



BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT

ROSSETT ROAD

ROSSETT

Transport Assessment

May 2019

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Registered in England Number: 7373729

REPORT CONTROL

Document: Transport Assessment

Project: Proposed Residential Development, Rossett Road, Rossett

Client: Bellis Bros Ltd

Job Number: 0807

File Origin: Z:\projects\0807 Rossett Road, Rossett\Docs\Reports\0807TA.12.docx

Document Checking:

Primary Author	MR	Initialled:
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Contributor	SM	Initialled:
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Review By	PJW	Initialled:
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Issue	Date	Status	Checked for Issue
1	16/05/19	Final	
2			
3			

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1 EXECUTIVE SUMMARY

- 1.1.1 Croft were 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. The application and associated Transport Assessment were submitted in July 2018.
- 1.1.2 The application sites form part of the Council's 'draft' allocation plan for residential development.
- 1.1.3 Despite the document being updated several times to address matters raised by the Council's highways officer, the application was subsequently refused in January 2019.
- 1.1.4 Notwithstanding the above, following refusal, the applicant engaged in preparing a highways Statement of Common Ground (SoCG) in which all matters were agreed in May 2019, with a view to lodging an Appeal against the decision.
- 1.1.5 This Transport Assessment has therefore been prepared to accompany a new planning application and seeks to incorporate all the items raised during discussions and as set out within the SoCG to demonstrate that the proposals should be deemed acceptable to the local highway authority and will assist in delivering a highly sustainable development, as set out in the National Planning Policy Framework.
- 1.1.6 The highways officer's main area of concern was the lack of footway provision along Holt Road between its junction with Chapel Street and The Green. To that end, Croft have liaised directly with the highways officer and presented a footway improvement scheme in this location and indeed, the works have been deemed acceptable by the highways officer who stated in his response that;

"It is agreed that the proposals will not have a detrimental impact on the operation of the highway network or give rise to road safety issues, subject to the proposed footway improvement works being implemented along the B5102 Holt Road in accordance with drawing ref no. 0807-04 REV B", a scheme which the highways officer confirmed "... is considered to enhance pedestrian safety along Holt Road".

- 1.1.7 The fact that agreement on all highways matters have now been agreed with Wrexham County Borough Council (WCBC) demonstrates that the highways officer no longer has concerns about the highway impact or road safety of the proposals (those concerns having been addressed prior to the preparation of this TA, it anticipated that the information set out in this report will allow the highways department to provide a positive recommendation from a highways perspective.

2 INTRODUCTION

2.1 Introduction

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

2.1.2 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.

2.1.3 Following additional comments received from the highway officer at the Council following submission, the report has been revised to take account of the issues raised.

2.2 Summary of Proposals

2.2.1 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.

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

2.3 Scope of Report

2.3.1 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.

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

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

2.4 Items Agreed within the Statement of Common Ground (SoCG)

2.4.1 This report will also include information relating to the items which have been agreed as part of the Statement of Common Ground (SoCG), which can be summarised, as follows;

- [Item 4] The use of the 2015 baseline traffic surveys;
- [Item 5] Trip generation rates;
- [Item 6] Trip distribution;
- [Item 7] Trip distribution altered to take account of the changes to Traffic Regulation Orders (TRO's) although it is understood that these works are no longer being progressed;
- [Item 8] Traffic flows and future year growth factors;
- [Item 9] Traffic impact and highway safety; and
- [Item 10] Accesses into the sites.

2.4.2 Relevant information pertaining to the above will be set out in the relevant sections of this TA. A signed copy of the Statement of Common Ground is contained within **Appendix 0** and demonstrates that there should be no objections to the scheme on highway grounds.

2.5 Structure of Report

2.5.1 Following this introduction, Section 3 of the Report details the existing site conditions and describes the adjacent highway network. Section 4 provides details of the proposed development including vehicular access.

2.5.2 Section 5 of the report briefly considers the aspects of national and local planning policy which are relevant to the proposals.

- 2.5.3 Section 6 considers the accessibility of the site by non-car modes, including walking, cycling and public transport, including details of the walking routes, distances and walking times to local facilities in the village.
- 2.5.4 Section 7 considers the trip generation and traffic impact assessment of the local highway network, while Section 8 provides an analysis of road safety in the vicinity of the site.
- 2.5.5 Section 9 contains details of the Framework Travel Plan and Section 10 draws together the Report's findings and conclusions.

3 EXISTING CONDITIONS

3.1 Introduction

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

3.2 Existing Site

3.2.1 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**.

3.2.2 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 3.1** below.

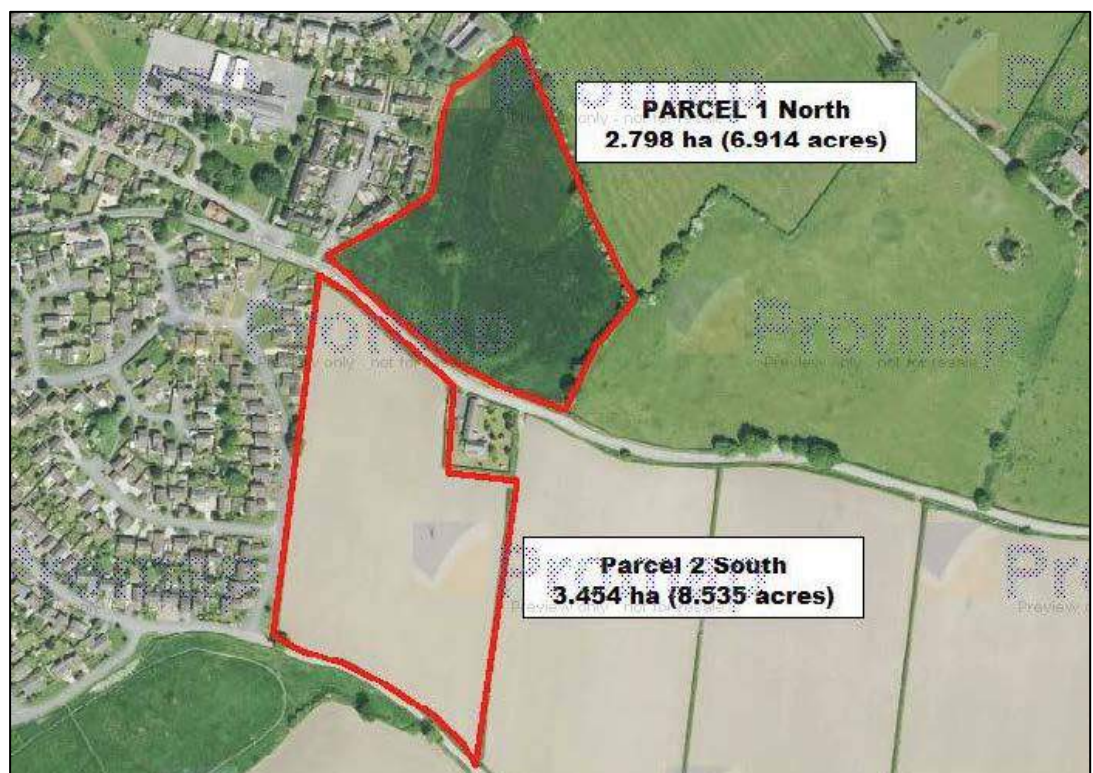


Figure 3.1 – The Application Sites

- 3.2.3 For the purpose of this report, the sites will be referred to as the northern site and the southern site.
- 3.2.4 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.
- 3.2.5 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.

3.3 Adjacent Highway Network

- 3.3.1 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.
- 3.3.2 A gateway entry feature and associated traffic calming is located on Rossett Road, adjacent to Lane Farm, as shown in **Figure 3.2** below.



Figure 3.2 – View along Rossett Road (looking west)

- 3.3.3 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 3.3** below.



Figure 3.3 – View further along Rossett Road (looking west)

- 3.3.4 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.
- 3.3.5 However, the speed limits in the area are currently under review and the new limit at this location will be 20mph.
- 3.3.6 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.
- 3.3.7 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.

- 3.3.8 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.

3.4 Potential Modifications to Existing Traffic Regulation Orders

- 3.4.1 During discussions with the highways officer following submission of the original planning application and TA, it was understood that the Councils' traffic section was reviewing existing Traffic Regulation Orders (TRO's) in the village.
- 3.4.2 There was potential to introduce a 'No Entry' at the Chester Road/The Green junction (the short link between Chester Road and Holt Road), with a one-way operation from Chester Road along The Green in a southbound direction towards Holt Road.
- 3.4.3 However, it is now understood that the planned works are no longer being progressed and so this particular scenario has not been given any further consideration in this updated Transport Assessment.

3.5 Baseline Transport Data

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

4 CONSIDERATION OF PLANNING POLICY

4.1 Introduction

4.1.1 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.

4.1.2 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.

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

4.2 National Policy

Planning Policy Wales

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

4.2.2 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.

4.2.3 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

4.2.4 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.

4.2.5 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".

- 4.2.6 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.
- 4.2.7 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.
- 4.2.8 TAN 18 discusses the general importance of promoting the integration between transport and land use planning, so as to contribute to the delivery of the key objective of sustainability.
- 4.2.9 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.
- 4.2.10 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.
- 4.2.11 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.
- 4.2.12 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

- 4.2.13 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.
- 4.2.14 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"*.
- 4.2.15 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

- 4.2.16 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.

- 4.2.17 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.
- 4.2.18 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.
- 4.2.19 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 CO2 emissions*". Section 4 of the TP considers a modal shift target for the proposed development.
- 4.2.20 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

4.3 Planning Policy Summary

- 4.3.1 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.
- 4.3.2 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.
- 4.3.3 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.
- 4.3.4 It can therefore be concluded that the proposed development accords with national policy and will assist in delivering a highly sustainable development.

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 during the application process, a number of footway improvements were discussed with the highways officer including the creation of a new footway along Holt Road between Chapel Lane and The Green.

- 5.2.6 Indeed, a potential improvement was also discussed in relation to Chapel Lane where the provision of a pedestrian walking strip (demarcated with white lining) was also discussed with a view to improving the safety of people walking along this route, particularly school children.
- 5.2.7 However, having considered such improvements, it was later confirmed by the highways officer that while a potential scheme was prepared *“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”*.
- 5.2.8 In acknowledgment that Chapel Lane only permits ‘Access Only’ vehicular traffic and is subject to a 20mph speed limit, it was agreed that such provision was not required.
- 5.2.9 while the deficiencies in the existing provision are acknowledged, it is 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”.

- 5.2.10 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.
- 5.2.11 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 improve the pedestrian environment and make it safer than the current situation for all road users including those with mobility problems.
- 5.2.12 The above matter was also raised at a meeting with the Council and it was considered that this was not an issue, in light of the alternative routes available to residents wishing to walk to the village and local amenities.
- 5.2.13 To that end, a plan to show the comparable walking times and distances to the junction of B5445 Chester Road/B5102 Holt Road (close to the Co-operative Foodstore) has been prepared, as shown in **Plan 5**. It shows the difference in distance and walking times between using Holt Road or roads within the existing residential development located to the west of the southern site.
- 5.2.14 It also includes a further route which utilises Chester Road and Waverley Crescent, which are subject to a 20mph speed limit and so still provides another option for older children walking to Darland High School from the village. Clearly, any children residing at the new development would have no need to take such a route as they will simply use the improved footpaths and footways within the site and alongside Trevalyn hall View to get to Darland High School.
- 5.2.15 For ease the walking distances and times are summarised in **Table 5.1** below.

Route	Northern Site		Southern Site	
	Distance (m)	Time (mins)	Distance (m)	Time (mins)
Holt Road	650	8	595	8
Trevalyn Way	708	9	570	7
Harwood's Lane	872	11	665	9
Distance and Walking Times from Co-operative Store to Darland High School				
Chester Rd/Waverley Crescent	653 metres		8 minutes	
Holt Road via Trevalyn Hall View & Waverley Crescent	698 metres		8 minutes	

Table 5.1 – Summary of Walking Routes, Distances and Walking Times

- 5.2.16 As can be seen on the plan, the route through the housing estate (Trevalyn Way) is very similar in length and walking time to the route along Holt Road for residents at the northern site, being just one minute longer and the Trevalyn Way route is both shorter and quicker for residents at the southern site.
- 5.2.17 The route along Harwood's Lane is slightly longer of those at the northern site but, the walking time is only 2 minutes longer than the walk along Holt Road, so residents are likely to still choose the route through the estate. Similarly, the walking route along Harwood's Lane for residents at the southern site is only a minute longer than the Holt Road route, so again, this may seem to be the more favourable option.
- 5.2.18 In light of the above, and considering the reduced speed limit through the village, it is not considered that even with an increase in pedestrian traffic, that the proposals will give rise to any highway safety issues. Clearly, residents will have the choice about which route they take but the improved linkages to St Peters School and potentially Darland High School should encourage school children to use these off-road routes where appropriate, thus having a positive impact on road safety and assisting in delivering safer route to schools.

- 5.2.19 The comparison of the route along Chester Road and Waverley Crescent shows that this route is slightly shorter than using Holt Road, Trevalyn Hall View and Waverley Crescent, although the walking times are more or less the same. This demonstrates that an alternative safe route is available, whether people choose to use them or not.
- 5.2.20 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.
- 5.2.21 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.
- 5.2.22 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. **Plan 6** 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.
- 5.2.23 The locations of such facilities in relation to the site are also identified in Plan 6. 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.
- 5.2.24 The 2-kilometre pedestrian catchment illustrates that the whole of Rossett can be accessed including areas such as Darland, Lavister, Trevalyn and Marford.
- 5.2.25 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.

5.2.26 **Table 5.2** 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 5.2 - Distance from Site to Local Facilities

- 5.2.27 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.
- 5.2.28 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 20mph 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 6.
- 5.4.5 A summary of the services available from the nearest bus stops of the development site is provided in **Table 5.3** 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 5.3 - 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 5.4** below.

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

Table 5.4 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 As recommended by the highways officer, (and detailed in Section 4) the proposals incorporate the provision of an additional bus stop/lay-by, raised kerb and hard-standing along the site frontage along Holt Road to improve/promote travel by public transport. The new bus stop and lay-by have been agreed with the highways officer in principle.
- 5.4.11 It is therefore concluded that the proposed development site is accessible by bus and this will be Improved as part of the proposals.

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 its 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.
- While it is acknowledged that Holt Road has limited footway provision at present, it has been demonstrated that there are other routes available to residents with comparable walking times and distances and so this is not considered to give rise to any highway safety issues.
- Notwithstanding the above, a footway improvement scheme is now proposed as will be detailed in the following section.
- 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 PROPOSED DEVELOPMENT

6.1 Development Proposals

6.1.1 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**. 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.

6.1.2 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.

6.2 Vehicular Access

6.2.1 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 (to replace the existing sub-standard crossing) are shown in **Plan 3 (Drawing Ref no. 0807-F03 REV D)**.

- 6.2.2 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.
- 6.2.3 As set out in the SoCG [Item no.10], the highways officer has confirmed in the latest correspondence that *“It would be possible to provide the required visibility splays based on speeds of 30mph for both proposed access points subject to modifications to the existing hedgerow”*.
- 6.2.4 As already stated, it is proposed to implement the 30mph or 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.
- 6.2.5 In relation to the above, the highways officer has confirmed that *“Any proposed modifications to the speed limit along this section of Holt Road will need to be agreed with our traffic section and will require public consultation. I assume that if the application is to be supported, a Grampian style condition will be required in respect of lowering the speed limit to 30mph (or 20mph) along this section of Holt Road subject to public consultation”*.
- 6.2.6 However, during the meeting with the highways officer, it was confirmed that the introduction of street lighting on Rossett Road along the site frontage would mean the speed limit would automatically be reduced to 30mph and as such no consultation would be required. The limit could still be reduced further down to 20mph should this be deemed necessary by the local highway authority. 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.
- 6.2.7 The highways officer confirmed that a speed limit reduction would be considered favourably and would comply with the Councils current ‘Safe Route to Schools Strategy’.

- 6.2.8 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.

6.3 Servicing

- 6.3.1 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.
- 6.3.2 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.
- 6.3.3 The associated swept paths for the northern and southern sites are shown in **Plan 4**.

6.4 Pedestrian and Cycle Access

- 6.4.1 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.
- 6.4.2 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.
- 6.4.3 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.

- 6.4.4 In addition to the above, the proposals include a range of elements that will benefit not only residents at the site but the wider community as well. These include the provision of 3 metre shared pedestrian/cycle links along the northern sites' western boundary, which with additional improvements to the footways on Trevalyn Hall View will improve access to St Peters Primary School.
- 6.4.5 The new route will extend all the way to Darland View, with potential for a direct link to the school to be created to Darland School, subject to further discussions.
- 6.4.6 The proposals also include improvements to the existing car park (which will be maintained by a private management company) and bring benefit to the existing residents on Trevalyn Hall View and provide off-road parking for people during school drop off and pick up times.
- 6.4.7 During discussions with regard to the above, 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.
- 6.4.8 It is understood 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.
- 6.4.9 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. However, at the meeting the highways officer suggested that a new zebra crossing at this location may be implemented as part of the Councils' 'Safer Routes to Schools' initiatives. While this has not yet been confirmed, the applicant is willing to fund the new crossing facility, should it ultimately not form part of the Councils improvement scheme.

6.4.10 This provision will ensure there is safe route to St Peter's Primary School, not just for residents at the development but for existing residents 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.

6.4.11 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.

6.5 Proposed Footway Improvements along Holt Road

6.5.1 As detailed in the previous section, one of the key concerns to the highways officer at WCBC was the lack of footway provision, particularly along Holt Road between Chapel Lane and The Green.

6.5.2 It should be noted that the section of Holt Road which has no footway, equates to a distance of less than 80 metres.

6.5.3 A previous scheme was proposed at this location as part of the submitted Highways Note v3 which included a build-out and short one-way section, so a new footway could be accommodated. However, the scheme was amended following comments received from the highways officer, including the removal of the build-out and this was detailed in the submitted Highways Note v4. The Highways Notes (v3 and v4) are contained within **Appendix 1**.

6.5.4 The current footway improvements proposed as part of this application are presented in **Drawing ref no. 0807-04 REV B**.

6.5.5 In respect to the current proposals the highway officer stated that *"Overall the proposed footway scheme (without the build-out) is considered to enhance pedestrian safety along Holt Road and I can therefore confirm that I would be willing to enter into a SOCG in respect of the proposals"*.

6.5.6 It is therefore considered that the proposed improvements in their current form are acceptable and address the points raised by the highways department at WCBC. Again, it should be reiterated that this section of Holt Road is lightly trafficked and vehicle speeds will be low, given the 20mph speed limit in place.

6.5.7 In addition, the proposals are a betterment to the existing situation, as confirmed by WCBC above and furthermore the provision of a 1.5 metre footway meets the requirements set out in Manual for Streets, which can be summarised as follows;

- 0.75 metres - pedestrians with walking aids, such as sticks or walking frames;
- 0.9 metres - wheelchair users;
- 1.2 metres - adult and child; and
- 1.5 metres - two adults and pushchair.

6.5.8 The above criteria are also illustrated in **Figure 6.1** below.

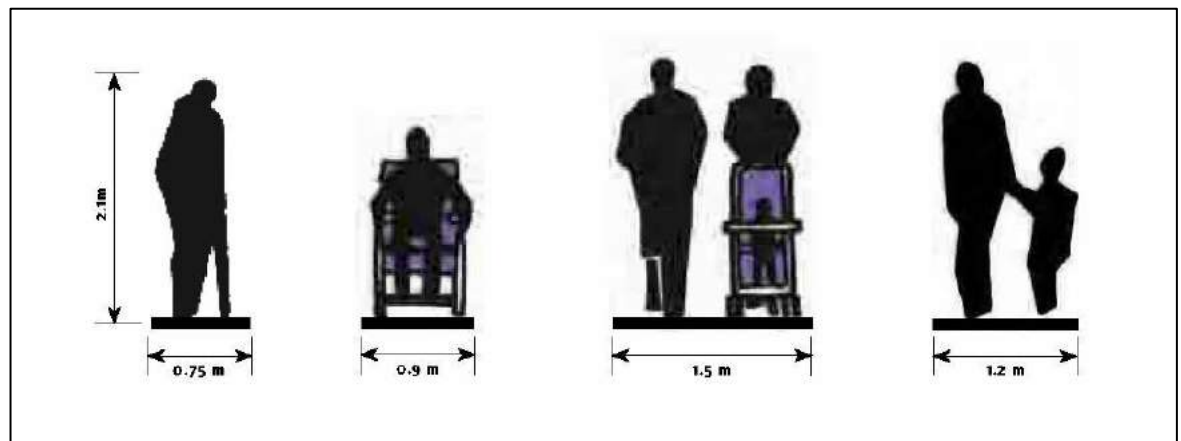


Figure 6.1 – Extract from Manual for Streets regarding Footway Widths

6.5.9 As can be seen above, a footway of 0.75 metres is considered acceptable for people walking with the assistance of sticks or walking frames, while 0.9 metres is considered acceptable for wheelchair users. A width of 1.2 metres is deemed suitable for an adult walking, holding the hand of a child and 1.5 metres (as is currently proposed) would be acceptable for two adults walking with a pram or pushchair.

- 6.5.10 On that basis, it is considered that the revised proposals provide a safe walking route for those wishing to walk along Holt Road, albeit that alternative routes are available and would not give rise to any road safety issues.
- 6.5.11 It should also be noted that the improvements detailed above are included as agreed items in the SoCG [Item 9] where the highways officer stated that *“the proposals will not have a detrimental impact on the operation of the highway network or give rise to road safety issues, subject to the proposed footway improvement works being implemented along the B5102 Holt Road in accordance with drawing ref no. 0807-04 REV B, which the highways officer has confirmed “... is considered to enhance pedestrian safety along Holt Road”.*

7 TRAFFIC IMPACT ANALYSIS

7.1 Introduction

7.1.1 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.

7.2 Assessment Criteria

7.2.1 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.

7.3 Traffic Survey Data

7.3.1 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.

7.3.2 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.

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

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

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

- 7.3.6 In the latest consultation response, the highways officer raised concern regarding the validity of the originally collected count data (2015) given it was more than 3 years old.
- 7.3.7 As such, an Automatic Traffic Counter (ATC) was installed on Chester Road (between its' junctions with Holt Road and The Green for a period of one week. The ATC recorded vehicles volumes and speeds.
- 7.3.8 A comparison of the 2015 and 2018 traffic data has been undertaken and is summarised in **Table 7.1** below.

2015 (Thursday)		
Time	North-eastbound	South-westbound
AM (0800 to 0900)	824	424
PM (1700 to 1800)	515	501
2018 (Thursday)		
Time	North-eastbound	South-westbound
AM (0800 to 0900)	625	339
PM (1700 to 1800)	312	379
2018 (Average Weekday)		
Time	North-eastbound	South-westbound
AM (0800 to 0900)	607	277
PM (1700 to 1800)	329	350
Difference between the two Thursdays	-199 in the AM	-85 in the AM
	-203 in the PM	-122 in the PM

Table 7.1 – Comparison of ATC Data

- 7.3.9 As can be seen above, the 2018 data shows there has been a reduction in traffic since the original surveys were undertaken on 2015.
- 7.3.10 When considering the comparison between the 2015 and 2018 Thursday south-westbound counts, the 2015 data is higher by 199 vehicles in the AM peak and by 203 vehicles in the PM peak.
- 7.3.11 Similarly, when considering the comparison between the 2015 and 2018 Thursday north-eastbound counts, the 2015 data is higher by 85 vehicles in the AM peak and by 122 vehicles in the PM peak.
- 7.3.12 On that basis, and as set out in the SoCG [Item no. 4] it is considered that the original 2015 data is suitable and appropriate for use for the assessments. Indeed, this was confirmed by the highways officer during a meeting with the Council and so no additional surveys have been undertaken.
- 7.3.13 For completeness, the 2018 ATC data is also included within Appendix 1.

7.4 Growthed Traffic Flows

- 7.4.1 For the purpose of this Report, the impact of the proposals has been considered for a likely opening year of 2028, which is considered to provide a robust assessment.
- 7.4.2 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.
- 7.4.3 The use for the 2015 traffic flow growthed up to represent the future year assessments are agreed as part of the SoCG [Item 8].

7.5 Base Flows

- 7.5.1 The growthed 2028 flows for the peak hours, which form the 2028 'Without Development' flows, converted into Passenger Car Units (PCU's), are shown in **Figures 3 and 4**.

7.6 Committed Development

- 7.6.1 At the time of preparing the original Transport Assessment, it was understood from WCBC that there were no committed developments in the area that would require inclusion within this report.
- 7.6.2 Following further discussions with the highways officer, it is understood that there may be a potential proposed development being pursued on land owned by the Welsh Government to the rear of the Golden Lion Public House. While a formal planning application has not yet been submitted, it is understood that the proposals could relate to the provision of between 60 and 80 residential dwellings and would result in modifications to the B5445 Chester Road/B5102 Rossett Road junction.
- 7.6.3 As the application has not yet been submitted and so does benefit from planning approval, this potential development has not been considered as part of this TA.

7.7 Trip Distribution

- 7.7.1 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.
- 7.7.2 The trip distribution and assignment of traffic is an agreed matter as set out in the SoCG [Item 5].
- 7.7.3 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**.
- 7.7.4 The highways officer also requested confirmation of the split of traffic at the site access which can be confirmed as being 10% to the east and 90% towards the village which can be considered to be robust.

- 7.7.5 To demonstrate the likely traffic impact of the development on Rossett Road at the site access points **Table 7.2** presents a summary of trips below.

Time	90%	10%
	Towards village (wb)	Away from village (eb)
AM	72	8
PM	88	10

Table 7.2 – Development Trips at the Site Access Points

- 7.7.6 The number of vehicles associated with the proposals that could potentially travel through each of the junctions through the village, assuming the road network remains unchanged i.e. the TRO's are not implemented is summarised in **Table 7.3** below.

Junction	AM	PM
B5102 Rossett Rd/The Green	72	88
B5102 Rossett Rd/B5445 Chester Road	51	59
B5445 Chester Road/The Green	21	29

Table 7.3 – Development Trips through the Village (No TRO's)

- 7.7.7 The total number of vehicles passing through the village assuming the TRO's have been implemented will be the same as the previous scenario, but the actual number of trips at two of the junctions will change as summarised in **Table 7.4** below.

Junction	AM	PM
B5102 Rossett Rd/The Green	72	88
B5102 Rossett Rd/B5445 Chester Road	67	68
B5445 Chester Road/The Green	5	20

Table 7.4 – Development Trips through the Village (With TRO's)

7.7.8 The above shows that the traffic impact of the proposal will be similar whether the proposed TRO's are implemented or not and the development will not prejudice their delivery, should the works come forward in the future.

7.7.9 It is noted that the trip distribution to take account of the TRO's (as presented in the previous TA) were also an agreed matter within the SoCG [Item 7], albeit that the proposals are no longer being progressed. It has been retained as an agreed matter as it shows robustness and demonstrates that the development traffic will not give rise to any capacity issues, should the scheme come forward at some point in the future.

7.8 Proposed Development

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

7.8.2 In order to establish the number of trips which the proposed development is forecast to generate the TRICS database was originally used and the trips rates were agreed with the highways officer.

7.8.3 Notwithstanding the above, however, it has been requested by the highways officer that the following trip rates be used for robustness. The trip rates have been derived from recently conducted traffic counts at a relatively new housing development which has similar characteristics to the application site and are contained within **Appendix 3**.

- 7.8.4 The peak hour trip rates and forecast trip generation for the proposed 132 units are shown within **Table 7.5**.

Peak Hour	Trip Rates		Trip Generation	
	Arr	Dep	Arr	Dep
AM	0.124	0.476	16	63
PM	0.482	0.259	64	34

Table 7.5 - Forecast Trip Generation of Proposed Residential Development

- 7.8.5 As demonstrated above, the residential development is forecast to generate a two-way total of approximately 79 trips in the AM peak hour and 98 trips in the PM peak hour.
- 7.8.6 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.
- 7.8.7 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**.
- 7.8.8 The trip rates based on WCBC's traffic counts at a relatively new housing development are included as agreed items within the SoCG [Item 5].

7.9 With Development Flows

- 7.9.1 In order to calculate the 2028 'With Development' flows, the development flows shown in Figures 7a and 7b have been added to the 2028 'Without Development' flows contained within Figure 3 for the AM peak.
- 7.9.2 Similarly, the development flows shown in Figures 8a and 8b have been added to the 2028 'Without Development' flows contained within Figures 4 for the PM peak.

- 7.9.3 The resulting 2028 'With Development' Flows are presented in **Figures 9 and 10** respectively for the AM and PM peak hour periods.

7.10 Capacity Assessments

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

- 7.10.2 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/The Green (link to B5102 Holt Road)
- B5445 Chester Road/B5102 Holt Road; and
- B5102 Holt Road/The Green (link to B5445 Chester Road).

- 7.10.3 The assessment year 2028 is considered to provide a robust assessment of the potential impact of the development in highway terms.

Rossett Road/Northern Site Access

- 7.10.4 The access to the northern site off Rossett Road will be priority controlled and so has been assessed using PICADY.

- 7.10.5 The results for the 'With Development' flow scenarios for 2028 are summarised within **Table 7.6** with the full results contained within **Appendix 4**.

Arm Name	2028 Assessment			
	AM		PM	
	RFC	Max Q	RFC	Max Q
Site Access	0.07	0	0.04	0
Rossett Road	0.00	0	0.01	0

Table 7.6 – Summary of PICADY Results for Rossett Road/Site Access (Northern)

- 7.10.6 As demonstrated, the proposed northern site access off Rossett Road is forecast to operate with reserve capacity in the 2028 ‘With Development’ flow scenario in both the AM and PM peak hours.

Rossett Road/Southern Site Access

- 7.10.7 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 2028 are summarised within **Table 7.7** with the full results contained within **Appendix 5**.

Arm Name	2028 Assessment			
	AM		PM	
	RFC	Max Q	RFC	Max Q
Site Access	0.06	0	0.03	0
Rossett Road	0.01	0	0.06	0

Table 7.7 – Summary of PICADY Results for Rossett Road/Site Access (Southern)

- 7.10.8 As demonstrated, the proposed southern site access off Rossett Road is forecast to operate with reserve capacity in the 'With Development' 2028 flow scenario in both the AM and PM peak hours.

B5445 Chester Road/The Green (Link to Rossett Road)

- 7.10.9 The B5445 Chester Road/The Green (link to Rossett Road) is priority controlled and so has been modelled using PICADY.
- 7.10.10 The results for the 'Without Development' and 'With Development' flow scenarios for 2028 are summarised within **Table 7.8** with the full results contained within **Appendix 6**.

Arm Name	2028 Without Development				2028 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
The Green	0.16	0	0.18	0	0.17	0	0.22	0
Chester Road	0.07	0	0.06	0	0.10	0	0.07	0

Table 7.8 – Summary of PICADY Results for B5445 Chester Road/The Green

- 7.10.11 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.
- 7.10.12 The 2028 '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 Holt Road

- 7.10.13 The B5445 Chester Road/B5102 Holt Road is priority controlled and so has been modelled using PICADY.

- 7.10.14 The results for the 'Without Development' and 'With Development' flow scenarios for 2028 are summarised within **Table 7.9** with the full results contained within **Appendix 7**.

Arm Name	2028 Without Development				2028 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
B5102 Holt Road	0.32	1	0.25	0	0.40	1	0.29	0
Chester Road	0.37	1	0.24	0	0.39	1	0.32	1

Table 7.9 – Summary of PICADY Results for B5445 Chester Road/B5102 Holt Road

- 7.10.15 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.
- 7.10.16 The 2028 '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.

Holt Road/The Green (link to B5445 Chester Road)

- 7.10.17 The Holt Road/The Green (link to B5445 Chester Road) is priority controlled and so has been modelled using PICADY.
- 7.10.18 The results for the 'Without Development' and 'With Development' flow scenarios for 2028 are summarised within **Table 7.10** with the full results contained within **Appendix 8**.

Arm Name	2028 Without Development				2028 With Development			
	AM		PM		AM		PM	
	RFC	Max Q	RFC	Max Q	RFC	Max Q	RFC	Max Q
Link Road	0.25	0	0.18	0	0.31	0	0.22	0
Chester Road	0.00	0	0.01	0	0.00	0	0.01	0

Table 7.10 – Summary of PICADY Results for Holt Road/The Green

- 7.10.19 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.
- 7.10.20 The 2028 ‘With Development’ results for the AM and PM peak hour show the junction will continue to operate efficiently.

7.11 Traffic Impact Summary

- 7.11.1 This section of the Report has considered the impact of the proposals in transport terms for a 2028 flow scenario, which is considered to provide a very robust set of assessments.

Rossett Road/Site Access (Northern and Southern)

- 7.11.2 The PICADY analysis for the two new access points show the junctions will operate with no capacity issues.
- 7.11.3 This demonstrates that the proposed access junctions are appropriate in their scale and design to adequately serve the sites.

B5445 Chester Road/The Green (link to Holt Road)

- 7.11.4 The results for the 2028 ‘Without Development’ scenario show the junction would be operating with reserve capacity in the AM and PM peak hours.

- 7.11.5 The results for the 2028 'With Development' scenario show the junction would operate at a similar level and the impact of the development would be minimal.

B5445 Chester Road/B5102 Holt Road

- 7.11.6 The results for the 2028 'Without Development' scenario show the junction is forecast to operate without any capacity issues in both the AM and PM peak hours.
- 7.11.7 The 2028 '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.
- 7.11.8 The sensitivity test undertaken for the B5445 Chester Road/B5102 Rossett Road junction, assuming the changes to existing TRO's have been implemented shows that the proposals will not result in any capacity problems and that the junction will continue to operate with reserve capacity in both peak hours.

B5445 Chester Road/The Green (link to Rossett Road)

- 7.11.9 The results for the 2028 'Without Development' flows show the junction would be operating efficiently with no queuing in both peak hours.
- 7.11.10 The results for 2028 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.
- 7.11.11 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, even based on the higher, particularly robust trip rates.
- 7.11.12 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.

- 7.11.13 It should also be noted that the impact of the proposals is also an agreed matter within the SoCG [Item 9], where the highways officer concluded that *“the proposals will not have a detrimental impact on the operation of the highway network”*.

8 ACCIDENT ANALYSIS

8.1 Introduction

8.1.1 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. The review has been updated following submission of the previous version of the TA.

8.1.2 The personal injury accident information provided on the website covered the 3-year period between 2016 and 2018 in the vicinity of the development site.

8.2 Accident Analysis

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

8.2.2 A review of the data contained within **Appendix 9** however, showed that there have only been three personal injury accidents with the area of study over the last 3 years, as illustrated in **Figure 8.1** below.

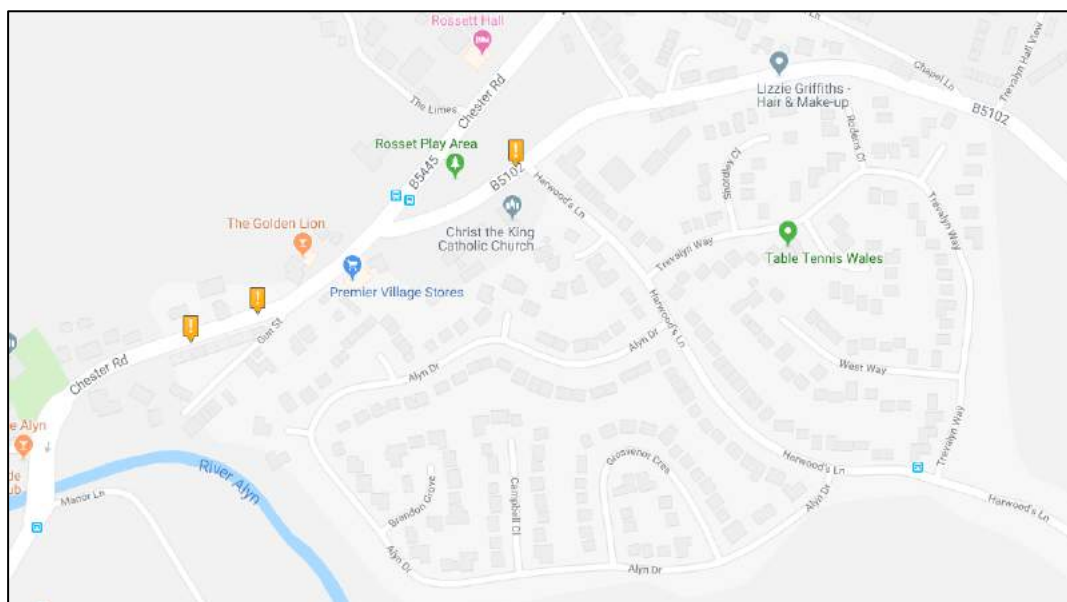


Figure 8.1 – Location of Accidents

- 8.2.3 The accident took place in 2016, when again the weather and road surface was dry. The records show that it involved a car and a goods vehicle where the car collided with the other vehicle as it was in the act of turning left, resulting in slight injuries being sustained. It is therefore highly likely that one or both of the drivers was not paying adequate attention to other road users, rather than there being any issues with the road or junction layout.
- 8.2.4 A second incident also took place in 2016 when the road conditions and weather were dry. The details show that the incident only involved 1 vehicle (a car) which struck a lamp post while it was in the act of turning left, resulting in slight injuries being sustained. As no other vehicles were involved, it is likely that the driver was travelling in excess of the posted speed limit and was unable to react in time.
- 8.2.5 The third accident took place in 2018 when it was raining and the road surface was wet/damp. It was also dark, although there was street lighting. The records show that the incident involved two cars and resulted in slight injuries to the two drivers, but no other details are provided.

8.3 Summary

- 8.3.1 The data reviewed has not identified any untypical accidents.
- 8.3.2 The evidence shows that there are no particular engineering issues or problems with the road network or junction layouts.
- 8.3.3 There have only been three recorded incidents in the last 3 years, two in 2016 and one in 2018, thus showing a trend of accidents reducing.
- 8.3.4 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.

- 8.3.5 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.
- 8.3.6 In addition, the new footway/cycleway links, as detailed in Section 6, will enhance the existing pedestrian/cyclists' environment and ensure that residents can move safely between the site and the local area. The proposals footway improvements along Holt Road will also be a betterment to the existing situation and will provide a safe walking route to and from the village, should residents wish to use it.
- 8.3.7 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.

9 SMARTER TRAVEL CHOICES VIA TRAVEL PLANS

9.1 Introduction

9.1.1 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.

9.2 Travel Planning Guidance

9.2.1 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.

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

9.2.3 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".

9.2.4 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;*

- 9.2.5 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.
- 9.2.6 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.
- 9.2.7 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.
- 9.2.8 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.
- 9.2.9 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.

9.3 Residential Travel Plan

- 9.3.1 The objective of a Residential Travel Plan is to encourage residents to travel to work by bus, on foot and by bicycle.
- 9.3.2 A Framework Residential Travel Plan has been prepared and is presented in **Appendix 10**.
- 9.3.3 The Framework Residential Travel Plan outlines physical and management measures that are designed to achieve this objective.

- 9.3.4 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.
- 9.3.5 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.
- 9.3.6 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.

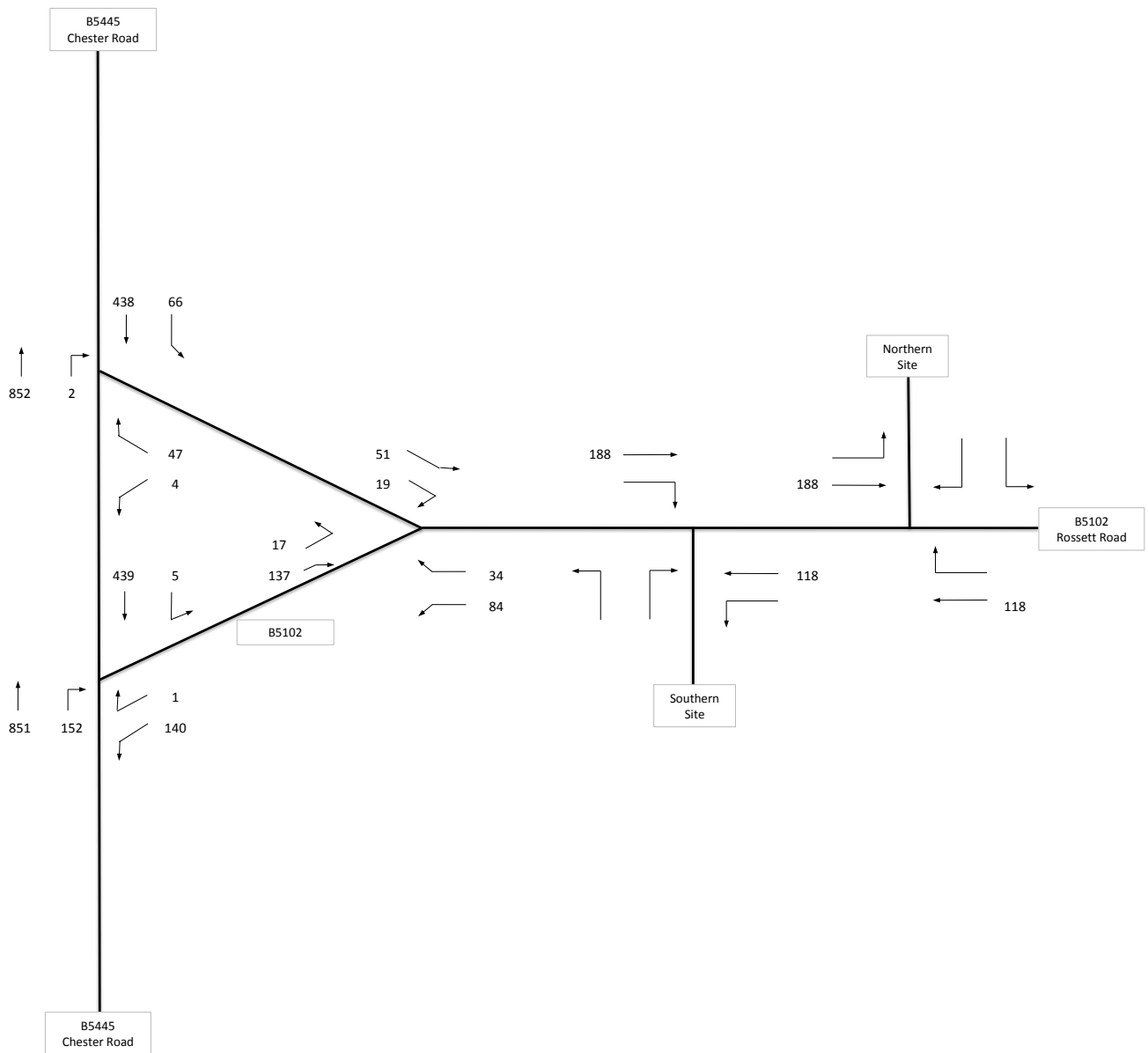
10 CONCLUSIONS

- 10.1.1 This Report has considered proposals relating to the development of land situated to the north and south of Rossett Road in Rossett.
- 10.1.2 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.
- 10.1.3 While footway provision along Holt Road is limited, other routes with comparable walking times and distances are available through Trevalyn Way and so this is not considered to be an issue, as agreed at the meeting with the planning case and highways officer.
- 10.1.4 Notwithstanding the above, footway improvements are proposed along this section of Holt Road and these have been deemed acceptable in principle by the highways officer at the Council.
- 10.1.5 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.
- 10.1.6 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.
- 10.1.7 The traffic impact of the development has been predicted using agreed trip rates that are considered to provide a robust assessment and the traffic impact assessments indicate that the proposed development would be able to be accommodated on the local highway network.

- 10.1.8 There have only been three recorded accidents 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.
- 10.1.9 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.
- 10.1.10 To reiterate, the signed copy of the Statement of Common Ground (included within this TA) shows that the initial concerns raised by WCBC have now been satisfactorily addressed and should allow the highways department to issue a positive recommendation in their consultation response.
- 10.1.11 In conclusion, the proposals for a residential development will provide a sustainable development in transport terms and planning permission should be granted planning permission.

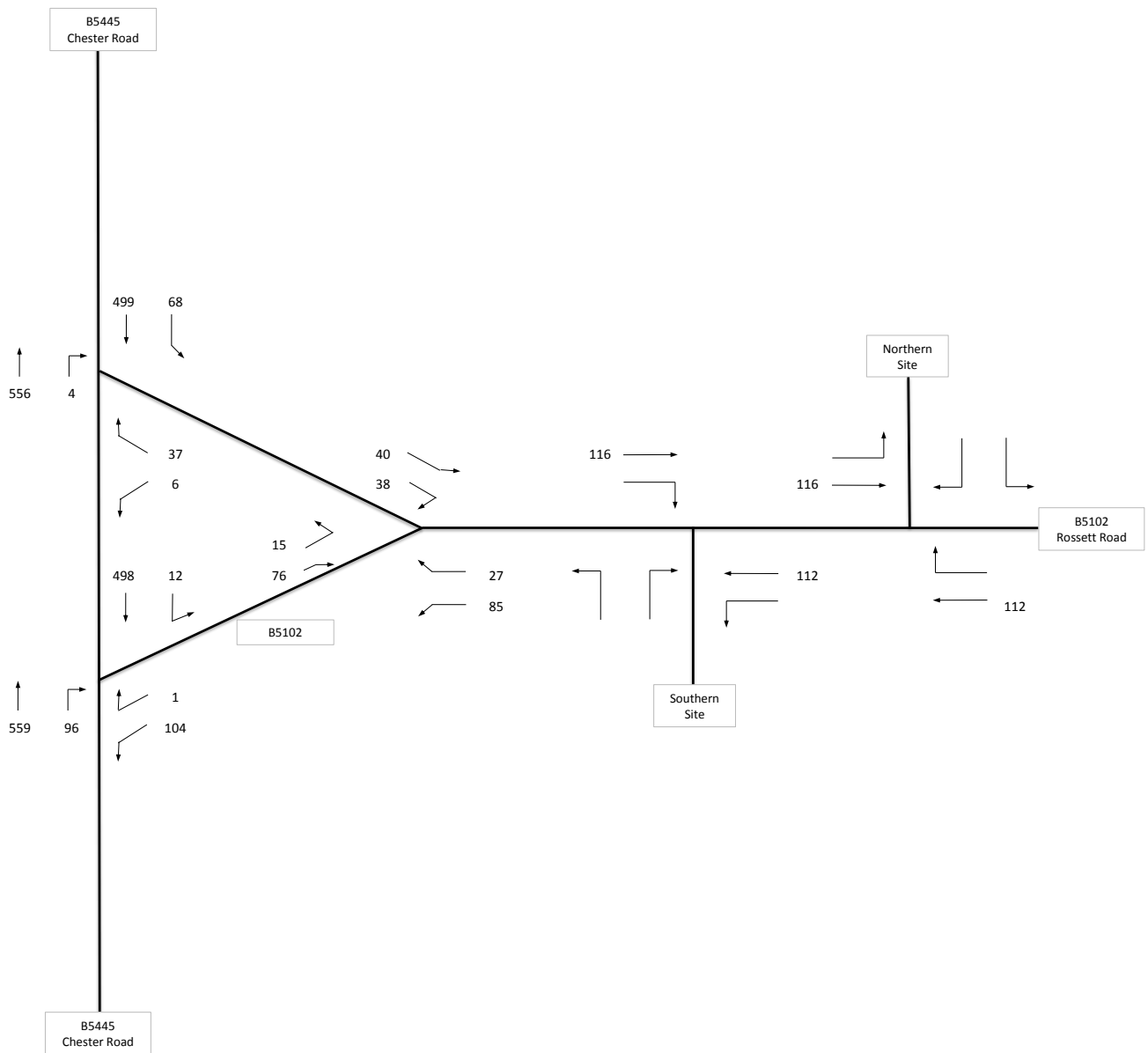
FIGURES

FIGURE	DESCRIPTION	SCENARIO	CALC
FIGURE 1	2015 SURVEYED FLOWS	AM PEAK	See TA
FIGURE 2	2015 SURVEYED FLOWS	PM PEAK	See TA
FIGURE 3	2028 BASE FLOWS	AM PEAK	FIG1xNTM
FIGURE 4	2028 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	2028 ASSESSMENT FLOWS	AM PEAK	F3+F7a+F7b
FIGURE 10	2028 ASSESSMENT FLOWS	PM PEAK	F4+F8a+F8b



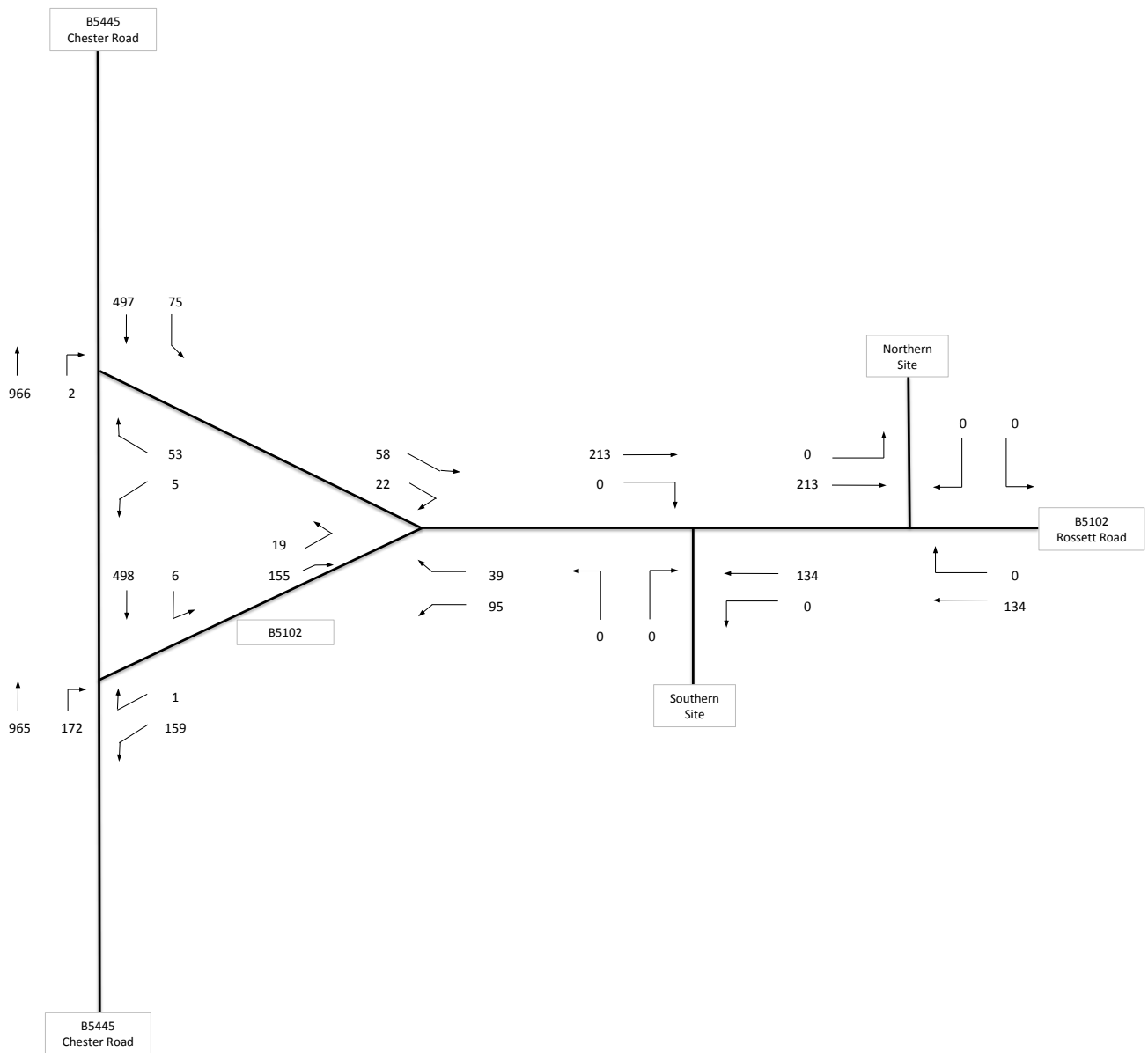
Flows in PCUs

Figure 1 - 2015 Surveyed Flows - AM Peak (0800 to 0900)



Flows in PCUs

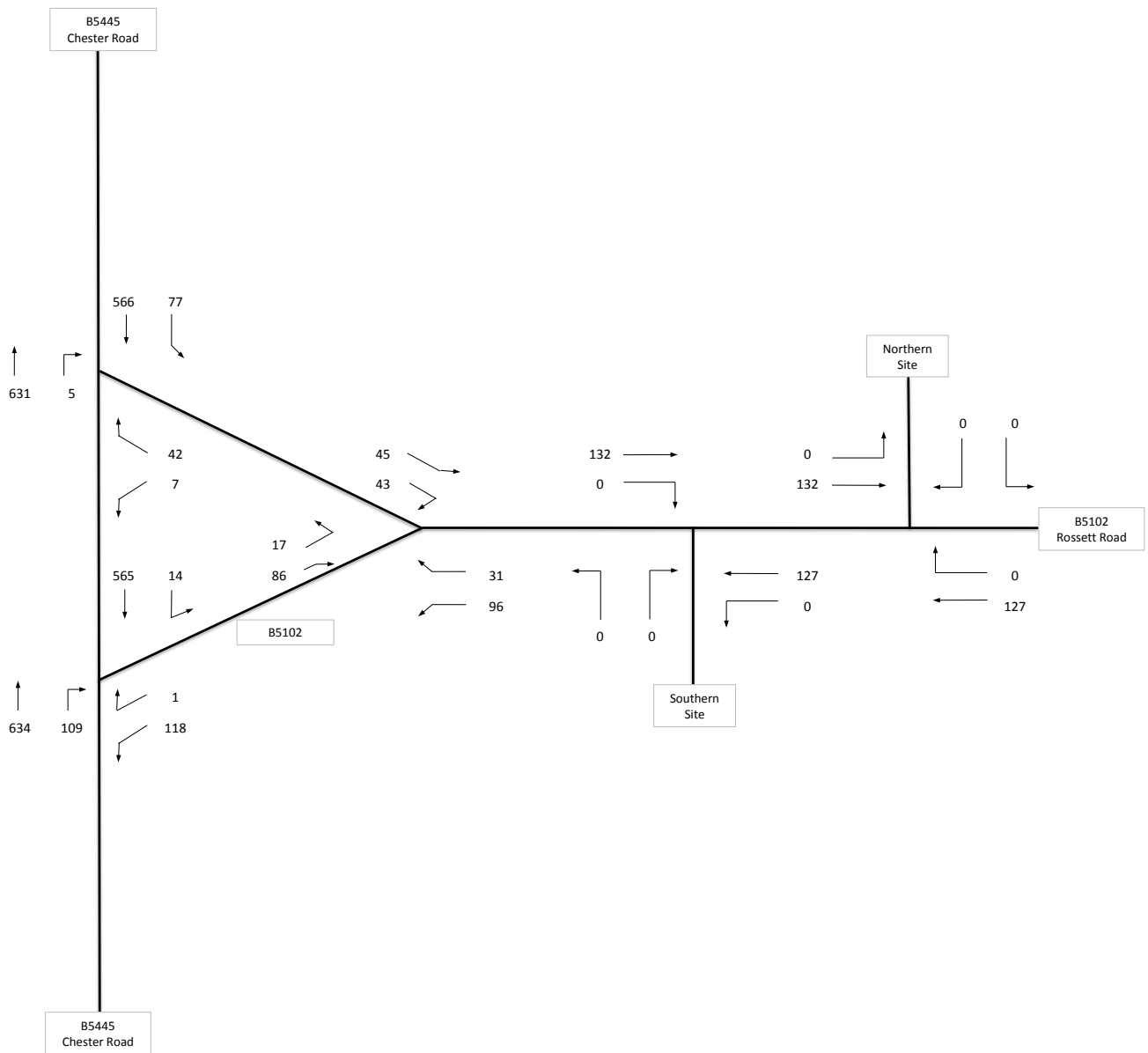
Figure 2 - 2015 Surveyed Flows - PM Peak (1645 to 1745)



Growth factor 2015 to 2028 = 1.1337

Flows in PCUs

Figure 3 - 2028 Base Flows - AM Peak (0800 to 0900)



Growth factor 2015 to 2028 = 1.1345

Flows in PCUs

Figure 4 - 2028 Base Flows - PM Peak (1645 to 1745)

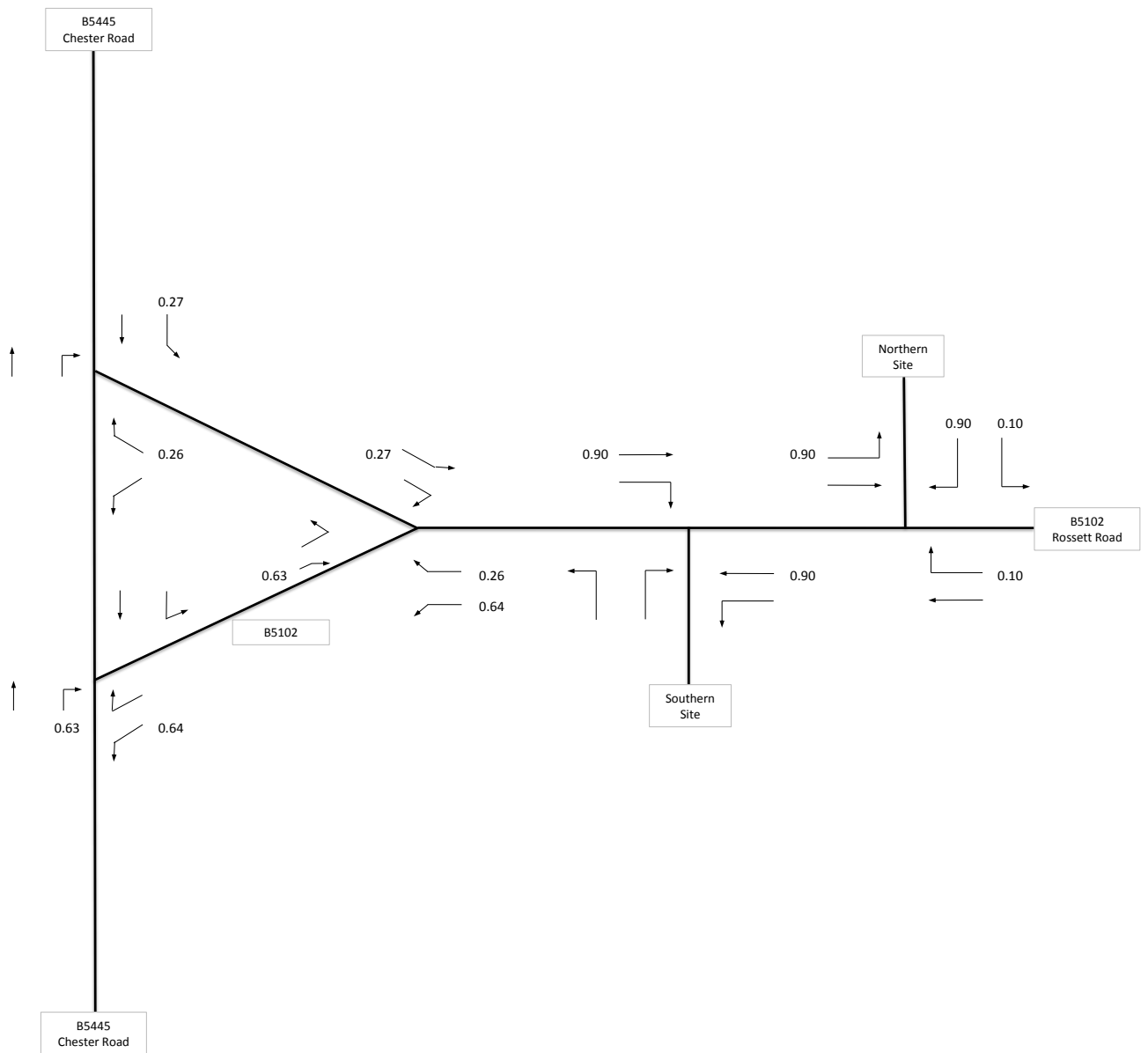


Figure 5a - Trip Distribution - AM Peak (0800 to 0900)
Northern Site

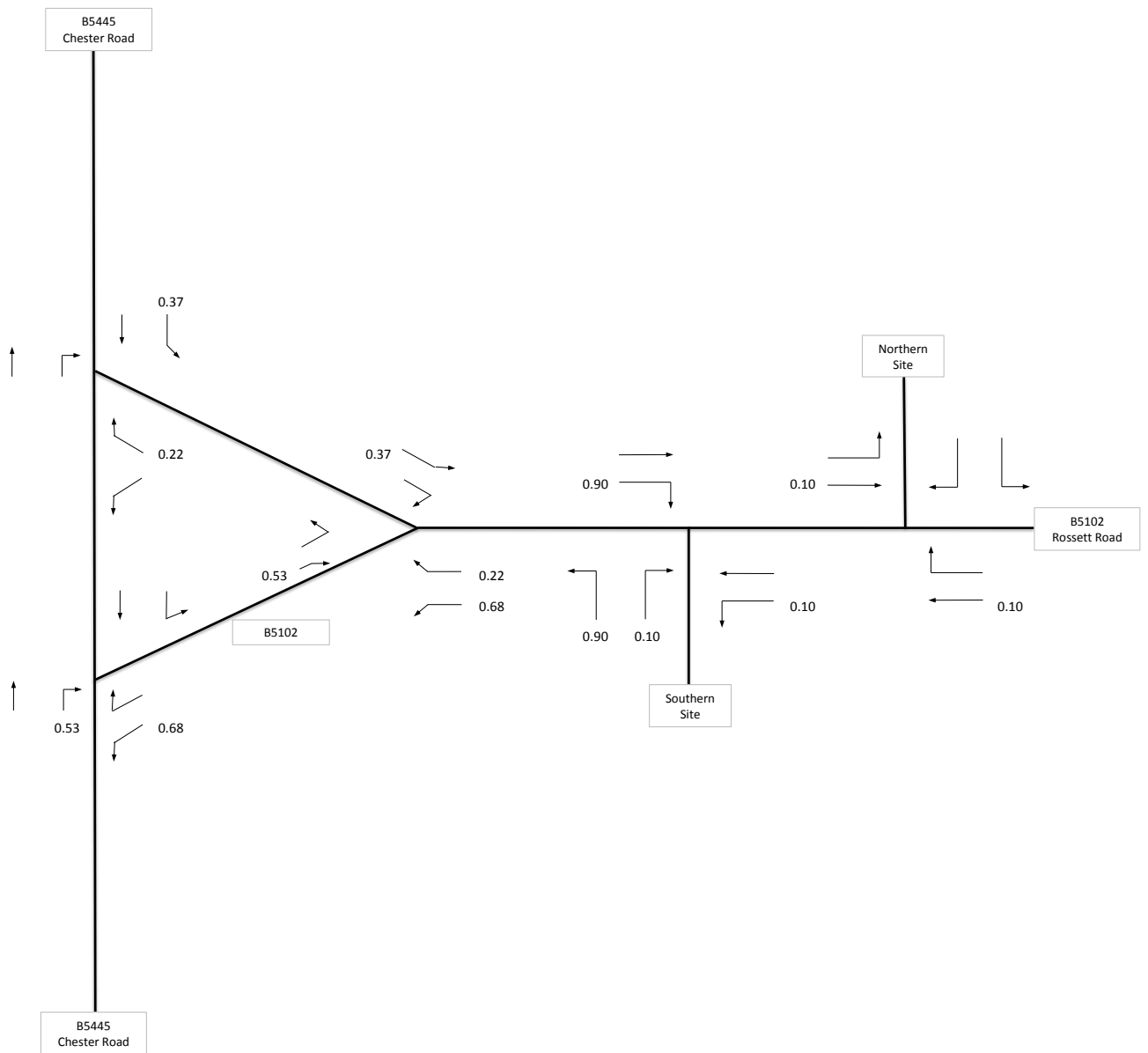
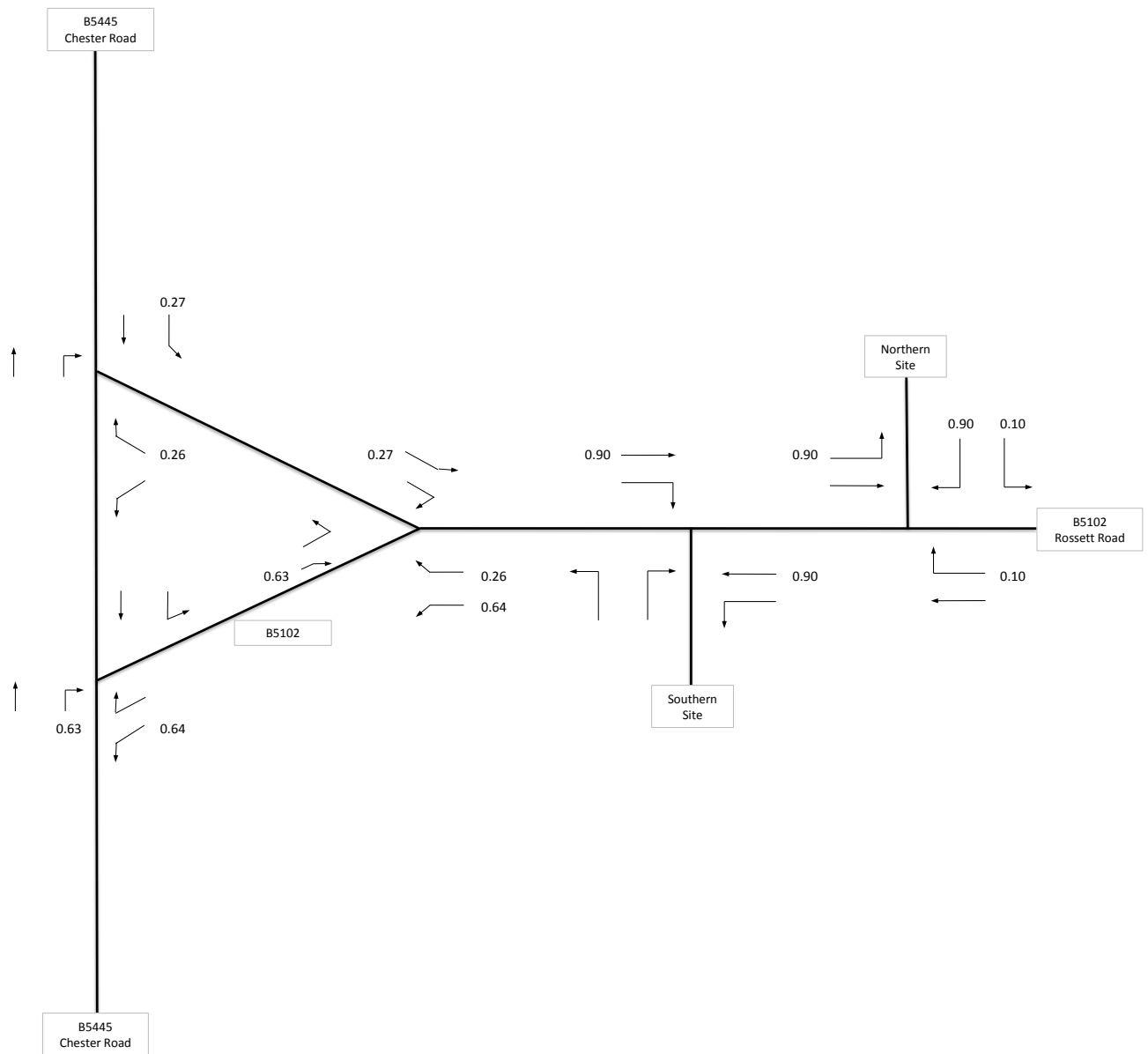
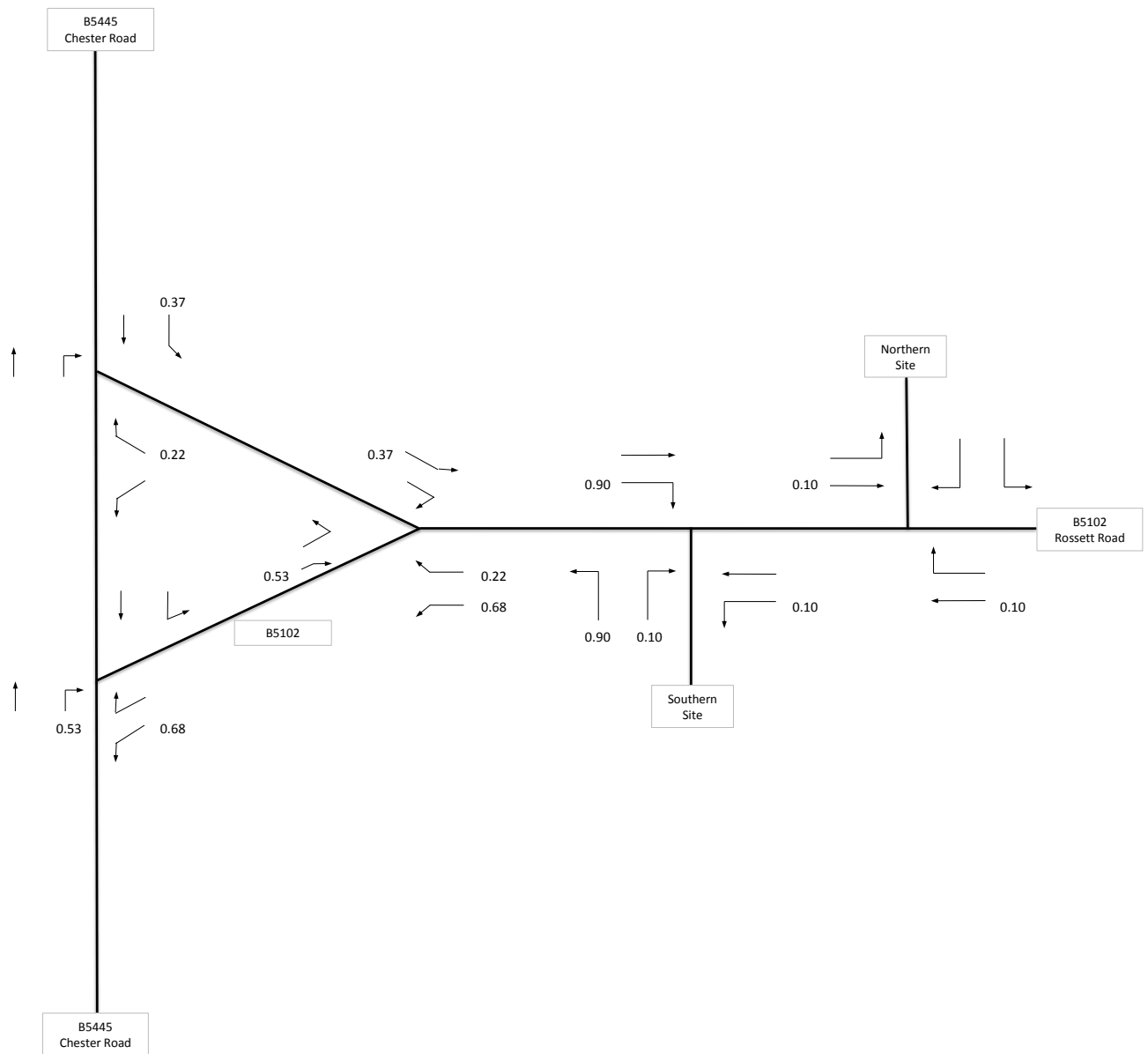


Figure 5b - Trip Distribution - AM Peak (0800 to 0900)
Southern Site



Flows in PCUs

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



Flows in PCUs

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

IN	8
OUT	29

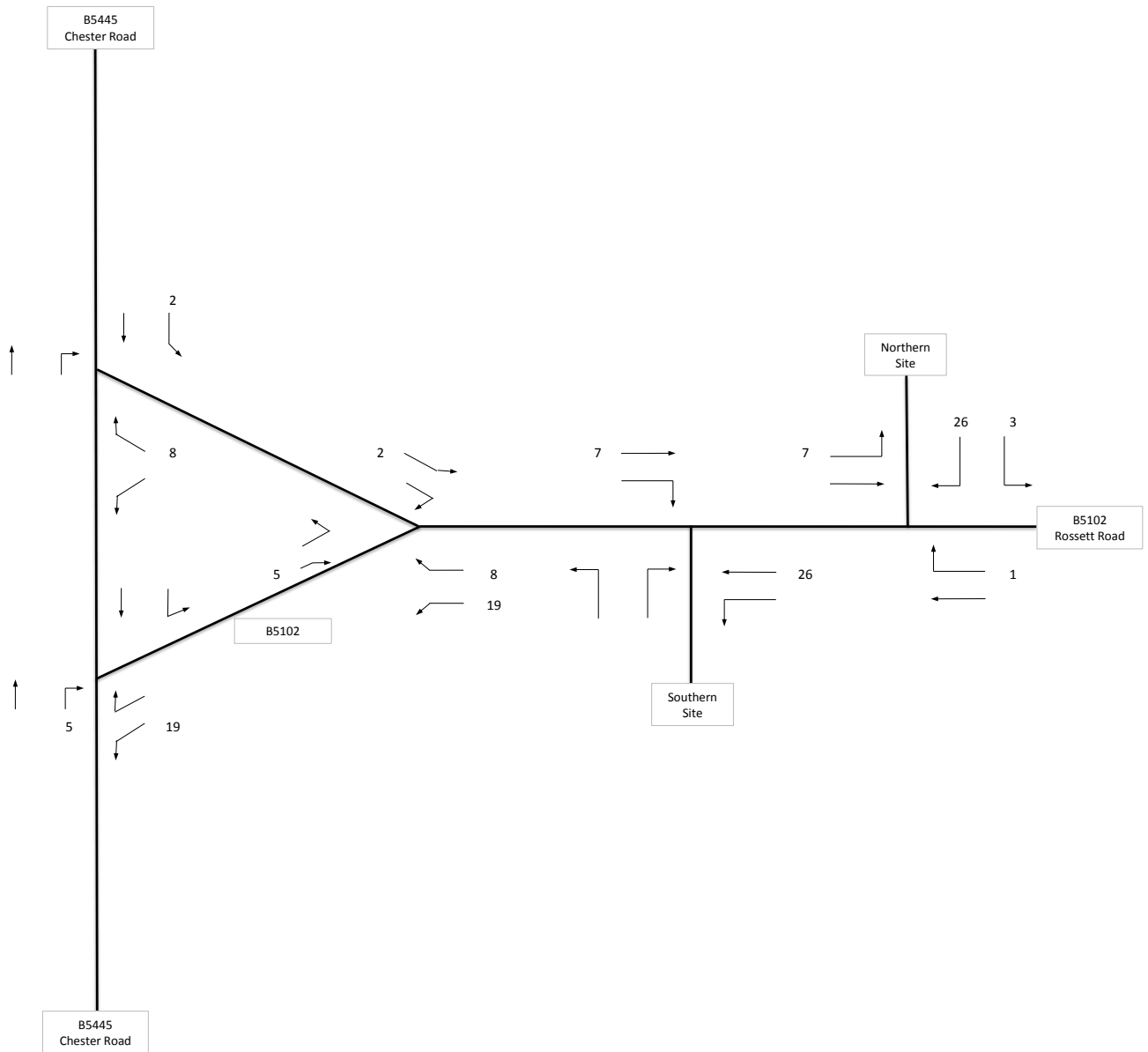


Figure 7a - Development Flows - AM Peak (0800 to 0900)
Northern Site

IN	9
OUT	34

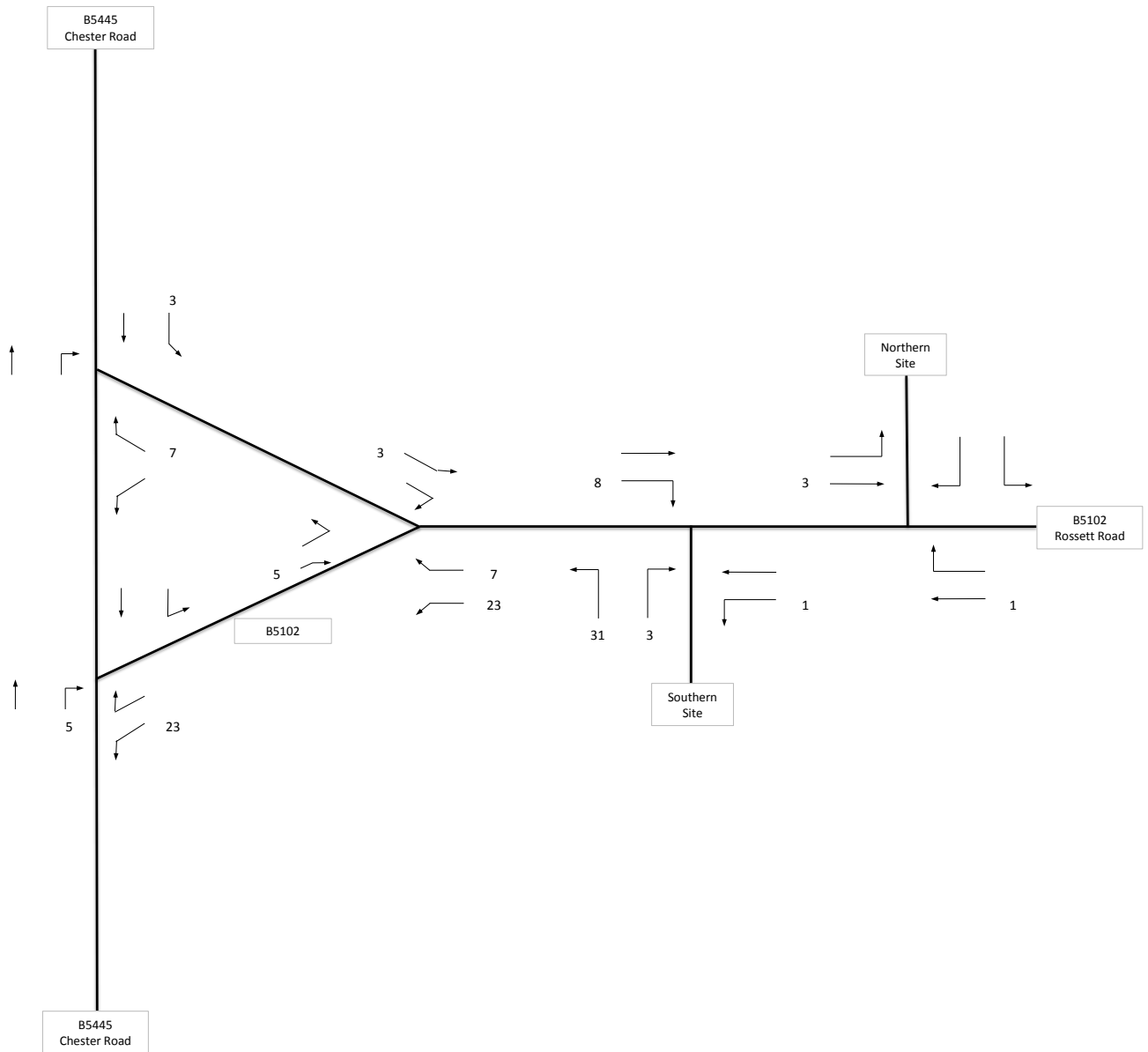


Figure 7b - Development Flows - AM Peak (0800 to 0900)
Southern Site

IN	29
OUT	16

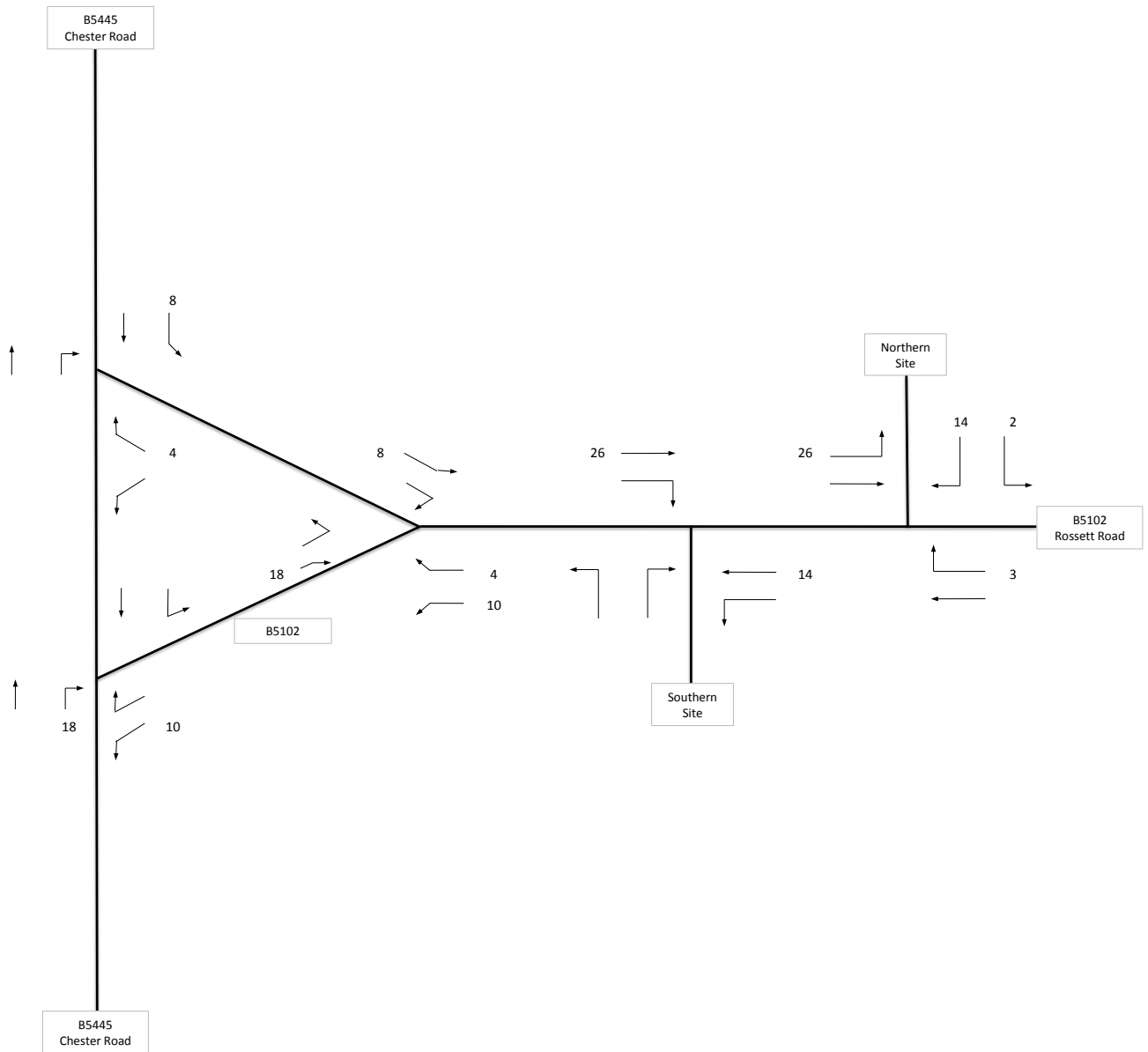


Figure 8a - Development Flows - PM Peak (1745 to 1845)
Northern Site

IN	34
OUT	18

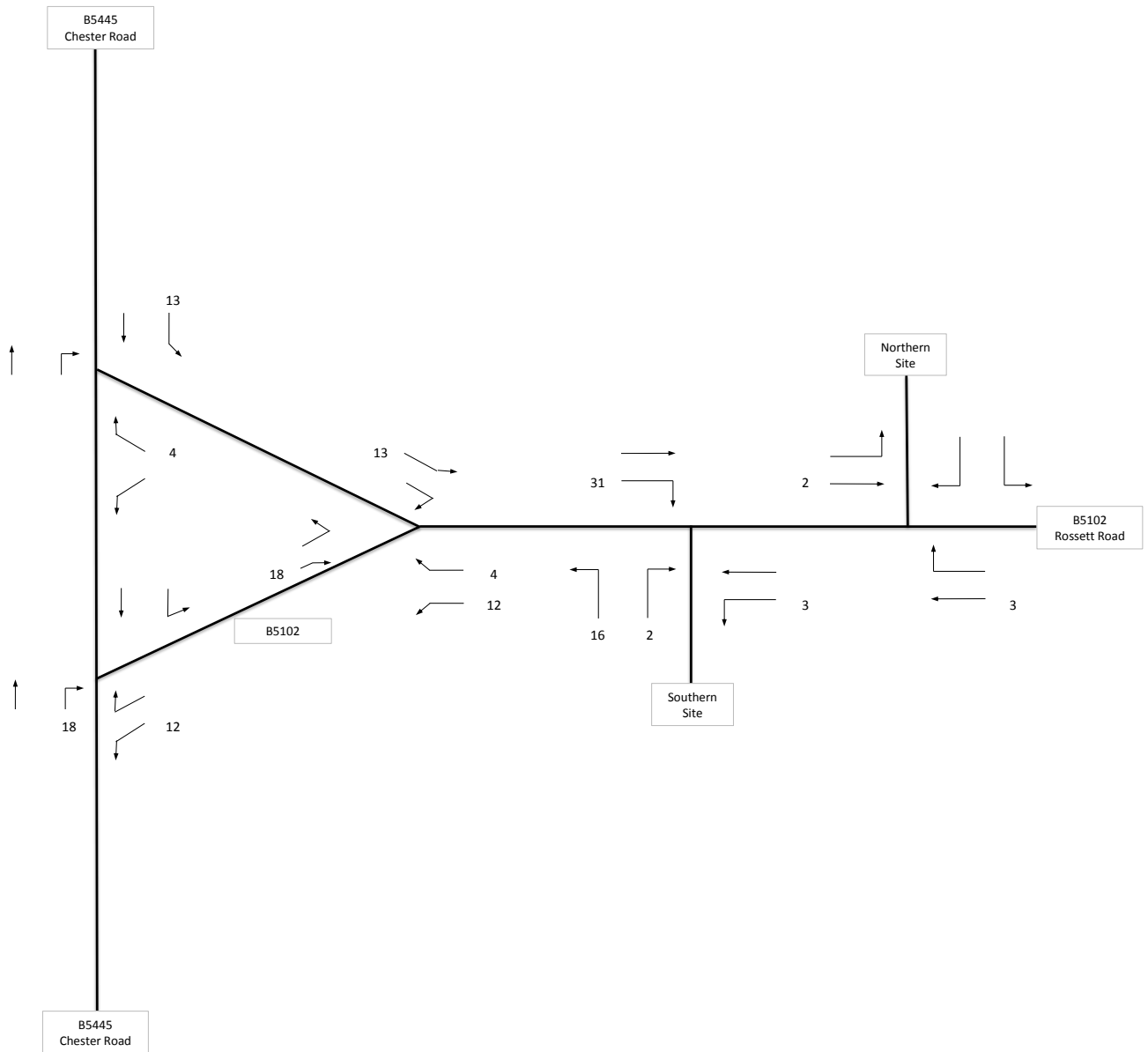


Figure 8b - Development Flows - PM Peak (1745 to 1845)
Southern Site

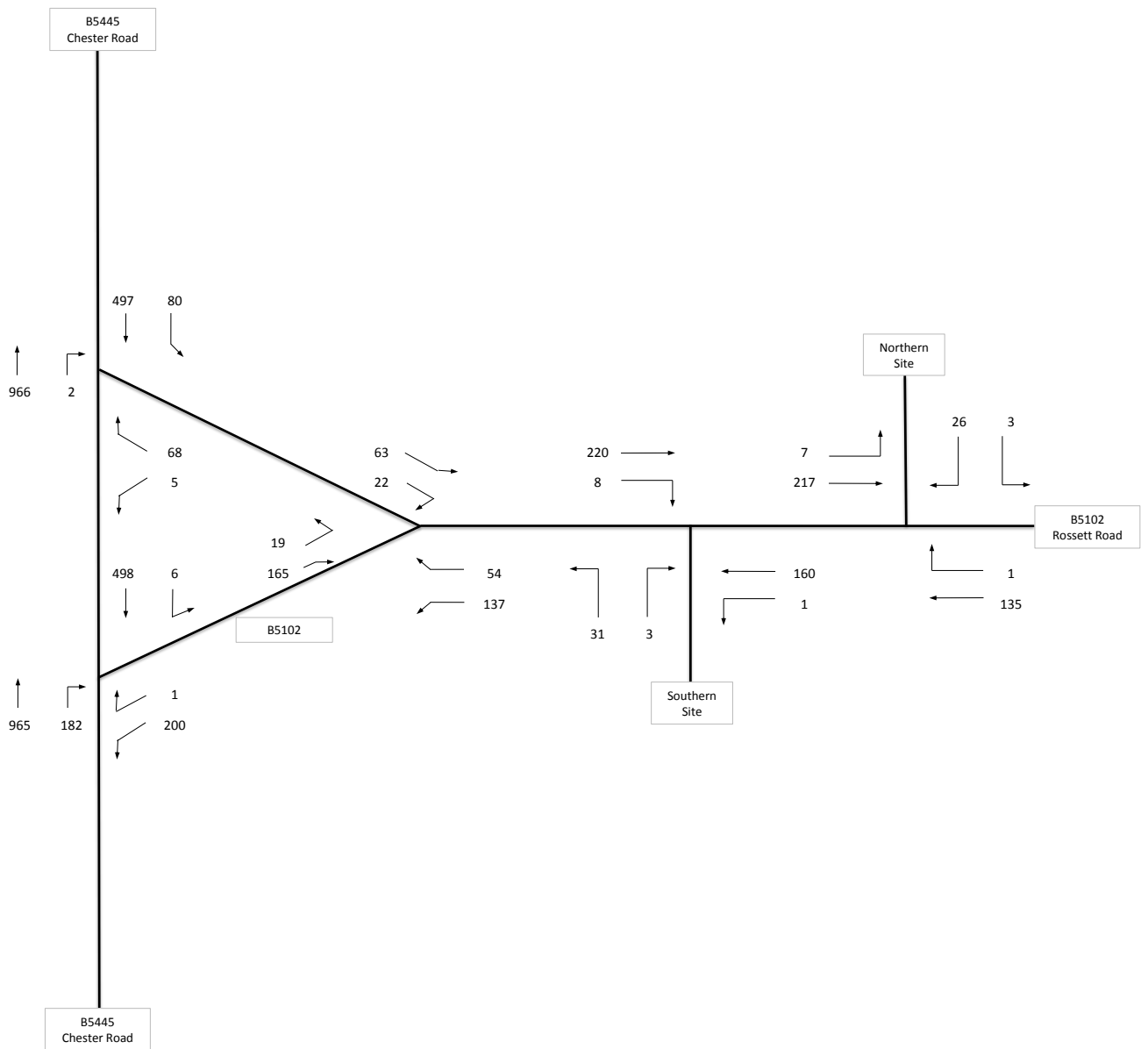
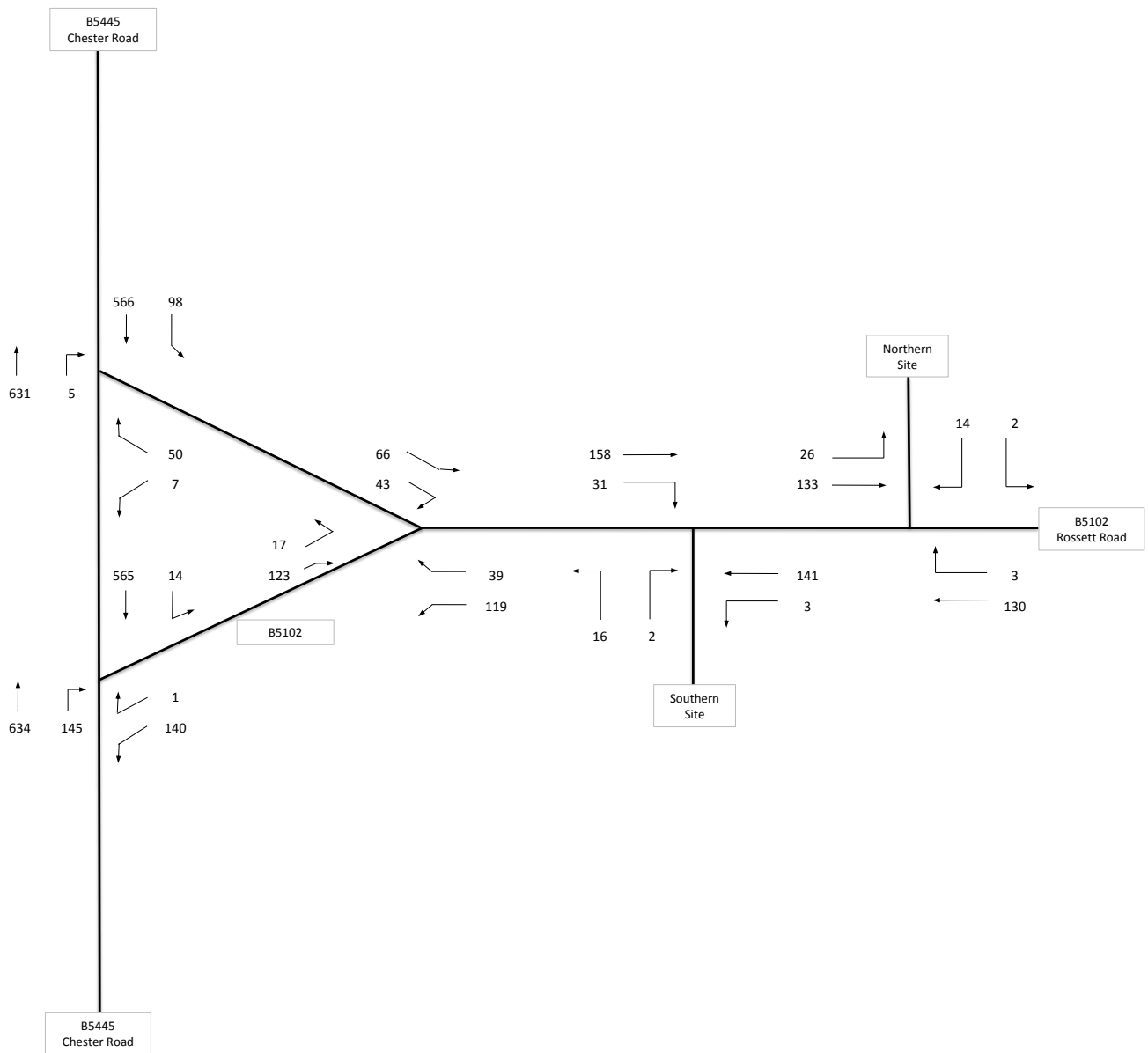


Figure 9 - 2028 Assessment Flows - AM Peak (0800 to 0900)



Flows in PCUs

Figure 10 - 2028 Assessment Flows - PM Peak (1645 to 1745)

DRAWINGS



NORTH SOUTH AERIAL VIEW



REV.	DETAILS	DRAWN	CHECKED	DATE	NOTES	ROSSETT ROAD, ROSSETT			BELLIS BROS LTD	
A	AMENDED FOLLOWING COMMENTS FROM WCBC	JC	MR	FEB 19	THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES.	PROPOSED FOOTWAY IMPROVEMENTS ALONG HOLT ROAD			Croft Transport Planning & Design Hill Quays 9 Jordan Street Manchester M15 4PY Email: info@crofts.co.uk Tel: 0161 667 3746 Web: www.crofts.co.uk	
B	AMENDED FOLLOWING COMMENTS FROM WCBC (PRIORITY ARRANGEMENT REMOVED AND CROSSING AND TACTILES RELOCATED TO THE WEST)	LB	MR	APR 19						
EXISTING DRIVEWAYS NEW KERBS EXISTING ADOPTED HIGHWAY NEW FOOTWAYS	DRAWN: LB		CHECKED: MR		DATE: APR 19		SCALES: 1:500 @ A3		DRAWING NUMBER: 0807-04	REVISION: B

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NOTES

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ANALYSIS, TOPOGRAPHICAL MAPPING &
HIGHWAY/THIRD PARTY LAND BOUNDARIES.

— DENOTES NEW KERBS

REV.	DETAILS	DRAWN	CHECKED	DATE
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CLIENT:

BELLIS BROS LTD

PROJECT:

ROSSETT ROAD, ROSSETT

DRAWING TITLE:

**PROPOSED ACCESS JUNCTIONS
AND ZEBRA CROSSING
ARRANGEMENT**

SCALES:

1:1000 @ A1

DRAWN:

SM

CHECKED:

MR

DATE:

JUNE 16

9 Jordan Street,
Manchester,
M15 4PY

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

croft
Transport Solutions

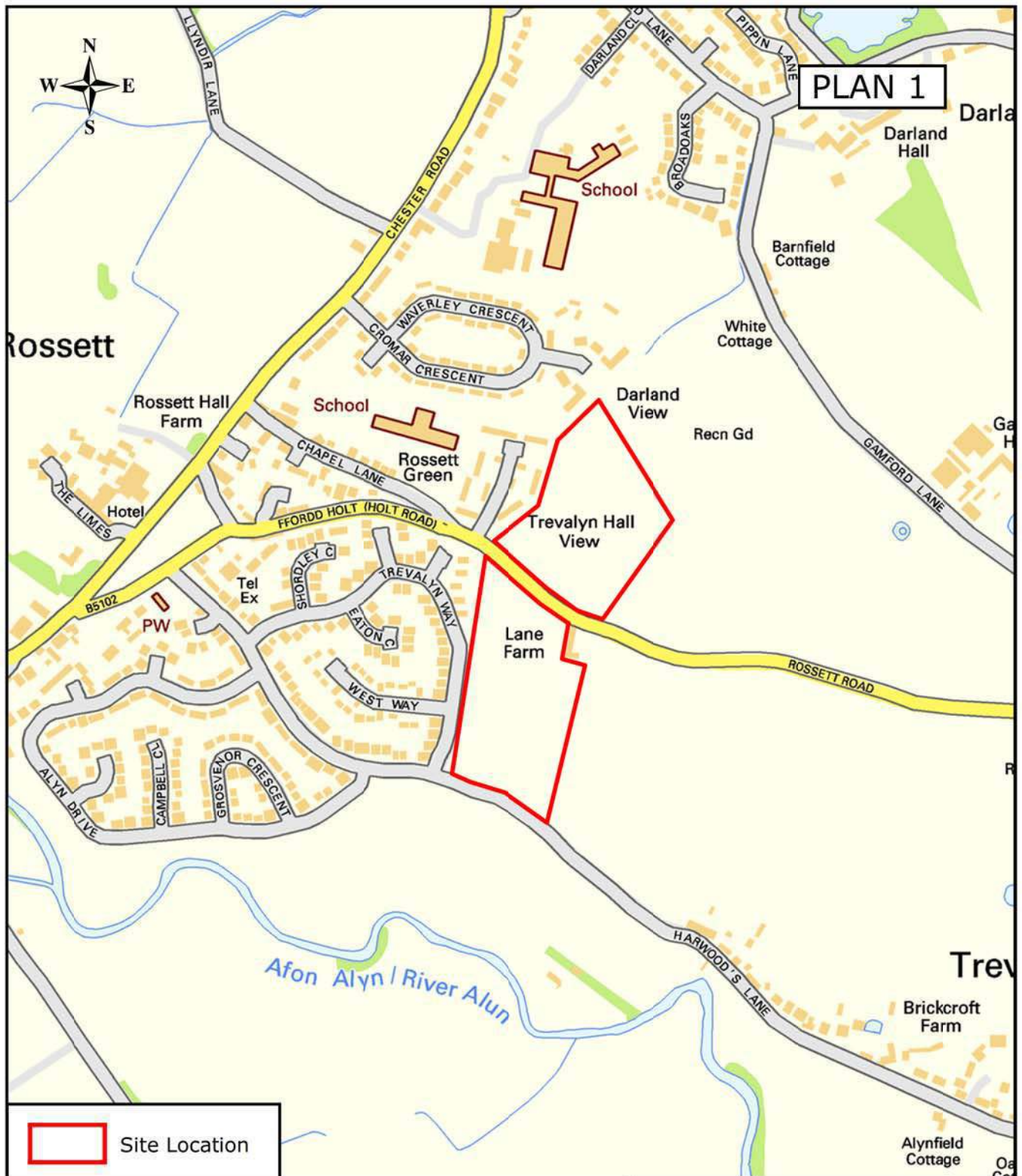
DRAWING NUMBER:

0807-F03

REVISION:

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PLANS



BELLIS BROS LTD

**PROPOSED RESIDENTIAL DEVELOPMENT
ROSSETT ROAD, ROSSETT
SITE LOCATION PLAN**

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Transport Solutions

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M15 4PY

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SM	05.02.16	MR	05.02.16	N.T.S	0807-01	.

KEY

-  EXISTING TREES
-  EXISTING HEDGEROWS
-  PROPOSED TREES
-  PROPOSED HEDGEROWS
-  PROPOSED PARK
-  PROPOSED HOUSING
-  PROPOSED STREET
-  PROPOSED SHARED SURFACES
-  PROPOSED SUDS POND

PLAN 2



REV. AMENDMENT. DATE

Parkinson
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
DATE 05.02.17 ROSSETT
CHECKED IP DRAWING NO. P100-37-SMP-01

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HIGHWAY/THIRD PARTY LAND BOUNDARIES.

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PLAN 3

REV.	DETAILS	DRAWN	CHECKED	DATE

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BELLIS BROS LTD

PROJECT:
ROSSETT ROAD, ROSSETT

DRAWING TITLE:
**PROPOSED ACCESS JUNCTIONS
AND ZEBRA CROSSING
ARRANGEMENT**

SCALES:
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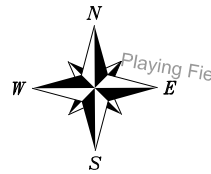
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Manchester,
M15 4PY
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NOTES

Large Refuse Vehicle (4 axle)

Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.504m
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:	SM	CHECKED:	MR	DATE:	NOV 16
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Tel: 0161 667 3746
Web: www.crofts.co.uk

DRAWING NUMBER:	0807-SP01	REVISION:	F
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PLAN 5



NOTES

- INDICATIVE SITE BOUNDARY
- HOLT ROAD ROUTE FROM NORTHERN SITE (650 METRES = APPROX 8 MINUTES WALKING TIME)
- HOLT ROAD ROUTE FROM SOUTHERN SITE (595 METRES = APPROX 8 MINUTES WALKING TIME)
- TREVALYN WAY ROUTE FROM NORTHERN SITE (708 METRES = APPROX 9 MINUTES WALKING TIME)
- TREVALYN WAY ROUTE FROM SOUTHERN SITE (570 METRES = APPROX 7 MINUTES WALKING TIME)
- HARWOODS LANE ROUTE FROM SOUTHERN SITE (665 METRES = APPROX 9 MINUTES WALKING TIME)
- HARWOODS LANE ROUTE FROM NORTHERN SITE (872 METRES = APPROX 11 MINUTES WALKING TIME)
- CHESTER ROAD ROUTE (653 METRES = APPROX 8 MINUTES WALKING TIME)
- HOLT ROAD THROUGH TREVALYN WAY (698 METRES = APPROX 8 MINUTES WALKING TIME)

REV	DETAILS	DRAWN	CHECKED	DATE

CLIENT:
BELLIS BROS LTD

PROJECT:
ROSSETT ROAD, ROSSETT

DRAWING TITLE:
WALKING ROUTE PLAN

SCALE:
NTS @ A3

DRAWN: SM	CHECKED: MR	DATE: FEB 19
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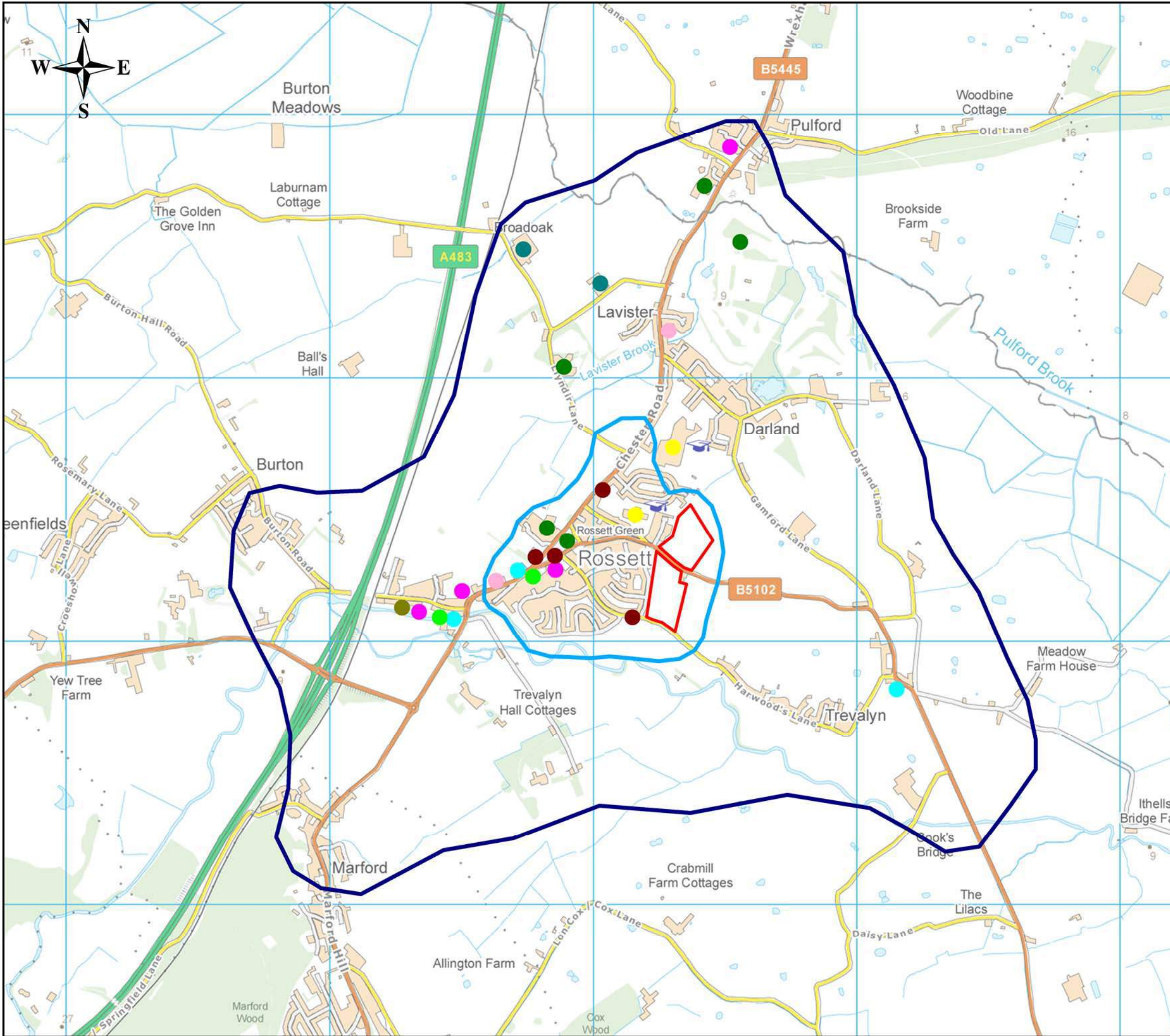
Croft Transport Planning & Design
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Manchester
M15 4PY

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

DRAWING NUMBER:
0807-03

REVISION:
A

CROFT



NOTES

PLAN 6

- 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: SM	CHECKED: MR	DATE: 09.02.16
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9 Jordan Street,
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DRAWING NUMBER: 0807-03	REVISION: .
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APPENDICES

APPENDIX 0

Statement of Common Ground (SoCG)



PROPOSED RESIDENTIAL DEVELOPMENT, ROSSETT ROAD, ROSSETT

LPA REF: P/2018/0560

APPEAL REF: APP/XXXX/X/XX/XXXXXX

HIGHWAYS STATEMENT OF COMMON GROUND BELLIS BBROS LTD & WREXHAM COUNTY BOROUGH COUNCIL (WCBC) – 14 MAY 2019

1. This document sets out the areas of agreement relating to the highways issues of a planning appeal relating to a proposed residential development on land to the north and south of Rossett Road in Rossett.
2. This Statement of Common Ground sets out the matters relating to traffic impact that are agreed between the appellants and Wrexham County Borough Council (WCBC), including trip generation rates and trip distribution, as well as any matters that are not agreed.
3. The documents referenced for this Statement of Common Ground, are as follows:
 - Transport Assessment (TA) prepared by Croft Planning & Design dated 6th November 2018 (ref. o8o7TA.9).

Matters Agreed

4. 2015 Surveyed Flows

It is agreed that the 2015 surveyed flows contained in Figures 1 and 2 within the Transport Assessment are representative of the AM and PM peak periods of the local highway network.

This was originally raised as a matter of potential concern given the lapse in time since the original surveys were undertaken. To that end, the highway office requested that some evidence be put forward so that the level of traffic volumes in 2015 and 2018 could be compared.



An Automatic Traffic Counter (ATC) was therefore installed on the B5445 Chester Road for a duration of 1 week between 26th September 2018 and 2nd October 2018. The ATC collected both vehicle volumes and traffic speeds. The 2018 data shows there has been a reduction in traffic since the original surveys were undertaken on 2015. On that basis, it is considered that the original 2015 data is suitable and appropriate for use for the assessments. Indeed, this was confirmed by the highways officer during the meeting and so no additional surveys have been undertaken.

5. Trip Generation Rates

The trip generation rates are agreed as being suitable to establish the impact of the Appeal proposals. The trip generation rates were provided by WCBC and were derived from recently conducted traffic counts at a relatively new housing development which has similar characteristics to the application site. The agreed trip rates are contained in Table 7.5 of the TA.

6. Trip Distribution

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. The highways officer also requested confirmation of the split of traffic at the site access which can be confirmed as being 10% to the east and 90% towards the village which can be considered to be robust.

The trip distribution utilised for the TA is therefore agreed.

7. Trip Distribution (Altered to take account of the potential TRO scheme)

During discussions, it was understood that WCBC were seeking to implement a series of traffic regulation orders within the village which included a change in direction of flow at the B5445 Chester Road/The Green junction, meaning vehicles would have only been permitted to travel southbound. This in turn would have meant that traffic previously using this link from Rossett Road to the B5445 northbound, would then have been required to utilise the junction of the B5445 Chester Road/B5102.



In light of the above, the submitted revised TA included an additional set of assessments based on the above changes in traffic and presented the subsequent capacity analysis as a 'sensitivity' test. The assessments demonstrated that the proposed development would not give rise to any junction capacity issues, even with the proposed TRO's in place. This was confirmed by the highways officer who stated in his response that:

"Junction assessments (Picady) based on the existing and proposed one-way system have been provided. The assessments indicate that the existing junctions will still operate with reserve capacity with or without the proposed changes for a future year of 2028 with the proposed development".

While it has since been confirmed that the works are no longer being progressed, it should be noted that the additional assessments undertaken demonstrated that the impact of the development will not be material and that development traffic could continue to be accommodated on the local road network, should those works be re-introduced in the future.

It is therefore agreed that the proposals will not have a material impact on the local highway network.

8. Traffic Flows

The use of the 2015 surveyed flows and the manual assignment of traffic growth using the National Traffic Model (NTM) factors adjusted by the TEMPRO regional and local growth factors for Wrexham provides an acceptable analysis of traffic conditions.

The base and future year scenario flows are therefore agreed.

9. Traffic Impact

It is agreed that the proposals will not have a detrimental impact on the operation of the highway network or give rise to road safety issues, subject to the proposed footway improvement works being implemented along the B5102 Holt Road in accordance with drawing ref no. 0807-04 REV B, which the highways officer has confirmed "... is considered to enhance pedestrian safety along Holt Road".



10. Access into the Sites

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 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. The highways officer has confirmed in the latest correspondence that:

"It would be possible to provide the required visibility splays based on speeds of 30mph for both proposed access points subject to modifications to the existing hedgerow". The proposed site access junctions are shown in Drawing ref no. 0807-F03 REV D.

It is therefore agreed that the proposed points of vehicular access are suitable in their design and form to serve the development.

All transport and highways matters are now agreed.

Signed.....*P. Wooliscroft*.....

Date.....*15/05/19*.....

By **Phil Wooliscroft** of Croft Transport Solutions on behalf of the Appellant (Bellis Bros Ltd)

Signed.....*Peter Douthwaite*.....

Date.....*14/05/19*.....

By **Peter Douthwaite** on behalf of the local highway authority (WCBC)

APPENDIX 1

Highways Notes v3 and v4

TRANSPORT ASSESSMENT – HIGHWAYS NOTE V3 (APRIL 2019)

Proposed Residential Development, Land North and South of Rossett Road, Rossett

1. Introduction

- 1.1 Croft have been appointed by Bellis Bros Ltd to produce a Transport Assessment (TA) and Travel Plan (TP) to assist the Local Planning Authority's determination of an outline planning application for a residential development on two parcels of land to the north and south of Rossett Road in Rossett. The site location is shown in **Plan 1**.
- 1.2 It has been confirmed in correspondence from the officers in the highway department at Wrexham County Borough Council (WCBC) dated 19th December 2018 that all matters relating to highways have been resolved, with the exception of road safety and the potential pedestrian/vehicle conflict along a short section of the B5102 Holt Road, where there is currently no footway.

2. Scope of Note

- 2.1 The purpose of this note is therefore to address this last remaining issue and demonstrate that the proposals are acceptable in highways terms and that suitable mitigation could be provided, if deemed necessary by the local highway authority.
- 2.2 As such, this note sets out the results of the recently collected traffic data, along with information relating to existing pedestrian, cyclist and agricultural traffic movements along Holt Road and detail a potential improvement option to address the issue of the lack of footway provision.
- 2.3 Following submission of this Highways Note and associated plan showing the proposed footway improvements, comments have been received from the Council's highway department.

3. Background

- 3.1 In the most recent consultation response from WCBC (detailed above) and in regard to 'Pedestrian and Cycle Access' the highway officer stated that *"The main bus stops 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 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”.

- 3.2 Croft acknowledge the current situation and indeed put forward a potential improvement scheme as part of the revised TA. The scheme sought to utilise existing grass verge on Holt Road where appropriate and convert it into footway. A demarcated pedestrian route was also proposed along Chapel Lane. These improvements however were not supported by the highway officers at WCBC and so they were subsequently omitted from the proposals.

4. Traffic and Multi Modal Surveys

- 4.1 In order to establish existing traffic volumes and the usage of Holt Road along this section, a traffic survey was undertaken in conjunction with a multi-modal survey which counted pedestrians and noted whether they were children, teenagers or adults. The surveys took place on Monday 28th January and Tuesday 29th January 2018 at the following times;

- 0730hrs to 1000hrs; and
- 1500hrs to 1900hrs.

- 4.2 The survey data is contained within **Appendix 1**.

Traffic Surveys

- 4.3 A summary of the morning traffic survey results, which includes any farm traffic (as noted) is shown in **Table 4.1** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
0730	0	0	16	1	0	0	0	0	0	0	12	2	1	0	0	0
0745	0	0	25	2	0	0	0	0	0	0	24	5	0	0	0	0
0800	0	0	28	2	2	0	1	0	0	0	35	4	0	0	0	0
0815	0	0	28	2	1	0	2	0	0	0	24	5	0	0	1	0
0830	0	0	31	4	4	0	0	0	0	0	33	3	0	1	0	0
0845	0	1	23	2	0	1	0	0	0	0	41	5	2	0	0	1
0900	0	0	20	4	2	0	0	0	0	0	14	2	3	0	0	0
0915	0	0	14	2	1	0	0	0	0	0	12	0	0	1	0	0
0930	1	0	13	2	0	0	0	0	0	0	15	3	1	0	0	0
0945	0	0	14	2	0	0	0	0	1	1	16	2	0	0	0	0

FT = Farm Traffic

Table 4.1 – Summary of Traffic Survey (AM)

- 4.4 As can be seen above, this section of Holt Road is very lightly trafficked in the morning period, which includes the previously identified peak hour which occurred between 0800 hrs and 0900hrs.
- 4.5 Similarly, the survey has shown that the number of heavy good vehicles is low, as is the amount of farm traffic.
- 4.6 Only 1 cyclist in each direction were observed to be utilising this part of Holt Road and the maximum number of buses was 3 between 0800hrs and 0815hrs in the westbound direction, with only 1 bus travelling eastbound at 0815hrs.
- 4.7 A summary of the afternoon traffic survey results is shown in **Table 4.2** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
1500	2	0	16	1	1	0	0	2	0	0	37	3	1	1	0	0
1515	0	0	18	0	1	0	0	0	0	0	20	1	2	0	1	0
1530	0	1	14	5	0	0	0	0	1	0	22	4	0	0	0	1
1545	0	0	24	2	0	0	0	1	0	0	22	1	0	0	0	0
1600	0	0	17	0	3	0	1	0	0	0	28	2	0	1	0	0
1615	0	1	30	7	0	1	1	0	0	0	23	1	1	0	0	1
1630	1	0	26	6	0	0	0	0	0	0	21	6	0	0	0	0
1645	0	0	17	4	0	0	0	0	0	0	23	2	1	0	0	0
1700	0	0	19	4	0	0	1	0	0	0	22	0	0	0	0	0
1715	0	1	26	2	0	0	0	0	0	0	31	2	0	0	0	0
1730	0	0	21	3	1	0	0	0	0	0	21	1	1	0	0	0
1745	0	0	20	2	0	0	0	0	0	0	20	1	0	0	0	0

FT = Farm Traffic

Table 4.2 – Summary of Traffic Survey (PM)

- 4.8 As can be seen above, the volumes of traffic during the afternoon are similar to the morning period, although 3 cyclists were observed in the westbound direction and 1 was observed travelling eastbound.
- 4.9 The number of heavy goods vehicles is still low and the number of buses recorded was 2 travelling westbound between 1600hrs and 1615hrs, with one additional bus observed at 1700hrs. Only 1 bus was observed travelling eastbound at 1515hrs. The results show there were 3 farm vehicle traffic movements travelling westbound and 2 further farm vehicles travelling eastbound, which is not considered unusual given the sites rural location.

Pedestrian Surveys

- 4.10 It is understood that the school day at Darland High School starts at 0855hrs and ends at 1520hours.

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- 4.11 The school day at St Peters Primary School starts at 0900hrs and the finishing times can be summarised as follows;
- Nursery - finishes at 1130hrs;
 - Year 2 - finishes at 1500hrs; and
 - Years 3 to 6 finish at 1515hrs.
- 4.12 The morning pedestrian surveys commenced at 0730hrs and the first pedestrian was observed at 0736hrs, which was a child walking on the northern side of Holt Road in a westbound direction. Another child was observed doing the same thing around a minute later.
- 4.13 A review of the results show that the remaining pedestrians were teenagers or adults, one of the adults was pushing a pram and one was walking a dog. The majority of trips were being made in a westbound direction (towards the village), with only one person (adult) walking eastbound.
- 4.14 The afternoon surveys commenced at 1500hrs, but the first pedestrian was not observed until 1519hrs, which was an adult walking on the northern side of the road in a westbound direction.
- 4.15 The results show that a further adult was observed walking in an eastbound direction at 1523hrs, where they were walking along the northern side of the road, but then crossed to the opposite side. Between 1523hrs and 1527hrs two adults with prams and a child were observed walking westbound, where one crossed from the northern side to the opposite side and the other continued to walk on the northern side. Between 1532hrs and 1538hrs, a total of 13 teenagers were observed to be walking mainly westbound, with only two walking in an eastbound direction.
- 4.16 The results show that for the remainder of the survey, all the pedestrians were either adults or teenagers, with one adult and two children observed to be walking westbound at 1713hrs.

5. Alternative Walking Routes

- 5.1 The revised TA (dated November 2018) included information relating to the alternative walking routes available to residents and included a review of walking distances and walking times. This matter was also discussed at a meeting held with the Councils highways department and planning case officer on 11th October 2018. It was confirmed that while pedestrians (including children) have been observed to walk on the carriageway at this location on Holt Road, the fact that safer (more attractive) routes to the village exist is indisputable, albeit that it will be up to the individual to choose which route to use.
- 5.2 To that end, a plan to show the alternative routes including comparable walking times and distances to the junction of B5445 Chester Road/B5102 Holt Road (close to the Co-operative Foodstore) has been prepared, as shown in **Plan 2**.

- 5.3 It shows the difference in distance and walking times between using Holt Road or roads within the existing residential development located to the west of the southern site.
- 5.4 It also includes a further route which utilises Chester Road and Waverley Crescent, which are subject to a 20mph speed limit and so still provides another option for older children walking to Darland High School from the village. Clearly, any children residing at the new development would have no need to take such a route as they will simply use the improved footpaths and footways within the site and alongside Trevalyn hall View to get to Darland High School.
- 5.5 For ease, the walking distances and times are summarised in **Table 5.1** below.

Route	Northern Site		Southern Site	
	Distance (m)	Time (mins)	Distance (m)	Time (mins)
Holt Road	650	8	595	8
Trevalyn Way	708	9	570	7
Harwood's Lane	872	11	665	9
Distance and Walking Times from Co-operative Store to Darland High School				
Chester Rd/Waverley Crescent	653 metres		8 minutes	
Holt Road via Trevalyn Hall View & Waverley Crescent	698 metres		8 minutes	

Table 5.1 – Summary of Walking Routes, Distances and Walking Times

- 5.6 As can be seen on the plan, the route through the existing housing estate (Trevalyn Way) is very similar in length and walking time to the route along Holt Road for residents at the northern site, being just one minute longer and the Trevalyn Way route is both shorter and quicker for residents at the southern site.
- 5.7 The route along Harwood's Lane is slightly longer of those at the northern site, but the walking time is only 2 minutes longer than the walk along Holt Road, so residents are likely to still choose the route through the estate.
- 5.8 Similarly, the walking route along Harwood's Lane for residents at the southern site is only a minute longer than the Holt Road route, so again, this may seem to be the more favourable option.

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- 5.9 In light of the above, and considering the reduced speed limit through the village, it is not considered that even with an increase in pedestrian traffic, that the proposals will give rise to any highway safety issues.
- 5.10 Clearly, residents will have the choice about which route they take, but the improved linkages to St Peters School and potentially Darland High School should encourage school children to use these off-road routes where appropriate, thus having a positive impact on road safety and assisting in delivering a safer route to schools.
- 5.11 The comparison of the route along Chester Road and Waverley Crescent shows that this route is slightly shorter than using Holt Road, Trevalyn Hall View and Waverley Crescent, although the walking times are more or less the same. This demonstrates that an alternative safe route is available, whether people choose to use them or not.

6. Speed Limit Reductions

- 6.1 Furthermore, the reduction in speed limit (to 20mph) now in operation through the village will have a positive effect and further improve the pedestrian environment, thus making it safer than the current situation for all road users, including those with mobility problems.
- 6.2 The extent of the existing 20mph speed limit within the village is shown in **Plan 3**, while further 20mph restrictions are proposed within the existing residential development to the west of the southern site including along Trevalyn Way, Harwood's Lane, Alyn Drive and West Way, as shown in **Plan 4**.
- 6.3 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”.

- 6.4 It is worth noting that the above conclusions were based on a speed limit of 30mph, whereas the speed limit in this instance is 20mph.
- 6.5 It can therefore 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 road safety in the area.

7. Proposed Mitigation

- 7.1 It should be noted that the section of Holt Road which has no footway, equates to a distance of less than 80 metres.
- 7.2 Notwithstanding the above, Croft considered the implementation of improvements which comprised a short one-way section on Holt Road, where there is no footway, with the priority being given to eastbound traffic. This allowed a new footway to be created on the southern side of Holt Road, by converting existing verge to a surfaced footway and providing dropped kerbs and tactile paving to allow pedestrians to cross back over to the existing footway along the northern side.
- 7.3 As already stated, comments from WCBC on the previously proposed scheme have been received and are contained within **Appendix 2**.
- 7.4 On that basis, the scheme has been revised to take account of the points raised and the revised proposals are presented in **Drawing ref no. 0807-04 REV A**.
- 7.5 For ease the changes to the proposals are summarised, as follows;
- To address the footway widths issue, it is now proposed to provide additional widening to the footway to provide a minimum of 1.5 metres, although in places this is increased to 2.1 metres (to the west) and 1.6 metres (to the east), this maintains a carriageway width of no less than 5.5 metres, as annotated on the plan;
 - To address the point regarding visibility, Croft have now incorporated a section of grass verge from the dropped kerb crossing on the southern side, to the east, which would require some of the existing hedge to be trimmed back. As shown on the plan, this area lies within adopted highway land and would allow 25 metres forward visibility (commensurate with traffic speeds of 20mph to be provided) to and from each crossing point in both directions, as shown on the plan.

- To address access to the existing property, Croft have relocated the give-way markings further over to the west to allow for vehicles exiting no.2 Vine Clad Cottage. This allows them to pull out of the driveway, if they wish to turn right and exit onto the opposite side of the road (as they do at present) and thus, could either continue westbound or simply wait at the give-way line, if a vehicle is approaching from the village. The associated swept path analysis for a large car undertaking this manoeuvre is also shown on the plan.

- 7.6 It is considered that the above revisions to the proposals address the points raised by the highways department at WBCB. Again, it should be reiterated that this section of Holt Road is lightly trafficked and vehicle speeds will be low, given the 20mph speed limit in place. The proposed features such as the build out are also likely to have a positive effect and assist in reducing traffic speeds further.
- 7.7 On that basis, it is therefore considered that the proposed improvements provide a betterment to the existing situation and provide a safe walking route for those wishing to walk along Holt Road, albeit that alternative routes are available.

8. Conclusions

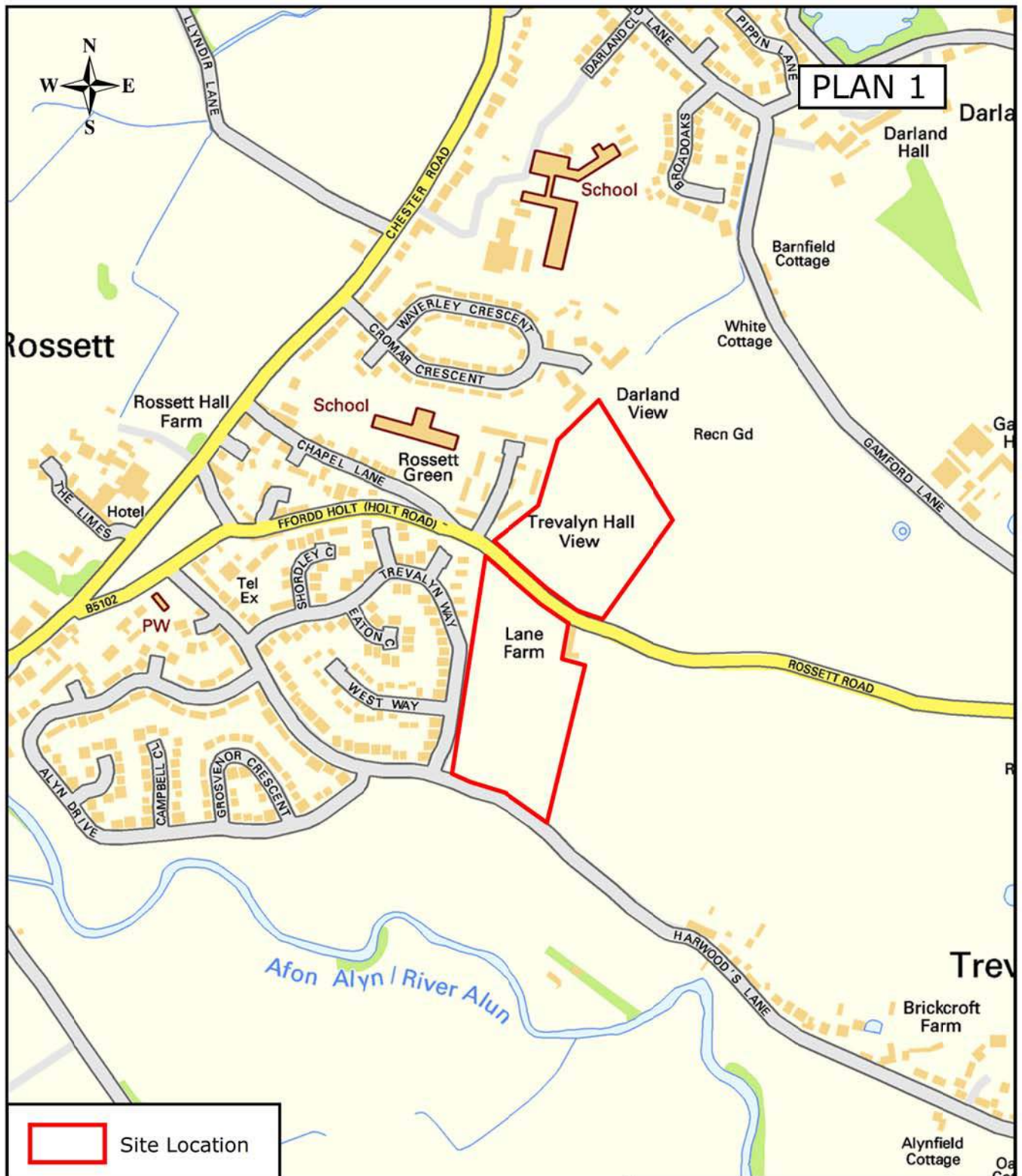
- 8.1 This Highways Note has provided additional information relating to the existing traffic volumes travelling along the B5102 Holt Road and the number of pedestrians/cyclists walking along this section of road, where there is no footway.
- 8.2 The traffic count data showed that Holt Road is lightly trafficked and comprises mainly cars, with only very few heavy goods vehicle movements and a small amount of agricultural traffic.
- 8.3 The pedestrian survey (which included cyclists) has demonstrated that the majority of people walking along this section of Holt Road were adults and teenagers. Only two children were observed walking unaccompanied, which took place just after 7.30am and so were likely to have been children walking to school.
- 8.4 The survey showed that while people walk in both directions, the majority of people were seen to be walking in a westbound direction, along the northern side of the road, which suggests they were walking to the village centre.
- 8.5 The comparison of walking routes, times and distances show that alternative shorter/quicker and safer routes are available through the established footway network.
- 8.6 Residents at the new development will be informed of these alternative routes and these will be promoted through the Travel Plan. The habits of existing residents in the area are more difficult to influence, but clearly safer routes are available to use, should pedestrians wish to do so.
- 8.7 The revised plan showing the proposed footway improvements take account of the issues raised by WBCB and demonstrate that these matters can be satisfactorily addressed.

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- 8.8 The amended scheme will be a betterment to the existing situation, thus having a positive impact on road safety and will ensure that a safe walking route is provided to both schools and local facilities in the village, should people choose to do so using Holt Road.
- 8.9 In conclusion, it is considered that taking account of the originally submitted information and the additional data that has been provided within this note, demonstrate that the proposals are acceptable in highway and pedestrian terms and will not give rise to any road safety issues.

PLANS



BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT
ROSSETT ROAD, ROSSETT
SITE LOCATION PLAN

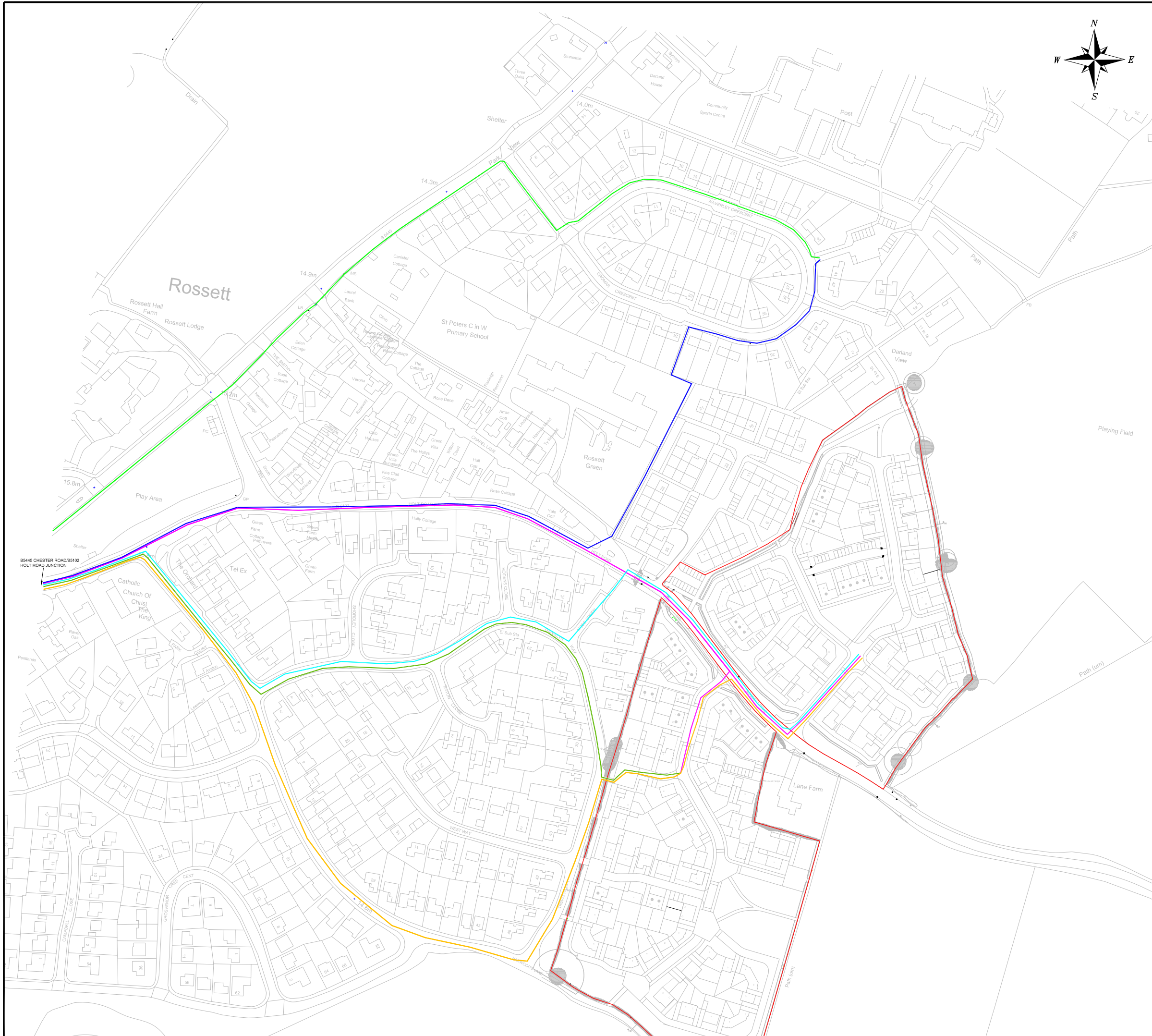
croft
Transport Solutions

Email: info@crofts.co.uk
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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	.

Z:\projects\0807 Rossett Road, Rossett\CAD\Croft Drawings\0807-03 REV A.dwg



NOTES

INDICATIVE SITE BOUNDARY

HOLT ROAD ROUTE FROM NORTHERN SITE
(650 METRES = APPROX 8 MINUTES WALKING TIME)

HOLT ROAD ROUTE FROM SOUTHERN SITE (595 METRES = APPROX 8 MINUTES WALKING TIME)

TREVALYN WAY ROUTE FROM NORTHERN SITE
(708 METRES = APPROX 9 MINUTES WALKING TIME)

TREVALYN WAY ROUTE FROM SOUTHERN SITE
(570 METRES = APPROX 7 MINUTES WALKING TIME)

HARWOODS LANE ROUTE FROM SOUTHERN SITE (665 METRES = APPROX 9 MINUTES WALKING TIME)

HARWOODS LANE ROUTE FROM NORTHERN SITE (872 METRES = APPROX 11 MINUTES WALKING TIME)

CHESTER ROAD ROUTE (653 METRES = APPROX 8 MINUTES WALKING TIME)

HOLT ROAD THROUGH TREVALYN WAY (698 METRES = APPROX 8 MINUTES WALKING TIME)

REV	DETAILS	DRAWN	CHECKED	DATE
CLIENT:				
BELLIS BROS LTD				
PROJECT:				
ROSSETT ROAD, ROSSETT				
DRAWING TITLE:				
WALKING ROUTE PLAN				
SCALES:				
NTS @ A3				
DRAWN:		CHECKED:		DATE:
SM		MR		FEB 19
Croft Transport Planning & Design Hill Quays 9 Jordan Street Manchester M15 4PY				 CROFT
Email: info@crofts.co.uk Tel: 0161 667 3746 Web: www.crofts.co.uk				
DRAWING NUMBER:			REVISION:	
0807-03			A	

St Peters C in W Primary School, Rossett, Wrexham 20mph Zone

Key

- Area of 20mph Zone.
- Area of School.

Erect new 20mph and 30mph signs on new post at back of footpath.

Erect new 20mph and 30mph signs on lighting column.

Remove existing 20mph and 30mph signs and post.

Remove existing traffic signal warning sign from lighting column No.6 and replace with new 20mph and 30mph signs.

Erect new 20mph and 30mph signs on new post at back of footpath.

Remove existing 30mph and de-restriction signs and replace with new 20mph and de-restriction signs.

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Seilwyrdd y map hwn ar ddeunydd yr Arolwg Ordnans gyda chaniatâd yr Arolwg Ordnans ar ran Rheolwr Llyfrfa Ei Mawrhydi © hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gall hyn arwain at erlyniad neu achos sifil. Rhif trwydded 100023429. 2016

Not to Scale

PLAN 4

Rossett, Wrexham
Proposed 20mph Zone



Scale 1:2500@A4

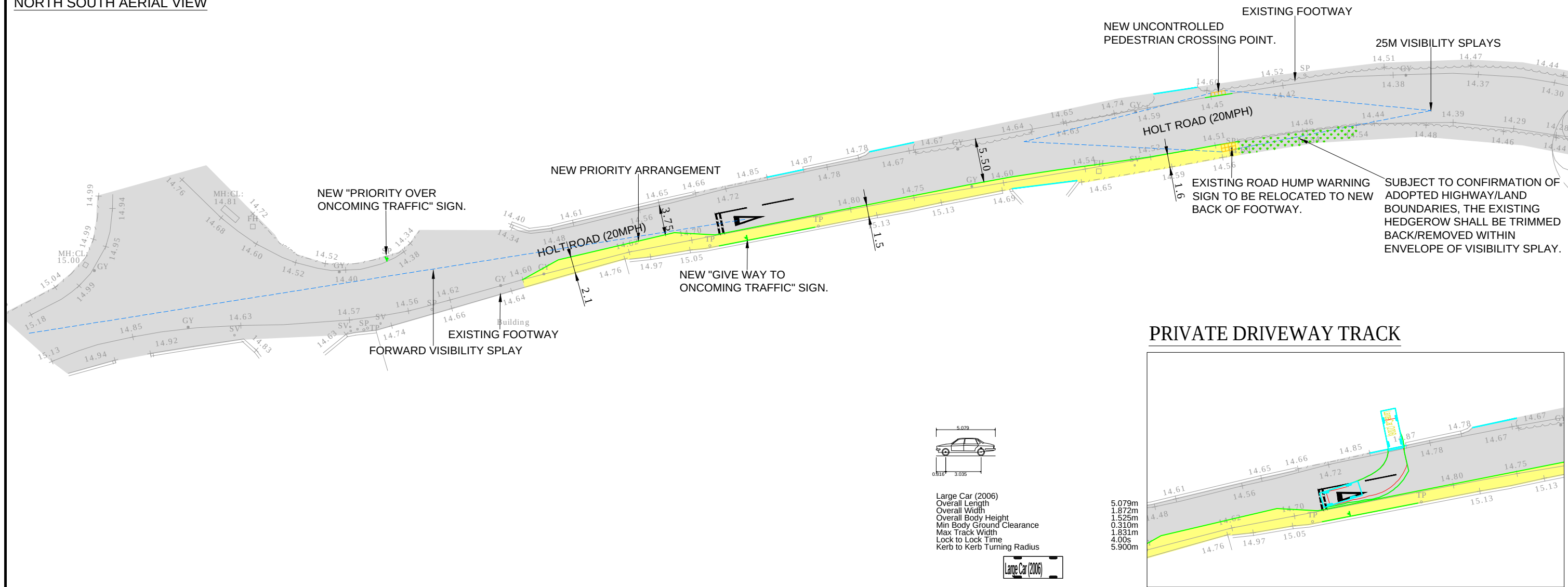
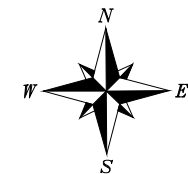
8 Hawflraint y Goron (a.hawflau cronfa ddata) 2018 OS 100023429.
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 rael gan [rhowch enw dalwr y drwydded]. Ni cheirw gocio,
 ls-drwydded, dosbarthu na gwerthu unrhyw ran o'r data hwn i
 drwydded parhau mewn unrhyw flur.

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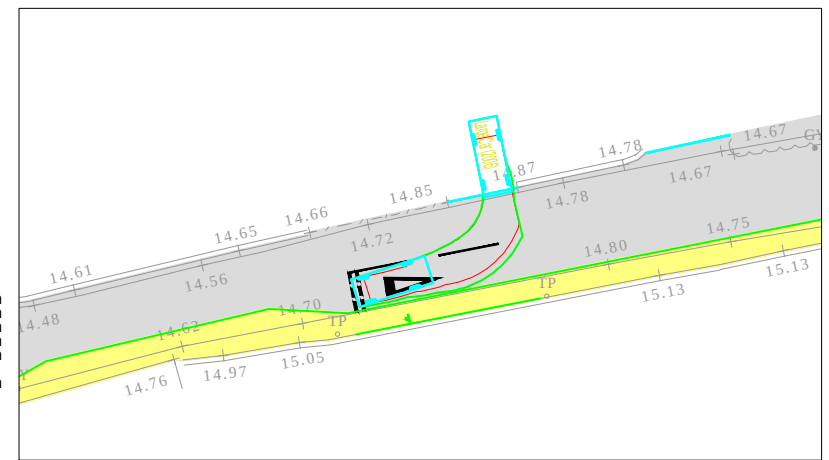
DRAWINGS



NORTH SOUTH AERIAL VIEW



PRIVATE DRIVEWAY TRACK



REV.	DETAILS	DRAWN	CHECKED	DATE	NOTES THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES. EXISTING DRIVEWAYS NEW KERBS EXISTING ADOPTED HIGHWAY NEW FOOTWAYS	ROSSETT ROAD, ROSSETT				BELLIS BROS LTD		
						POTENTIAL PRIORITY ARRANGEMENT AND FOOTWAY IMPROVEMENT PLAN				Croft Transport Planning & Design Hill Quays 9 Jordan Street Manchester M15 4PY Email: info@croftts.co.uk Tel: 0161 667 3746 Web: www.croftts.co.uk		
						DRAWN: JC	CHECKED: MR	DATE: FEB 19	SCALES: 1:500 @ A3	DRAWING NUMBER: 0807-04	REVISION: A	

APPENDICES

APPENDIX 1

Traffic & Pedestrian Survey Data

SURVEY CONTROL

Client: Croft Transport Planning & Design

Client Contact: Marty Rae

Survey Location: Rossett

Date(s) of Survey: Monday 28 January 2019
Tuesday 29 January 2019

Notes:

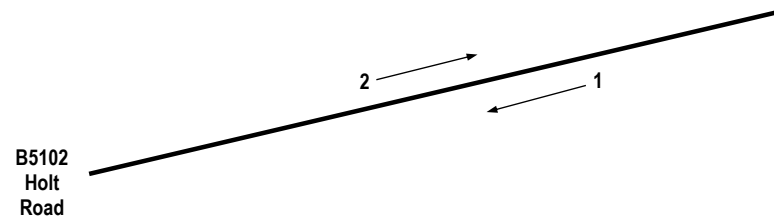
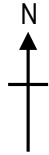
On Site Supervisor: David Cheng

Data Checking: David Cheng

Survey Reference: 2019.024 Rossett

Status: Final

Date of Issue: 31 January 2019



DRAWING TITLE

TRAFFIC MOVEMENT REFERENCE

JOB TITLE

2019.024 ROSSETT

DRAWN BY

DC

DATE

JAN 2019

SCALE

NTS

REF

FIGURE 1

signal surveys

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

signal surveys

Time Beginning	B5102 Holt Road - Monday 28 January 2019															
	1								2							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
1500	2	0	16	1	1	0	0	2	0	0	37	3	1	1	0	0
1515	0	0	18	0	1	0	0	0	0	0	20	1	2	0	1	0
1530	0	1	14	5	0	0	0	0	1	0	22	4	0	0	0	1
1545	0	0	24	2	0	0	0	1	0	0	22	1	0	0	0	0
1600	0	0	17	0	3	0	1	0	0	0	28	2	0	1	0	0
1615	0	1	30	7	0	1	1	0	0	0	23	1	1	0	0	1
1630	1	0	26	6	0	0	0	0	0	0	21	6	0	0	0	0
1645	0	0	17	4	0	0	0	0	0	0	23	2	1	0	0	0
1700	0	0	19	4	0	0	1	0	0	0	22	0	0	0	0	0
1715	0	1	26	2	0	0	0	0	0	0	31	2	0	0	0	0
1730	0	0	21	3	1	0	0	0	0	0	21	1	1	0	0	0
1745	0	0	20	2	0	0	0	0	0	0	20	1	0	0	0	0
Time Beginning	B5102 Holt Road - Tuesday 29 January 2019															
	1								2							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
0730	0	0	16	1	0	0	0	0	0	0	12	2	1	0	0	0
0745	0	0	25	2	0	0	0	0	0	0	24	5	0	0	0	0
0800	0	0	28	2	2	0	1	0	0	0	35	4	0	0	0	0
0815	0	0	28	2	1	0	2	0	0	0	24	5	0	0	1	0
0830	0	0	31	4	4	0	0	0	0	0	33	3	0	1	0	0
0845	0	1	23	2	0	1	0	0	0	0	41	5	2	0	0	1
0900	0	0	20	4	2	0	0	0	0	0	14	2	3	0	0	0
0915	0	0	14	2	1	0	0	0	0	0	12	0	0	1	0	0
0930	1	0	13	2	0	0	0	0	0	0	15	3	1	0	0	0
0945	0	0	14	2	0	0	0	0	1	1	16	2	0	0	0	0

* FT = Farm Traffic

Time Beginning	B5102 Holt Road - Monday 28 January 2019		
	Direction (refer to map)	Description	Comments
1519	Westbound	1 x Adult	Walking on northside of road
1523	Eastbound	1 x Adult	Walking on northside of road then crossed to the opposite side and carried on eastbound
1523	Westbound	1 x Adult, 1 x Child, 1 x Pram	Walking on northside then crossed to opposite to the footpath and carried on westbound
1527	Westbound	1 x Adult, 1 x Child, 1 x Pram	Walking on northside of road
1532	Westbound	2 x Teenager	Walking on northside then crossed to opposite to the footpath and carried on westbound
1532	Westbound	4 x Teenager	Walking on northside of road
1534	Westbound	1 x Teenager	Walking on southside of road
1534	Westbound	3 x Teenager	Walking on northside of road
1534	Eastbound	2 x Teenager	Walking on southside of road
1538	Westbound	1 x Teenager	Walking on northside then crossed to opposite to the footpath and carried on westbound
1550	Eastbound	1 x Adult	Walking on northside of road
1610	Eastbound	1 x Adult	Walking on footpath on southside then crossed to the opposite side and carried on eastbound
1611	Eastbound	1 x Teenager	Walking on the road on the footpath side on southside then crossed to the opposite side and carried on eastbound
1611	Westbound	1 x Adult	Walking on the southside of the road then crossed to the northside and carried on westbound
1625	Westbound	2 x Adult	Walking on the northside of the road
1637	Westbound	1 x Adult	Walking on the southside of the road
1640	Westbound	1 x Adult	Walking on the northside of the road
1655	Eastbound	1 x Adult	Walking on the southside of the road
1713	Westbound	1 x Adult, 2 x Child	Walking on northside then crossed to opposite to the footpath and carried on westbound
1740	Westbound	2 x Adult	Walking on the northside of the road
1758	Westbound	1 x Adult	Walking on the northside of the road
Time Beginning	B5102 Holt Road - Tuesday 29 January 2019		
	Direction (refer to map)	Description	Comments
0736	Westbound	1 x Child	Walking on northside of road
0737	Westbound	1 x Child	Walking on the southside of the road then crossed to the northside and carried on westbound
0802	Westbound	3 x Teenager	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0832	Westbound	1 x Teenager	Walking on northside of the road
0846	Westbound	2 x Teenager	Walking on the southside of the road then crossed to the opposite side and carried on westbound
0851	Eastbound	1 x Adult	Walking on the northside
0905	Westbound	1 x Adult, 1 x Pram	Walking on the northside
0905	Westbound	1 x Adult	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0925	Westbound	1 x Adult	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0955	Westbound	1 x Adult, 1 x Dog	Walking on the northside of the road

APPENDIX 2

WCBC Comments on Footway Improvements

From: Peter Douthwaite <Peter.Douthwaite@wrexham.gov.uk>
Sent: 29 March 2019 14:29
To: Justin Paul <Justin@j10planning.com>
Subject: Holt Road Rossett

Justin

Apologies for the delay in responding.

I refer to the submitted layout plan (Potential Priority Arrangement and Footway Improvement Plan) – Drg. No. 0807-04 in respect of the above site:-

The submitted layout plan indicates the provision of a short section of footway on the southern side of the B5102 Holt Road fronting Holly Cottage and nos. 5 – 11 Holt Road. A significant portion of this footway would appear to be less than 1.2m wide given the limited available highway verge along this section. 1.2m is the minimum acceptable width to meet mobility standards. A minimum footway width of 2m would normally be required particularly in close proximity to schools.

The proposed dropped kerb crossing point at the eastern end of the scheme is located on a bend where visibility between vehicles and pedestrians is sub-standard. Visibility is impeded in this location by the existing hedgerow along this section. The location of such a crossing in this location is not considered appropriate / safe.

The existing driveway serving no. 2 Vine Clad Cottage suffers from inadequate visibility in both directions. When exiting the driveway heading west (with restricted visibility), a vehicle can currently exit on to the opposite side of the road. However, with the proposed build-out / priority system in place, they would have to exit at a slower speed to make the manoeuvre and would be driving along the wrong side of the road facing oncoming traffic who are given priority. The proposed layout / priority arrangement is considered to increase the likelihood of danger to road users and pedestrians.

I have therefore amended the attached SOCG to take account of this – please confirm that the SOCG is acceptable and I will arrange to send you a signed copy

Regards

Pete Douthwaite
Senior Development Control Engineer Uwch Beiriannydd Rheoli Datblygu
01978 729689



Cyngor Bwrdeistref Sirol Wrecsam, Adran Amgylchedd a Chynllunio, De Ffordd yr Abaty, Ystad
Ddiwydiannol Wrecsam, Wrecsam LL13 9PW

Wrexham County Borough Council, Environment and Planning Department, Abbey Road South,
Wrexham Industrial Estate, Wrexham LL13 9PW

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Registered in England Number: 7373729

TRANSPORT ASSESSMENT – HIGHWAYS NOTE V4 (APRIL 2019)

Proposed Residential Development, Land North and South of Rossett Road, Rossett

1. Introduction

- 1.1 Croft have been appointed by Bellis Bros Ltd to produce a Transport Assessment (TA) and Travel Plan (TP) to assist the Local Planning Authority's determination of an outline planning application for a residential development on two parcels of land to the north and south of Rossett Road in Rossett. The site location is shown in **Plan 1**.
- 1.2 It has been confirmed in correspondence from the officers in the highway department at Wrexham County Borough Council (WCBC) dated 19th December 2018 that all matters relating to highways have been resolved, with the exception of road safety and the potential pedestrian/vehicle conflict along a short section of the B5102 Holt Road, where there is currently no footway provision.

2. Scope of Note

- 2.1 The purpose of the original note (Highways Note v1 - dated February 2019) was to address this last remaining issue and demonstrate that the proposals are acceptable in highways terms and that suitable mitigation could be provided, if deemed necessary by the local highway authority.
- 2.2 The v1 note also set out the results of the recently collected traffic data, along with information relating to existing pedestrian, cyclist and agricultural traffic movements along Holt Road and details a potential improvement option to address the issue of the lack of footway provision.
- 2.1 It included a mitigation scheme which was presented as **Drawing ref no. 0807-04** which comprised a short one-way section on Holt Road, where there is no footway, with the priority being given to eastbound traffic. This allowed a new footway to be created on the southern side of Holt Road, by converting existing verge to a surfaced footway and providing dropped kerbs and tactile paving to allow pedestrians to cross back over to the existing footway along the northern side.
- 2.2 The v1 note was submitted on 12th February 2019, but was immediately updated to produce Highways Note v2 (also dated February 2019), which included additional plans to show the existing and proposed 20mph speed limits through the village. The v2 note was then submitted on 13th February 2019 with the same improvement plan i.e. Drawing ref no. 0807-04.
- 2.3 Following submission of Highways Note v2 and associated drawing (0807-04) showing the proposed footway improvements, comments were received from the Council's highway department on 29th March 2019, as contained within **Appendix 1**.

Our Reference: mr/0807

Page: 2

- 2.4 In light of the above, a third note was produced (Highways Note v3 - submitted 4th April 2019) and this version included **Drawing ref no. 0807-04 REV A** which addressed the points raised by WCBC (as presented in Appendix 1) in relation to the proposed footway improvements.
- 2.5 Following submission of this version of the note (v3), further comments on the proposed improvements were received from WCBC and for ease, these are contained in **Appendix 2**.
- 2.6 This version of the note (v4) has therefore been prepared to take account of the second set of comments (4th April 2019) and once again, the proposed improvements have been altered to address the points raised. For consistency, the note continues to include all previous information, although the remainder of the note remains largely unchanged, other than reporting on the updated plan.

3. Background

- 3.1 In the most recent consultation response from WCBC (19th December 2018) and in regard to 'Pedestrian and Cycle Access' the highway officer stated that;

"The main bus stops 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 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".

- 3.2 Croft acknowledge the current situation and indeed put forward a potential improvement scheme as part of the revised TA. The scheme sought to utilise existing grass verge on Holt Road, where appropriate and convert it into footway. A demarcated pedestrian route was also proposed along Chapel Lane. These improvements however were not supported by the highway officers at WCBC and so they were subsequently omitted from the proposals.

4. Traffic and Multi Modal Surveys

4.1 In order to establish existing traffic volumes and the usage of Holt Road along this section, a traffic survey was undertaken in conjunction with a multi-modal survey which counted pedestrians and noted whether they were children, teenagers or adults. The surveys took place on Monday 28th January and Tuesday 29th January 2018 at the following times;

- 0730hrs to 1000hrs; and
- 1500hrs to 1900hrs.

4.2 The survey data is contained within **Appendix 3**.

Traffic Surveys

4.3 A summary of the morning traffic survey results, which includes any farm traffic (as noted) is shown in **Table 4.1** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
0730	0	0	16	1	0	0	0	0	0	0	12	2	1	0	0	0
0745	0	0	25	2	0	0	0	0	0	0	24	5	0	0	0	0
0800	0	0	28	2	2	0	1	0	0	0	35	4	0	0	0	0
0815	0	0	28	2	1	0	2	0	0	0	24	5	0	0	1	0
0830	0	0	31	4	4	0	0	0	0	0	33	3	0	1	0	0
0845	0	1	23	2	0	1	0	0	0	0	41	5	2	0	0	1
0900	0	0	20	4	2	0	0	0	0	0	14	2	3	0	0	0
0915	0	0	14	2	1	0	0	0	0	0	12	0	0	1	0	0
0930	1	0	13	2	0	0	0	0	0	0	15	3	1	0	0	0
0945	0	0	14	2	0	0	0	0	1	1	16	2	0	0	0	0

FT = Farm Traffic

Table 4.1 – Summary of Traffic Survey (AM)

- 4.4 As can be seen above, this section of Holt Road is very lightly trafficked in the morning period, which includes the previously identified peak hour which occurred between 0800 hrs and 0900hrs.
- 4.5 Similarly, the survey has shown that the number of heavy good vehicles is low, as is the amount of farm traffic.
- 4.6 Only 1 cyclist in each direction were observed to be utilising this part of Holt Road and the maximum number of buses was 3 between 0800hrs and 0815hrs in the westbound direction, with only 1 bus travelling eastbound at 0815hrs.

4.7 A summary of the afternoon traffic survey results is shown in **Table 4.2** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
1500	2	0	16	1	1	0	0	2	0	0	37	3	1	1	0	0
1515	0	0	18	0	1	0	0	0	0	0	20	1	2	0	1	0
1530	0	1	14	5	0	0	0	0	1	0	22	4	0	0	0	1
1545	0	0	24	2	0	0	0	1	0	0	22	1	0	0	0	0
1600	0	0	17	0	3	0	1	0	0	0	28	2	0	1	0	0
1615	0	1	30	7	0	1	1	0	0	0	23	1	1	0	0	1
1630	1	0	26	6	0	0	0	0	0	0	21	6	0	0	0	0
1645	0	0	17	4	0	0	0	0	0	0	23	2	1	0	0	0
1700	0	0	19	4	0	0	1	0	0	0	22	0	0	0	0	0
1715	0	1	26	2	0	0	0	0	0	0	31	2	0	0	0	0
1730	0	0	21	3	1	0	0	0	0	0	21	1	1	0	0	0
1745	0	0	20	2	0	0	0	0	0	0	20	1	0	0	0	0

FT = Farm Traffic

Table 4.2 – Summary of Traffic Survey (PM)

- 4.8 As can be seen above, the volumes of traffic during the afternoon are similar to the morning period, although 3 cyclists were observed in the westbound direction and 1 was observed travelling eastbound.
- 4.9 The number of heavy goods vehicles is still low and the number of buses recorded was 2 travelling westbound between 1600hrs and 1615hrs, with one additional bus observed at 1700hrs. Only 1 bus was observed travelling eastbound at 1515hrs. The results show there were 3 farm vehicle traffic movements travelling westbound and 2 further farm vehicles travelling eastbound, which is not considered unusual given the sites rural location.

Pedestrian Surveys

- 4.10 It is understood that the school day at Darland High School starts at 0855hrs and ends at 1520hours.
- 4.11 The school day at St Peters Primary School starts at 0900hrs and the finishing times can be summarised as follows;
- Nursery - finishes at 1130hrs;
 - Year 2 - finishes at 1500hrs; and
 - Years 3 to 6 finish at 1515hrs.
- 4.12 The morning pedestrian surveys commenced at 0730hrs and the first pedestrian was observed at 0736hrs, which was a child walking on the northern side of Holt Road in a westbound direction. Another child was observed doing the same thing around a minute later.

- 4.13 A review of the results show that the remaining pedestrians were teenagers or adults, one of the adults was pushing a pram and one was walking a dog. The majority of trips were being made in a westbound direction (towards the village), with only one person (adult) walking eastbound.
- 4.14 The afternoon surveys commenced at 1500hrs, but the first pedestrian was not observed until 1519hrs, which was an adult walking on the northern side of the road in a westbound direction.
- 4.15 The results show that a further adult was observed walking in an eastbound direction at 1523hrs, where they were walking along the northern side of the road, but then crossed to the opposite side. Between 1523hrs and 1527hrs two adults with prams and a child were observed walking westbound, where one crossed from the northern side to the opposite side and the other continued to walk on the northern side. Between 1532hrs and 1538hrs, a total of 13 teenagers were observed to be walking mainly westbound, with only two walking in an eastbound direction.
- 4.16 The results show that for the remainder of the survey, all the pedestrians were either adults or teenagers, with one adult and two children observed to be walking westbound at 1713hrs.

5. Alternative Walking Routes

- 5.1 The revised TA (dated November 2018) included information relating to the alternative walking routes available to residents and included a review of walking distances and walking times. This matter was also discussed at a meeting held with the Councils highways department and planning case officer on 11th October 2018. It was confirmed that while pedestrians (including children) have been observed to walk on the carriageway at this location on Holt Road, the fact that safer (more attractive) routes to the village exist is indisputable, albeit that it will be up to the individual to choose which route to use.
- 5.2 To that end, a plan to show the alternative routes including comparable walking times and distances to the junction of B5445 Chester Road/B5102 Holt Road (close to the Co-operative Foodstore) has been prepared, as shown in **Plan 2**.
- 5.3 It shows the difference in distance and walking times between using Holt Road or roads within the existing residential development located to the west of the southern site.
- 5.4 It also includes a further route which utilises Chester Road and Waverley Crescent, which are subject to a 20mph speed limit and so still provides another option for older children walking to Darland High School from the village. Clearly, any children residing at the new development would have no need to take such a route as they will simply use the improved footpaths and footways within the site and alongside Trevalyn hall View to get to Darland High School.

5.5 For ease, the walking distances and times are summarised in **Table 5.1** below.

Route	Northern Site		Southern Site	
	Distance (m)	Time (mins)	Distance (m)	Time (mins)
Holt Road	650	8	595	8
Trevalyn Way	708	9	570	7
Harwood's Lane	872	11	665	9
Distance and Walking Times from Co-operative Store to Darland High School				
Chester Rd/Waverley Crescent	653 metres		8 minutes	
Holt Road via Trevalyn Hall View & Waverley Crescent	698 metres		8 minutes	

Table 5.1 – Summary of Walking Routes, Distances and Walking Times

- 5.6 As can be seen on the plan, the route through the existing housing estate (Trevalyn Way) is very similar in length and walking time to the route along Holt Road for residents at the northern site, being just one minute longer and the Trevalyn Way route is both shorter and quicker for residents at the southern site.
- 5.7 The route along Harwood's Lane is slightly longer of those at the northern site, but the walking time is only 2 minutes longer than the walk along Holt Road, so residents are likely to still choose the route through the estate.
- 5.8 Similarly, the walking route along Harwood's Lane for residents at the southern site is only a minute longer than the Holt Road route, so again, this may seem to be the more favourable option.
- 5.9 In light of the above, and considering the reduced speed limit through the village, it is not considered that even with an increase in pedestrian traffic, that the proposals will give rise to any highway safety issues.
- 5.10 Clearly, residents will have the choice about which route they take, but the improved linkages to St Peters School and potentially Darland High School should encourage school children to use these off-road routes where appropriate, thus having a positive impact on road safety and assisting in delivering a safer route to schools.

- 5.11 The comparison of the route along Chester Road and Waverley Crescent shows that this route is slightly shorter than using Holt Road, Trevalyn Hall View and Waverley Crescent, although the walking times are more or less the same. This demonstrates that an alternative safe route is available, whether people choose to use them or not.

6. Speed Limit Reductions

- 6.1 Furthermore, the reduction in speed limit (to 20mph) now in operation though the village will have a positive effect and further improve the pedestrian environment, thus making it safer than the current situation for all road users, including those with mobility problems.
- 6.2 The extent of the existing 20mph speed limit within the village is shown in **Plan 3**, while further 20mph restrictions are proposed within the existing residential development to the west of the southern site, including along Trevalyn Way, Harwood's Lane, Alyn Drive and West Way, as shown in **Plan 4**.
- 6.3 It is 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".

- 6.4 It is also worth noting that the above conclusions were based on a speed limit of 30mph, whereas the speed limit in this instance is 20mph.

Our Reference: mr/0807

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- 6.5 It can therefore 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 road safety in the area.

7. Proposed Mitigation

- 7.1 It should be noted that the section of Holt Road which has no footway, equates to a distance of less than 80 metres.
- 7.2 Notwithstanding the above, Croft considered the implementation of improvements (as presented in v1 and v2 of the note) which comprised a short one-way section on Holt Road, where there is no footway, with the priority being given to eastbound traffic. This allowed a new footway to be created on the southern side of Holt Road, by converting existing verge to a surfaced footway and providing dropped kerbs and tactile paving to allow pedestrians to cross back over to the existing footway along the northern side, as shown in Drawing ref no. 0807-04 REV A.
- 7.3 The latest comments received from WCBC however (as contained within Appendix 2) advised that the scheme in its current form with the proposed short one-way section system would not be deemed acceptable. The comments from the highways officer state that *"...consequently I would be unable to support the implementation of a priority working scheme"*.
- 7.4 On that basis, the scheme has been revised again to take account of the additional issues raised and the revised proposals are presented in **Drawing ref no. 0807-04 REV B**.
- 7.5 For ease the changes to the proposals are summarised, as follows;
- To address the footway widths issue, it is now proposed to provide additional widening to the footway to provide a minimum of 1.5 metres, although to the east, this increases slightly to 1.6 metres. To the west, it ties into the existing footway which is 0.71 metres in width (as annotated on the plan);
 - To address the pedestrian/vehicle visibility issues, the proposed pedestrian crossing point with tactile paving has been relocated to the west (approximately 13 metres to the west of the property boundary of Holly Cottage (as annotated on the plan).
 - To address the point regarding the inadequate visibility at the existing driveway (serving approximately 8 dwellings at Green Cottages) the build out and one-way priority working system has been removed from the proposals.
- 7.6 The last paragraph of the latest WCBC comment's states that;

"Overall the proposed footway scheme (without the build out) is considered to enhance pedestrian safety along Holt Road and I can therefore confirm that I would be willing to enter into a SOCG in respect of the proposals".

- 7.7 It is therefore considered that the above revisions to the proposals address the points raised by the highways department at WCBC. Again, it should be reiterated that this section of Holt Road is lightly trafficked and vehicle speeds will be low, given the 20mph speed limit in place.
- 7.8 The proposals are a betterment to the existing situation, as confirmed by WCBC above and furthermore the provision of a 1.5 metre footway meets the requirements set out in Manual for Streets, which can be summarised as follows;
- 0.75 metres - pedestrians with walking aids, such as sticks or walking frames;
 - 0.9 metres - wheelchair users;
 - 1.2 metres - adult and child; and
 - 1.5 metres - two adults and pushchair.
- 7.9 The above criteria are also illustrated in **Figure 7.1** below.

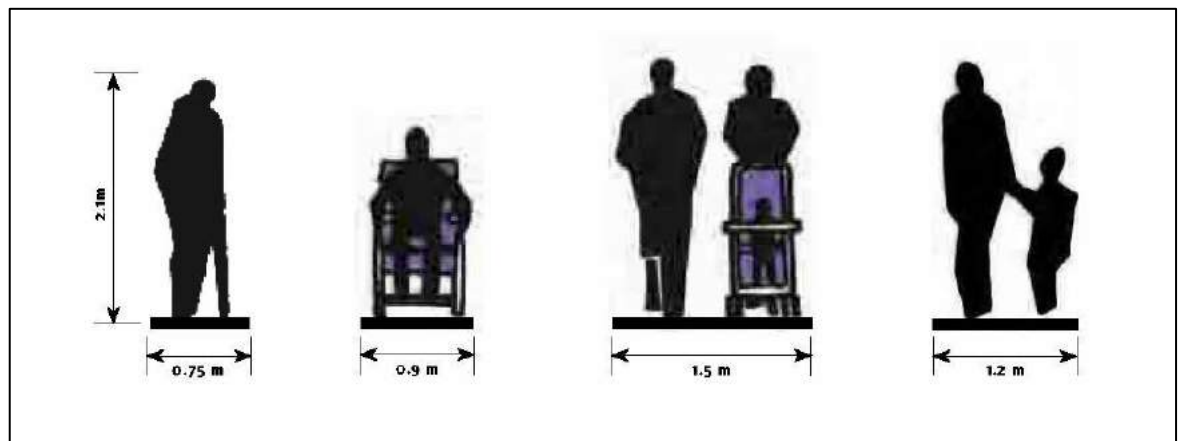


Figure 7.1 – Extract from Manual for Streets regarding Footway Widths

- 7.10 As can be seen above, a footway of 0.75 metres is considered acceptable for people walking with the assistance of sticks or walking frames, while 0.9 metres is considered acceptable for wheelchair users. A width of 1.2 metres is deemed suitable for an adult walking, holding the hand of a child and 1.5 metres (as is currently proposed) would be acceptable for two adults walking with a pram or pushchair.
- 7.11 On that basis, it is considered that the revised proposals provide a safe walking route for those wishing to walk along Holt Road, albeit that alternative routes are available.

8. Conclusions

- 8.1 This Highways Note has provided additional information relating to the existing traffic volumes travelling along the B5102 Holt Road and the number of pedestrians/cyclists walking along this section of road, where there is no footway (approximately 80 metres).

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- 8.2 The traffic count data showed that Holt Road is lightly trafficked and comprises mainly cars, with only very few heavy goods vehicle movements and a small amount of agricultural traffic.
- 8.3 The existing and proposed 20mph speed limits will also have a positive impact on overall road safety.
- 8.4 The pedestrian survey (which included cyclists) has demonstrated that the majority of people walking along this section of Holt Road were adults and teenagers. Only two children were observed walking unaccompanied, which took place just after 7.30am and so were likely to have been children walking to school.
- 8.5 The survey showed that while people walk in both directions, the majority of people were seen to be walking in a westbound direction, along the northern side of the road, which suggests they were walking to the village centre.
- 8.6 The comparison of walking routes, times and distances show that alternative shorter/quicker and safer routes are available through the established footway network.
- 8.7 Residents at the new development will be informed of these alternative routes and these will be promoted through the Travel Plan. The habits of existing residents in the area are more difficult to influence, but clearly safer routes are available to use, should pedestrians wish to do so.
- 8.8 The revised plan (0804-04 REV B) showing the proposed footway improvements take account of all the issues raised by WBCB and demonstrate that these matters have been satisfactorily addressed.
- 8.9 The amended scheme presented in this note (v4) will be a betterment to the existing situation, thus having a positive impact on road safety and will ensure that a safe walking route is provided to both schools and local facilities in the village, should people choose to do so using Holt Road.
- 8.10 In conclusion, it is considered that taking account of the originally submitted information and the additional data and amended drawing that has been provided within this note, demonstrate that the proposals are acceptable in highway and pedestrian terms and will not give rise to any road safety issues.

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- 2.4 In light of the above, a third note was produced (Highways Note v3 - submitted 4th April 2019) and this version included **Drawing ref no. 0807-04 REV A** which addressed the points raised by WCBC (as presented in Appendix 1) in relation to the proposed footway improvements.
- 2.5 Following submission of this version of the note (v3), further comments on the proposed improvements were received from WCBC and for ease, these are contained in **Appendix 2**.
- 2.6 This version of the note (v4) has therefore been prepared to take account of the second set of comments (4th April 2019) and once again, the proposed improvements have been altered to address the points raised. For consistency, the note continues to include all previous information, although the remainder of the note remains largely unchanged, other than reporting on the updated plan.

3. Background

- 3.1 In the most recent consultation response from WCBC (19th December 2018) and in regard to 'Pedestrian and Cycle Access' the highway officer stated that;

"The main bus stops 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 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".

- 3.2 Croft acknowledge the current situation and indeed put forward a potential improvement scheme as part of the revised TA. The scheme sought to utilise existing grass verge on Holt Road, where appropriate and convert it into footway. A demarcated pedestrian route was also proposed along Chapel Lane. These improvements however were not supported by the highway officers at WCBC and so they were subsequently omitted from the proposals.

4. Traffic and Multi Modal Surveys

4.1 In order to establish existing traffic volumes and the usage of Holt Road along this section, a traffic survey was undertaken in conjunction with a multi-modal survey which counted pedestrians and noted whether they were children, teenagers or adults. The surveys took place on Monday 28th January and Tuesday 29th January 2018 at the following times;

- 0730hrs to 1000hrs; and
- 1500hrs to 1900hrs.

4.2 The survey data is contained within **Appendix 3**.

Traffic Surveys

4.3 A summary of the morning traffic survey results, which includes any farm traffic (as noted) is shown in **Table 4.1** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
0730	0	0	16	1	0	0	0	0	0	0	12	2	1	0	0	0
0745	0	0	25	2	0	0	0	0	0	0	24	5	0	0	0	0
0800	0	0	28	2	2	0	1	0	0	0	35	4	0	0	0	0
0815	0	0	28	2	1	0	2	0	0	0	24	5	0	0	1	0
0830	0	0	31	4	4	0	0	0	0	0	33	3	0	1	0	0
0845	0	1	23	2	0	1	0	0	0	0	41	5	2	0	0	1
0900	0	0	20	4	2	0	0	0	0	0	14	2	3	0	0	0
0915	0	0	14	2	1	0	0	0	0	0	12	0	0	1	0	0
0930	1	0	13	2	0	0	0	0	0	0	15	3	1	0	0	0
0945	0	0	14	2	0	0	0	0	1	1	16	2	0	0	0	0

FT = Farm Traffic

Table 4.1 – Summary of Traffic Survey (AM)

- 4.4 As can be seen above, this section of Holt Road is very lightly trafficked in the morning period, which includes the previously identified peak hour which occurred between 0800 hrs and 0900hrs.
- 4.5 Similarly, the survey has shown that the number of heavy good vehicles is low, as is the amount of farm traffic.
- 4.6 Only 1 cyclist in each direction were observed to be utilising this part of Holt Road and the maximum number of buses was 3 between 0800hrs and 0815hrs in the westbound direction, with only 1 bus travelling eastbound at 0815hrs.

4.7 A summary of the afternoon traffic survey results is shown in **Table 4.2** below.

Time	Westbound								Eastbound							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
1500	2	0	16	1	1	0	0	2	0	0	37	3	1	1	0	0
1515	0	0	18	0	1	0	0	0	0	0	20	1	2	0	1	0
1530	0	1	14	5	0	0	0	0	1	0	22	4	0	0	0	1
1545	0	0	24	2	0	0	0	1	0	0	22	1	0	0	0	0
1600	0	0	17	0	3	0	1	0	0	0	28	2	0	1	0	0
1615	0	1	30	7	0	1	1	0	0	0	23	1	1	0	0	1
1630	1	0	26	6	0	0	0	0	0	0	21	6	0	0	0	0
1645	0	0	17	4	0	0	0	0	0	0	23	2	1	0	0	0
1700	0	0	19	4	0	0	1	0	0	0	22	0	0	0	0	0
1715	0	1	26	2	0	0	0	0	0	0	31	2	0	0	0	0
1730	0	0	21	3	1	0	0	0	0	0	21	1	1	0	0	0
1745	0	0	20	2	0	0	0	0	0	0	20	1	0	0	0	0

FT = Farm Traffic

Table 4.2 – Summary of Traffic Survey (PM)

- 4.8 As can be seen above, the volumes of traffic during the afternoon are similar to the morning period, although 3 cyclists were observed in the westbound direction and 1 was observed travelling eastbound.
- 4.9 The number of heavy goods vehicles is still low and the number of buses recorded was 2 travelling westbound between 1600hrs and 1615hrs, with one additional bus observed at 1700hrs. Only 1 bus was observed travelling eastbound at 1515hrs. The results show there were 3 farm vehicle traffic movements travelling westbound and 2 further farm vehicles travelling eastbound, which is not considered unusual given the sites rural location.

Pedestrian Surveys

- 4.10 It is understood that the school day at Darland High School starts at 0855hrs and ends at 1520hours.
- 4.11 The school day at St Peters Primary School starts at 0900hrs and the finishing times can be summarised as follows;
- Nursery - finishes at 1130hrs;
 - Year 2 - finishes at 1500hrs; and
 - Years 3 to 6 finish at 1515hrs.
- 4.12 The morning pedestrian surveys commenced at 0730hrs and the first pedestrian was observed at 0736hrs, which was a child walking on the northern side of Holt Road in a westbound direction. Another child was observed doing the same thing around a minute later.

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- 4.13 A review of the results show that the remaining pedestrians were teenagers or adults, one of the adults was pushing a pram and one was walking a dog. The majority of trips were being made in a westbound direction (towards the village), with only one person (adult) walking eastbound.
- 4.14 The afternoon surveys commenced at 1500hrs, but the first pedestrian was not observed until 1519hrs, which was an adult walking on the northern side of the road in a westbound direction.
- 4.15 The results show that a further adult was observed walking in an eastbound direction at 1523hrs, where they were walking along the northern side of the road, but then crossed to the opposite side. Between 1523hrs and 1527hrs two adults with prams and a child were observed walking westbound, where one crossed from the northern side to the opposite side and the other continued to walk on the northern side. Between 1532hrs and 1538hrs, a total of 13 teenagers were observed to be walking mainly westbound, with only two walking in an eastbound direction.
- 4.16 The results show that for the remainder of the survey, all the pedestrians were either adults or teenagers, with one adult and two children observed to be walking westbound at 1713hrs.

5. Alternative Walking Routes

- 5.1 The revised TA (dated November 2018) included information relating to the alternative walking routes available to residents and included a review of walking distances and walking times. This matter was also discussed at a meeting held with the Councils highways department and planning case officer on 11th October 2018. It was confirmed that while pedestrians (including children) have been observed to walk on the carriageway at this location on Holt Road, the fact that safer (more attractive) routes to the village exist is indisputable, albeit that it will be up to the individual to choose which route to use.
- 5.2 To that end, a plan to show the alternative routes including comparable walking times and distances to the junction of B5445 Chester Road/B5102 Holt Road (close to the Co-operative Foodstore) has been prepared, as shown in **Plan 2**.
- 5.3 It shows the difference in distance and walking times between using Holt Road or roads within the existing residential development located to the west of the southern site.
- 5.4 It also includes a further route which utilises Chester Road and Waverley Crescent, which are subject to a 20mph speed limit and so still provides another option for older children walking to Darland High School from the village. Clearly, any children residing at the new development would have no need to take such a route as they will simply use the improved footpaths and footways within the site and alongside Trevalyn hall View to get to Darland High School.

5.5 For ease, the walking distances and times are summarised in **Table 5.1** below.

Route	Northern Site		Southern Site	
	Distance (m)	Time (mins)	Distance (m)	Time (mins)
Holt Road	650	8	595	8
Trevalyn Way	708	9	570	7
Harwood's Lane	872	11	665	9
Distance and Walking Times from Co-operative Store to Darland High School				
Chester Rd/Waverley Crescent	653 metres		8 minutes	
Holt Road via Trevalyn Hall View & Waverley Crescent	698 metres		8 minutes	

Table 5.1 – Summary of Walking Routes, Distances and Walking Times

- 5.6 As can be seen on the plan, the route through the existing housing estate (Trevalyn Way) is very similar in length and walking time to the route along Holt Road for residents at the northern site, being just one minute longer and the Trevalyn Way route is both shorter and quicker for residents at the southern site.
- 5.7 The route along Harwood's Lane is slightly longer of those at the northern site, but the walking time is only 2 minutes longer than the walk along Holt Road, so residents are likely to still choose the route through the estate.
- 5.8 Similarly, the walking route along Harwood's Lane for residents at the southern site is only a minute longer than the Holt Road route, so again, this may seem to be the more favourable option.
- 5.9 In light of the above, and considering the reduced speed limit through the village, it is not considered that even with an increase in pedestrian traffic, that the proposals will give rise to any highway safety issues.
- 5.10 Clearly, residents will have the choice about which route they take, but the improved linkages to St Peters School and potentially Darland High School should encourage school children to use these off-road routes where appropriate, thus having a positive impact on road safety and assisting in delivering a safer route to schools.

- 5.11 The comparison of the route along Chester Road and Waverley Crescent shows that this route is slightly shorter than using Holt Road, Trevalyn Hall View and Waverley Crescent, although the walking times are more or less the same. This demonstrates that an alternative safe route is available, whether people choose to use them or not.

6. Speed Limit Reductions

- 6.1 Furthermore, the reduction in speed limit (to 20mph) now in operation though the village will have a positive effect and further improve the pedestrian environment, thus making it safer than the current situation for all road users, including those with mobility problems.
- 6.2 The extent of the existing 20mph speed limit within the village is shown in **Plan 3**, while further 20mph restrictions are proposed within the existing residential development to the west of the southern site, including along Trevalyn Way, Harwood's Lane, Alyn Drive and West Way, as shown in **Plan 4**.
- 6.3 It is 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".

- 6.4 It is also worth noting that the above conclusions were based on a speed limit of 30mph, whereas the speed limit in this instance is 20mph.

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- 6.5 It can therefore 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 road safety in the area.

7. Proposed Mitigation

- 7.1 It should be noted that the section of Holt Road which has no footway, equates to a distance of less than 80 metres.
- 7.2 Notwithstanding the above, Croft considered the implementation of improvements (as presented in v1 and v2 of the note) which comprised a short one-way section on Holt Road, where there is no footway, with the priority being given to eastbound traffic. This allowed a new footway to be created on the southern side of Holt Road, by converting existing verge to a surfaced footway and providing dropped kerbs and tactile paving to allow pedestrians to cross back over to the existing footway along the northern side, as shown in Drawing ref no. 0807-04 REV A.
- 7.3 The latest comments received from WCBC however (as contained within Appendix 2) advised that the scheme in its current form with the proposed short one-way section system would not be deemed acceptable. The comments from the highways officer state that *"...consequently I would be unable to support the implementation of a priority working scheme"*.
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 - To address the point regarding the inadequate visibility at the existing driveway (serving approximately 8 dwellings at Green Cottages) the build out and one-way priority working system has been removed from the proposals.
- 7.6 The last paragraph of the latest WCBC comment's states that;

"Overall the proposed footway scheme (without the build out) is considered to enhance pedestrian safety along Holt Road and I can therefore confirm that I would be willing to enter into a SOCG in respect of the proposals".

- 7.7 It is therefore considered that the above revisions to the proposals address the points raised by the highways department at WCBC. Again, it should be reiterated that this section of Holt Road is lightly trafficked and vehicle speeds will be low, given the 20mph speed limit in place.
- 7.8 The proposals are a betterment to the existing situation, as confirmed by WCBC above and furthermore the provision of a 1.5 metre footway meets the requirements set out in Manual for Streets, which can be summarised as follows;
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 - 0.9 metres - wheelchair users;
 - 1.2 metres - adult and child; and
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- 7.9 The above criteria are also illustrated in **Figure 7.1** below.

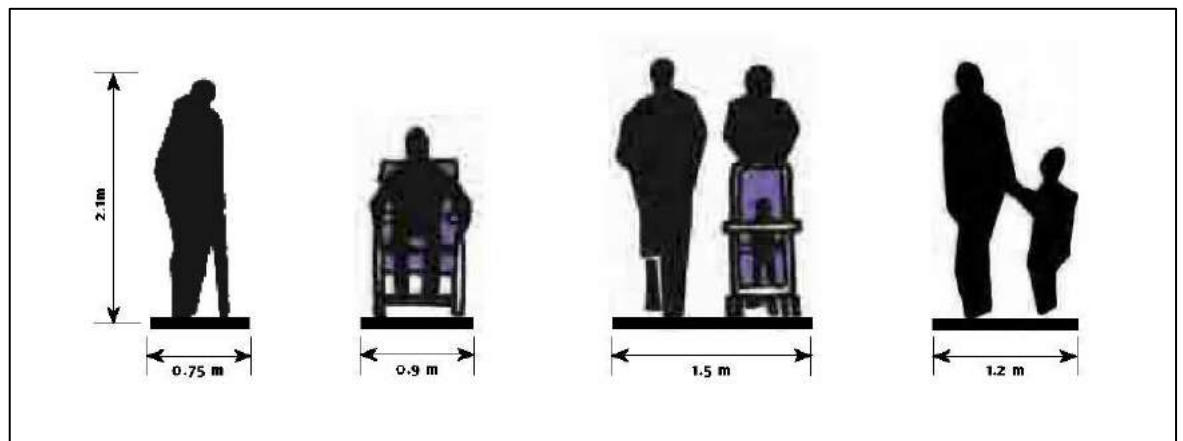


Figure 7.1 – Extract from Manual for Streets regarding Footway Widths

- 7.10 As can be seen above, a footway of 0.75 metres is considered acceptable for people walking with the assistance of sticks or walking frames, while 0.9 metres is considered acceptable for wheelchair users. A width of 1.2 metres is deemed suitable for an adult walking, holding the hand of a child and 1.5 metres (as is currently proposed) would be acceptable for two adults walking with a pram or pushchair.
- 7.11 On that basis, it is considered that the revised proposals provide a safe walking route for those wishing to walk along Holt Road, albeit that alternative routes are available.

8. Conclusions

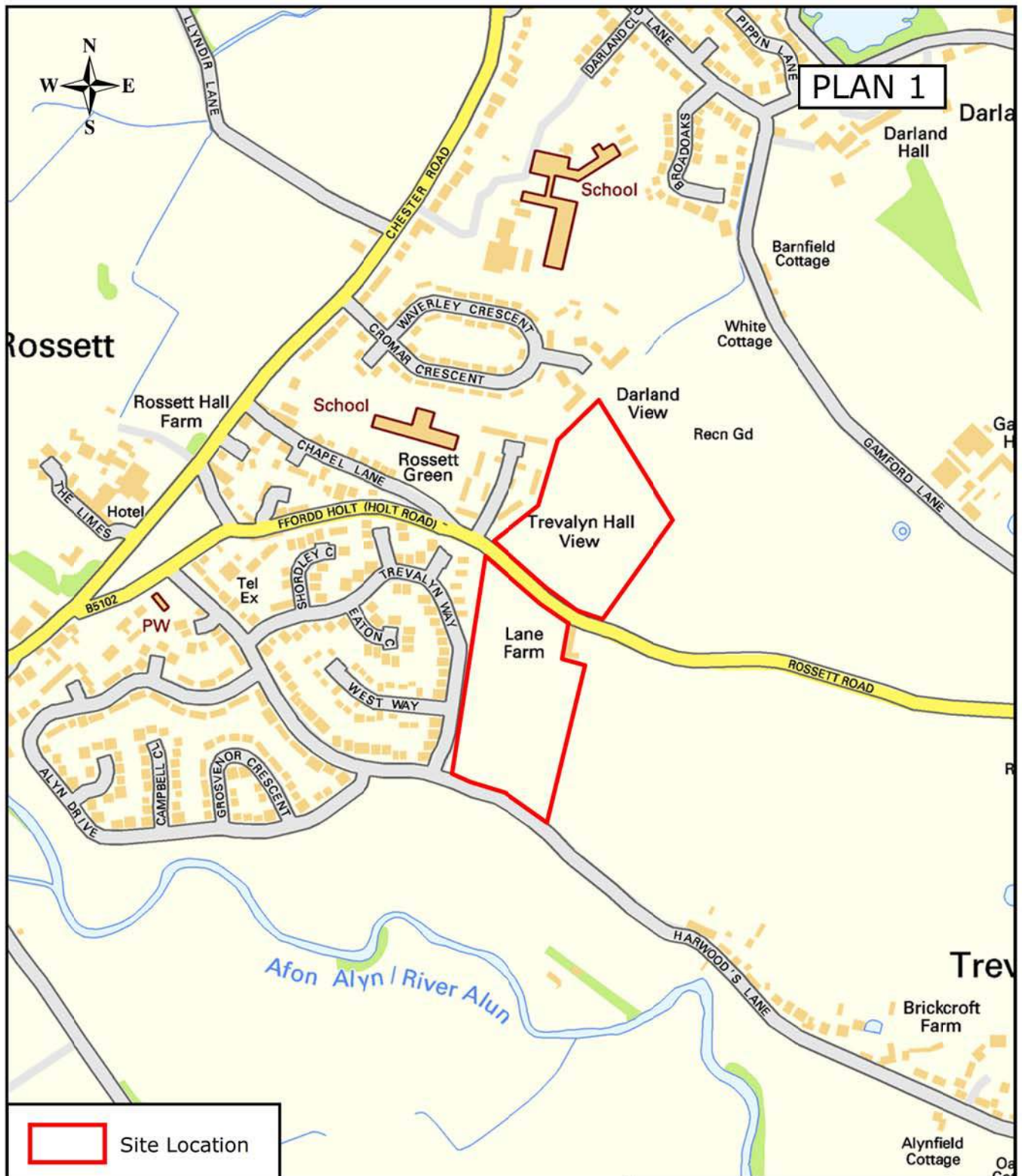
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- 8.2 The traffic count data showed that Holt Road is lightly trafficked and comprises mainly cars, with only very few heavy goods vehicle movements and a small amount of agricultural traffic.
- 8.3 The existing and proposed 20mph speed limits will also have a positive impact on overall road safety.
- 8.4 The pedestrian survey (which included cyclists) has demonstrated that the majority of people walking along this section of Holt Road were adults and teenagers. Only two children were observed walking unaccompanied, which took place just after 7.30am and so were likely to have been children walking to school.
- 8.5 The survey showed that while people walk in both directions, the majority of people were seen to be walking in a westbound direction, along the northern side of the road, which suggests they were walking to the village centre.
- 8.6 The comparison of walking routes, times and distances show that alternative shorter/quicker and safer routes are available through the established footway network.
- 8.7 Residents at the new development will be informed of these alternative routes and these will be promoted through the Travel Plan. The habits of existing residents in the area are more difficult to influence, but clearly safer routes are available to use, should pedestrians wish to do so.
- 8.8 The revised plan (0804-04 REV B) showing the proposed footway improvements take account of all the issues raised by WBCB and demonstrate that these matters have been satisfactorily addressed.
- 8.9 The amended scheme presented in this note (v4) will be a betterment to the existing situation, thus having a positive impact on road safety and will ensure that a safe walking route is provided to both schools and local facilities in the village, should people choose to do so using Holt Road.
- 8.10 In conclusion, it is considered that taking account of the originally submitted information and the additional data and amended drawing that has been provided within this note, demonstrate that the proposals are acceptable in highway and pedestrian terms and will not give rise to any road safety issues.

PLANS



BELLIS BROS LTD

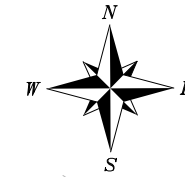
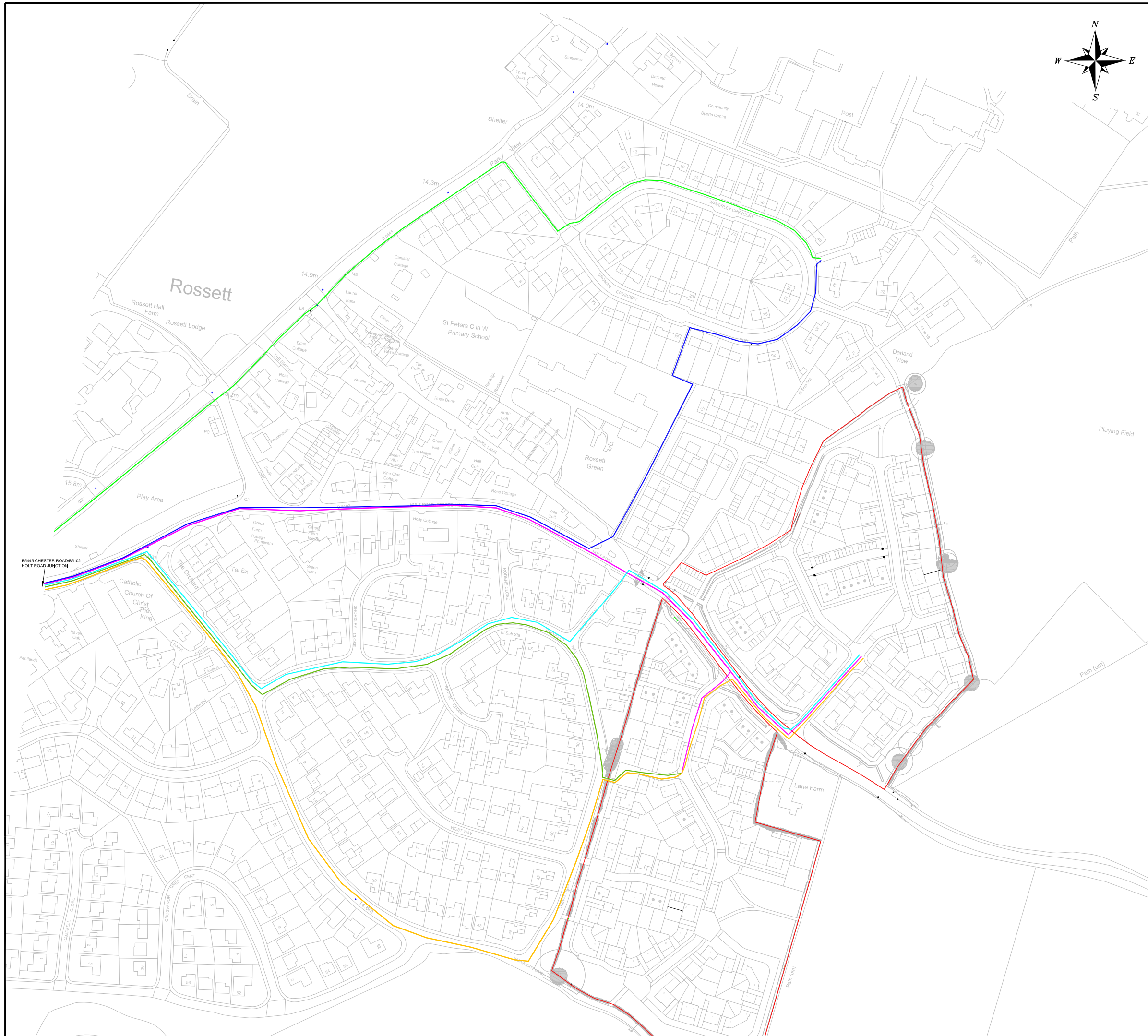
**PROPOSED RESIDENTIAL DEVELOPMENT
ROSSETT ROAD, ROSSETT
SITE LOCATION PLAN**

croft
Transport Solutions

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



NOTES

PLAN 2

-  INDICATIVE SITE BOUNDARY
-  HOLT ROAD ROUTE FROM NORTHERN SITE (650 METRES = APPROX 8 MINUTES WALKING TIME)
-  HOLT ROAD ROUTE FROM SOUTHERN SITE (595 METRES = APPROX 8 MINUTES WALKING TIME)
-  TREVALYN WAY ROUTE FROM NORTHERN SITE (708 METRES = APPROX 9 MINUTES WALKING TIME)
-  TREVALYN WAY ROUTE FROM SOUTHERN SITE (570 METRES = APPROX 7 MINUTES WALKING TIME)
-  HARWOODS LANE ROUTE FROM SOUTHERN SITE (665 METRES = APPROX 9 MINUTES WALKING TIME)
-  HARWOODS LANE ROUTE FROM NORTHERN SITE (872 METRES = APPROX 11 MINUTES WALKING TIME)
-  CHESTER ROAD ROUTE (653 METRES = APPROX 8 MINUTES WALKING TIME)
-  HOLT ROAD THROUGH TREVALYN WAY (698 METRES = APPROX 8 MINUTES WALKING TIME)

REV	DETAILS	DRAWN	CHECKED	DATE
CLIENT: BELLIS BROS LTD				
PROJECT: ROSSETT ROAD, ROSSETT				
DRAWING TITLE: WALKING ROUTE PLAN				
SCALES: NTS @ A3				
DRAWN: SM		CHECKED: MR		DATE: FEB 19
Croft Transport Planning & Design Hill Quays 9 Jordan Street Manchester M15 4PY Email: info@croftts.co.uk Tel: 0161 667 3746 Web: www.croftts.co.uk			 CROFT	
DRAWING NUMBER: 0807-03		REVISION: A		

St Peters C in W Primary School, Rossett, Wrexham 20mph Zone

Key

- Area of 20mph Zone.
- Area of School.

Erect new 20mph and 30mph signs on new post at back of footpath.

Erect new 20mph and 30mph signs on lighting column.

Remove existing 20mph and 30mph signs and post.

Remove existing traffic signal warning sign from lighting column No.6 and replace with new 20mph and 30mph signs.

Erect new 20mph and 30mph signs on new post at back of footpath.

Remove existing 30mph and de-restriction signs and replace with new 20mph and de-restriction signs.

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Seilwyrdd y map hwn ar ddeunydd yr Arolwg Ordnans gyda chaniatâd yr Arolwg Ordnans ar ran Rheolwr Llyfrfa Ei Mawrhydi © hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gall hyn arwain at erlyniad neu achos sifil. Rhif trwydded 100023429. 2016

Not to Scale

PLAN 4

Rossett, Wrexham Proposed 20mph Zone



Scale 1:2500@A4

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DRAWINGS



NORTH SOUTH AERIAL VIEW



REV.	DETAILS	DRAWN	CHECKED	DATE	NOTES THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES. EXISTING DRIVEWAYS NEW KERBS EXISTING ADOPTED HIGHWAY NEW FOOTWAYS	ROSSETT ROAD, ROSSETT				BELLIS BROS LTD		
A	AMENDED FOLLOWING COMMENTS FROM WCBC	JC	MR	FEB 19		PROPOSED FOOTWAY IMPROVEMENTS ALONG HOLT ROAD	Croft Transport Planning & Design Hill Quays 9 Jordan Street Manchester M15 4PY Email: info@croftts.co.uk Tel: 0161 667 3746 Web: www.croftts.co.uk					
B	AMENDED FOLLOWING COMMENTS FROM WCBC (PRIORITY ARRANGEMENT REMOVED AND CROSSING AND TACTILES RELOCATED TO THE WEST)	LB	MR	APR 19								
				DRAWN:			CHECKED:	DATE:		SCALES:	DRAWING NUMBER:	REVISION:
				LB			MR	APR 19		1:500 @ A3	0807-04	B

APPENDICES

APPENDIX 1

WCBC Comments on Footway Improvements

(29th March 2019)

From: Peter Douthwaite <Peter.Douthwaite@wrexham.gov.uk>
Sent: 29 March 2019 14:29
To: Justin Paul <Justin@j10planning.com>
Subject: Holt Road Rossett

Justin

Apologies for the delay in responding.

I refer to the submitted layout plan (Potential Priority Arrangement and Footway Improvement Plan) – Drg. No. 0807-04 in respect of the above site:-

The submitted layout plan indicates the provision of a short section of footway on the southern side of the B5102 Holt Road fronting Holly Cottage and nos. 5 – 11 Holt Road. A significant portion of this footway would appear to be less than 1.2m wide given the limited available highway verge along this section. 1.2m is the minimum acceptable width to meet mobility standards. A minimum footway width of 2m would normally be required particularly in close proximity to schools.

The proposed dropped kerb crossing point at the eastern end of the scheme is located on a bend where visibility between vehicles and pedestrians is sub-standard. Visibility is impeded in this location by the existing hedgerow along this section. The location of such a crossing in this location is not considered appropriate / safe.

The existing driveway serving no. 2 Vine Clad Cottage suffers from inadequate visibility in both directions. When exiting the driveway heading west (with restricted visibility), a vehicle can currently exit on to the opposite side of the road. However, with the proposed build-out / priority system in place, they would have to exit at a slower speed to make the manoeuvre and would be driving along the wrong side of the road facing oncoming traffic who are given priority. The proposed layout / priority arrangement is considered to increase the likelihood of danger to road users and pedestrians.

I have therefore amended the attached SOCG to take account of this – please confirm that the SOCG is acceptable and I will arrange to send you a signed copy

Regards

Pete Douthwaite
Senior Development Control Engineer



APPENDIX 2

WCBC Comments on Footway Improvements

(16th April 2019)

On 16 Apr 2019, at 15:06, Peter Douthwaite <Peter.Douthwaite@wrexham.gov.uk> wrote:

Justin

I refer to the submitted layout plan (Potential Priority Arrangement and Footway Improvement Plan) – Drg. No. 0807-04 Rev A in respect of the above site:-

The submitted layout plan indicates the provision of a short section of footway on the southern side of the B5102 Holt Road fronting Holly Cottage and nos. 5 – 11 Holt Road. A significant portion of this footway would appear to be less than 1.2m wide given the limited available highway verge along this section. . This footway would link up with the existing 0.5m wide footway located just beyond no. 5 Holt Road. Whilst the footway is below recommended width it is considered to be an improvement on the existing situation and would benefit pedestrian safety along Holt Road.

I would however suggest that the proposed dropped kerb crossing point at the eastern end of the scheme is located on approximately 12m from the eastern boundary of Holly Cottage to enable adequate visibility to be established without the need to remove or cut back hedges which may be within private ownership.

The existing driveway serving approximately 8 dwellings at Green Cottages suffers from inadequate visibility to the east. The proposed build-out / priority system will reduce visibility from the existing access, and vehicles driving from the east will be forced on the wrong side of the carriageway, leading to increased potential for vehicular conflict; consequently I would be unable to support the implementation of a priority working scheme.

Overall the proposed footway scheme (without the build out) is considered to enhance pedestrian safety along Holt Road and I can therefore confirm that I would be willing to enter into a SOCG in respect of the proposals

Regards

Pete Douthwaite
Senior Development Control Engineer



APPENDIX 3

Traffic & Pedestrian Survey Data

SURVEY CONTROL

Client: Croft Transport Planning & Design

Client Contact: Marty Rae

Survey Location: Rossett

Date(s) of Survey: Monday 28 January 2019
Tuesday 29 January 2019

Notes:

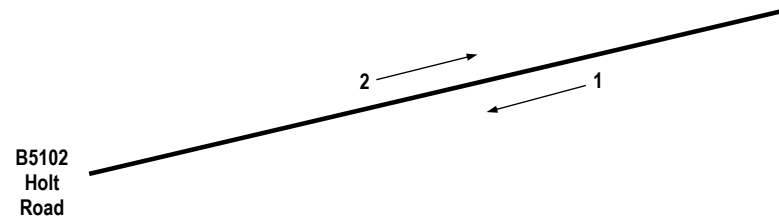
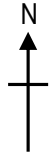
On Site Supervisor: David Cheng

Data Checking: David Cheng

Survey Reference: 2019.024 Rossett

Status: Final

Date of Issue: 31 January 2019



DRAWING TITLE

TRAFFIC MOVEMENT REFERENCE

JOB TITLE

2019.024 ROSSETT

DRAWN BY

DC

DATE

JAN 2019

SCALE

NTS

REF

FIGURE 1

signal surveys

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

signal surveys

Time Beginning	B5102 Holt Road - Monday 28 January 2019															
	1								2							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
1500	2	0	16	1	1	0	0	2	0	0	37	3	1	1	0	0
1515	0	0	18	0	1	0	0	0	0	0	20	1	2	0	1	0
1530	0	1	14	5	0	0	0	0	1	0	22	4	0	0	0	1
1545	0	0	24	2	0	0	0	1	0	0	22	1	0	0	0	0
1600	0	0	17	0	3	0	1	0	0	0	28	2	0	1	0	0
1615	0	1	30	7	0	1	1	0	0	0	23	1	1	0	0	1
1630	1	0	26	6	0	0	0	0	0	0	21	6	0	0	0	0
1645	0	0	17	4	0	0	0	0	0	0	23	2	1	0	0	0
1700	0	0	19	4	0	0	1	0	0	0	22	0	0	0	0	0
1715	0	1	26	2	0	0	0	0	0	0	31	2	0	0	0	0
1730	0	0	21	3	1	0	0	0	0	0	21	1	1	0	0	0
1745	0	0	20	2	0	0	0	0	0	0	20	1	0	0	0	0
Time Beginning	B5102 Holt Road - Tuesday 29 January 2019															
	1								2							
	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT	PC	MC	CAR	LGV	OGV1	OGV2	PSV	FT
0730	0	0	16	1	0	0	0	0	0	0	12	2	1	0	0	0
0745	0	0	25	2	0	0	0	0	0	0	24	5	0	0	0	0
0800	0	0	28	2	2	0	1	0	0	0	35	4	0	0	0	0
0815	0	0	28	2	1	0	2	0	0	0	24	5	0	0	1	0
0830	0	0	31	4	4	0	0	0	0	0	33	3	0	1	0	0
0845	0	1	23	2	0	1	0	0	0	0	41	5	2	0	0	1
0900	0	0	20	4	2	0	0	0	0	0	14	2	3	0	0	0
0915	0	0	14	2	1	0	0	0	0	0	12	0	0	1	0	0
0930	1	0	13	2	0	0	0	0	0	0	15	3	1	0	0	0
0945	0	0	14	2	0	0	0	0	1	1	16	2	0	0	0	0

* FT = Farm Traffic

Time Beginning	B5102 Holt Road - Monday 28 January 2019		
	Direction (refer to map)	Description	Comments
1519	Westbound	1 x Adult	Walking on northside of road
1523	Eastbound	1 x Adult	Walking on northside of road then crossed to the opposite side and carried on eastbound
1523	Westbound	1 x Adult, 1 x Child, 1 x Pram	Walking on northside then crossed to opposite to the footpath and carried on westbound
1527	Westbound	1 x Adult, 1 x Child, 1 x Pram	Walking on northside of road
1532	Westbound	2 x Teenager	Walking on northside then crossed to opposite to the footpath and carried on westbound
1532	Westbound	4 x Teenager	Walking on northside of road
1534	Westbound	1 x Teenager	Walking on southside of road
1534	Westbound	3 x Teenager	Walking on northside of road
1534	Eastbound	2 x Teenager	Walking on southside of road
1538	Westbound	1 x Teenager	Walking on northside then crossed to opposite to the footpath and carried on westbound
1550	Eastbound	1 x Adult	Walking on northside of road
1610	Eastbound	1 x Adult	Walking on footpath on southside then crossed to the opposite side and carried on eastbound
1611	Eastbound	1 x Teenager	Walking on the road on the footpath side on southside then crossed to the opposite side and carried on eastbound
1611	Westbound	1 x Adult	Walking on the southside of the road then crossed to the northside and carried on westbound
1625	Westbound	2 x Adult	Walking on the northside of the road
1637	Westbound	1 x Adult	Walking on the southside of the road
1640	Westbound	1 x Adult	Walking on the northside of the road
1655	Eastbound	1 x Adult	Walking on the southside of the road
1713	Westbound	1 x Adult, 2 x Child	Walking on northside then crossed to opposite to the footpath and carried on westbound
1740	Westbound	2 x Adult	Walking on the northside of the road
1758	Westbound	1 x Adult	Walking on the northside of the road
Time Beginning	B5102 Holt Road - Tuesday 29 January 2019		
	Direction (refer to map)	Description	Comments
0736	Westbound	1 x Child	Walking on northside of road
0737	Westbound	1 x Child	Walking on the southside of the road then crossed to the northside and carried on westbound
0802	Westbound	3 x Teenager	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0832	Westbound	1 x Teenager	Walking on northside of the road
0846	Westbound	2 x Teenager	Walking on the southside of the road then crossed to the opposite side and carried on westbound
0851	Eastbound	1 x Adult	Walking on the northside
0905	Westbound	1 x Adult, 1 x Pram	Walking on the northside
0905	Westbound	1 x Adult	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0925	Westbound	1 x Adult	Walking on the northside of the road then crossed to the opposite side and carried on westbound
0955	Westbound	1 x Adult, 1 x Dog	Walking on the northside of the road



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

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

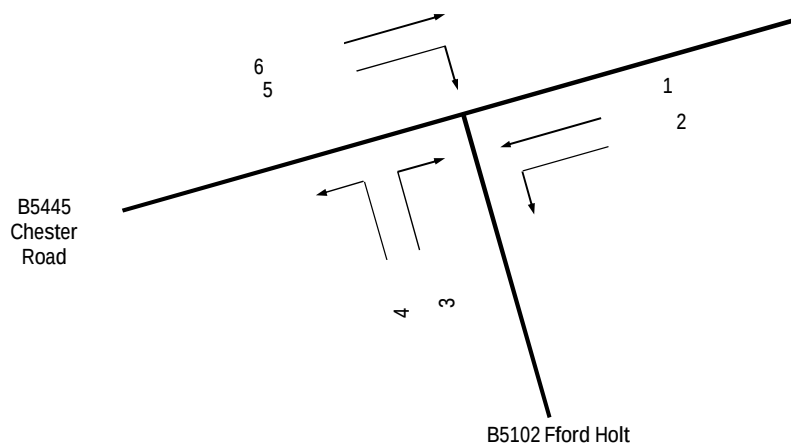
Data Checking: Richard Adams

Survey Reference: 2015.091 Rossett

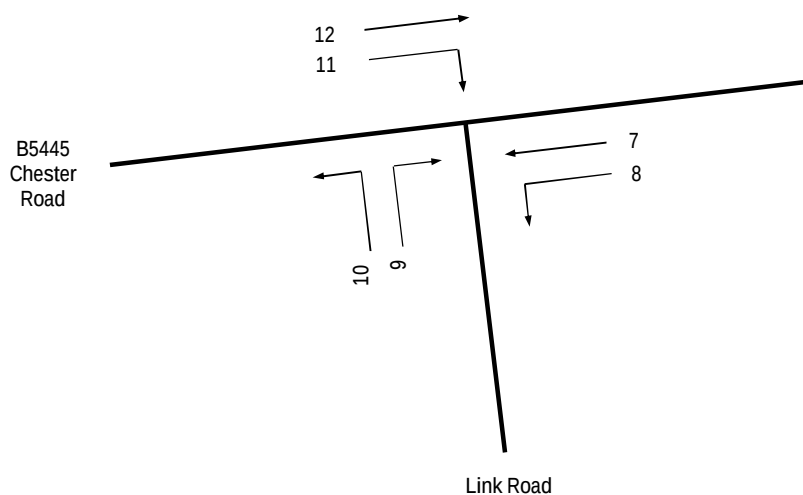
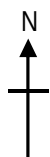
Status: Final

Date of Issue: 22 June 2015

JUNCTION 1



JUNCTION 2



DRAWING TITLE

TRAFFIC MOVEMENT REFERENCE

JOB TITLE

2015.091 ROSSETT

signal surveys

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

DRAWN BY

RA

DATE

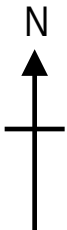
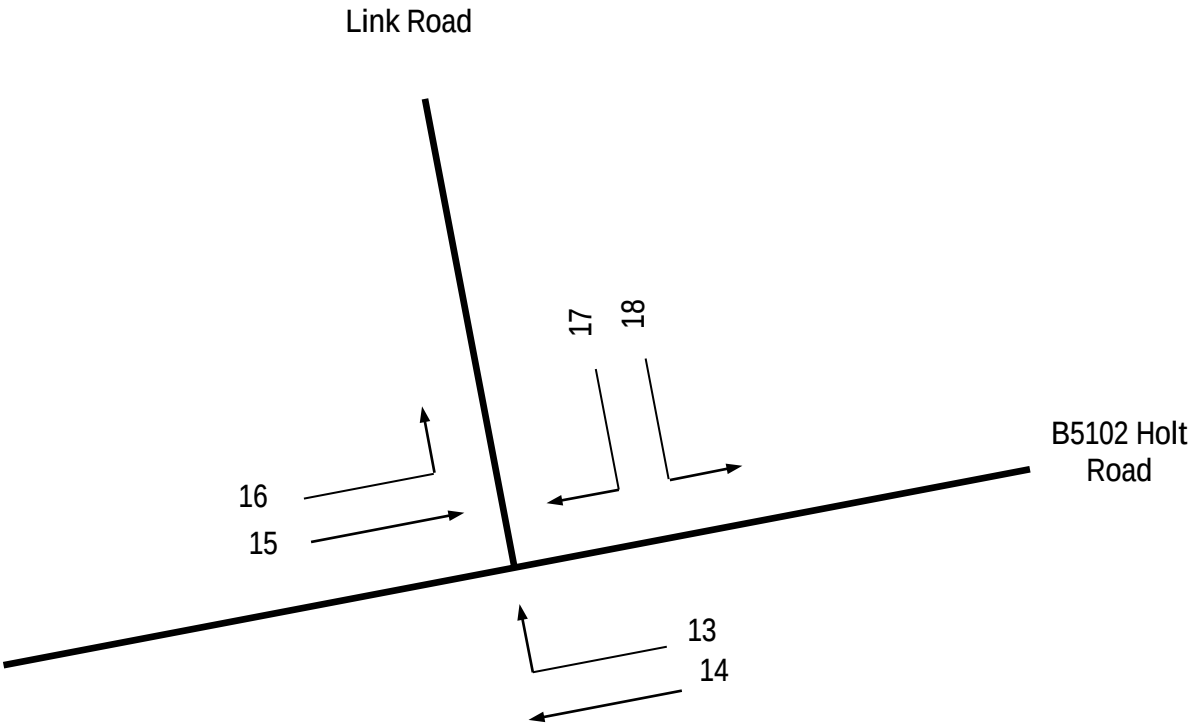
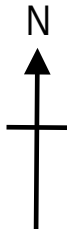
JUN 2015

SCALE

NTS

REF

FIGURE 1



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

Rosset ATC, B5445 Chester Road

Produced by Road Data Services Ltd.

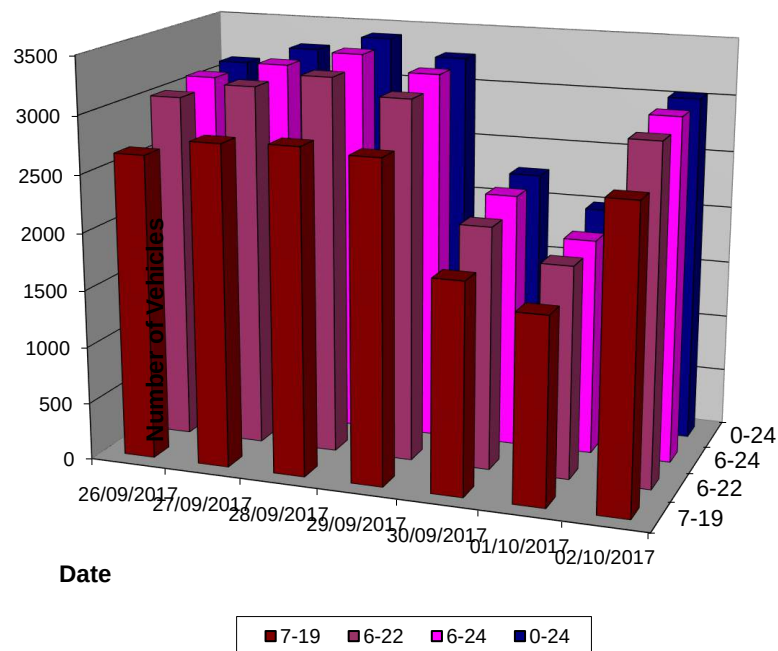
Channel 1 - Southwestbound

Vehicle Flow

Week 1

Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday	5 Day Ave	7 Day Ave
1	5	16	16	7	15	45	10	11	16
2	2	2	5	2	7	23	5	3	7
3	2	3	0	1	4	18	1	1	4
4	0	3	1	2	0	7	1	1	2
5	3	2	4	4	4	4	1	3	3
6	15	10	11	15	7	9	10	12	11
7	19	25	24	17	11	7	23	22	18
8	142	151	150	140	17	13	137	144	107
9	330	367	339	297	70	30	312	329	249
10	178	224	213	178	108	52	187	196	163
11	153	148	138	160	153	103	142	148	142
12	123	148	144	146	160	144	154	143	146
13	171	176	171	207	191	163	189	183	181
14	173	148	177	211	191	166	166	175	176
15	169	170	176	198	166	199	178	178	179
16	231	223	253	281	199	206	200	238	228
17	341	348	338	405	190	209	370	360	314
18	375	381	379	328	205	214	288	350	310
19	271	320	350	236	187	125	283	292	253
20	165	152	224	160	126	96	160	172	155
21	98	98	125	114	91	71	68	101	95
22	86	81	80	63	52	50	77	77	70
23	42	45	53	57	56	27	54	50	48
24	21	32	35	36	53	18	17	28	30
7-19	2657	2804	2828	2787	1837	1624	2606	2736	2449
6-22	3025	3160	3281	3141	2117	1848	2934	3108	2787
6-24	3088	3237	3369	3234	2226	1893	3005	3187	2865
0-24	3115	3273	3406	3265	2263	1999	3033	3218	2908

Vehicle Flow (Channel 1)



Rosset ATC, B5445 Chester Road

Produced by Road Data Services Ltd.

Channel 1 - Southwestbound

Average Speed

Week 1

Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
1	26.4	28.2	28.2	23.3	28.6	26.5	28.6
2	19.0	30.0	27.0	26.8	27.1	25.4	27.2
3	23.9	28.1	-	34.3	30.6	31.1	31.0
4	-	30.4	35.7	23.4	-	29.3	26.0
5	34.2	36.9	32.9	29.6	31.3	37.1	26.9
6	31.1	28.6	30.0	29.0	34.1	27.7	33.4
7	26.8	27.7	28.0	29.6	25.5	28.4	28.1
8	26.9	26.3	25.6	25.6	24.9	26.9	26.3
9	24.8	24.8	24.9	26.1	27.1	24.8	23.9
10	24.0	23.0	24.3	24.3	25.8	25.6	24.5
11	24.3	24.4	25.6	25.6	25.5	25.3	25.0
12	25.3	24.3	25.1	25.3	24.9	24.0	24.3
13	24.3	25.3	24.7	24.5	24.9	25.5	24.5
14	23.8	25.4	25.9	24.8	25.4	25.0	25.3
15	25.2	25.2	25.4	25.7	25.5	25.0	24.8
16	24.7	24.3	24.7	24.2	25.1	24.5	24.1
17	23.2	22.6	22.4	20.5	25.4	25.0	21.0
18	23.8	24.2	24.3	23.7	24.3	24.5	23.6
19	24.3	24.7	24.8	25.0	25.9	25.5	24.0
20	24.9	25.2	24.7	24.7	25.5	25.8	24.0
21	26.6	25.5	25.4	25.2	25.4	27.0	25.0
22	26.3	24.1	25.8	26.0	26.3	26.7	25.3
23	26.3	26.6	25.3	26.1	25.3	27.8	27.4
24	28.5	28.6	26.5	25.6	25.0	26.4	28.4
10-12	24.8	24.3	25.3	25.5	25.2	24.5	24.6
14-16	24.9	24.7	25.0	24.8	25.3	24.7	24.4
0-24	24.6	24.6	24.8	24.5	25.4	25.3	24.2

Average	24.7
---------	------

Channel 1 - Southwestbound

85th Percentile

Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
1	28.8	35.4	33.9	29.1	32.0	30.5	36.7
2	22.8	34.2	33.3	29.9	31.5	31.2	36.6
3	26.5	33.9	-	-	33.7	38.1	-
4	-	32.5	-	27.4	-	35.4	-
5	38.9	40.3	39.2	33.4	33.9	40.6	-
6	36.3	34.8	33.5	34.7	41.5	30.9	43.7
7	32.1	34.9	32.9	38.0	31.3	35.3	36.4
8	32.6	31.9	30.4	30.9	26.8	31.4	30.1
9	28.8	29.5	29.0	30.6	32.1	28.5	28.3
10	28.8	27.2	28.3	28.3	31.0	30.5	28.5
11	29.0	29.4	30.1	30.3	32.0	31.1	29.4
12	28.9	29.2	28.9	28.9	29.0	27.7	28.9
13	28.8	29.5	29.9	29.1	29.9	29.1	28.5
14	27.3	30.0	30.5	29.7	29.4	31.1	29.5
15	29.6	28.9	30.0	30.6	30.0	29.3	29.0
16	28.4	28.4	29.3	28.3	29.0	27.9	27.8
17	27.5	27.5	27.0	26.8	29.2	29.6	27.4
18	28.2	28.0	28.2	28.1	28.8	29.6	27.4
19	28.7	28.2	29.0	29.1	29.8	30.3	27.7
20	29.8	29.3	28.9	28.6	30.8	31.4	27.7
21	32.3	29.7	32.3	28.7	29.6	31.6	29.9
22	31.2	28.7	30.4	29.9	30.8	31.4	31.0
23	31.8	31.2	29.9	31.3	30.2	33.5	32.0
24	34.2	36.4	34.7	33.3	30.1	34.1	33.2
10-12	29.0	29.3	29.6	29.6	29.9	29.6	29.0
14-16	28.9	28.7	29.8	29.0	29.5	28.6	28.5
0-24	29.1	28.9	29.4	29.1	30.0	30.3	28.6

85th %ile	29.3
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Rosset ATC, B5445 Chester Road

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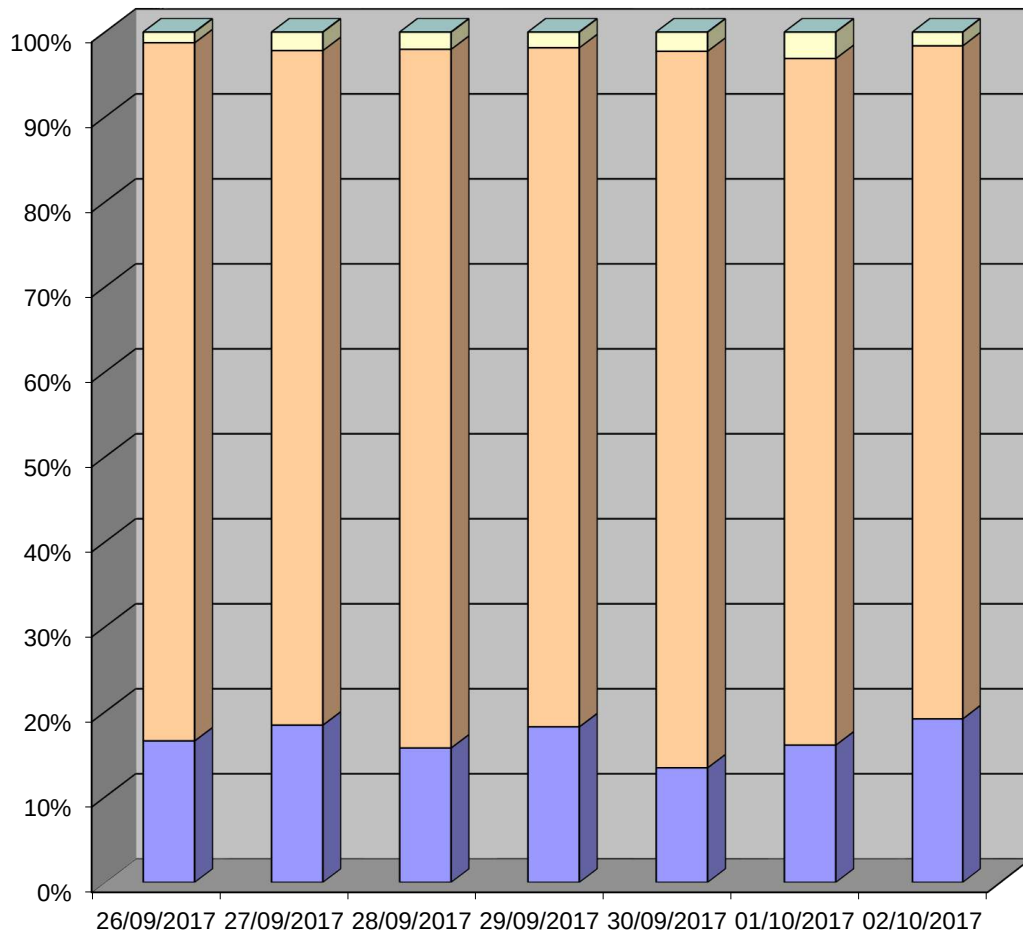
Channel 1 - Southwestbound

Speed Summary

Week 1

Speed (MPH)	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
0-20	517	604	537	596	304	322	582
21-35	2559	2598	2800	2609	1908	1615	2402
36-50	39	71	69	60	51	62	49
51+	0	0	0	0	0	0	0
TOTAL	3115	3273	3406	3265	2263	1999	3033

Speed Summary (MPH)



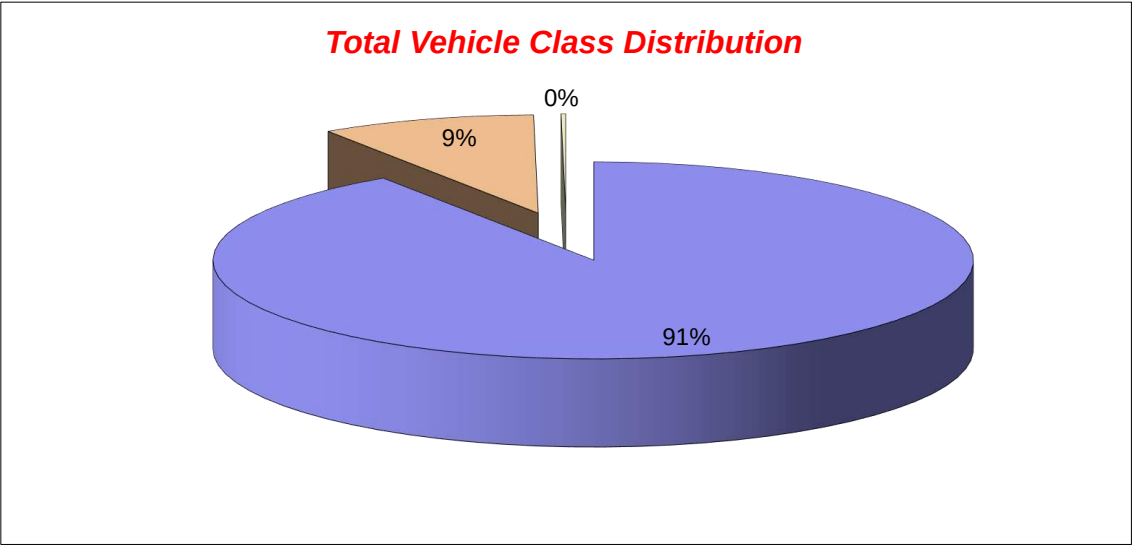
Date

0-20 21-35 36-50 51+

Rosset ATC, B5445 Chester Road

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Channel 1 - Southwestbound		Vehicle Class		Week 1
Classes	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
Day / Time				
26/09/2017				
7-19	2361	290	6	2657
6-22	2701	318	6	3025
6-24	2758	324	6	3088
0-24	2778	330	7	3115
27/09/2017				
7-19	2510	288	6	2804
6-22	2842	312	6	3160
6-24	2913	318	6	3237
0-24	2938	329	6	3273
28/09/2017				
7-19	2555	269	4	2828
6-22	2982	294	5	3281
6-24	3065	299	5	3369
0-24	3095	306	5	3406
29/09/2017				
7-19	2528	255	4	2787
6-22	2860	277	4	3141
6-24	2947	282	5	3234
0-24	2970	289	6	3265
30/09/2017				
7-19	1691	140	6	1837
6-22	1947	164	6	2117
6-24	2044	175	7	2226
0-24	2077	179	7	2263
01/10/2017				
7-19	1536	86	2	1624
6-22	1745	101	2	1848
6-24	1787	104	2	1893
0-24	1884	112	3	1999
02/10/2017				
7-19	2329	271	6	2606
6-22	2627	301	6	2934
6-24	2692	307	6	3005
0-24	2713	314	6	3033
Average				
7-19	2216	228	5	2449
6-22	2529	252	5	2787
6-24	2601	258	5	2865
0-24	2636	266	6	2908



Rosset ATC, B5445 Chester Road

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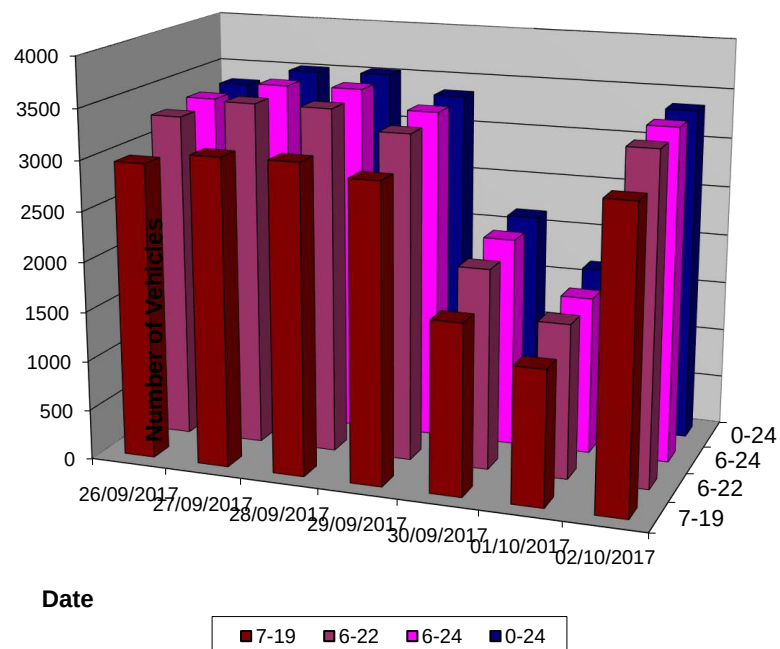
Channel 2 - Northeastbound

Vehicle Flow

Week 1

Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday	5 Day Ave	7 Day Ave
1	4	6	5	9	21	27	6	6	11
2	2	3	4	2	8	23	4	3	7
3	1	1	1	2	4	10	1	1	3
4	0	3	3	1	3	9	5	2	3
5	5	1	0	1	5	5	1	2	3
6	4	3	6	8	5	6	1	4	5
7	13	24	14	16	17	11	31	20	18
8	124	131	144	114	26	9	131	129	97
9	618	640	625	482	62	26	669	607	446
10	467	459	420	429	119	49	466	448	344
11	143	143	145	174	162	109	149	151	146
12	141	157	138	161	178	144	139	147	151
13	137	184	166	191	161	166	160	168	166
14	164	182	178	197	166	170	167	178	175
15	164	137	146	172	213	153	137	151	160
16	207	265	270	275	179	155	239	251	227
17	256	267	243	317	136	145	232	263	228
18	297	295	312	253	156	118	226	277	237
19	242	220	302	210	145	100	261	247	211
20	157	152	165	145	130	90	140	152	140
21	86	127	110	85	110	58	80	98	94
22	56	69	75	42	49	43	60	60	56
23	31	30	40	41	51	22	30	34	35
24	13	16	17	26	47	16	23	19	23
7-19	2960	3080	3089	2975	1703	1344	2976	3016	2590
6-22	3272	3452	3453	3263	2009	1546	3287	3345	2897
6-24	3316	3498	3510	3330	2107	1584	3340	3399	2955
0-24	3332	3515	3529	3353	2153	1664	3358	3417	2986

Vehicle Flow (Channel 2)



Rosset ATC, B5445 Chester Road

Produced by Road Data Services Ltd.

Channel 2 - Northeastbound

Average Speed

Week 1

Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
1	37.1	31.3	30.3	30.9	29.5	28.8	32.7
2	28.6	27.7	39.8	30.6	29.2	28.2	30.8
3	25.3	33.0	25.0	22.6	28.2	36.6	32.9
4	-	28.2	31.5	38.6	36.1	30.9	31.7
5	26.0	46.2	-	37.8	32.0	36.3	27.5
6	34.1	34.5	32.4	30.9	34.8	29.1	36.1
7	26.9	30.3	26.5	28.5	27.6	32.1	28.6
8	27.1	27.4	26.5	28.4	27.0	27.0	26.5
9	25.1	24.8	25.3	25.3	28.0	27.5	24.6
10	24.6	24.9	25.5	25.3	25.8	27.6	25.6
11	27.5	26.3	27.0	27.0	27.3	25.9	26.2
12	26.7	26.6	27.1	27.4	26.9	26.0	26.6
13	26.2	26.7	26.8	26.3	27.2	26.7	27.0
14	26.3	26.1	27.7	26.8	27.0	26.0	27.0
15	26.9	27.2	26.6	26.3	27.1	27.1	27.0
16	26.1	25.6	26.2	25.5	26.9	26.5	25.9
17	26.3	26.4	25.0	26.0	26.4	27.5	26.0
18	26.3	26.7	26.0	26.5	26.2	27.4	26.5
19	26.8	27.0	26.8	26.4	27.6	27.7	26.0
20	26.2	26.7	26.0	27.1	26.3	26.3	25.7
21	27.0	26.7	28.5	28.4	26.4	27.9	26.8
22	28.1	29.3	28.3	28.6	28.3	30.8	29.0
23	27.3	29.1	27.1	28.9	28.3	29.0	27.9
24	31.1	31.6	30.4	28.5	28.4	25.7	29.8
10-12	27.1	26.5	27.1	27.2	27.1	26.0	26.4
14-16	26.5	26.2	26.3	25.8	27.0	26.8	26.3
0-24	26.1	26.2	26.3	26.4	27.0	27.1	26.1

Average 26.3

Channel 2 - Northeastbound

85th Percentile

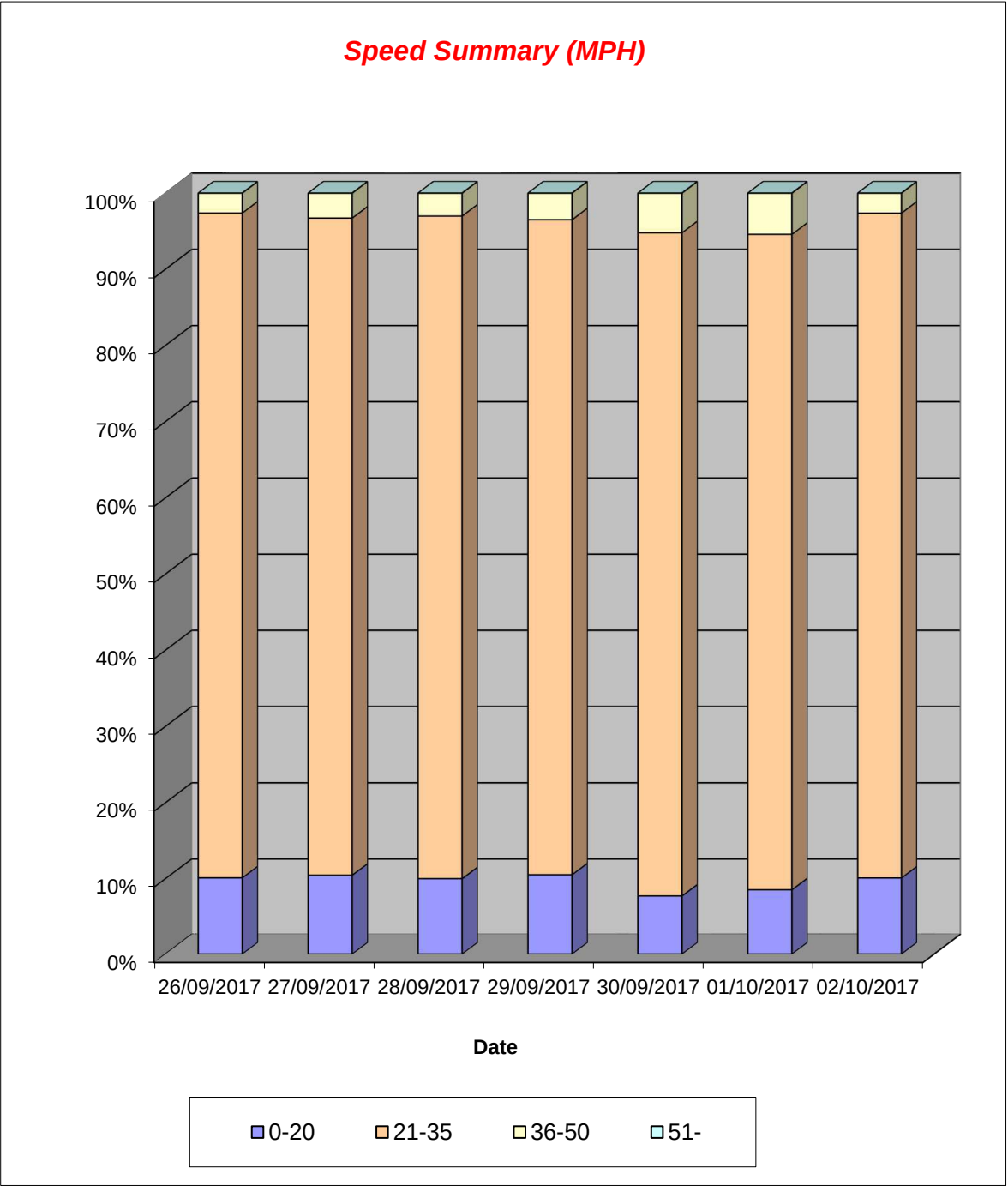
Hr Ending	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
1	42.4	37.2	38.1	36.1	33.5	31.7	36.8
2	28.9	35.1	44.6	30.9	32.3	34.6	32.0
3	-	-	-	26.0	31.1	39.7	-
4	-	29.9	31.9	-	37.7	39.0	38.1
5	31.6	-	-	-	35.6	41.3	-
6	37.3	39.3	39.6	33.2	42.2	31.2	-
7	32.5	37.4	31.0	38.2	32.0	40.4	35.0
8	31.9	32.3	31.5	34.0	30.4	31.0	30.9
9	29.1	29.2	30.0	29.5	33.1	31.2	29.3
10	28.6	29.0	30.2	29.8	31.3	32.7	29.9
11	32.6	30.9	31.8	32.2	31.9	30.3	30.5
12	30.5	32.6	32.6	31.2	31.7	31.0	31.8
13	30.7	32.2	31.7	30.8	32.2	30.9	31.5
14	30.8	30.2	32.1	31.6	31.5	31.5	31.5
15	31.4	31.2	31.3	30.8	31.7	31.6	32.4
16	30.5	30.0	29.7	30.0	31.2	30.7	29.9
17	29.9	30.8	29.6	30.7	30.8	31.6	30.4
18	31.6	31.2	30.7	32.0	30.1	32.3	30.8
19	30.9	31.5	31.7	31.0	32.1	32.8	30.4
20	31.9	31.3	30.7	32.1	30.9	31.4	30.4
21	31.6	30.8	34.2	33.1	32.0	32.1	30.8
22	33.1	34.2	34.2	35.4	34.7	36.1	33.8
23	31.5	31.7	31.5	33.4	34.6	33.4	34.6
24	38.9	37.0	37.3	35.3	35.5	33.5	35.4
10-12	31.9	31.8	32.1	31.7	31.8	30.6	31.2
14-16	30.8	30.2	30.2	30.3	31.7	31.1	30.6
0-24	30.5	30.7	31.0	31.0	32.0	31.9	30.5

85th %ile 30.9

Rosset ATC, B5445 Chester Road

Produced by Road Data Services Ltd.

Channel 2 - Northeastbound				Speed Summary			Week 1
Speed (MPH)	26/09/2017 Tuesday	27/09/2017 Wednesday	28/09/2017 Thursday	29/09/2017 Friday	30/09/2017 Saturday	01/10/2017 Sunday	02/10/2017 Monday
0-20	337	368	353	353	166	142	339
21-35	2908	3032	3070	2883	1875	1432	2931
36-50	87	115	106	117	112	90	88
51-	0	0	0	0	0	0	0
TOTAL	3332	3515	3529	3353	2153	1664	3358

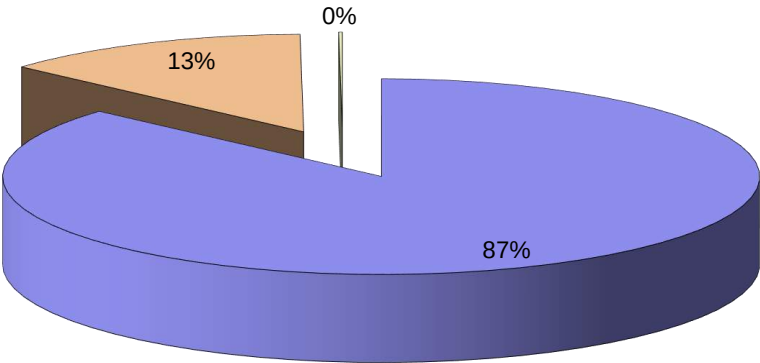


Rosset ATC, B5445 Chester Road

Produced by Road Data Services Ltd.

Channel 2 - Northeastbound		Vehicle Class		Week 1
Classes	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
Day / Time				
26/09/2017				
7-19	2568	387	5	2960
6-22	2837	430	5	3272
6-24	2874	437	5	3316
0-24	2887	440	5	3332
27/09/2017				
7-19	2606	467	7	3080
6-22	2918	526	8	3452
6-24	2953	537	8	3498
0-24	2966	541	8	3515
28/09/2017				
7-19	2649	436	4	3089
6-22	2971	478	4	3453
6-24	3019	487	4	3510
0-24	3034	491	4	3529
29/09/2017				
7-19	2589	383	3	2975
6-22	2833	427	3	3263
6-24	2891	436	3	3330
0-24	2912	438	3	3353
30/09/2017				
7-19	1482	215	6	1703
6-22	1752	251	6	2009
6-24	1840	261	6	2107
0-24	1881	266	6	2153
01/10/2017				
7-19	1206	137	1	1344
6-22	1380	165	1	1546
6-24	1413	170	1	1584
0-24	1485	178	1	1664
02/10/2017				
7-19	2617	354	5	2976
6-22	2882	399	6	3287
6-24	2924	410	6	3340
0-24	2938	414	6	3358
Average				
7-19	2245	340	4	2590
6-22	2510	382	5	2897
6-24	2559	391	5	2955
0-24	2586	395	5	2986

Total Vehicle Class Distribution



APPENDIX 3

Agreed Trip Rates Correspondence

MEMORANDUM

From: Planning Control Manager **To:** Head of Environment and Planning
Our Ref: EP/DC/PP/2018/0560 **Your Ref:** MP/P/2018/0560
Date: 16th July 2018

TOWN AND COUNTRY PLANNING ACT 1990

TOWN AND COUNTRY (GENERAL DEVELOPMENT PROCEDURE) ORDER 1995

Location: O. S Grid Ref: 373 573 Land to North and South of Lane Farm, Rossett Road, Trevalyn, Wrexham.

Development: Outline application for residential development of two parcels of land (Northern Parcel for up to 61 no. dwellings, Southern Parcel for up to 71 no. dwellings). Extension to community parking facility (in association with Northern Parcel) with associated means of access and all other matters reserved with Indicative provision made for pedestrian, pedestrian linkages, public open space and affordable housing.

I refer to your consultation dated 12/07/2018 including Layout Plan (Drg. No. Plnc 100-37-SMP-01 Rev G) in respect of the above.

Access

The development site is located on the B5102 Holt Road which is a classified road subject to a 40mph speed limit along this section.

Any proposed / existing access in this location would normally be required to provide visibility splays of 2.4 x 120m in both directions measured to the nearside edge of the adjoining highway in accordance with TAN 18. However, there is potential for the speed limit along this section of road to be reduced to 30mph. Based on such speeds, Any proposed access in this location would normally be required 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 be possible to provide the required visibility splays based on speeds of 30mph for both proposed access points subject to modifications to the existing hedgerow.

Both access points serving the northern and southern sites would need to be a minimum of 5.5m wide with 6m kerb radii.

I would recommend that a 3m wide shared cycleway / footway is provided along the frontages of both sites. This has been indicated on the submitted layout plan located behind the re-positioned hedgerow.

Should the proposed development be supported, the applicant would be required to enter into a Section 38 / 278 agreement with the Council in order to construct any proposed accesses and estate roads.

Any proposed modifications to the speed limit along this section of Holt Road will need to be agreed with our Traffic Section and will require public consultation. I assume that if the application is to be supported, a Grampian style condition will be required in respect of lowering the speed limit to 30mph (or 20mph) along this section of Holt Road subject to public consultation.

I would recommend that the applicant liaises with our Traffic Section - contact: Darren Green on Tel: 01978 729643.

Proposed Modifications to Existing Traffic Regulation Orders

Our Traffic Section is currently reviewing existing traffic regulation orders in the vicinity of the site ie/ possible no entry at junction of Chester Rd / Holt Rd, possible one way system along The Green off Chester Road.

The outcome of this review is likely to have a significant impact on which routes vehicles accessing the proposed development will take. **Any proposed modifications to the existing traffic order will require a revised Transport Assessment including re-assessment of the affected junctions.**

Any proposed modifications to the speed limit along this section of Holt Road will need to be agreed with our Traffic Section and will require public consultation. I assume that if the application is to be supported, a Grampian style condition will be required in respect of lowering the speed limit to 30mph (or 20mph) along this section of Holt Road subject to public consultation.

I would recommend that the applicant liaises with our Traffic Section - contact: Darren Green on Tel: 01978 729643 in respect of these proposals,

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 the submitted layout plan (Drg. No. Plnc 100-37-SMP-01 Rev G).

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. Plnc 100-37-SMP-01 Rev G) indicates the provision of a zebra crossing and improvements to the existing footways in this location.

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.

A number of footway / cycleway links have been proposed 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. There may also be scope to provide a cycleway / footway link into the school grounds as indicated on the submitted layout plan. I have previously requested that the applicant discusses this option with the Headteacher of Darland School.

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 have also been indicated on the submitted layout plan. A continuous 3m wide shared cycleway / footway link is proposed from Darland View to a point south of the proposed additional parking area at the southern end of Trevalyn Hall View.

The submitted layout plan includes the provision of an improved car park located immediately south of no. 1 Trevalyn Hall View. Any proposed footway works or alterations to the existing car park will require consent from WCBC Asset Management / Housing Department. Further clarification on future maintenance of these areas will need to be provided by the applicant.

Transport Assessment (TA)

Traffic Generation

The submitted TA includes TRICs data indicating 4.902 daily vehicle movements per dwelling which is particularly low. Revised TRICs information was previously supplied which indicated 5.405 movements per day but this detail has not been re-submitted / used to calculate the anticipated trip generation for the proposed development sites.

However, we have recently conducted a traffic count on a relatively new housing development which has similar characteristics to the proposed development site. This produced the following information:-

	Ave Trip Rates (weekday)					
	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrive	Depart	Total	Arrive	Depart	Total
Trip Rate	0.476	0.124	0.6	0.259	0.482	0.741

Could you please ask the applicant to amend the TA to take account of the revised figures indicated in the above table.

Our Traffic Section is currently reviewing existing traffic regulation orders in the vicinity of the site ie/ possible no entry at junction of Chester Rd / Holt Rd, possible one way system along The Green off Chester Road.

The outcome of this review is likely to have a significant impact on which routes vehicles accessing the proposed development will take. **Any proposed modifications to the existing traffic order will require a revised Transport Assessment including re-assessment of the affected junctions.**

Layout (Reserved Matter)

Any proposed layout will need to be constructed in accordance with WCBC Adoptable Standards and requirements of Manual for Streets.

Parking and Turning Provision (Reserved Matter)

Parking provision at the proposed development site will need to comply with LPGN 16 requirements.

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.

Lighting Provision

A scheme of street lighting will be required along site frontage, for the proposed internal estates and for any proposed footway / cycleway links I would recommend that the applicant liaises with our Street Lighting Section – contact Paul Rogers on Tel: 01978 729673.

Scheme for the comprehensive and integrated drainage of the site.

I assume that these details will be assessed / approved by our Flood Management Officer – Neil Taunt.

Construction and Traffic Management Plan (including provision for contractor parking) - CTMP

If the proposed development is supported, a suitable CTMP will be required. This could be included as a planning condition.

I await the requested information.

Notes to Applicant

- *The proposed scheme should be constructed to a standard suitable for adoption by the Council for future maintenance at the public expense and the developer will need to enter into an agreement with the Council under s.38 / 278 of the Highways Act 1980.*
You are advised that the Highway Authority will require such works to be completed to their satisfaction before they will formally adopt the relevant Highway works for public use and to be maintained at public expense. This will include the provision of a bond to cover the estimated value of such works.
The appropriate fees will become due to the Council when the Highways Authority approve the proposed works to be carried out

Supplementary Notes

The applicant's attention should be drawn to item nos. 1, 2, 3, 4 & 5 of the supplementary notes.

peter southwate

14. Planning Control Manager

APPENDIX 4

PICADY Output for Rossett Road/Site Access

(Northern Site)

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.5.0.6896 © Copyright TRL Limited, 2018				
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Northern Site.j9

Path: Z:\projects\0807 Rossett Road, Rossett\Picady\August 2018

Report generation date: 22/08/2018 09:40:50

»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	8.41	0.07	A	0.0	7.79	0.04	A
Stream C-AB	0.0	6.34	0.00	A	0.0	6.20	0.01	A

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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	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	Rossett Road (W)		Major
B	Site Access		Minor
C	Rossett Road (E)		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	517	0.082	0.207	0.130	0.296
1	B-C	645	0.086	0.217	-	-
1	C-B	619	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	220	100.000
B		✓	29	100.000
C		✓	133	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	7	213
	B	26	0	3
	C	132	1	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.07	8.41	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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

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

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	100.000
B		✓	16	100.000
C		✓	131	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	26	131
	B	14	0	2
	C	128	3	0

Vehicle Mix

Heavy Vehicle Percentages

	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	7.79	0.0	A
C-AB	0.01	6.20	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: 9.5.0.6896 © Copyright TRL Limited, 2018				
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Filename: Rossett Road (E)-Site Access-Rossett Road (W)- Southern Site.j9

Path: Z:\projects\0807 Rossett Road, Rossett\Picady\August 2018

Report generation date: 22/08/2018 09:44:31

»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	6.47	0.06	A	0.0	6.27	0.03	A
Stream C-AB	0.0	6.17	0.01	A	0.1	6.34	0.06	A

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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
D2	2026 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.64	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	522	0.083	0.210	0.132	0.300
1	B-C	651	0.087	0.221	-	-
1	C-B	626	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	159	100.000
B		✓	34	100.000
C		✓	225	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	1	158
	B	3	0	31
	C	217	8	0

Vehicle Mix

Heavy Vehicle Percentages

	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	6.47	0.1	A
C-AB	0.01	6.17	0.0	A
C-A				
A-B				
A-C				

2026 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.90	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

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

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		✓	142	100.000
B		✓	18	100.000
C		✓	186	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	3	139
	B	2	0	16
	C	155	31	0

Vehicle Mix

Heavy Vehicle Percentages

	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	6.27	0.0	A
C-AB	0.06	6.34	0.1	A
C-A				
A-B				
A-C				

APPENDIX 6

PICADY Output for Rossett Road/Link Road

Junctions 9							
PICADY 9 - Priority Intersection Module							
Version: 9.5.0.6896							
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk							
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Filename: B5102 (W)-Link Road-Fford Holt.j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady\August 2018
Report generation date: 06/11/2018 16:29:00

- »2028 Base Flows, AM
- »2028 Base Flows, PM
- »2028 Assessment Flows, AM
- »2028 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2028 Base Flows								
Stream B-AC	0.2	7.62	0.16	A	0.2	8.06	0.18	A
Stream C-AB	0.1	6.63	0.07	A	0.1	6.35	0.06	A
2028 Assessment Flows								
Stream B-AC	0.2	7.78	0.17	A	0.3	8.45	0.22	A
Stream C-AB	0.1	6.78	0.10	A	0.1	6.51	0.07	A

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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.24	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	522	0.083	0.209	0.131	0.298
1	B-C	651	0.087	0.219	-	-
1	C-B	619	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	174	100.000
B		✓	80	100.000
C		✓	134	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	19	155
	B	22	0	58
	C	95	39	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	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	0.16	7.62	0.2	A
C-AB	0.07	6.63	0.1	A
C-A				
A-B				
A-C				

2028 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	103	100.000
B		✓	88	100.000
C		✓	127	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	17	86
	B	43	0	45
	C	96	31	0

Vehicle Mix

Heavy Vehicle Percentages

	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	8.06	0.2	A
C-AB	0.06	6.35	0.1	A
C-A				
A-B				
A-C				

2028 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	184	100.000
B		✓	85	100.000
C		✓	191	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	19	165
	B	22	0	63
	C	137	54	0

Vehicle Mix

Heavy Vehicle Percentages

	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	7.78	0.2	A
C-AB	0.10	6.78	0.1	A
C-A				
A-B				
A-C				

2028 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	140	100.000
B		✓	109	100.000
C		✓	158	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	17	123
	B	43	0	66
	C	119	39	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.22	8.45	0.3	A
C-AB	0.07	6.51	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: 9.5.0.6896							
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Filename: Chester Road-B5102-B5445.j9

Path: Z:\projects\0807 Rossett Road, Rossett\Picady\August 2018

Report generation date: 06/11/2018 16:24:31

»2028 Base Flows, AM

»2028 Base Flows, PM

»2028 Assessment Flows, AM

»2028 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2028 Base Flows								
Stream B-AC	0.5	9.74	0.32	A	0.3	9.05	0.25	A
Stream C-AB	1.0	6.57	0.37	A	0.4	7.20	0.24	A
2028 Assessment Flows								
Stream B-AC	0.7	11.07	0.40	B	0.4	9.63	0.29	A
Stream C-AB	1.1	6.60	0.39	A	0.7	7.44	0.32	A

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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.84	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	0.089	0.225	0.142	0.322
1	B-C	682	0.094	0.237	-	-
1	C-B	632	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	504	100.000
B		✓	160	100.000
C		✓	1137	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	6	498
	B	1	0	159
	C	965	172	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	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	9.74	0.5	A
C-AB	0.37	6.57	1.0	A
C-A				
A-B				
A-C				

2028 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.43	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	579	100.000
B		✓	119	100.000
C		✓	743	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	14	565
	B	1	0	118
	C	634	109	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.25	9.05	0.3	A
C-AB	0.24	7.20	0.4	A
C-A				
A-B				
A-C				

2028 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	504	100.000
B		✓	201	100.000
C		✓	1147	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	6	498
	B	1	0	200
	C	965	182	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	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	0.40	11.07	0.7	B
C-AB	0.39	6.60	1.1	A
C-A				
A-B				
A-C				

2028 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.86	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	579	100.000
B		✓	141	100.000
C		✓	779	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	14	565
	B	1	0	140
	C	634	145	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.29	9.63	0.4	A
C-AB	0.32	7.44	0.7	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: 9.5.0.6896							
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk							
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution							

Filename: Chester Road (W)-Link Road-Chester Road (E).j9
Path: Z:\projects\0807 Rossett Road, Rossett\Picady\August 2018
Report generation date: 06/11/2018 16:31:13

- »2028 Base Flows, AM
- »2028 Base Flows, PM
- »2028 Assessment Flows, AM
- »2028 Assessment Flows, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2028 Base Flows								
Stream B-AC	0.3	18.46	0.25	C	0.2	14.98	0.18	B
Stream C-AB	0.0	6.90	0.00	A	0.0	7.13	0.01	A
2028 Assessment Flows								
Stream B-AC	0.5	20.48	0.31	C	0.3	15.87	0.22	C
Stream C-AB	0.0	6.92	0.00	A	0.0	7.20	0.01	A

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

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028 Base Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.68	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	484	0.075	0.189	0.119	0.270
1	B-C	624	0.081	0.205	-	-
1	C-B	655	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	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028 Base Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	572	100.000
B		✓	58	100.000
C		✓	968	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	75	497
	B	53	0	5
	C	966	2	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	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	0.25	18.46	0.3	C
C-AB	0.00	6.90	0.0	A
C-A				
A-B				
A-C				

2028 Base Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2028 Base Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	643	100.000
B		✓	49	100.000
C		✓	636	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	77	566
	B	42	0	7
	C	631	5	0

Vehicle Mix

Heavy Vehicle Percentages

	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	14.98	0.2	B
C-AB	0.01	7.13	0.0	A
C-A				
A-B				
A-C				

2028 Assessment Flows, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2028 Assessment Flows	AM	ONE HOUR	08:00	09:30	15

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		✓	577	100.000
B		✓	73	100.000
C		✓	968	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	80	497
	B	68	0	5
	C	966	2	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.31	20.48	0.5	C
C-AB	0.00	6.92	0.0	A
C-A				
A-B				
A-C				

2028 Assessment Flows, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2028 Assessment Flows	PM	ONE HOUR	16:45	18:15	15

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		✓	664	100.000
B		✓	57	100.000
C		✓	636	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	98	566
	B	50	0	7
	C	631	5	0

Vehicle Mix

Heavy Vehicle Percentages

	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	0.22	15.87	0.3	C
C-AB	0.01	7.20	0.0	A
C-A				
A-B				
A-C				

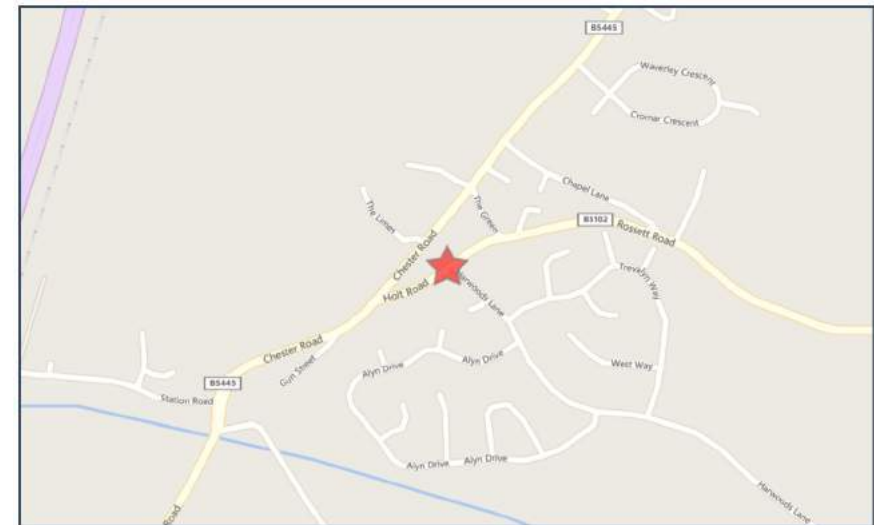
APPENDIX 9

Personal Injury Accident Data



crashmap.co.uk

Crash Date:	Wednesday, September 14, 2016	Time of Crash:	6:15:00 AM	Crash Reference:	201660U139777
Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	1
Local Authority:	Wrexham County Borough			OS Grid Reference:	336873 357329
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Male	66 - 75	Vehicle is in the act of turning left	Front	Other	None	Lamp post

Casualties

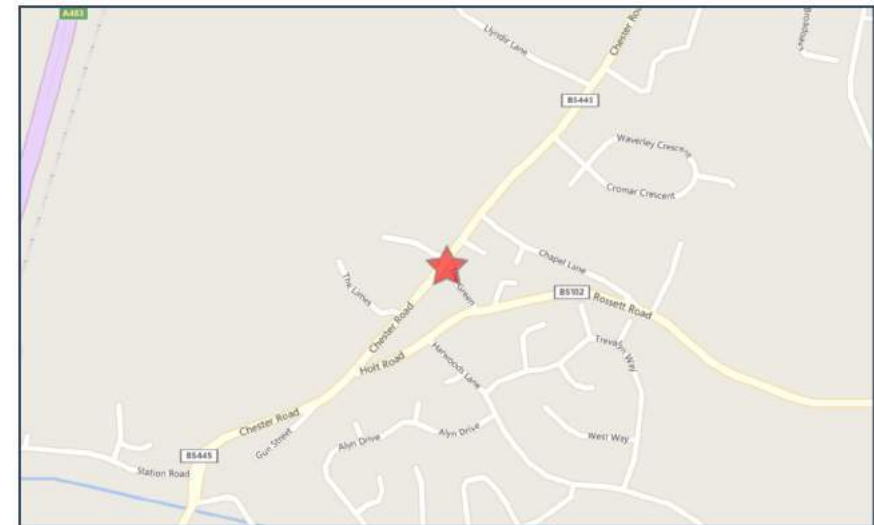
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	66 - 75	Unknown or other	Unknown or other

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



crashmap.co.uk

Crash Date:	Friday, April 29, 2016	Time of Crash:	3:34:00 PM	Crash Reference:	201660U061262
Highest Injury Severity:	Slight	Road Number:	B5445	Number of Casualties:	2
Highway Authority:	Wrexham			Number of Vehicles:	2
Local Authority:	Wrexham County Borough			OS Grid Reference:	336910 357441
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Give way or uncontrolled				



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



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
2	Car (excluding private hire)	-1	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Pupil riding to/from school	None	None
1	Van or goods vehicle 3.5 tonnes mgw and under	-1	Male	36 - 45	Vehicle is in the act of turning left	Front	Journey as part of work	None	None

Casualties

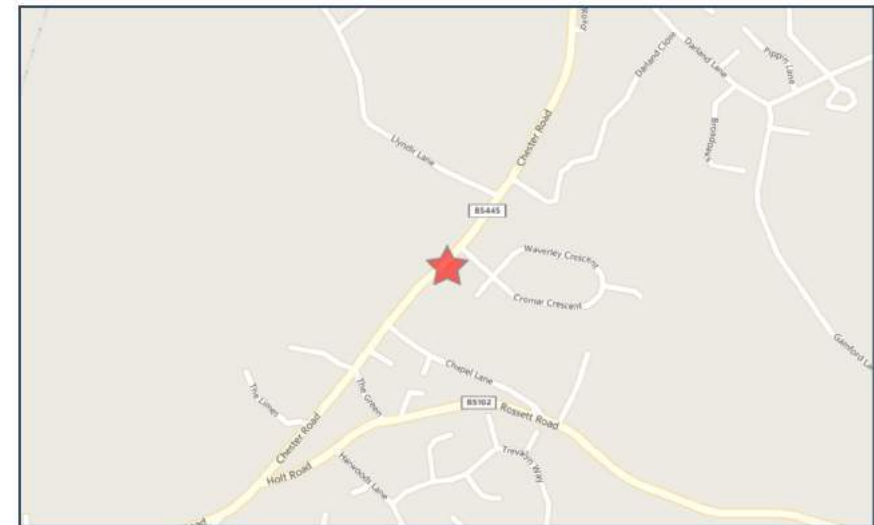
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other

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



crashmap.co.uk

Crash Date:	Tuesday, February 17, 2015	Time of Crash:	2:36:00 PM	Crash Reference:	201560S023079
Highest Injury Severity:	Slight	Road Number:	B5445	Number of Casualties:	1
Highway Authority:	Wrexham			Number of Vehicles:	3
Local Authority:	Wrexham			OS Grid Reference:	337055 357607
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	30				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



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



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
3	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle is parked in the carriageway	Back	Other	None	None
2	Car (excluding private hire)	-1	Male	66 - 75	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Car (excluding private hire)	-1	Unknown	Unknown	Vehicle is changing lane to the right (including slip road)	Did not impact	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Vehicle or pillion passenger	Female	66 - 75	Unknown or other	Unknown or other

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

APPENDIX 10

Framework Residential Travel Plan

BELLIS BROS LTD

PROPOSED RESIDENTIAL DEVELOPMENT

ROSSETT ROAD

ROSSETT

Framework Residential Travel Plan

May 2019

REPORT CONTROL

Document: Framework Residential Travel Plan

Project: Proposed Residential Development, Rossett Road, Rossett

Client: Bellis Bros Ltd

Job Number: 0807

File Origin: Z:\projects\0807 Rossett Road, Rossett\Docs\Reports\0807TP.4.docx

Document Checking:

Primary Author	MR	Initialled:
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Contributor	SM	Initialled:
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Review By	PJW	Initialled:
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Issue	Date	Status	Checked for Issue
1	15/05/19	Final	
2			
3			
4			

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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 its 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

3.2 Appointment of Travel Co-ordinator

3.2.1 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.

3.2.2 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.

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

3.3 Residents Travel Pack

3.3.1 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.

- 3.3.2 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.
- 3.3.3 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.
- 3.3.4 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.
- 3.3.5 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.
- 3.3.6 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.
- 3.3.7 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.

3.4 Travel Awareness and Information

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

- 3.4.2 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.

3.5 Travel Survey

- 3.5.1 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.
- 3.5.2 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.
- 3.5.3 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.
- 3.5.4 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.

- 3.5.5 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.

3.6 Promotion of National Car Sharing Scheme

- 3.6.1 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.
- 3.6.2 The website can be found at the following location www.liftshare.com
- 3.6.3 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.

3.7 Encouraging Walking/Cycling

- 3.7.1 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
- 3.7.2 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.
- 3.7.3 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.

5 CONCLUSIONS

- 5.1.1 This Travel Plan has detailed the proposals associated with the development site to promote sustainable modes of travel and reduce the dependency of the private car.
- 5.1.2 Additionally, the Travel Plan has presented a series of measures to be implemented to reduce the number of single car occupancy trips.
- 5.1.3 The information contained within the Travel Plan and details of sustainable modes of transport in the vicinity of the site will be accessible to residents and visitors to the development.
- 5.1.4 The aim of the Travel Plan is:
- to encourage residents to use sustainable modes of transport to access the site;
 - reduce the reliance on single car occupancy journeys; and
 - generally reduce traffic related pollution and noise.
- 5.1.5 A wide range of measures and actions will be used to encourage car sharing, public transport use, cycling and walking.
- 5.1.6 The Travel Plan Co-ordinator will ensure the Travel Plan is implemented and is operating effectively.
- 5.1.7 A detailed resident Travel Survey will be undertaken to establish travel modes of residents and following this, specific targets will be set and agreed with the Travel Plan team at the Council.
- 5.1.8 The site has been demonstrated to benefit from good non-car accessibility and it should, therefore, be expected that the adoption of a Travel Plan would be particularly effective.
- 5.1.9 It can therefore be concluded that the proposals will provide a highly sustainable development and should be considered acceptable to the local highway authority.



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