchildren on their way to Darland School were observed walking from the Rossett Shops along Holt Road in order to cut through the footpath running through St. Peters School. Vehicles including cars and HGVs travelling along this section of Holt Road had to slow down as school children walked along the carriageway due to the lack of adequate footway provision.

I therefore raise serious concerns regarding the proposed increase in vehicle & pedestrian movements likely to be generated by the development site given the significant lack of suitable pedestrian provision/footways along both Holt Road and Chapel Lane. I would recommend that you give serious consideration to proposed measures to address these concerns.

Although a number of highway improvements have been proposed as part of the proposed development, the above issues along Rossett Road and Chapel Lane are still a concern. These issues will inevitably be raised by objectors to the scheme as part of the planning process".

5.2.4 As set out in the previous Section, the proposals seek to address these issues by the provision of upgraded and new footpath links to both St Peters Primary School and Darland High School.

5.2.5 It is also worth noting that in respect of another application site, Vicarage Road, Gresford (Appeal Ref APP/H6955/A/15/3095184) which had a similar issue in terms of pedestrian connectivity and safety, the Inspector reported that;

"There are no footpaths along Vicarage Lane and there is a high level of on-street parking between the site and the junction with Chester Road to the north. The Council is concerned that this does not provide a safe route for pedestrians from the site to the local shops and bus stops on Chester Road.

It is clear from the discussion at the hearing that existing residents on the site walk or use mobility scooters between the site and Chester Road and I observed staff from the Hall and local residents walking along Vicarage Lane as I also did. Whilst it would be preferable to segregate pedestrians from the main highway the Council confirmed this was not possible.

Notwithstanding this, the route is within a 30mph area and the nature of the road together with the parked cars actively slow vehicles. Pedestrians do have to be more aware of the traffic when using a shared surface rather than when there is a dedicated footway and I accept that some residents may choose not to walk to local services. However, I do not consider the situation to be significantly different from numerous roads in rural settlements.

Furthermore, I do not consider that the increase in the use of Vicarage Lane by pedestrians as a result of the proposed development would be so significant as to be detrimental to highway safety".

5.2.6 It can be concluded that in respect to this development, while the situation would not be ideal, the provision of new links and the upgrading of those existing ones will go a long way to improving pedestrian linkages and safety in the area.

5.2.7 Furthermore, the reduction in speed limit from 30mph to 20mph, being sought by the Council on Holt Road and Chapel Lane will have a positive effect and further improvement the pedestrian environment and make it safer than the current situation for all road users including those with mobility problems.

5.2.8 Within the Institution of Highways and Transportation (IHT) document, entitled "Guidelines for Providing for Journeys on Foot", a distance of 800 metres is identified as the preferred maximum distance for town centres, whilst a distance of 2 kilometres is defined as a preferred maximum for commuting.

5.2.9 Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car journeys, particularly those under 2 kilometres.

5.2.10 In addition, the DFT National Travel Survey of 2015 confirms that 78% of all trips less than a mile (1.6km) are carried out on foot.

5.2.11 **Plan 5** shows the pedestrian catchment for 800 metres and 2 kilometres from the centre of the site and provides an illustrative indication of the areas that can be reached based on a leisurely walk from the site. In addition to the pedestrian catchment plan, a review of the proximity of local facilities such as pharmacies/doctor's surgeries, schools (both primary and secondary) local shops/retail outlets and leisure facilities has been undertaken.

5.2.12 The locations of such facilities in relation to the site are also identified in Plan 5. As can be seen, the 800 metres catchment includes residential areas of Rossett along with Rossett village centre and its amenities, such as Christ the King Catholic Church, The Golden Lion Public House, Rossett Pharmacy, The Village store and St Peter's Primary School.

5.2.13 The 2 kilometre pedestrian catchment illustrates that the whole of Rossett can be accessed including areas such as Darland, Lavister, Trevalyn and Marford.

5.2.14 In addition to the above, there are a variety of retail, leisure, healthcare and community facilities located within the catchment, these include Rossett Parish Church, The Alyn Public House, Darland Golf Course, a SPAR convenience store, Rossett Dental Care, Rossett and Burton Village Hall and The Griffin Inn Public House.

5.2.15 **Table 5.1** below, shows the walking distances from the centre of the site to the local retail facilities and other nearby key amenities in the vicinity of the site:

Local Amenity	Distance (metres)
Christ the King Catholic Church	520
St Peter's Primary School	370
The Village store	680
The Golden Lion Public House	700
Rossett Pharmacy	800
Rossett Parish church	950
The Alyn Public House	970
SPAR	1030
Burton Village Hall	1130
Rossett Dental Care	1140
The Griffin Inn Public House	1240
Darland Golf Course	1770

Table 5.1 - Distance from Site to Local Facilities

5.2.16 As can be seen in the above table, the site is located within close proximity to a number of key local amenities including primary services, as well as retail and healthcare facilities.

5.2.17 It is therefore considered that the existing and proposed pedestrian infrastructure will facilitate safe and direct pedestrian linkages between the site and local destinations.

5.3 Access by Cycle

5.3.1 An alternative mode of travel to the site could be achieved by bicycle.

5.3.2 A distance of 5 kilometres is generally accepted as a distance where cycling has the potential to replace short car journeys. This distance equates to a journey of around 25 minutes based on a leisurely cycle speed of 12 kilometres per hour and would encompass Marford, Gresford, Llay, Pulford and Belgrave.

5.3.3 An on-road local cycle route is located approximately 3.5 kilometres south-west from the centre of the site, this cycle route travels into Wrexham town centre before linking up with various other local cycle routes.

5.3.4 The site can therefore be considered as being accessible by cycle.

5.4 Access by Bus

5.4.1 The nearest bus stops to the site are located on Harwood's Lane, Rossett Road and Chester Road, with the closest stop approximately 140 metres from the centre of the site.

5.4.2 However, it is noted that the main bus stops serving Wrexham town centre are located on Chester Road and these bus stops consist of a bus shelter along with a bus service timetable.

5.4.3 In light of the above, it is highly likely that anyone wishing to access these services on foot from the two development sites will walk along the B5102 Holt Road or Chapel Lane. It is acknowledged that both Holt Road and Chapel Lane have limited footway provision but it is likely that the introduction of the 20 mph speed limit through the village will have a positive effect, keeping traffic speeds low and hence will create a more pedestrian friendly environment.

5.4.4 The location of the nearest bus stops to the development site are shown on Plan 5.

5.4.5 A summary of the services available from the nearest bus stops of the development site is provided in **Table 5.2** below.

Serv. No.	Route	Mon-Fri Frequency Per Hour				Sat	Sun
		AM Peak	Mid-day	PM Peak	Eve		
1	Wrexham – Gresford – Pulford - Chester	6	5	6	2	5	2
34	Wrexham – Trevalyn 3 services daily (Weds/Fri/Sat)	0945	1145	1545	0	3	0

Table 5.2 - Existing Bus Services Operation in the Vicinity of the Site

5.4.6 As can be seen above, the nearest bus stops to the centre of the site offer up to 7 services per hour, providing direct access into Wrexham and Chester.

5.4.7 These services operate from 0540 hours in the morning until 2329 hours in the evening, proving the opportunity for residents to travel by public transport for commuting and leisure trips.

5.4.8 In order to demonstrate the level of accessibility some example journey times by bus are presented below **Table 5.3** below.

Destination	Duration
Wrexham	17 mins
Chester (railway station)	31 mins

Table 5.3 Example Bus Journey Times

5.4.9 The above table demonstrates that Wrexham is a 17 minute bus journey from the site and Chester railway station is a 31 minute bus journey.

5.4.10 It is therefore concluded that the proposed development site is highly accessible by bus.

5.5 Access by Rail

5.5.1 The nearest train stations to the site are Wrexham Central and Wrexham General, and although these fall outside the recommended 2 kilometre pedestrian catchment, they are accessible via a 17 minute bus journey from the site and a short walk, equating to an overall journey time of approximately 20 minutes.

5.5.2 Wrexham Central train station is managed by Arriva Trains Wales and has 1 platform, offering an hourly service to Bidston, whilst Wrexham general train station has 4 platforms, offering 4 services per hour to Cardiff, Birmingham, Holyhead and Bidston.

5.5.3 It is also worth noting that Chester train station is also accessible via a 31 minute bus journey using service number 1. This train station is also managed by Arriva Trains Wales but has 7 platforms, offering 13 services per hour to destinations throughout the UK such as Liverpool, Manchester, Birmingham and London Euston.

5.5.4 In conclusion, the proposed site can be considered as being highly accessible in terms of travel by rail.

5.6 Summary

5.6.1 The site has been considered in terms of it accessibility by non-car modes and the following conclusions can be drawn from this section of the Report:

- The site is accessible on foot and these provisions will be substantially improved as part of the proposals, with new and upgraded footpath links.
- The provision of a new zebra crossing, to replace the existing sub-standard crossing on Holt Road will also have a positive impact and improve road safety in the area, not just for residents but for the wider community as well, including school children.
- The site is well located to generate trips on foot and provides potential for a high degree of linked walk trips between the development and the surrounding area.

- It has been demonstrated that the site is accessible by cycle, with a local cycle route situated 3.5 kilometres south west of the site, which travels into Wrexham centre.

- The close proximity of bus stops on Harwoods Lane, the B5102 and Chester Road offering services to Wrexham and Chester demonstrates that the proposed development can be considered as highly accessible by bus.

- Residents can also travel to and from the site by rail using services from the two Wrexham rail stations which can be accessed via the bus services that run very close to the site.

5.6.2 In light of the above, it is considered that site is highly accessible and able to cater for needs of the development's residents and visitors and assist in promoting a choice of travel modes other than the private car.

6 TRAFFIC IMPACT ANALYSIS

6.1 Introduction

6.1.1 Having established that the development site is highly accessible by modes of transport other than the private car and that the site can be satisfactorily accessed, the following section considers the traffic impact of the development proposals on the local highway network.

6.2 Assessment Criteria

6.2.1 Given the proposed residential land use, it is assumed reasonable to consider whether the traffic increases at the site would have any material impact within the local highway network during the typical morning and evening peak periods.

6.3 Traffic Survey Data

6.3.1 In order to establish current levels of traffic, manual traffic counts were undertaken on Thursday 18th June 2015 between 0730 and 0930 hours in the morning and 1630 and 1830 hours in the evening.

6.3.2 The junctions included in the survey are set out below;

- B5445 Chester Road/Link to Rossett Road
- B5445 Chester Road/B5102 Rossett Road; and
- Rossett Road/Link to B5445 Chester Road.

6.3.3 The full traffic survey data is contained within **Appendix 2**.

6.3.4 The peak hours were identified as 0800 to 0900 hours and 1645 to 1745 hours, for the AM and PM peaks respectively.

6.3.5 The surveyed flows for the peak hours converted into Passenger Car Units (PCU's) are shown in **Figures 1** and **2**.

6.4 Growthed Traffic Flows

6.4.1 For the purpose of this Report, the impact of the proposals has been considered for a likely opening year of 2026, which is considered to provide a robust assessment.

6.4.2 The future year traffic flow factors have been derived using the National Traffic Model (NTM) factors adjusted by the TEMPRO regional and local growth factors for Wrexham.

6.5 Base Flows

6.5.1 The growthed 2026 flows for the peak hours, which form the 2026 'Without Development' flows, converted into Passenger Car Units (PCU's), are shown in **Figures 3** and **4**.

6.6 Committed Development

6.6.1 It is understood from WCBC that there are no committed developments in the area that would require inclusion within this report.

6.7 Trip Distribution

6.7.1 The directional distribution of the traffic associated with the proposals has been assigned to the local highway network in line with the observed vehicle movements, which is considered to present a suitable approach.

6.7.2 The trip distribution from the northern and southern access points for the AM peak hour is shown in **Figures 5a** and **5b** whilst the trip distribution from each access point for the PM peak traffic is shown in **Figures 6a** and **6b**.

6.8 Proposed Development

6.8.1 As previously stated, it is proposed to develop the two sites for up to 132 residential properties in total.

6.8.2 For robustness however, the traffic impact analysis has been based on a provision of 137 dwellings.

6.8.3 In order to establish the number of trips which the proposed development is forecast to generate the TRICS database has been used for the 'private housing' range of sites based on the 'Residential - Privately owned houses' category with any Greater London and Eire sites excluded. The full TRICS outputs are contained within **Appendix 3**.

6.8.4 The trip rates have been deemed acceptable by the highways officer at WCBC.

6.8.5 The peak hour trip rates and forecast trip generation for the proposed 137 units are shown within **Table 6.1**.

Peak Hour	Trip Rates		Trip Generation	
	Arr	Dep	Arr	Dep
AM	0.15	0.41	20	56
PM	0.35	0.22	48	30

Table 6.1 - Forecast Trip Generation of Proposed Residential Development

6.8.6 As demonstrated above, the residential development is forecast to generate a two-way total of approximately 76 trips in the AM peak hour and 78 trips in the PM peak hour.

6.8.7 In order to assign traffic forecast to be generated by the proposed development, the trip distribution shown in the Figures 5a and 5b and 6a and 6b has been utilised for the AM and PM peaks respectively.

6.8.8 The resulting trips to and from each access point for the AM peak hour are shown in **Figures 7a** and **7b** whilst the trips from each access point for the PM peak traffic are shown in **Figures 8a** and **8b**.

6.9 With Development Flows

6.9.1 In order to calculate the 2026 'With Development' flows, the development flows shown in Figures 7a and 7b have been added to the 2026 'Without Development' flows contained within Figure 3 for the AM peak.

6.9.2 Similarly, the development flows shown in Figures 8a and 8b have been added to the 2026 'Without Development' flows contained within Figures 4 for the PM peak.

6.9.3 The resulting 2026 'With Development' Flows are presented in **Figures 9** and **10** respectively for the AM and PM peak hour periods.

6.10 Capacity Assessments

6.10.1 As already stated, there will be two new priority controlled junctions to serve each of the sites.

6.10.2 In addition to the site access junctions, in order to assess the operation of the junctions on the local highway network, capacity assessments have been undertaken at the following junctions;

- B5445 Chester Road/Link to Rossett Road
- B5445 Chester Road/B5102 Rossett Road; and
- Rossett Road/Link to B5445 Chester Road.

6.10.3 The assessment year 2026 is considered to provide a robust assessment of the potential impact of the development in highway terms.

Rossett Road/Northern Site Access

6.10.4 The access to the northern site off Rossett Road will be priority controlled and so has been assessed using PICADY. The results for the 'With Development' flow scenarios for 2026 are summarised within **Table 6.2** with the full results contained within **Appendix 4**.

Arm Name	2026 Assessment			
	AM		PM	
	RFC	Max Q	RFC	Max Q
Site Access	0.06	0	0.03	0
Rossett Road	0.01	0	0.02	0

Table 6.2 – Summary of PICADY Results for Rossett Road/Site Access (Northern)

6.10.5 As demonstrated, the proposed northern site access off Rossett Road is forecast to operate with reserve capacity in the 2026 'With Development' flow scenario in both the AM and PM peak hours.

Rossett Road/Southern Site Access

6.10.6 The access to the southern site off Rossett Road will also be priority controlled and so has been assessed using PICADY. The results for the 'With Development' flow scenarios for 2026 are summarised within **Table 6.3** with the full results contained within **Appendix 5**.

Arm Name	2026 Assessment			
	AM		PM	
	RFC	Max Q	RFC	Max Q
Site Access	0.06	0	0.03	0
Rossett Road	0.01	0	0.02	0

Table 6.3 – Summary of PICADY Results for Rossett Road/Site Access (Southern)

6.10.7 As demonstrated, the proposed southern site access off Rossett Road is forecast to operate with reserve capacity in the 'With Development' 2026 flow scenario in both the AM and PM peak hours.

B5445 Chester Road/Link to Rossett Road

6.10.8 The B5445 Chester Road/Link to Rossett Road is priority controlled and so has been modelled using PICADY.

6.10.9 The results for the 'Without Development' and 'With Development' flow scenarios for 2026 are summarised within **Table 6.4** with the full results contained within **Appendix 6**.

Arm Name	2026 Without Development				2026 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
Link Road	0.22	0	0.16	0	0.25	0	0.18	0
Chester Road	0.00	0	0.01	0	0.00	0	0.01	0

Table 6.4 – Summary of PICADY Results for B5445 Chester Road/Link to Rossett Road

6.10.10 As can be seen in the above table, the 'Without Development' results for the AM and PM peak hours show that the junction will operate with reserve capacity with no queuing.

6.10.11 The 2026 'With Development' results for the AM and PM peak hour show the junction will continue to operate with reserve capacity, in a similar manner to the base situation.

B5445 Chester Road/B5102 Rossett Road

6.10.12 The B5445 Chester Road/B5102 Rossett Road is priority controlled and so has been modelled using PICADY.

6.10.13 The results for the 'Without Development' and 'With Development' flow scenarios for 2026 are summarised within **Table 6.5** with the full results contained within **Appendix 7**.

Arm Name	2026 Without Development				2026 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
B5102	0.30	0	0.23	0	0.34	0	0.25	0
Chester Road	0.34	1	0.22	0	0.36	1	0.26	0

Table 6.5 – Summary of PICADY Results for B5445 Chester Road/B5102 Rossett Road

6.10.14 As can be seen in the above table, the 'Without Development' results for the AM and PM peak hours show that the junction will operate with reserve capacity.

6.10.15 The 2026 'With Development' results for the AM and PM peak hour show the junction will continue to operate with reserve capacity. The proposals will have a minimal impact on the operation of this junction.

Rossett Road/Link to B5445 Chester Road

6.10.16 The Rossett Road/Link to B5445 Chester Road is priority controlled and so has been modelled using PICADY. The results for the 'Without Development' and 'With Development' flow scenarios for 2026 are summarised within **Table 6.6** with the full results contained within **Appendix 8**.

Arm Name	2026 Without Development				2026 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
Link Road	0.14	0	0.17	0	0.27	0	0.19	0
Chester Road	0.07	0	0.05	0	0.14	0	0.06	0

Table 6.6 – Summary of PICADY Results for Rossett Road/Link to B5445 Chester Road

6.10.17 As can be seen in the above table, the 'Without Development' results for the AM and PM peak hours show that the junction will operate with reserve capacity.

6.10.18 The 2026 'With Development' results for the AM and PM peak hour show the junction will continue to operate efficiently.

6.11 Traffic Impact Summary

6.11.1 This section of the Report has considered the impact of the proposals in transport terms for a 2026 flow scenario, which is considered to provide a very robust set of assessments.

Rossett Road/Site Access (Northern and Southern)

6.11.2 The PICADY analysis for the two new access points show the junctions will operate with no capacity issues.

6.11.3 This demonstrates that the proposed access junctions are appropriate in their scale and design to adequately serve the sites.

B5445 Chester Road/Link to Rossett Road

6.11.4 The results for the 2026 'Without Development' scenario show the junction would be operating with reserve capacity in the AM and PM peak hours.

6.11.5 The results for the 2026 'With Development' scenario show the junction would operate at a similar level and the impact of the development would be minimal.

B5445 Chester Road/Link to Rossett Road

6.11.6 The results for the 2026 'Without Development' flows show the junction would be operating efficiently with no queuing in both peak hours.

6.11.7 The results for 2026 which include addition of the traffic associated with the proposals show that the junction would operate in a similar manner to the base flow scenario and that the development would not have a material impact.

B5445 Chester Road/B5102 Rossett Road

6.11.8 The results for the 2026 'Without Development' scenario show the junction is forecast to operate without any capacity issues in both the AM and PM peak hours.

6.11.9 The 2026 'With Development' scenario shows the junction would continue to operate with reserve capacity and the development traffic would not have an impact on the overall operation of the junction.

6.11.10 The capacity assessments undertaken therefore demonstrate that the local highway network would remain operating well within its capacity and the development traffic can be accommodated in both peak hours.

6.11.11 It is concluded that the development will not have a material impact on the local network and will not give rise to any traffic impact issues.

7 ACCIDENT ANALYSIS

7.1 Introduction

7.1.1 In order to consider the potential impact of the development on road safety, a brief review of the Crashmap website (www.crashmap.co.uk) has been undertaken.

7.1.2 The personal injury accident information provided on the website covered the 3 year period between 2014 and 2016 in the vicinity of the development site.

7.2 Accident Analysis

7.2.1 The analysis of road traffic accidents has been focused on the same road network as the junction capacity assessments.

7.2.2 A review of the data contained within **Appendix 9** however, showed that there has only been one personal injury accident with the area of study over the last 3 years, as illustrated in **Figure 7.1** below.

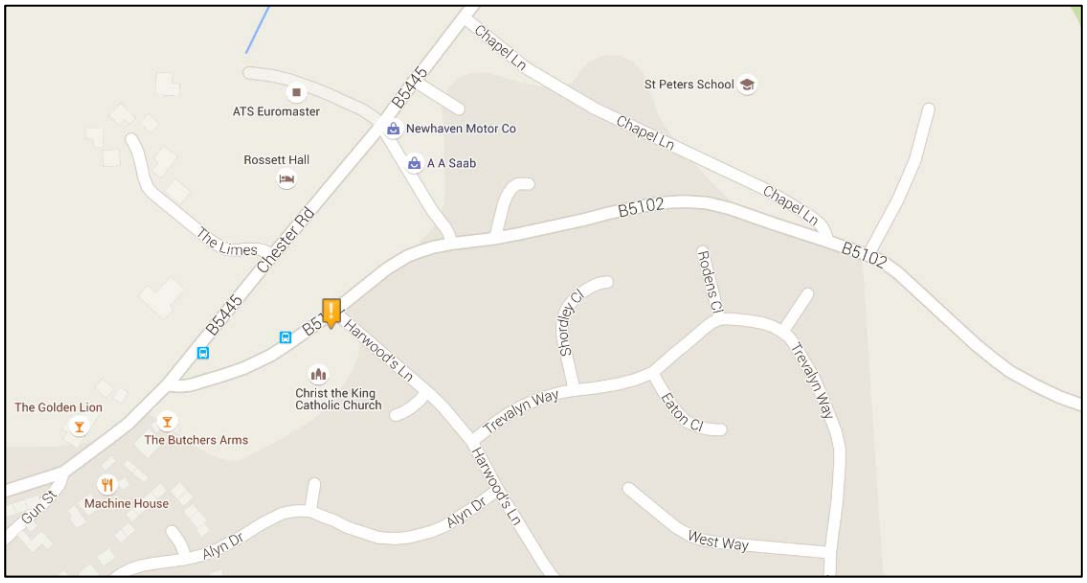


Figure 7.1 – Location of Accidents

7.2.3 As can be seen above, the one recorded accident took place on the B5102 Rossett Road, close to its junction with Harwood Lane, which benefits from excellent junction visibility.

7.2.4 The accident involved two vehicles, one of which was turning right into Harwood Lane at the time, when it was struck by the other vehicle. The accident can therefore be attributed to driver error or the driver not paying sufficient attention to other road users and resulted in a slight injury being sustained.

7.3 Summary

7.3.1 The only recorded incident in the last 3 years, related to a collision which took place due to either one or both of the drivers not paying attention to other road users, rather than being due to the characteristics or junction layout.

7.3.2 Having considered the accidents that have taken place over the last 3 years in the study area, it is not considered that there are any accident or highway safety problems in the area.

7.3.3 It should be noted that the internal layout of the site will be focused on providing safe access for all road users, including pedestrians and cyclists and the proposed new footway along Rossett Road will provide residents with a continuous safe walking to the village and the surrounding area.

7.3.4 As such, there is no evidence to suggest that the proposed residential development will have an adverse effect on road safety or the number of accidents in the vicinity.

8 SMARTER TRAVEL CHOICES VIA TRAVEL PLANS

8.1 Introduction

8.1.1 In order to manage the travel by residents at the new development, the applicant wishes to offer a Travel Plan to encourage travel to the site by non-car modes.

8.2 Travel Planning Guidance

8.2.1 The management of residents travel represents an important element in pursuing the overall aims of the latest national guidance included within the DfT's Best Practice Guide and the Welsh Assembly's Smarter Choice: Wales document.

8.2.2 The preparation and adoption of a Travel Plan is an important element of managing the demand for travel to all modern developments.

8.2.3 The Welsh Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by "Encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel".

8.2.4 Land use planning can help to achieve the Welsh Government's objectives for transport through:

- *reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;*
- *improving accessibility by walking, cycling and public transport;*
- *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*
- *promoting walking and cycling;*
- *supporting the provision of high quality public transport;*
- *supporting traffic management measures; and*
- *supporting sustainable travel options in rural areas;*

8.2.5 Travel Plans should focus on achieving the lowest practical level of single occupancy vehicle trips to or from a site and widening the use of other travel modes and assist in the wider aims of encouraging sustainable travel, improving health, reducing congestion, energy consumption and pollution.

8.2.6 A Residential Travel Plan is a package of measures designed to reduce car use originating from new housing by supporting alternative forms of transport and reducing the need to travel in the first place.

8.2.7 They are an important tool to help deliver accessible, sustainable communities and offer clear benefits to all the parties involved – public, private and the community. They involve meeting the access needs of residents in a new way and require partnerships between developers, local authorities, local communities and new residents.

8.2.8 The value of Travel Plans in reducing car use to workplaces and schools is widely recognised and many local authorities and developers have experience in their design and implementation.

8.2.9 However, until recently, little attention has been given to tackling the origins of journeys from people's homes. Now, forward-thinking developers and local authorities are developing packages of smarter choices to both reduce the traffic generated by new housing developments and increasing the travel choices available to residents. These smarter choices are being set out in Residential Travel Plans.

8.3 Residential Travel Plan

8.3.1 The objective of a Residential Travel Plan is to encourage residents to travel to work by bus, on foot and by bicycle.

8.3.2 A Framework Residential Travel Plan has been prepared and is presented in **Appendix 10**.

8.3.3 The Framework Residential Travel Plan outlines physical and management measures that are designed to achieve this objective.

8.3.4 However, the principle measure will consist of a Residents Travel Pack containing relevant material to promote non-car modes of travel and the provision of certain physical measures.

8.3.5 The Travel Pack will contain information to inform residents of the existing long-term strategy for reducing the dependence of residents and visitors on travel by private car.

8.3.6 The site has been demonstrated to benefit from excellent non-car accessibility and it should, therefore, be expected that the adoption of a Travel Plan would be particularly effective.

9 CONCLUSIONS

9.1.1 This Report has considered proposals relating to the development of land situated to the north and south of Rossett Road in Rossett.

9.1.2 The site lies on the eastern edge of the village, within a predominantly residential area and is within a short walk and cycle distance from bus stops, local shops, schools, leisure facilities and key employment areas. A regular and frequent bus service runs along Chester Road, providing up to 7 services per hour which connect to local and national rail networks at Wrexham and Chester.

9.1.3 The development will be accessed via two new priority controlled junctions directly off Rossett Road, one serving the northern site and the other serving the site to the south. The proposals include a number of off-site highway works such as new/upgraded footpaths and a zebra crossing on Holt Road which will improve pedestrian connectivity and overall road safety.

9.1.4 The swept path analysis undertaken has shown servicing can take place safely and efficiently within both sites and will not have a detrimental impact on road safety.

9.1.5 The traffic impact of the development has been predicted using the TRICS database and the traffic impact assessments indicate that the proposed development would be able to be accommodated on the local highway network.

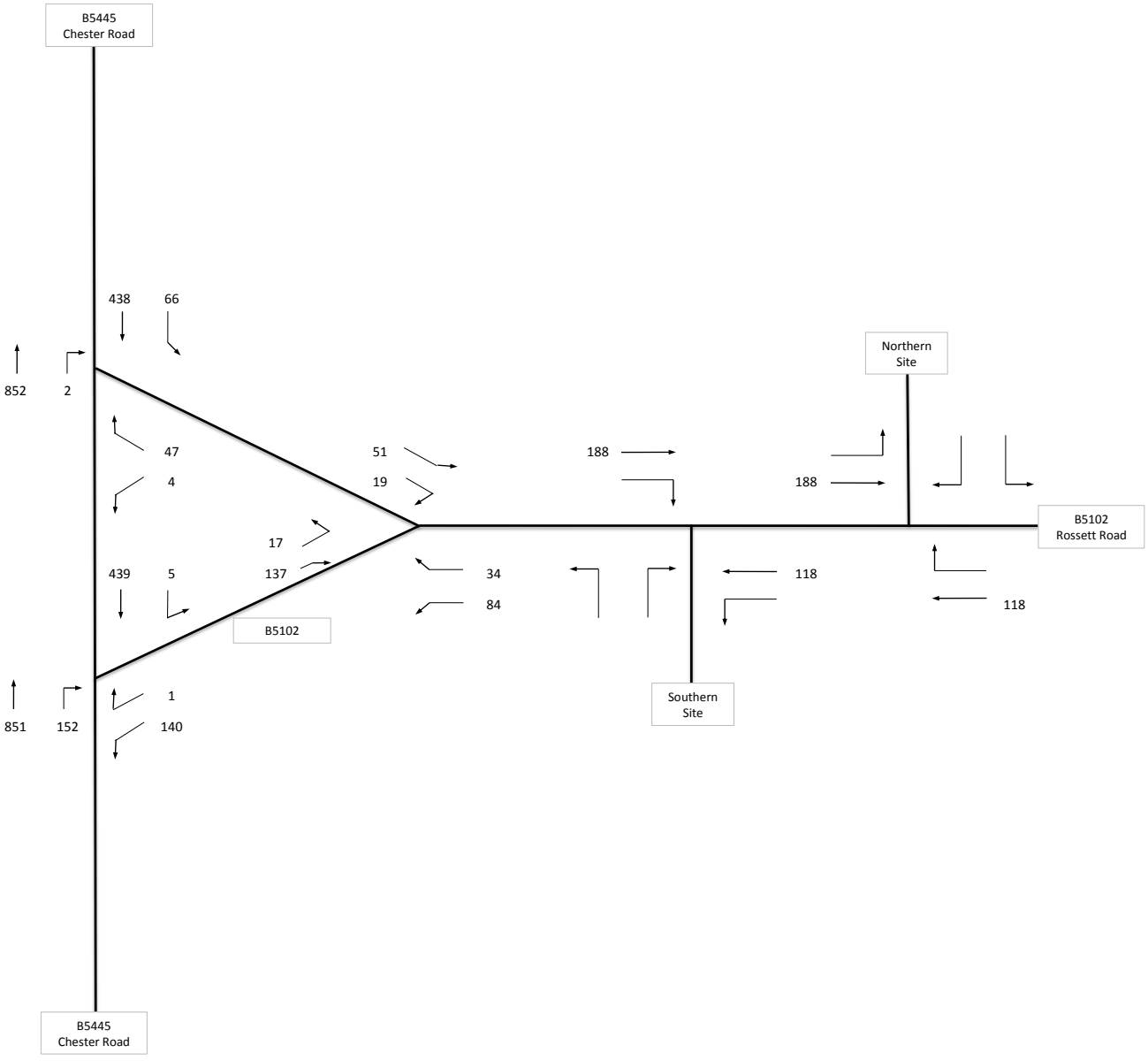
9.1.6 There has only been one recorded accident within the study area, over the last 3 years and there is no evidence to suggest that the proposals would have an adverse effect on road safety or the number of accidents in the vicinity.

9.1.7 A Framework Travel Plan will be implemented to encourage the use of non-car modes to take advantage of the sustainable travel accessibility credentials of the site.

9.1.8 In conclusion, the proposals for a residential development will provide a sustainable development in transport terms and planning permission should be granted planning permission.

FIGURES

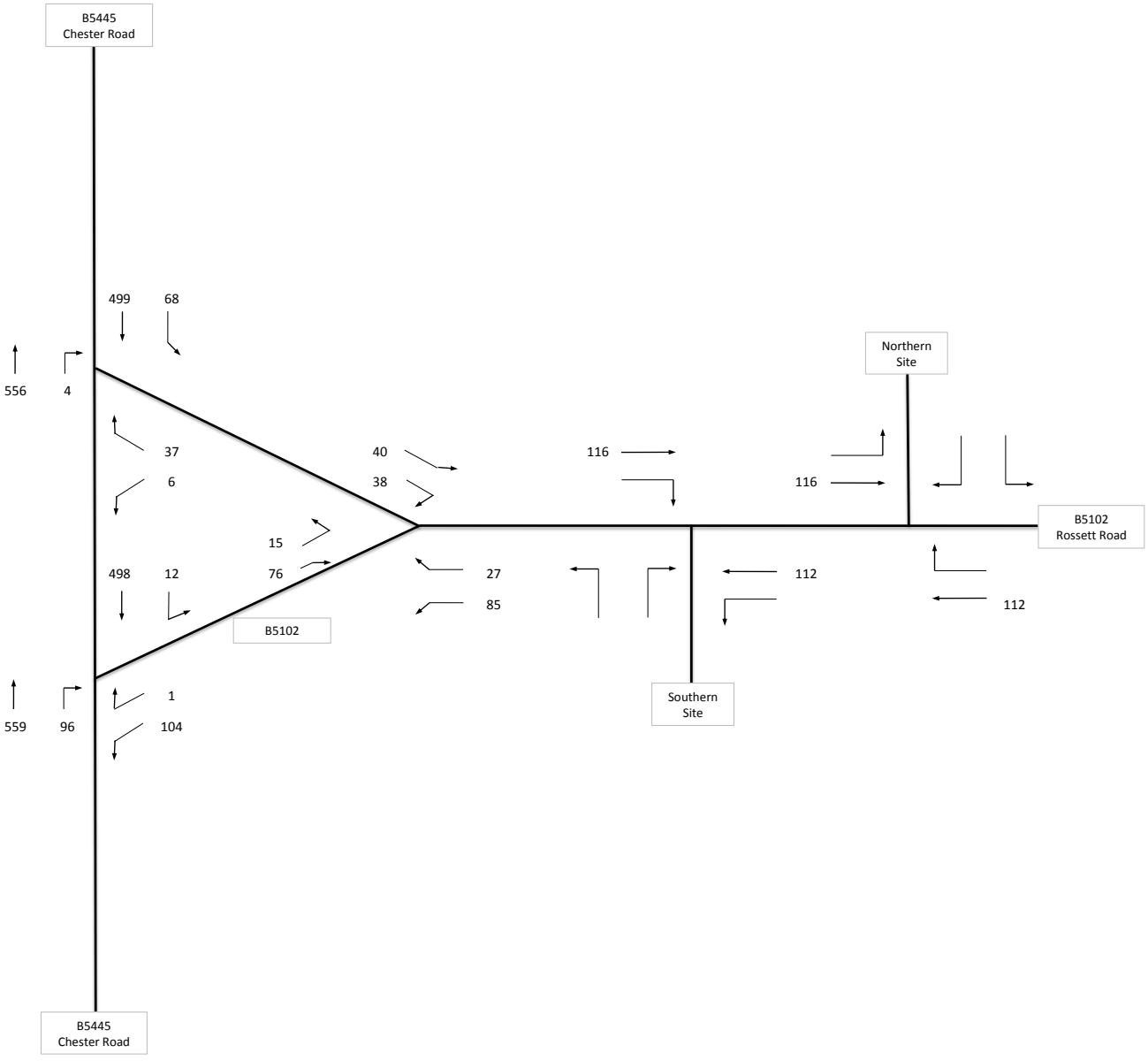
FIGURE	DESCRIPTION	SCENARIO	CALC
FIGURE 1	2016 SURVEYED FLOWS	AM PEAK	See TA
FIGURE 2	2016 SURVEYED FLOWS	PM PEAK	See TA
FIGURE 3	2026 BASE FLOWS	AM PEAK	FIG1xNTM
FIGURE 4	2026 BASE FLOWS	PM PEAK	FIG2xNTM
FIGURE 5a	TRIP DISTRIBUTION - NORTHERN SITE	AM PEAK	See TA
FIGURE 5b	TRIP DISTRIBUTION - SOUTHERN SITE	AM PEAK	See TA
FIGURE 6a	TRIP DISTRIBUTION - NORTHERN SITE	PM PEAK	See TA
FIGURE 6b	TRIP DISTRIBUTION - SOUTHERN SITE	PM PEAK	See TA
FIGURE 7a	DEVELOPMENT FLOWS - NORTHERN SITE	AM PEAK	Based on F5a
FIGURE 7b	DEVELOPMENT FLOWS - SOUTHERN SITE	AM PEAK	Based on F5b
FIGURE 8a	DEVELOPMENT FLOWS - NORTHERN SITE	PM PEAK	Based on F6a
FIGURE 8b	DEVELOPMENT FLOWS - SOUTHERN SITE	PM PEAK	Based on F6b
FIGURE 9	2026 ASSESSMENT FLOWS	AM PEAK	F3+F7a+F7b
FIGURE 10	2026 ASSESSMENT FLOWS	PM PEAK	F4+F8a+F8b



Flows in PCUs

Figure 1 - 2016 Surveyed Flows - AM Peak (0800 to 0900)

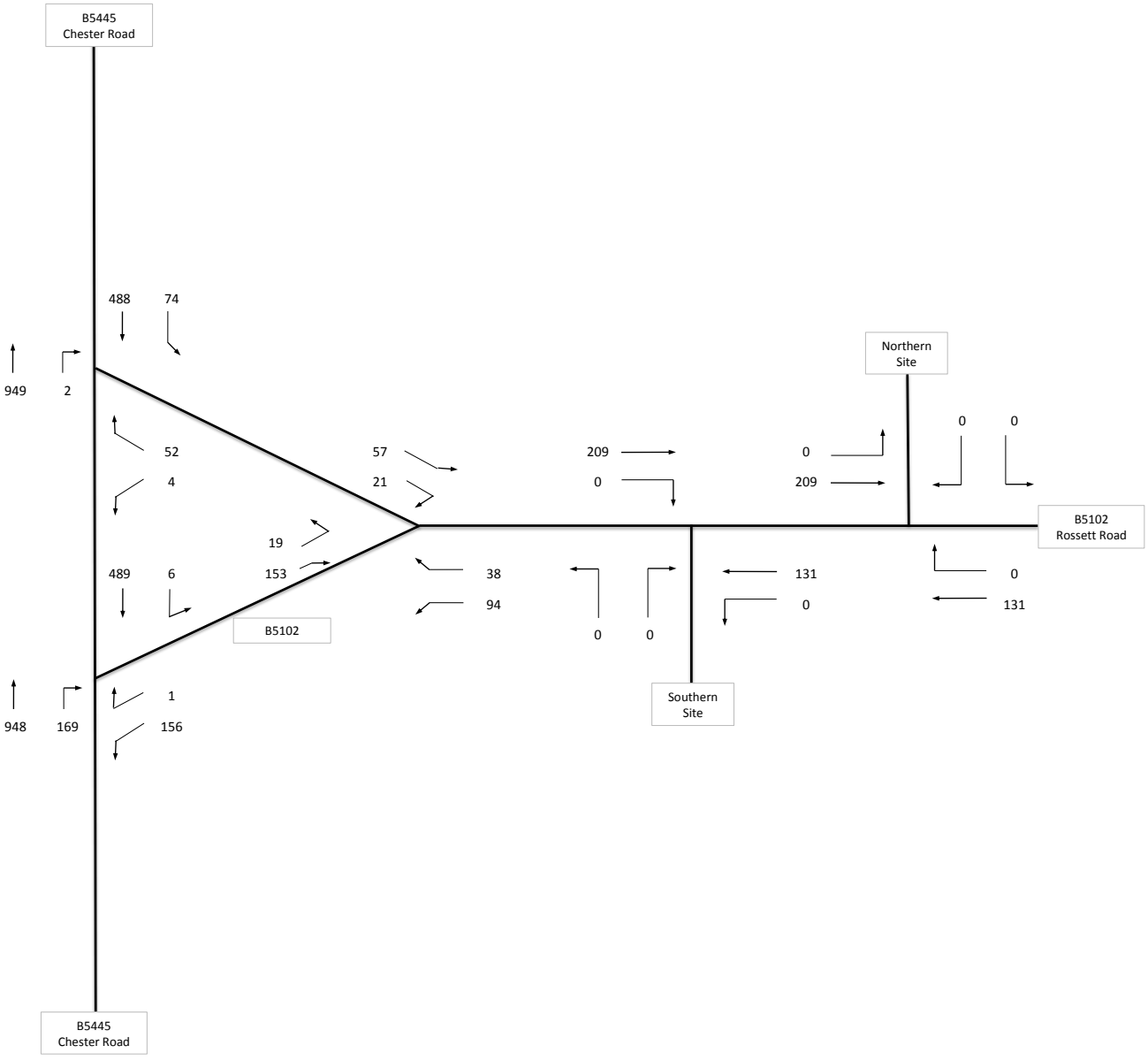
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Flows in PCUs

Figure 2 - 2016 Surveyed Flows - PM Peak (1645 to 1745)

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Growth factor 2016 to 2026 = 1.1141

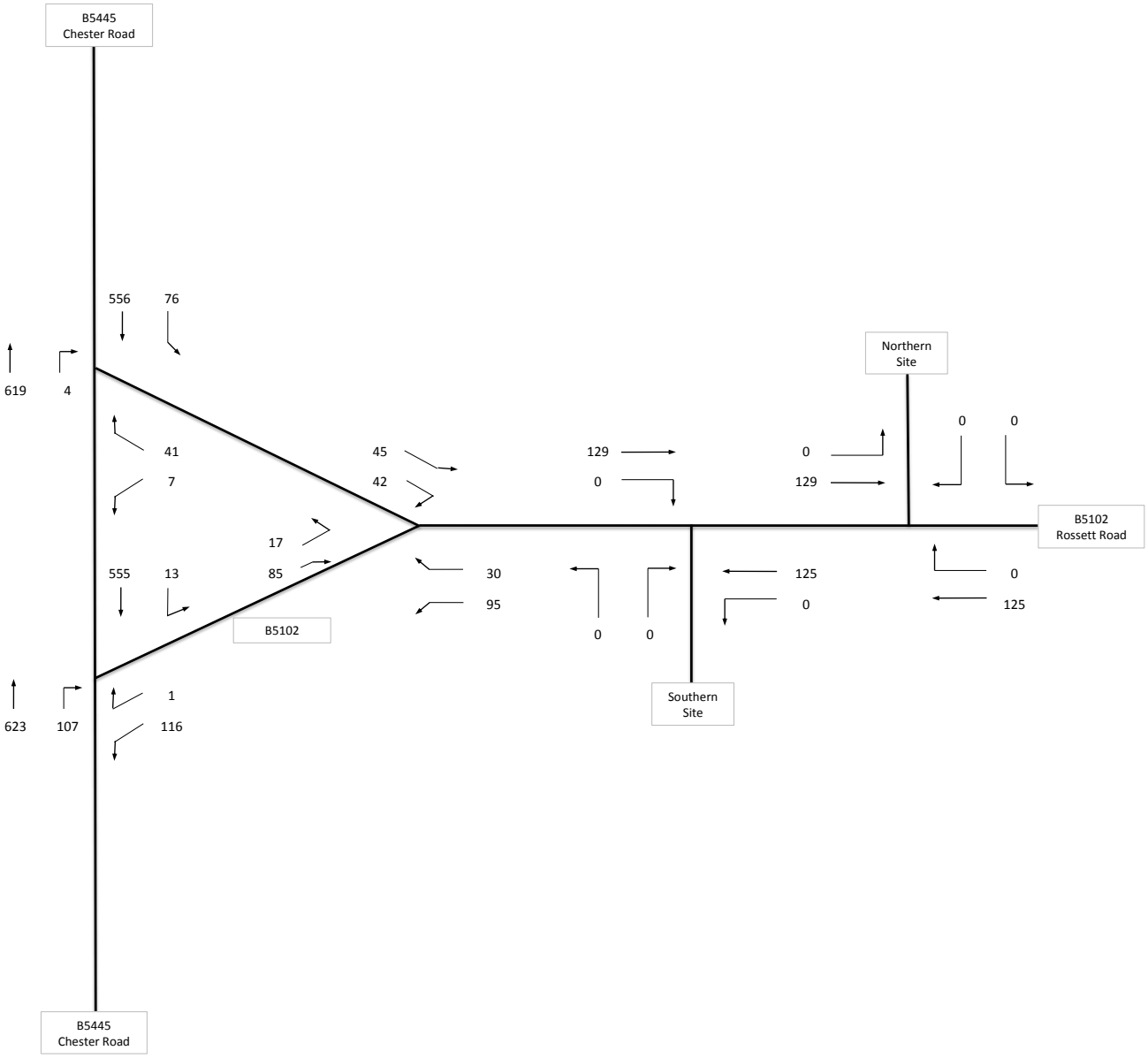
Flows in PCUs

Figure 3 - 2026 Base Flows - AM Peak (0800 to 0900)

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Growth factor 2016 to 2026 = 1.1139

Flows in PCUs

Figure 4 - 2026 Base Flows - PM Peak (1645 to 1745)

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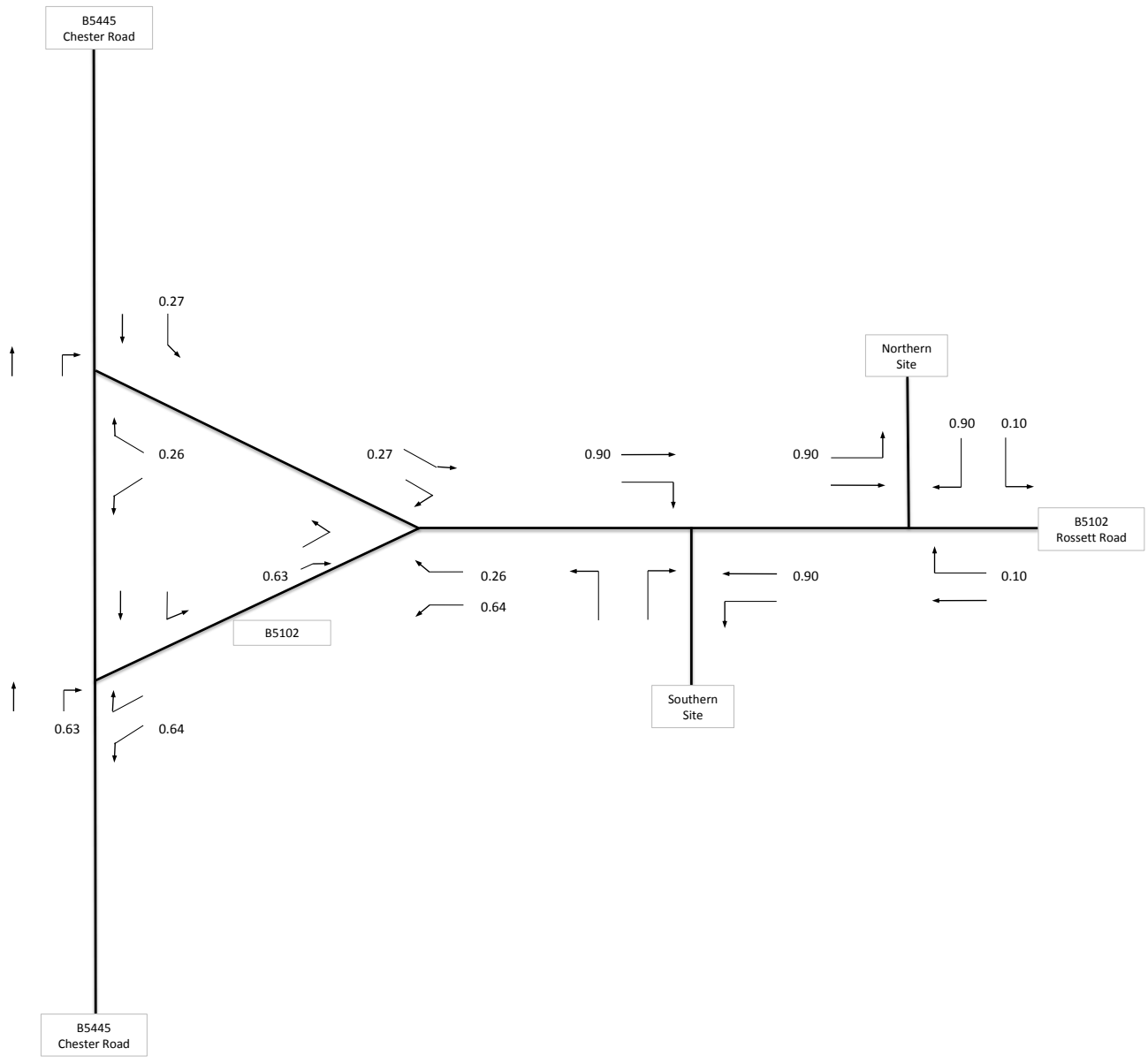


Figure 5a - Trip Distribution - AM Peak (0800 to 0900)

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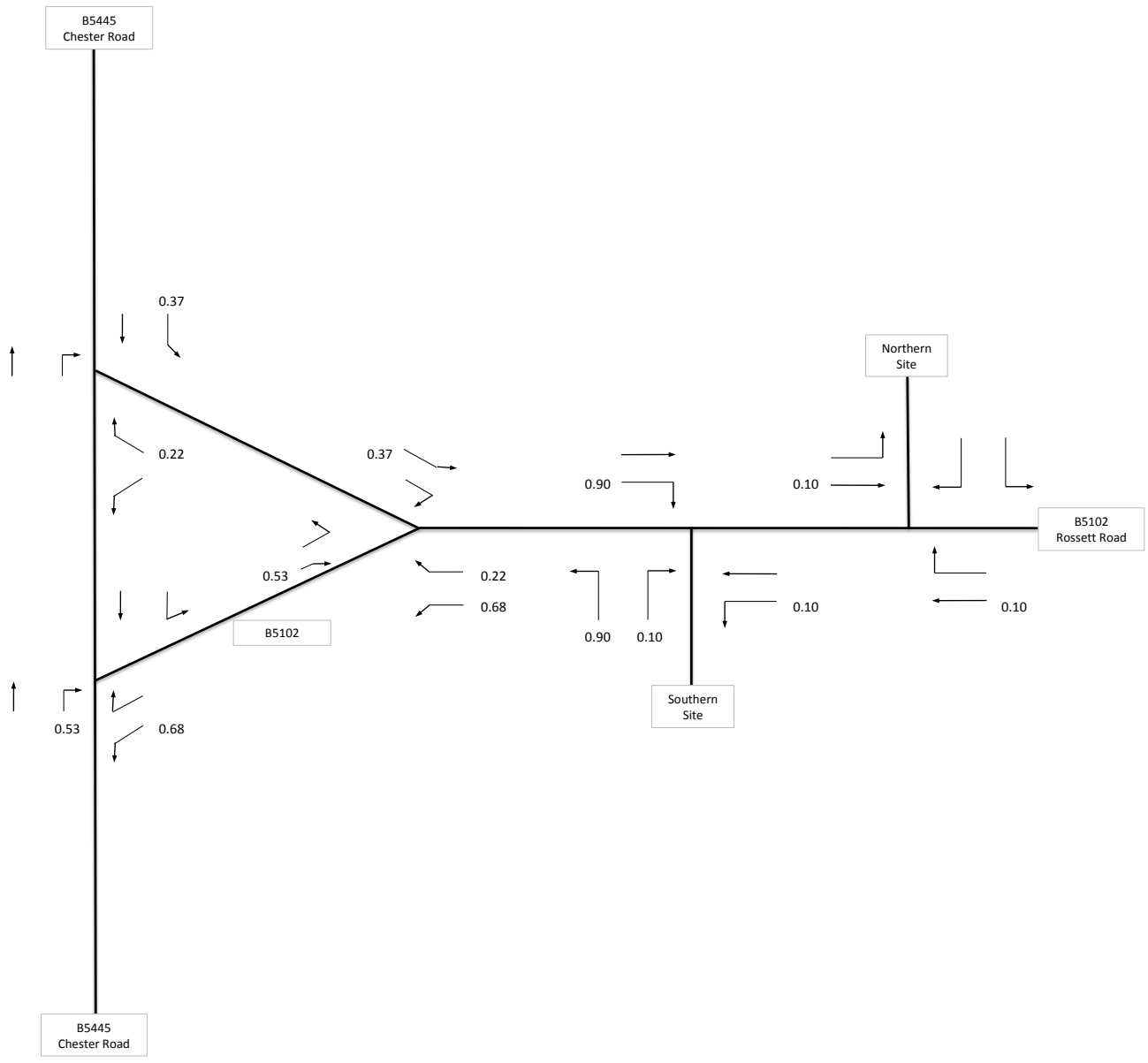


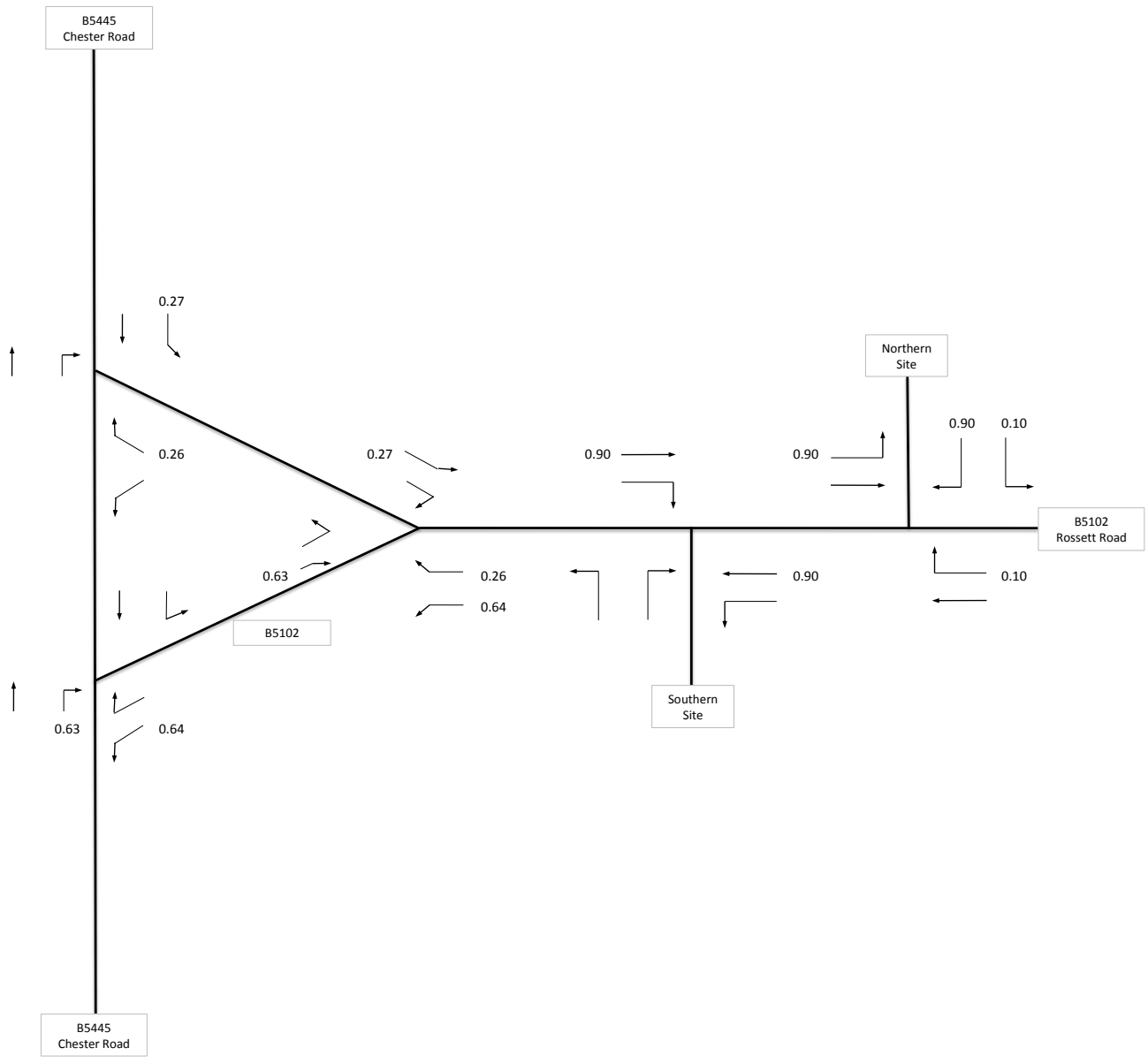
Figure 5b - Trip Distribution - AM Peak (0800 to 0900)

Southern Site

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Flows in PCUs

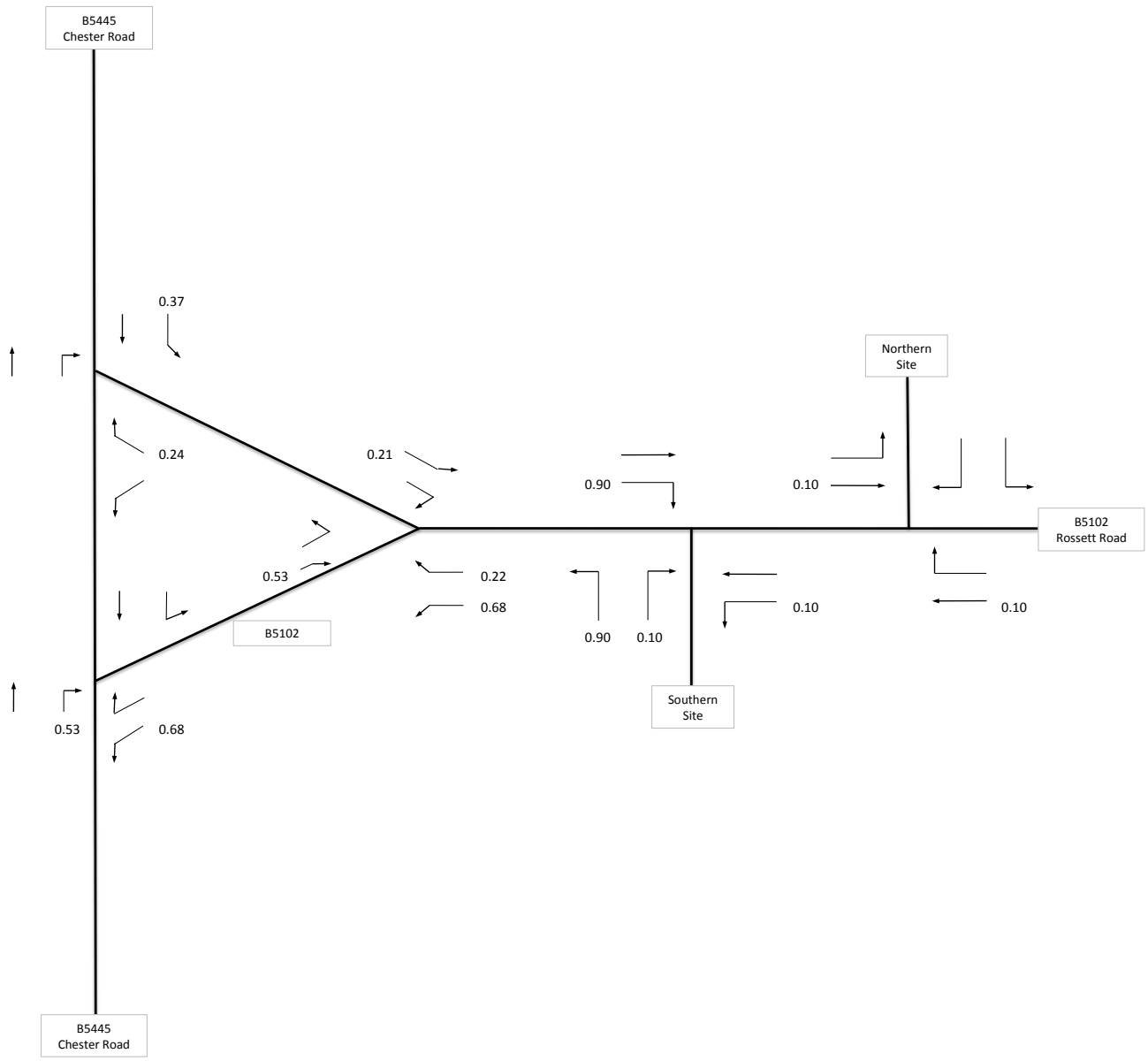
Figure 6a - Trip Distribution - PM Peak (1645 to 1745)

Northern Site

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Flows in PCUs

Figure 6b - Trip Distribution - PM Peak (1645 to 1745)
Southern Site

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IN	10
OUT	27

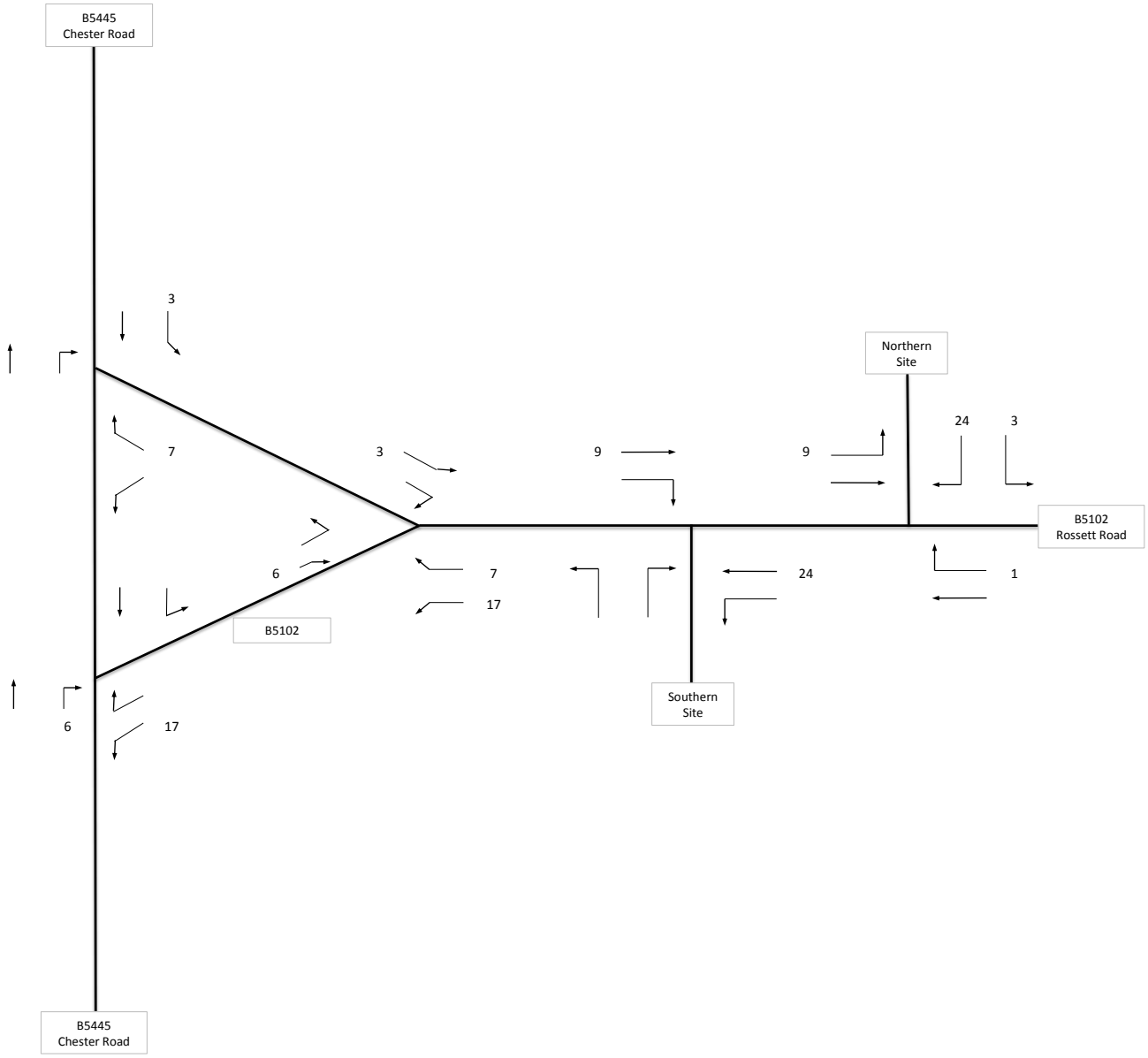


Figure 7a - Development Flows - AM Peak (0800 to 0900)

Northern Site

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IN	10
OUT	29

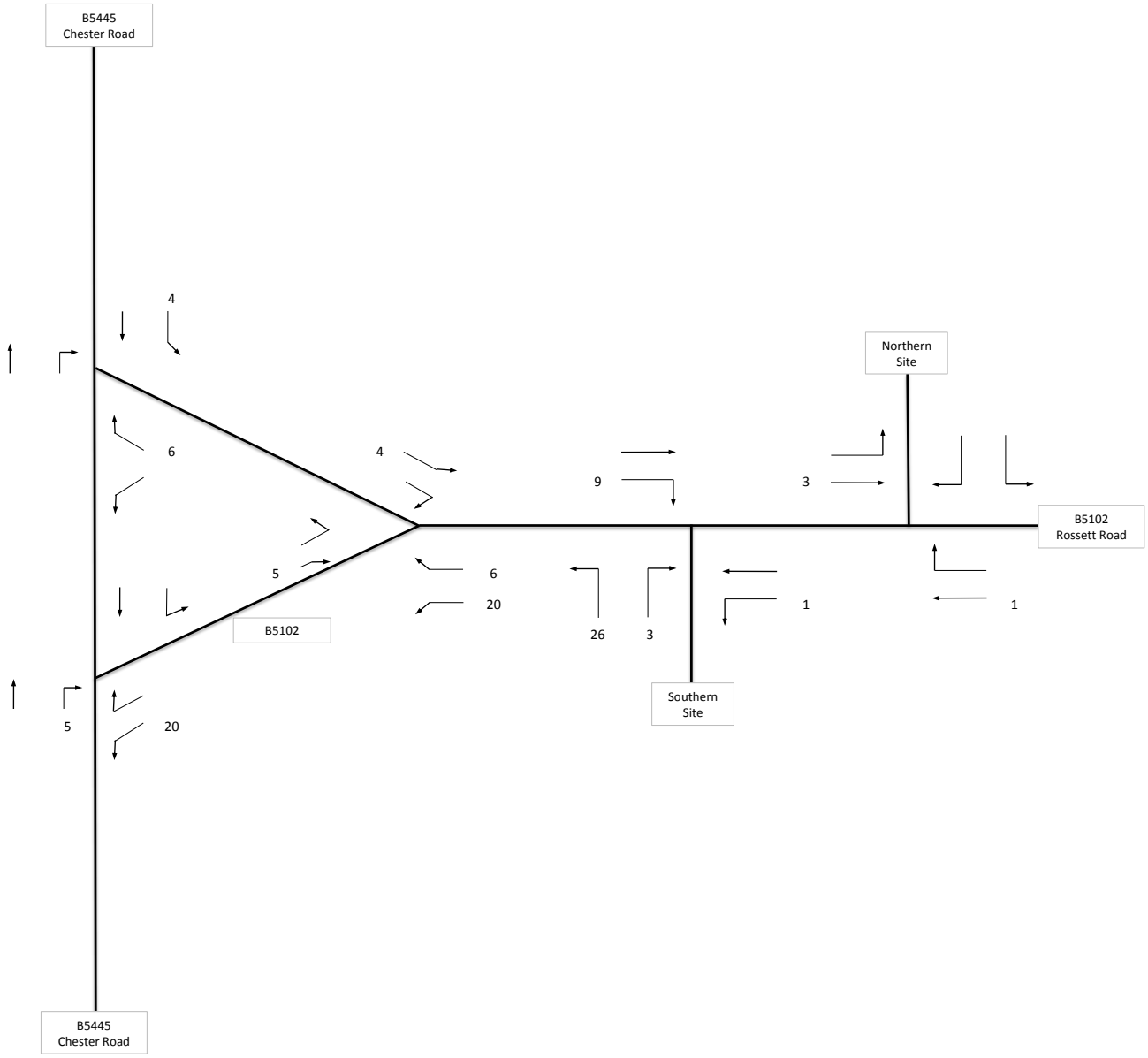


Figure 7b - Development Flows - AM Peak (0800 to 0900)

Southern Site

croft
Transport Solutions
9 Jordan Street, Manchester, M15 4PY
Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

IN	24
OUT	15

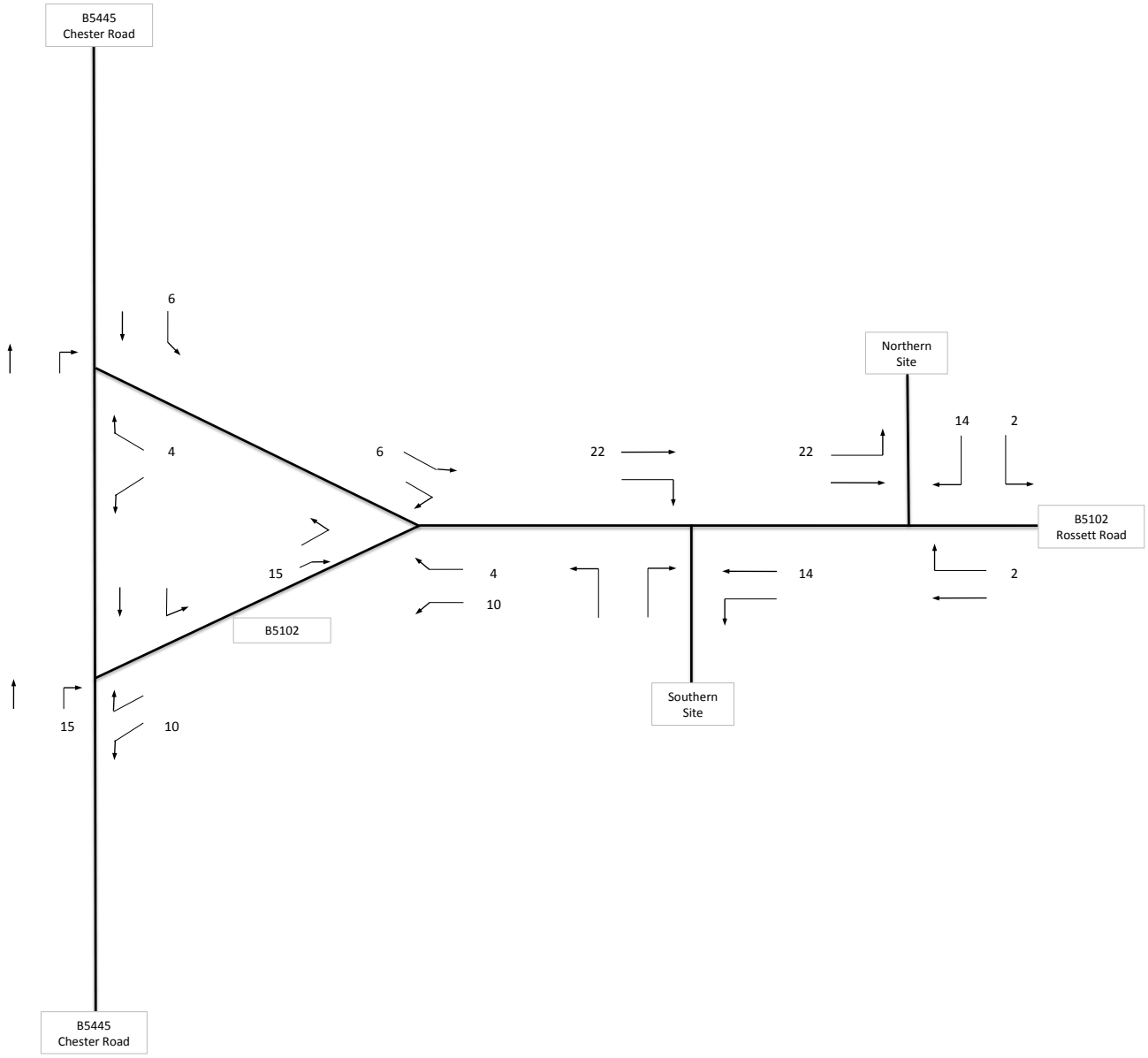


Figure 8a - Development Flows - PM Peak (1745 to 1845)

Northern Site

Transport Solutions

9 Jordan Street, Manchester, M15 4PY

Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

IN	25
OUT	16

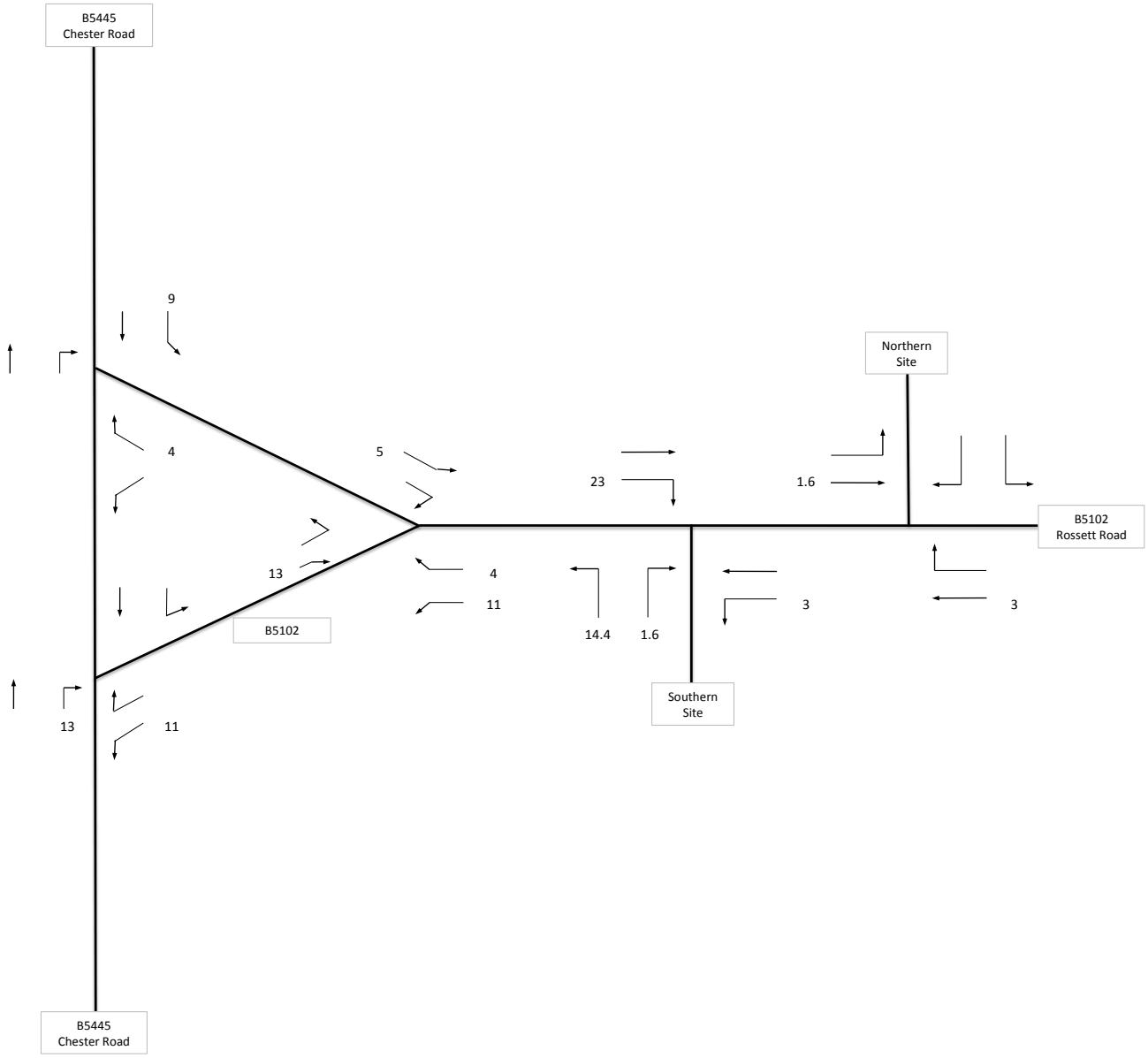


Figure 8b - Development Flows - PM Peak (1745 to 1845)

Southern Site

croft
Transport Solutions
9 Jordan Street, Manchester, M15 4PY
Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

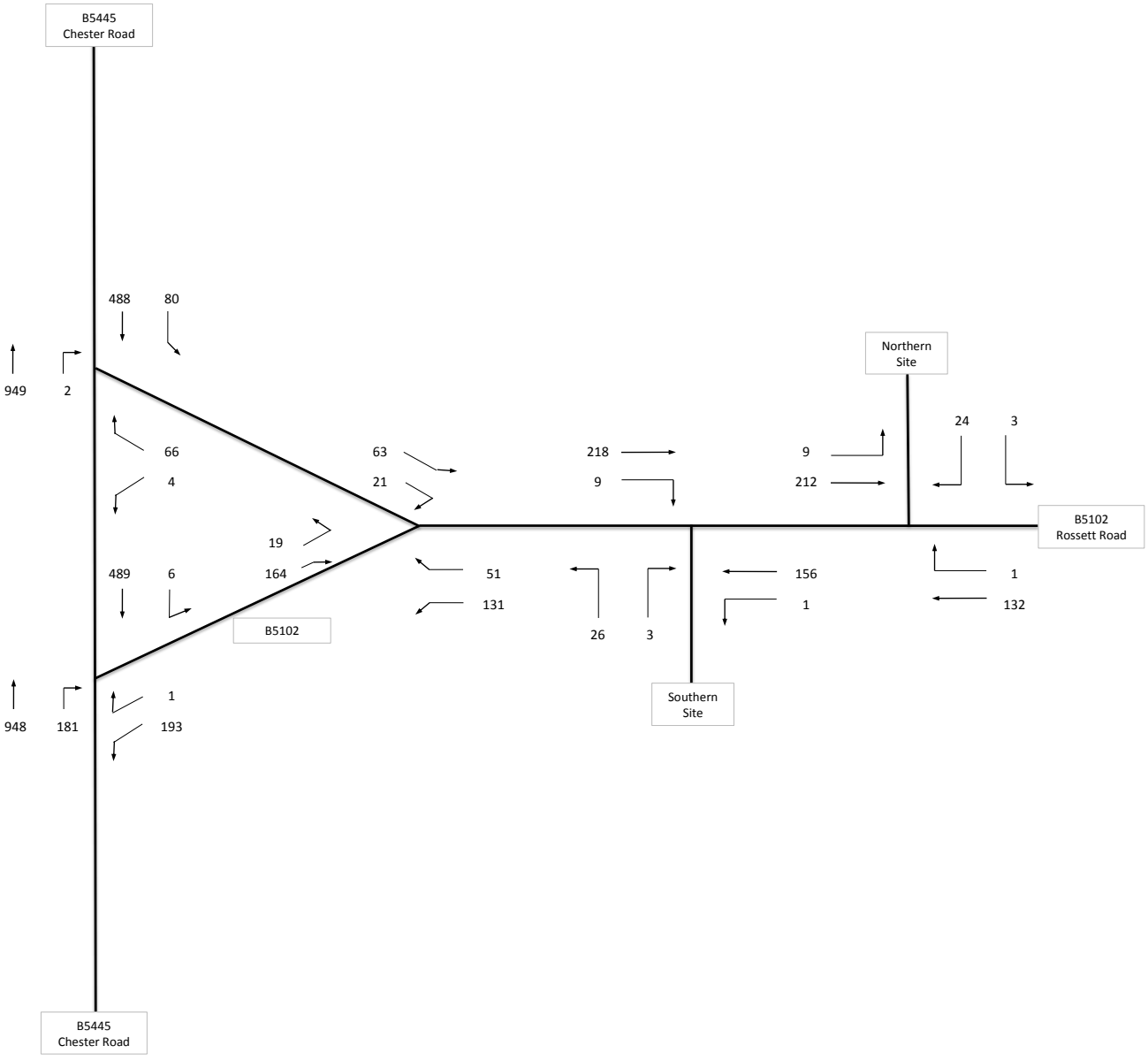
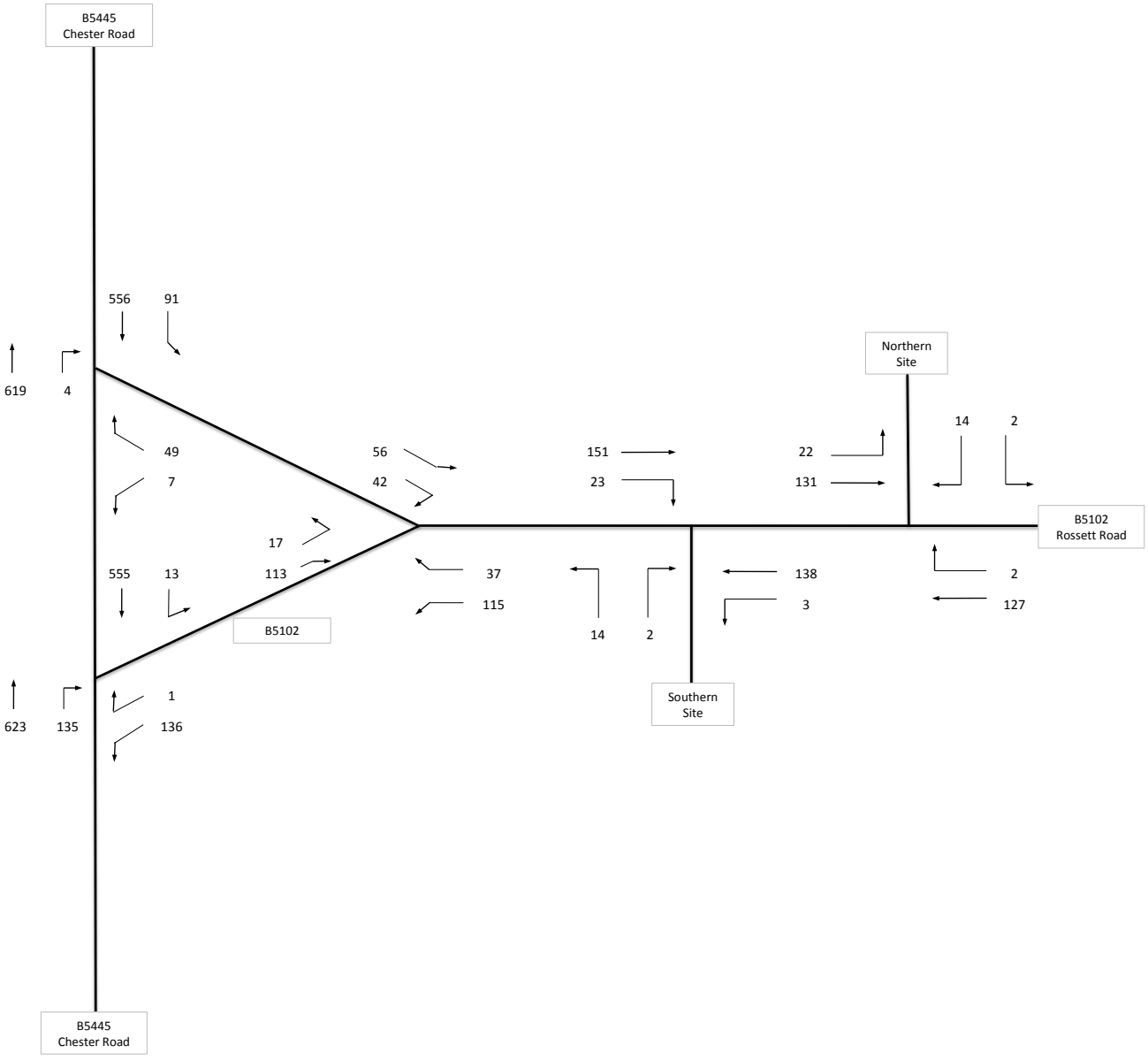


Figure 9 - 2026 Assessment Flows - AM Peak (0800 to 0900)

Transport Solutions

9 Jordan Street, Manchester, M15 4PY

Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk



Flows in PCUs

Figure 10 - 2026 Assessment Flows - PM Peak (1645 to 1745)

croft
Transport Solutions
9 Jordan Street, Manchester, M15 4PY
Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

PLANS



BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT
ROSSET ROAD, ROSSET
SITE LOCATION PLAN

croft
Transport Solutions
Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk
9 Jordan Street,
Manchester
M15 4PY

DRAWN:	DATE:	CHECKED:	DATE:	SCALE:	DRAWING NUMBER:	REVISION:
SM	05.02.16	MR	05.02.16	N.T.S	0807-01	.



NORTH

REF	BEDS	SQ FT	QTY	TOTAL	TYPE
A	2	700	10	7000	2 BED TERRACE
B	2	720	0	0	2 BED TERRACE
C	3	900	11	9900	3 BED TERRACE
D	3	1000	17	17000	3 BED TERRACE
E	3	1024	4	4096	3 BED SEMI
G	4	1350	0	0	4 BED DETACHED
H	4	1350	10	13500	4 BED DETACHED
I	4	1380	3	4140	4 BED DETACHED
J	4	1240	6	7440	4 BED DETACHED
		TOTAL	61	63076	

Units / Net/ Hectare / Acre	31 / 12
Gross area	6.94 acres
POS area	1.17 acres
Undevelopable area	0.4 acres
Net area	5.37 acres

SOUTH

REF	BEDS	SQ FT	QTY	TOTAL	TYPE
A	2	700	1	700	2 BED TERRACE
B	2	720	1	720	2 BED TERRACE
C	3	900	21	18900	3 BED TERRACE
D	3	1000	11	11000	3 BED TERRACE
E	3	1024	9	9216	3 BED SEMI
G	4	1350	2	2700	4 BED DETACHED
H	4	1350	19	25650	4 BED DETACHED
I	4	1380	3	4140	4 BED DETACHED
J	4	1240	4	4960	4 BED DETACHED
		TOTAL	71	77986	

Units / Net/ Hectare / Acre	30 / 11
Gross area	8.41 acres
POS area	1.69 acres
Undevelopable area	0.5 acres
Net area	6.20 acres

Typical Property Sizes.

* NOTE
ALL BUILDINGS ARE UP TO 2.5 STOREY MAX (9.7m GROUND TO RIDGE LEVEL)
DIMENSIONS SHOWN HAVE A DEVIATION OF +/- 3m

REV.	AMENDMENT.	DATE

Parkinson
Urban design & masterplanning
First Floor, 5 Union Court, Liverpool, L2 4SJ
T: 07970 686 302 E: ian@parkinsoninc.co.uk

PROJECT
HOLT ROAD / ROSSETT ROAD, ROSSETT, CLYWD.

CLIENT
BELLIS BROS

DRAWING TITLE
MASTER PLAN (RENDERED)

SCALE	1:500 @A0	REV. G	PROJECT REF ROSSETT
DATE	05.02.17		DRAWING No. Princ 100-37-SMP-01
CHECKED	IP		



NOTES

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. IT IS SUBJECT TO FURTHER DESIGN ANALYSIS, TOPOGRAPHICAL MAPPING & HIGHWAY/THIRD PARTY LAND BOUNDARIES.

DENOTES NEW KERBS

PLAN 3

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

BELLIS BROS LTD

PROJECT:

ROSSETT ROAD, ROSSETT

DRAWING TITLE:

PROPOSED ACCESS JUNCTIONS AND ZEBRA CROSSING ARRANGEMENT

SCALES:

1:1000 @ A1

DRAWN:	CHECKED:	DATE:
SM	MR	JUNE 16

9 Jordan Street,
Manchester,
M15 4PY

Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

croft Transport Solutions

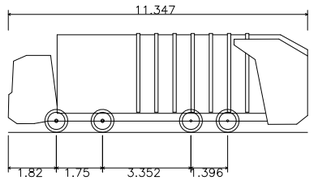
DRAWING NUMBER: 0807-F03

REVISION: D

\\CADWORKSTATION\Shared Storage\projects\0807 Rossett Road, Rossett\CAD\Croft Drawings\0807-F03D.dwg

NOTES

PLAN 4



Large Refuse Vehicle (4 axle)	
Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to Lock Time	6.00s
Wall to Wall Turning Radius	11.330m





REV.	DETAILS	DRAWN	CHECKED	DATE
F	REVISED ON LATEST LAYOUT	SM	MR	JULY 17
E	REVISED ON LATEST LAYOUT	SM	MR	FEB 17
D	REVISED ON LATEST LAYOUT	SM	MR	NOV 16
C	REVISED ON LATEST LAYOUT	SM	MR	JUNE 16
B	REVISED ON LATEST LAYOUT	SM	MR	FEB 16
A	REVISED ON LATEST LAYOUT	SM	PJW	JAN 16

CLIENT:

BELLIS BROS LTD

PROJECT:

ROSSETT ROAD, ROSSETT

DRAWING TITLE:

SWEPT PATH ANALYSIS

SCALES:

1:1250 @ A3

DRAWN:	CHECKED:	DATE:
SM	MR	NOV 16

9 Jordan Street,
Manchester,
M15 4PY

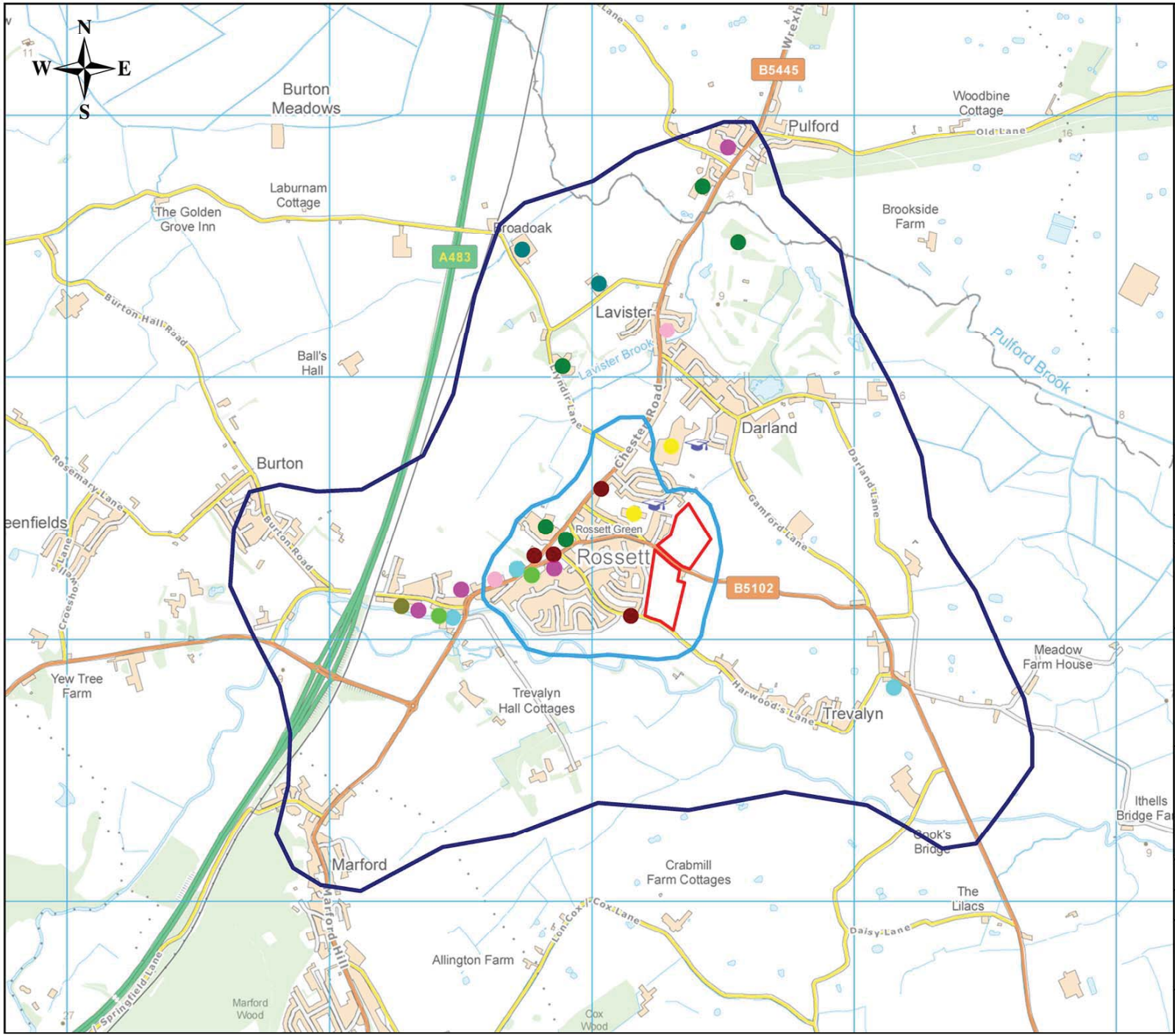
Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER: 0807-SP01

REVISION: F

\\CADWORKSTATION\Shared Storage\projects\0807 Rossett Road, Rossett\CAD\Croft Drawings\0807-SP01F.dwg



NOTES

PLAN 5

- Site
- 800m Pedestrian Catchment
- 2km Pedestrian Catchment
- Nearest Bus Stops
- Education
- Retail
- Medical/Pharmacy
- Community Facilities
- Business/Employment/Industrial
- Leisure/Sport
- Cafe/Takeaway/Public House
- Dentist

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

BELLIS BROS LTD

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
ROSSETT ROAD
ROSSETT

DRAWING TITLE:

800M & 2KM PEDESTRIAN CATCHMENT WITH AMENITIES

SCALE: 1:15000 @ A3

DRAWN:	CHECKED:	DATE:
SM	MR	09.02.16

9 Jordan Street,
Manchester,
M15 4PY

Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER: 0807-03

REVISION: .

APPENDICES

APPENDIX 1

Correspondence with WCBC

Marty Rae

From: Sk1#Sdqp hu#P Sk1#Sdqp huC zuh{kdp 1jry1knA
Sent: 3;#Mkqh#534:#43=48
To: P duw|#Jdh
Subject: UH=#Jrvvhww#Jrdg#D#Jrvvhww

Hi Marty

Links behind hedges (both north & south sites) to be 3m wide shared footway / cycleway links.

As discussed the developer will need to contact both schools to ask if they are happy with the proposed footway / cycleway links to their schools.

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 08 June 2017 10:10
To: Phil Palmer
Subject: FW: Rossett Road - Rossett

Hi Phil,

Further to our conversation earlier, and just for your records, please see attached plan which annotates the further amends, we discussed…

I'll get this over to architect now for him to amend the planning layout! ☺!

Marty Rae
Senior Consultant
croft
Transport Solutions
Hill Quays, 9 Jordan Street,
Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *The world's largest rodent was a Venezualan guinea pig the size of a buffalo.*

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 07 June 2017 12:48
To: 'Phil Palmer' <Phil.Palmer@wrexham.gov.uk>
Subject: Rossett Road - Rossett

Hi Phil,

I hope you're okay! ☺! Better weather than yesterday! Apologies for the delay getting this to you… please see attached (we have shown dims where appropriate, to assist)…

I trust the plan now shows all of the proposed footway improvements which will no doubt enhance connectivity and provide safer routes for walking to school etc. Of course these are to complemented by the reduction in speed limit through the village to 20mph which will also help to create a safer, more pleasant walking environment.

We are hoping that these improvements will allow you to update your consultation response accordingly and allow you to provide a positive recommendation from a highways perspective.

If you can confirm the above, I'll get the architect to update the Masterplan and we should be good to go… ☺!

I look forward to hearing from you.

Marty Rae
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twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…*In 1949, a flock of starlings perched on the minute hand of the Great Clock of Westminster, slowing it by 4.5 minutes.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 22 May 2017 15:50
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Thanks

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 May 2017 15:50
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Gotcha - thanks Phil! ☺! We'll draw it up and send you back a complete plan that shows everything… with the latest layout, as well!

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Registered Company Number 7373729

Croft Fact of the Week…. *The bird with the largest vocabulary was Puck the Budgie, who died in 1998. He knew 1,728 words, the same as a four year old child.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 22 May 2017 15:46
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Hi Marty

Something like this.

Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 19 May 2017 12:00
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Hi Phil,

I hope you're okay – glad it's Friday! ☺! I've marked up the adopted highway plan and the site layout as per our telephone conversation but not sure I've got it right…

Please see attached – I was going to continue the widening all the way behind the garages but there is a small triangle area (coloured in pink on my plan) which is not adopted and is not within our control… is that housing land they said we can use? If so the 3m can continue up past properties 6 to 9…

If you could sketch anything else I've missed on the plan and get it back to me, that'd be great!

Marty Rae
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Registered Company Number 7373729

Croft Fact of the Week... *The Eurovision Song Contest was first held in Switzerland in 1956 with just seven participating countries. It was the only contest with two songs per country and was won by Lys Assia from Switzerland.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 05 May 2017 10:01
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Enjoy your weekend too.

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 05 May 2017 09:43
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Okay, that's fine, I'll pass that on and wait to hear back from you with an update from that… we can then see where we are and arrange an further meeting with us, if required…

In the meantime, have a lovely weekend! ☺! Bring on the snooze…

Marty Rae
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Transport Solutions
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twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *The international distress signal, "mayday," has nothing to do with the first of May. It derives from the French venez m'aider, meaning "come help me.".*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 05 May 2017 09:36
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Matthew has arranged an internal meeting for 17/05/2017. You may wish to contact Matthew after this to discuss.

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 05 May 2017 09:19
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Happy Friday! ☺! Hope you're okay! Just wondering if you have got a date yet for your internal meeting?

I'm getting chased by Justin (planning consultant) for an update, so if you could let me know, that'd be great!

Marty Rae
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twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week.... *The international distress signal, "mayday," has nothing to do with the first of May. It derives from the French venez m'aider, meaning "come help me.".*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 24 April 2017 10:13
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Thanks

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 24 April 2017 09:40
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Hi Phil,

Yes, it was very nice thanks! ☺! Hope you also made the most of it! To be honest, I think we need to put it on hold until I speak to our planning consultant, Justin Paul…

He was cc'd in on Alan's e-mail but has not responded to me – need to see what he says in light of the *'bad'* news…

I'll find out and come back to you asap… ☺!

Marty Rae
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Registered Company Number 7373729

Croft Fact of the Week.... *If Emmanuel Macron wins the French Presidential Election he will become the country's youngest President at 39 years of age. The previous youngest was Louis-Napoléon Bonaparte who was 40 when he assumed the Presidency in 1848.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 24 April 2017 09:09
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Had a nice week off thanks. Hope you had a good break as well ?

Are we still having the site meeting at 11:00 this Wednesday as I understand that Matthew Phillips is at a hearing all day weds so presume he cannot attend ??

Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 19 April 2017 08:57
To: Phil Palmer
Subject: FW: Rossett Road - Rossett

Good morning Phil,

I hope you are okay! ☺! I was meant to be on leave this week but have ended up coming into the office today… think you said you were off as well, so hope you had a nice Easter…

Please see e-mail from Alan below, no doubt we can speak on your return…

Marty Rae
Senior Consultant
croft
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Manchester, M15 4PY
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twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week.... *The tallest Easter egg chocolate was made in Italy in 2011. It stood at 10.39 metres and weighed 7,200 kg.*

From: Alan Jenkins [mailto:Alan.Jenkins@wrexham.gov.uk]
Sent: 18 April 2017 12:04
To: Marty Rae; Matthew Phillips
Cc: Justin Paul
Subject: RE: Rossett Road - Rossett

Good morning Marty,

The position of the client dept. has been explained, but to reiterate.

The inclusion of the footpaths to the rear of the flats is not acceptable. These are private paths that serve just the flats.

The client department are not willing for the land between the two blocks of flats to be used to create an access to the existing hammer head and beyond. The proposals would turn the quietest area of the estate into, potentially, one of the busiest with detriment to the existing tenants.

The proposal to link to the adopted footpath that runs behind the garage site is not one that is supported. The Estate Manager has stated that she already has issues managing that area. Whilst the construction of any access will be down to yourselves the ongoing management of the use will fall to the Estate Office.

Have you got any alternative proposals with regard to the use of land owned by the WCBC Housing Dept?

Regards,

Alan

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 11 April 2017 11:56
To: Matthew Phillips
Cc: Alan Jenkins; Justin Paul
Subject: Rossett Road - Rossett

Good afternoon Alan/Mathew,

I hope you are well! ☺! With regard to the above application, I have been liaising with Phil Palmer (in your Highways Department) to discuss the potential to provide new footpath/footway links in the vicinity of the site.

I know Phil has also been speaking to Alan directly, in that regard, as some of the land involved is owned by Wrexham Council's Housing Department.

In order to agree what would be suitable and appropriate in terms of improvements, we feel it may be best to meet up and as Phil suggests below, a site visit may be the most productive.

To that end, please can you both confirm your availability for a site meeting on Wednesday 26th April 2017 at 11.00am?

Should the above date/time, not be convenient, then please could circulate some dates that suit?

I look forward to hearing from you.

Marty Rae
Senior Consultant
croft
Transport Solutions
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Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week.... *Gary Player holds the record for the most appearances at The Masters with 52.*

From: Justin Paul [mailto:Justin@j10planning.com]
Sent: 11 April 2017 11:44
To: Marty Rae
Cc: ian@parkinsoninc.co.uk
Subject: RE: Rossett Road - Rossett

That's good with me
J

Justin Paul BA BTP MRTPI
MANAGING PARTNER
J10 Planning Ltd
1-3 Upper Eastgate Row, Eastgate Row North, Chester, CH1 1LQ
01244 349400 // 07971 446630 // justin@j10planning.com
Company Reg. No. 6000409 VAT Reg. No. 815630835

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: Tuesday, April 11, 2017 11:25 AM
To: Justin Paul <Justin@j10planning.com>
Cc: ian@parkinsoninc.co.uk
Subject: FW: Rossett Road - Rossett

Hi Justin,

The first available date Phil has is Wednesday 26th April 2017 – see below…

He has suggested I check Alan's and Matthews availability but thought I'd check with you in case you prefer to contact Matthew yourself, once I can confirm if Alan is okay for that date…

Can you let me know…?

Marty Rae
Senior Consultant
croft
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Manchester, M15 4PY
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www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *Gary Player holds the record for the most appearances at The Masters with 52.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 11 April 2017 10:59
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

I am off all next week but should be ok for weds 26/04/2016 @ 11:00. Probably best to meet on site?

Alan's email :- alan.jenkins@wrexham.gov.uk

Matthew Phillips email:- matthew.phillips@wrexham.gov.uk

You may wish to email Alan & Matthew to check their availability.

Regards, Phil

Marty Rae

From: Dodq#Mhqnlqv#P Dodq1Mhqnlqv@ zuh{kdp 1jry1knA
Sent: 4;#Dsuo#534:#45=37
To: P duw|#Jdh>#P dwwkhz #Skloolsv
Cc: Mkvwq#Sdxo
Subject: UH=#Jrvvhww#Jrdg#D#Jrvvhww

Good morning Marty,

The position of the client dept. has been explained, but to reiterate.

The inclusion of the footpaths to the rear of the flats is not acceptable. These are private paths that serve just the flats.

The client department are not willing for the land between the two blocks of flats to be used to create an access to the existing hammer head and beyond. The proposals would turn the quietest area of the estate into, potentially, one of the busiest with detriment to the existing tenants.

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Have you got any alternative proposals with regard to the use of land owned by the WCBC Housing Dept?

Regards,

Alan

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Sent: 11 April 2017 11:56
To: Matthew Phillips
Cc: Alan Jenkins; Justin Paul
Subject: Rossett Road - Rossett

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Marty Rae
Senior Consultant

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Hill Quays, 9 Jordan Street,
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twitter @croft_ts
Registered Company Number 7373729

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From: Justin Paul [mailto:Justin@j10planning.com]
Sent: 11 April 2017 11:44
To: Marty Rae
Cc: ian@parkinsoninc.co.uk
Subject: RE: Rossett Road - Rossett

That's good with me
J

Justin Paul BA BTP MRTPI
MANAGING PARTNER
J10 Planning Ltd
1-3 Upper Eastgate Row, Eastgate Row North, Chester, CH1 1LQ
01244 349400 // 07971 446630 // justin@j10planning.com
Company Reg. No. 6000409 VAT Reg. No. 815630835

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: Tuesday, April 11, 2017 11:25 AM
To: Justin Paul <Justin@j10planning.com>
Cc: ian@parkinsoninc.co.uk
Subject: FW: Rossett Road - Rossett

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He has suggested I check Alan's and Matthews availability but thought I'd check with you in case you prefer to contact Matthew yourself, once I can confirm if Alan is okay for that date…

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t 0161 667 3746
www.croftts.co.uk

Croft Fact of the Week.... *Gary Player holds the record for the most appearances at The Masters with 52.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 11 April 2017 10:59
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

I am off all next week but should be ok for weds 26/04/2016 @ 11:00. Probably best to meet on site?

Alan's email :- alan.jenkins@wrexham.gov.uk

Matthew Phillips email:- matthew.phillips@wrexham.gov.uk

You may wish to email Alan & Matthew to check their availability.

Regards, Phil

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2016.0.8007 / Virus Database: 4769/14288 - Release Date: 04/11/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

Ewch i weld - mi fedrwch chi dalu, rhoi gwybod, gwneud cais, dweud eich dweud, a dod o hyd i wybodaeth ar-lein yn www.wrecsam.gov.uk. Arbedwch bapur - meddyliwch cyn argraffu!

Mae'r neges e-bost hon ac unrhyw atodiadau wedi eu bwriadu ar gyfer yr unigolyn neu?r sefydliad y?i cyfeirir atynt yn unig. Am yr amodau llawn yngl?n ? chynnwys a defnyddio?r neges e-bost hon, ac unrhyw atodiadau, cyfeiriwch at www.wrecsam.gov.uk/top_navigation/disclaimersw.htm

We welcome correspondence in Welsh. We will respond to any correspondence in Welsh and this will not lead to any delay.

Take a look - you can pay, report, request, have your say and find information online at www.wrexham.gov.uk. Save paper - think before you print!

This e-mail message and any attachments are intended solely for the individual or organisation to whom it is addressed. For full conditions in relation to content and use of this e-mail message and any attachments, please refer to www.wrexham.gov.uk/top_navigation/disclaimers.htm

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Checked by AVG - www.avg.com
Version: 2016.0.8012 / Virus Database: 4769/14345 - Release Date: 04/18/17

Pennaeth yr Amgylchedd a Chynllunio/Head of Environment and Planning
Lawrence Isted

De Ffordd yr Abaty, Ystad Ddiwydiannol Wrecsam, Wrecsam LL13 9PW
Abbey Road South, Wrexham Industrial Estate, Wrexham LL13 9PW
Ffôn/Tel: 01978 298989 BT Text Phone: 01978 292067
www.wrecsam.gov.uk www.wrexham.gov.uk

wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

J10 Planning Ltd
1-3 Upper Eastgate Row
Eastgate Row North
Chester CH1 1LQ

Eich Cyf/Your Ref
Ein Cyf/Our Ref
Dyddiad/Date
Gofynner am/Ask for
Rhif Union/Direct Dial
E-bost/E-mail

PRE/2017/007
15th March 2017
Mr P Palmer
01978 729688
phil.palmer@wrexham.gov.uk

FAO: Justin Paul

Dear Justin

Land off Rossett Road, Wrexham.
Proposed Residential Development – DMO Notice

I refer to your email / DMO Consultation dated 08/02/2017 in respect of the above. My comments on the submittedTransport Assessment and associated plans are as follows:-

Planning Policy Wales – Technical Advice Note 18 Transport includes the promotion of housing developments at locations with good access by walking and cycling to primary and secondary schools and public transport stops, and by all modes to employment, further and higher education, services, shopping and leisure.

The submitted draft Outline Planning Application form indicates all matters reserved except for access. I have therefore limited my comments accordingly:-

Comments on Transport Assessment – Dated February 2017

4.2 Vehicular Access

- The proposed development sites are located on the B5102 Holt Road which is a classified road subject to a 40mph speed limit. However, I understand that the speed limit is currently being reviewed and may well be reduced to 30mph in the light of the proposed residential development.

  I understand that the existing 30mph speed limit heading into Rossett just west of the development site(s) is in the process of being reduced to 20mph all the way through to the junction with the B5445 Chester Road. This will provide significant benefit in terms of highway / pedestrian safety given the limited footway provision along this section of Holt Road towards the village centre.

Rydym yn croesawu gohebiaeth yn Gymraeg.
Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

We welcome correspondence in Welsh.
We will respond to any correspondence in Welsh and this will not lead to any delay.

Assuming a revised speed limit of 30mph along the frontage of the development site, any proposed access would need to provide visibility splays of 2.4 x 56m in both directions measured to the nearside edge of the adjoining highway in accordance with Manual for Streets. It would appear possible to provide the required visibility splays from both proposed accesses serving the north and south development sites.

- The proposed accesses are both 5.5m wide with 10m kerb radii which is considered acceptable.

- Access to the site off Chester Road via Holt Road and The Green can at times be impeded by on-street parking alongside Rossett Park and two way flows are not always possible. It may be considered beneficial for TROs / junction protection to be introduced if the development is to be supported. I would suggest that the applicant liaises with our Traffic Section – contact Darren Green on Tel: 01978 729643 to discuss possible measures.

4.3 Servicing

- More detailed swept path details of an 11.2m long refuse vehicle will be required showing access / egress of vehicle negotiating site access points, routes through site, turning within cul de sacs and service arrangements for all private shared driveways. Manual for Streets recommends that refuse vehicles should not have to reverse more than 12m along estate roads.

4.4 Pedestrian and Cycle Access

- The main bus stop serving Wrexham and Chester are located on the B5445 Chester Road. It is highly likely that anyone wishing to access these bus stops on foot from the proposed development sites (north and south) will walk along the B5102 Holt Road or Chapel Lane.

  Both Holt Road and Chapel Lane have limited footway provision leading to Chester Road and some sections have no footway provision which is a concern in highway / pedestrian safety terms. During a site visit on 07/03/2016 between 08:20 – 09:00, a significant number of schoolchildren on their way to Darland School were observed walking from the Rossett Shops along Holt Road in order to cut through the footpath running through St. Peters School. Vehicles including cars and HGVs travelling along this section of Holt Road had to slow down as school children walked along the carriageway due to the lack of adequate footway provision.

  I therefore raise serious concerns regarding the proposed increase in vehicle & pedestrian movements likely to be generated by the development site given the significant lack of suitable pedestrian provision / footways along both Holt Road and Chapel Lane. It would appear difficult for the developer to carry out any footway / pedestrian improvements along this section of Holt Road and Chapel Lane due to limited carriageway and verge widths.

  There is an additional bus service which provides access to Wrexham Town Centre but this currently only operates 3 times per day on a Wednesday, Friday & Saturday.

  I would recommend that the developer provides an additional bus stop / layby, raised kerb and hardstanding along the site frontage along Holt Road to improve / promote this service. This detail has been indicated on Drg. No. 0807-F03 Rev B.

Typically, those wishing to visit Wrexham or Chester by bus are likely to use the service running every 10 -12 minutes along Chester Road.

Pedestrian facilities at the Chapel Lane / Holt Road junction and vicinity of the site are generally poor and require improvement particularly given the location of St. Peters Primary School.

The existing sub-standard crossing facilities at the junction of Chapel Lane / Holt Road would benefit from being removed and replaced with alternative facilities.

Previous preliminary discussions have included the requirement for a new zebra crossing located immediately east of the Chapel Lane / Holt Road junction. This should ideally be located in a 20mph zone and provided with a 2.0m footway link to the southern development site. Adequate visibility must be provided to such a feature. The Submitted layout plan Drg. No. 0807-F03 Rev B indicates the provision of a zebra crossing and improvements to the existing footways in this location. I would recommend that further discussions are held in respect of specific footway / cycleway improvements in this location and leading to the St Peters School.

There would appear to be a number of proposed footway / cycleway links serving the southern site off both Trevalyn Way and Harwoods Lane. A minimum 3.0m wide footway / cycleway link should be provided off both Harwoods Lane and Trevalyn Way.. These access points in conjunction with a new zebra crossing on Holt Road would significantly improve accessibility to nearby shops, bus stops etc. located on Chester Road. Pedestrians could then utilise existing footways through Moss Green and Trevalyn Way.

It is unclear from the submitted layout plan what is proposed in terms of footway / cycleway links for the northern site. There is an existing relatively narrow footway link running to the east of nos. 1 – 9 Trevalyn Hall View. It would seem beneficial to improve this pedestrian route both in terms of widening (ie/ in the form of a 3m wide shared footway / cycleway) and lighting to serve children wishing to access Darland School to the north. There would appear to be scope to incorporate these improvements as part of the development site and extend a possible 3m wide footway / cycleway link to the northern end of the site and provide access through the public open space between nos. 3 – 10 & 11 – 18 Darland View. The submitted layout plan Drg. No. 100-37-SMP-01 Rev G only appears to indicate a 2m wide footways which is considered inadequate.

I understand that it is proposed to provide 2.0m footways along both site frontages along Holt Road leading back into the village. I would recommend that both sites provide a 3m wide shared cycleway/ footway behind the hedgerows in lieu of the proposed 2m footways.

Footways should also be extended up to the public footpaths (PROW nos. 20 & 21 Allington) accessed off Holt Road and the southern end of PROW no. 21 – Allington off Harwoods Lane.

In terms of any required improvements to the existing public footpaths adjoining the site, I would recommend that you contact our Public Rights of Way Section – Sean Hanratty on Tel: 01978 729761.

Improvements to existing footways leading from the development site (northerly) towards St Peters Primary School will also need to be considered / provided. A continuous 3m wide shared cycleway / footway link shall be provided from Darland View to a suitable point south of the proposed additional parking area at the southern end of Trevalyn Hall View. This has not been shown on the submitted layout plan Drg. No. 100-37-SMP-01 Rev G.

Section 5 Accessibility by Non Car Modes

- Accessibility on Foot

  Whilst the existing pedestrian / footway provision in this location is not ideal, the provision of the proposed new footway / cycleway links, upgrading of existing links, provision of new zebra crossing and reduction in prevailing speed limit would be considered a significant improvement in highway safety terms.

Section 6 Traffic Impact Analysis

- Clause 6.4.1 indicates a future year traffic assessment of 5 yrs (2021). I would recommend that a future year traffic assessment of 10 yrs (2026) is adopted for the proposed development.

Section 7 Accident Analysis

- The submitted data indicates that are no significant reported traffic accidents / incidents in the vicinity of the development site.

TRICS Output for Residential Use

- I understand that the submitted TA includes a 2026 assessment of future traffic growth and has been re-run on the basis of a 90 / 10 split towards the village which is considered acceptable. However, The PICADY data included in Section 6 & Appendix 7 only appears to refer to a 2021 assessment.

-

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Yours faithfully



Service Manager Environment

Pennaeth yr Amgylchedd a Chynllunio/Head of Environment and Planning
Lawrence Isted

De Ffordd yr Abaty, Ystad Ddiwydiannol Wrecsam, Wrecsam LL13 9PW
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COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
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J10 Planning Ltd
1-3 Upper Eastgate Row
Eastgate Row North
Chester CH1 1LQ

Eich Cyf/Your Ref	
Ein Cyf/Our Ref	PRE/2017/007
Dyddiad/Date	13th February 2017
Gofynner am/Ask for	Mr P Palmer
Rhif Union/Direct Dial	01978 729688
E-bost/E-mail	phil.palmer@wrexham.gov.uk

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Yours faithfully



Service Manager Environment

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 25 October 2016 14:54
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I have finally had a response to your enquiry.
Our Housing Department officers are open to path improvement being undertaken on the Council's residential estate resulting from a future development of your clients' neighbouring land.
The vehicular "drop off/pick up" area at the entrance to the estate would need more detailed consideration in due course, but for now, nothing is being ruled out.
I hope that the above enables you to progress your enquiries and develop proposed layout plans etc.

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 10 August 2016 16:54
To: Marty Rae
Subject: RE: Rossett Road - Rossett

If you wish to speak to Denise Garland directly she is contactable on 01978 – 297214.
She did however speak to me after receiving your e-mail, and we are now liaising with our Housing officers on the matter, given that they have management control of the pieces of land in question.
We will be in contact with you as soon as we get their initial responses, hopefully with their support to progress negotiations.
Thanks,

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 26 July 2016 15:43
To: Marty Rae
Subject: RE: Rossett Road - Rossett

To progress discussions I would recommend that you contact Mrs Denise Garland, Strategic Assets Lead, Housing and Economy Department, Wrexham County Borough Council, Crown Buildings, 31 Chester Street, Wrexham, LL13 8BG. denise.garland@wrexham.gov.uk
Once a deal is provisionally reached to carry out work to the affected areas of Council owned land, she can ensure that all necessary approvals within the Authority are sought. I have already notified her that you will be in contact on these matters.
Thank you,

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 July 2016 12:04
To: 'David James'
Subject: RE: Rossett Road - Rossett

Hi David,

Many thanks for coming back so quickly, that's great! ☺!

During discussions with the highways officer (Phil Palmer) it was requested that we improve some of the existing footpaths to increase them to 3 metres - this includes widening the path that runs all the way along the site boundary and the link to Darland High School located to the north (no.4).

What would we need to do to get permission to undertake these works? The footpaths that are required to be widened to 3m are identified on the attached plan.

Marty Rae

From: David James <David.James@wrexham.gov.uk>
Sent: 01 February 2017 12:17
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I've discussed this proposal with a colleague responsible for the estate, and am able to confirm that the Council would be willing to dedicate the additional improved footway land to be part of the adopted highway.

Thanks,

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 01 February 2017 11:03
To: David James
Cc: Denise Garland
Subject: RE: Rossett Road - Rossett

Good morning David,

I hope you are well! ☺! I spoke to Phil Palmer (Highways Department) yesterday with regards to the footway improvements we will be providing as part of our development…

He suggested that in addition to my Report confirming that your Housing Department has agreed that the works could be undertaken on land they own, would you also be able to confirm that they would be happy to dedicate them over to highway, so they can be maintained…?

It only need to be a one liner but if you could get it over to me today, that'd be great as I am just finalising my report ready for submission…

Marty Rae
Senior Consultant
croft
Transport Solutions
Hill Quays, 9 Jordan Street,
Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week...*A Hummingbird weighs less than a penny.*

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Subject: RE: Rossett Road - Rossett

I have finally had a response to your enquiry.
Our Housing Department officers are open to path improvement being undertaken on the Council's residential estate resulting from a future development of your clients' neighbouring land.

We are also proposing a small car parking area for school pick up/drop offs (13 spaces) in the area marked no.1, so again can you advise on the process we would need to go through to get permission to use this land?

I look forward to hearing from you.

Senior Consultant

croft
Transport Solutions

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 21 July 2016 17:01
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I've checked your annotated plans against our land ownership records.
I am able to confirm that the areas numbered 1 to 4 are all owned by Wrexham County Borough Council, and fall under the management control of our Housing Department. I can also confirm that 12 Trevalyn Hall View is in private ownership.
Let me know if I can be of any other assistance.
Thanks,

From: Sean Hanratty [mailto:Sean.Hanratty@wrexham.gov.uk]
Sent: 21 July 2016 15:24
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Thanks for your e-mail. Looking at your scheme it would appear that some of the issues highlighted may involve Wrexham Council land. I would therefore contact David James (david.james@wrexham.gov.uk) in our Asset and Economic Development section to ascertain Council landownership. If you have any questions regarding the public rights of way adjacent to the proposal, please let me know.

Regards

E-mail from highways officer confirming trip rates are acceptable

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 25 April 2016 09:09
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Revised TRICS data

Figures appear acceptable

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 April 2016 15:51
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Following our discussions at the meeting, would you be able to send me a copy of the adopted highway plan, so we can look at the wider off-site pedestrian improvements?

Would you also be able to send me the contact details for the traffic team working on the reduction in speed limit/traffic calming along Rossett Road and a plan of the proposed scheme, if there is one?

I will revise the TA accordingly as per your comments, including a 2026 assessment and re-run the assessments on the basis of a 90/10 split towards the village, for robustness.

I have re-visited the trip rates based on the following parameters (output attached);

- No great London or Eire sites;
- Selected 5 to 200 units (smaller sites tend to generate more trips);
- All edge of town sites;
- No sites with Travel Plans; and
- No bungalows.

For ease, I have summarised them along with the original ones…

Trip Rate	AM		PM	
	Arr	Dep	Arr	Dep
Original Trip Rates	0.15	0.41	0.35	0.22
Revised Trip Rates	0.15	0.44	0.43	0.24

If you could come back to let me know if you think they are acceptable, that'd be great…

In the meantime, have a lovely weekend and I look forward to hearing from you! ☺!

Senior Consultant
croft
Transport Solutions

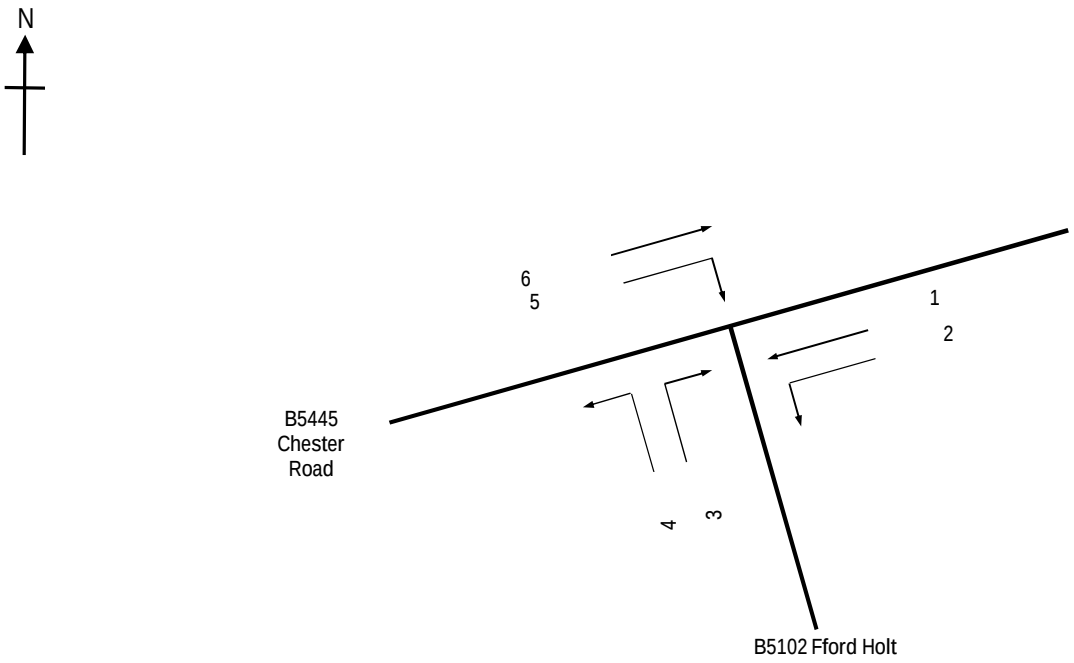
APPENDIX 2

Traffic Survey Data

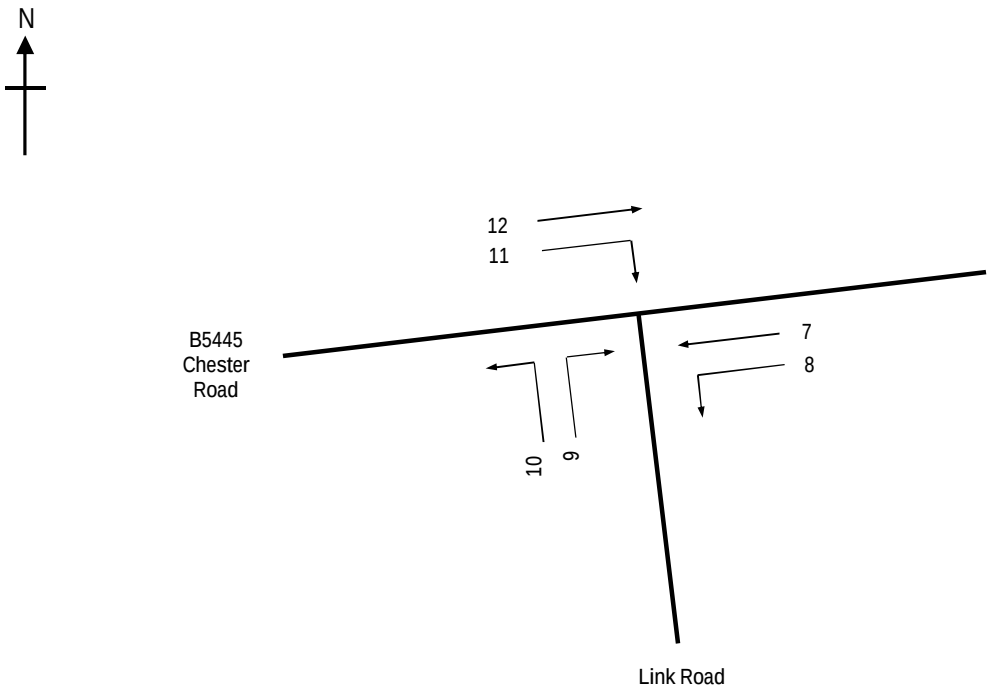
SURVEY CONTROL

Client:	Croft Transport Solutions
Client Contact:	Phil Wooliscroft
Survey Location:	Rossett
Date(s) of Survey:	Thursday 18 June 2015
Notes:	
On Site Supervisor:	David Cheng
Data Checking:	Richard Adams
Survey Reference:	2015.091 Rossett
Status:	Final
Date of Issue:	22 June 2015

JUNCTION 1



JUNCTION 2



DRAWING TITLE

TRAFFIC MOVEMENT REFERENCE

JOB TITLE

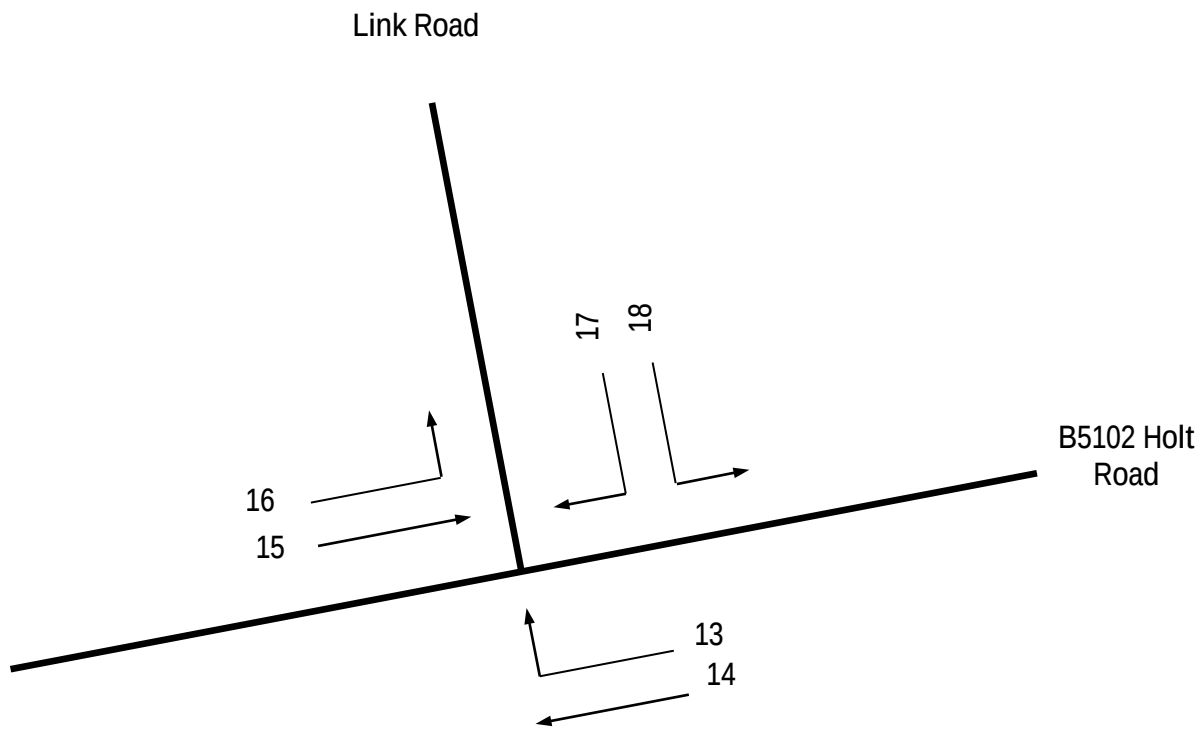
2015.091 ROSSETT

DRAWN BY	DATE	SCALE	REF
RA	JUN 2015	NTS	FIGURE 1

signal surveys
Traffic Counts and Car Park Surveys
Parkway House, Palatine Road, Northenden, Manchester, M22 4DB
Tel 0161 998 4226 Fax 0161 998 1189

JUNCTION 3

N



N

DRAWING TITLE: TRAFFIC MOVEMENT REFERENCE			
JOB TITLE: 2015.091 ROSSETT			
DRAWN BY: RA	DATE: JUN 2015	SCALE: NTS	REF: FIGURE 2

signal surveys
Traffic Counts and Car Park Surveys
Parkway House, Palatine Road, Northenden, Manchester, M22 4DB
Tel 0161 998 4226 Fax 0161 998 1189

Time Beginning	Chester Road/Holt Road - Thursday 18 June 2015											
	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	33	4	1	0	1	0	24	1	19	0	235	5
0745	56	5	0	0	1	0	27	0	21	0	233	10
0800	84	4	1	0	1	0	27	2	31	2	235	5
0815	88	3	1	0	0	0	35	1	23	0	211	8
0830	116	4	3	0	0	0	34	1	36	1	161	4
0845	111	9	0	0	0	0	36	0	52	2	188	11
0900	73	4	1	0	0	0	22	2	20	2	132	8
0915	45	5	3	0	1	0	19	1	25	2	121	11

Time Beginning	Chester Road/Holt Road - Thursday 18 June 2015											
	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	90	2	2	0	2	0	26	0	19	0	140	2
1645	98	3	4	1	0	0	37	0	27	0	139	4
1700	126	1	1	0	1	0	22	0	24	0	124	9
1715	126	2	3	0	0	0	21	0	19	0	142	4
1730	128	4	2	0	0	0	22	1	26	0	116	2
1745	104	1	3	0	0	0	23	0	30	0	114	3
1800	73	3	2	0	0	0	18	0	26	0	105	3
1815	50	2	2	0	0	0	30	1	25	0	81	2

Time Beginning	Chester Road/Link Road - Thursday 18 June 2015											
	7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	30	3	6	0	22	3	4	1	0	1	237	4
0745	53	5	4	1	19	0	1	0	0	1	233	8
0800	81	4	14	2	10	1	0	0	0	0	239	4
0815	90	4	9	2	13	1	0	0	0	0	211	7
0830	115	4	12	0	9	0	2	0	1	0	161	3
0845	110	9	19	2	11	0	2	0	1	0	189	12
0900	71	3	9	0	6	0	1	0	1	0	129	12
0915	48	6	3	0	10	0	0	0	0	0	118	10

Time Beginning	Chester Road/Link Road - Thursday 18 June 2015											
	7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	89	2	11	1	10	1	0	0	0	0	140	2
1645	102	4	14	0	5	0	2	0	1	0	138	4
1700	126	1	16	0	9	0	1	0	1	0	127	9
1715	126	2	15	0	10	0	3	0	0	0	137	5
1730	123	4	23	0	13	0	0	0	2	0	114	2
1745	102	2	12	0	11	0	3	0	0	0	116	3
1800	76	2	12	0	8	0	1	0	1	0	99	3
1815	51	2	14	0	6	1	1	0	1	1	85	0

Time Beginning	Holt Road/Link Road - Thursday 18 June 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	4	1	10	0	14	0	22	3	1	1	6	0
0745	6	0	8	0	22	0	13	0	1	1	3	1
0800	6	1	15	1	25	1	5	0	5	1	6	2
0815	10	1	17	0	22	1	2	0	2	1	7	2
0830	8	0	21	1	38	1	3	0	4	0	10	0
0845	6	0	27	0	46	0	7	0	2	1	18	1
0900	5	0	15	1	21	1	1	0	2	0	8	0
0915	5	0	12	0	20	2	5	0	3	0	1	0

Time Beginning	Holt Road/Link Road - Thursday 18 June 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	7	0	21	1	14	0	4	1	5	0	4	1
1645	4	0	25	0	23	1	4	0	7	0	6	0
1700	5	0	19	0	16	0	5	0	8	0	10	2
1715	11	0	21	0	17	0	3	0	13	0	7	0
1730	7	0	20	0	18	0	3	0	10	0	13	0
1745	7	0	17	0	12	0	6	0	5	0	5	0
1800	5	0	16	0	11	0	4	0	7	0	3	0
1815	4	1	17	0	11	0	3	0	6	1	10	0

APPENDIX 3

TRICS Output for Residential Use

Calculation Reference: AUDIT-851401-150818-0832

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	2 days
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
10	WALES		
	CF	CARDIFF	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	FI	FIFE	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: 108 to 432 (units:)
Range Selected by User: 100 to 800 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 11/12/14

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

Selected survey days:

Monday	4 days
Tuesday	5 days
Wednesday	1 days
Thursday	3 days
Friday	2 days

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

Selected survey types:

Manual count	15 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:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	6
Edge of Town	8

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	12
No Sub Category	3

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	15 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	1 days
10,001 to 15,000	3 days
15,001 to 20,000	6 days
20,001 to 25,000	3 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	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
100,001 to 125,000	5 days
125,001 to 250,000	3 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	4 days
1.1 to 1.5	11 days

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

Travel Plan:

Yes	1 days
No	14 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 CF-03-A-02 MIXED HOUSES CARDIFF
DROPE ROAD

CARDIFF
Edge of Town
Residential Zone
Total Number of dwellings: 196
Survey date: FRIDAY 05/10/07 Survey Type: MANUAL

2 CH-03-A-02 HOUSES/FLATS CHESHIRE
SYDNEY ROAD

CREWE
Edge of Town
Residential Zone
Total Number of dwellings: 174
Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 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

4 EX-03-A-01 SEMI-DET. ESSEX
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

5 FA-03-A-02 MIXED HOUSES FALKIRK
ROSEBANK AVENUE & SPRINGFIELD DRIVE

FALKIRK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 161
Survey date: WEDNESDAY 29/05/13 Survey Type: MANUAL

6 FI-03-A-03 MIXED HOUSES FIFE
WOODMILL ROAD

DUNFERMLINE
Edge of Town
Residential Zone
Total Number of dwellings: 155
Survey date: MONDAY 30/04/07 Survey Type: MANUAL

7 LN-03-A-01 MIXED HOUSES LINCOLNSHIRE
BRANT ROAD
BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings: 150
Survey date: TUESDAY 15/05/07 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 LN-03-A-02 MIXED HOUSES LINCOLNSHIRE
HYKEHAM ROAD

LINCOLN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 186
Survey date: MONDAY 14/05/07 Survey Type: MANUAL

9 NE-03-A-02 SEMI DETACHED & DETACHED NORTH EAST LINCOLNSHIRE
HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432
Survey date: MONDAY 12/05/14 Survey Type: MANUAL

10 NE-03-A-03 PRIVATE HOUSES NORTH EAST LINCOLNSHIRE
STATION ROAD

SCUNTHORPE
Edge of Town Centre
Residential Zone
Total Number of dwellings: 180
Survey date: TUESDAY 20/05/14 Survey Type: MANUAL

11 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

12 SF-03-A-02 SEMI DET./TERRACED SUFFOLK
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings: 230
Survey date: THURSDAY 24/05/07 Survey Type: MANUAL

13 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

14 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

LIST OF SITES relevant to selection parameters (Cont.)

15 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AN-03-A-06	ldn/ire
AN-03-A-08	ldn/ire
AR-03-A-01	ldn/ire
DL-03-A-02	ldn/ire
DL-03-A-03	ldn/ire
DL-03-A-06	ldn/ire
DN-03-A-05	ldn/ire
WA-03-A-04	ldn/ire

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.074	15	181	0.270	15	181	0.344
08:00 - 09:00	15	181	0.145	15	181	0.408	15	181	0.553
09:00 - 10:00	15	181	0.154	15	181	0.182	15	181	0.336
10:00 - 11:00	15	181	0.139	15	181	0.176	15	181	0.315
11:00 - 12:00	15	181	0.153	15	181	0.153	15	181	0.306
12:00 - 13:00	15	181	0.180	15	181	0.167	15	181	0.347
13:00 - 14:00	15	181	0.172	15	181	0.162	15	181	0.334
14:00 - 15:00	15	181	0.168	15	181	0.187	15	181	0.355
15:00 - 16:00	15	181	0.286	15	181	0.201	15	181	0.487
16:00 - 17:00	15	181	0.311	15	181	0.191	15	181	0.502
17:00 - 18:00	15	181	0.352	15	181	0.222	15	181	0.574
18:00 - 19:00	15	181	0.247	15	181	0.202	15	181	0.449
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.381			2.521			4.902

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.003	15	181	0.002	15	181	0.005
08:00 - 09:00	15	181	0.002	15	181	0.003	15	181	0.005
09:00 - 10:00	15	181	0.002	15	181	0.002	15	181	0.004
10:00 - 11:00	15	181	0.003	15	181	0.003	15	181	0.006
11:00 - 12:00	15	181	0.001	15	181	0.001	15	181	0.002
12:00 - 13:00	15	181	0.002	15	181	0.002	15	181	0.004
13:00 - 14:00	15	181	0.001	15	181	0.001	15	181	0.002
14:00 - 15:00	15	181	0.002	15	181	0.002	15	181	0.004
15:00 - 16:00	15	181	0.004	15	181	0.004	15	181	0.008
16:00 - 17:00	15	181	0.003	15	181	0.002	15	181	0.005
17:00 - 18:00	15	181	0.002	15	181	0.001	15	181	0.003
18:00 - 19:00	15	181	0.001	15	181	0.001	15	181	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.026			0.024			0.050

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.003	15	181	0.002	15	181	0.005
08:00 - 09:00	15	181	0.003	15	181	0.003	15	181	0.006
09:00 - 10:00	15	181	0.003	15	181	0.001	15	181	0.004
10:00 - 11:00	15	181	0.003	15	181	0.003	15	181	0.006
11:00 - 12:00	15	181	0.001	15	181	0.002	15	181	0.003
12:00 - 13:00	15	181	0.003	15	181	0.003	15	181	0.006
13:00 - 14:00	15	181	0.002	15	181	0.003	15	181	0.005
14:00 - 15:00	15	181	0.001	15	181	0.003	15	181	0.004
15:00 - 16:00	15	181	0.001	15	181	0.001	15	181	0.002
16:00 - 17:00	15	181	0.002	15	181	0.001	15	181	0.003
17:00 - 18:00	15	181	0.000	15	181	0.000	15	181	0.000
18:00 - 19:00	15	181	0.000	15	181	0.000	15	181	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.022			0.044

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.000	15	181	0.000	15	181	0.000
08:00 - 09:00	15	181	0.001	15	181	0.001	15	181	0.002
09:00 - 10:00	15	181	0.000	15	181	0.000	15	181	0.000
10:00 - 11:00	15	181	0.000	15	181	0.000	15	181	0.000
11:00 - 12:00	15	181	0.000	15	181	0.000	15	181	0.000
12:00 - 13:00	15	181	0.000	15	181	0.000	15	181	0.000
13:00 - 14:00	15	181	0.000	15	181	0.000	15	181	0.000
14:00 - 15:00	15	181	0.000	15	181	0.000	15	181	0.000
15:00 - 16:00	15	181	0.000	15	181	0.001	15	181	0.001
16:00 - 17:00	15	181	0.000	15	181	0.000	15	181	0.000
17:00 - 18:00	15	181	0.000	15	181	0.000	15	181	0.000
18:00 - 19:00	15	181	0.000	15	181	0.000	15	181	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.002			0.003

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.006	15	181	0.010	15	181	0.016
08:00 - 09:00	15	181	0.004	15	181	0.015	15	181	0.019
09:00 - 10:00	15	181	0.004	15	181	0.003	15	181	0.007
10:00 - 11:00	15	181	0.003	15	181	0.006	15	181	0.009
11:00 - 12:00	15	181	0.004	15	181	0.003	15	181	0.007
12:00 - 13:00	15	181	0.006	15	181	0.005	15	181	0.011
13:00 - 14:00	15	181	0.003	15	181	0.004	15	181	0.007
14:00 - 15:00	15	181	0.003	15	181	0.004	15	181	0.007
15:00 - 16:00	15	181	0.017	15	181	0.011	15	181	0.028
16:00 - 17:00	15	181	0.009	15	181	0.005	15	181	0.014
17:00 - 18:00	15	181	0.011	15	181	0.010	15	181	0.021
18:00 - 19:00	15	181	0.011	15	181	0.006	15	181	0.017
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.081			0.082			0.163

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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 4

PICADY Output for Rossett Road/Site Access

(Northern Site)

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Northern Site.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:00:07

»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Assessment Flows							
Stream B-AC	0.1	8.35	0.06	A	0.0	7.78	0.04	A
Stream C-AB	0.0	6.34	0.00	A	0.0	6.18	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (W)/Site Access/Rossett Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	Site Access		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00			78.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	60

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	516.900	0.082	0.207	0.130	0.296
1	B-C	645.146	0.086	0.217	-	-
1	C-B	619.134	0.209	0.209	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	221.00	100.000
B		✓	27.00	100.000
C		✓	133.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	9.000	212.000
	B	24.000	0.000	3.000
	C	132.000	1.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.06	8.35	0.1	A
C-AB	0.00	6.34	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.46	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	153.00	100.000
B		✓	16.00	100.000
C		✓	129.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	22.000	131.000
	B	14.000	0.000	2.000
	C	127.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	7.78	0.0	A
C-AB	0.00	6.18	0.0	A
C-A				
A-B				
A-C				

APPENDIX 5

PICADY Output for Rossett Road/Site Access

(Southern Site)

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Southern Site.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:01:21

»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Assessment Flows							
Stream B-AC	0.1	6.43	0.05	A	0.0	6.26	0.03	A
Stream C-AB	0.0	6.17	0.02	A	0.0	6.26	0.04	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (E)/Site Access/Rossett Road (W)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	Site Access		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.90			90.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	70

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	521.818	0.083	0.210	0.132	0.300
1	B-C	651.284	0.087	0.221	-	-
1	C-B	626.083	0.212	0.212	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	157.00	100.000
B		✓	29.00	100.000
C		✓	227.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	1.000	156.000
	B	3.000	0.000	26.000
	C	218.000	9.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.05	6.43	0.1	A
C-AB	0.02	6.17	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.74	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	141.00	100.000
B		✓	16.00	100.000
C		✓	174.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	3.000	138.000
	B	2.000	0.000	14.000
	C	151.000	23.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.03	6.26	0.0	A
C-AB	0.04	6.26	0.0	A
C-A				
A-B				
A-C				

APPENDIX 6

PICADY Output for Rossett Road/Link Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: B5102 (W)-Link Road-Fford Holt.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:08:00

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.2	7.56	0.15	A	0.2	8.01	0.18	A
Stream C-AB	0.1	6.61	0.07	A	0.1	6.34	0.06	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.2	7.72	0.17	A	0.2	8.26	0.20	A
Stream C-AB	0.1	6.75	0.10	A	0.1	6.47	0.07	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (W)/Site Access/Rossett Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	The Green		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00			78.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	70

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	521.818	0.083	0.209	0.131	0.298
1	B-C	651.284	0.087	0.219	-	-
1	C-B	619.134	0.209	0.209	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	172.00	100.000
B		✓	78.00	100.000
C		✓	132.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	19.000	153.000
	B	21.000	0.000	57.000
	C	94.000	38.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.15	7.56	0.2	A
C-AB	0.07	6.61	0.1	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.83	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	102.00	100.000
B		✓	87.00	100.000
C		✓	125.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	17.000	85.000
	B	42.000	0.000	45.000
	C	95.000	30.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	8.01	0.2	A
C-AB	0.06	6.34	0.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.22	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	183.00	100.000
B		✓	84.00	100.000
C		✓	182.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	19.000	164.000
	B	21.000	0.000	63.000
	C	131.000	51.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	7.72	0.2	A
C-AB	0.10	6.75	0.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.77	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	130.00	100.000
B		✓	98.00	100.000
C		✓	152.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	17.000	113.000
	B	42.000	0.000	56.000
	C	115.000	37.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.20	8.26	0.2	A
C-AB	0.07	6.47	0.1	A
C-A				
A-B				
A-C				

APPENDIX 7

PICADY Output for B5102 Rossett Rd/B5445 Chester Rd

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Chester Road-B5102-B5445.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 09:29:03

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.5	9.59	0.32	A	0.3	8.94	0.24	A
Stream C-AB	1.0	6.57	0.36	A	0.4	7.19	0.24	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.6	10.73	0.39	B	0.4	9.45	0.28	A
Stream C-AB	1.1	6.62	0.39	A	0.6	7.36	0.30	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Chester Road-B5102-B5445
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5445		Major
B	B5102		Minor
C	Chester Road		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.40			100.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	70	40

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	546.117	0.089	0.225	0.142	0.322
1	B-C	681.612	0.094	0.237	-	-
1	C-B	631.874	0.219	0.219	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	495.00	100.000
B		✓	157.00	100.000
C		✓	1117.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	6.000	489.000
	B	1.000	0.000	156.000
	C	948.000	169.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.32	9.59	0.5	A
C-AB	0.36	6.57	1.0	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.41	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	117.00	100.000
C		✓	730.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	13.000	555.000
	B	1.000	0.000	116.000
	C	623.000	107.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	8.94	0.3	A
C-AB	0.24	7.19	0.4	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.17	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	495.00	100.000
B		✓	194.00	100.000
C		✓	1129.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	6.000	489.000
	B	1.000	0.000	193.000
	C	948.000	181.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.39	10.73	0.6	B
C-AB	0.39	6.62	1.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.76	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	137.00	100.000
C		✓	758.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	13.000	555.000
	B	1.000	0.000	136.000
	C	623.000	135.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	9.45	0.4	A
C-AB	0.30	7.36	0.6	A
C-A				
A-B				
A-C				

APPENDIX 8

PICADY Output for B5445 Chester Rd/Link Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Chester Road (W)-Link Road-Chester Road (E).j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 09:45:56

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.3	18.05	0.24	C	0.2	14.64	0.18	B
Stream C-AB	0.0	6.87	0.00	A	0.0	7.10	0.01	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.4	19.82	0.30	C	0.3	15.45	0.21	C
Stream C-AB	0.0	6.89	0.00	A	0.0	7.15	0.01	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Chester Road (W)-Link Road-Chester Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Chester Road (E)		Major
B	Link Road		Minor
C	Chester Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.50			140.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.60	20	41

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	483.990	0.075	0.189	0.119	0.270
1	B-C	623.727	0.081	0.205	-	-
1	C-B	655.039	0.215	0.215	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	562.00	100.000
B		✓	56.00	100.000
C		✓	951.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	74.000	488.000
	B	52.000	0.000	4.000
	C	949.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	18.05	0.3	C
C-AB	0.00	6.87	0.0	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.56	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	632.00	100.000
B		✓	48.00	100.000
C		✓	623.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	76.000	556.000
	B	41.000	0.000	7.000
	C	619.000	4.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	14.64	0.2	B
C-AB	0.01	7.10	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.88	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	70.00	100.000
C		✓	951.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	80.000	488.000
	B	66.000	0.000	4.000
	C	949.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.30	19.82	0.4	C
C-AB	0.00	6.89	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.67	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	647.00	100.000
B		✓	56.00	100.000
C		✓	623.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	91.000	556.000
	B	49.000	0.000	7.000
	C	619.000	4.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.21	15.45	0.3	C
C-AB	0.01	7.15	0.0	A
C-A				
A-B				
A-C				

APPENDIX 9

Personal Injury Accident Data

Crash Report including Vehicle and Casualty Information

Crash Date:	Saturday, December 08, 2012	**Time of Crash:**	3:03:00 PM	**Crash Reference:**	201260N201994
Highest Injury Severity:	Slight	**Number of Vehicles:**	2	**Number of Casualties:**	2
Highway Authority:	Wrexham			**OS Grid Reference:**	336880 357320
Local Authority:	Wrexham County Borough				
Road Number:	U0	**Road Type:**	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30	**Junction Control:**	Give way or uncontrolled		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre
1	Car (excluding private hire cars 2005 onwards)	-1	Male	26 - 35	Vehicle is in the act of turning right
2	Car (excluding private hire cars 2005 onwards)	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend

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

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other

APPENDIX 10

Framework Residential Travel Plan

Transport Solutions

BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT

ROSSETT ROAD

ROSSETT

Framework Residential Travel Plan

July 2017

Croft Transport Solutions
Hill Quays, 9 Jordan Street, Manchester, M15 4PY
Tel: 0161 667 3746 Email: info@croftts.co.uk www.croftts.co.uk
Registered in England Number: 7373729

REPORT CONTROL

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PLANS **(See Transport Assessment)**

1 INTRODUCTION

1.1 Preamble

1.1.1 Croft have been commissioned by Bellis Bros Ltd to produce a Transport Assessment and Travel Plan to support a planning application relating to proposals to develop two sites off Rossett Road in Rossett for residential development.

1.1.1 This Framework Residential Travel Plan will set out the principal strategies that will be put in place once the development is open and residents are occupying the dwellings, to encourage sustainable travel to the development.

1.2 Development Site and its Location

1.1.2 The application site comprises two separate parcels of land, bisected by the B5102 Rossett Road, and located approximately 800 metres to the north-east of the village and approximately 10.5 kilometres to the north of Wrexham town centre.

1.1.3 The location of the site in its' local context is identified in **Plan 1**.

1.2 Summary of Proposals

1.2.1 It is proposed to develop the two sites to provide a total of approximately 132 residential dwellings across the two sites, with associated car parking and landscaping.

1.2.2 The proposed Masterplan for the site showing the internal layout is shown in **Plan 2**.

1.3 The Travel Plan

1.2.3 The management of residents travel represents an important element in pursuing the overall aims of the latest national guidance included within the DfT's Best Practice Guide and the Welsh Assembly's Smarter Choice: Wales document. A Travel Plan is effectively a combination of information, proposals and incentives designed to use most effectively the different means of travel available to residents and visitors.

1.3.1 The aims of the Travel Plans are as follows:

- To encourage residents and visitors to use alternatives to the private car;
- To increase the awareness of the advantages and potential for travel by more environmentally friendly modes, and
- To introduce a package of management measures that will facilitate travel by modes of transport other than the private car.

1.4 Residents Travel Pack

1.4.1 The principal measure will consist of a Residents Travel Pack containing relevant material to promote non-car modes of travel and the provision of certain physical measures. This will be discussed further in Section 3.

2 ACCESSIBILITY BY NON CAR MODES

2.1 Introduction

2.1.1 The Welsh Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by;

"Encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel. This will be achieved through integration:

- *within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation".*

2.1.2 Land use planning can help to achieve the Welsh Government's objectives for transport through:

- *reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;*
- *locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;*
- *improving accessibility by walking, cycling and public transport;*
- *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*
- *promoting walking and cycling;*
- *supporting the provision of high quality public transport;*
- *supporting traffic management measures;*

- *promoting sustainable transport options for freight and commerce;*
- *supporting sustainable travel options in rural areas;*
- *supporting necessary infrastructure improvements; and*
- *ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.*

2.1.3 New proposals should therefore attempt to influence the mode of travel to the development in terms of gaining a shift in modal split towards non-car modes, thus assisting in meeting the aspirations of current national and local planning policy.

2.1.4 To demonstrate the above, the accessibility of the proposed site has been considered by the following modes of transport:

- Accessibility on foot.
- Accessibility by cycle.
- Accessibility by bus.
- Accessibility by rail.

2.2 Accessibility on Foot

2.2.1 It is important to create a choice of direct, safe and attractive routes between where people live and where they need to travel in their day-to-day life.

2.2.2 This philosophy clearly encourages the opportunity to walk whatever the journey purpose and also helps to create more active streets and a more vibrant neighbourhood.

2.2.3 Footways of 2 metres in width will be provided within the development and will connect in to the existing provision at the Rossett Road/Chapel Lane junction.

2.2.4 The provision of a new zebra crossing at this location will significantly improve the current provision, which is substandard and have a positive impact on road safety.

2.2.5 During the pre-application process, the highway officer raised concerns over the availability of safe walking routes in the vicinity of the site and stated that;

"The main bus stop serving Wrexham and Chester are located on the B5445 Chester Road. It is highly likely that anyone wishing to access these bus stops on foot from the proposed development sites (north and south) will walk along the B5102 Holt Road or Chapel Lane.

Both Holt Road and Chapel Lane have limited footway provision leading to Chester Road and some sections have no footway provision which is a concern in highway/pedestrian safety terms.

During a site visit on 07/03/2016 between 08:20 – 09:00, a significant number of school children on their way to Darland School were observed walking from the Rossett shops along Holt Road in order to cut through the footpath running through St. Peters School. Vehicles including cars and HGVs travelling along this section of Holt Road had to slow down as school children walked along the carriageway due to the lack of adequate footway provision.

I therefore raise serious concerns regarding the proposed increase in vehicle & pedestrian movements likely to be generated by the development site, given the significant lack of suitable pedestrian provision/footways along both Holt Road and Chapel Lane. I would recommend that you give serious consideration to proposed measures to address these concerns.

Although a number of highway improvements have been proposed as part of the proposed development, the above issues along Rossett Road and Chapel Lane are still a concern".

2.2.6 As set out in the previous Section, the proposals seek to address these issues by the provision of upgraded and new footpath links to both St Peters Primary School and Darland High School.

2.2.7 It is also worth noting that in respect of another application site, Vicarage Road, Gresford (Appeal Ref APP/H6955/A/15/3095184) which had a similar issue in terms of pedestrian connectivity and safety, the Inspector reported that;

"There are no footpaths along Vicarage Lane and there is a high level of on-street parking between the site and the junction with Chester Road to the north. The Council is concerned that this does not provide a safe route for pedestrians from the site to the local shops and bus stops on Chester Road. It is clear from the discussion at the hearing that existing residents on the site walk or use mobility scooters between the site and Chester Road and I observed staff from the Hall and local residents walking along Vicarage Lane, as I also did. Whilst it would be preferable to segregate pedestrians from the main highway the Council confirmed this was not possible.

Notwithstanding this, the route is within a 30mph area and the nature of the road together with the parked cars actively slow vehicles. Pedestrians do have to be more aware of the traffic when using a shared surface rather than when there is a dedicated footway and I accept that some residents may choose not to walk to local services. However, I do not consider the situation to be significantly different from numerous roads in rural settlements.

Furthermore, I do not consider that the increase in the use of Vicarage Lane by pedestrians as a result of the proposed development would be so significant as to be detrimental to highway safety".

2.2.8 It can be concluded that in respect to this development, while the situation would not be ideal, the provision of new footway links and the upgrading of those existing ones will go a long way to improving pedestrian linkages and safety in the area.

2.2.9 Furthermore, the reduction in speed limit from 30mph to 20mph, being sought by the Council on Holt Road and Chapel Lane will have a positive effect and further improvement the pedestrian environment and make it safer than the current situation for all road users including those with mobility problems.

2.2.10 Within the Institution of Highways and Transportation (IHT) document, entitled "Guidelines for Providing for Journeys on Foot", a distance of 800 metres is identified as the preferred maximum distance for town centres, whilst a distance of 2 kilometres is defined as a preferred maximum for commuting.

2.2.11 Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car journeys, particularly those under 2 kilometres. In addition, the DFT National Travel Survey of 2015 confirms that 78% of all trips less than a mile (1.6km) are carried out on foot.

2.2.12 **Plan 5** shows the pedestrian catchment for 800 metres and 2 kilometres from the centre of the site and provides an illustrative indication of the areas that can be reached based on a leisurely walk from the site.

2.2.13 In addition to the pedestrian catchment plan, a review of the proximity of local facilities such as pharmacies/doctor's surgeries, schools (both primary and secondary) local shops/retail outlets and leisure facilities has been undertaken.

2.2.14 The locations of such facilities in relation to the site are also identified in Plan 5. As can be seen, the 800 metres catchment includes residential areas of Rossett along with Rossett village centre and its amenities, such as Christ the King Catholic Church, The Golden Lion Public House, Rossett Pharmacy, The Village store and St Peter's Primary School.

2.2.15 The 2 kilometre pedestrian catchment illustrates that the whole of Rossett can be accessed including areas such as Darland, Lavister, Trevalyn and Marford.

2.2.16 In addition to the above, there are a variety of retail, leisure, healthcare and community facilities located within the catchment, these include Rossett Parish church, The Alyn Public House, Darland Golf Course, a SPAR convenience store, Rossett Dental Care, Rossett and Burton Village Hall and The Griffin Inn Public House.

2.2.17 **Table 2.1** below, shows the walking distances from the centre of the site to the local retail facilities and other nearby key amenities in the vicinity of the site:

Local Amenity	Distance (metres)
Christ the King Catholic Church	520
St Peter's Primary School	370
The Village store	680
The Golden Lion Public House	700
Rossett Pharmacy	800
Rossett Parish church	950
The Alyn Public House	970
SPAR	1030
Burton Village Hall	1130
Rossett Dental Care	1140
The Griffin Inn Public House	1240
Darland Golf Course	1770

Table 2.1 - Distance from Site to Local Facilities

2.2.18 As can be seen in the above table, the site is located within close proximity to a number of key local amenities including primary services, as well as retail and healthcare facilities.

2.2.19 It is therefore considered that the existing and proposed pedestrian infrastructure will facilitate safe and direct pedestrian linkages between the site and local destinations.

2.3 Access by Cycle

2.3.1 An alternative mode of travel to the site could be achieved by bicycle.

2.3.2 A distance of 5 kilometres is generally accepted as a distance where cycling has the potential to replace short car journeys. This distance equates to a journey of around 25 minutes based on a leisurely cycle speed of 12 kilometres per hour and would encompass Marford, Gresford, Llay, Pulford and Belgrave.

2.3.3 An on-road local cycle route is located approximately 3.5 kilometres south-west from the centre of the site, this cycle route travels into Wrexham town centre before linking up with various other local cycle routes.

2.3.4 The site can therefore be considered as being accessible by cycle.

2.4 Access by Bus

2.4.1 The nearest bus stops to the site are located on Harwood's Lane, Rossett Road and Chester Road, with the closest stop approximately 140 metres from the centre of the site.

2.4.2 However, it is noted that the main bus stops serving Wrexham town centre are located on Chester Road and these bus stops consist of a bus shelter along with a bus service timetable.

2.4.3 In light of the above, it is highly likely that anyone wishing to access these services on foot from the two development sites will walk along the B5102 Holt Road or Chapel Lane. It is acknowledged that both Holt Road and Chapel Lane have limited footway provision but it is likely that the introduction of the 20 mph speed limit through the village will have a positive effect, keeping traffic speeds low and hence will create a more pedestrian friendly environment.

2.4.4 The location of the nearest bus stops to the development site are shown on Plan 5.

2.4.5 A summary of the services available from the nearest bus stops of the development site is provided in **Table 2.2** below.

Serv. No.	Route	Mon-Fri Frequency Per Hour				Sat	Sun
		AM Peak	Mid-day	PM Peak	Eve		
1	Wrexham – Gresford – Pulford - Chester	6	5	6	2	5	2
34	Wrexham – Trevalyn 3 services daily (Weds/Fri/Sat)	0945	1145	1545	0	3	0

Table 2.2 - Existing Bus Services Operation in the Vicinity of the Site

2.4.6 As can be seen above, the nearest bus stops to the centre of the site offer up to 7 services per hour, providing direct access into Wrexham and Chester.

2.4.7 These services operate from 0540 hours in the morning until 2329 hours in the evening, proving the opportunity for residents to travel by public transport for commuting and leisure trips. In order to demonstrate the level of accessibility some example journey times by bus are presented below **Table 2.3** below.

Destination	Duration
Wrexham	17 mins
Chester (train station)	31 mins

Table 2.3 Example Bus Journey Times

2.4.8 The above table demonstrates that Wrexham is a 17 minute bus journey from the site and Chester railway station is a 31 minute bus journey.

2.4.9 It is therefore concluded that the proposed development site is highly accessible by bus.

2.5 Access by Rail

2.5.1 The nearest train stations to the site are Wrexham Central and Wrexham General, and although these fall outside the recommended 2 kilometre pedestrian catchment, they are accessible via a 17 minute bus journey from the site and a short walk, equating to an overall journey time of approximately 20 minutes.

2.5.2 Wrexham Central train station is managed by Arriva Trains Wales and has 1 platform, offering an hourly service to Bidston, whilst Wrexham general train station has 4 platforms, offering 4 services per hour to Cardiff, Birmingham, Holyhead and Bidston.

2.5.3 It is also worth noting that Chester train station is also accessible via a 31 minute bus journey using service number 1. This train station is also managed by Arriva Trains Wales but has 7 platforms, offering 13 services per hour to destinations throughout the UK such as Liverpool, Manchester, Birmingham and London Euston.

2.5.4 In conclusion, the proposed site can be considered as being highly accessible in terms of travel by rail.

2.6 Summary

2.6.1 The site has been considered in terms of it accessibility by non-car modes and the following conclusions can be drawn from this section of the Report:

- The site is accessible on foot and these provisions will be substantially improved as part of the proposals, with new and upgraded footpath links.
- The provision of a new zebra crossing, to replace the existing sub-standard crossing point on Holt Road will also have a positive impact and improve road safety in the area, not just for residents but for the wider community as well, including school children.

- The site is well located to generate trips on foot and provides potential for a high degree of linked walk trips between the development and the surrounding area.

- It has been demonstrated that the site is accessible by cycle, with a local cycle route situated 3.5 kilometres south west of the site, which travels into Wrexham centre.

- The close proximity of bus stops on Harwoods Lane, the B5102 and Chester Road offering services to Wrexham and Chester demonstrates that the proposed development can be considered as highly accessible by bus.

- Residents can also travel to and from the site by rail using services from the two Wrexham rail stations which can be accessed via the bus services that run very close to the site.

2.6.2 In light of the above, it is considered that site is highly accessible and able to cater for needs of the development's residents and visitors and assist in promoting a choice of travel modes other than the private car.

3 MANAGEMENT MEASURES

3.1 Introduction

3.1.1 The following Travel Plan measures will be implemented:

i) Appointment of a Travel Plan Co-ordinator

ii) Residents Travel Pack

iii) Residents Travel Survey

iv) Travel Awareness and Information

v) Promotion of National Car Sharing Scheme

vi) Encouraging Walking/Cycling

Appointment of Travel Co-ordinator

3.1.2 A Travel Plan Co-ordinator will be appointed at least 3 months prior to the occupation of the first dwelling with the contact details of the Travel Plan Co-ordinator submitted to WCBC's Travel Team.

3.1.3 Until all of the properties are occupied this role is likely to be undertaken by a person employed by the developer, as this will show a commitment to the Travel Plan from an early stage.

3.1.4 The post of Travel Plan co-ordinator will continue for the life of the development.

Residents Travel Pack

3.1.5 It is an important and emerging principle in residential developments that where appropriate, the implementation of travel plan type measures can establish a pattern of travel behaviour favouring sustainable modes from the inception of the development.

3.1.6 The proposed development is very well placed for encouraging access on foot or by cycle to a wide range of facilities. Similarly, the existence of a local bus service close to the site will encourage the choice of public transport as a primary means of travel for the development.

3.1.7 However, in order to build on these locational advantages it is recommended that a Residents Travel Pack is provided for the occupants of each new residential unit, prior to the occupation of the first unit. The contents of such a Travel Pack would include information relating to walking and cycling routes in the area and the provision of up to date bus and rail timetable information.

3.1.8 In addition, as part of the information supplied to purchasers, the pack will include a map to identify the location of nearby local facilities along with approximate distances and walk times to allow residents to choose a more sustainable mode of travel, rather than the private car, where appropriate.

3.1.9 The adoption of such Travel Packs is recognised as being an important element in ensuring that access by non-car modes is promoted from the earliest occupation of a residential development.

3.1.10 Within the Residents Travel Pack, residents will be encouraged to consider ways in which to reduce their need to travel such as 'Home Delivery' for shopping and working from home. The first issue of the Residents Travel Pack will be the responsibility of the house builder.

3.1.11 The provision of a Residents Travel Pack will form part of the terms of the sale or occupancy of the dwellings and therefore they are aware in advance of what is required of them within the Travel Plan framework.

Travel Awareness and Information

3.1.12 All residents will be made aware of the existence of the Travel Plan.

3.1.13 As mentioned previously, Residents Travel Packs will be issued for new residents moving into the development and prospective buyers will be made aware of the Travel Plan and its aims when viewing properties.

Travel Survey

3.1.14 A key to developing the operational Travel Plan is to establish how the site users make journeys to and from the site. After occupation of the site, travel surveys would be performed in order to ascertain travel patterns of site residents. The survey will play a key role in the sustainability process as it provides a baseline from which to measure changes in travel as a result of the Travel Plan.

3.1.15 The travel surveys will continue to be carried out as long as the Travel Plan is in place at the site (for a period of 5 years) and they will be completed between every 2 to 3 years. The surveys will give an indication of how travel behaviour is changing.

3.1.16 The travel survey will be used to show how people travel to the site, what potential there is for change (for example, the numbers of people who would like to walk, cycle or use public transport, but are unable to), what are the most significant deterrents to walking, cycling and using public transport, what would encourage people to reduce car use.

3.1.17 The following information can be obtained:

- How site users usually travel to and from the site (walking, cycling, using public transport, arriving by car or car sharing with others),
- Where site users are generally travelling to/from.
- What routes children are using for the school journey.
- Which places are considered to be dangerous for walking or cycling, and why.
- Any problems there are with bus services and where a new service might be helpful.
- How site users would like to travel if they had the choice and whether they own a bike or have a bus pass.

3.1.18 The results of the surveys will provide a valuable 'baseline' against which the success of the Travel Plan in reducing car journeys and increasing journeys by walking, cycling and public transport will be measured.

Promotion of National Car Sharing Scheme

3.1.19 The Travel Plan Co-ordinator will promote the use of car sharing via registering on the Liftshare website. This is a recognised website which allows users to register their details, where they are travelling to in the area, and if they are offering a lift or need a lift to their destination.

3.1.20 The website can be found at the following location www.liftshare.com

3.1.21 Travel Plan Co-ordinator will also investigate the viability of establishing a Car Sharing Club for the residential development. However, it is likely that the promotion of the lift share scheme will be more beneficial to local residents.

Encouraging Walking/Cycling

3.1.22 Residents will be provided with information and advice concerning safe pedestrian and cycle routes to the site through the WalkBUDi/BikeBUDi schemes. Information on these schemes is available on the following websites;

www.walkbudi.com and www.bikebudi.com

3.1.23 The WalkBUDi/BikeBUDi schemes are part of the National Lift Share Network and are simple and free to use. They simply match individuals with others walking or cycling the same way so they can walk or cycle together. They can be used for regular trips such as walking or cycling to the office or going to the station as well as making a journey safer. The matches are displayed in both table and map format, allowing the user to easily find the most suitable people.

3.1.24 Through the Travel Plan, residents will be encouraged to register with one of both of the above schemes.

4 TRAVEL PLAN TARGETS

4.1 Introduction

4.1.1 This section of the Travel Plan deals with the post development scenario i.e. once the development is complete, occupied and the Travel Plan has been implemented and relates to targets against which the success of the Plan in achieving its objectives will be measured. The targets are designed to be quantifiable, be relevant to both measures and objectives identified in the Plan and to include timescale.

4.1.2 In order to set the targets, further information (e.g. through a travel survey) may have to be obtained in order to establish against which to set the targets.

4.1.3 This information will be related to existing patterns of movement (i.e. the proportion of residents who travel to their workplace by non-car mode) and may be obtained from sources such as the National Travel Survey and the National Census.

4.1.4 More accurate information to establish the baseline targets however, will be obtained from a Residents Travel Survey which will be undertaken within one month of the development being 50% occupied.

4.1.5 Following the granting planning consent, suitable targets for reducing the need to travel by private car will be set against the baseline targets and agreed with WCBC and included in the final Residential Travel Plan for the whole development.

4.2 Potential Targets

4.2.1 The targets are designed to be quantifiable, be relevant to both measures and objectives identified in the Plan and to include timescale.

4.2.2 Targets which according to the DfT may potentially be included in the Travel Plan include the following:

- Car trips per household - targets set on the basis of predicted trip rates for the development.
- Uptake of alternatives - targets for bus patronage, registration and participation in the Liftshare car share scheme, cycle counts and pedestrian counts.
- Car ownership and mode of travel - trip based targets may be supplemented by targets related to car ownership, travel to work by mode and travel to school by mode.
- Travel Plan awareness targets - for example, a target can be established to ensure a significant percentage of residents are aware of the Travel Plan and its purpose.

4.3 Action Plan

4.3.1 **Table 4.1** below provides an Action Plan and timescales to assist the Travel Plan Co-ordinator (TPC) to implement the obligations of the Travel Plan;

Action	Target Date	Indicator/Measured by	Responsibility
Appointment of TPC	TPC appointed 3 month prior to first occupation of site	Appointment of TPC by target date	Developer
Production of Residents Travel Pack	Upon Occupation	Resident travel survey	Developer
Undertake initial travel surveys	Within 1 month of reaching 50% occupation of development	Receipt of survey results	TPC
Agree Travel Plan Targets	1 month after initial travel survey undertaken	Receipt of written agreements of targets	TPC
Achieve target car driver travel to work mode split	5 years after initial travel survey	Residents travel surveys conducted in years 1, 3 and 5	TPC

Table 4.1 – Travel Plan Action Plan and Timescales

4.3.2 The table above sets out the key tasks that will need to be undertaken by the Travel Plan Co-ordinator as part of the Travel Plan including guidance as to timescales for the tasks to be undertaken.

4.4 Travel Plan Budget

4.4.1 To show commitment to the aims of the Travel Plan funding has been allocated for the launch and implementation of the TP, while an annual budget will be in place to deal with the day to day operation of the TP through the appointed TP Co-ordinator.

4.4.2 The use of the above budget will be at the discretion of the TPC as it may be that the majority of spending is required during the early stages of the development i.e. incentives to encourage bus or walking/cycling.

4.4.3 Such measures should ideally be implemented from the on-set of the development being occupied as it is easier to influence trips made by people before they get into 'bad habits'. The requirement to implement other incentives could form part of the monitoring process i.e. if the number of cyclists or walkers has reduced from the initial travel survey, then measures could be put in place to encourage the use of these modes.

4.4.4 In addition to the above, numerous maps and leaflets (walking, cycling and public transport) are likely to be available free of charge from WCBC's sustainable Travel Team.

4.4.5 The TPC will be free to investigate how the TP can be promoted for example TP events could be organised to coincide with national initiatives such as such as national Walking Month and Bike Week. Posters and promotional material for such events are available to download free of charge off the internet.

4.5 Plan Monitoring and Assessment

4.5.1 DfT best practice guidelines state that monitoring of the Travel Plan should normally take place on the following basis:

- Early on in the occupation period of the site - for example, triggered by 50% occupancy to provide the information base for the review of the plan;
- Annually or at least every two years thereafter to provide on-going information on the impact of the plan.
- Monitoring should take place over a wide range of time periods to reflect the different pattern of journeys that can be generated by residential development.

4.5.2 The monitoring could include items such as:

- Full residential surveys to be completed between every 2 to 3 years and snap shot surveys to be completed every 6 to 12 months.

- Feedback from bus operators to establish demand for local bus services.

4.5.3 Once planning consent is granted, consideration will be given on how best to monitor and measure the success of the Travel Plan measures when preparing the final Travel Plan for the development. Appropriate monitoring arrangements will be discussed and agreed with WCBC.

4.5.4 The monitoring and assessment of the Travel Plan will include the submission of annual progress reports detailing the results of the travel surveys with regards to targets, budgets, general effectiveness and current initiatives.

4.5.5 An annual report is to be submitted to the local authority no later than one month following the anniversary of the approval of the Travel Plan.

4.5.6 This will allow effective measures to be promoted and increased while ineffective measures can be revised and rectified. New initiatives for the coming year will also be contained within the report and submitted to officers at the Council.

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Croft Transport Solutions

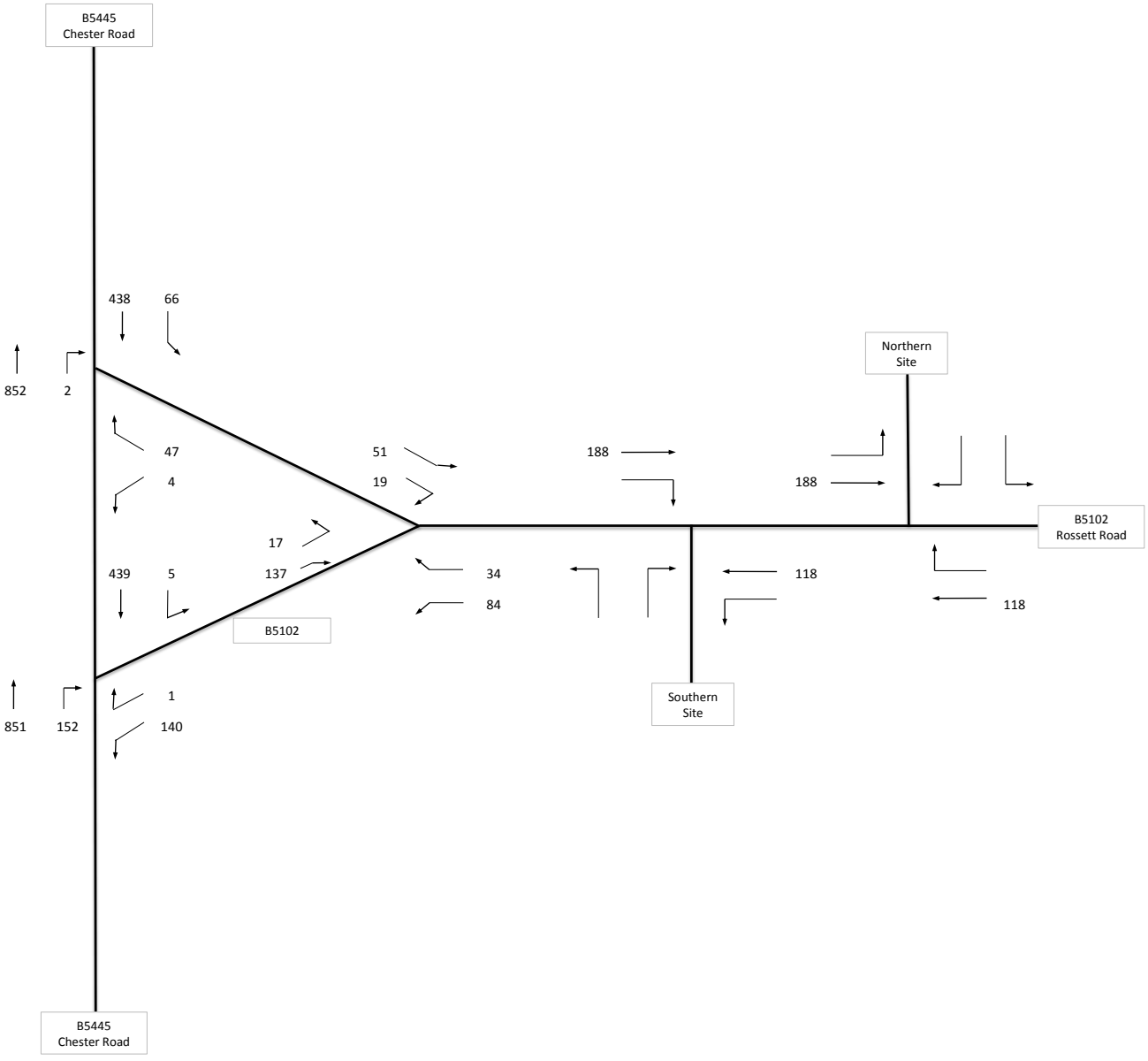
9 Jordan Street, Manchester, M15 4PY

Tel: 0161 667 3746 Email: info@croftts.co.uk www.croftts.co.uk

Registered in England Number: 7373729

FIGURES

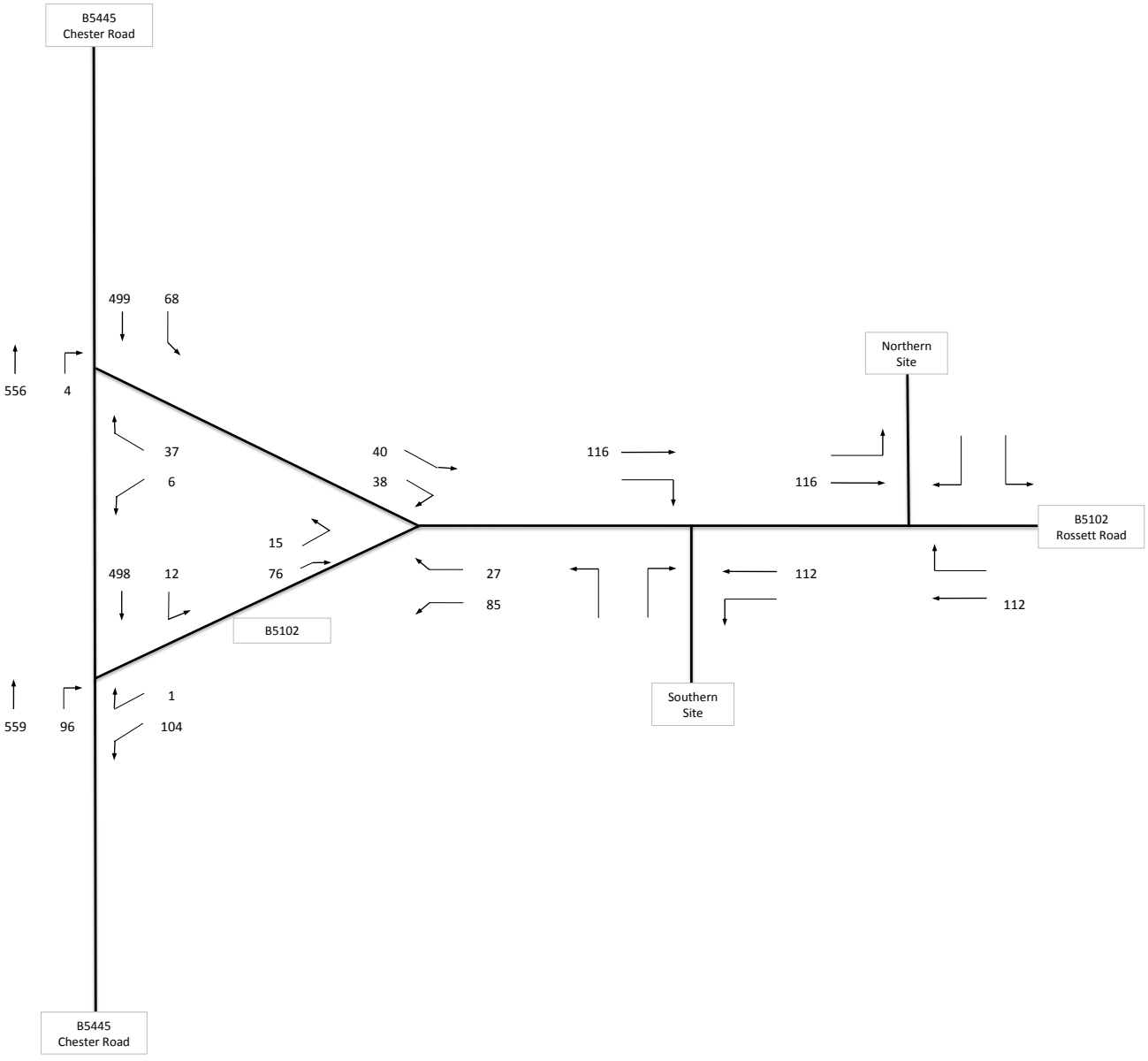
FIGURE	DESCRIPTION	SCENARIO	CALC
FIGURE 1	2016 SURVEYED FLOWS	AM PEAK	See TA
FIGURE 2	2016 SURVEYED FLOWS	PM PEAK	See TA
FIGURE 3	2026 BASE FLOWS	AM PEAK	FIG1xNTM
FIGURE 4	2026 BASE FLOWS	PM PEAK	FIG2xNTM
FIGURE 5a	TRIP DISTRIBUTION - NORTHERN SITE	AM PEAK	See TA
FIGURE 5b	TRIP DISTRIBUTION - SOUTHERN SITE	AM PEAK	See TA
FIGURE 6a	TRIP DISTRIBUTION - NORTHERN SITE	PM PEAK	See TA
FIGURE 6b	TRIP DISTRIBUTION - SOUTHERN SITE	PM PEAK	See TA
FIGURE 7a	DEVELOPMENT FLOWS - NORTHERN SITE	AM PEAK	Based on F5a
FIGURE 7b	DEVELOPMENT FLOWS - SOUTHERN SITE	AM PEAK	Based on F5b
FIGURE 8a	DEVELOPMENT FLOWS - NORTHERN SITE	PM PEAK	Based on F6a
FIGURE 8b	DEVELOPMENT FLOWS - SOUTHERN SITE	PM PEAK	Based on F6b
FIGURE 9	2026 ASSESSMENT FLOWS	AM PEAK	F3+F7a+F7b
FIGURE 10	2026 ASSESSMENT FLOWS	PM PEAK	F4+F8a+F8b



Flows in PCUs

Figure 1 - 2016 Surveyed Flows - AM Peak (0800 to 0900)

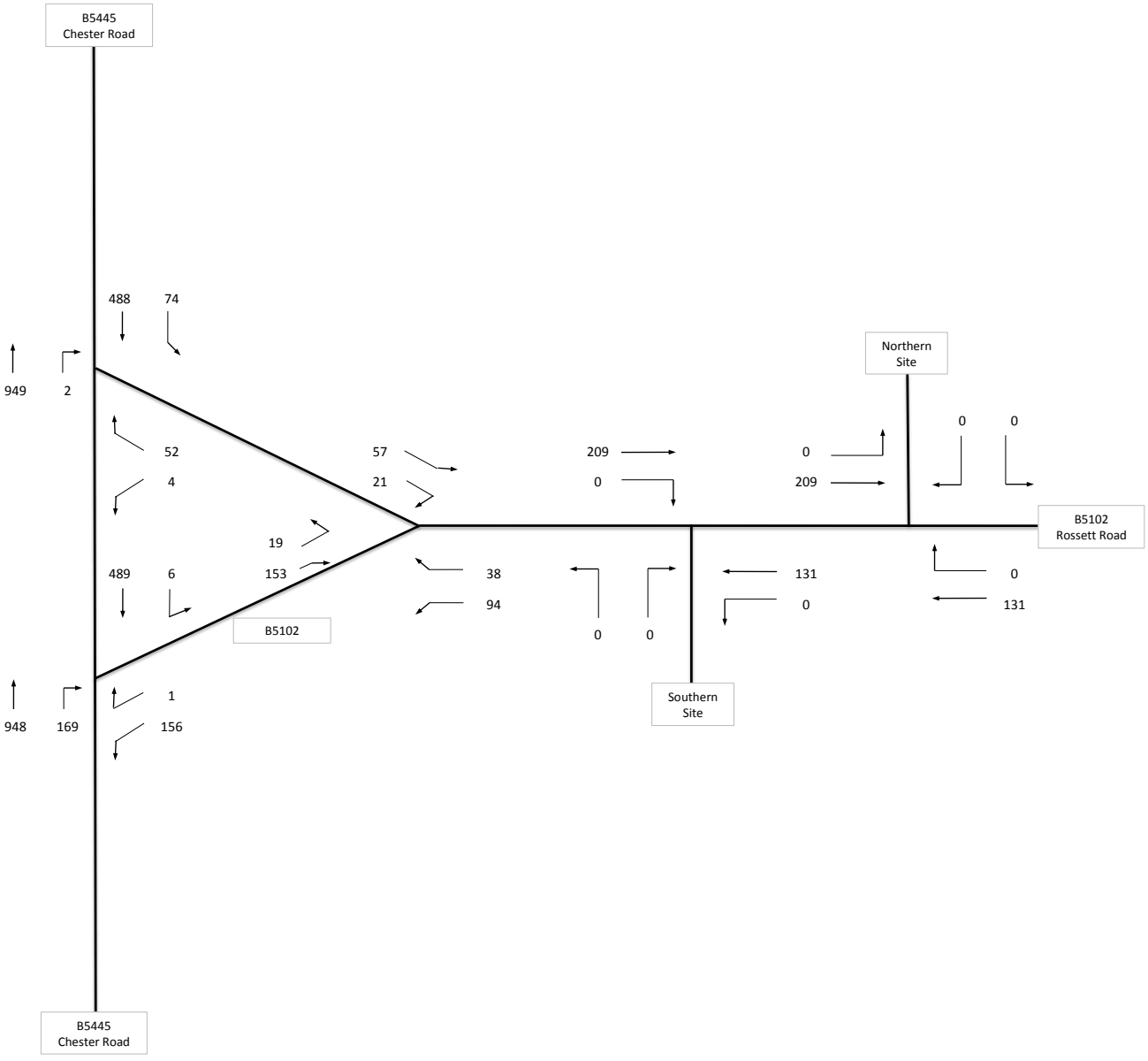
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Flows in PCUs

Figure 2 - 2016 Surveyed Flows - PM Peak (1645 to 1745)

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Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk



Growth factor 2016 to 2026 = 1.1141

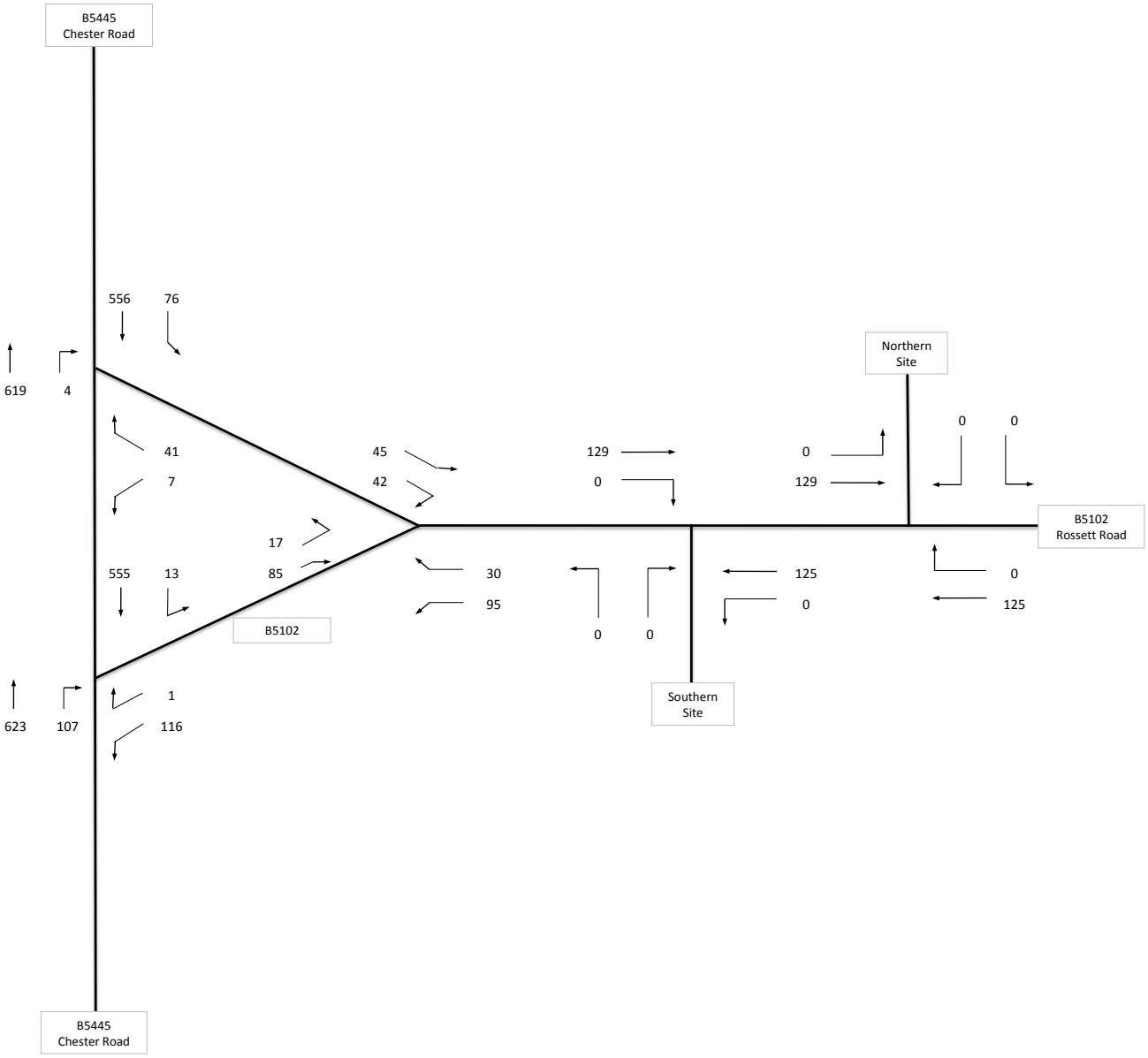
Flows in PCUs

Figure 3 - 2026 Base Flows - AM Peak (0800 to 0900)

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Growth factor 2016 to 2026 = 1.1139

Flows in PCUs

Figure 4 - 2026 Base Flows - PM Peak (1645 to 1745)

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Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

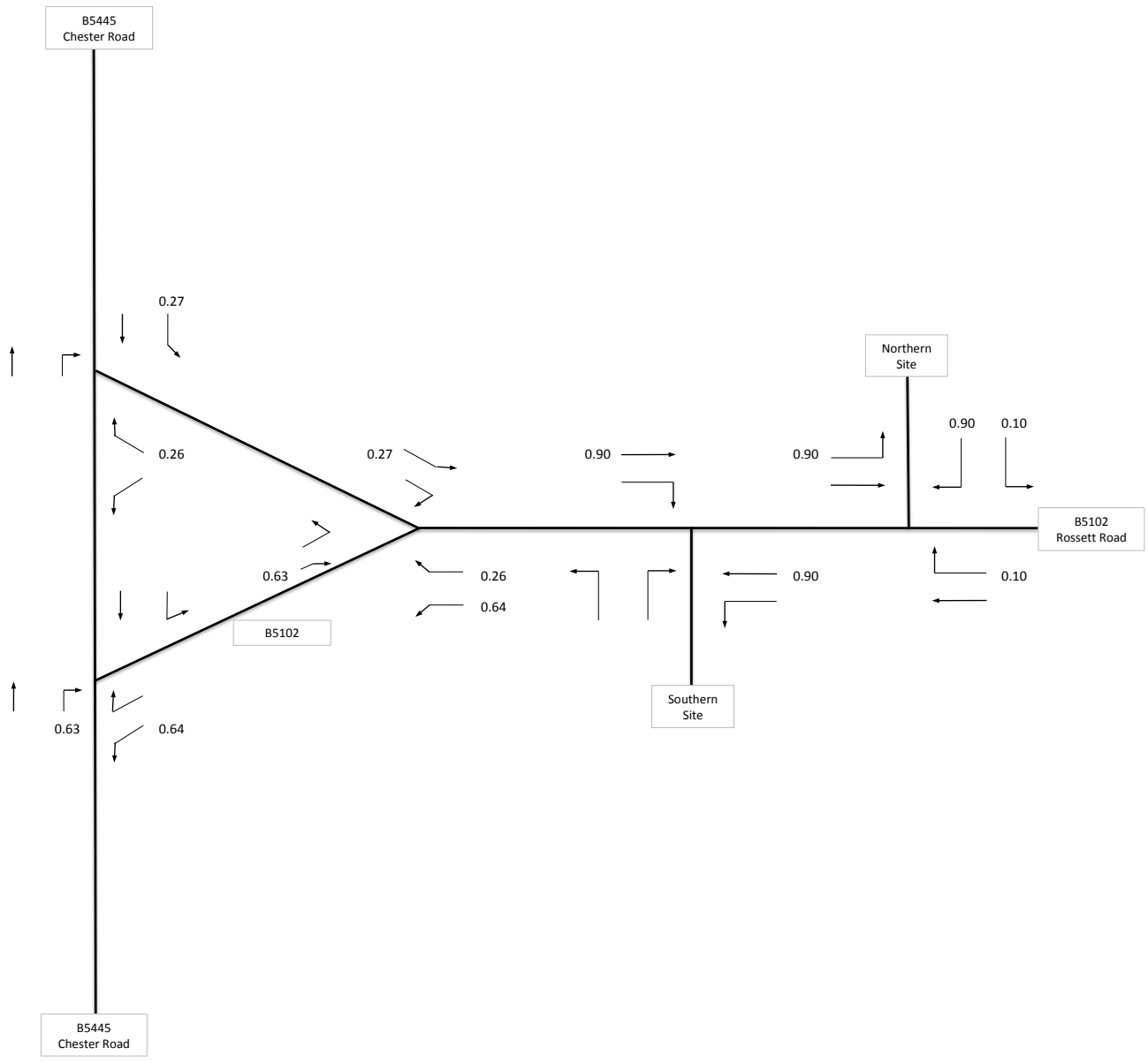


Figure 5a - Trip Distribution - AM Peak (0800 to 0900)

Northern Site

Transport Solutions

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Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

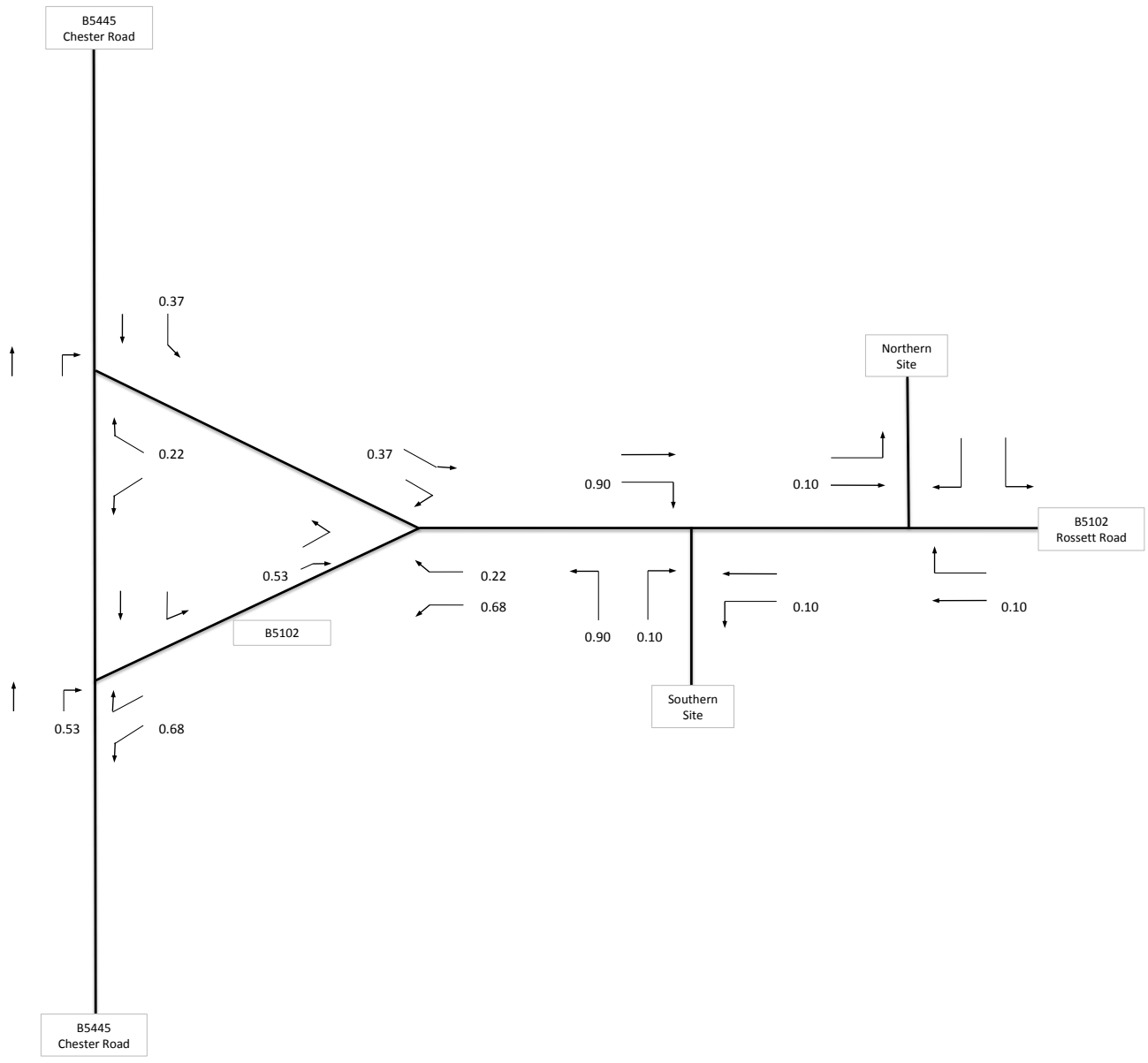


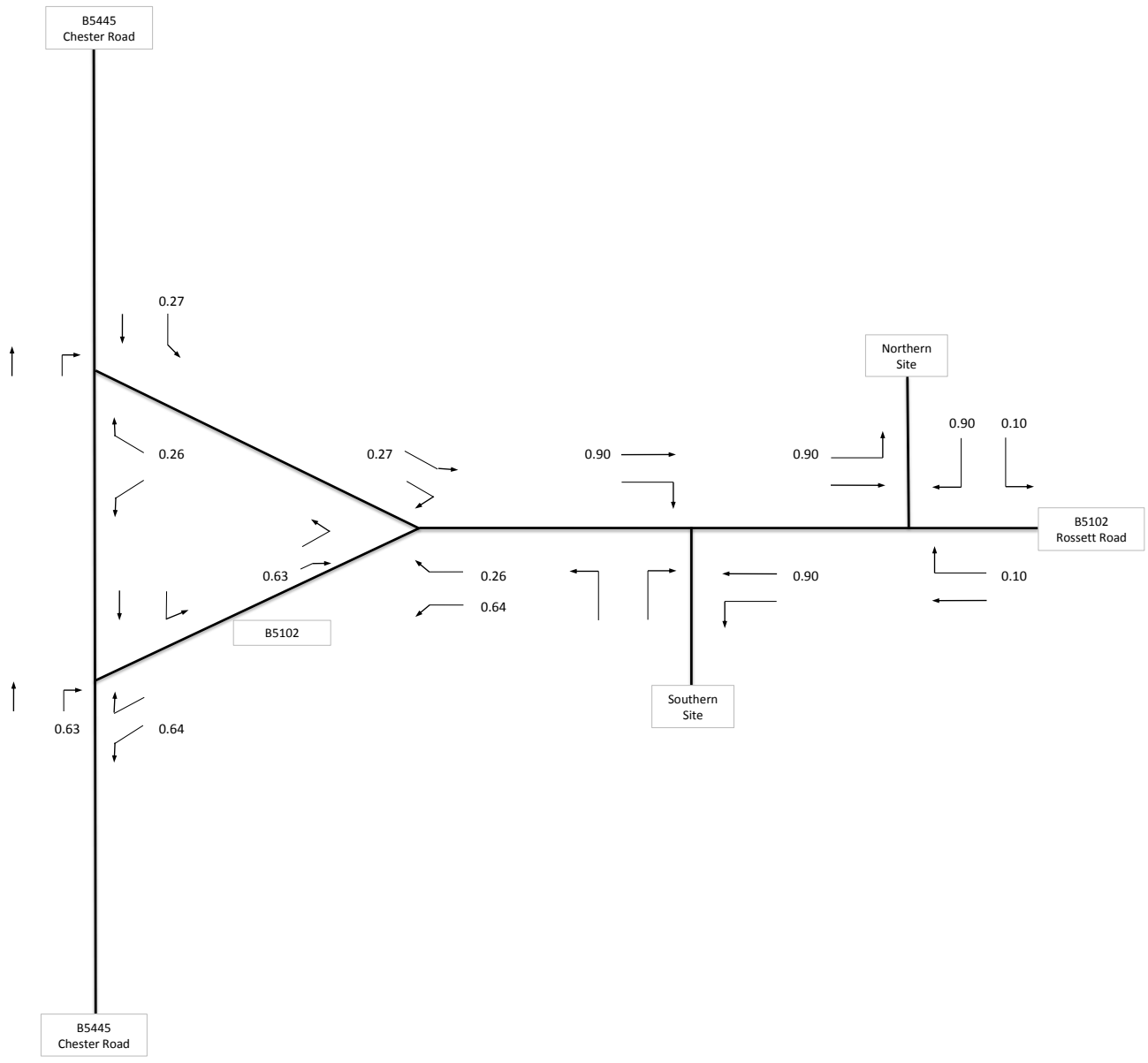
Figure 5b - Trip Distribution - AM Peak (0800 to 0900)

Southern Site

Transport Solutions

9 Jordan Street, Manchester, M15 4PY

Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk



Flows in PCUs

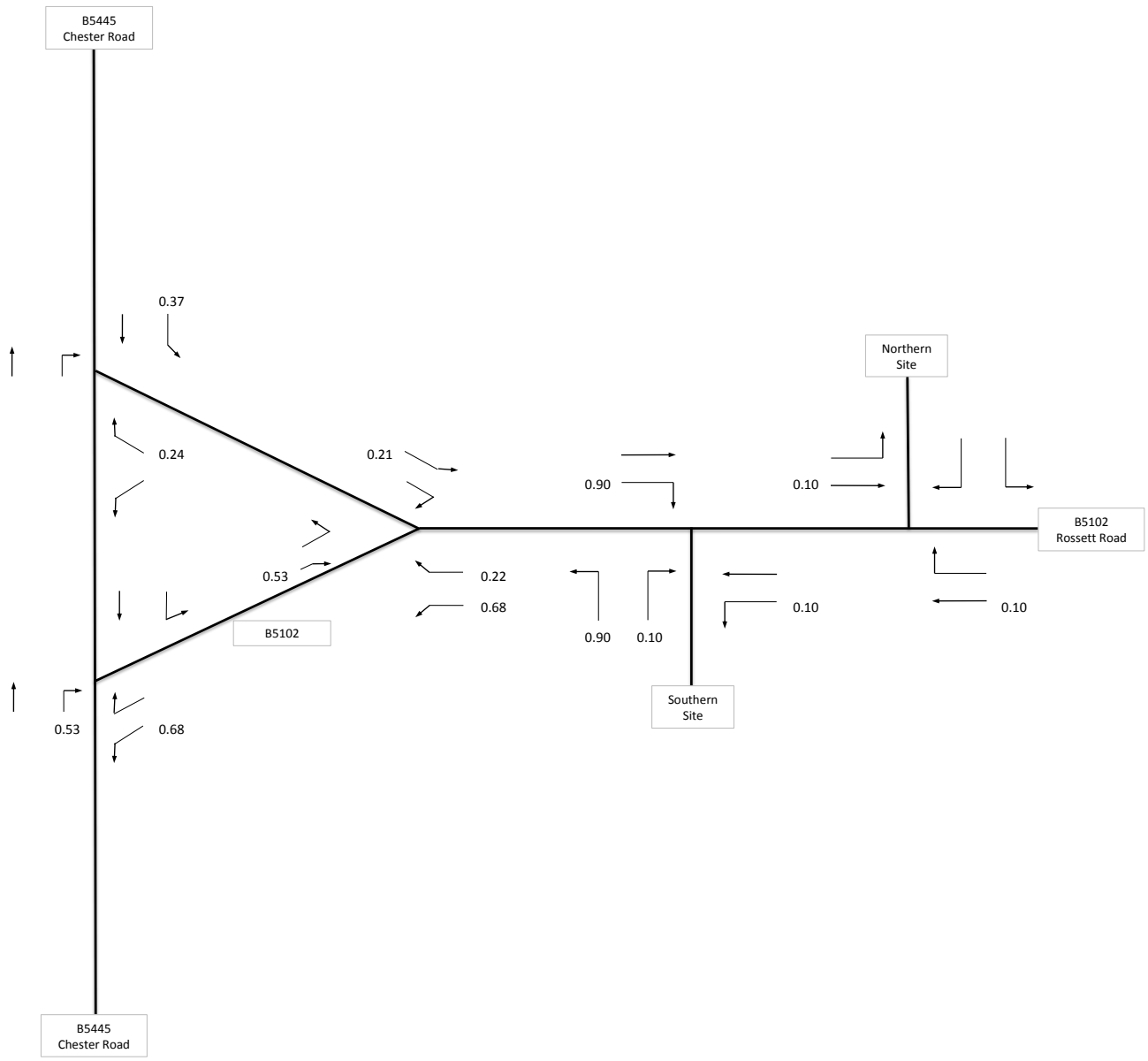
Figure 6a - Trip Distribution - PM Peak (1645 to 1745)

Northern Site

Transport Solutions

9 Jordan Street, Manchester, M15 4PY

Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk



Flows in PCUs

Figure 6b - Trip Distribution - PM Peak (1645 to 1745)
Southern Site

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Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

IN	10
OUT	27

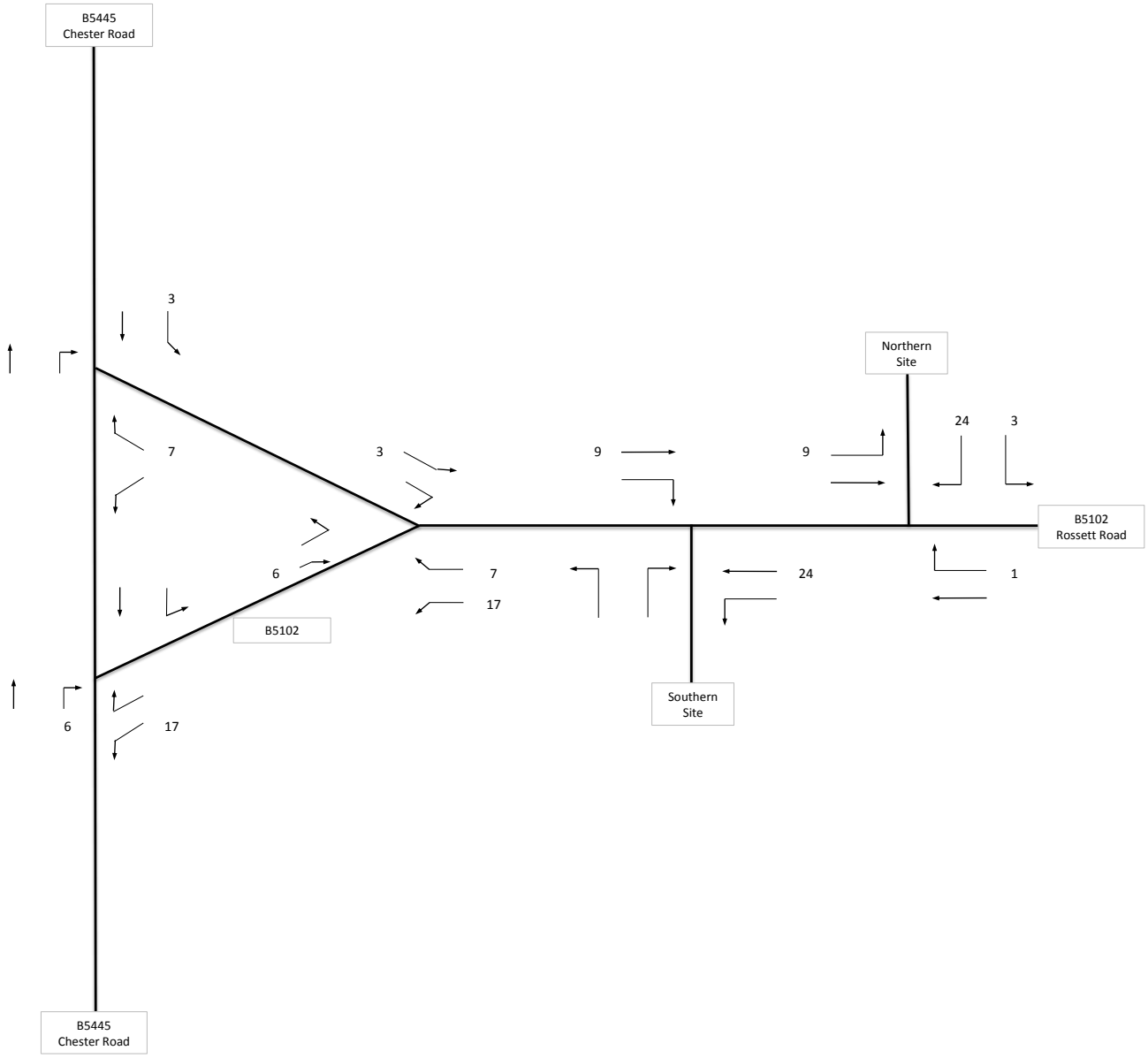


Figure 7a - Development Flows - AM Peak (0800 to 0900)

Northern Site

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Tel: 0161 667 3746 www.croftts.co.uk info@croftts.co.uk

IN	10
OUT	29

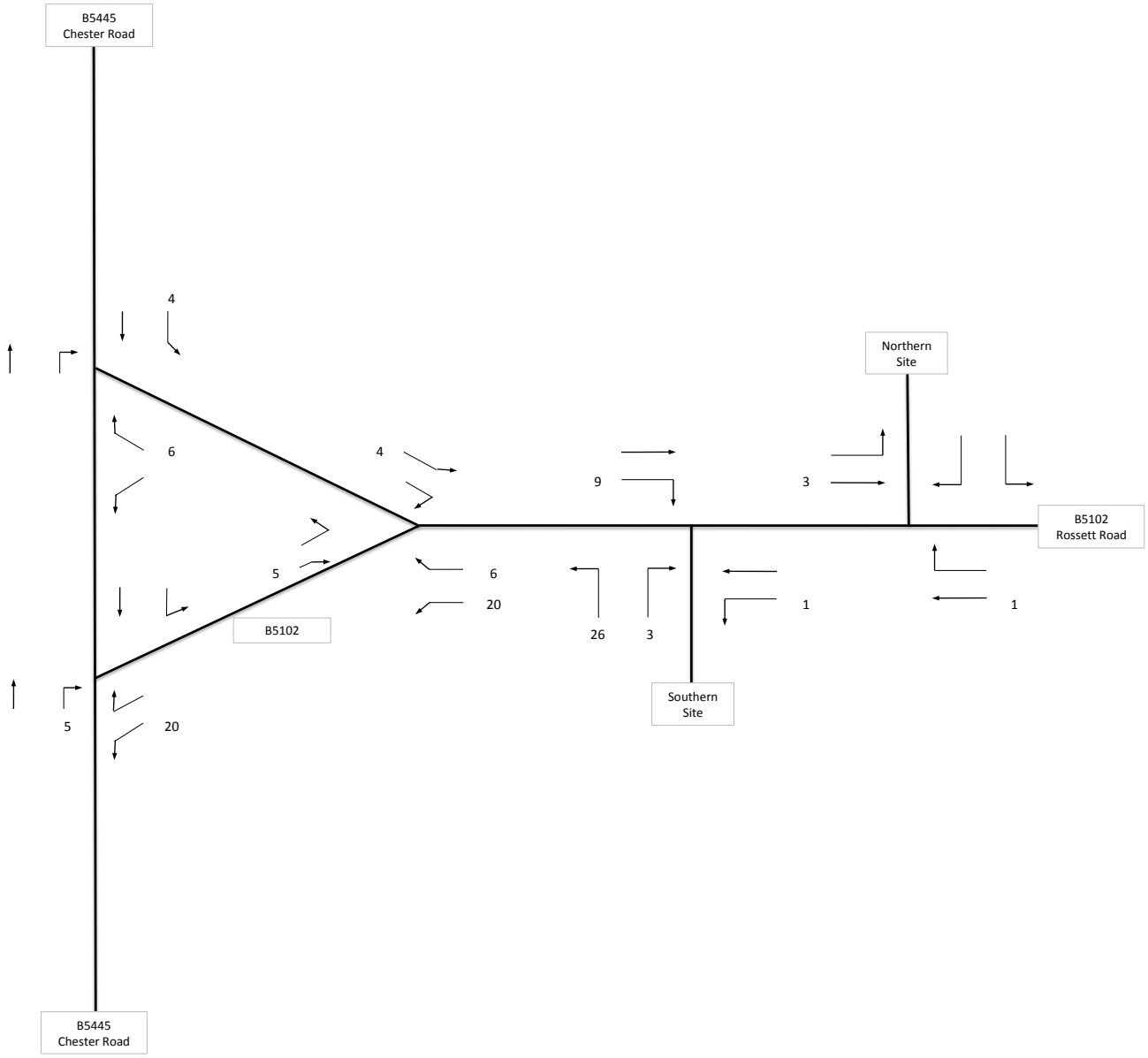


Figure 7b - Development Flows - AM Peak (0800 to 0900)

Southern Site

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IN	24
OUT	15

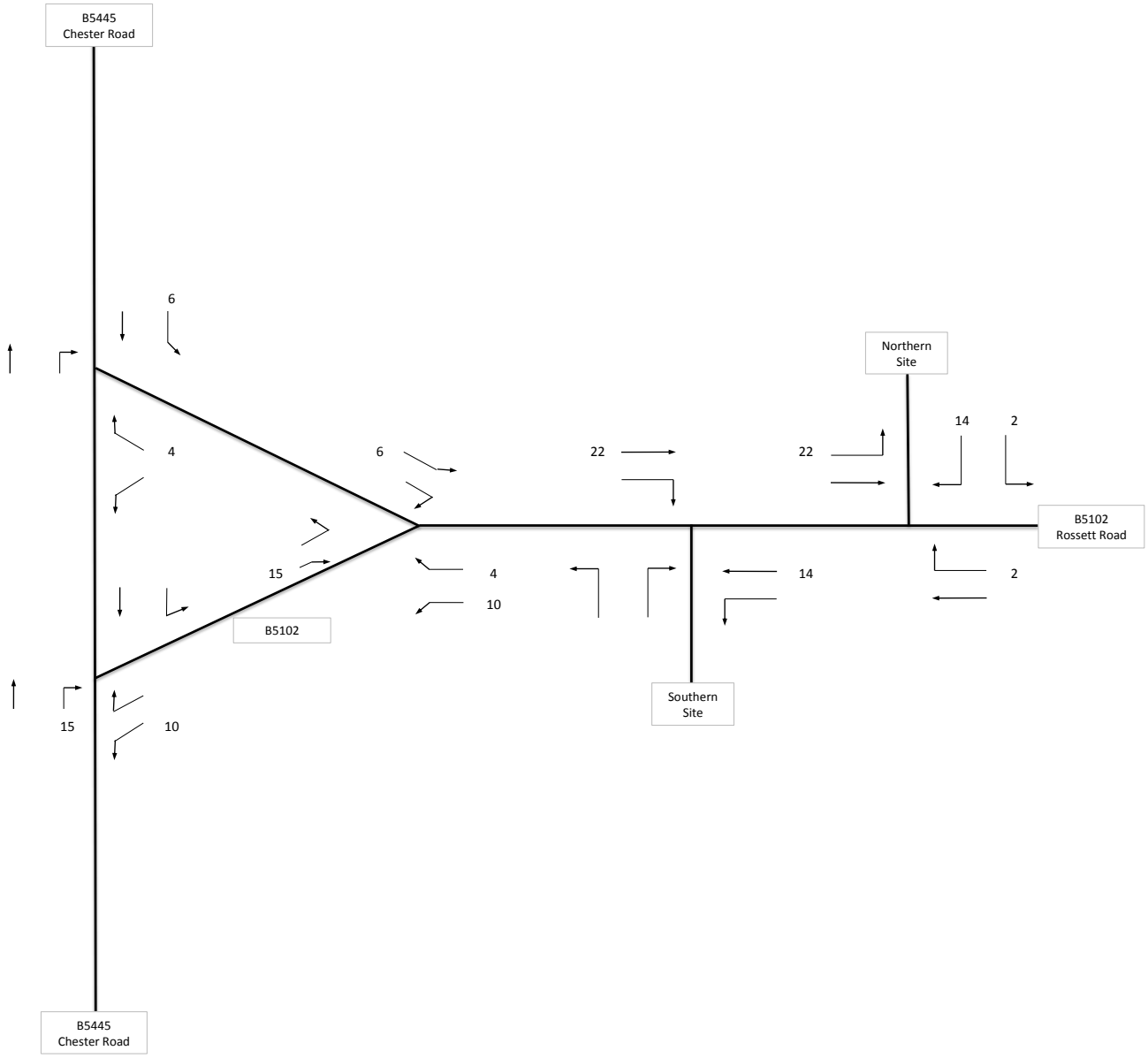


Figure 8a - Development Flows - PM Peak (1745 to 1845)

Northern Site

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IN	25
OUT	16

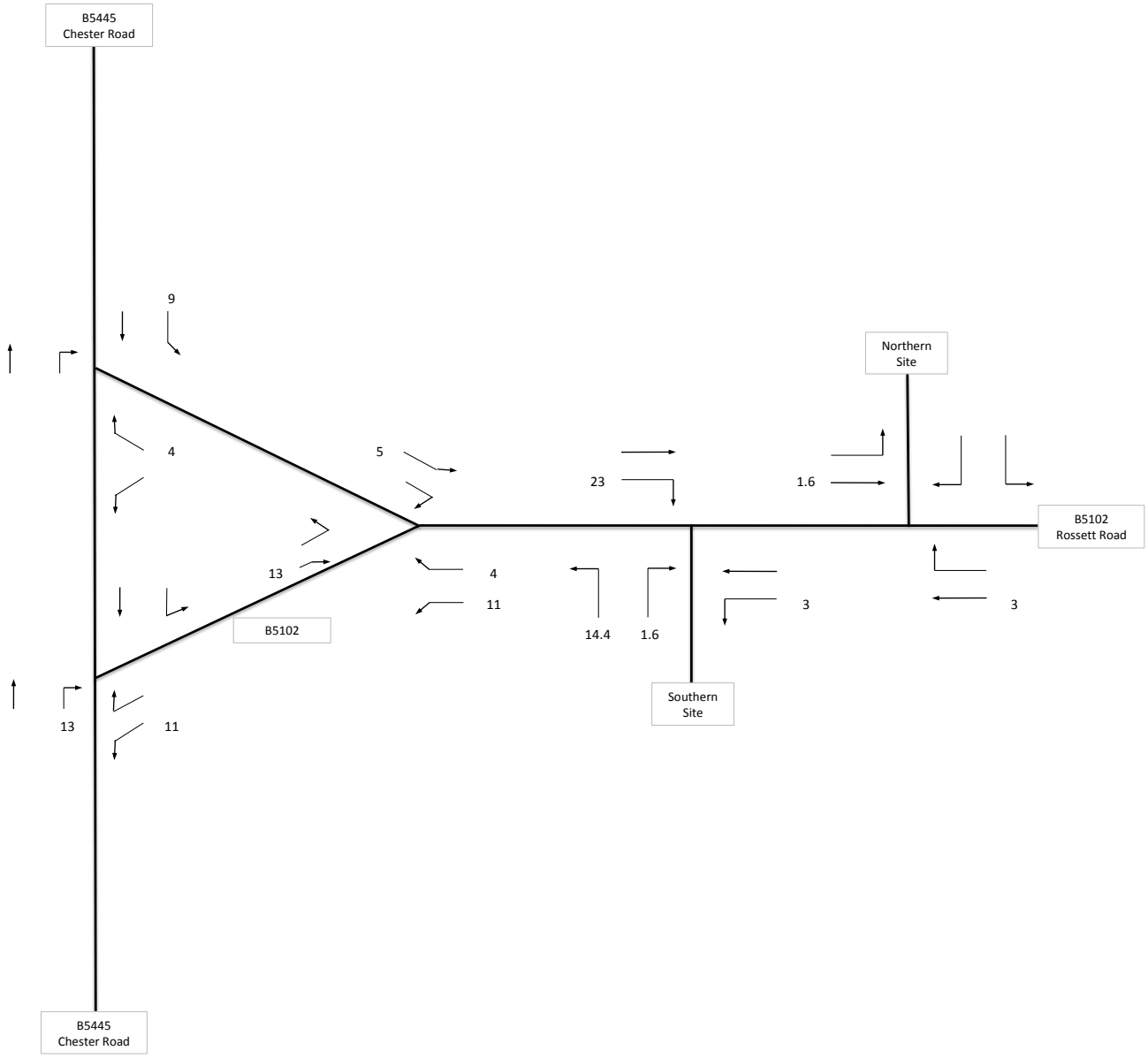


Figure 8b - Development Flows - PM Peak (1745 to 1845)

Southern Site

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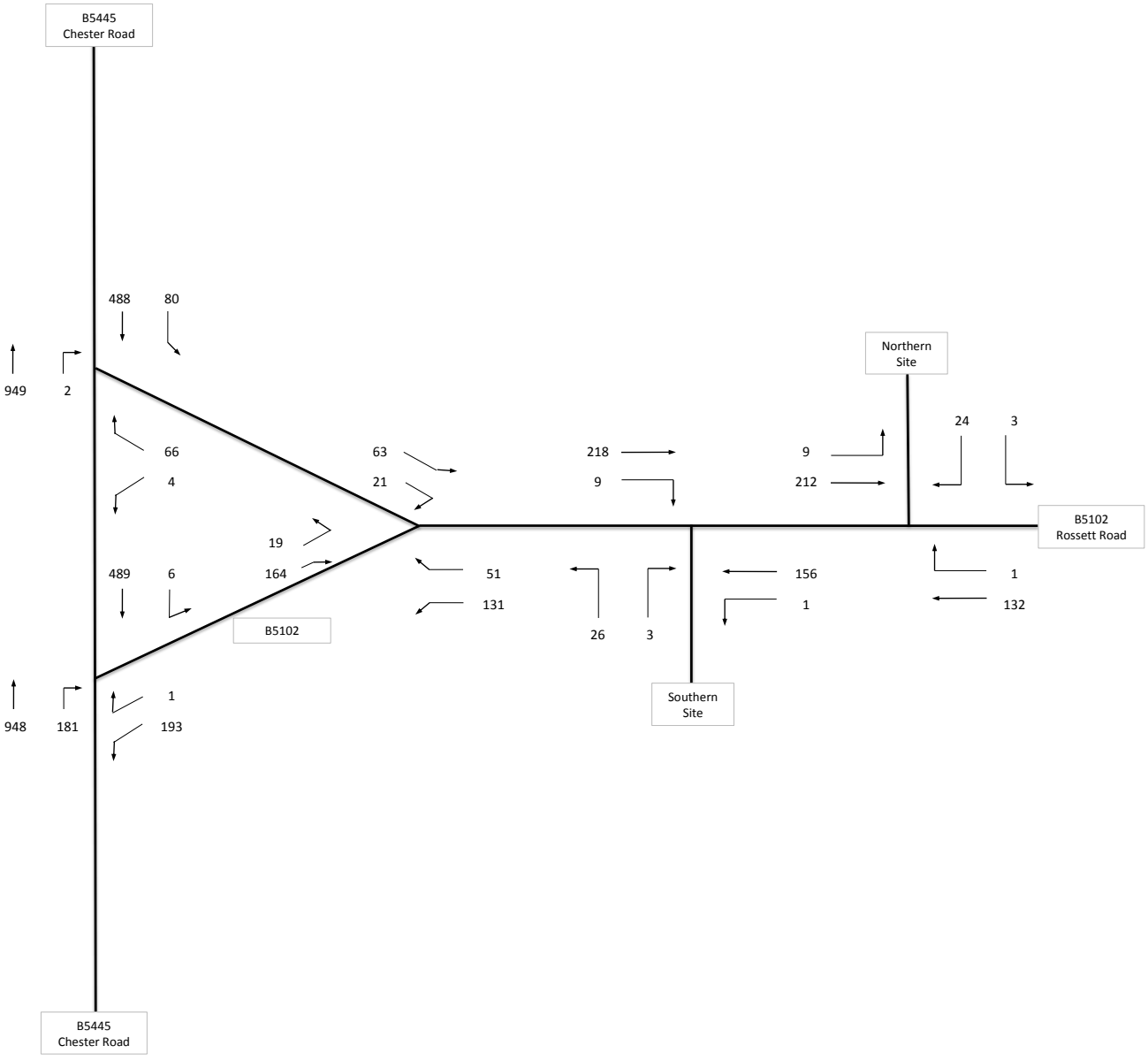
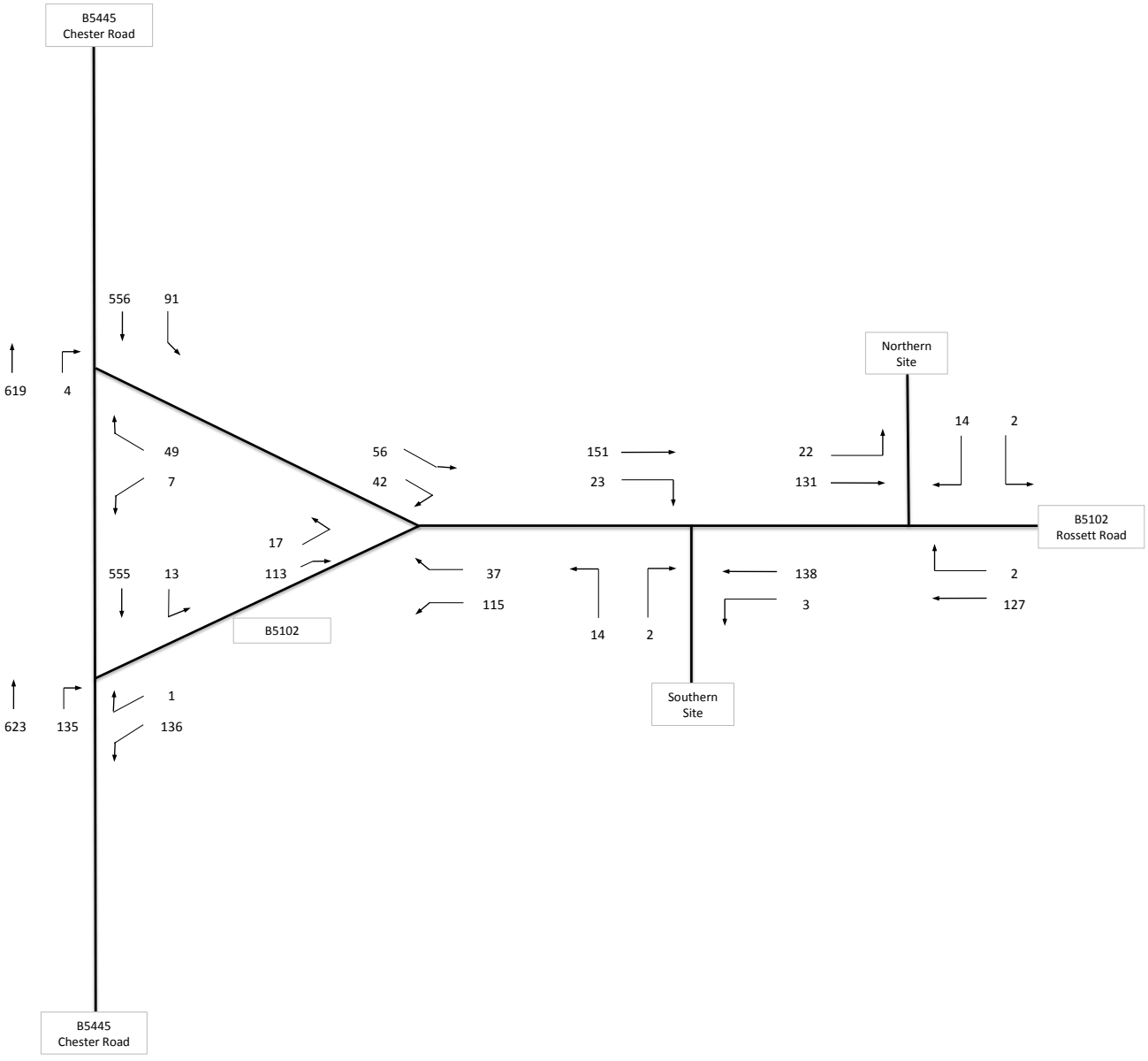


Figure 9 - 2026 Assessment Flows - AM Peak (0800 to 0900)

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Flows in PCUs

Figure 10 - 2026 Assessment Flows - PM Peak (1645 to 1745)

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PLANS



BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT
ROSSET ROAD, ROSSET
SITE LOCATION PLAN

croft
Transport Solutions
Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk
9 Jordan Street,
Manchester
M15 4PY

DRAWN:	DATE:	CHECKED:	DATE:	SCALE:	DRAWING NUMBER:	REVISION:
SM	05.02.16	MR	05.02.16	N.T.S	0807-01	.



NORTH

REF	BEDS	SQ FT	QTY	TOTAL	TYPE
A	2	700	10	7000	2 BED TERRACE
B	2	720	0	0	2 BED TERRACE
C	3	900	11	9900	3 BED TERRACE
D	3	1000	17	17000	3 BED TERRACE
E	3	1024	4	4096	3 BED SEMI
G	4	1350	0	0	4 BED DETACHED
H	4	1350	10	13500	4 BED DETACHED
I	4	1380	3	4140	4 BED DETACHED
J	4	1240	6	7440	4 BED DETACHED
		TOTAL	61	63076	

Units / Net/ Hectare / Acre	31 / 12
Gross area	6.94 acres
POS area	1.17 acres
Undevelopable area	0.4 acres
Net area	5.37 acres

SOUTH

REF	BEDS	SQ FT	QTY	TOTAL	TYPE
A	2	700	1	700	2 BED TERRACE
B	2	720	1	720	2 BED TERRACE
C	3	900	21	18900	3 BED TERRACE
D	3	1000	11	11000	3 BED TERRACE
E	3	1024	9	9216	3 BED SEMI
G	4	1350	2	2700	4 BED DETACHED
H	4	1350	19	25650	4 BED DETACHED
I	4	1380	3	4140	4 BED DETACHED
J	4	1240	4	4960	4 BED DETACHED
		TOTAL	71	77986	

Units / Net/ Hectare / Acre	30 / 11
Gross area	8.41 acres
POS area	1.69 acres
Undevelopable area	0.5 acres
Net area	6.20 acres

Typical Property Sizes.

* NOTE
ALL BUILDINGS ARE UP TO 2.5 STOREY MAX (9.7m GROUND TO RIDGE LEVEL)
DIMENSIONS SHOWN HAVE A DEVIATION OF +/- 3m

REV.	AMENDMENT.	DATE

Parkinson
Urban design & masterplanning
First Floor, 5 Union Court, Liverpool, L2 4SJ
T: 07970 686 302 E: ian@parkinsoninc.co.uk

PROJECT
HOLT ROAD / ROSSETT ROAD, ROSSETT, CLYWD.

CLIENT
BELLIS BROS

DRAWING TITLE
MASTER PLAN (RENDERED)

SCALE	1:500 @A0	REV. G	PROJECT REF ROSSETT
DATE	05.02.17		DRAWING No. Princ 100-37-SMP-01
CHECKED	IP		



NOTES

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. IT IS SUBJECT TO FURTHER DESIGN ANALYSIS, TOPOGRAPHICAL MAPPING & HIGHWAY/THIRD PARTY LAND BOUNDARIES.

DENOTES NEW KERBS

PLAN 3

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

BELLIS BROS LTD

PROJECT:

ROSSETT ROAD, ROSSETT

DRAWING TITLE:

PROPOSED ACCESS JUNCTIONS AND ZEBRA CROSSING ARRANGEMENT

SCALES:

1:1000 @ A1

DRAWN:	CHECKED:	DATE:
SM	MR	JUNE 16

9 Jordan Street,
Manchester,
M15 4PY

Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

croft Transport Solutions

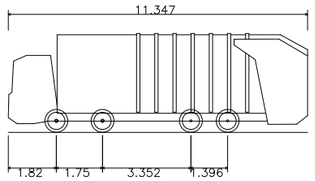
DRAWING NUMBER: 0807-F03

REVISION: D

\\CADWORKSTATION\Shared Storage\projects\0807 Rossett Road, Rossett\CAD\Croft Drawings\0807-F03D.dwg

NOTES

PLAN 4



Large Refuse Vehicle (4 axle)	
Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to Lock Time	6.00s
Wall to Wall Turning Radius	11.330m





REV.	DETAILS	DRAWN	CHECKED	DATE
F	REVISED ON LATEST LAYOUT	SM	MR	JULY 17
E	REVISED ON LATEST LAYOUT	SM	MR	FEB 17
D	REVISED ON LATEST LAYOUT	SM	MR	NOV 16
C	REVISED ON LATEST LAYOUT	SM	MR	JUNE 16
B	REVISED ON LATEST LAYOUT	SM	MR	FEB 16
A	REVISED ON LATEST LAYOUT	SM	PJW	JAN 16

CLIENT:

BELLIS BROS LTD

PROJECT:

ROSSETT ROAD, ROSSETT

DRAWING TITLE:

SWEPT PATH ANALYSIS

SCALES:

1:1250 @ A3

DRAWN:	CHECKED:	DATE:
SM	MR	NOV 16

9 Jordan Street,
Manchester,
M15 4PY

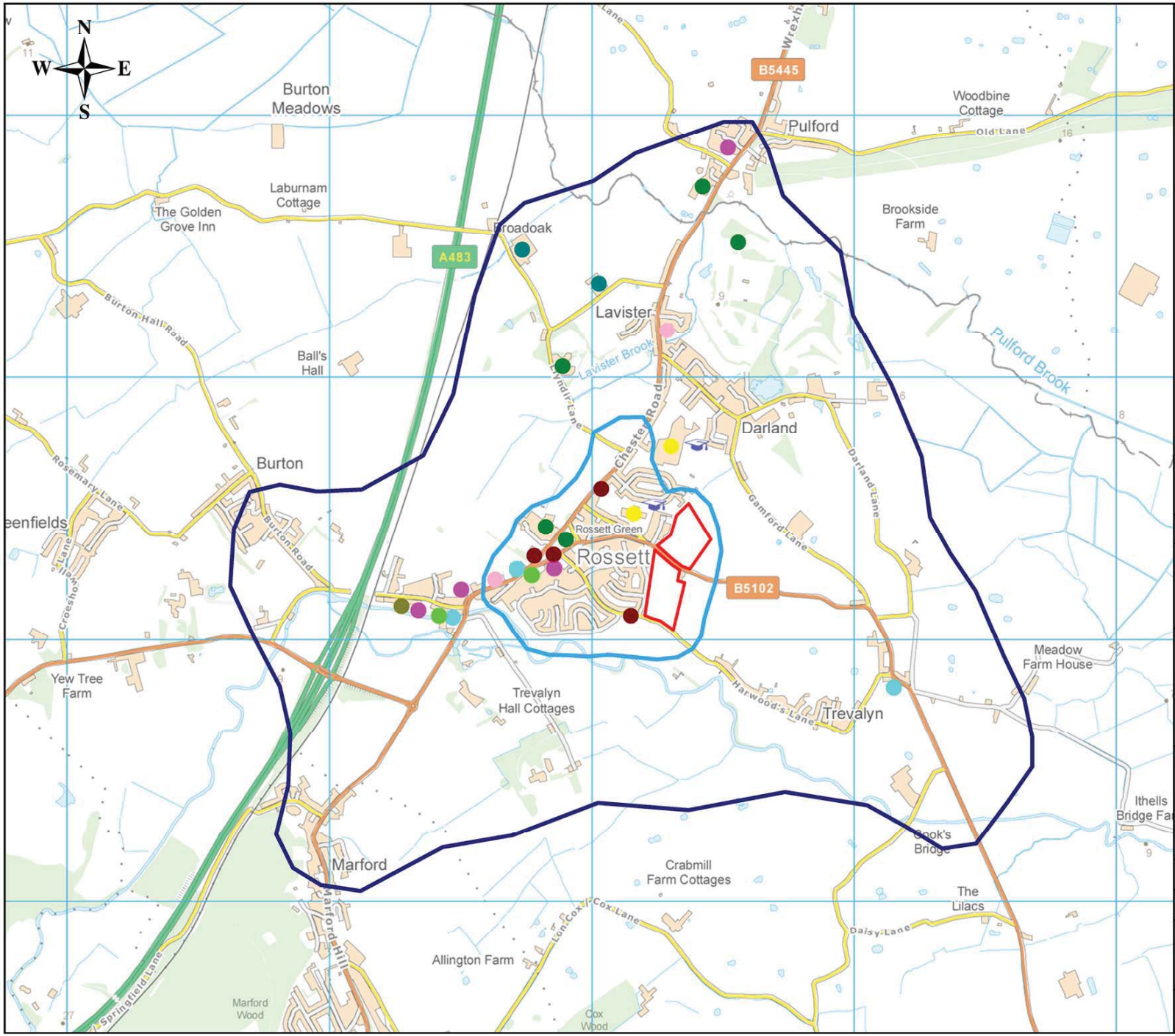
Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

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Transport Solutions

DRAWING NUMBER: 0807-SP01

REVISION: F

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NOTES

PLAN 5

- Site
- 800m Pedestrian Catchment
- 2km Pedestrian Catchment
- Nearest Bus Stops
- Education
- Retail
- Medical/Pharmacy
- Community Facilities
- Business/Employment/Industrial
- Leisure/Sport
- Cafe/Takeaway/Public House
- Dentist

REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:

BELLIS BROS LTD

PROJECT:

PROPOSED RESIDENTIAL DEVELOPMENT
ROSSETT ROAD
ROSSETT

DRAWING TITLE:

800M & 2KM PEDESTRIAN CATCHMENT WITH AMENITIES

SCALE: 1:15000 @ A3

DRAWN:	CHECKED:	DATE:
SM	MR	09.02.16

9 Jordan Street,
Manchester,
M15 4PY

Email: info@croftts.co.uk
Tel: 0161 667 3746
Web: www.croftts.co.uk

croft
Transport Solutions

DRAWING NUMBER: 0807-03

REVISION: .

APPENDICES

APPENDIX 1

Correspondence with WCBC

Marty Rae

From: Sk1#Sdqp hu#P Sk1#Sdqp huC zuh{kdp 1jry1knA
Sent: 3;#Mkqh#534:#43=48
To: P duw|#Jdh
Subject: UH=#Jrvvhww#Jrdg#D#Jrvvhww

Hi Marty

Links behind hedges (both north & south sites) to be 3m wide shared footway / cycleway links.

As discussed the developer will need to contact both schools to ask if they are happy with the proposed footway / cycleway links to their schools.

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 08 June 2017 10:10
To: Phil Palmer
Subject: FW: Rossett Road - Rossett

Hi Phil,

Further to our conversation earlier, and just for your records, please see attached plan which annotates the further amends, we discussed…

I'll get this over to architect now for him to amend the planning layout! ☺!

Marty Rae
Senior Consultant
croft
Transport Solutions
Hill Quays, 9 Jordan Street,
Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *The world's largest rodent was a Venezualan guinea pig the size of a buffalo.*

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 07 June 2017 12:48
To: 'Phil Palmer' <Phil.Palmer@wrexham.gov.uk>
Subject: Rossett Road - Rossett

Hi Phil,

I hope you're okay! ☺! Better weather than yesterday! Apologies for the delay getting this to you… please see attached (we have shown dims where appropriate, to assist)…

I trust the plan now shows all of the proposed footway improvements which will no doubt enhance connectivity and provide safer routes for walking to school etc. Of course these are to complemented by the reduction in speed limit through the village to 20mph which will also help to create a safer, more pleasant walking environment.

We are hoping that these improvements will allow you to update your consultation response accordingly and allow you to provide a positive recommendation from a highways perspective.

If you can confirm the above, I'll get the architect to update the Masterplan and we should be good to go… ☺!

I look forward to hearing from you.

Marty Rae
Senior Consultant
croft
Transport Solutions
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Manchester, M15 4PY
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www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…*In 1949, a flock of starlings perched on the minute hand of the Great Clock of Westminster, slowing it by 4.5 minutes.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 22 May 2017 15:50
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Thanks

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 May 2017 15:50
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Gotcha - thanks Phil! ☺! We'll draw it up and send you back a complete plan that shows everything… with the latest layout, as well!

Marty Rae
Senior Consultant
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www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *The bird with the largest vocabulary was Puck the Budgie, who died in 1998. He knew 1,728 words, the same as a four year old child.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 22 May 2017 15:46
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Hi Marty

Something like this.

Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 19 May 2017 12:00
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Hi Phil,

I hope you're okay – glad it's Friday! ☺! I've marked up the adopted highway plan and the site layout as per our telephone conversation but not sure I've got it right…

Please see attached – I was going to continue the widening all the way behind the garages but there is a small triangle area (coloured in pink on my plan) which is not adopted and is not within our control… is that housing land they said we can use? If so the 3m can continue up past properties 6 to 9…

If you could sketch anything else I've missed on the plan and get it back to me, that'd be great!

Marty Rae
Senior Consultant
croft
Transport Solutions
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Manchester, M15 4PY
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twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week... *The Eurovision Song Contest was first held in Switzerland in 1956 with just seven participating countries. It was the only contest with two songs per country and was won by Lys Assia from Switzerland.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 05 May 2017 10:01
To: Marty Rae <marty@croftts.co.uk>
Subject: RE: Rossett Road - Rossett

Enjoy your weekend too.

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 05 May 2017 09:43
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Okay, that's fine, I'll pass that on and wait to hear back from you with an update from that… we can then see where we are and arrange an further meeting with us, if required…

In the meantime, have a lovely weekend! ☺! Bring on the snooze…

Marty Rae
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Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week…. *The international distress signal, "mayday," has nothing to do with the first of May. It derives from the French venez m'aider, meaning "come help me.".*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 05 May 2017 09:36
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Matthew has arranged an internal meeting for 17/05/2017. You may wish to contact Matthew after this to discuss.

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 05 May 2017 09:19
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Happy Friday! ☺! Hope you're okay! Just wondering if you have got a date yet for your internal meeting?

I'm getting chased by Justin (planning consultant) for an update, so if you could let me know, that'd be great!

Marty Rae
Senior Consultant
croft
Transport Solutions
Hill Quays, 9 Jordan Street,

Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week.... *The international distress signal, "mayday," has nothing to do with the first of May. It derives from the French venez m'aider, meaning "come help me.".*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 24 April 2017 10:13
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Thanks

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 24 April 2017 09:40
To: Phil Palmer
Subject: RE: Rossett Road - Rossett

Hi Phil,

Yes, it was very nice thanks! ☺! Hope you also made the most of it! To be honest, I think we need to put it on hold until I speak to our planning consultant, Justin Paul…

He was cc'd in on Alan's e-mail but has not responded to me – need to see what he says in light of the *'bad'* news…

I'll find out and come back to you asap… ☺!

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Croft Fact of the Week.... *If Emmanuel Macron wins the French Presidential Election he will become the country's youngest President at 39 years of age. The previous youngest was Louis-Napoléon Bonaparte who was 40 when he assumed the Presidency in 1848.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 24 April 2017 09:09
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Had a nice week off thanks. Hope you had a good break as well ?

Are we still having the site meeting at 11:00 this Wednesday as I understand that Matthew Phillips is at a hearing all day weds so presume he cannot attend ??

Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 19 April 2017 08:57
To: Phil Palmer
Subject: FW: Rossett Road - Rossett

Good morning Phil,

I hope you are okay! ☺! I was meant to be on leave this week but have ended up coming into the office today… think you said you were off as well, so hope you had a nice Easter…

Please see e-mail from Alan below, no doubt we can speak on your return…

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Croft Fact of the Week.... *The tallest Easter egg chocolate was made in Italy in 2011. It stood at 10.39 metres and weighed 7,200 kg.*

From: Alan Jenkins [mailto:Alan.Jenkins@wrexham.gov.uk]
Sent: 18 April 2017 12:04
To: Marty Rae; Matthew Phillips
Cc: Justin Paul
Subject: RE: Rossett Road - Rossett

Good morning Marty,

The position of the client dept. has been explained, but to reiterate.

The inclusion of the footpaths to the rear of the flats is not acceptable. These are private paths that serve just the flats.

The client department are not willing for the land between the two blocks of flats to be used to create an access to the existing hammer head and beyond. The proposals would turn the quietest area of the estate into, potentially, one of the busiest with detriment to the existing tenants.

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Have you got any alternative proposals with regard to the use of land owned by the WCBC Housing Dept?

Regards,

Alan

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 11 April 2017 11:56
To: Matthew Phillips
Cc: Alan Jenkins; Justin Paul
Subject: Rossett Road - Rossett

Good afternoon Alan/Mathew,

I hope you are well! ☺! With regard to the above application, I have been liaising with Phil Palmer (in your Highways Department) to discuss the potential to provide new footpath/footway links in the vicinity of the site.

I know Phil has also been speaking to Alan directly, in that regard, as some of the land involved is owned by Wrexham Council's Housing Department.

In order to agree what would be suitable and appropriate in terms of improvements, we feel it may be best to meet up and as Phil suggests below, a site visit may be the most productive.

To that end, please can you both confirm your availability for a site meeting on Wednesday 26th April 2017 at 11.00am?

Should the above date/time, not be convenient, then please could circulate some dates that suit?

I look forward to hearing from you.

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Croft Fact of the Week.... *Gary Player holds the record for the most appearances at The Masters with 52.*

From: Justin Paul [mailto:Justin@j10planning.com]
Sent: 11 April 2017 11:44
To: Marty Rae
Cc: ian@parkinsoninc.co.uk
Subject: RE: Rossett Road - Rossett

That's good with me
J

Justin Paul BA BTP MRTPI
MANAGING PARTNER
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He has suggested I check Alan's and Matthews availability but thought I'd check with you in case you prefer to contact Matthew yourself, once I can confirm if Alan is okay for that date…

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From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 11 April 2017 10:59
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

I am off all next week but should be ok for weds 26/04/2016 @ 11:00. Probably best to meet on site?

Alan's email :- alan.jenkins@wrexham.gov.uk

Matthew Phillips email:- matthew.phillips@wrexham.gov.uk

You may wish to email Alan & Matthew to check their availability.

Regards, Phil

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2016.0.8007 / Virus Database: 4769/14288 - Release Date: 04/11/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

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Mae'r neges e-bost hon ac unrhyw atodiadau wedi eu bwriadu ar gyfer yr unigolyn neu?r sefydliad y?i cyfeirir atynt yn unig. Am yr amodau llawn yngl?n ? chynnwys a defnyddio?r neges e-bost hon, ac unrhyw atodiadau, cyfeiriwch at www.wrecsam.gov.uk/top_navigation/disclaimersw.htm

We welcome correspondence in Welsh. We will respond to any correspondence in Welsh and this will not lead to any delay.

Take a look - you can pay, report, request, have your say and find information online at www.wrexham.gov.uk. Save paper - think before you print!

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Version: 2016.0.8012 / Virus Database: 4769/14345 - Release Date: 04/18/17

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2016.0.8012 / Virus Database: 4769/14366 - Release Date: 04/23/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

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Checked by AVG - www.avg.com
Version: 2016.0.8012 / Virus Database: 4776/14434 - Release Date: 05/05/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

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Version: 2016.0.8013 / Virus Database: 4776/14488 - Release Date: 05/22/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

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Checked by AVG - www.avg.com
Version: 2016.0.8013 / Virus Database: 4776/14542 - Release Date: 06/08/17

Marty Rae

From: Dodq#Mhqnlqv#P Dodq1Mhqnlqv@ zuh{kdp 1jry1knA
Sent: 4;#Dsuo#534:#45=37
To: P duw|#Jdh>#P dwwkhz #Skloolsv
Cc: Mkvwq#Sdxo
Subject: UH=#Jrvvhww#Jrdg#D#Jrvvhww

Good morning Marty,

The position of the client dept. has been explained, but to reiterate.

The inclusion of the footpaths to the rear of the flats is not acceptable. These are private paths that serve just the flats.

The client department are not willing for the land between the two blocks of flats to be used to create an access to the existing hammer head and beyond. The proposals would turn the quietest area of the estate into, potentially, one of the busiest with detriment to the existing tenants.

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Have you got any alternative proposals with regard to the use of land owned by the WCBC Housing Dept?

Regards,

Alan

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 11 April 2017 11:56
To: Matthew Phillips
Cc: Alan Jenkins; Justin Paul
Subject: Rossett Road - Rossett

Good afternoon Alan/Mathew,

I hope you are well! ☺! With regard to the above application, I have been liaising with Phil Palmer (in your Highways Department) to discuss the potential to provide new footpath/footway links in the vicinity of the site.

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To that end, please can you both confirm your availability for a site meeting on Wednesday 26th April 2017 at 11.00am?

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Cc: ian@parkinsoninc.co.uk
Subject: RE: Rossett Road - Rossett

That's good with me
J

Justin Paul BA BTP MRTPI
MANAGING PARTNER
J10 Planning Ltd
1-3 Upper Eastgate Row, Eastgate Row North, Chester, CH1 1LQ
01244 349400 // 07971 446630 // justin@j10planning.com
Company Reg. No. 6000409 VAT Reg. No. 815630835

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Marty Rae

From: Dodq#Mhqnlqv#P Dodq1Mhqnlqv@ zuh{kdp 1jry1knA
Sent: 4;#Dsuo#534:#45=37
To: P duw|#Jdh>#P dwwkhz #Skloolsv
Cc: Mkvwq#Sdxo
Subject: UH=#Jrvvhww#Jrdg#D#Jrvvhww

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Senior Consultant
Transport Solutions
Hill Quays, 9 Jordan Street,
Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk

Croft Fact of the Week.... *Gary Player holds the record for the most appearances at The Masters with 52.*

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 11 April 2017 10:59
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

I am off all next week but should be ok for weds 26/04/2016 @ 11:00. Probably best to meet on site?

Alan's email :- alan.jenkins@wrexham.gov.uk

Matthew Phillips email:- matthew.phillips@wrexham.gov.uk

You may wish to email Alan & Matthew to check their availability.

Regards, Phil

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2016.0.8007 / Virus Database: 4769/14288 - Release Date: 04/11/17

Rydym yn croesawu gohebiaeth yn Gymraeg. Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

Ewch i weld - mi fedrwch chi dalu, rhoi gwybod, gwneud cais, dweud eich dweud, a dod o hyd i wybodaeth ar-lein yn www.wrecsam.gov.uk. Arbedwch bapur - meddyliwch cyn argraffu!

Mae'r neges e-bost hon ac unrhyw atodiadau wedi eu bwriadu ar gyfer yr unigolyn neu?r sefydliad y?i cyfeirir atynt yn unig. Am yr amodau llawn yngl?n ? chynnwys a defnyddio?r neges e-bost hon, ac unrhyw atodiadau, cyfeiriwch at www.wrecsam.gov.uk/top_navigation/disclaimersw.htm

We welcome correspondence in Welsh. We will respond to any correspondence in Welsh and this will not lead to any delay.

Take a look - you can pay, report, request, have your say and find information online at www.wrexham.gov.uk. Save paper - think before you print!

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Version: 2016.0.8012 / Virus Database: 4769/14345 - Release Date: 04/18/17

Pennaeth yr Amgylchedd a Chynllunio/Head of Environment and Planning
Lawrence Isted

De Ffordd yr Abaty, Ystad Ddiwydiannol Wrecsam, Wrecsam LL13 9PW
Abbey Road South, Wrexham Industrial Estate, Wrexham LL13 9PW
Ffôn/Tel: 01978 298989 BT Text Phone: 01978 292067
www.wrecsam.gov.uk www.wrexham.gov.uk

wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

J10 Planning Ltd
1-3 Upper Eastgate Row
Eastgate Row North
Chester CH1 1LQ

Eich Cyf/Your Ref
Ein Cyf/Our Ref
Dyddiad/Date
Gofynner am/Ask for
Rhif Union/Direct Dial
E-bost/E-mail

PRE/2017/007
15th March 2017
Mr P Palmer
01978 729688
phil.palmer@wrexham.gov.uk

FAO: Justin Paul

Dear Justin

Land off Rossett Road, Wrexham.
Proposed Residential Development – DMO Notice

I refer to your email / DMO Consultation dated 08/02/2017 in respect of the above. My comments on the submittedTransport Assessment and associated plans are as follows:-

Planning Policy Wales – Technical Advice Note 18 Transport includes the promotion of housing developments at locations with good access by walking and cycling to primary and secondary schools and public transport stops, and by all modes to employment, further and higher education, services, shopping and leisure.

The submitted draft Outline Planning Application form indicates all matters reserved except for access. I have therefore limited my comments accordingly:-

Comments on Transport Assessment – Dated February 2017

4.2 Vehicular Access

- The proposed development sites are located on the B5102 Holt Road which is a classified road subject to a 40mph speed limit. However, I understand that the speed limit is currently being reviewed and may well be reduced to 30mph in the light of the proposed residential development.

  I understand that the existing 30mph speed limit heading into Rossett just west of the development site(s) is in the process of being reduced to 20mph all the way through to the junction with the B5445 Chester Road. This will provide significant benefit in terms of highway / pedestrian safety given the limited footway provision along this section of Holt Road towards the village centre.

Rydym yn croesawu gohebiaeth yn Gymraeg.
Byddwn yn ymateb i unrhyw ohebiaeth yn Gymraeg ac ni fydd hyn yn arwain at unrhyw oedi.

We welcome correspondence in Welsh.
We will respond to any correspondence in Welsh and this will not lead to any delay.

Assuming a revised speed limit of 30mph along the frontage of the development site, any proposed access would need to provide visibility splays of 2.4 x 56m in both directions measured to the nearside edge of the adjoining highway in accordance with Manual for Streets. It would appear possible to provide the required visibility splays from both proposed accesses serving the north and south development sites.

- The proposed accesses are both 5.5m wide with 10m kerb radii which is considered acceptable.

- Access to the site off Chester Road via Holt Road and The Green can at times be impeded by on-street parking alongside Rossett Park and two way flows are not always possible. It may be considered beneficial for TROs / junction protection to be introduced if the development is to be supported. I would suggest that the applicant liaises with our Traffic Section – contact Darren Green on Tel: 01978 729643 to discuss possible measures.

4.3 Servicing

- More detailed swept path details of an 11.2m long refuse vehicle will be required showing access / egress of vehicle negotiating site access points, routes through site, turning within cul de sacs and service arrangements for all private shared driveways. Manual for Streets recommends that refuse vehicles should not have to reverse more than 12m along estate roads.

4.4 Pedestrian and Cycle Access

- The main bus stop serving Wrexham and Chester are located on the B5445 Chester Road. It is highly likely that anyone wishing to access these bus stops on foot from the proposed development sites (north and south) will walk along the B5102 Holt Road or Chapel Lane.

  Both Holt Road and Chapel Lane have limited footway provision leading to Chester Road and some sections have no footway provision which is a concern in highway / pedestrian safety terms. During a site visit on 07/03/2016 between 08:20 – 09:00, a significant number of schoolchildren on their way to Darland School were observed walking from the Rossett Shops along Holt Road in order to cut through the footpath running through St. Peters School. Vehicles including cars and HGVs travelling along this section of Holt Road had to slow down as school children walked along the carriageway due to the lack of adequate footway provision.

  I therefore raise serious concerns regarding the proposed increase in vehicle & pedestrian movements likely to be generated by the development site given the significant lack of suitable pedestrian provision / footways along both Holt Road and Chapel Lane. It would appear difficult for the developer to carry out any footway / pedestrian improvements along this section of Holt Road and Chapel Lane due to limited carriageway and verge widths.

  There is an additional bus service which provides access to Wrexham Town Centre but this currently only operates 3 times per day on a Wednesday, Friday & Saturday.

  I would recommend that the developer provides an additional bus stop / layby, raised kerb and hardstanding along the site frontage along Holt Road to improve / promote this service. This detail has been indicated on Drg. No. 0807-F03 Rev B.

Typically, those wishing to visit Wrexham or Chester by bus are likely to use the service running every 10 -12 minutes along Chester Road.

Pedestrian facilities at the Chapel Lane / Holt Road junction and vicinity of the site are generally poor and require improvement particularly given the location of St. Peters Primary School.

The existing sub-standard crossing facilities at the junction of Chapel Lane / Holt Road would benefit from being removed and replaced with alternative facilities.

Previous preliminary discussions have included the requirement for a new zebra crossing located immediately east of the Chapel Lane / Holt Road junction. This should ideally be located in a 20mph zone and provided with a 2.0m footway link to the southern development site. Adequate visibility must be provided to such a feature. The Submitted layout plan Drg. No. 0807-F03 Rev B indicates the provision of a zebra crossing and improvements to the existing footways in this location. I would recommend that further discussions are held in respect of specific footway / cycleway improvements in this location and leading to the St Peters School.

There would appear to be a number of proposed footway / cycleway links serving the southern site off both Trevalyn Way and Harwoods Lane. A minimum 3.0m wide footway / cycleway link should be provided off both Harwoods Lane and Trevalyn Way.. These access points in conjunction with a new zebra crossing on Holt Road would significantly improve accessibility to nearby shops, bus stops etc. located on Chester Road. Pedestrians could then utilise existing footways through Moss Green and Trevalyn Way.

It is unclear from the submitted layout plan what is proposed in terms of footway / cycleway links for the northern site. There is an existing relatively narrow footway link running to the east of nos. 1 – 9 Trevalyn Hall View. It would seem beneficial to improve this pedestrian route both in terms of widening (ie/ in the form of a 3m wide shared footway / cycleway) and lighting to serve children wishing to access Darland School to the north. There would appear to be scope to incorporate these improvements as part of the development site and extend a possible 3m wide footway / cycleway link to the northern end of the site and provide access through the public open space between nos. 3 – 10 & 11 – 18 Darland View. The submitted layout plan Drg. No. 100-37-SMP-01 Rev G only appears to indicate a 2m wide footways which is considered inadequate.

I understand that it is proposed to provide 2.0m footways along both site frontages along Holt Road leading back into the village. I would recommend that both sites provide a 3m wide shared cycleway/ footway behind the hedgerows in lieu of the proposed 2m footways.

Footways should also be extended up to the public footpaths (PROW nos. 20 & 21 Allington) accessed off Holt Road and the southern end of PROW no. 21 – Allington off Harwoods Lane.

In terms of any required improvements to the existing public footpaths adjoining the site, I would recommend that you contact our Public Rights of Way Section – Sean Hanratty on Tel: 01978 729761.

Improvements to existing footways leading from the development site (northerly) towards St Peters Primary School will also need to be considered / provided. A continuous 3m wide shared cycleway / footway link shall be provided from Darland View to a suitable point south of the proposed additional parking area at the southern end of Trevalyn Hall View. This has not been shown on the submitted layout plan Drg. No. 100-37-SMP-01 Rev G.

Section 5 Accessibility by Non Car Modes

- Accessibility on Foot

  Whilst the existing pedestrian / footway provision in this location is not ideal, the provision of the proposed new footway / cycleway links, upgrading of existing links, provision of new zebra crossing and reduction in prevailing speed limit would be considered a significant improvement in highway safety terms.

Section 6 Traffic Impact Analysis

- Clause 6.4.1 indicates a future year traffic assessment of 5 yrs (2021). I would recommend that a future year traffic assessment of 10 yrs (2026) is adopted for the proposed development.

Section 7 Accident Analysis

- The submitted data indicates that are no significant reported traffic accidents / incidents in the vicinity of the development site.

TRICS Output for Residential Use

- I understand that the submitted TA includes a 2026 assessment of future traffic growth and has been re-run on the basis of a 90 / 10 split towards the village which is considered acceptable. However, The PICADY data included in Section 6 & Appendix 7 only appears to refer to a 2021 assessment.

-

  Rossett is a moderate sized village for which it would seem more appropriate to use data from sites classed as "edge of town" which have a semi -rural setting. Any data submitted in respect of this site should use this parameter.I understand that the revised TRICS data has been based on "edge of town Sites" which is considered acceptable. However, the submitted data still appears to refer to some suburban sites.

  The total daily trip rate of 4.902 is considered to be on the low side for such a development site. The survey data only appears to include weekdays and not weekends. Weekends would typically involve increased vehicle movements.

  I would recommend that revised TRICS data is considered / submitted which takes account of the above issues.

You are advised that the above comments are those of an officer of the council and do not commit the Council in any way with regard to the determination of any formal planning application that may be submitted. You are also advised that the above comments take account of policies and guidance adopted by the Council at the present time and which remain open to continuous review.

Yours faithfully



Service Manager Environment

Pennaeth yr Amgylchedd a Chynllunio/Head of Environment and Planning
Lawrence Isted

De Ffordd yr Abaty, Ystad Ddiwydiannol Wrecsam, Wrecsam LL13 9PW
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wrexham
COUNTY BOROUGH COUNCIL
CYNGOR BWRDEISTREF SIROL
wrecsam

J10 Planning Ltd
1-3 Upper Eastgate Row
Eastgate Row North
Chester CH1 1LQ

Eich Cyf/Your Ref	
Ein Cyf/Our Ref	PRE/2017/007
Dyddiad/Date	13th February 2017
Gofynner am/Ask for	Mr P Palmer
Rhif Union/Direct Dial	01978 729688
E-bost/E-mail	phil.palmer@wrexham.gov.uk

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Yours faithfully



Service Manager Environment

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 25 October 2016 14:54
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I have finally had a response to your enquiry.
Our Housing Department officers are open to path improvement being undertaken on the Council's residential estate resulting from a future development of your clients' neighbouring land.
The vehicular "drop off/pick up" area at the entrance to the estate would need more detailed consideration in due course, but for now, nothing is being ruled out.
I hope that the above enables you to progress your enquiries and develop proposed layout plans etc.

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 10 August 2016 16:54
To: Marty Rae
Subject: RE: Rossett Road - Rossett

If you wish to speak to Denise Garland directly she is contactable on 01978 – 297214.
She did however speak to me after receiving your e-mail, and we are now liaising with our Housing officers on the matter, given that they have management control of the pieces of land in question.
We will be in contact with you as soon as we get their initial responses, hopefully with their support to progress negotiations.
Thanks,

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 26 July 2016 15:43
To: Marty Rae
Subject: RE: Rossett Road - Rossett

To progress discussions I would recommend that you contact Mrs Denise Garland, Strategic Assets Lead, Housing and Economy Department, Wrexham County Borough Council, Crown Buildings, 31 Chester Street, Wrexham, LL13 8BG. denise.garland@wrexham.gov.uk
Once a deal is provisionally reached to carry out work to the affected areas of Council owned land, she can ensure that all necessary approvals within the Authority are sought. I have already notified her that you will be in contact on these matters.
Thank you,

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 July 2016 12:04
To: 'David James'
Subject: RE: Rossett Road - Rossett

Hi David,

Many thanks for coming back so quickly, that's great! ☺!

During discussions with the highways officer (Phil Palmer) it was requested that we improve some of the existing footpaths to increase them to 3 metres - this includes widening the path that runs all the way along the site boundary and the link to Darland High School located to the north (no.4).

What would we need to do to get permission to undertake these works? The footpaths that are required to be widened to 3m are identified on the attached plan.

Marty Rae

From: David James <David.James@wrexham.gov.uk>
Sent: 01 February 2017 12:17
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I've discussed this proposal with a colleague responsible for the estate, and am able to confirm that the Council would be willing to dedicate the additional improved footway land to be part of the adopted highway.

Thanks,

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 01 February 2017 11:03
To: David James
Cc: Denise Garland
Subject: RE: Rossett Road - Rossett

Good morning David,

I hope you are well! ☺! I spoke to Phil Palmer (Highways Department) yesterday with regards to the footway improvements we will be providing as part of our development…

He suggested that in addition to my Report confirming that your Housing Department has agreed that the works could be undertaken on land they own, would you also be able to confirm that they would be happy to dedicate them over to highway, so they can be maintained…?

It only need to be a one liner but if you could get it over to me today, that'd be great as I am just finalising my report ready for submission…

Marty Rae
Senior Consultant
croft
Transport Solutions
Hill Quays, 9 Jordan Street,
Manchester, M15 4PY
t 0161 667 3746
www.croftts.co.uk
twitter @croft_ts
Registered Company Number 7373729

Croft Fact of the Week...*A Hummingbird weighs less than a penny.*

From: David James [mailto:David.James@wrexham.gov.uk]
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Subject: RE: Rossett Road - Rossett

I have finally had a response to your enquiry.
Our Housing Department officers are open to path improvement being undertaken on the Council's residential estate resulting from a future development of your clients' neighbouring land.

We are also proposing a small car parking area for school pick up/drop offs (13 spaces) in the area marked no.1, so again can you advise on the process we would need to go through to get permission to use this land?

I look forward to hearing from you.

Senior Consultant

croft
Transport Solutions

From: David James [mailto:David.James@wrexham.gov.uk]
Sent: 21 July 2016 17:01
To: Marty Rae
Subject: RE: Rossett Road - Rossett

I've checked your annotated plans against our land ownership records.
I am able to confirm that the areas numbered 1 to 4 are all owned by Wrexham County Borough Council, and fall under the management control of our Housing Department. I can also confirm that 12 Trevalyn Hall View is in private ownership.
Let me know if I can be of any other assistance.
Thanks,

From: Sean Hanratty [mailto:Sean.Hanratty@wrexham.gov.uk]
Sent: 21 July 2016 15:24
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Thanks for your e-mail. Looking at your scheme it would appear that some of the issues highlighted may involve Wrexham Council land. I would therefore contact David James (david.james@wrexham.gov.uk) in our Asset and Economic Development section to ascertain Council landownership. If you have any questions regarding the public rights of way adjacent to the proposal, please let me know.

Regards

E-mail from highways officer confirming trip rates are acceptable

From: Phil Palmer [mailto:Phil.Palmer@wrexham.gov.uk]
Sent: 25 April 2016 09:09
To: Marty Rae
Subject: RE: Rossett Road - Rossett

Hi Marty

Revised TRICS data

Figures appear acceptable

Regards, Phil

From: Marty Rae [mailto:marty@croftts.co.uk]
Sent: 22 April 2016 15:51
To: Phil Palmer
Subject: Rossett Road - Rossett

Hi Phil,

Following our discussions at the meeting, would you be able to send me a copy of the adopted highway plan, so we can look at the wider off-site pedestrian improvements?

Would you also be able to send me the contact details for the traffic team working on the reduction in speed limit/traffic calming along Rossett Road and a plan of the proposed scheme, if there is one?

I will revise the TA accordingly as per your comments, including a 2026 assessment and re-run the assessments on the basis of a 90/10 split towards the village, for robustness.

I have re-visited the trip rates based on the following parameters (output attached);

- No great London or Eire sites;
- Selected 5 to 200 units (smaller sites tend to generate more trips);
- All edge of town sites;
- No sites with Travel Plans; and
- No bungalows.

For ease, I have summarised them along with the original ones…

Trip Rate	AM		PM	
	Arr	Dep	Arr	Dep
Original Trip Rates	0.15	0.41	0.35	0.22
Revised Trip Rates	0.15	0.44	0.43	0.24

If you could come back to let me know if you think they are acceptable, that'd be great…

In the meantime, have a lovely weekend and I look forward to hearing from you! ☺!

Senior Consultant
croft
Transport Solutions

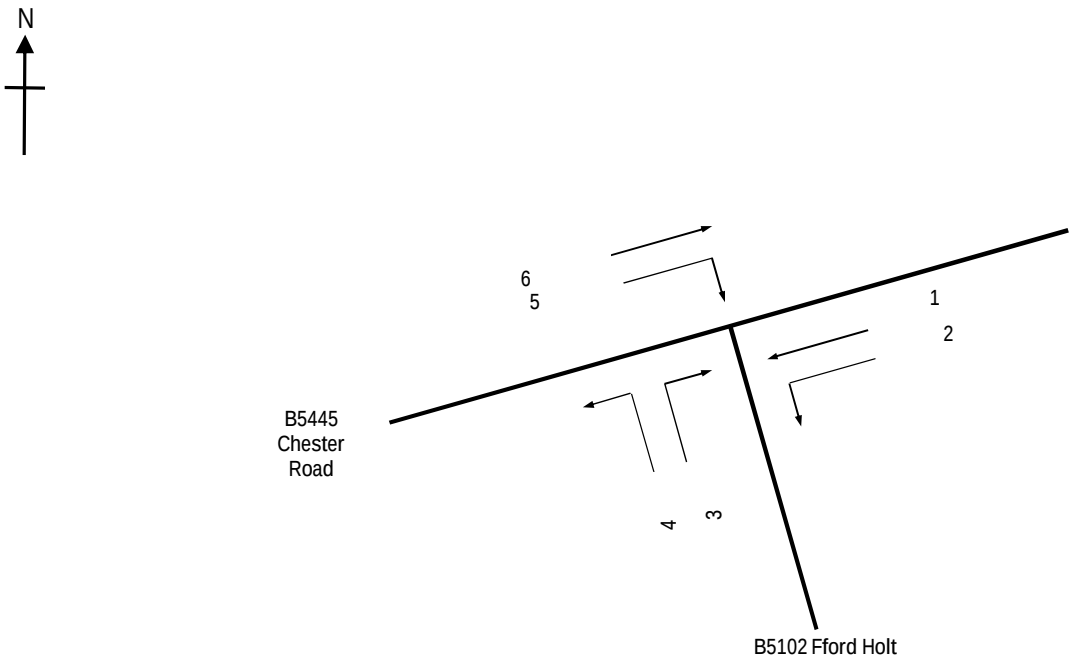
APPENDIX 2

Traffic Survey Data

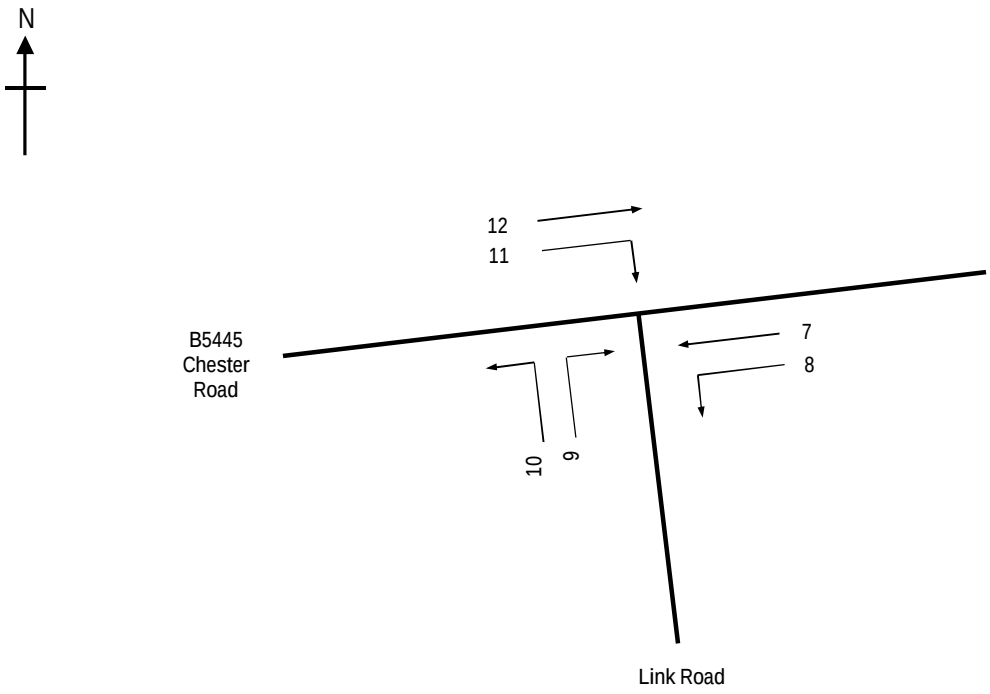
SURVEY CONTROL

Client:	Croft Transport Solutions
Client Contact:	Phil Wooliscroft
Survey Location:	Rossett
Date(s) of Survey:	Thursday 18 June 2015
Notes:	
On Site Supervisor:	David Cheng
Data Checking:	Richard Adams
Survey Reference:	2015.091 Rossett
Status:	Final
Date of Issue:	22 June 2015

JUNCTION 1



JUNCTION 2



DRAWING TITLE

TRAFFIC MOVEMENT REFERENCE

JOB TITLE

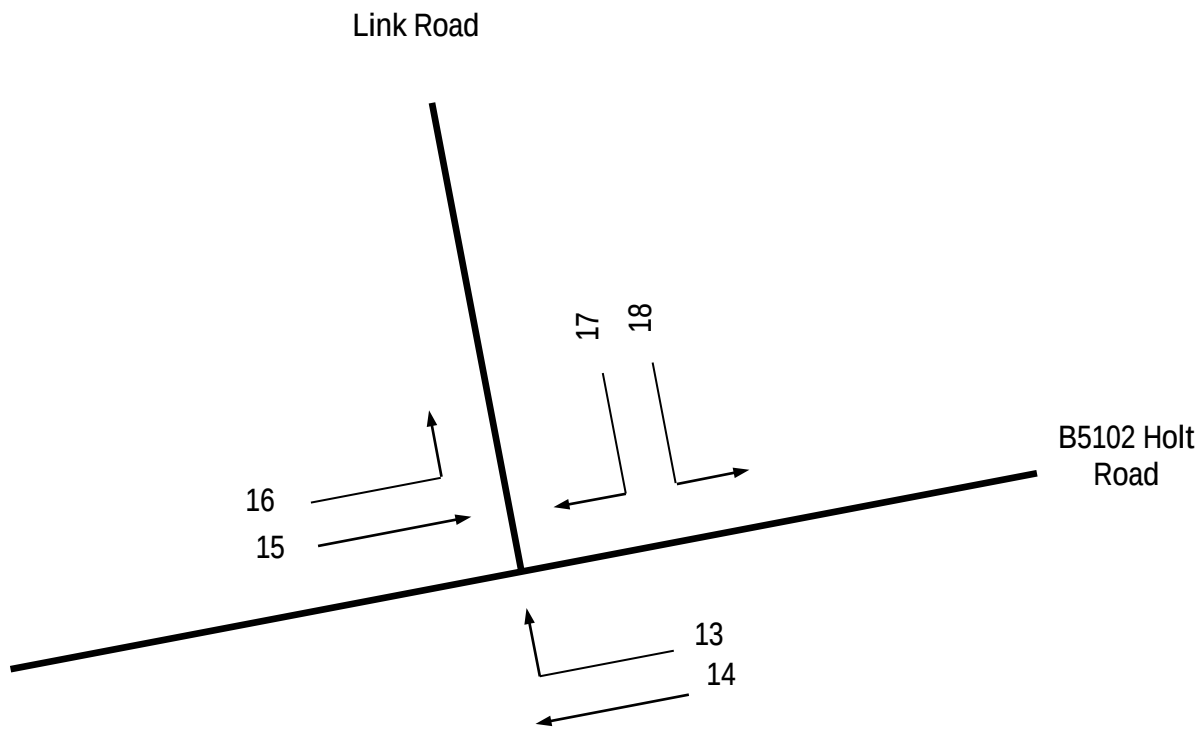
2015.091 ROSSETT

DRAWN BY	DATE	SCALE	REF
RA	JUN 2015	NTS	FIGURE 1

signal surveys
Traffic Counts and Car Park Surveys
Parkway House, Palatine Road, Northenden, Manchester, M22 4DB
Tel 0161 998 4226 Fax 0161 998 1189

JUNCTION 3

N



N

DRAWING TITLE: TRAFFIC MOVEMENT REFERENCE			
JOB TITLE: 2015.091 ROSSETT			
DRAWN BY: RA	DATE: JUN 2015	SCALE: NTS	REF: FIGURE 2

signal surveys
Traffic Counts and Car Park Surveys
Parkway House, Palatine Road, Northenden, Manchester, M22 4DB
Tel 0161 998 4226 Fax 0161 998 1189

Time Beginning	Chester Road/Holt Road - Thursday 18 June 2015											
	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	33	4	1	0	1	0	24	1	19	0	235	5
0745	56	5	0	0	1	0	27	0	21	0	233	10
0800	84	4	1	0	1	0	27	2	31	2	235	5
0815	88	3	1	0	0	0	35	1	23	0	211	8
0830	116	4	3	0	0	0	34	1	36	1	161	4
0845	111	9	0	0	0	0	36	0	52	2	188	11
0900	73	4	1	0	0	0	22	2	20	2	132	8
0915	45	5	3	0	1	0	19	1	25	2	121	11

Time Beginning	Chester Road/Holt Road - Thursday 18 June 2015											
	1		2		3		4		5		6	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	90	2	2	0	2	0	26	0	19	0	140	2
1645	98	3	4	1	0	0	37	0	27	0	139	4
1700	126	1	1	0	1	0	22	0	24	0	124	9
1715	126	2	3	0	0	0	21	0	19	0	142	4
1730	128	4	2	0	0	0	22	1	26	0	116	2
1745	104	1	3	0	0	0	23	0	30	0	114	3
1800	73	3	2	0	0	0	18	0	26	0	105	3
1815	50	2	2	0	0	0	30	1	25	0	81	2

Time Beginning	Chester Road/Link Road - Thursday 18 June 2015											
	7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	30	3	6	0	22	3	4	1	0	1	237	4
0745	53	5	4	1	19	0	1	0	0	1	233	8
0800	81	4	14	2	10	1	0	0	0	0	239	4
0815	90	4	9	2	13	1	0	0	0	0	211	7
0830	115	4	12	0	9	0	2	0	1	0	161	3
0845	110	9	19	2	11	0	2	0	1	0	189	12
0900	71	3	9	0	6	0	1	0	1	0	129	12
0915	48	6	3	0	10	0	0	0	0	0	118	10

Time Beginning	Chester Road/Link Road - Thursday 18 June 2015											
	7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	89	2	11	1	10	1	0	0	0	0	140	2
1645	102	4	14	0	5	0	2	0	1	0	138	4
1700	126	1	16	0	9	0	1	0	1	0	127	9
1715	126	2	15	0	10	0	3	0	0	0	137	5
1730	123	4	23	0	13	0	0	0	2	0	114	2
1745	102	2	12	0	11	0	3	0	0	0	116	3
1800	76	2	12	0	8	0	1	0	1	0	99	3
1815	51	2	14	0	6	1	1	0	1	1	85	0

Time Beginning	Holt Road/Link Road - Thursday 18 June 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
0730	4	1	10	0	14	0	22	3	1	1	6	0
0745	6	0	8	0	22	0	13	0	1	1	3	1
0800	6	1	15	1	25	1	5	0	5	1	6	2
0815	10	1	17	0	22	1	2	0	2	1	7	2
0830	8	0	21	1	38	1	3	0	4	0	10	0
0845	6	0	27	0	46	0	7	0	2	1	18	1
0900	5	0	15	1	21	1	1	0	2	0	8	0
0915	5	0	12	0	20	2	5	0	3	0	1	0

Time Beginning	Holt Road/Link Road - Thursday 18 June 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1630	7	0	21	1	14	0	4	1	5	0	4	1
1645	4	0	25	0	23	1	4	0	7	0	6	0
1700	5	0	19	0	16	0	5	0	8	0	10	2
1715	11	0	21	0	17	0	3	0	13	0	7	0
1730	7	0	20	0	18	0	3	0	10	0	13	0
1745	7	0	17	0	12	0	6	0	5	0	5	0
1800	5	0	16	0	11	0	4	0	7	0	3	0
1815	4	1	17	0	11	0	3	0	6	1	10	0

APPENDIX 3

TRICS Output for Residential Use

Calculation Reference: AUDIT-851401-150818-0832

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
	WS	WEST SUSSEX	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	2 days
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
10	WALES		
	CF	CARDIFF	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	FI	FIFE	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: 108 to 432 (units:)
Range Selected by User: 100 to 800 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 11/12/14

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

Selected survey days:

Monday	4 days
Tuesday	5 days
Wednesday	1 days
Thursday	3 days
Friday	2 days

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

Selected survey types:

Manual count	15 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:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	6
Edge of Town	8

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	12
No Sub Category	3

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	15 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	1 days
10,001 to 15,000	3 days
15,001 to 20,000	6 days
20,001 to 25,000	3 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	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
100,001 to 125,000	5 days
125,001 to 250,000	3 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	4 days
1.1 to 1.5	11 days

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

Travel Plan:

Yes	1 days
No	14 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 CF-03-A-02 MIXED HOUSES CARDIFF
DROPE ROAD

CARDIFF
Edge of Town
Residential Zone
Total Number of dwellings: 196
Survey date: FRIDAY 05/10/07 Survey Type: MANUAL

2 CH-03-A-02 HOUSES/FLATS CHESHIRE
SYDNEY ROAD

CREWE
Edge of Town
Residential Zone
Total Number of dwellings: 174
Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 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

4 EX-03-A-01 SEMI-DET. ESSEX
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

5 FA-03-A-02 MIXED HOUSES FALKIRK
ROSEBANK AVENUE & SPRINGFIELD DRIVE

FALKIRK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 161
Survey date: WEDNESDAY 29/05/13 Survey Type: MANUAL

6 FI-03-A-03 MIXED HOUSES FIFE
WOODMILL ROAD

DUNFERMLINE
Edge of Town
Residential Zone
Total Number of dwellings: 155
Survey date: MONDAY 30/04/07 Survey Type: MANUAL

7 LN-03-A-01 MIXED HOUSES LINCOLNSHIRE
BRANT ROAD
BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings: 150
Survey date: TUESDAY 15/05/07 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 LN-03-A-02 MIXED HOUSES LINCOLNSHIRE
HYKEHAM ROAD

LINCOLN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 186
Survey date: MONDAY 14/05/07 Survey Type: MANUAL

9 NE-03-A-02 SEMI DETACHED & DETACHED NORTH EAST LINCOLNSHIRE
HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432
Survey date: MONDAY 12/05/14 Survey Type: MANUAL

10 NE-03-A-03 PRIVATE HOUSES NORTH EAST LINCOLNSHIRE
STATION ROAD

SCUNTHORPE
Edge of Town Centre
Residential Zone
Total Number of dwellings: 180
Survey date: TUESDAY 20/05/14 Survey Type: MANUAL

11 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

12 SF-03-A-02 SEMI DET./TERRACED SUFFOLK
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings: 230
Survey date: THURSDAY 24/05/07 Survey Type: MANUAL

13 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

14 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

LIST OF SITES relevant to selection parameters (Cont.)

15 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AN-03-A-06	ldn/ire
AN-03-A-08	ldn/ire
AR-03-A-01	ldn/ire
DL-03-A-02	ldn/ire
DL-03-A-03	ldn/ire
DL-03-A-06	ldn/ire
DN-03-A-05	ldn/ire
WA-03-A-04	ldn/ire

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.074	15	181	0.270	15	181	0.344
08:00 - 09:00	15	181	0.145	15	181	0.408	15	181	0.553
09:00 - 10:00	15	181	0.154	15	181	0.182	15	181	0.336
10:00 - 11:00	15	181	0.139	15	181	0.176	15	181	0.315
11:00 - 12:00	15	181	0.153	15	181	0.153	15	181	0.306
12:00 - 13:00	15	181	0.180	15	181	0.167	15	181	0.347
13:00 - 14:00	15	181	0.172	15	181	0.162	15	181	0.334
14:00 - 15:00	15	181	0.168	15	181	0.187	15	181	0.355
15:00 - 16:00	15	181	0.286	15	181	0.201	15	181	0.487
16:00 - 17:00	15	181	0.311	15	181	0.191	15	181	0.502
17:00 - 18:00	15	181	0.352	15	181	0.222	15	181	0.574
18:00 - 19:00	15	181	0.247	15	181	0.202	15	181	0.449
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.381			2.521			4.902

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.003	15	181	0.002	15	181	0.005
08:00 - 09:00	15	181	0.002	15	181	0.003	15	181	0.005
09:00 - 10:00	15	181	0.002	15	181	0.002	15	181	0.004
10:00 - 11:00	15	181	0.003	15	181	0.003	15	181	0.006
11:00 - 12:00	15	181	0.001	15	181	0.001	15	181	0.002
12:00 - 13:00	15	181	0.002	15	181	0.002	15	181	0.004
13:00 - 14:00	15	181	0.001	15	181	0.001	15	181	0.002
14:00 - 15:00	15	181	0.002	15	181	0.002	15	181	0.004
15:00 - 16:00	15	181	0.004	15	181	0.004	15	181	0.008
16:00 - 17:00	15	181	0.003	15	181	0.002	15	181	0.005
17:00 - 18:00	15	181	0.002	15	181	0.001	15	181	0.003
18:00 - 19:00	15	181	0.001	15	181	0.001	15	181	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.026			0.024			0.050

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.003	15	181	0.002	15	181	0.005
08:00 - 09:00	15	181	0.003	15	181	0.003	15	181	0.006
09:00 - 10:00	15	181	0.003	15	181	0.001	15	181	0.004
10:00 - 11:00	15	181	0.003	15	181	0.003	15	181	0.006
11:00 - 12:00	15	181	0.001	15	181	0.002	15	181	0.003
12:00 - 13:00	15	181	0.003	15	181	0.003	15	181	0.006
13:00 - 14:00	15	181	0.002	15	181	0.003	15	181	0.005
14:00 - 15:00	15	181	0.001	15	181	0.003	15	181	0.004
15:00 - 16:00	15	181	0.001	15	181	0.001	15	181	0.002
16:00 - 17:00	15	181	0.002	15	181	0.001	15	181	0.003
17:00 - 18:00	15	181	0.000	15	181	0.000	15	181	0.000
18:00 - 19:00	15	181	0.000	15	181	0.000	15	181	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.022			0.044

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.000	15	181	0.000	15	181	0.000
08:00 - 09:00	15	181	0.001	15	181	0.001	15	181	0.002
09:00 - 10:00	15	181	0.000	15	181	0.000	15	181	0.000
10:00 - 11:00	15	181	0.000	15	181	0.000	15	181	0.000
11:00 - 12:00	15	181	0.000	15	181	0.000	15	181	0.000
12:00 - 13:00	15	181	0.000	15	181	0.000	15	181	0.000
13:00 - 14:00	15	181	0.000	15	181	0.000	15	181	0.000
14:00 - 15:00	15	181	0.000	15	181	0.000	15	181	0.000
15:00 - 16:00	15	181	0.000	15	181	0.001	15	181	0.001
16:00 - 17:00	15	181	0.000	15	181	0.000	15	181	0.000
17:00 - 18:00	15	181	0.000	15	181	0.000	15	181	0.000
18:00 - 19:00	15	181	0.000	15	181	0.000	15	181	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.002			0.003

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	181	0.006	15	181	0.010	15	181	0.016
08:00 - 09:00	15	181	0.004	15	181	0.015	15	181	0.019
09:00 - 10:00	15	181	0.004	15	181	0.003	15	181	0.007
10:00 - 11:00	15	181	0.003	15	181	0.006	15	181	0.009
11:00 - 12:00	15	181	0.004	15	181	0.003	15	181	0.007
12:00 - 13:00	15	181	0.006	15	181	0.005	15	181	0.011
13:00 - 14:00	15	181	0.003	15	181	0.004	15	181	0.007
14:00 - 15:00	15	181	0.003	15	181	0.004	15	181	0.007
15:00 - 16:00	15	181	0.017	15	181	0.011	15	181	0.028
16:00 - 17:00	15	181	0.009	15	181	0.005	15	181	0.014
17:00 - 18:00	15	181	0.011	15	181	0.010	15	181	0.021
18:00 - 19:00	15	181	0.011	15	181	0.006	15	181	0.017
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.081			0.082			0.163

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:	108 - 432 (units:)
Survey date date range:	01/01/07 - 11/12/14
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

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 4

PICADY Output for Rossett Road/Site Access

(Northern Site)

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Northern Site.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:00:07

»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Assessment Flows							
Stream B-AC	0.1	8.35	0.06	A	0.0	7.78	0.04	A
Stream C-AB	0.0	6.34	0.00	A	0.0	6.18	0.00	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (W)/Site Access/Rossett Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	Site Access		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00			78.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	60

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	516.900	0.082	0.207	0.130	0.296
1	B-C	645.146	0.086	0.217	-	-
1	C-B	619.134	0.209	0.209	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	221.00	100.000
B		✓	27.00	100.000
C		✓	133.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	9.000	212.000
	B	24.000	0.000	3.000
	C	132.000	1.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.06	8.35	0.1	A
C-AB	0.00	6.34	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.46	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	153.00	100.000
B		✓	16.00	100.000
C		✓	129.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	22.000	131.000
	B	14.000	0.000	2.000
	C	127.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	7.78	0.0	A
C-AB	0.00	6.18	0.0	A
C-A				
A-B				
A-C				

APPENDIX 5

PICADY Output for Rossett Road/Site Access

(Southern Site)

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Southern Site.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:01:21

»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Assessment Flows							
Stream B-AC	0.1	6.43	0.05	A	0.0	6.26	0.03	A
Stream C-AB	0.0	6.17	0.02	A	0.0	6.26	0.04	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (E)/Site Access/Rossett Road (W)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	Site Access		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.90			90.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	70

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	521.818	0.083	0.210	0.132	0.300
1	B-C	651.284	0.087	0.221	-	-
1	C-B	626.083	0.212	0.212	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	157.00	100.000
B		✓	29.00	100.000
C		✓	227.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	1.000	156.000
	B	3.000	0.000	26.000
	C	218.000	9.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.05	6.43	0.1	A
C-AB	0.02	6.17	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.74	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	141.00	100.000
B		✓	16.00	100.000
C		✓	174.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	3.000	138.000
	B	2.000	0.000	14.000
	C	151.000	23.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.03	6.26	0.0	A
C-AB	0.04	6.26	0.0	A
C-A				
A-B				
A-C				

APPENDIX 6

PICADY Output for Rossett Road/Link Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: B5102 (W)-Link Road-Fford Holt.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 10:08:00

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.2	7.56	0.15	A	0.2	8.01	0.18	A
Stream C-AB	0.1	6.61	0.07	A	0.1	6.34	0.06	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.2	7.72	0.17	A	0.2	8.26	0.20	A
Stream C-AB	0.1	6.75	0.10	A	0.1	6.47	0.07	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Rossett Road (W)/Site Access/Rossett Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rossett Road (E)		Major
B	The Green		Minor
C	Rossett Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.00			78.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	70	70

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	521.818	0.083	0.209	0.131	0.298
1	B-C	651.284	0.087	0.219	-	-
1	C-B	619.134	0.209	0.209	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	172.00	100.000
B		✓	78.00	100.000
C		✓	132.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	19.000	153.000
	B	21.000	0.000	57.000
	C	94.000	38.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.15	7.56	0.2	A
C-AB	0.07	6.61	0.1	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.83	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	102.00	100.000
B		✓	87.00	100.000
C		✓	125.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	17.000	85.000
	B	42.000	0.000	45.000
	C	95.000	30.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	8.01	0.2	A
C-AB	0.06	6.34	0.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.22	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	183.00	100.000
B		✓	84.00	100.000
C		✓	182.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	19.000	164.000
	B	21.000	0.000	63.000
	C	131.000	51.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	7.72	0.2	A
C-AB	0.10	6.75	0.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.77	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	130.00	100.000
B		✓	98.00	100.000
C		✓	152.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	17.000	113.000
	B	42.000	0.000	56.000
	C	115.000	37.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.20	8.26	0.2	A
C-AB	0.07	6.47	0.1	A
C-A				
A-B				
A-C				

APPENDIX 7

PICADY Output for B5102 Rossett Rd/B5445 Chester Rd

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Chester Road-B5102-B5445.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 09:29:03

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.5	9.59	0.32	A	0.3	8.94	0.24	A
Stream C-AB	1.0	6.57	0.36	A	0.4	7.19	0.24	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.6	10.73	0.39	B	0.4	9.45	0.28	A
Stream C-AB	1.1	6.62	0.39	A	0.6	7.36	0.30	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Chester Road-B5102-B5445
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5445		Major
B	B5102		Minor
C	Chester Road		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.40			100.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	70	40

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	546.117	0.089	0.225	0.142	0.322
1	B-C	681.612	0.094	0.237	-	-
1	C-B	631.874	0.219	0.219	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	495.00	100.000
B		✓	157.00	100.000
C		✓	1117.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	6.000	489.000
	B	1.000	0.000	156.000
	C	948.000	169.000	0.000

Vehicle Mix

Heavy Vehicle proportion

	To			
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.32	9.59	0.5	A
C-AB	0.36	6.57	1.0	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.41	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	117.00	100.000
C		✓	730.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	13.000	555.000
	B	1.000	0.000	116.000
	C	623.000	107.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	8.94	0.3	A
C-AB	0.24	7.19	0.4	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.17	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	495.00	100.000
B		✓	194.00	100.000
C		✓	1129.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	6.000	489.000
	B	1.000	0.000	193.000
	C	948.000	181.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.39	10.73	0.6	B
C-AB	0.39	6.62	1.1	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.76	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	137.00	100.000
C		✓	758.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	13.000	555.000
	B	1.000	0.000	136.000
	C	623.000	135.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.28	9.45	0.4	A
C-AB	0.30	7.36	0.6	A
C-A				
A-B				
A-C				

APPENDIX 8

PICADY Output for B5445 Chester Rd/Link Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.0.0.4211 []
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Filename: Chester Road (W)-Link Road-Chester Road (E).j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady
Report generation date: 03/08/2017 09:45:56

»2026 Base Flows, AM
»2026 Base Flows, PM
»2026 Assessment Flows, AM
»2026 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base Flows							
Stream B-AC	0.3	18.05	0.24	C	0.2	14.64	0.18	B
Stream C-AB	0.0	6.87	0.00	A	0.0	7.10	0.01	A
Stream C-A								
Stream A-B								
Stream A-C								
	2026 Assessment Flows							
Stream B-AC	0.4	19.82	0.30	C	0.3	15.45	0.21	C
Stream C-AB	0.0	6.89	0.00	A	0.0	7.15	0.01	A
Stream C-A								
Stream A-B								
Stream A-C								

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

File summary

File Description

Title	Chester Road (W)-Link Road-Chester Road (E)
Location	Rossett
Site number	
Date	10/02/2016
Version	
Status	TA
Identifier	
Client	
Jobnumber	0807
Enumerator	SM
Description	

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

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
2026 Base Flows	AM	ONE HOUR	08:00	09:30	15
2026 Base Flows	PM	ONE HOUR	16:45	18:15	15
2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

2026 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Chester Road (E)		Major
B	Link Road		Minor
C	Chester Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.50			140.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.60	20	41

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	483.990	0.075	0.189	0.119	0.270
1	B-C	623.727	0.081	0.205	-	-
1	C-B	655.039	0.215	0.215	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D1	2026 Base Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	562.00	100.000
B		✓	56.00	100.000
C		✓	951.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	74.000	488.000
	B	52.000	0.000	4.000
	C	949.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	18.05	0.3	C
C-AB	0.00	6.87	0.0	A
C-A				
A-B				
A-C				

2026 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.56	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D2	2026 Base Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	632.00	100.000
B		✓	48.00	100.000
C		✓	623.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	76.000	556.000
	B	41.000	0.000	7.000
	C	619.000	4.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	14.64	0.2	B
C-AB	0.01	7.10	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.88	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D3	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	568.00	100.000
B		✓	70.00	100.000
C		✓	951.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	80.000	488.000
	B	66.000	0.000	4.000
	C	949.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.30	19.82	0.4	C
C-AB	0.00	6.89	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.67	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Time segment length (min)
D4	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	647.00	100.000
B		✓	56.00	100.000
C		✓	623.00	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0.000	91.000	556.000
	B	49.000	0.000	7.000
	C	619.000	4.000	0.000

Vehicle Mix

Heavy Vehicle proportion

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.21	15.45	0.3	C
C-AB	0.01	7.15	0.0	A
C-A				
A-B				
A-C				

APPENDIX 9

Personal Injury Accident Data

Crash Report including Vehicle and Casualty Information

Crash Date:	Saturday, December 08, 2012	**Time of Crash:**	3:03:00 PM	**Crash Reference:**	201260N201994
Highest Injury Severity:	Slight	**Number of Vehicles:**	2	**Number of Casualties:**	2
Highway Authority:	Wrexham			**OS Grid Reference:**	336880 357320
Local Authority:	Wrexham County Borough				
Road Number:	U0	**Road Type:**	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30	**Junction Control:**	Give way or uncontrolled		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre
1	Car (excluding private hire cars 2005 onwards)	-1	Male	26 - 35	Vehicle is in the act of turning right
2	Car (excluding private hire cars 2005 onwards)	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend

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

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	6 - 10	Unknown or other	Unknown or other

APPENDIX 10

Framework Residential Travel Plan

Transport Solutions

BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT

ROSSETT ROAD

ROSSETT

Framework Residential Travel Plan

July 2017

Croft Transport Solutions
Hill Quays, 9 Jordan Street, Manchester, M15 4PY
Tel: 0161 667 3746 Email: info@croftts.co.uk www.croftts.co.uk
Registered in England Number: 7373729

REPORT CONTROL

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PLANS **(See Transport Assessment)**

1 INTRODUCTION

1.1 Preamble

1.1.1 Croft have been commissioned by Bellis Bros Ltd to produce a Transport Assessment and Travel Plan to support a planning application relating to proposals to develop two sites off Rossett Road in Rossett for residential development.

1.1.1 This Framework Residential Travel Plan will set out the principal strategies that will be put in place once the development is open and residents are occupying the dwellings, to encourage sustainable travel to the development.

1.2 Development Site and its Location

1.1.2 The application site comprises two separate parcels of land, bisected by the B5102 Rossett Road, and located approximately 800 metres to the north-east of the village and approximately 10.5 kilometres to the north of Wrexham town centre.

1.1.3 The location of the site in its' local context is identified in **Plan 1**.

1.2 Summary of Proposals

1.2.1 It is proposed to develop the two sites to provide a total of approximately 132 residential dwellings across the two sites, with associated car parking and landscaping.

1.2.2 The proposed Masterplan for the site showing the internal layout is shown in **Plan 2**.

1.3 The Travel Plan

1.2.3 The management of residents travel represents an important element in pursuing the overall aims of the latest national guidance included within the DfT's Best Practice Guide and the Welsh Assembly's Smarter Choice: Wales document. A Travel Plan is effectively a combination of information, proposals and incentives designed to use most effectively the different means of travel available to residents and visitors.

1.3.1 The aims of the Travel Plans are as follows:

- To encourage residents and visitors to use alternatives to the private car;
- To increase the awareness of the advantages and potential for travel by more environmentally friendly modes, and
- To introduce a package of management measures that will facilitate travel by modes of transport other than the private car.

1.4 Residents Travel Pack

1.4.1 The principal measure will consist of a Residents Travel Pack containing relevant material to promote non-car modes of travel and the provision of certain physical measures. This will be discussed further in Section 3.

2 ACCESSIBILITY BY NON CAR MODES

2.1 Introduction

2.1.1 The Welsh Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by;

"Encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel. This will be achieved through integration:

- *within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation".*

2.1.2 Land use planning can help to achieve the Welsh Government's objectives for transport through:

- *reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;*
- *locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;*
- *improving accessibility by walking, cycling and public transport;*
- *ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;*
- *promoting walking and cycling;*
- *supporting the provision of high quality public transport;*
- *supporting traffic management measures;*

- *promoting sustainable transport options for freight and commerce;*
- *supporting sustainable travel options in rural areas;*
- *supporting necessary infrastructure improvements; and*
- *ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.*

2.1.3 New proposals should therefore attempt to influence the mode of travel to the development in terms of gaining a shift in modal split towards non-car modes, thus assisting in meeting the aspirations of current national and local planning policy.

2.1.4 To demonstrate the above, the accessibility of the proposed site has been considered by the following modes of transport:

- Accessibility on foot.
- Accessibility by cycle.
- Accessibility by bus.
- Accessibility by rail.

2.2 Accessibility on Foot

2.2.1 It is important to create a choice of direct, safe and attractive routes between where people live and where they need to travel in their day-to-day life.

2.2.2 This philosophy clearly encourages the opportunity to walk whatever the journey purpose and also helps to create more active streets and a more vibrant neighbourhood.

2.2.3 Footways of 2 metres in width will be provided within the development and will connect in to the existing provision at the Rossett Road/Chapel Lane junction.

2.2.4 The provision of a new zebra crossing at this location will significantly improve the current provision, which is substandard and have a positive impact on road safety.

2.2.5 During the pre-application process, the highway officer raised concerns over the availability of safe walking routes in the vicinity of the site and stated that;

"The main bus stop serving Wrexham and Chester are located on the B5445 Chester Road. It is highly likely that anyone wishing to access these bus stops on foot from the proposed development sites (north and south) will walk along the B5102 Holt Road or Chapel Lane.

Both Holt Road and Chapel Lane have limited footway provision leading to Chester Road and some sections have no footway provision which is a concern in highway/pedestrian safety terms.

During a site visit on 07/03/2016 between 08:20 – 09:00, a significant number of school children on their way to Darland School were observed walking from the Rossett shops along Holt Road in order to cut through the footpath running through St. Peters School. Vehicles including cars and HGVs travelling along this section of Holt Road had to slow down as school children walked along the carriageway due to the lack of adequate footway provision.

I therefore raise serious concerns regarding the proposed increase in vehicle & pedestrian movements likely to be generated by the development site, given the significant lack of suitable pedestrian provision/footways along both Holt Road and Chapel Lane. I would recommend that you give serious consideration to proposed measures to address these concerns.

Although a number of highway improvements have been proposed as part of the proposed development, the above issues along Rossett Road and Chapel Lane are still a concern".

2.2.6 As set out in the previous Section, the proposals seek to address these issues by the provision of upgraded and new footpath links to both St Peters Primary School and Darland High School.

2.2.7 It is also worth noting that in respect of another application site, Vicarage Road, Gresford (Appeal Ref APP/H6955/A/15/3095184) which had a similar issue in terms of pedestrian connectivity and safety, the Inspector reported that;

"There are no footpaths along Vicarage Lane and there is a high level of on-street parking between the site and the junction with Chester Road to the north. The Council is concerned that this does not provide a safe route for pedestrians from the site to the local shops and bus stops on Chester Road. It is clear from the discussion at the hearing that existing residents on the site walk or use mobility scooters between the site and Chester Road and I observed staff from the Hall and local residents walking along Vicarage Lane, as I also did. Whilst it would be preferable to segregate pedestrians from the main highway the Council confirmed this was not possible.

Notwithstanding this, the route is within a 30mph area and the nature of the road together with the parked cars actively slow vehicles. Pedestrians do have to be more aware of the traffic when using a shared surface rather than when there is a dedicated footway and I accept that some residents may choose not to walk to local services. However, I do not consider the situation to be significantly different from numerous roads in rural settlements.

Furthermore, I do not consider that the increase in the use of Vicarage Lane by pedestrians as a result of the proposed development would be so significant as to be detrimental to highway safety".

2.2.8 It can be concluded that in respect to this development, while the situation would not be ideal, the provision of new footway links and the upgrading of those existing ones will go a long way to improving pedestrian linkages and safety in the area.

2.2.9 Furthermore, the reduction in speed limit from 30mph to 20mph, being sought by the Council on Holt Road and Chapel Lane will have a positive effect and further improvement the pedestrian environment and make it safer than the current situation for all road users including those with mobility problems.

2.2.10 Within the Institution of Highways and Transportation (IHT) document, entitled "Guidelines for Providing for Journeys on Foot", a distance of 800 metres is identified as the preferred maximum distance for town centres, whilst a distance of 2 kilometres is defined as a preferred maximum for commuting.

2.2.11 Walking is the most important mode of travel at the local level and offers the greatest potential to replace short car journeys, particularly those under 2 kilometres. In addition, the DFT National Travel Survey of 2015 confirms that 78% of all trips less than a mile (1.6km) are carried out on foot.

2.2.12 **Plan 5** shows the pedestrian catchment for 800 metres and 2 kilometres from the centre of the site and provides an illustrative indication of the areas that can be reached based on a leisurely walk from the site.

2.2.13 In addition to the pedestrian catchment plan, a review of the proximity of local facilities such as pharmacies/doctor's surgeries, schools (both primary and secondary) local shops/retail outlets and leisure facilities has been undertaken.

2.2.14 The locations of such facilities in relation to the site are also identified in Plan 5. As can be seen, the 800 metres catchment includes residential areas of Rossett along with Rossett village centre and its amenities, such as Christ the King Catholic Church, The Golden Lion Public House, Rossett Pharmacy, The Village store and St Peter's Primary School.

2.2.15 The 2 kilometre pedestrian catchment illustrates that the whole of Rossett can be accessed including areas such as Darland, Lavister, Trevalyn and Marford.

2.2.16 In addition to the above, there are a variety of retail, leisure, healthcare and community facilities located within the catchment, these include Rossett Parish church, The Alyn Public House, Darland Golf Course, a SPAR convenience store, Rossett Dental Care, Rossett and Burton Village Hall and The Griffin Inn Public House.

2.2.17 **Table 2.1** below, shows the walking distances from the centre of the site to the local retail facilities and other nearby key amenities in the vicinity of the site:

Local Amenity	Distance (metres)
Christ the King Catholic Church	520
St Peter's Primary School	370
The Village store	680
The Golden Lion Public House	700
Rossett Pharmacy	800
Rossett Parish church	950
The Alyn Public House	970
SPAR	1030
Burton Village Hall	1130
Rossett Dental Care	1140
The Griffin Inn Public House	1240
Darland Golf Course	1770

Table 2.1 - Distance from Site to Local Facilities

2.2.18 As can be seen in the above table, the site is located within close proximity to a number of key local amenities including primary services, as well as retail and healthcare facilities.

2.2.19 It is therefore considered that the existing and proposed pedestrian infrastructure will facilitate safe and direct pedestrian linkages between the site and local destinations.

2.3 Access by Cycle

2.3.1 An alternative mode of travel to the site could be achieved by bicycle.

2.3.2 A distance of 5 kilometres is generally accepted as a distance where cycling has the potential to replace short car journeys. This distance equates to a journey of around 25 minutes based on a leisurely cycle speed of 12 kilometres per hour and would encompass Marford, Gresford, Llay, Pulford and Belgrave.

2.3.3 An on-road local cycle route is located approximately 3.5 kilometres south-west from the centre of the site, this cycle route travels into Wrexham town centre before linking up with various other local cycle routes.

2.3.4 The site can therefore be considered as being accessible by cycle.

2.4 Access by Bus

2.4.1 The nearest bus stops to the site are located on Harwood's Lane, Rossett Road and Chester Road, with the closest stop approximately 140 metres from the centre of the site.

2.4.2 However, it is noted that the main bus stops serving Wrexham town centre are located on Chester Road and these bus stops consist of a bus shelter along with a bus service timetable.

2.4.3 In light of the above, it is highly likely that anyone wishing to access these services on foot from the two development sites will walk along the B5102 Holt Road or Chapel Lane. It is acknowledged that both Holt Road and Chapel Lane have limited footway provision but it is likely that the introduction of the 20 mph speed limit through the village will have a positive effect, keeping traffic speeds low and hence will create a more pedestrian friendly environment.

2.4.4 The location of the nearest bus stops to the development site are shown on Plan 5.

2.4.5 A summary of the services available from the nearest bus stops of the development site is provided in **Table 2.2** below.

Serv. No.	Route	Mon-Fri Frequency Per Hour				Sat	Sun
		AM Peak	Mid-day	PM Peak	Eve		
1	Wrexham – Gresford – Pulford - Chester	6	5	6	2	5	2
34	Wrexham – Trevalyn 3 services daily (Weds/Fri/Sat)	0945	1145	1545	0	3	0

Table 2.2 - Existing Bus Services Operation in the Vicinity of the Site

2.4.6 As can be seen above, the nearest bus stops to the centre of the site offer up to 7 services per hour, providing direct access into Wrexham and Chester.

2.4.7 These services operate from 0540 hours in the morning until 2329 hours in the evening, proving the opportunity for residents to travel by public transport for commuting and leisure trips. In order to demonstrate the level of accessibility some example journey times by bus are presented below **Table 2.3** below.

Destination	Duration
Wrexham	17 mins
Chester (train station)	31 mins

Table 2.3 Example Bus Journey Times

2.4.8 The above table demonstrates that Wrexham is a 17 minute bus journey from the site and Chester railway station is a 31 minute bus journey.

2.4.9 It is therefore concluded that the proposed development site is highly accessible by bus.

2.5 Access by Rail

2.5.1 The nearest train stations to the site are Wrexham Central and Wrexham General, and although these fall outside the recommended 2 kilometre pedestrian catchment, they are accessible via a 17 minute bus journey from the site and a short walk, equating to an overall journey time of approximately 20 minutes.

2.5.2 Wrexham Central train station is managed by Arriva Trains Wales and has 1 platform, offering an hourly service to Bidston, whilst Wrexham general train station has 4 platforms, offering 4 services per hour to Cardiff, Birmingham, Holyhead and Bidston.

2.5.3 It is also worth noting that Chester train station is also accessible via a 31 minute bus journey using service number 1. This train station is also managed by Arriva Trains Wales but has 7 platforms, offering 13 services per hour to destinations throughout the UK such as Liverpool, Manchester, Birmingham and London Euston.

2.5.4 In conclusion, the proposed site can be considered as being highly accessible in terms of travel by rail.

2.6 Summary

2.6.1 The site has been considered in terms of it accessibility by non-car modes and the following conclusions can be drawn from this section of the Report:

- The site is accessible on foot and these provisions will be substantially improved as part of the proposals, with new and upgraded footpath links.
- The provision of a new zebra crossing, to replace the existing sub-standard crossing point on Holt Road will also have a positive impact and improve road safety in the area, not just for residents but for the wider community as well, including school children.

- The site is well located to generate trips on foot and provides potential for a high degree of linked walk trips between the development and the surrounding area.

- It has been demonstrated that the site is accessible by cycle, with a local cycle route situated 3.5 kilometres south west of the site, which travels into Wrexham centre.

- The close proximity of bus stops on Harwoods Lane, the B5102 and Chester Road offering services to Wrexham and Chester demonstrates that the proposed development can be considered as highly accessible by bus.

- Residents can also travel to and from the site by rail using services from the two Wrexham rail stations which can be accessed via the bus services that run very close to the site.

2.6.2 In light of the above, it is considered that site is highly accessible and able to cater for needs of the development's residents and visitors and assist in promoting a choice of travel modes other than the private car.

3 MANAGEMENT MEASURES

3.1 Introduction

3.1.1 The following Travel Plan measures will be implemented:

i) Appointment of a Travel Plan Co-ordinator

ii) Residents Travel Pack

iii) Residents Travel Survey

iv) Travel Awareness and Information

v) Promotion of National Car Sharing Scheme

vi) Encouraging Walking/Cycling

Appointment of Travel Co-ordinator

3.1.2 A Travel Plan Co-ordinator will be appointed at least 3 months prior to the occupation of the first dwelling with the contact details of the Travel Plan Co-ordinator submitted to WCBC's Travel Team.

3.1.3 Until all of the properties are occupied this role is likely to be undertaken by a person employed by the developer, as this will show a commitment to the Travel Plan from an early stage.

3.1.4 The post of Travel Plan co-ordinator will continue for the life of the development.

Residents Travel Pack

3.1.5 It is an important and emerging principle in residential developments that where appropriate, the implementation of travel plan type measures can establish a pattern of travel behaviour favouring sustainable modes from the inception of the development.

3.1.6 The proposed development is very well placed for encouraging access on foot or by cycle to a wide range of facilities. Similarly, the existence of a local bus service close to the site will encourage the choice of public transport as a primary means of travel for the development.

3.1.7 However, in order to build on these locational advantages it is recommended that a Residents Travel Pack is provided for the occupants of each new residential unit, prior to the occupation of the first unit. The contents of such a Travel Pack would include information relating to walking and cycling routes in the area and the provision of up to date bus and rail timetable information.

3.1.8 In addition, as part of the information supplied to purchasers, the pack will include a map to identify the location of nearby local facilities along with approximate distances and walk times to allow residents to choose a more sustainable mode of travel, rather than the private car, where appropriate.

3.1.9 The adoption of such Travel Packs is recognised as being an important element in ensuring that access by non-car modes is promoted from the earliest occupation of a residential development.

3.1.10 Within the Residents Travel Pack, residents will be encouraged to consider ways in which to reduce their need to travel such as 'Home Delivery' for shopping and working from home. The first issue of the Residents Travel Pack will be the responsibility of the house builder.

3.1.11 The provision of a Residents Travel Pack will form part of the terms of the sale or occupancy of the dwellings and therefore they are aware in advance of what is required of them within the Travel Plan framework.

Travel Awareness and Information

3.1.12 All residents will be made aware of the existence of the Travel Plan.

3.1.13 As mentioned previously, Residents Travel Packs will be issued for new residents moving into the development and prospective buyers will be made aware of the Travel Plan and its aims when viewing properties.

Travel Survey

3.1.14 A key to developing the operational Travel Plan is to establish how the site users make journeys to and from the site. After occupation of the site, travel surveys would be performed in order to ascertain travel patterns of site residents. The survey will play a key role in the sustainability process as it provides a baseline from which to measure changes in travel as a result of the Travel Plan.

3.1.15 The travel surveys will continue to be carried out as long as the Travel Plan is in place at the site (for a period of 5 years) and they will be completed between every 2 to 3 years. The surveys will give an indication of how travel behaviour is changing.

3.1.16 The travel survey will be used to show how people travel to the site, what potential there is for change (for example, the numbers of people who would like to walk, cycle or use public transport, but are unable to), what are the most significant deterrents to walking, cycling and using public transport, what would encourage people to reduce car use.

3.1.17 The following information can be obtained:

- How site users usually travel to and from the site (walking, cycling, using public transport, arriving by car or car sharing with others),
- Where site users are generally travelling to/from.
- What routes children are using for the school journey.
- Which places are considered to be dangerous for walking or cycling, and why.
- Any problems there are with bus services and where a new service might be helpful.
- How site users would like to travel if they had the choice and whether they own a bike or have a bus pass.

3.1.18 The results of the surveys will provide a valuable 'baseline' against which the success of the Travel Plan in reducing car journeys and increasing journeys by walking, cycling and public transport will be measured.

Promotion of National Car Sharing Scheme

3.1.19 The Travel Plan Co-ordinator will promote the use of car sharing via registering on the Liftshare website. This is a recognised website which allows users to register their details, where they are travelling to in the area, and if they are offering a lift or need a lift to their destination.

3.1.20 The website can be found at the following location www.liftshare.com

3.1.21 Travel Plan Co-ordinator will also investigate the viability of establishing a Car Sharing Club for the residential development. However, it is likely that the promotion of the lift share scheme will be more beneficial to local residents.

Encouraging Walking/Cycling

3.1.22 Residents will be provided with information and advice concerning safe pedestrian and cycle routes to the site through the WalkBUDi/BikeBUDi schemes. Information on these schemes is available on the following websites;

www.walkbudi.com and www.bikebudi.com

3.1.23 The WalkBUDi/BikeBUDi schemes are part of the National Lift Share Network and are simple and free to use. They simply match individuals with others walking or cycling the same way so they can walk or cycle together. They can be used for regular trips such as walking or cycling to the office or going to the station as well as making a journey safer. The matches are displayed in both table and map format, allowing the user to easily find the most suitable people.

3.1.24 Through the Travel Plan, residents will be encouraged to register with one of both of the above schemes.

4 TRAVEL PLAN TARGETS

4.1 Introduction

4.1.1 This section of the Travel Plan deals with the post development scenario i.e. once the development is complete, occupied and the Travel Plan has been implemented and relates to targets against which the success of the Plan in achieving its objectives will be measured. The targets are designed to be quantifiable, be relevant to both measures and objectives identified in the Plan and to include timescale.

4.1.2 In order to set the targets, further information (e.g. through a travel survey) may have to be obtained in order to establish against which to set the targets.

4.1.3 This information will be related to existing patterns of movement (i.e. the proportion of residents who travel to their workplace by non-car mode) and may be obtained from sources such as the National Travel Survey and the National Census.

4.1.4 More accurate information to establish the baseline targets however, will be obtained from a Residents Travel Survey which will be undertaken within one month of the development being 50% occupied.

4.1.5 Following the granting planning consent, suitable targets for reducing the need to travel by private car will be set against the baseline targets and agreed with WCBC and included in the final Residential Travel Plan for the whole development.

4.2 Potential Targets

4.2.1 The targets are designed to be quantifiable, be relevant to both measures and objectives identified in the Plan and to include timescale.

4.2.2 Targets which according to the DfT may potentially be included in the Travel Plan include the following:

- Car trips per household - targets set on the basis of predicted trip rates for the development.
- Uptake of alternatives - targets for bus patronage, registration and participation in the Liftshare car share scheme, cycle counts and pedestrian counts.
- Car ownership and mode of travel - trip based targets may be supplemented by targets related to car ownership, travel to work by mode and travel to school by mode.
- Travel Plan awareness targets - for example, a target can be established to ensure a significant percentage of residents are aware of the Travel Plan and its purpose.

4.3 Action Plan

4.3.1 **Table 4.1** below provides an Action Plan and timescales to assist the Travel Plan Co-ordinator (TPC) to implement the obligations of the Travel Plan;

Action	Target Date	Indicator/Measured by	Responsibility
Appointment of TPC	TPC appointed 3 month prior to first occupation of site	Appointment of TPC by target date	Developer
Production of Residents Travel Pack	Upon Occupation	Resident travel survey	Developer
Undertake initial travel surveys	Within 1 month of reaching 50% occupation of development	Receipt of survey results	TPC
Agree Travel Plan Targets	1 month after initial travel survey undertaken	Receipt of written agreements of targets	TPC
Achieve target car driver travel to work mode split	5 years after initial travel survey	Residents travel surveys conducted in years 1, 3 and 5	TPC

Table 4.1 – Travel Plan Action Plan and Timescales

4.3.2 The table above sets out the key tasks that will need to be undertaken by the Travel Plan Co-ordinator as part of the Travel Plan including guidance as to timescales for the tasks to be undertaken.

4.4 Travel Plan Budget

4.4.1 To show commitment to the aims of the Travel Plan funding has been allocated for the launch and implementation of the TP, while an annual budget will be in place to deal with the day to day operation of the TP through the appointed TP Co-ordinator.

4.4.2 The use of the above budget will be at the discretion of the TPC as it may be that the majority of spending is required during the early stages of the development i.e. incentives to encourage bus or walking/cycling.

4.4.3 Such measures should ideally be implemented from the on-set of the development being occupied as it is easier to influence trips made by people before they get into 'bad habits'. The requirement to implement other incentives could form part of the monitoring process i.e. if the number of cyclists or walkers has reduced from the initial travel survey, then measures could be put in place to encourage the use of these modes.

4.4.4 In addition to the above, numerous maps and leaflets (walking, cycling and public transport) are likely to be available free of charge from WCBC's sustainable Travel Team.

4.4.5 The TPC will be free to investigate how the TP can be promoted for example TP events could be organised to coincide with national initiatives such as such as national Walking Month and Bike Week. Posters and promotional material for such events are available to download free of charge off the internet.

4.5 Plan Monitoring and Assessment

4.5.1 DfT best practice guidelines state that monitoring of the Travel Plan should normally take place on the following basis:

- Early on in the occupation period of the site - for example, triggered by 50% occupancy to provide the information base for the review of the plan;
- Annually or at least every two years thereafter to provide on-going information on the impact of the plan.
- Monitoring should take place over a wide range of time periods to reflect the different pattern of journeys that can be generated by residential development.

4.5.2 The monitoring could include items such as:

- Full residential surveys to be completed between every 2 to 3 years and snap shot surveys to be completed every 6 to 12 months.

- Feedback from bus operators to establish demand for local bus services.

4.5.3 Once planning consent is granted, consideration will be given on how best to monitor and measure the success of the Travel Plan measures when preparing the final Travel Plan for the development. Appropriate monitoring arrangements will be discussed and agreed with WCBC.

4.5.4 The monitoring and assessment of the Travel Plan will include the submission of annual progress reports detailing the results of the travel surveys with regards to targets, budgets, general effectiveness and current initiatives.

4.5.5 An annual report is to be submitted to the local authority no later than one month following the anniversary of the approval of the Travel Plan.

4.5.6 This will allow effective measures to be promoted and increased while ineffective measures can be revised and rectified. New initiatives for the coming year will also be contained within the report and submitted to officers at the Council.

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