

WDL Homes

**Proposed residential development in Trefechan,  
Merthyr Tydfil**

**Transport Assessment**

**October 2019**



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## **1.0 INTRODUCTION**

### **1.1 Background**

1.1.1 Asbri Transport Limited has been appointed by WDL Homes to produce a Transport Assessment to accompany a full planning application for the proposed development of up to 50 residential dwellings on a parcel of land in Trefechan, Merthyr Tydfil.

1.1.2 The proposed development site is located to the north of Crabtree Walk on vacant agricultural land.

### **1.2 Purpose of the report**

1.1.3 The purpose of this report is to detail the likely transport characteristics of the proposed development and identify the potential impact of the proposals on the surrounding transport network. This report also considers the on-site layout with regard to parking provision.

### **1.3 Pre-application**

1.1.4 Pre-application advice was provided by Merthyr Tydfil County Borough Council and potential highway implications were highlighted. It was acknowledged that previous planning permission (Ref P/76/0445) was granted on the site for a total of 82 dwellings on the same plot. The site is now subject to a much smaller housing allocation, however a pinch point on the access to the site along Crabtree Walk was raised as a potential implication. The pre-application response letter (**Appendix A**) details the following:

*‘Whilst there has been a significant reduction in the number of proposed dwellings, our Highway Engineer has raised major concerns with the proposed means of access into the site from Crabtree Walk. It has been noted that at the entrance to the site, the highway narrows considerably between existing properties, essentially creating a pinch point to the development.’*

1.1.5 Thus, a detailed analysis of transport related issues in the form of a Transport Assessment (TA) was deemed necessary.

1.1.6 In response to the highways comments received at the pre-app stage, Asbri Transport have submitted a supporting Technical Note to the local highway authority which details the proposed access strategy and highway works required to access the site safely. The Technical note is presented in full at **Appendix B**.

#### **1.4 Structure of the report**

1.1.7 Following this introductory chapter, the report is structured as follows:

- **Section 2** of the report reviews relevant national, regional and local land use planning and transport policy in the context of the proposed development;
- **Section 3** undertakes a baseline audit of the site and assesses the transport characteristics of the local area, including public transport services and the safety record of the local highway network;
- **Section 4** of the report describes the development proposed in the Masterplan and the access strategy for all modes of travel.
- **Section 5** undertakes a comparative trip generation exercise.
- **Section 6** assesses the impact of the nett change in movement on the performance of the local road network and public transport services.
- **Section 7** concludes the report.

## **2.0 POLICY CONTEXT**

### **2.1 Introduction**

2.1.1 This chapter reviews national and local transport related planning policy guidance that is relevant to the proposed development.

### **2.2 Wales Spatial Plan – People, Places, Futures**

2.2.1 The Wales Spatial Plan – People, Places Future (WSP) – was originally adopted by the National Assembly for Wales in November 2004, and updated in 2008 to bring the WSP into line with One Wales [see below] and to give status to the Area work which has developed over the previous two years.

2.2.2 In Wales, spatial planning is the consideration of what can and should happen where. It is a principle of the WSP that development should be *sustainable*. Sustainable development is about improving wellbeing and quality of life by integrating social, economic and environmental objectives in the context of more efficient use of natural resources.

2.2.3 The purpose of the WSP is to ensure that what is done in the public, private and third sectors in Wales is integrated and sustainable, and that actions within an area support each other and jointly move towards a shared vision for Wales and for the different parts of Wales.

### **2.3 Achieving sustainable development**

2.3.1 The WSP states that:

*‘Citizens must be able to access job opportunities and public services – health, social services, education, etc – if equality of opportunity is to be successfully promoted in Wales. This is particular concern for those who face barriers to accessibility, such as people on low incomes, young and old people, disabled people and those living in rural areas.’*

2.3.2 The WSP also states that:

*'In the context of responding to and mitigating the effects of climate change, the Wales Spatial Plan supports the development of spatially targeted responses. These include reducing the need to travel by co-locating jobs, housing and services, for instance, and changing behaviour in favour of 'greener' modes of travel, such as car sharing, public transport, walking and cycling.'*

## **2.4 Planning Policy Wales**

2.4.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Assembly Government (the Assembly Government). It is supplemented by a series of Technical Advice Notes (TANs). Procedural advice is given in circulars and policy clarification letters.

### **Transport**

2.4.2 The Assembly 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 the 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.

2.4.3 PPW states that:

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

- *Reducing the need to travel, especially by private car, and 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 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.'*

#### **Promoting walking and cycling**

2.4.4 PPW states that:

*'Walking should be promoted for shorter trips. The impact of policies and development on pedestrians should be considered. Planning authorities should promote specific measures to assist pedestrians including the provision of safe, convenient and well-signed routes.'*

2.4.5 PPW also states that:

*'Cycling should also be encouraged for short trips and as a substitute for shorter car journeys or, as part of a longer journey when combined with public transport'.*

and

*'Where appropriate, planning authorities should also seek to assist the completion of the national cycle network and of key links to and from the network.'*

## **Parking**

2.4.6 In relation to parking, PPW states that:

*‘Car parking provision is a major influence on the choice of means of transport and the pattern of development. Local authorities should ensure that new developments provide lower levels of parking than have generally been achieved in the past. Minimum parking standards are no longer appropriate. Local authorities should develop an integrated strategy on parking to support the overall transport and locational policies of the development plan.’*

## **2.5 Planning Policy Wales: Edition 10**

2.5.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Assembly Government (the Assembly Government). It is supplemented by a series of Technical Advice Notes (TANs). Procedural advice is given in circulars and policy clarification letters.

2.5.2 PPW states that:

*‘The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution by:*

- *Enabling More Sustainable Travel Choices – measures to increase walking, cycling and public transport, reduce dependency on the car for daily travel;*
- *Network Management – measures to make best use of the available capacity, supported by targeted new infrastructure; and,*
- *Demand Management – the application of strategies and policies to reduce travel demand, specifically that of single-occupancy private vehicles.’*

2.5.3 The overarching goal of The Welsh Government is to reduce reliance on single occupancy vehicles and support a modal shift to walking, cycling and public transport.

2.5.4 The Assembly 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: enabling more sustainable travel choices, manage both the current and future transport network effectively and minimising the need to travel via single-occupancy private vehicles. This will be achieved through the 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.

2.5.5 PPW states that:

*‘The planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:*

- *Are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*
- *Are designed in a way which integrates them with existing land uses and neighbourhoods: and;*
- *Make it possible for all short journeys within and beyond the development to be easily made by walking and cycling.’*

2.5.6 In addition, PPW outlines:

*‘Transport Assessments can be required for any proposed development if the planning authority considers that there is a justification or specific need.’*

## Promoting cycling and walking

2.5.7 PPW details the Welsh Government's objective of promoting active travel and references the Active Travel (Wales) Act 2013. This Act is referenced below.

*'The Active Travel Act (Wales) 2013 makes walking and cycling the preferred option for shorter journeys, particularly everyday journeys, such as to and from a workplace or education establishment, or in order to access health, leisure or other services or facilities. The Active Travel Act requires local authorities to produce Integrated Network Maps, identifying the walking and cycling routes required to create fully integrated networks for walking and cycling to access work, education, services and facilities.'*

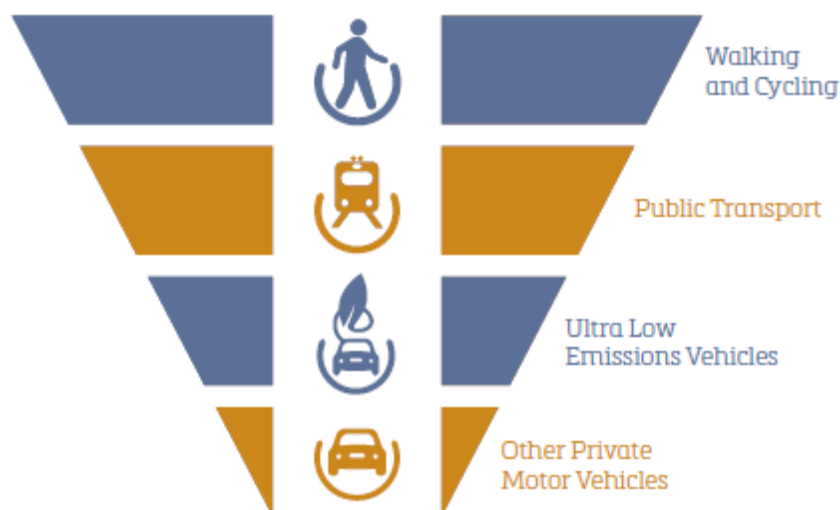
2.5.8 PPW also states that:

*'The planning system has an important role to play in promoting and supporting the delivery of the Active Travel Act and creating the right environments and infrastructure to make it easier for people to walk and cycle, including new and improved routes and related facilities.'*

And,

*'Planning authorities should also seek to assist the completion of the national cycle network and key links to and from the network.'*

2.5.9 PPW includes the following Hierarchy for Planning:



2.5.10 In relation to the sustainable transport hierarchy, PPW states that:

*'The sustainable transport hierarchy should be used to reduce the need to travel, prevent car-dependent developments in unsustainable locations, and support the delivery of schemes located, designed and supported by infrastructure which prioritises access and movement by active and sustainable transport.'*

*'The sustainable transport hierarchy must be a key principle in the preparation of development plans, including site allocations, and when considering and determining planning applications.'*

2.5.11 PPW also references the Active Travel Act 2013 which is discussed in further detail in sub-section 2.7 below.

## **2.6 Parking**

2.6.1 In relation to parking, PPW details:

*'Car parking provision is a major influence on how people choose to travel and the pattern of development...Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed.'*

2.6.2 Additionally, PPW states:

*'Parking provision should be informed by the local context, including public transport accessibility, urban design principles and the objective of reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Planning authorities must support schemes which keep parking levels down, especially off-street parking, when well designed. The needs of disabled people must be recognised and adequate parking provided for them.'*

2.6.3 PPW notes that Local authorities are required to develop an integrated parking strategy which complies with the overall transport and locational policies of the development plan. Additionally, maximum levels of parking for broad classes of development should be established in conjunction with a threshold size of development above which such levels will apply.

- 2.6.4 Technical Advice Note 18 also details national planning policy on parking matters and this is described in sub-section 2.9.

## **2.7 One Wales: Connecting the nation**

- 2.7.1 National transport policy for Wales is specified within the Wales Transport Strategy, One Wales: Connecting the Nation, which is supplemented by a series of Technical Advice Notes (TANs).

- 2.7.2 The goal of One Wales: Connecting the Nation is to:

*‘Promote sustainable transport networks that safeguard the environment while strengthening our country’s economic and social life. The transport strategy identifies a series of high-level outcomes and sets out the steps to their delivery. The One Wales programme is working to achieve a nation with access for all, where travelling between communities and accessing services, jobs and facilities in different parts of Wales is both easy and sustainable, and which support the growth of our economy.’*

## **2.8 Technical Advice Note (TAN 18)**

- 2.8.1 TAN 18 identifies that Planning Policy Wales and the Wales Transport Strategy both aim to secure the provision of transport infrastructure and services, which improve accessibility, build a stronger economy, improve road safety and foster more sustainable communities. To achieve this and the core objectives, the following initiatives relevant to the proposed development are:

- Reducing the need to travel;
- Promoting walking and cycling;
- Managing parking provision; and,
- Encouraging the location of development near other related uses to encourage multi-purpose trips.

- 2.8.2 Section 3.4 to 3.6 of TAN 18 references ‘Accessible Housing Development’, which in summary, seeks to ensure that housing development is sustainable in transport and movement terms including maximising the opportunity for residents to walk and cycle to local facilities and public transport stops.

## **2.9 Active Travel Act 2013 (Wales)**

2.9.1 The Active Travel Act places a requirement on local authorities to continuously improve facilities for those who walk and cycle and to prepare information, such as maps, that identify current and potential future routes for their use.

2.9.2 The Act also requires highway authorities to have regard in the construction and improvement of highways to enhance provision for cyclists and pedestrians. The Active Travel Act makes provision for:

- Approved maps of existing active travel routes and related facilities in a local authority's area;
- Approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area;
- Requiring local authorities to have regard to integrated network maps in preparing transport policies and to make continuous improvements in the range and quality of active travel routes and related facilities; and,
- Requiring the Welsh Ministers and local authorities, in constructing and improving highways, to have regard to the desirability of enhancing the provision made for walking and cycling.

## **2.10 Merthyr Tydfil Replacement Local Development Plan 2016-2031**

2.10.1 Merthyr Tydfil's Replacement LDP proposed to reduce the need to travel by modes such as the private car and locate developments in accessible locations with good connections to sustainable transport modes and active travel routes.

2.10.2 The LDP seeks to ensure proposals are designed to promote the use of sustainable transport and support the provision of new and improved facilities.

2.10.3 Policy SW12: Improving the Transport Network states the following:

*‘Development that encourages a modal shift towards sustainable transport will be supported, including the enhancement of pedestrian, cycle, rail and bus facilities, in addition to any necessary road improvements. Development proposals will be expected to demonstrate how they reduce the need to travel and encourage the use of sustainable transport.’*

- 2.10.4 LDP Objective 7 Transport, aims to *‘support an integrated transport system, promote active travel and ensure new developments are accessible by walking, cycling and public transport links’*

## **2.11 Summary**

- 2.11.1 It is considered that the proposed development is sustainably located in transport terms with access to both public transport and active travel networks.

## **3.0 EXISTING CONDITIONS**

### **3.1 Introduction**

3.1.1 In order to assess the impact of the development proposals, it is necessary to establish the conditions that exist within the surrounding transport network. This section of the report therefore describes the existing transport network within the vicinity of the site.

### **3.2 Site location**

3.2.1 As previously detailed, the site is located in the north-west of Trefechan on vacant agricultural land accessed off Crabtree Walk. Trefechan is a small settlement located to the north of Merthyr Tydfil.

3.2.2 The application site is enclosed by additional agricultural land to the north, Sweetwater Park to the east, Crabtree Walk to the south and further agricultural land to the west.

3.2.3 The location of the site can be seen in in **Figure 3.1** below.



**Figure 3.1:** Site location

### 3.3 Pedestrians and cyclists

#### Pedestrians

- 3.3.1 The site is located in the existing residential area in Trefechan and therefore there is already an established network of footways / paths in place within the vicinity of the site.
- 3.3.2 Footways are present along both sides of Crabtree Walk, with dropped kerbs at regular intervals to inform pedestrians of convenient and safe points of crossing (See **Figure 3.2** below).
- 3.3.3 A signalised pedestrian crossing is located along Vaynor Road, approximately 20m south of its junction with Cherry Tree Close, providing a safe point of crossing to the adjacent footway along Vaynor Road and Rowan Rise.



**Figure 3.2:** Footway provision

- 3.3.4 There are a number of publications which suggest guidance for appropriate walking and cycling distances to facilities. For reference, a number of quotes from relevant documents have been summarised as follows.
- walking as a mode of travel predominates for journeys of less than two miles whilst cycling is more convenient for longer journeys, typically of up to five miles for regular journeys. (Paragraph 4.1.4, Active Travel Design Act, Welsh Government)

- Two miles is ‘a distance that could easily be walked by the majority of people’ (Paragraph 2.2, TA91/05 Provision for Non-motorised Users, DfT)
- Walking is used to access a wide variety of destinations including places of work, normally within a range of up to 2 miles (Paragraph 2.3, TA91/05 Provision for Non-motorised Users, DfT)
- Cycling is used for accessing a variety of different destinations, including places of work, up to a range of around 5 miles. Cycling is also undertaken as a leisure activity, often over much longer distances (Paragraph 2.11, TA91/05, DfT)
- 80% of journeys shorter than 1 mile (1.6km) are made wholly on foot (Section 2.1, Planning for Walking, CIHT).
- Five miles is a distance that could easily be cycled by the majority of people (Paragraph 2.9, TA91/05, DfT)
- for commuter journeys, a trip distance of over five miles is not uncommon and Novice and occasional leisure cyclists will cycle longer distances where the cycle ride is the primary purpose of their journey. A round trip on a waymarked leisure route could easily involve distances of 20 to 30 miles. Experienced cyclists will often be prepared to cycle longer distances for whatever journey purpose (Paragraph 1.5.1, LTN02/08, DfT)

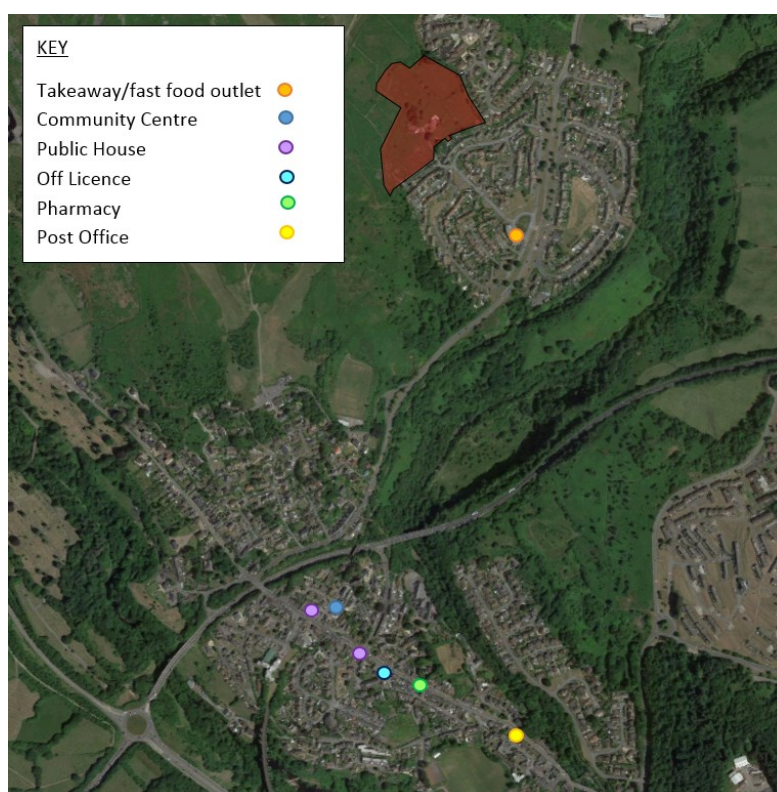
3.3.5 Therefore, for the purposes of this TS, journeys of up to 3.2km have been considered as a reasonable and appropriate distance.

3.3.6 **Table 3.1** identifies the walking/cycling distances from the site to a number of local amenities. The distance is measured from a point located at the site access junction.

| Amenity/Facility          | Distance | Walking Time | Cycling Time |
|---------------------------|----------|--------------|--------------|
| Takeaway/Fast food outlet | 214m     | 3 minutes    | 1 minute     |
| Cefn Community centre     | 1.18km   | 14 minutes   | 4 minutes    |
| Public House              | 1.36km   | 17 minutes   | 4 minutes    |
| Off licence               | 1.39km   | 17 minutes   | 4 minutes    |
| Pharmacy                  | 1.48km   | 19 minutes   | 5 minutes    |
| Post office               | 1.73km   | 22 minutes   | 6 minutes    |

**Table 3.1:** Distance to local amenities from the site

3.3.7 **Figure 3.3** identifies the location of the local amenities identifies in relation to the site.



**Figure 3.3:** Proximity of local amenities

### 3.4 Cyclists

3.4.1 Cycling as a mode of travel is ever increasing given the growing trend of recreational cycling and is seen as a key travel mode for mode shift away from the car.

3.4.2 Route 8 of the national cycle network (NCN) runs approximately 500m to the east of the site “as the crow flies”, and is a traffic free route which links Trefechan with Cefn-Coed-Y-Cymer to the south.

- 3.4.3 For those who wish to ride longer distances, NCN 8 runs from Cardiff to Anglesey passing through the Brecon National Park along the way.
- 3.4.4 NCN route 8 and its proximity from the site can be seen in **Figure 3.4** below.



**Figure 3.4:** Proximity of local cycle paths

### 3.5 Public Transport

#### Bus

- 3.5.1 The closest bus stop to the site is located on Hawthorn Hill approximately 120m walking distance from the proposed access to the site.
- 3.5.2 The bus services that operate within the vicinity of the site are shown in **Table 3.1** and a map of local public transport infrastructure is shown in **Figure 3.5**.

| Service | Route                           | Frequency                                                                  |
|---------|---------------------------------|----------------------------------------------------------------------------|
| 25      | Merthyr Tydfil – Merthyr Tydfil | 06:38 – 18:55. Every 15 minutes between 07:40 and 17:25. No Sunday service |

**Table 3.1:** Summary of bus services operating in vicinity of site

- 3.5.3 Despite a small variety of bus provision serving Trefechan, service 25 is deemed to operate on a frequent basis from Monday – Saturday.



**Figure 3.5:** Bus Stop Locations

### **3.6 Rail**

- 3.6.1 There is no railway station in Trefechan itself, however Merthyr Tydfil train station is located approximately 3.2km south of the site “as the crow flies”.
- 3.6.2 The station is accessible by bus service 25 which stops along Hawthorn Hill, approximately 50m from the site. From Hawthorn Hill, the service takes roughly 24 minutes to Merthyr Tydfil Train Station.
- 3.6.3 Merthyr Tydfil railway is on the Merthyr Line, and consists of 1 platform. The Line stops at towns such as Pontypridd, Treforest before terminating at Cardiff Central.

### **3.7 Local Highway Network**

#### **Crabtree Walk**

- 3.7.1 Crabtree Walk is a residential road, which serves a number of dwellings in Trefechan – including the proposed application site.

- 3.7.2 The road is subject to a 20mph speed limit, with traffic calming features along its length with speed cushions located along its length.
- 3.7.3 As previously outlined, footways are provided on either side of the carriageway along its length, as well as street lighting along the eastern boundary of the road.

### **Vaynor Road**

- 3.7.4 Vaynor Road, located approximately 310m east of the site, is the primary vehicle link from Trefechan to Cefn-Coed-Y-Cymer and wider regions. At its southern end, it forms a priority junction with the A4054 providing access to Cefn Coed.
- 3.7.5 The road is subject to a 30mph speed limit with street lighting along its length. The road also provides access to the A4065 via Grawen Lane.
- 3.7.6 A signalised pedestrian crossing is located along Vaynor Road, approximately 20m south after forming a priority junction with Cherry Tree Close.

### **A465**

- 3.7.7 The A465 is a trunk road, known as the Heads of the Valleys Road which traverses from Neath to Abergavenny.
- 3.7.8 In the vicinity of the site, the road is subject to the national speed limit, and links Trefechan with Ebbw Vale to the east and Hirwaun to the West.

## **3.8 Existing Site Access**

- 3.8.1 Access to the site is currently gained off a single-track road (approximately 3.05m wide), which forms a priority junction with Crabtree Walk.
- 3.8.2 Approximately 10m south of the proposed site access, a pinch point forms in the carriageway in between existing properties (as detailed from the outset). This pinch point during the pre-app stage was a matter of concern due to the potential disruption that it could cause to the flow of traffic.
- 3.8.3 As such, to accompany this detailed transport assessment, a road safety audit will be undertaken given the current highway restrictions.

### **3.9 Baseline Traffic Flows**

3.9.1 In order to obtain the most recent traffic flows on the local highway network, classified junction turning counts were undertaken on Tuesday 16<sup>th</sup> July 2019 during school term-time at the following junctions:

1. Vaynor Road/Cherry Tree Close/ Beechwood Ave priority junction;
2. Crabtree Walk/The Green priority junction;
3. Crabtree Walk/The Broadway priority junction;
4. Crabtree Walk/The Broadway/Unnamed residential Road/Proposed Site Access priority junction(s);
5. Hawthorn Hill/Crabtree Walk priority junction;
6. Beechwood Avenue/ The Green priority junction; and
7. Cherry Tree Close/The Green priority junction.

3.9.2 The results of these turning counts are included at **Appendix C** and the 2019 AM and PM baseline traffic flows are shown on **Figure 3.6**.

3.9.3 The highway network was operating normally with no road-works present within the study area on the day of the traffic surveys.

3.9.4 From the survey, the peak periods on a weekday have been determined as 0800-0900 and 1600-1700.

### **3.10 Highway Safety**

3.10.1 This section of the report reviews collision data within proximity of the site.

3.10.2 Accident data for the study area was obtained for the most recent five-year period 2014-2018 from [www.Crashmap.co.uk](http://www.Crashmap.co.uk) for the most recent five-year period available.

3.10.3 The study cordon for the highway safety analysis is detailed in **Figure 3.7**.



**Figure 3.7:** Personal Injury Collision study area

- 3.10.4 Based on analysis of the crashmap database there have been no incidents within the study area and the study period assessed.
- 3.10.5 It is therefore considered that there are no pre-existing highway safety concerns or problems within the immediate vicinity of the site.

## **4.0 DEVELOPMENT PROPOSALS**

### **4.1 Proposed development**

4.1.1 As outlined in section one, the planning application proposes the development of up to 50 residential dwellings. The tenure of the proposed development is currently unknown, so for the purpose of this report it has been assumed that all dwellings will be privately owned.

4.1.2 The proposed development schedule is to comprise of the following:

- 9 x three-bed houses; and
- 36 x four-bed houses.

4.1.3 A layout for the proposed development is shown in **Appendix D**. The site layout indicates the internal design of the site and how it works in terms of access for pedestrians, cyclists and vehicles.

### **4.2 Pedestrian and Cyclist Access**

4.2.1 Walking and cycling will be promoted as a primary mode of transport for the residents of the new development. Secure covered cycle storage facilities will be provided within the site for the exclusive use of the residents. Footways will be provided internally within the site, providing a safe link to the existing footway provision provided along Crab Tree Walk.

4.2.2 It is reasonable to assume that typical able bodied people are capable of walking at least 3.2km for day to day activities. The thrust of current sustainability policy is that there will be an increasing propensity for people to use non-single car occupancy modes, of which walking is one. People will choose their mode based on their journey purpose, and it is reasonable to conclude that a proportion of journeys undertaken by residents will be on foot.

4.2.3 The propensity for people to walk or cycle depends on individual preferences and circumstances. These circumstances might include, for instance, the purpose of the journey, the attractiveness of, and activity along, the route, the weather, and the cost of alternatives.

- 4.2.4 The thrust of land use and transport policy is to promote and encourage the choice of walking and cycling above all else where travel needs to occur. Therefore, it is both reasonable to assume that walking is a viable and growing means of travel, and that new development, such as this one, should be designed to promote and encourage it.

### **4.3 Travel Plan**

- 4.3.1 The implementation of a development-wide Travel Plan will improve the sustainability of the site through promotion and raising awareness of more sustainable modes of travel. A Travel Plan is a management tool designed to enable the users of a site to make more informed decisions about their travel. It aims to increase the attractiveness of travelling by more sustainable modes thus minimising adverse impacts of travel on the surroundings.
- 4.3.2 This is achieved by setting out a strategy for eliminating the barriers that prevent users of the site from using sustainable modes, within local policy aims. The Travel Plan will apply to both residents and visitors to the site.
- 4.3.3 The implementation of a well-designed, and properly managed Travel Plan can lead to an increase in the proportion of residents travelling by more sustainable modes.
- 4.3.4 It is envisaged that a Travel Plan will be requested as a suitably worded condition should the application receive planning permission.

### **4.4 Vehicular Access**

- 4.4.1 The development site is proposed to be accessed via a northward extension of Crabtree Walk. Access to the site is proposed via a 5.5m wide carriageway (with localised widening at bends) that is accompanied by 1.8m footways on either side of the road for pedestrian connectivity.
- 4.4.2 Highway works are also proposed to the existing, northern section of Crabtree Walk which will be widened to a uniform width of 4.5m and provided with a 2.5m deep parking bay on its northern side to provide off-carriageway parking for approximately 8 vehicles.

- 4.4.3 The access proposals and the proposed works, including engineering work and visibility splays can be seen in **Appendix E**.
- 4.4.4 As is evident from Appendix E, the planning application proposes a new estate road of 5.5m in width extending in a northerly alignment to serve the proposed residential development.
- 4.4.5 The junction of Crabtree Walk and Hawthorn Hill is to be re-aligned so that traffic travelling north-bound from Crabtree Walk to Hawthorn Hill has priority over south-bound traffic departing the development. This will be emphasised by the implementation of 'give way' carriageway markings.
- 4.4.6 The existing carriageway width of the northern extremity of Crabtree Walk is proposed to be increased in width to 4.5m. A lay-by of 2.5m in depth is to be constructed on the northern side of Crabtree Walk.
- 4.4.7 A kerbed build-out feature is proposed as shown on Appendix E. This will be provided with pedestrian crossing provision and associated tactile paving and has been positioned to allow for maximum forward visibility for vehicles approaching from both directions. This will act as a traffic calming feature for vehicles accessing and departing the development which ties in with the traffic calming measures as already provided on Crabtree Walk.
- 4.4.8 It will also provide a greater footway width for pedestrians using the northern side of Crabtree Walk.

#### **Stage 1 Road Safety Audit**

- 4.4.9 A Stage 1 Road Safety Audit (RSA) was carried by the Safety Forum of the proposed site access arrangement in September 2019. The audit is included in full at **Appendix F**.

4.4.10 The following issues were detailed in the audit:

- PROBLEM 3.1 - There is limited inter-visibility through the narrowing to opposing traffic for vehicles as they approach the narrowing due to the horizontal and vertical alignment of the existing and proposed approach carriageways. This could result in vehicles failing to see an opposing vehicle and result in head to head conflicts within the narrowing.
- PROBLEM 3.2 - Vehicles accessing the private driveway to north will overrun the north side of the proposed crossing. This may lead to vehicle to pedestrian conflicts, or to damage to the crossing resulting in trip hazards.
- PROBLEM 3.3 - The Audit Team note that the proposed footway widths in areas around the narrowing appear to be restricted to less than 1.5m. They are also further restricted by existing vegetation growth. This may result in pedestrians being forced into the carriageway in possible conflict with vehicles.

4.4.11 As a result of the recommendations, a priority arrangement is proposed at the carriageway narrowing so that traffic exiting the development has to give way to inbound traffic. This change to the design addresses recommendation 3.1 of the safety audit.

4.4.12 Similarly, the proposed highway works now propose the pedestrian crossing provision at the location of the carriageway narrowing which addresses recommendation 3.2 of the safety audit.

4.4.13 With reference to recommendation 3.3, the provision of the build-out associated with the carriageway narrowing will increase the footway width in this location. Where vegetation is encroaching on the public highway the Highway Authority may serve notice on adjacent land-owners to cut back the vegetation.

#### 4.5 Site access visibility

4.5.1 The required visibility splays at the site access are based on the Stopping Sight Distance (SSD) of vehicles travelling along Crabtree Walk. In accordance with a speed limit of 30mph, the required SSD is 43m based on Annex B of TAN18 guidance.

4.5.2 **Figure 4.1** details a visibility splay of 2.4m 'x' distance by 43m 'y' distance to the north and south. A forward visibility splay for a vehicle approaching a potential pedestrian at the pinch point/priority give-way feature is also indicated.

4.5.3 It can be seen from Figure 4.1 that the required visibility splays can be accommodated within land owned by the applicant/highway authority.

#### 4.6 Service Vehicle Access

4.6.1 Swept path analysis of a 10.2m refuse collection vehicle has been undertaken, demonstrating that the site access and internal road layout can satisfactorily accommodate the vehicle. The swept path analysis can be viewed at **Appendix G**.

#### 4.7 Parking Provision

##### Car parking

4.7.1 Parking will be provided in accordance with CSS Wales Parking Standards 2008.

4.7.2 **Table 4.1** below outlines the maximum number of car parking spaces required based on the adopted standards as well as the proposed level of parking provision associated with the proposed development.

| Dwelling Type | Parking Standard (max. 3 per dwelling) | Guidance Parking Provision | Proposed Provision |
|---------------|----------------------------------------|----------------------------|--------------------|
| 9 x 3 bed     | 1 space per bedroom                    | 27                         | 23                 |
| 36 x 4 bed    | 1 space per bedroom                    | 108                        | 121                |
| Visitors      | 1 space per 5 units                    | 9                          | 2                  |
| Total         |                                        | 144                        | 146                |

**Table 4.1:** Car parking provision

4.7.3 It is anticipated to provide a total of 146 car parking spaces at the proposed development of which, 2 are reserved for visitor parking. The total proposed provision at the development is slightly greater than the guidance stated within CSS Wales 2008 adopted parking standards.

4.7.4 The majority of the proposed dwellings are accompanied by a single or double garage. The CSS Wales 2008 parking standards state the following:

*‘All properties with a garage must also have a 6m long driveway which has a width of not less than 3.6m.’*

4.7.5 It is envisaged that most dwellings will have sufficient driveway parking to accommodate any visitors. If necessary, visitor parking at the proposed development will be provided on street. It is envisaged that the majority of visitors will only be parked for a short period of time.

#### **4.8 Cycle parking provision**

##### **Cycle Parking**

4.8.1 Cycle parking at the development will be provided in accordance with CSS Wales 2008 parking standards.

## 5.0 TRANSPORT CHARACTERISTICS

### 5.1 Introduction

5.1.1 This section of the report outlines the likely volumes of traffic generated by the proposed (residential) use and identifies the likely impact of the proposals on the surrounding network.

5.1.2 As has been detailed in the preceding section of the report, the planning application seeks permission for the development of up to 50 residential dwellings.

5.1.3 The trip generation proposed residential development has been derived from the TRICS 7.6.2 trip generation database, which is the current version of the TRICS database.

### 5.2 Residential – Private Housing

5.2.1 Sites from the database have been selected using the following criteria:

- Land use: Residential – houses privately owned;
- Survey days – Monday- Friday; and,
- Number of units: 23-73 units.

5.2.2 The vehicle trip generation for the proposed residential development is outlined below in **Table 5.1** and the full TRICS output is included in **Appendix H**.

| Peak<br>period | Trip rates |        |       | Vehicles |        |       |
|----------------|------------|--------|-------|----------|--------|-------|
|                | Arrive     | Depart | Total | Arrive   | Depart | Total |
| <b>Vehicle</b> |            |        |       |          |        |       |
| 0800-0900      | 0.157      | 0.436  | 0.593 | 8        | 22     | 30    |
| 1700-1800      | 0.363      | 0.210  | 0.573 | 18       | 11     | 29    |

**Table 5.1:** Vehicle trip generation- private residential dwellings

- 5.2.3 Table 5.1 indicates that the proposed 50 residential dwellings will attract up to 30 vehicle trips (two-way) in the AM peak and up to 29 vehicle trips (two-way) in the PM peak. It should be noted that the vehicle movements in the AM peak are primarily outbound from the proposed development and inbound during the PM peak with a maximum of one movement every 2.5 minutes.
- 5.2.4 Because that the development is likely to have 'tidal' vehicle movements, the propensity for conflict at the pinch point along the site access road is likely to be low.
- 5.2.5 As earlier mentioned, planning permission has previously been granted for up to 82 residential dwellings at the proposed site which would have generated a greater number of vehicle trips during both the AM and PM peak period. Using the same trip rate as above, it is likely that the 82 residential dwellings would have generated an additional 19 (two-way) vehicle movements during the AM peak period and up to 18 additional (two-way) vehicle movements during the PM peak period.

### 5.3 Distribution of development flows

- 5.3.1 Travel to work data has been obtained from *Table WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)*, contained within the Office for National Statistics Census 2011.
- 5.3.2 The development traffic has been assigned to the local highway network from the origin /destination information contained within the 2011 census data. The residential location has been set as Merthyr Tydfil 008 middle layer super output area in which the site is located.
- 5.3.3 The primary percentage distribution to surrounding MSA's is shown in **Table 5.2**. The corresponding development trips assigned to the study network are shown in **Figure 5.1**.

| Network entry/exit point | Percentage distribution |
|--------------------------|-------------------------|
| W02000113: Powys 017     | 1%                      |
| W02000384: Cardiff 018   | 1%                      |
| W02000398: Cardiff 032   | 1%                      |

|                                  |             |
|----------------------------------|-------------|
| W02000252: Rhondda Cynon Taf 001 | 1%          |
| W02000253: Rhondda Cynon Taf 002 | 1%          |
| W02000255: Rhondda Cynon Taf 004 | 15          |
| W02000263: Rhondda Cynon Taf 012 | 1%          |
| W02000272: Rhondda Cynon Taf 021 | 1%          |
| W02000277: Rhondda Cynon Taf 026 | 1%          |
| W02000284: Merthyr Tydfil 002    | 22%         |
| W02000285: Merthyr Tydfil 003    | 9%          |
| W02000286: Merthyr Tydfil 004    | 26%         |
| W02000287: Merthyr Tydfil 005    | 7%          |
| W02000288: Merthyr Tydfil 006    | 5%          |
| W02000289: Merthyr Tydfil 007    | 1%          |
| W02000415: Merthyr Tydfil 008    | 19%         |
| W02000290: Caerphilly 001        | 1%          |
| W02000302: Caerphilly 013        | 1%          |
| W02000309: Caerphilly 020        | 1%          |
| W02000314: Blaenau Gwent 001     | 1%          |
| <b>Total</b>                     | <b>100%</b> |

**Table 5.2:** Percentage distribution to wider road network

- 5.3.4 It should be noted that traffic between the site and the MSOA's identified in Table 5.2 has been assigned using the fastest / most convenient route using Google Maps to assign traffic flows.
- 5.3.5 The majority of residents living in the Merthyr Tydfil 008 middle layer super output area work within Merthyr Tydfil (89%). As such, it is predicted that there will be only a small number of trips outside of Merthyr Tydfil for residents of the proposed development site.
- 5.4 Future base traffic flows**
- 5.4.1 The impact of the development has been assessed for an opening year of 2022 and a future year of 2029.
- 5.4.2 In order to obtain the base traffic flows (i.e. with no development traffic) in 2022 and 2029, the baseline traffic flows (2019) have been factored using NTM growth factors derived from Temprow v7.2.

5.4.3 The Merthyr Tydfil 008 middle layer super output area which covers the site area and assessed junctions was used to calculate the local growth factors. It should be noted that the NTM growth factors take into account housing and employment growth up to the future year based on allocations set out in the Local Plan.

5.4.4 The factors applied to the 2019 baseline surveyed flows are identified in **Table 5.3** below.

| Period      | Level     | Name               | AM     | PM     |
|-------------|-----------|--------------------|--------|--------|
| 2019 - 2022 | W02000415 | Merthyr Tydfil 008 | 1.0463 | 1.0449 |
| 2019 - 2029 | W02000415 | Merthyr Tydfil 008 | 1.1222 | 1.1207 |

**Table 5.3:** NTM growth factors

5.4.5 The 2022 and 2029 base traffic flows are set out in **Figure 5.2** and **Figure 5.3** respectively.

## **5.5 Committed development**

5.5.1 During pre-application discussions with the local highway authority it has been concluded that there is no relevant committed development within the area. As such, committed development has not been included within this TA other than the background traffic growth included in the TEMPRO NTM growth factors.

## **5.6 Final future traffic flows**

5.6.1 The final future traffic flows have been obtained by combining the development flows (see Figure 5.1) with both the 2022 and 2029 base traffic flows.

5.6.2 The 2022 'with development' traffic flows are set out in **Figure 5.4** and the 2029 'with development' traffic flow are set out in **Figure 5.5**.

## **6.0 IMPACT OF THE DEVELOPMENT PROPOSALS**

### **6.1 Introduction**

6.1.1 This section of the report identifies the impact of the development proposals on the surrounding highway network.

### **6.2 Potential impact**

6.2.1 This section of the report identifies the impact of the development proposals on the operational performance of the surrounding highway network, and identifies any mitigation measures to reduce the impact of development generated traffic, should these be required.

6.2.2 The following seven junctions have been assessed:

1. Vaynor Road/Cherry Tree Close/ Beechwood Ave priority junction;
2. Crabtree Walk/The Green priority junction;
3. Crabtree Walk/The Broadway priority junction;
4. Crabtree Walk/The Broadway/Unnamed residential Road/Proposed Site Access priority junction(s);
5. Hawthorn Hill/Crabtree Walk priority junction;
6. Beechwood Avenue/ The Green priority junction; and,
7. Cherry Tree Close/The Green priority junction.

6.2.3 The junctions identified above have been assessed for the 0800-0900 AM peak period 1600-1700 PM peak period.

### **6.3 Impact assessment**

6.3.1 A percentage impact assessment for 2022 and 2029 has been undertaken that calculates the impact of the primary trip generation of the proposed development on the wider road network at the junctions identified above.

6.3.2 The percentage impact assessment is shown in **Table 6.1**.

|                                     | Percentage impact |     |             |      |     |             |      |     |             |      |     |             |
|-------------------------------------|-------------------|-----|-------------|------|-----|-------------|------|-----|-------------|------|-----|-------------|
|                                     | 2022              |     |             |      |     |             | 2029 |     |             |      |     |             |
|                                     | AM                |     |             | PM   |     |             | AM   |     |             | PM   |     |             |
|                                     | Base              | Dev | %age Impact | Base | Dev | %age Impact | Base | Dev | %age Impact | Base | Dev | %age Impact |
| <b>Crabtree Walk/Hawthorn Hill</b>  |                   |     |             |      |     |             |      |     |             |      |     |             |
| Crabtree Walk (N)                   | 8                 | 22  | 260%        | 9    | 11  | 112%        | 9    | 22  | 243%        | 10   | 11  | 104%        |
| Hawthorn Hill                       | 4                 | 0   | 0%          | 5    | 0   | 0%          | 4    | 0   | 0%          | 6    | 0   | 0%          |
| Crabtree Walk (S)                   | 13                | 8   | 63%         | 28   | 18  | 64%         | 13   | 8   | 58%         | 30   | 18  | 60%         |
| <b>Crabtree Walk/The Birchway</b>   |                   |     |             |      |     |             |      |     |             |      |     |             |
| Crabtree Walk (N)                   | 14                | 22  | 160%        | 10   | 11  | 100%        | 15   | 22  | 149%        | 11   | 11  | 94%         |
| The Birchway                        | 12                | 0   | 0%          | 14   | 0   | 0%          | 12   | 0   | 0%          | 15   | 0   | 0%          |
| Crabtree Walk (S)                   | 12                | 8   | 68%         | 39   | 18  | 47%         | 12   | 8   | 64%         | 41   | 18  | 44%         |
| <b>Crabtree Walk/The Green</b>      |                   |     |             |      |     |             |      |     |             |      |     |             |
| Crabtree Walk                       | 19                | 22  | 116%        | 20   | 11  | 53%         | 20   | 22  | 108%        | 21   | 11  | 49%         |
| The Green (N)                       | 6                 | 8   | 125%        | 19   | 18  | 97%         | 7    | 8   | 117%        | 20   | 18  | 90%         |
| The Green (S)                       | 19                | 8   | 42%         | 46   | 18  | 39%         | 20   | 8   | 39%         | 49   | 18  | 37%         |
| <b>The Green/Beechwood Avenue</b>   |                   |     |             |      |     |             |      |     |             |      |     |             |
| Beechwood Avenue (N)                | 24                | 0   | 0%          | 15   | 0   | 0%          | 26   | 0   | 0%          | 16   | 0   | 0%          |
| The Green                           | 28                | 22  | 77%         | 34   | 11  | 30%         | 30   | 22  | 72%         | 37   | 11  | 28%         |
| Beechwood Avenue (S)                | 14                | 0   | 0%          | 39   | 0   | 0%          | 15   | 0   | 0%          | 41   | 0   | 0%          |
| <b>The Green/ Cherry Tree Close</b> |                   |     |             |      |     |             |      |     |             |      |     |             |
| Cherry Tree Close (N)               | 31                | 8   | 25%         | 61   | 18  | 30%         | 34   | 8   | 23%         | 65   | 18  | 28%         |
| The Green                           | 1                 | 0   | 0%          | 2    | 0   | 0%          | 1    | 0   | 0%          | 2    | 0   | 0%          |
| Cherry Tree Close (S)               | 29                | 0   | 0%          | 20   | 0   | 0%          | 31   | 0   | 0%          | 21   | 0   | 0%          |
| <b>Vaynor Road/Unnamed Road</b>     |                   |     |             |      |     |             |      |     |             |      |     |             |
| Vaynor Road (N)                     | 99                | 0   | 0%          | 73   | 0   | 0%          | 107  | 0   | 0%          | 78   | 0   | 0%          |
| Unnamed Road                        | 73                | 22  | 30%         | 69   | 11  | 15%         | 79   | 22  | 28%         | 74   | 11  | 14%         |
| Vaynor Road (S)                     | 82                | 8   | 10%         | 174  | 18  | 10%         | 88   | 8   | 9%          | 187  | 18  | 10%         |

**Table 6.1: Impact assessment on local highway network**

6.3.3 As shown within Table 6.1, the proportionate effect of the development traffic at the arms of the junctions closest to the site are the greatest. The percentage impact is high across all junctions due to the fact that the existing traffic flows on the area of the highway network studied are low. Therefore, the slightest increase in traffic is likely to indicate a large impact, however, the number of vehicles using the network may still be relatively low.

6.3.4 The usual threshold for assessment has been set at a threshold of >5%. Where the effect of the development proposals is greater than 5%, detailed junction modelling work is undertaken to quantify the effect in terms of queue lengths and junction capacity.

6.3.5 In this instance, however, due to the fact that Crabtree Walk and its spur junctions are lightly trafficked, it is anticipated that the additional vehicle movements associated with the proposed development will have a very low impact on the operational performance of these junctions.

6.3.6 This is demonstrated by capacity assessments carried out at junctions where development traffic impacts the give-way arms as opposed to the major priority arms which are generally unopposed. This TA has therefore assessed the following junctions:

- Proposed Site Access/Hawthorn Hill/ Crabtree Walk;
- Crabtree Walk/ The Green; and,
- Vaynor Road/Unnamed Road.

#### **6.4 Junction capacity modelling**

6.4.1 Assessment of the priority junctions listed above has been undertaken using the TRL software package Junctions 9.

6.4.2 The outputs of Junctions 9 provide a number of measurements to ascertain information of a junction's operation. The key measurements which are considered in this assessment are:

- 'Ratio of Flow to Capacity' (RFC),
- Maximum queue length in Passenger Car Units (PCUs),
- Delay in seconds per vehicle
- Level of Service indicated by a letter between A (well within capacity) and F (at or over capacity)

6.4.3 The main indication of the performance of a junction is given by the RFC for each lane. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait on approach to the stop line. This is reached when the RFC attains a value of 1.

6.4.4 Queue lengths provide an indication of how the overall junction performance may affect adjacent junctions on the highway network. The queue lengths are presented as the maximum over an hourly period. Changes in queue lengths provide a useful indicator as to a development's impact on the operation of a junction.

## 6.5 Site Access Priority Junction/Hawthorn Hill/Crabtree Walk

6.5.1 The operation of the proposed residential site access has been assessed for each of the assessment periods, using the TRL program Junctions 9. The results of the analysis are presented in full in **Appendix I**, and summarised in **Table 6.2** below.

6.5.2 Each arm of the junction is represented as follows:

- Arm A – Crabtree Walk
- Arm B – Site Access
- Arm C – Hawthorn Hill

| Approach arm                  | With Development |      |           |      |
|-------------------------------|------------------|------|-----------|------|
|                               | 0800-0900        |      | 1600-1700 |      |
|                               | Max Q            | RFC  | Max Q     | RFC  |
| <b>2022 – Year of opening</b> |                  |      |           |      |
| Stream B-AC                   | 0.1              | 0.07 | 0.0       | 0.05 |
| Stream C-AB                   | 0.0              | 0.00 | 0.0       | 0.01 |
| <b>2029 – Future year</b>     |                  |      |           |      |
| Stream B-AC                   | 0.1              | 0.07 | 0.1       | 0.05 |
| Stream C-AB                   | 0.0              | 0.00 | 0.0       | 0.01 |

**Table 6.2: Site access priority junction**

6.5.3 Table 6.2 demonstrates that the junction has significant spare capacity to accommodate vehicular movements associated with the proposed development, with a maximum RFC of 0.07 and a maximum queue of less than 1 PCU.

## 6.6 Crabtree Walk/The Green

6.6.1 The operation of Crabtree Walk / The Green priority junction has been assessed for each of the assessment periods, using Junctions 9. The results of the analysis are presented in full in **Appendix J**, and summarised in **Table 6.2** below.

6.6.2 Each arm of the junction is represented as follows:

- Arm A – The Green (S)
- Arm B – Crabtree Walk
- Arm C – The Green (N)

| Approach arm                    | No Development |      |           |      | With Development |      |           |      |
|---------------------------------|----------------|------|-----------|------|------------------|------|-----------|------|
|                                 | 0800-0900      |      | 1600-1700 |      | 0800-0900        |      | 1600-1700 |      |
|                                 | Max Q          | RFC  | Max Q     | RFC  | Max Q            | RFC  | Max Q     | RFC  |
| <b>2019 – Baseline scenario</b> |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.0            | 0.03 | 0.0       | 0.04 |                  |      |           |      |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.03 |                  |      |           |      |
| <b>2022 – Year of opening</b>   |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.0            | 0.03 | 0.0       | 0.04 | 0.1              | 0.07 | 0.1       | 0.06 |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.03 | 0.0              | 0.03 | 0.1       | 0.07 |
| <b>2029– Future year</b>        |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.0            | 0.04 | 0.0       | 0.04 | 0.1              | 0.08 | 0.1       | 0.06 |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.04 | 0.0              | 0.03 | 0.1       | 0.07 |

**Table 6.3: Crabtree Walk/The Green priority junction**

6.6.3 Table 6.3 demonstrates that the Crabtree Walk / The Green priority junction has sufficient capacity to accommodate vehicular movements associated with the proposed development, with a maximum RFC of 0.08 and a maximum queue of less than 1 PCU.

## 6.7 Vaynor Road/Unnamed Road

6.7.1 The operation of the Vaynor Road/Unnamed Road priority junction has been assessed for each of the assessment periods, using Junctions 9. The results of the analysis are presented in full in **Appendix K**, and summarised in **Table 6.4** below.

6.7.2 Each arm of the junction is represented as follows:

- Arm A – Vaynor Road (S)
- Arm B – Unnamed Road
- Arm C – Vaynor Road (N)

| Approach arm                    | No Development |      |           |      | With Development |      |           |      |
|---------------------------------|----------------|------|-----------|------|------------------|------|-----------|------|
|                                 | 0800-0900      |      | 1600-1700 |      | 0800-0900        |      | 1600-1700 |      |
|                                 | Max Q          | RFC  | Max Q     | RFC  | Max Q            | RFC  | Max Q     | RFC  |
| <b>2019 – Baseline scenario</b> |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.1            | 0.12 | 0.1       | 0.11 |                  |      |           |      |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.01 |                  |      |           |      |
| <b>2022 – Year of opening</b>   |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.1            | 0.13 | 0.1       | 0.12 | 0.2              | 0.17 | 0.2       | 0.14 |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.01 | 0.0              | 0.01 | 0.0       | 0.01 |
| <b>2029 – Future year</b>       |                |      |           |      |                  |      |           |      |
| Stream B-AC                     | 0.2            | 0.14 | 0.1       | 0.13 | 0.2              | 0.18 | 0.2       | 0.15 |
| Stream C-AB                     | 0.0            | 0.01 | 0.0       | 0.02 | 0.0              | 0.01 | 0.0       | 0.02 |

**Table 6.4: Vaynor Road/Unnamed Road Priority Junction**

6.7.3 Table 6.4 demonstrates that the Vaynor Road / Unnamed Road priority junction has sufficient capacity to accommodate the proposed development, with a maximum RFC of 0.18 and a maximum queue of less than 1 PCU.

## 6.8 Summary

6.8.1 It can be seen from the above analysis that the junctions within the vicinity of the site are predicted to operate well within capacity in all future year assessment scenarios. On this basis, it is considered that no traffic impact mitigation measures will be required.

## **7.0 CONCLUSION**

### **7.1 Summary**

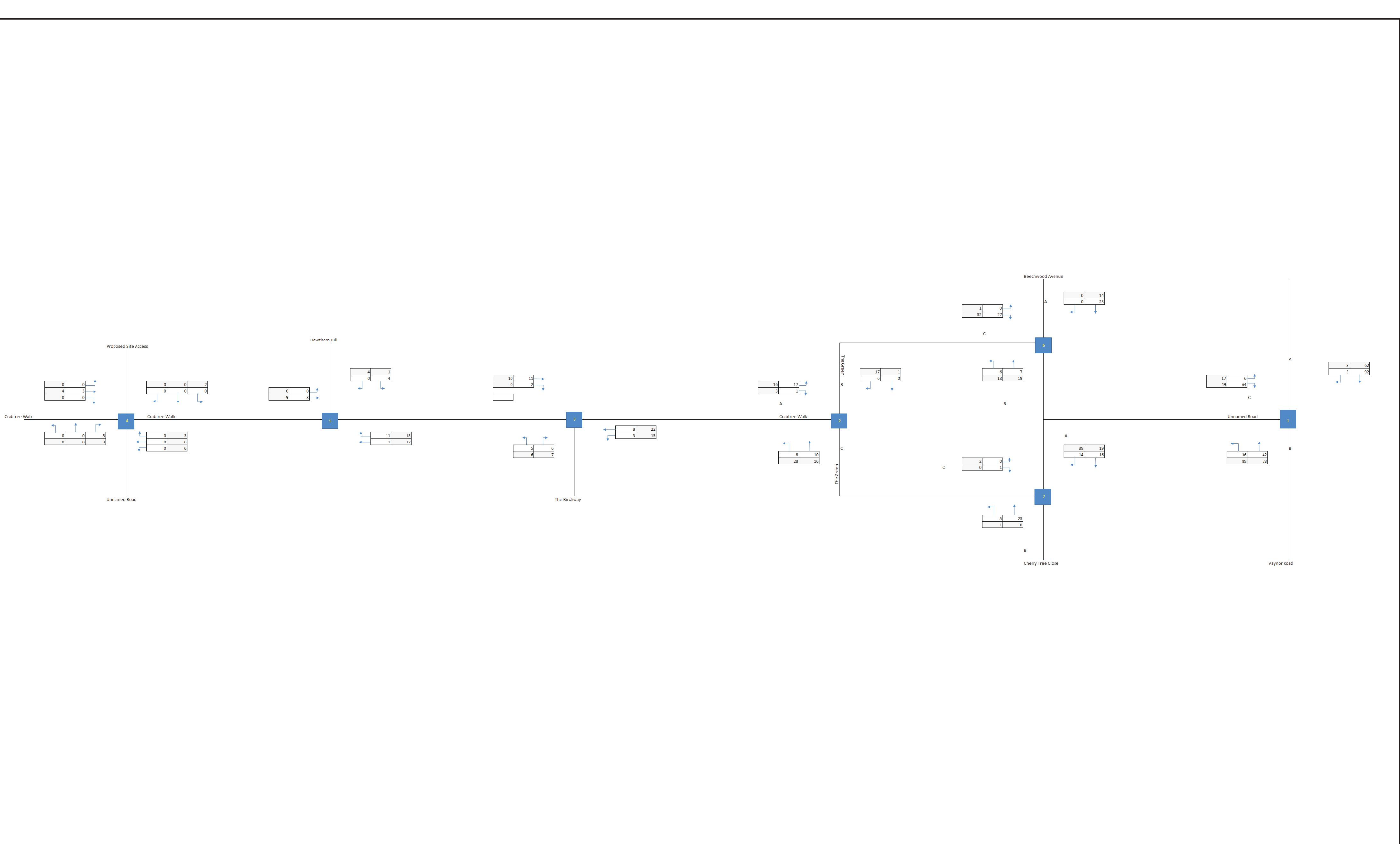
- 7.1.1 Asbri Transport Ltd has been appointed by WDL Homes to produce a Transport Assessment in support of a planning application to develop land to the north west of Trefechan for a residential development of up to 50 dwellings.
- 7.1.2 As part of the development, it is proposed to provide access via a northward extension of Crabtree Walk. Highway works are also proposed to the existing, northern section of Crabtree Walk which will be widened to a uniform width of 4.5m and provided with a 2.5m deep parking bay on its northern side to provide off-carriageway parking for approximately 8 vehicles.
- 7.1.3 The junction of Crabtree Walk and Hawthorn Hill is to be re-aligned so that traffic travelling north-bound from Crabtree Walk to Hawthorn Hill has priority over south-bound traffic departing the development. This will be emphasised by the implementation of 'give way' carriageway markings.
- 7.1.4 The internal estate road has been designed to accommodate the use of a 10.2m refuse collection vehicle.
- 7.1.5 Car parking will be provided for the development in accordance with CSS Wales 2008 parking standards.
- 7.1.6 The development will provide the necessary pedestrian and cycling infrastructure within the site to encourage residents to walk and cycle, with 2m footways provided on both sides of the carriageway throughout the majority of the site.
- 7.1.7 It is estimated that the proposed development could generate up to 30 two-way vehicle movements in the AM peak period and up to 29 two-way vehicle movements during the PM peak period, equating to less than 1 vehicle movement every minute.
- 7.1.8 It is envisaged that the proposed development will have a marginal impact on the performance of the local highway network during the AM and PM peak hour periods or throughout the course of the day.

## **7.2 Conclusion**

- 7.2.1 In conclusion, it is considered that highway concerns over the proposed site access have been addressed and that the development proposals are appropriate and acceptable in traffic and transport terms.
- 7.2.2 It should not be ignored that planning permission has previously been granted at the application site for up to 82 residential dwellings which would generate a greater number of vehicle movements than that of the proposed development.
- 7.2.3 It is considered that the traffic movements associated with the development proposals could be accommodated on the highway network and will not have a significant detrimental impact on the current or future conditions of the local highway network.

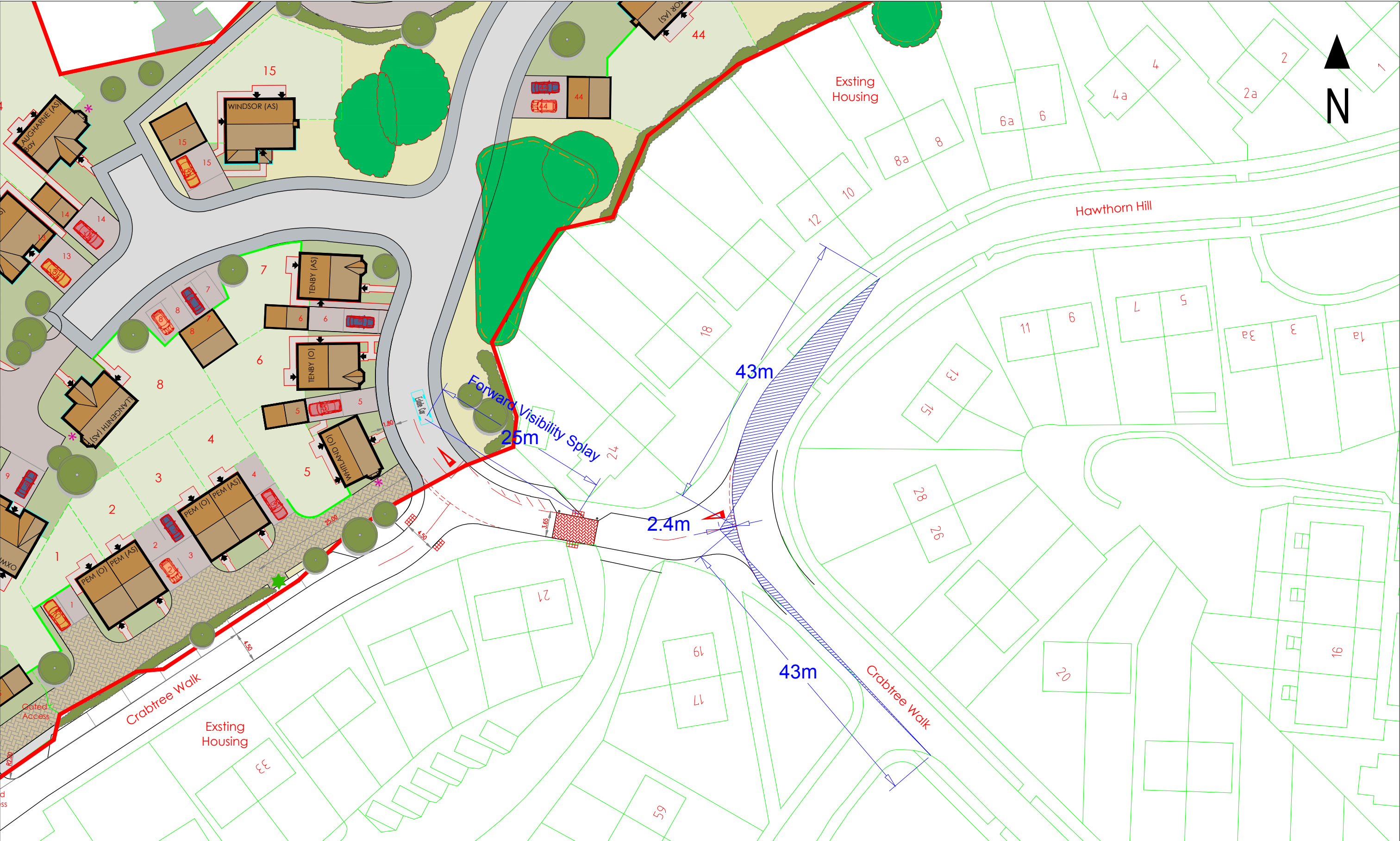
# Figures

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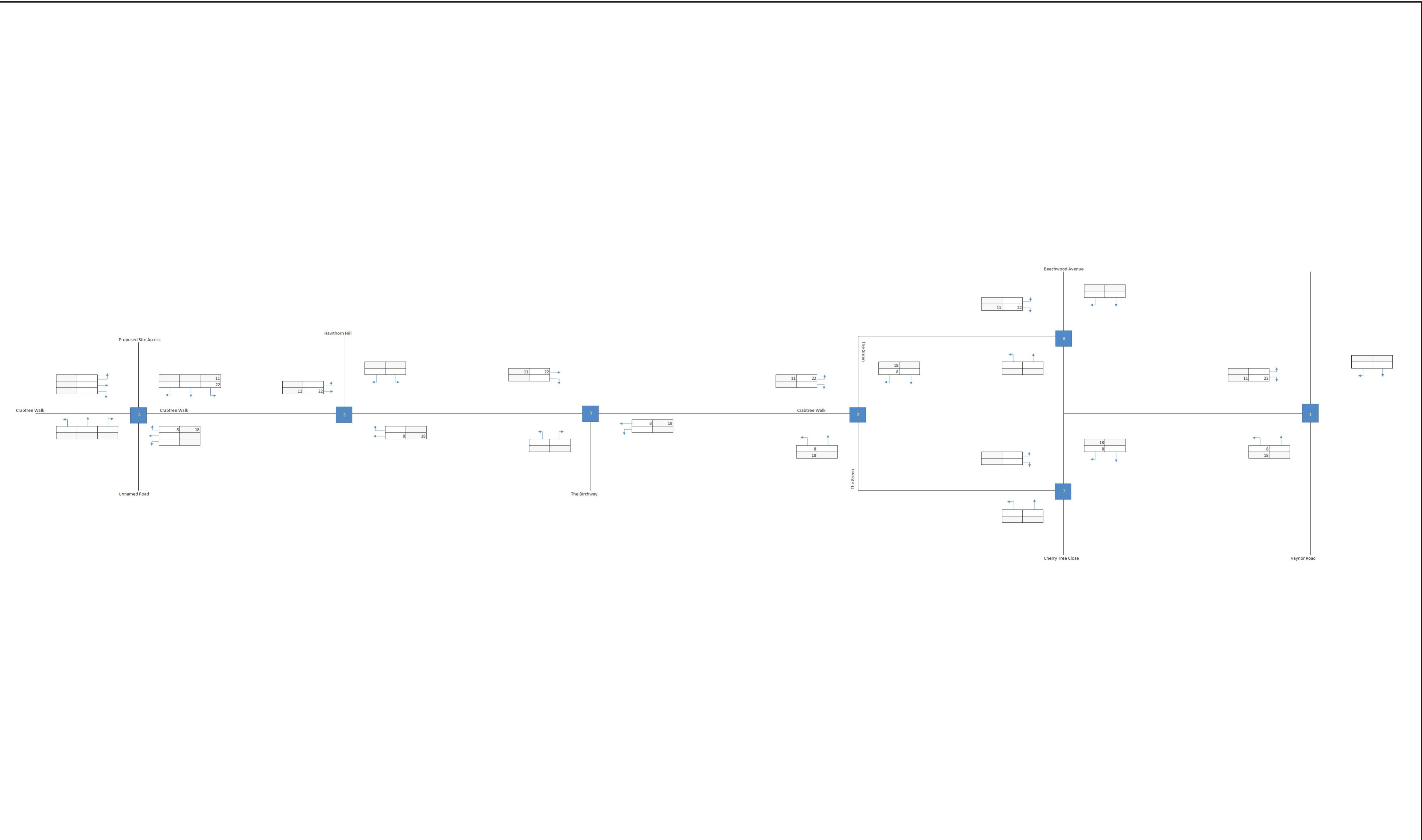


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|------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Drawing Title<br><br>2019 Baseline Flows | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS           | File Extension:    |
|                                          | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW      |                    |
|                                          |                            |                                                                                                                                                                                   | Drawn by: KW         |                    |
|                                          |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C       |                    |
|                                          |                            |                                                                                                                                                                                   | Issue date: Oct 2019 | Drg No: Figure 3.6 |
|                                          |                            |                                                                                                                                                                                   | Job No: T19.137      |                    |

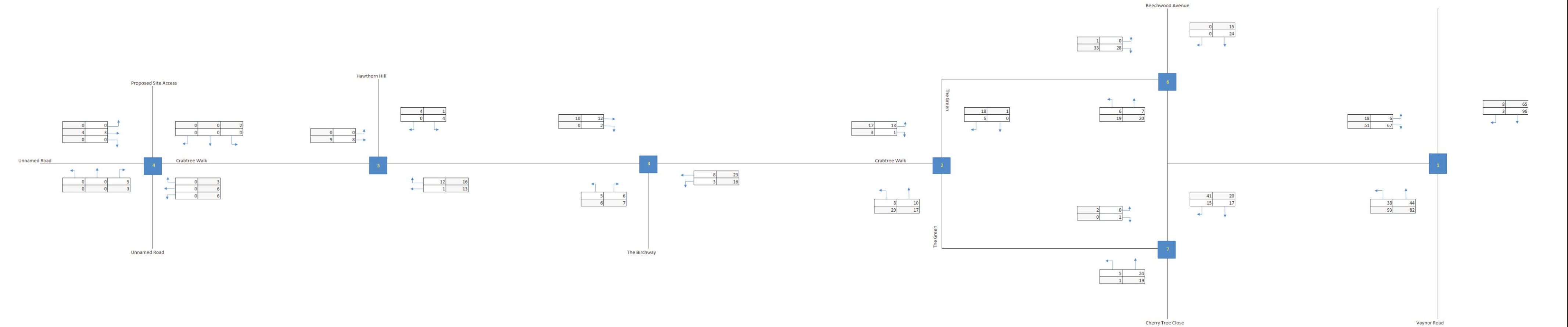


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|------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------------|-------|------------|------|------|-----|--|
| Drawing Title<br><br>Site Access Visibility Splay: 2.4m x 43m<br>Forward Visibility Splay: 25m | Client    | <br><br>Unit 9<br>Oak Tree Court<br>Mulberry Drive<br>Cardiff Gate Business Park<br>Cardiff<br>CF23 8RS<br><br>T 029 2073 2652 | Scale: 1:1000@A3 |                      |                    |       |            |      |      |     |  |
|                                                                                                | Job Title |                                                                                                                                                                                                                     | WDL Homes        | Designed by: KW      |                    |       |            |      |      |     |  |
|                                                                                                |           |                                                                                                                                                                                                                     |                  | Drawn by: KW         |                    |       |            |      |      |     |  |
|                                                                                                |           |                                                                                                                                                                                                                     |                  | Ckd/Appd: PO'C       | Rev.               | Date. | Amendment. | Des. | Drn. |     |  |
|                                                                                                |           |                                                                                                                                                                                                                     |                  | 1st Issued: Oct 2019 | Drg No: Figure 4.1 |       |            |      |      | Rev |  |
|                                                                                                |           |                                                                                                                                                                                                                     |                  | Job No: T19.137      |                    |       |            |      |      |     |  |



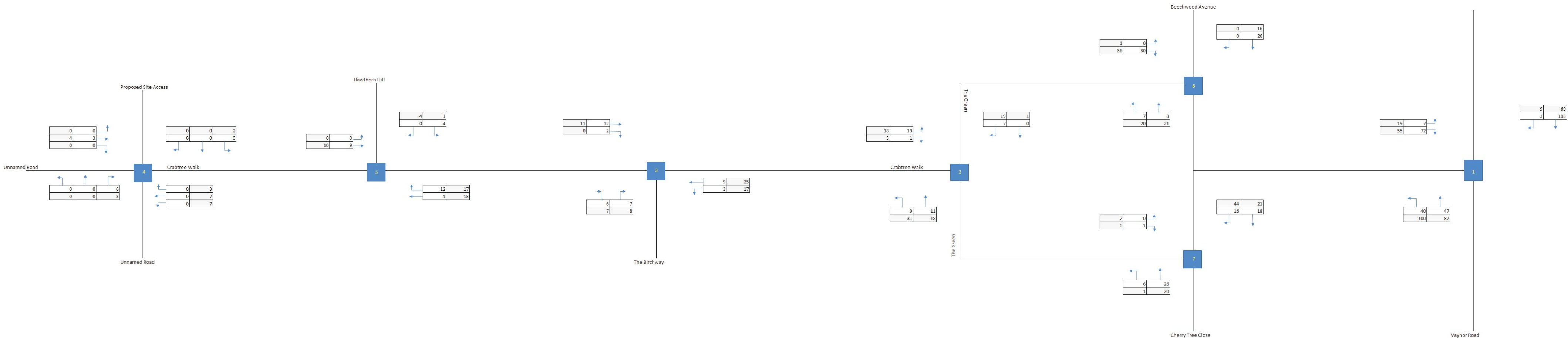
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|------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------|----------------------|
| Drawing Title<br><br>Development Traffic Flows | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS      | File Extension: |                      |
|                                                | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW |                 |                      |
|                                                |                            |                                                                                                                                                                                   | Drawn by: KW    |                 |                      |
|                                                |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C  |                 |                      |
|                                                |                            |                                                                                                                                                                                   |                 |                 | Issue date: Oct 2019 |
|                                                |                            |                                                                                                                                                                                   | Job No: T19.137 |                 |                      |



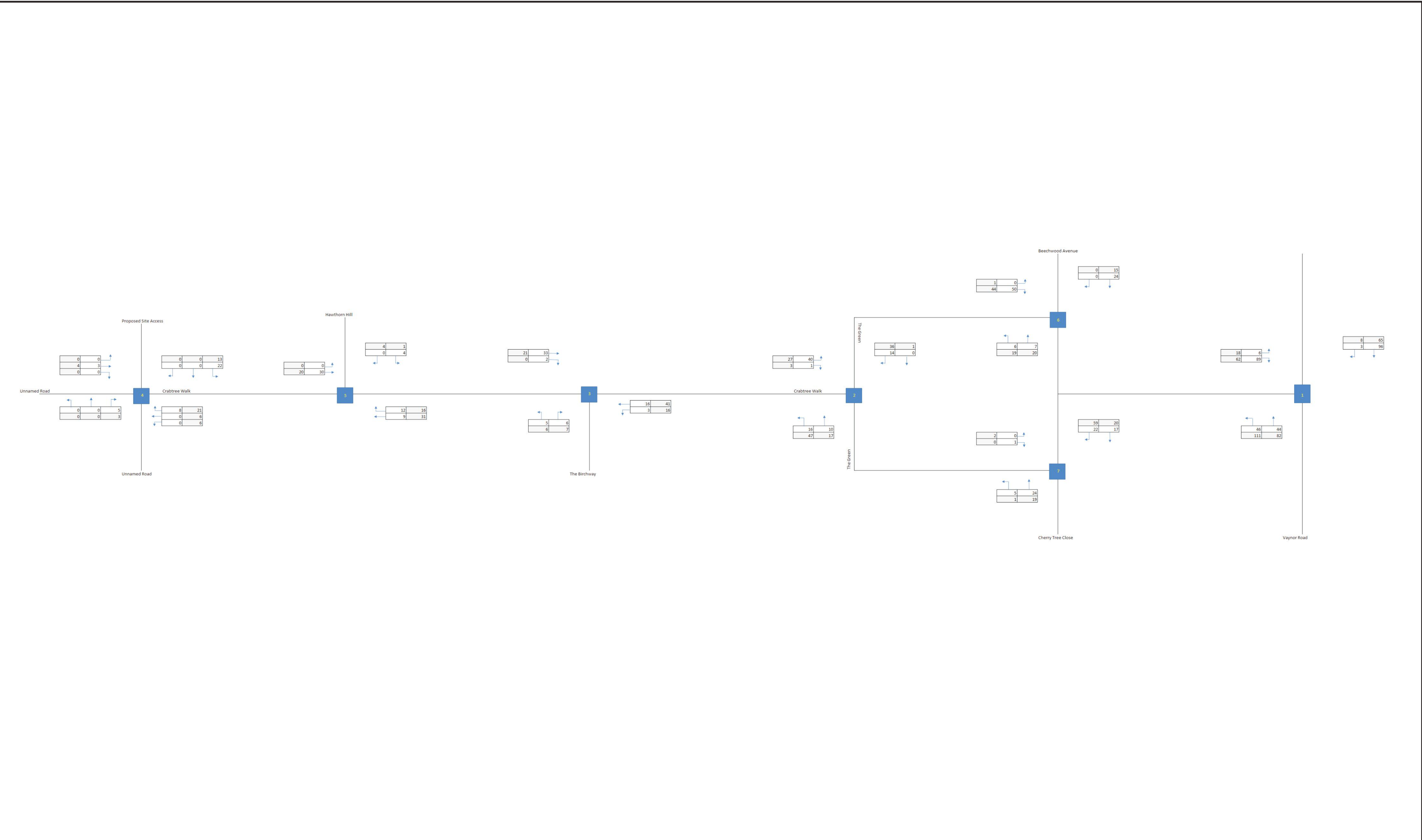
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|------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|--|
| Drawing Title<br><br>2022 Baseline Flows | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS           | File Extension:    |  |
|                                          | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW      |                    |  |
|                                          |                            |                                                                                                                                                                                   | Drawn by: KW         |                    |  |
|                                          |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C       |                    |  |
|                                          |                            |                                                                                                                                                                                   | Issue date: Oct 2019 | Drg No: Figure 5.2 |  |
|                                          |                            |                                                                                                                                                                                   | Job No: T19.137      |                    |  |



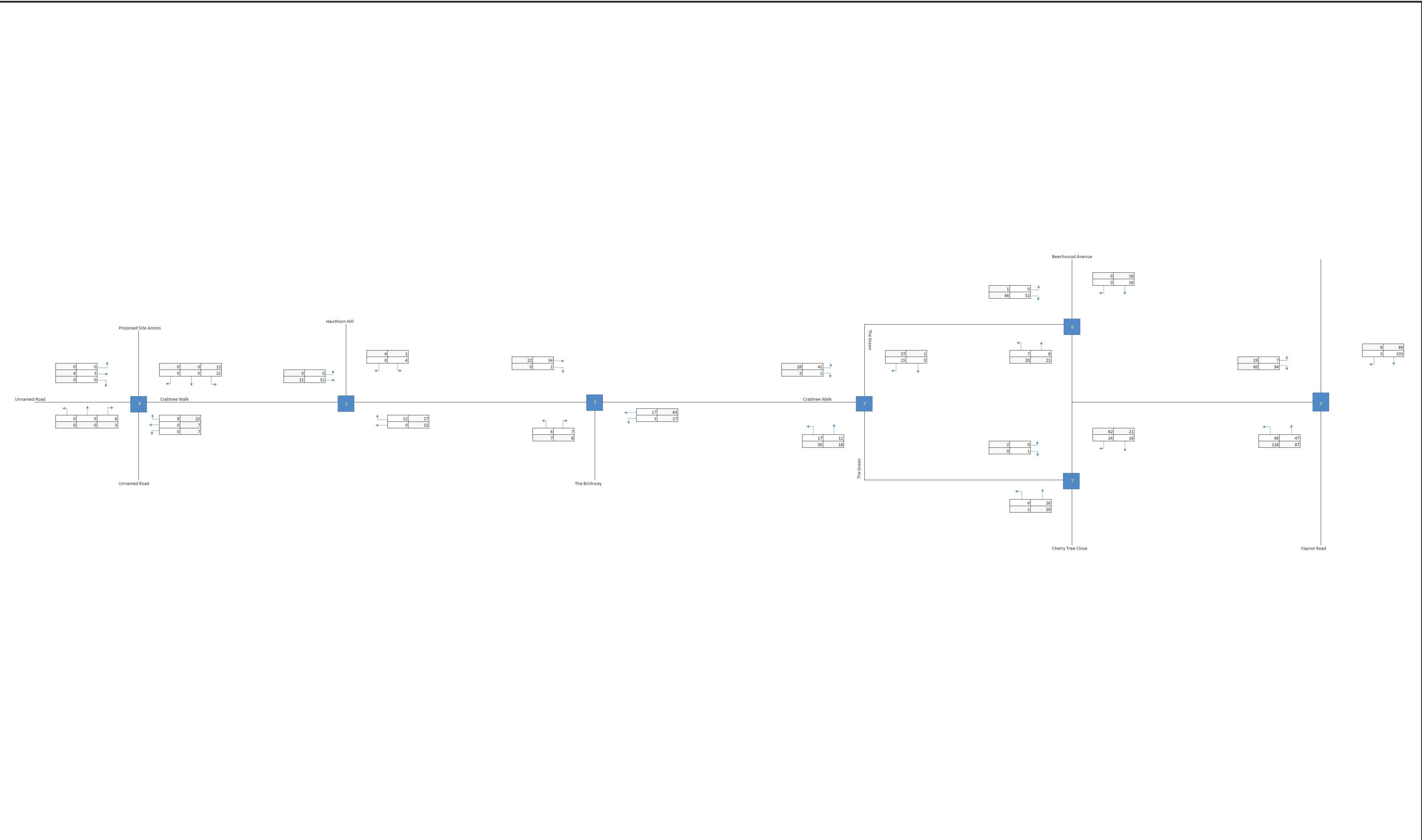
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| Drawing Title<br><br>2029 Baseline Flows | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS           | File Extension:    |
|                                          | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW      |                    |
|                                          |                            |                                                                                                                                                                                   | Drawn by: KW         |                    |
|                                          |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C       |                    |
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| Drawing Title<br><br>2022 Baseline + Development | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS           | File Extension:    |
|                                                  | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW      |                    |
|                                                  |                            |                                                                                                                                                                                   | Drawn by: KW         |                    |
|                                                  |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C       |                    |
|                                                  |                            |                                                                                                                                                                                   | Issue date: Oct 2019 | Drg No: Figure 5.4 |
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|--------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Drawing Title<br><br>2029 Baseline + Development | Client<br><br>WDL Homes    | <br><br>Suite D, 1st Floor,<br>220 High Street,<br>Swansea,<br>SA1 1NW<br><br>T 01792 480535 | Scale: NTS           | File Extension:    |
|                                                  | Job Title<br><br>Trefechan |                                                                                                                                                                                   | Designed by: KW      |                    |
|                                                  |                            |                                                                                                                                                                                   | Drawn by: KW         |                    |
|                                                  |                            |                                                                                                                                                                                   | Ckd/Appd: PO'C       |                    |
|                                                  |                            |                                                                                                                                                                                   | Issue date: Oct 2019 | Drg No: Figure 5.5 |
|                                                  | Job No: T19.137            |                                                                                                                                                                                   |                      |                    |

# Appendices

# Appendix A

f.a.o. Ms Emma Harding  
Asbri Planning

(Sent via email: [emma@asbriplanning.co.uk](mailto:emma@asbriplanning.co.uk))

**Dyddiad/Date:** 19<sup>th</sup> June 2019

**Ein Cyf / Our ref:** PA/19/0029  
**Eich Cyf / Your ref:**

**Gofynnwch am / Please ask for:** David Cross  
**Llinell Uniongyrchol / Direct Line:** 01685 724632  
**e-bost / e-mail:** David.cross@merthyr.gov.uk

Dear Ms Harding

**RE: Proposed residential scheme comprising 42 dwellings on land to the north of Crabtree Walk, Trefachan.**

I write in regards to the above mentioned pre-application enquiry (following our meeting on the 10<sup>th</sup> June 2019) for a proposed residential scheme, which included an indicative layout plan, a preliminary Ecological Survey and supporting statement. I have now had the opportunity to discuss the proposal with our internal consultees, which includes our Policy Officer, the Engineering and Traffic Officer, Drainage Engineering, Landscape Architect and Ecologist.

It should be noted that the scale of the proposal would constitute a 'major' development under the planning regulations. As such, a statutory pre-application consultation exercise will need to be carried out and a Pre-Application Consultation (PAC) report will need to be submitted with the planning application.

#### Principle of development

The site is located within the settlement boundary and Primary Growth Area as defined by the Local Development Plan (LDP), where the majority of new development is generally supported in principle by Policies BW1 and BW4. It is acknowledged that planning permission was previously granted (Ref P/76/0445) for a residential scheme at the site a considerable time ago. Whilst this establishes the principle of development, the proposal will still nevertheless need to be assessed against the current LDP policies.

#### Design approach

The design considerations of the development should have particular regard to Policy BW7 of the LDP, which highlights the need to provide good quality sustainable design in new development that integrates well with its local context.

The proposed development would essentially be seen as an expansion to the existing Trefachan housing estate, which would extend alongside the recently completed Sweetwater Park estate to the east. It appears on the submitted plans that the layout would follow a similar pattern of development with a central road that extends up the valley side branching off to cul-de-sac arrangements. It is noted that the existing dwellings within the site are also to be incorporated as part of the development and that the access leading to these properties would be altered.

Details of the proposed house types have been submitted which illustrate a mixture of 3 and 4 bedroom detached and semi-detached dwellings. It appears that the style of these dwellings would be similar to those

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that have been built within the Sweetwater Park estate, with some incorporating front gables, bay windows, canopies and integral garages. The general design of these dwellings is considered to be appropriate for the site. The drawings indicate the dwellings would be, in the main, of a brickwork construction with a slate roof and with some having rendered features to the front elevations. Our Landscape Architect has suggested that millstone grit, being a natural stone found in the area, could be used in the material finishes of the dwellings. However, it was noted in the meeting that this may adversely impact on the viability on the scheme and that the use of natural stone on the dwellings is not a feature commonly found in the area. Alternatively, it was suggested that natural stone could be incorporated as features of the landscaping scheme i.e. on the initial approach into the site and possibly within the areas of public open space. This would add to the attractiveness of the scheme.

The creation of a pedestrian link to the bridleway adjacent to plots 42 is welcomed and helps to integrate the development within its surroundings. It was suggested in the meeting that an additional pedestrian link could be provided between plots 33 and 34. This would further enhance the connectivity to the bridleway and the open countryside beyond, as well as improving the links to Sweetwater Park.

Concerns were raised in the meeting in respect of the siting/orientation of some of the dwellings, particularly on plots 8, 20, 23 and 40. In respect of plot 8 it was suggested that the dwelling should have a more direct frontage onto the cul-de-sac to integrate better with the street. Similarly it was suggested that the dwelling on plot 23 should be orientated with an easterly front aspect to form a better relationship with plots 21 and 22. On plot 40 it was suggested that the position of dwelling and the garage are swapped around so that the dwelling is the focal point within the streetscene. In terms of plot 20, the dwelling appears to generally have a poor relationship with the rest of the development given its location behind other plots. This part of the site would be better suited as garden space for each of the adjoining plots.

The garages located in front of plots 29 and 30 are considered to be inappropriately positioned and would appear incongruous within the streetscene and would needlessly impede on the width of the carriageway. It is suggested that these garages are removed and that plots 29 and 30 should accommodate a driveway instead. The area could also be landscaped to add interest within the street and create a more private feel on the approach to the cul-de-sac.

The submission of a Design and Access Statement would be required with the planning application. This document would provide a useful tool to explain the design approach to the development and set out the key principles and constraints. It can also help explain how the various elements of the scheme are being integrated i.e. ecological mitigation areas and the sustainable drainage schemes.

In order to appreciate the level changes across the site and the relationship between plots and with the existing properties, a number of section details should be provided along with elevations illustrating the street scenes. In this respect a plan illustrating the location and height of any retaining walls would also be helpful. Additionally, given the prominence of the site, the submission of a landscaping masterplan would help demonstrate how the scheme will integrate with its environment and would give a clear impression of the quality of the development.

#### Landscape impact

The housing development would be located within a historic landscape as defined by Policy AS4 of the LDP, where proposals will only be permitted where they would maintain or enhance the character and integrity of the landscape. The development would also adjoin the Nant Morlais and Cwm Taf Fechan Special Landscape Area, which is currently proposed in the replacement LDP. This further emphasises the quality of the surrounding landscape. Additionally, it is noted that the development would be located approximately 0.1km south of the border to the Brecon Beacons National Park.

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Concerns have initially been raised by our Landscape Architect in respect of the potential impact the development may have on the skyline/ ridge to the north of the site, which makes up the border to the National Park. In this regard, the concept of permitting the extension of garden boundaries in such an elevated position should be resisted and that the rear boundaries should be consistent with the character of the landscape, which avoid the use close boarded fencing. It was suggested in the meeting that a buffer should be provided across the top of the site, which would help integrate the development into the landscape. Within this area there are also a number of existing stone walls, which have been identified as having some potential ecological value that could be appropriately retained.

The Landscape Architect has raised concerns about the general layout of the development, which appears to be too regimented and unsympathetic to the landform, and that a more organic approach should be adopted. During the meeting, it was highlighted that the layout of the development has in the first instance been informed by the need to provide a suitable highway with appropriate gradients. It was also noted that the extent of the engineering works required to accommodate the development was not clear on the plans. Providing this information as part of the application would enable a better understanding of the constraints with the topography of the site.

It is advised that an area of public open space should be incorporated into the scheme, which could have a dual functionality to create/enhance wildlife habitats and be designed as part of a sustainable drainage scheme. In the meeting it was suggested that the area of land in front of plots 40-41 could be utilised, which may also provide an attractive link to the nearby bridleway. Other areas within the site that have landscaping/habitat potential would be the land opposite plots 5-7 and the strip of land in front of plots 1-4. Further details are also required for the area of land adjacent to plot 16, which appears to include a meandering footpath within a landscaped environment. The boundary treatment of properties which abut this area should be carefully designed to ensure a welcoming environment can be created. The dwelling on Plot 16 could also be designed/orientated to provide suitable natural surveillance over the landscaped area.

It was advised in the meeting that a landscape buffer should be provided along the eastern boundary of the site which abuts the existing bridleway. Currently, the existing properties within the vicinity back-on to one side of this route and the site then offers an attractive outlook. It was noted that the existing embankment which runs alongside the bridleway should be retained. The robust planting of trees (with a small percentage of evergreens) would help compensate for the loss of interest. Additionally, the existing field boundaries containing tree cover should be retained as a component of the development. A tree survey of the site would help identify the location of existing trees to be retained and those which may be affected by the development.

The proposal is considered to be a prominent development adjoining a sensitive landscape of international importance. Given the likely visible imposition of the proposal on the landscape and the change in character that is likely to ensue, our Landscape Architect has indicated that a proportional Landscape and Visual Impact Assessment (LVIA) is required in order to ascertain the potential impacts on both landscape character and vantage viewpoints. Such a study should demonstrate through detailed mitigation, how the impacts of the development can be appropriately addressed through sensitive design.

Although there are no listed buildings or schedule monuments within the proposed site, given its location within a historic landscape, it is advised that the Glamorgan Gwent Archaeological Trust be consulted as part of the statutory pre-application exercise, to establish whether they would request an ASIDHOL2 (Assessment of the Impact of the Proposed Development on the Historic Landscape).

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### Impact on neighbouring properties

Amongst other criteria, Policy BW7 considers the potential impact a development may have on local amenities, such as visual impacts, loss of light or privacy, disturbance and traffic movements. The properties that have the greatest potential to be affected by the development are the two dwellings located at the centre of the site and the properties situated adjacent to the eastern and southern boundaries.

It appears on the layout plan that the proposed dwellings would generally be positioned a sufficient distance (at least 21m) away from the existing properties and would be orientated to not give rise to significant overlooking or overbearing concerns. To fully assess the potential impacts on amenity, section details illustrating the development in relation to the existing properties should also be provided at various locations around the site, which take into account any changes in the ground levels. Consultation with local residents as part of the PAC process would also help to identify any other specific concerns which could be addressed as part of a detailed application submission.

### Highway implications

When assessing the potential highway impacts, particular regard should be given to policy BW12 of the LDP, which amongst other things seeks to encourage sustainable forms of transport and avoid causing or exacerbating highway safety problems. Additionally, policy TB11 of the LDP is of relevance and considers the need for new highways to be designed in accordance with the Manual for Streets.

It is noted that there is an existing access track that currently serves two residential properties at the centre of the site, which links to Crabtree Walk to the south. There is also a protected bridleway that extends along the eastern boundary, between the site and the Sweetwater Park housing estate. This links to another bridleway further north of the site.

It is acknowledged that planning permission (P/76/0445) has previously been granted for 81 dwellings within the site and that the current proposal is for only 42 dwellings. Whilst there has been a significant reduction in the number of proposed dwellings, our Highway Engineer has raised major concerns with the proposed means of access into the site from Crabtree Walk. It has been noted that at the entrance to the site, the highway narrows considerably between existing properties, essentially creating a pinch point to the development. On-street parking in the vicinity is also prevalent, which can impede on the traffic flow. It was noted in the meeting that historically there was an intention to carry out highway improvement works to widen the carriageway. However, it is understood, due to a change in land ownership, this is not currently feasible.

Given the current circumstances and the limitations of any highway improvement works, our Highway Engineer has requested that a detailed Traffic Impact Assessment be carried out, together with a Road Safety Audit to evaluate the existing constraints and the potential impacts on traffic movement. It is noted on the submitted layout plan that a possible solution might be to create a priority system at the entrance to the site. However, further details would be required to demonstrate how this addresses the identified concerns.

### Ecological impact

The site lies adjacent to the Cilsanws Common South Site of Importance for Nature Conservation (SINC), which adjoins part of the western boundary. There is also a tree opposite to north-east boundary (to the rear of 63 Sweetwater Park) which is protected with a Tree Preservation Order. The proposal should have regard to Policies BW5 and AS6 of the LDP, which seek to ensure development maintains, enhances or does not cause harm to areas of nature conservation and other biodiversity interests, including protected and priority species and ecological networks.

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It is acknowledged that an Extended Phase 1 Ecological Survey has been carried out. The report notes the proximity of the development to the above mentioned SINC and the need to provide appropriate boundaries to minimise potential indirect impacts on habitats. The survey has also identified potential habitats for reptiles and nesting birds within the site. A series of recommendations have been put forward, which need to be incorporated into the proposed development. However, it appears that the potential layout of the development was not available at the time the report was written. It is suggested that the authors of the report (Ecological Services Ltd) reviews the final layout of the development to help inform targeted areas of mitigation, appropriate boundary treatments and the landscaping scheme.

The planning division's ecologist is generally satisfied with the conclusions reached in the Ecological Survey. In addition to this, it is advised that a Bat Transect Survey would be appropriate to help show how nearby roosting bats may be using the site to commute/forage. This would help inform the lighting plan for nocturnal species. Given the moderate potential for reptiles within the site, a Reptile Mitigation Strategy would be required. This should include the retention of suitable habitat areas within the site with additional enhancement features i.e. hibernacula and log piles. Regard should also be given to the need to translocate reptiles out of construction zones. It is advised that this strategy needs to be prepared prior to the finalisation of the development layout.

The existing stone walls in various parts of the site should be retained where possible as they provide excellent habitats for birds, insects, small mammals and hibernating reptiles. Additionally, if any trees with bat roost potential are to be removed, then targeted bat surveys will be required.

#### Sustainable drainage

Under the Flood & Water Management Act, sustainable drainage schemes are required to be incorporated in to the development. Policy BW8 of the LDP also considers the potential impact on surface water and ground water resources.

In the meeting, it was noted that a preliminary drainage strategy is in the process of being put together, which may include a number of interventions, such as swales, rain gardens and soakaways. It was suggested that some of these features could form part of a wider landscaping proposal. The drainage strategy would also need to have regard to the ecological mitigations and take advantage of the potential enhancements to biodiversity. It is advised that details of the drainage scheme should be provided as part of the application to help assess how it integrates with other features of the development. However, the more technical aspects would be a matter that needs to be addressed as part of a separate SAB (SUDs Approval Body) application. In this respect, it is advised that early pre-application with the Council's SAB would be beneficial to ensure the drainage strategy integrates well with the final layout of the proposal.

#### Planning obligations

Policies BW17 and AS22 of the LDP consider the need to secure appropriate planning obligations and the delivery of affordable housing respectively. In terms of affordable housing, the policy indicates that residential schemes comprising 10 or more dwellings, within the Primary Growth Area, should accommodate 10% on-site affordable housing. Based on the current proposal, this would amount to the provision of 4 residential units. It was noted in the meeting that you may wish to contact Merthyr Valley Homes (Registered Social Landlord) to establish if they have the capacity to take on additional residential units. They currently manage a number of properties within the housing estate to the south of the site.

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It is understood that due to the sloping nature of the site, the development costs may be higher than normal, which will have an impact on the viability of the development. As part of the planning process, the development would be assessed using the Three Dragons Toolkit, which assists in determining the level of contribution that may be sought. In order to provide a more accurate assessment, it is advised that details of the anticipated development costs be provided as part of the application. The viability of the development would then be assessed using the Three Dragons Toolkit and the potential contributions towards affordable housing can then be appropriately evaluated.

#### Application details

If you intend to submit a planning application, you will need to submit the following information:

- A fully completed application form and relevant ownership certificates (this can be found on the Council's web site [www.merthyr.gov.uk](http://www.merthyr.gov.uk))
- A site location plan (Scale of 1:1250) which clearly identifies the application site (outlined in red) within the surrounding area and includes a north arrow.
- Detailed drawings (to a suitable scale) illustrating the proposed development in relation to neighbouring properties/features, including a master plan for the development, proposed elevations, floor plans, sections and streetscene plans.
- A landscape master plan including details of the open spaces to be created.
- Any supporting information and surveys i.e. PAC Report, DAS, Ecology Report, Tree Survey, Landscape Assessment, Traffic Impact Assessment and Road Safety Audit, details of the drainage/SUDS proposal and details of the potential development costs/viability report
- Appropriate planning fee of £380 per dwelling.

Yours sincerely



P.P. JUDITH JONES  
CHIEF OFFICER PLANNING & NEIGHBOURHOOD SERVICES

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# Appendix B

Proposed access strategy for a residential  
development at land to the north of  
Crabtree Walk, Trefechan

**TECHNICAL NOTE**  
October 2019

|                             |                                        |                     |                                    |
|-----------------------------|----------------------------------------|---------------------|------------------------------------|
| <b>Project number</b>       | T19.137                                | <b>Project name</b> | Residential Development, Trefechan |
| <b>Contact/participants</b> | Merthyr Tydfil County Borough Council  |                     |                                    |
| <b>Noted by</b>             | Patrick O'Connor & Katie Watkins       |                     |                                    |
| <b>Subject</b>              | Proposed access strategy highway works | <b>Date</b>         | 10 <sup>th</sup> October 2019      |

## Technical Note

### 1.0 Introduction

- 1.1 This Technical Note has been prepared to accompany a planning application for an access strategy (only) for a proposed residential development of up to 50 dwellings at land to the north of Crabtree Walk, Trefechan. Two residential properties are currently located on the site of the proposed residential development, known as Mira Monte and Caerllwyn respectively.
- 1.2 A separate planning application is to be submitted for the residential development in its entirety and that will be accompanied by a Transport Assessment (TA). The TA will assess the off-site impact of the development's traffic on the wider network.
- 1.3 There has been pre-application discussion with officers of the Highway Authority by both Asbri Transport Limited and WDL Homes (the planning applicant) regarding the proposed residential development and specifically the geometric design of the proposed access strategy.

1.4 Asbri Transport Limited are instructed to advise on transport planning matters relevant to the proposed residential scheme by addressing the following:

- Advising on the access strategy proposed for the development;
- Provide visibility splay drawings in accordance with the requirements of the local highway authority;
- Undertake swept-path analysis of the proposed access strategy;
- Derive trip generation for the proposed development;
- and to report on the Stage 1 Road Safety Audit of the proposed access strategy.

1.5 The site is located in the north-west of Trefechan on vacant agricultural land accessed off Crabtree Walk. Trefechan is a small settlement located to the north of Merthyr Tydfil, South Wales.

1.6 The location of the proposed development is detailed in **Figure 1**.



**Figure 1: Site Location**

## 2.0 PROPOSED DEVELOPMENT ACCESS, VISIBILITY AND STAGE 1 ROAD SAFETY AUDIT

- 2.1 The proposed development consists of up to 50 dwellings, but as detailed in Section 1 planning permission is to be sought for the residential scheme by way of a separate planning application.
- 2.2 The development site is proposed to be accessed via a northward extension of Crabtree Walk. Access to the site is proposed via a 5.5m wide carriageway (with localised widening at bends) that is accompanied by 1.8m footways on either side of the road for pedestrian connectivity.
- 2.3 Highway works are also proposed to the existing, northern section of Crabtree Walk which will be widened to a uniform width of 4.5m and provided with a 2.5m deep parking bay on its northern side to provide off-carriageway parking for approximately 8 vehicles.
- 2.4 The access proposals and the proposed works, including engineering work and visibility splays can be seen in **Appendix A**.
- 2.5 As is evident from Appendix A, the planning application proposes a new estate road of 5.5m in width extending in a northerly alignment to serve the proposed residential development.
- 2.6 The junction of Crabtree Walk and Hawthorn Hill is to be re-aligned so that traffic travelling north-bound from Crabtree Walk to Hawthorn Hill has priority over south-bound traffic departing the development. This will be emphasised by the implementation of 'give way' carriageway markings.
- 2.7 The existing carriageway width of the northern extremity of Crabtree Walk is proposed to be increased in width to 4.5m. A lay-by of 2.5m in depth is to be constructed on the northern side of Crabtree Walk.
- 2.8 A kerbed build-out feature is proposed as shown on Appendix A. This will be provided with pedestrian crossing provision and associated tactile paving. It will also provide a greater footway width for pedestrians using the northern side of Crabtree Walk.

- 2.9 Forward visibility for traffic approaching the designated crossing point is shown on **Appendix B**. Additionally, junction visibility splays can be achieved within land owned by the applicant/LHA.
- 2.10 A series of swept-path analysis have been undertaken of the proposed highway configuration detailed on PHG Consulting Engineer's plan included at **Appendix C**.
- 2.11 The swept-path analysis included at Appendix C details that the highway alignment can satisfactorily accommodate the vehicle tracking of 10.2m refuse collection vehicle and an outbound car as shown on Appendix C.
- 2.12 In addition, the widening of the carriageway of the northernmost section of Crabtree walk will allow simultaneous entry and exit of the road by 2 cars.

#### **Stage 1 Road Safety Audit**

- 2.13 A stage 1 Road Safety audit was undertaken by the Safety Forum in September 2019. The audit is included in full at **Appendix D**. As a consequence of recommendations detailed in the audit a priority arrangement is proposed at the carriageway throttling so that traffic exiting the development has to give way to inbound traffic. This change to the design addresses recommendation 3.1 of the safety audit.
- 2.14 Similarly, the proposed highway works now propose the pedestrian crossing provision in the at the location of the carriageway narrowing which addresses recommendation 3.2 of the safety audit.
- 2.15 With reference to recommendation 3.3, the provision of the build-out associated with the carriageway narrowing will increase footway width in this location. Where vegetation is encroaching on the public highway the Highway Authority may serve notice on adjacent land-owners to cut back the vegetation.

### 3.0 EXISTING TRAFFIC FLOW & TRIP GENERATION

3.1 This section outlines the existing traffic generated from the 13 residential dwellings that are currently served via the northern extremity of Crabtree Walk and details the estimated additional vehicle trip generation created by the proposed 50 residential dwellings. The TRICS 7.6.1 data base has been used to estimate the vehicle trip generation of the proposed development.

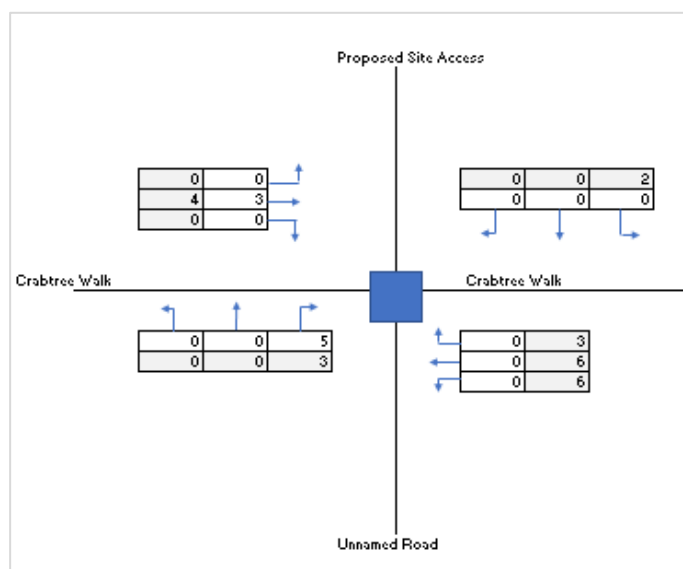
3.2 Peak hour junction turning counts (JTCS) were undertaken on Tuesday 16<sup>th</sup> July 2019 at the location indicated in **Figure 3.1** below.



**Figure 3.1:** Junction Turning Count Location

3.3 The junctions surveyed are listed below and the traffic flows are indicated in **Figure 3.2** below.

- Existing access to proposed development site.
- Crabtree Walk
- Unnamed Road
- Hawthorn Hill



**Figure 3.2:** 2019 surveyed flows

3.4 Figure 3.2 indicates that the two existing residential dwellings located within the redline boundary of the proposed site, the 13 dwellings located along the northern extremity of Crabtree Walk and those served off the unnamed road generate 8 vehicle movements in the AM peak period and 24 vehicle movements in the PM peak period.

3.5 TRICS is described as follows:

***“TRICS is an interactive database and data analysis system comprising a large number of transport survey records of individual developments across a wide range of land use categories.”***

3.6 For the purpose of this exercise, the proposed residential use of the site has been compared to the trips generated by similar developments across the UK.

3.7 Trip generation for the proposed scheme has been assessed for 50 dwellings.

3.8 Sites were selected on the basis of the following criteria:

- Land use: residential – houses privately owned
- Survey days: Monday – Friday; and
- Location of the development: UK, excluding Greater London, Northern Ireland and Republic of Ireland,

- 3.9 The full TRICS output is appended at **Appendix E**. A summary of the AM. and PM peak periods can be seen in **Table 3.1** below.

| Peak Period | Trip rate |        |       | Vehicles |        |       |
|-------------|-----------|--------|-------|----------|--------|-------|
|             | Arrive    | Depart | Total | Arrive   | Depart | Total |
| 0800-0900   | 0.157     | 0.436  | 0.593 | 8        | 22     | 30    |
| 1700-1800   | 0.363     | 0.210  | 0.573 | 18       | 11     | 29    |

**Table 3.1: Estimated trip generation – 50 dwellings**

- 3.10 The table above demonstrates that an estimated 30 vehicle trips will be generated in the AM peak period, whilst 29 trips are estimated to be generated in the PM peak period.
- 3.11 When adding the vehicle trips generated by the existing properties within the vicinity of the site that will be served via the proposed junction, it is forecast that the total number of two-way vehicle movements will equate to approximately 38 (two-way) vehicle movements in the AM peak period and up to 53 (two-way) vehicle movements in the PM peak period.
- 3.12 It is considered that the access strategy could safely and satisfactorily accommodate the volume of traffic forecast to be generated by the proposed development.

## **4.0 CONCLUSION**

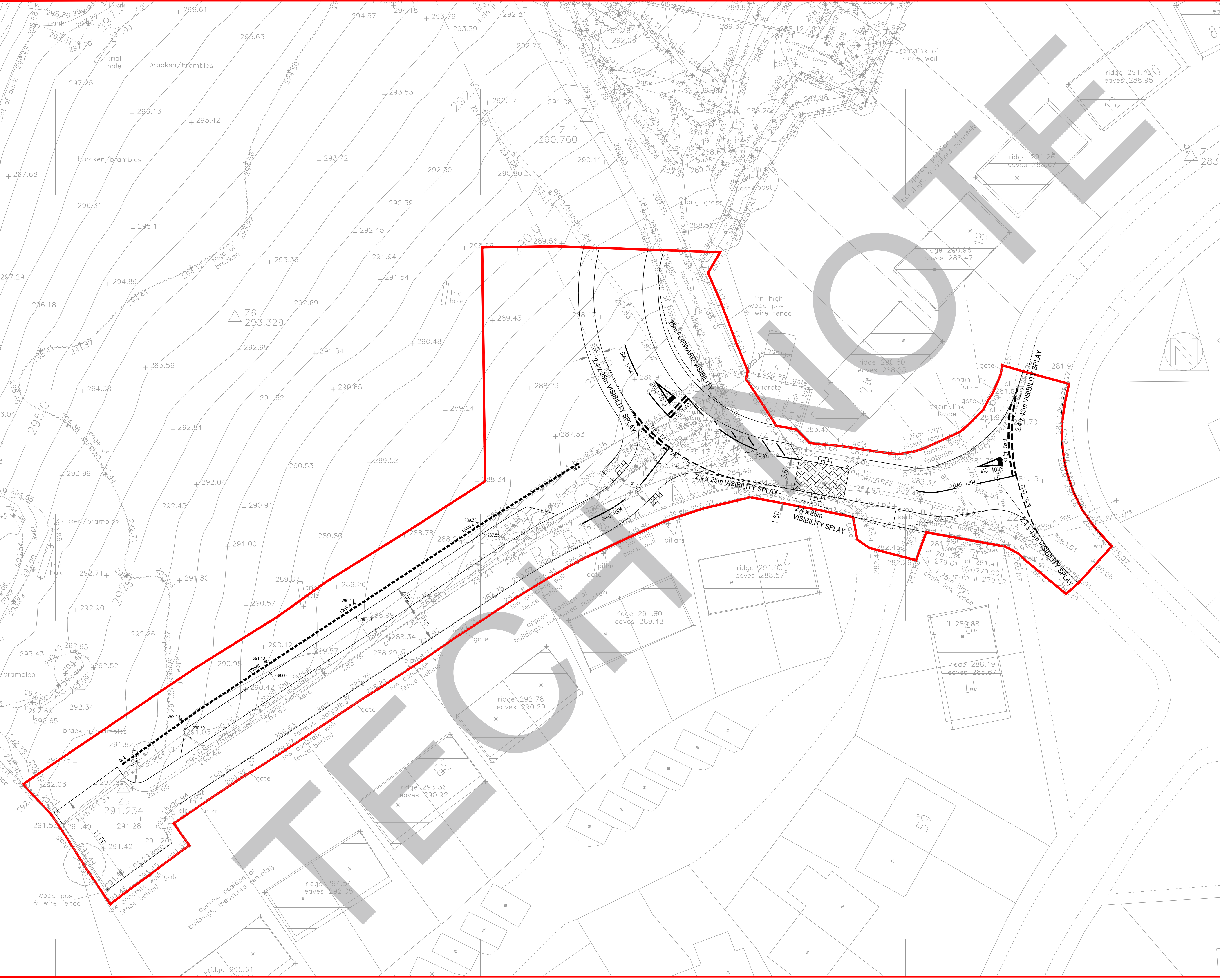
- 4.1 This Technical Note has been prepared to support a planning application for highway works to provide an access strategy to a proposed residential development of up to 50 units at land to the north-west of Trefechan.
- 4.2 The highway works proposed in the planning application have been described in this technical note. In summary, the junction of Crabtree Walk and Hawthorn Hill is to be re-aligned so that traffic travelling north-bound from Crabtree Walk to Hawthorn Hill has priority over south-bound traffic departing the development. This will be emphasised by the implementation of 'give way' carriageway markings. In addition, a carriageway narrowing is proposed in the location shown on Appendix A. This feature will give priority to inbound traffic which will be enforced by carriageway markings and highways signs to TSRGD (2016) requirements.
- 4.3 Visibility splay drawings conclude that both satisfactory junction and inter-visibility splays in accordance with technical guidance contained within Manual for Streets can be achieved at new and existing junctions within the area of the proposed highway works. All visibility splays are understood to be achieved within land owned by the Applicant/LHA.
- 4.4 Swept-path analysis has been undertaken to assess the highway alignment and this demonstrates that vehicles may access and egress the site satisfactorily. A large refuse collection vehicle may pass a car as detailed in the swept-path analysis.
- 4.5 A further planning permission will be sought for the residential development of up to 50 dwellings in due course via the submission of a second planning application.
- 4.6 The TRICS analysis undertaken to derive traffic generation conducted concludes that the development is forecast to generate and estimate 30 trips in the AM peak period and similarly, the development is estimated to produce 29 trips in the PM peak period.
- 4.7 The proposed highway works have been discussed with offices of the Highway

Authority and at their request, have been subject to a Stage 1 Road Safety Audit. Revisions to the design of the scheme have been made to address 2 of the 3 recommendations of the stage 1 safety audit. A 'designer's response' has been prepared to address recommendation 3.3 of the audit.

- 4.8 The proposed access works as detailed in the planning application will provide a safe and satisfactory access to the residential development. It is also considered that they provide a level of 'betterment' by widening the existing northernmost section of Crabtree Walk.
- 4.9 The Transport Assessment that will accompany the residential planning application will assess the impact of the development on the wider highway network and will also examine the site's propensity for active and sustainable travel.

# Appendices

# Appendix A



- GENERAL NOTES**
1. Do Not Scale
  2. The contractor is to check and verify all buildings and site dimensions and levels, including sewer invert levels, before works start on site. The contractor is to comply in all aspects with the current building legislation, British Standards, building regulations etc.
  3. Positions of existing services/statutory undertakers apparatus adjacent to or crossing proposed excavations are to be checked by the contractor prior to starting work
  4. This drawing is to be read in conjunction with and checked against all other drawings, Engineering Details, Specification and any structural, geotechnical or other specialist document provided.
  5. Any anomaly or contradiction between any of the above is to be reported to WDL Homes
  6. This drawing is schematic for clarity only, positions of pipe runs and manholes may vary on site due to site conditions.

- ROAD AND SEWER ADOPTION NOTES**
1. All works for adoption under a Section 38 / 278 agreement shall be carried out to the approval of the Merthyr Tydfil County Borough Council.
  2. All works for adoption under a Section 104 agreement shall be carried out to the National Water Council guide 'Sewers for Adoption' 7th edition and Dwr Cymru Welsh Water's requirements.
  3. Streetlighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.

|     |      |            |                                               |     |     |
|-----|------|------------|-----------------------------------------------|-----|-----|
| A   |      | 04/10/2019 | Updated following Road Safety Audit comments. | SJD | TL  |
| REV | DATE | DETAILS    | AMENDMENTS                                    | BY  | CHK |

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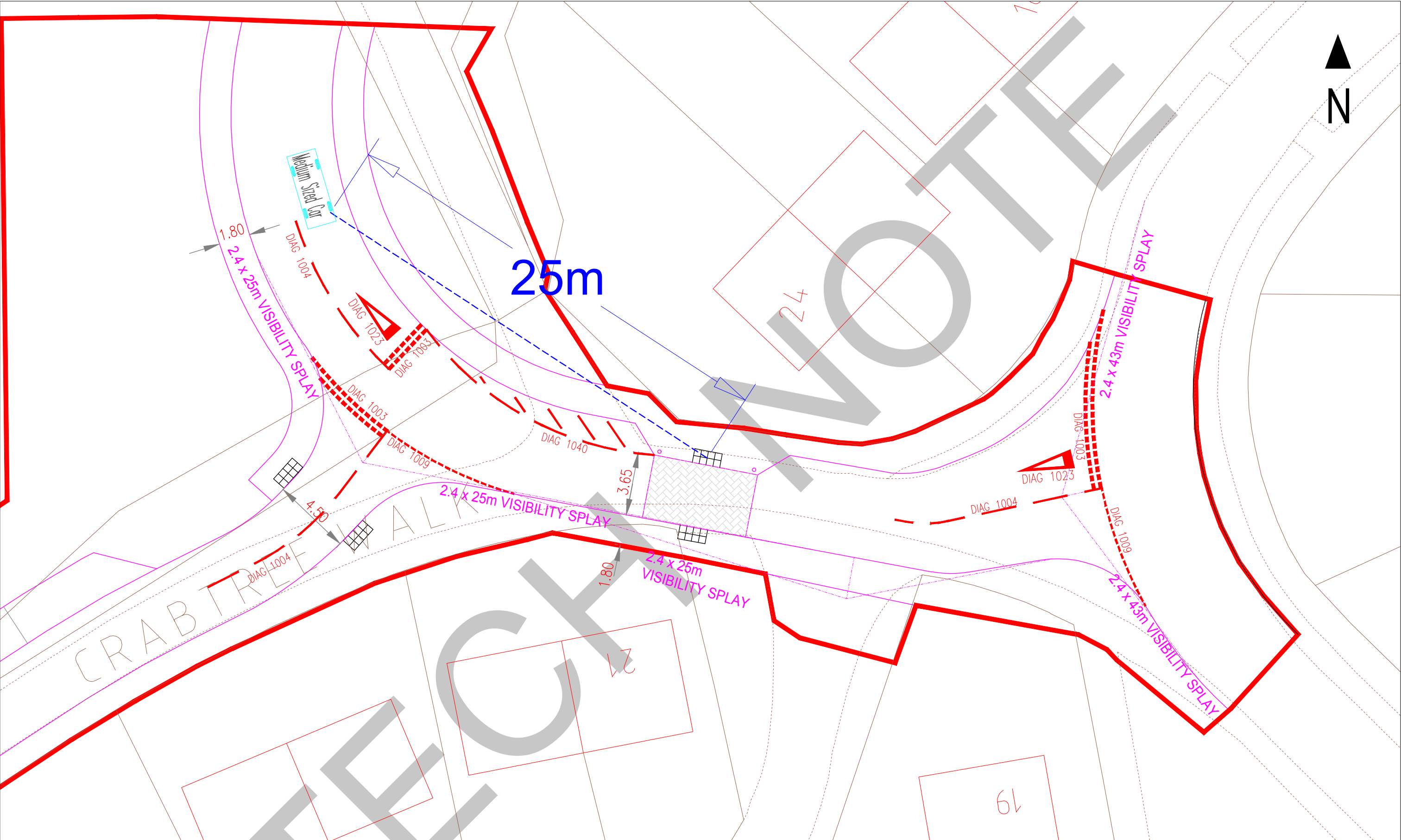
@PHG\_consulting  
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PROJECT:  
**WDL Homes  
Trefechan**

DRAWING TITLE:  
**Site Access Layout**

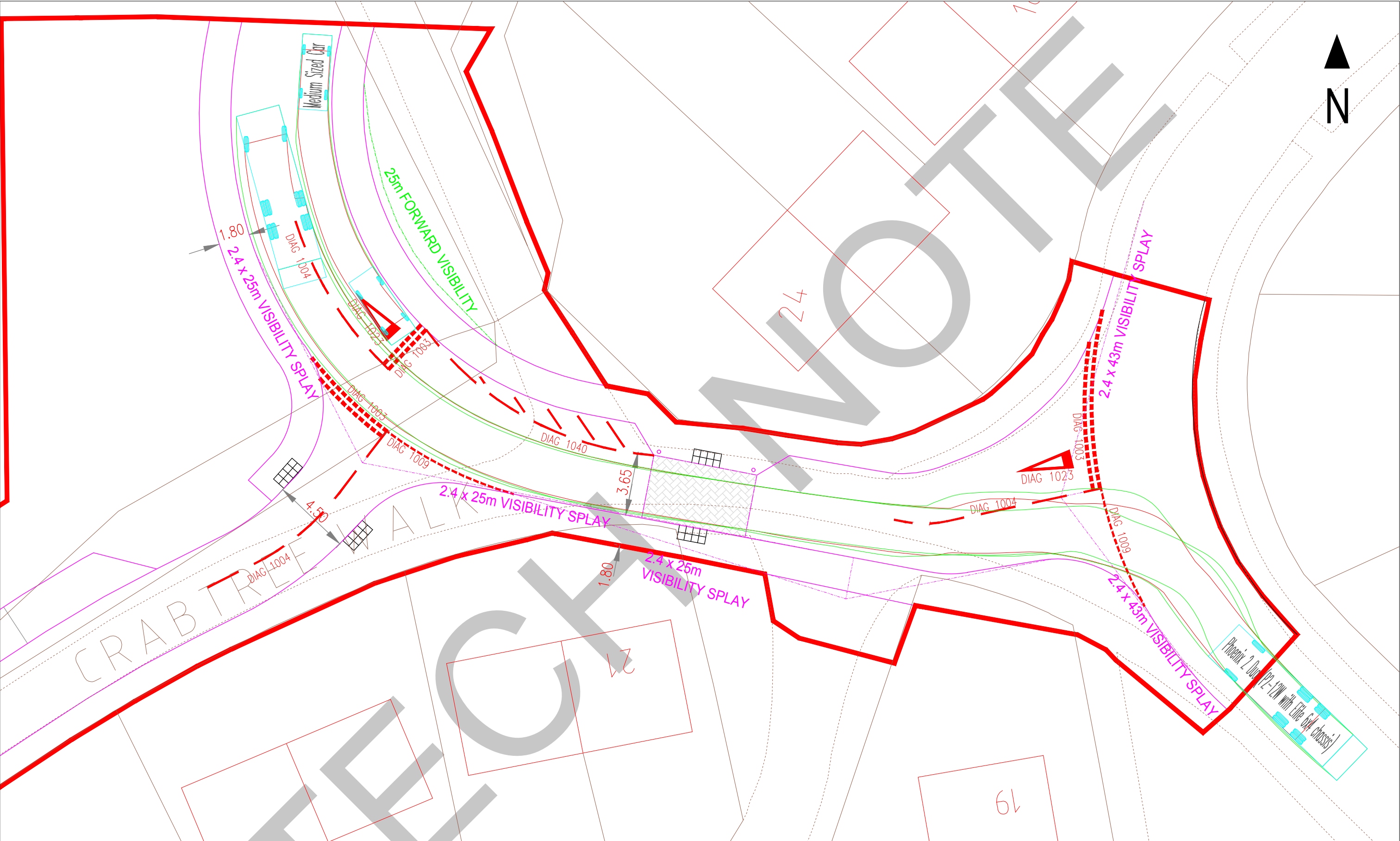
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|---------|--------|-------------|----------|
| DRAWN   | CHK    | STATUS      | SCALE    |
| TL      | SJD    | Preliminary | 1:250@A1 |
| DATE    | JOB NO | DWG NO      | REV      |
| Sept'19 | 1914   | 102         | A        |

# Appendix B



|               |                                                       |        |           |                                                                                                                                                                                                                            |        |          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Drawing Title | <div>Forward Visibility Splay<br/>from Crossing</div> | Client | WDL Homes | <br><br>Unit 9<br>Oak Tree Court<br>Mulberry Drive<br>Cardiff Gate Business Park<br>Cardiff<br>CF23 8RS<br><div>T 029 2073 2652</div> | Scale: | 1:500@A3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Drawing Title | <div>Swept Path Analysis of<br/>10.2m RCV and Car</div> | <div></div> | Client | WDL Homes | <div><br/><br/>Unit 9<br/>Oak Tree Court<br/>Mulberry Drive<br/>Cardiff Gate Business Park<br/>Cardiff<br/>CF23 8RS<br/><div>T 029 2073 2652</div></div> | Scale: | 1:500@A3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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# Appendix D

# **CRABTREE WALK, TREFECHAN, MERTHYR TYDFIL**

## **PROPOSED RESIDENTIAL DEVELOPMENT ACCESS ARRANGEMENTS**

**Stage 1 Road Safety Audit**

**September 2019**

**RDW-DL-19-2057-RSA1**

| Revision Status      | Prepared by:<br>(Name) | Checked by:<br>(Name) | Approved by:<br>(Signature)                                                        | Date Approved: |
|----------------------|------------------------|-----------------------|------------------------------------------------------------------------------------|----------------|
| Original             | R Westhead             | D Lord                |  | 27/09/19       |
| Designer's Response  |                        |                       |                                                                                    |                |
| Authority's Response |                        |                       |                                                                                    |                |
| Audit Response       |                        |                       |                                                                                    |                |

|                                                               |                                              |
|---------------------------------------------------------------|----------------------------------------------|
| <b>Client:</b>                                                |                                              |
| Asbri Transport Ltd                                           | The Safety Forum Ltd                         |
| Suite D<br>1st Floor<br>220 High Street<br>Swansea<br>SA1 1NW | PO Box 831<br>Godalming<br>Surrey<br>GU7 9HT |
|                                                               | Date: 27/09/19                               |

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### APPENDIX A          Location Plan

## 1.0 INTRODUCTION

- 1.1 This report results from a Stage 1 Road Safety Audit (RSA) carried out on the proposed access arrangements, and highway improvements associated with a 42 unit residential development off Crabtree Walk, Trefechan, Merthyr Tydfil.
- 1.2 The highway proposals include: realignment of an existing private access road to provide access to the new residential development; providing priority to the proposed development access road with a new and realigned priority junction between Crabtree Walk to the southwest, and the development access; a narrowing on Crabtree Walk east of the development. The development is forecast to generate approximately 25 peak hour vehicle trips which will all access the wider highway network via Crabtree Walk.
- 1.3 The Stage 1 RSA was carried out at the request of Asbri Transport Ltd.
- 1.4 No formal RSA Brief was provided, with instruction given within email correspondence on 25<sup>th</sup> September 2019.
- 1.5 The Audit was carried out on 25<sup>th</sup> September 2019 by consultants working on behalf of The Safety Forum Limited. The Audit Team, which is established from The Safety Forum Ltd and independent of the project design team, has had no involvement with the project.

The Auditors were:

R Westhead – Team Leader (MSoRSA, RSA Certificate of Competency)

D Lord – Team Member (IEng, FIHE, RSA Certificate of Competency)

- 1.6 The report has been prepared in accordance with General Principles and Scheme Governance General Information, GG 119, Road Safety Audit (Formerly HD 19/15).
- 1.7 The Audit consisted of a desktop study and a site visit. The site visit was carried out on 25<sup>th</sup> September 2019, between 12:30 and 13:00 hours by all member of the Audit Team together. The weather was dry and sunny and the road surface was dry. Traffic conditions were quiet.
- 1.8 Issues relating to the health & safety of operatives constructing, operating or maintaining the highway are not covered by Road Safety Audit. Only issues relating to the design and construction of facilities for highway maintenance that may potentially contribute to a Road Safety Matter are considered by the Road Safety Audit process.

Road Safety Audit is not a technical check that the design conforms to Standards and/or best practice guidance. Design Organisations are responsible for ensuring that their designs have been subjected to the appropriate design reviews (including, where applicable, Walking, Cycling & Horse Riding Assessment & Review) prior to Road Safety Audit.

Road Safety Audit is not a check that the scheme has been constructed in accordance with the design.

Whilst reference is made to certain design standards, where safety may be compromised by a reduction in standard, this report is not intended to provide a design check. The Auditors have only reported on matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme or the appropriateness of the design. Consequently, the Auditors accept no responsibility for the design or construction of the scheme.

- 1.9 The recommendations in this report are aimed at addressing the road safety problems; however there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities.
- 1.10 The Auditors would be pleased to discuss the acceptability of alternative solutions to problems identified during the Audit, and would encourage the Designer to consult them on this matter.
- 1.11 The Overseeing Organisation response to the RSA should be formally recorded and reported to the Designer and the RSA Team so that a record of the Audit process is contained in the *As Built* design pack to be provided and retained by the Overseeing Organisation on final completion.
- 1.12 All problems identified in this Road Safety Audit Report are indicated on a location plan in Appendix A

## 2.0 ITEMS CONSIDERED

- 2.1 The Road Safety Audit was undertaken on the scheme detailed in the following documentation.

| Drawing No. | Rev | Title                         |
|-------------|-----|-------------------------------|
| 1914 001-2  | -   | Site Access Layout            |
| Figure 2    | -   | Swept Path Analysis 10.2m RCV |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |

- 2.2 No departure from standards or other information was submitted to the Audit Team.

### 3.0 MATTERS ARISING FROM THIS STAGE 1 AUDIT.

#### 3.1 PROBLEM

LOCATION: Approach to narrowing.

SUMMARY: Lack of priority indication may lead to conflicts.

There is limited inter-visibility through the narrowing to opposing traffic for vehicles as they approach the narrowing due to the horizontal and vertical alignment of the existing and proposed approach carriageways. This could result in vehicles failing to see an opposing vehicle and result in head to head conflicts within the narrowing.

#### RECOMMENDATION

Make this a priority narrowing so that traffic approaching from the development is required to give-way.

Also remove overgrown vegetation from the footway around the northern side of the narrowing to keep available visibility clear.

#### 3.2 PROBLEM

LOCATION: Proposed crossing over Crabtree Walk to west of crossing.

SUMMARY: Vehicle to pedestrian conflicts.

Vehicles accessing the private driveway to north will overrun the northside of the proposed crossing. This may lead to vehicle to pedestrian conflicts, or to damage to the crossing resulting in trip hazards.

#### RECOMMENDATION

Locate the crossing away from the private driveway, possibly incorporating it with the proposed road narrowing (subject to visibility requirements).

#### 3.3 PROBLEM

LOCATION: Footway around narrowing.

SUMMARY: Narrow footway width.

The Audit Team note that the proposed footway widths in areas around the narrowing appear to be restricted to less than 1.5m. They are also further restricted by existing vegetation growth. This may result in pedestrians being forced into the carriageway in possible conflict with vehicles.

#### RECOMMENDATION

Ensure that sufficient unobstructed footway width is provided.

TECHNICAL NOTE

## 4.0 AUDIT TEAM STATEMENT

4.1 We certify that this audit has been carried out in accordance with GG 119.

### AUDIT TEAM LEADER

Name: R Westhead  
Position: Road Safety Auditor  
The Safety Forum Ltd  
PO Box 831  
Godalming  
Surrey  
GU7 9HT

Signed: 

Date: 27 September 2019

### AUDIT TEAM MEMBER

Name: D Lord  
Position: Road Safety Auditor  
The Safety Forum Ltd  
PO Box 831  
Godalming  
Surrey  
GU7 9HT

Signed: 

Date: 27 September 2019

---

## APPENDIX A: LOCATION PLAN



# Appendix E

Calculation Reference: AUDIT-317901-190918-0953

## TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

|    |                 |        |
|----|-----------------|--------|
| 02 | SOUTH EAST      |        |
|    | BD BEDFORDSHIRE | 1 days |
| 03 | SOUTH WEST      |        |
|    | CW CORNWALL     | 1 days |
|    | DC DORSET       | 1 days |
|    | DV DEVON        | 2 days |
| 09 | NORTH           |        |
|    | DH DURHAM       | 1 days |
| 10 | WALES           |        |
|    | CF CARDIFF      | 1 days |
|    | CP CAERPHILLY   | 1 days |
| 11 | SCOTLAND        |        |
|    | FI FIFE         | 1 days |

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

## Secondary Filtering selection:

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

Parameter: Number of dwellings  
 Actual Range: 29 to 82 (units: )  
 Range Selected by User: 28 to 82 (units: )

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 28/03/17

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

Selected survey days:

|           |        |
|-----------|--------|
| Monday    | 4 days |
| Tuesday   | 3 days |
| Wednesday | 2 days |

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

Selected survey types:

|                       |        |
|-----------------------|--------|
| Manual count          | 9 days |
| Directional ATC Count | 0 days |

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

Selected Locations:

|                                    |   |
|------------------------------------|---|
| Suburban Area (PPS6 Out of Centre) | 9 |
|------------------------------------|---|

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

Selected Location Sub Categories:

|                  |   |
|------------------|---|
| Residential Zone | 8 |
| No Sub Category  | 1 |

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

## Secondary Filtering selection:

### Use Class:

C3 9 days

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

### Population within 1 mile:

|                  |        |
|------------------|--------|
| 1,001 to 5,000   | 2 days |
| 5,001 to 10,000  | 2 days |
| 10,001 to 15,000 | 1 days |
| 25,001 to 50,000 | 4 days |

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

### Population within 5 miles:

|                    |        |
|--------------------|--------|
| 5,001 to 25,000    | 2 days |
| 25,001 to 50,000   | 2 days |
| 75,001 to 100,000  | 1 days |
| 125,001 to 250,000 | 2 days |
| 250,001 to 500,000 | 2 days |

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

### Car ownership within 5 miles:

|            |        |
|------------|--------|
| 0.6 to 1.0 | 4 days |
| 1.1 to 1.5 | 5 days |

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

### Travel Plan:

No 9 days

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

### PTAL Rating:

No PTAL Present 9 days

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

LIST OF SITES relevant to selection parameters

|   |                                                                                                                                                   |                          |  |              |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|--------------|
| 1 | BD-03-A-02<br>RIDDY LANE<br>LUTON                                                                                                                 | SEMI DETACHED            |  | BEDFORDSHIRE |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 82<br>Survey date: TUESDAY 06/07/04<br>Survey Type: MANUAL   |                          |  |              |
| 2 | CF-03-A-03<br>LLANTRISANT ROAD<br>CARDIFF                                                                                                         | DETACHED                 |  | CARDIFF      |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 29<br>Survey date: MONDAY 08/10/07<br>Survey Type: MANUAL    |                          |  |              |
| 3 | CP-03-A-02<br>THE RISE<br>PENGAM                                                                                                                  | SEMI DETACHED            |  | CAERPHILLY   |
|   | Suburban Area (PPS6 Out of Centre)<br>No Sub Category<br>Total Number of dwellings: 41<br>Survey date: MONDAY 05/09/05<br>Survey Type: MANUAL     |                          |  |              |
| 4 | CW-03-A-02<br>BOSVEAN GARDENS<br>TRURO                                                                                                            | SEMI D./DETACHED         |  | CORNWALL     |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 73<br>Survey date: TUESDAY 18/09/07<br>Survey Type: MANUAL   |                          |  |              |
| 5 | DC-03-A-01<br>ISAACS CLOSE<br>POOLE                                                                                                               | DETACHED                 |  | DORSET       |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 51<br>Survey date: WEDNESDAY 16/07/08<br>Survey Type: MANUAL |                          |  |              |
| 6 | DH-03-A-01<br>GREENFIELDS ROAD<br>BISHOP AUCKLAND                                                                                                 | SEMI DETACHED            |  | DURHAM       |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 50<br>Survey date: TUESDAY 28/03/17<br>Survey Type: MANUAL   |                          |  |              |
| 7 | DV-03-A-01<br>BRONSHILL ROAD<br>TORQUAY                                                                                                           | TERRACED HOUSES          |  | DEVON        |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 37<br>Survey date: WEDNESDAY 30/09/15<br>Survey Type: MANUAL |                          |  |              |
| 8 | DV-03-A-03<br>LOWER BRAND LANE<br>HONITON                                                                                                         | TERRACED & SEMI DETACHED |  | DEVON        |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 70<br>Survey date: MONDAY 28/09/15<br>Survey Type: MANUAL    |                          |  |              |
| 9 | FI-03-A-02<br>WAROUT ROAD<br>GLENROTHES                                                                                                           | SEMI DETACHED            |  | FIFE         |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 58<br>Survey date: MONDAY 16/05/05<br>Survey Type: MANUAL    |                          |  |              |

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.073     | 3.079               | 9          | 55          | 0.253     | 10.607              | 9        | 55          | 0.326     | 13.686              |
| 08:00 - 09:00 | 9        | 55          | 0.157     | 6.587               | 9          | 55          | 0.436     | 18.305              | 9        | 55          | 0.593     | 24.892              |
| 09:00 - 10:00 | 9        | 55          | 0.214     | 8.982               | 9          | 55          | 0.222     | 9.324               | 9        | 55          | 0.436     | 18.306              |
| 10:00 - 11:00 | 9        | 55          | 0.165     | 6.929               | 9          | 55          | 0.196     | 8.212               | 9        | 55          | 0.361     | 15.141              |
| 11:00 - 12:00 | 9        | 55          | 0.196     | 8.212               | 9          | 55          | 0.202     | 8.468               | 9        | 55          | 0.398     | 16.680              |
| 12:00 - 13:00 | 9        | 55          | 0.208     | 8.725               | 9          | 55          | 0.183     | 7.699               | 9        | 55          | 0.391     | 16.424              |
| 13:00 - 14:00 | 9        | 55          | 0.185     | 7.784               | 9          | 55          | 0.220     | 9.238               | 9        | 55          | 0.405     | 17.022              |
| 14:00 - 15:00 | 9        | 55          | 0.189     | 7.955               | 9          | 55          | 0.230     | 9.666               | 9        | 55          | 0.419     | 17.621              |
| 15:00 - 16:00 | 9        | 55          | 0.285     | 11.976              | 9          | 55          | 0.185     | 7.784               | 9        | 55          | 0.470     | 19.760              |
| 16:00 - 17:00 | 9        | 55          | 0.336     | 14.114              | 9          | 55          | 0.214     | 8.982               | 9        | 55          | 0.550     | 23.096              |
| 17:00 - 18:00 | 9        | 55          | 0.363     | 15.226              | 9          | 55          | 0.210     | 8.811               | 9        | 55          | 0.573     | 24.037              |
| 18:00 - 19:00 | 9        | 55          | 0.275     | 11.548              | 9          | 55          | 0.177     | 7.442               | 9        | 55          | 0.452     | 18.990              |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 2.646     | 111.117             |            |             | 2.728     | 114.538             |          |             | 5.374     | 225.655             |

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

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

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The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

#### Parameter summary

|                                               |                     |
|-----------------------------------------------|---------------------|
| Trip rate parameter range selected:           | 29 - 82 (units: )   |
| Survey date range:                            | 01/01/00 - 28/03/17 |
| Number of weekdays (Monday-Friday):           | 9                   |
| Number of Saturdays:                          | 0                   |
| Number of Sundays:                            | 0                   |
| Surveys automatically removed from selection: | 0                   |
| Surveys manually removed from selection:      | 0                   |

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

OGVS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 08:00 - 09:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.008     | 0.342               |
| 09:00 - 10:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.006     | 0.257               |
| 10:00 - 11:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 11:00 - 12:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.002     | 0.086               |
| 12:00 - 13:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.004     | 0.172               |
| 13:00 - 14:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.008     | 0.343               |
| 14:00 - 15:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.006     | 0.257               | 9        | 55          | 0.008     | 0.343               |
| 15:00 - 16:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 16:00 - 17:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 17:00 - 18:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 18:00 - 19:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.002     | 0.086               |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 0.020     | 0.857               |            |             | 0.018     | 0.772               |          |             | 0.038     | 1.629               |

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
CYCLISTS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.010     | 0.428               |
| 08:00 - 09:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.006     | 0.257               | 9        | 55          | 0.010     | 0.428               |
| 09:00 - 10:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.004     | 0.171               |
| 10:00 - 11:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.006     | 0.257               |
| 11:00 - 12:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.006     | 0.257               |
| 12:00 - 13:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.014     | 0.599               |
| 13:00 - 14:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.010     | 0.428               |
| 14:00 - 15:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.004     | 0.171               |
| 15:00 - 16:00 | 9        | 55          | 0.016     | 0.684               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.024     | 1.026               |
| 16:00 - 17:00 | 9        | 55          | 0.016     | 0.684               | 9          | 55          | 0.024     | 1.026               | 9        | 55          | 0.040     | 1.710               |
| 17:00 - 18:00 | 9        | 55          | 0.020     | 0.855               | 9          | 55          | 0.018     | 0.770               | 9        | 55          | 0.038     | 1.625               |
| 18:00 - 19:00 | 9        | 55          | 0.018     | 0.770               | 9          | 55          | 0.020     | 0.855               | 9        | 55          | 0.038     | 1.625               |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 0.100     | 4.278               |            |             | 0.104     | 4.447               |          |             | 0.204     | 8.725               |

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

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

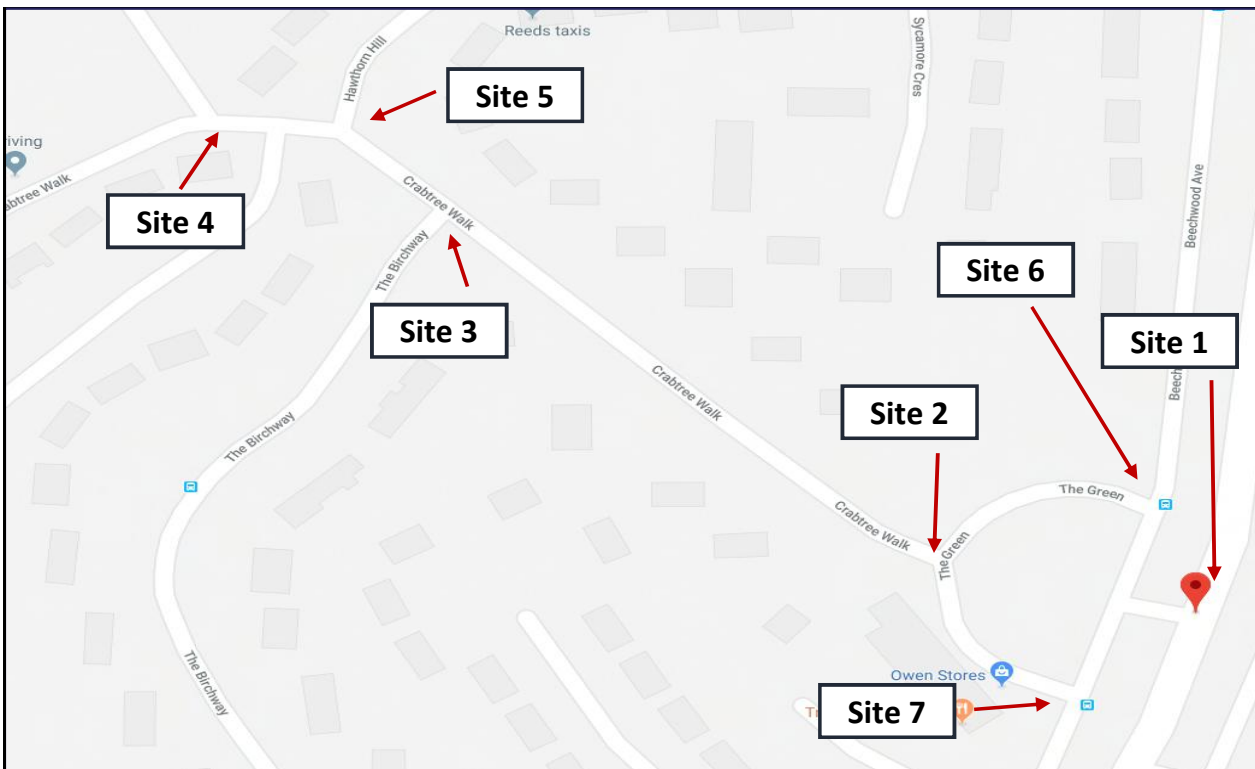
# Appendix C



**Severnside**  
Transportation Data Collection

**Survey Overview**

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
|                    |                                                                 |
| Job Number         | SS96                                                            |
|                    |                                                                 |
| Job Name           | Trefechan ASBRI                                                 |
|                    |                                                                 |
| Date & Time        | Tuesday 16th July 2019 peak times between 0700-1000 & 1600-1900 |
|                    |                                                                 |
| Survey Type        | Camera                                                          |
|                    |                                                                 |
| Weather Conditions |                                                                 |
|                    |                                                                 |



Comments



Tue

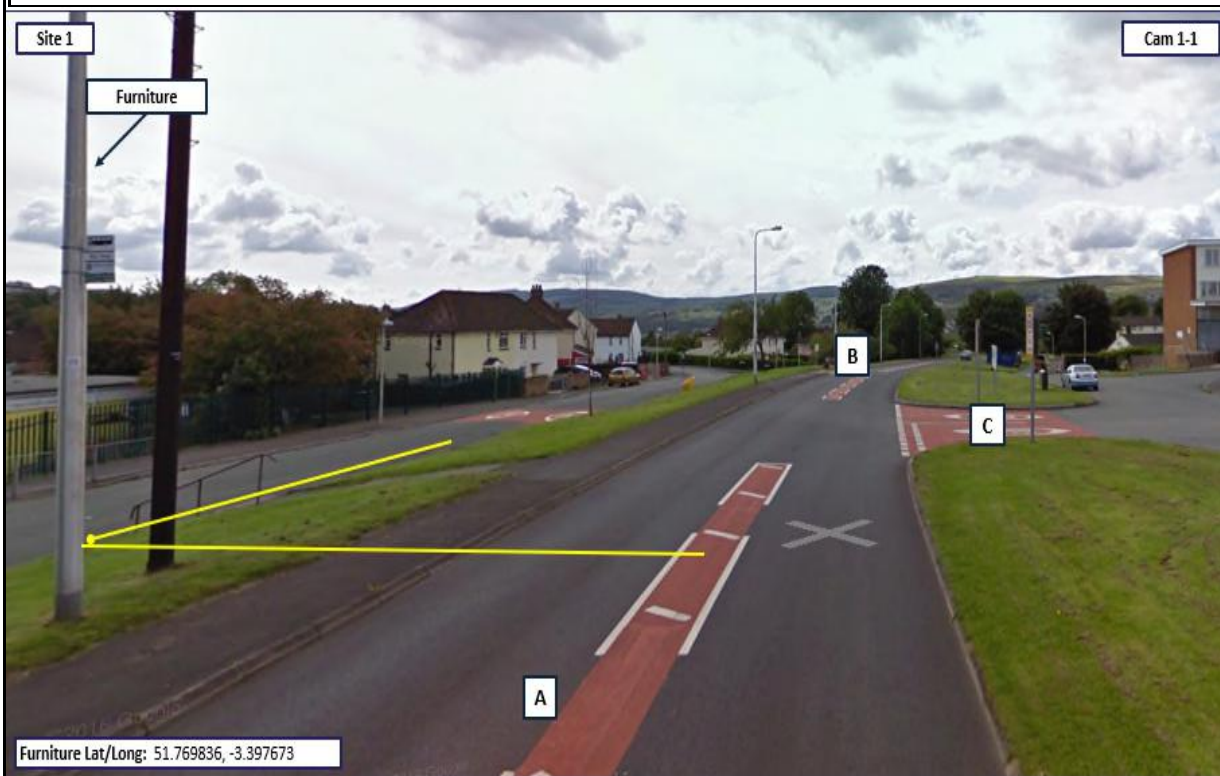
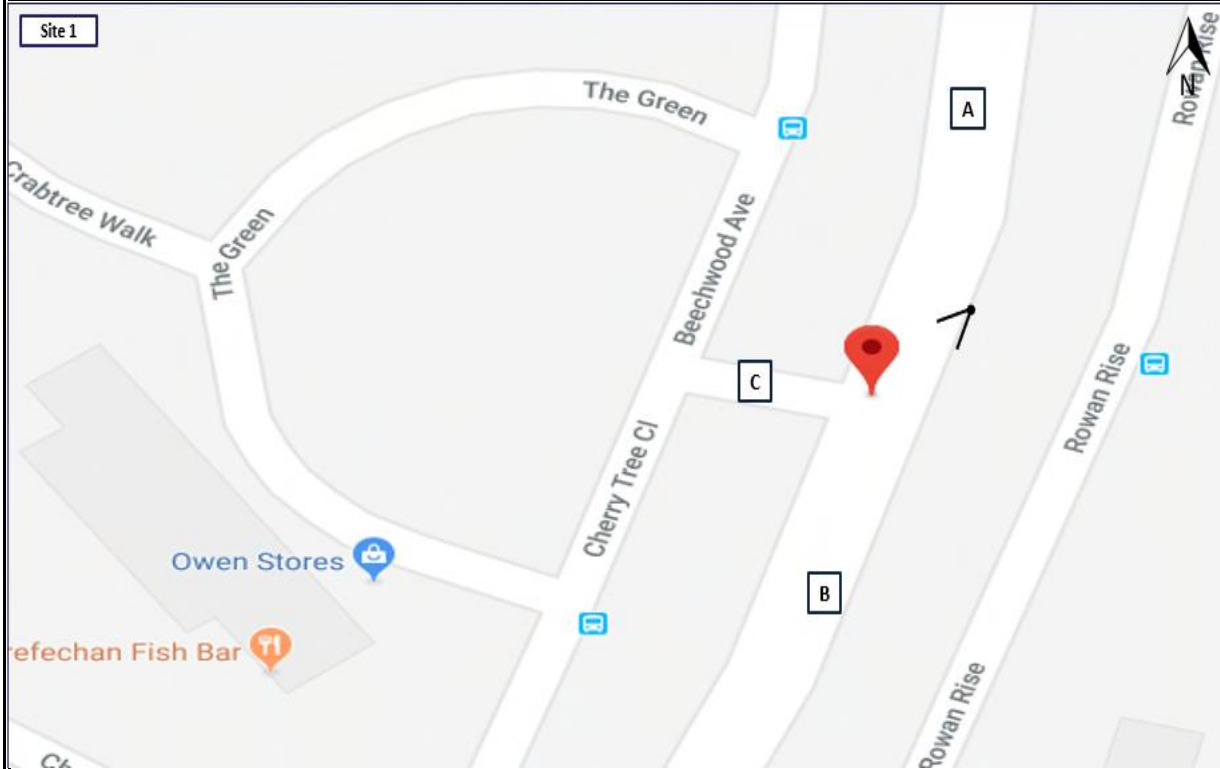
**Severnside**  
Transportation Data Collection

SS96

Trefechan ASBRI

times between 0700-1000 & 1600-1900

### Site 1 - Cam 1-1



Furniture Lat/Long: 51.769836, -3.397673



**Severnside**

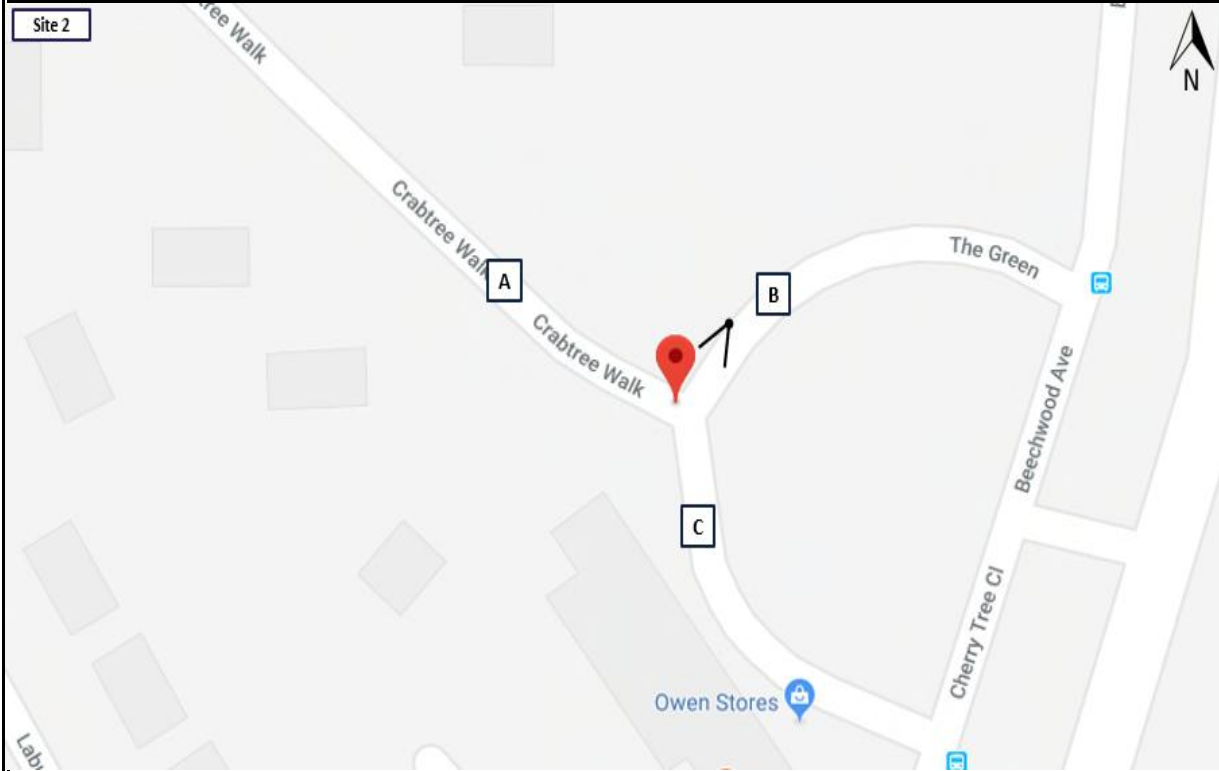
**Transportation Data Collection**

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

### Site 2 - Cam 2-1





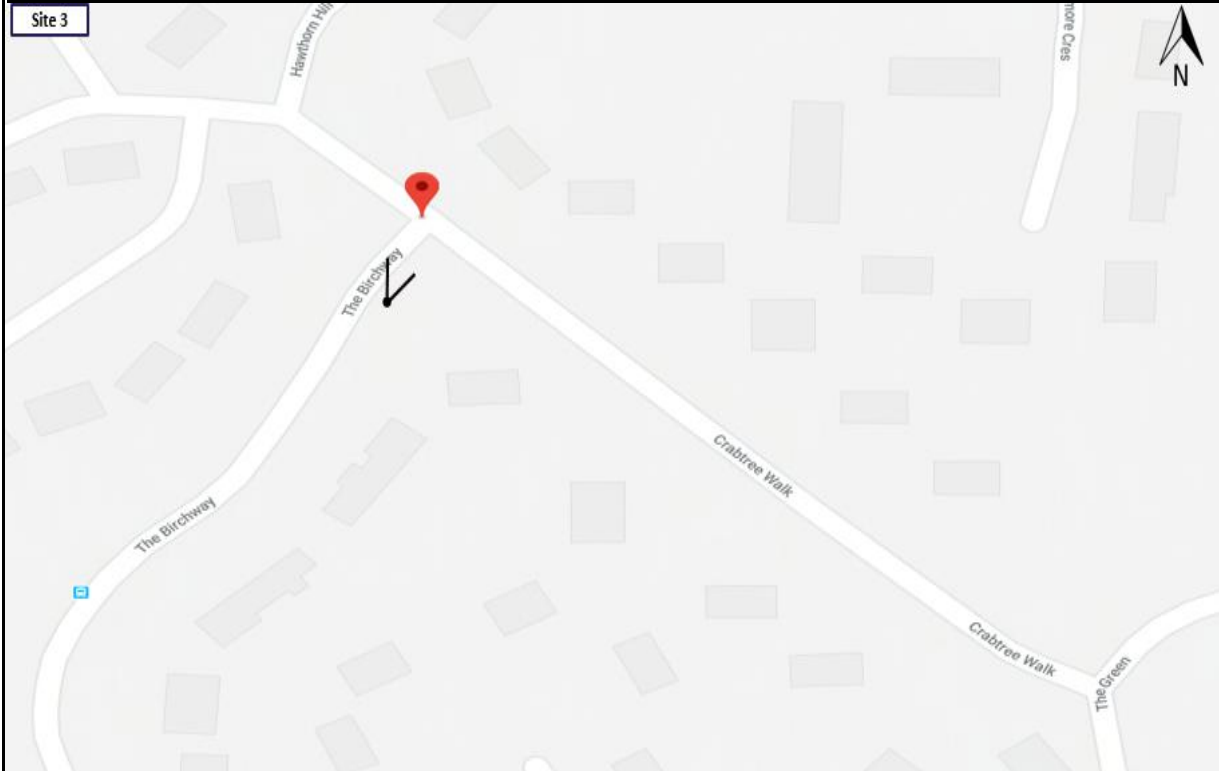
**Severnside**  
**Transportation Data Collection**

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

### Site 3 - Cam 3-1





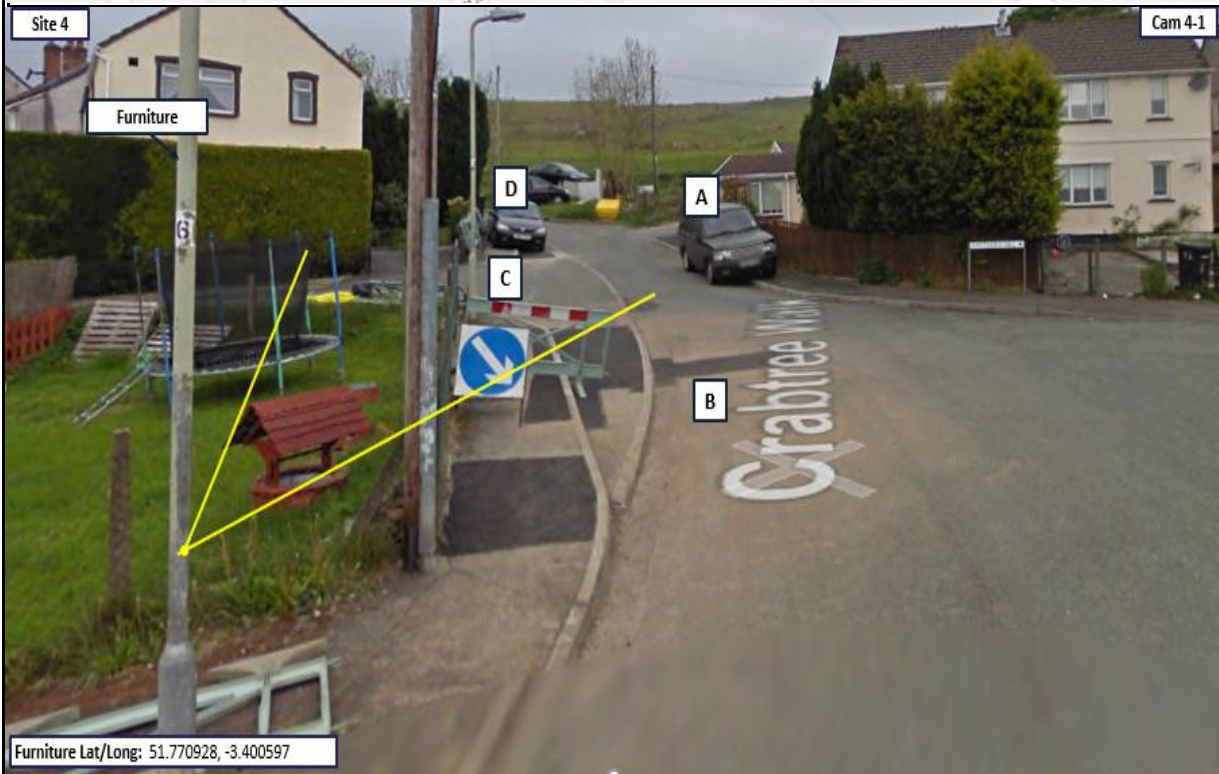
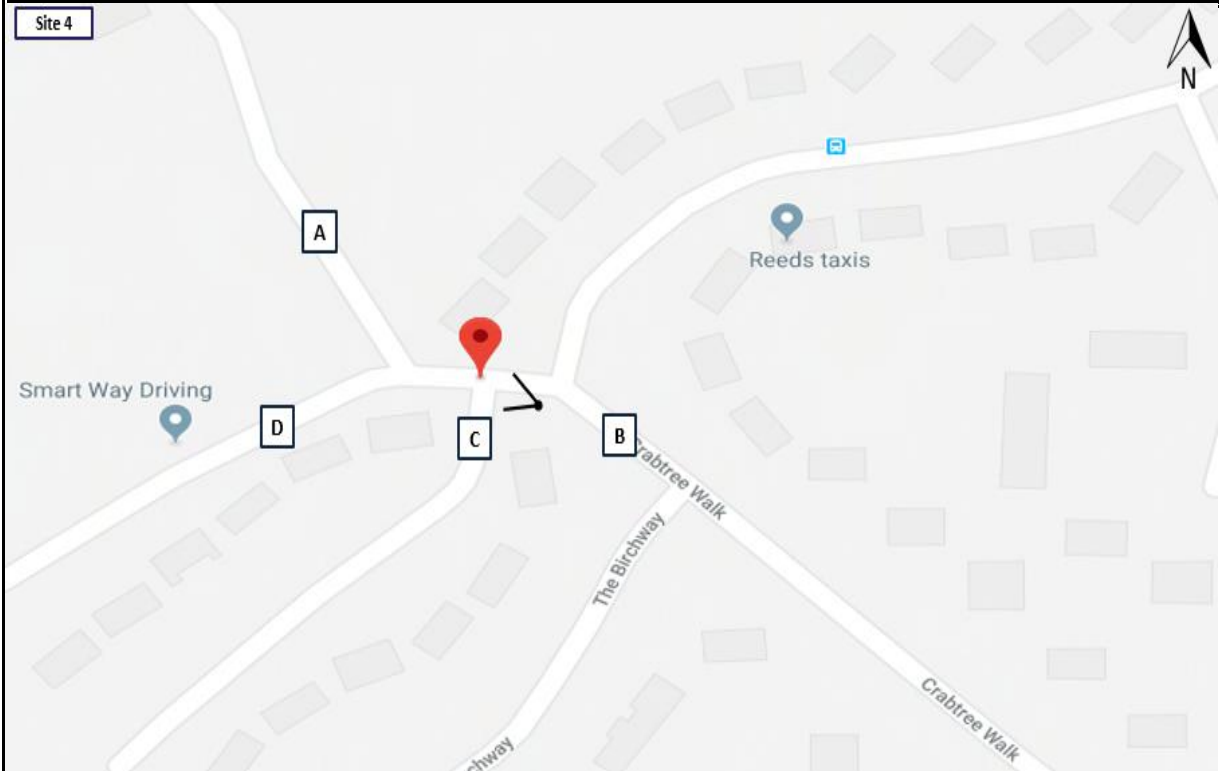
**Severnside**  
**Transportation Data Collection**

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

### Site 4 - Cam 4-1





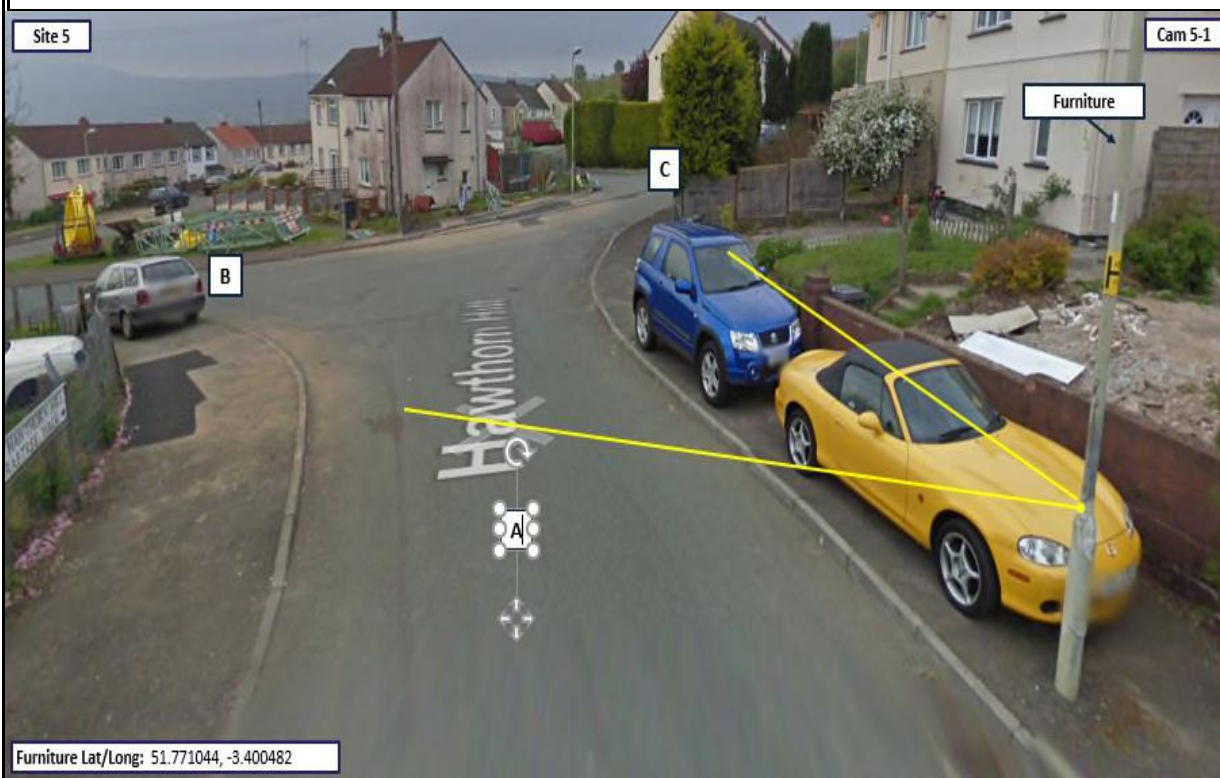
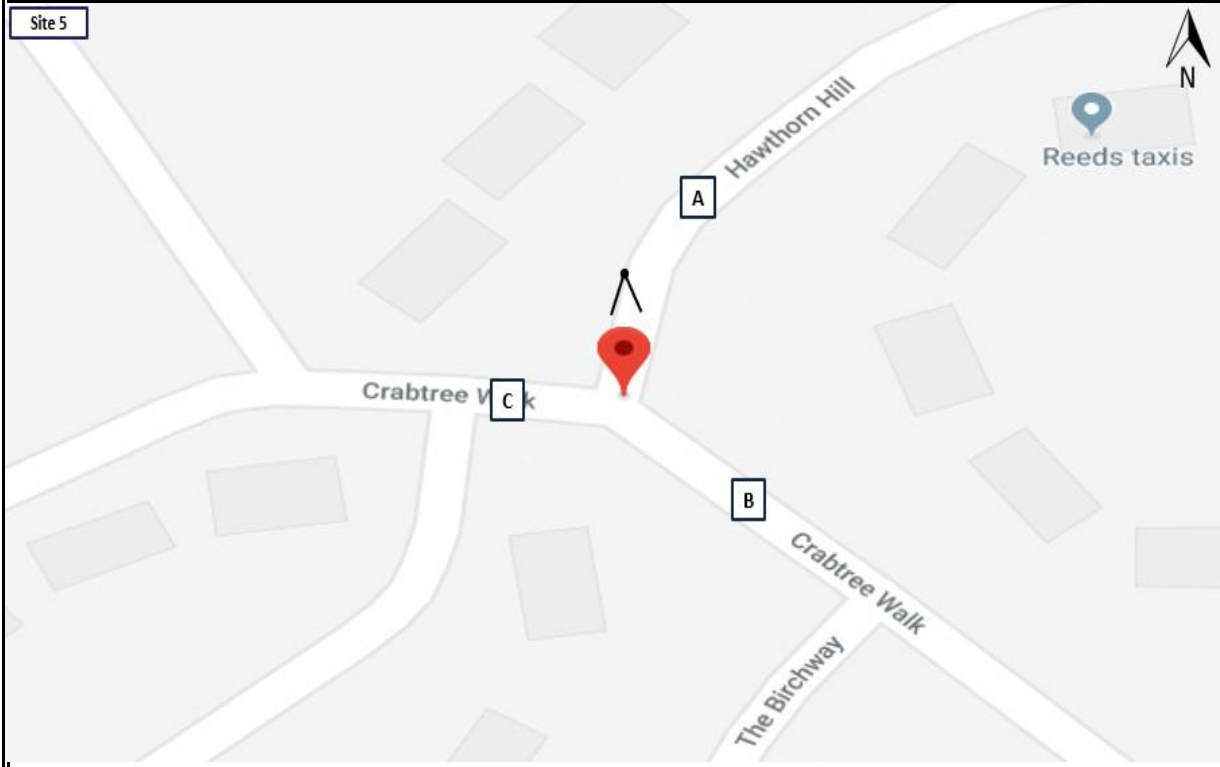
**Severnside**  
Transportation Data Collection

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

### Site 5 - Cam 5-1





**Severnside**  
**Transportation Data Collection**

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

### Site 6 - Cam 6-1



Furniture Lat/Long: 51.770347, -3.397874



**Severnside**  
**Transportation Data Collection**

SS96

Trefechan ASBRI

peak times between 0700-1000 & 1600-1900

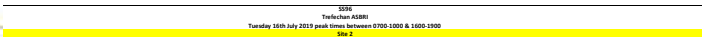
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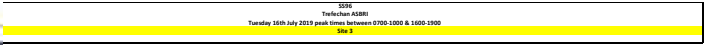


Furniture Lat/Long: 51.769371, -3.397938



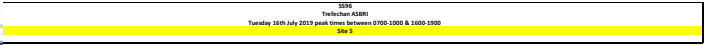


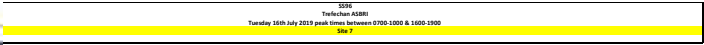
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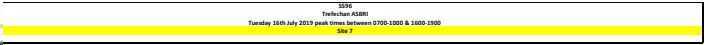


| City | ID | ID2 | ID3 | ID4 | Area A - Area 1 |  |  |  | Area B - Area 2 | Area C - Area 3 | Area D - Area 4 | Area E - Area 5 | Area F - Area 6 | Area G - Area 7 | Area H - Area 8 | Area I - Area 9 | Area J - Area 10 | Area K - Area 11 | Area L - Area 12 | Area M - Area 13 | Area N - Area 14 | Area O - Area 15 | Area P - Area 16 | Area Q - Area 17 | Area R - Area 18 | Area S - Area 19 | Area T - Area 20 | Area U - Area 21 | Area V - Area 22 | Area W - Area 23 | Area X - Area 24 | Area Y - Area 25 | Area Z - Area 26 | Area AA - Area 27 | Area AB - Area 28 | Area AC - Area 29 | Area AD - Area 30 | Area AE - Area 31 | Area AF - Area 32 | Area AG - Area 33 | Area AH - Area 34 | Area AI - Area 35 | Area AJ - Area 36 | Area AK - Area 37 | Area AL - Area 38 | Area AM - Area 39 | Area AN - Area 40 | Area AO - Area 41 | Area AP - Area 42 | Area AQ - Area 43 | Area AR - Area 44 | Area AS - Area 45 | Area AT - Area 46 | Area AU - Area 47 | Area AV - Area 48 | Area AW - Area 49 | Area AX - Area 50 | Area AY - Area 51 | Area AZ - Area 52 | Area BA - Area 53 | Area BB - Area 54 | Area BC - Area 55 | Area BD - Area 56 | Area BE - Area 57 | Area BF - Area 58 | Area BG - Area 59 | Area BH - Area 60 | Area BI - Area 61 | Area BJ - Area 62 | Area BK - Area 63 | Area BL - Area 64 | Area BM - Area 65 | Area BN - Area 66 | Area BO - Area 67 | Area BP - Area 68 | Area BQ - Area 69 | Area BR - Area 70 | Area BS - Area 71 | Area BT - Area 72 | Area BU - Area 73 | Area BV - Area 74 | Area BW - Area 75 | Area BX - Area 76 | Area BY - Area 77 | Area BZ - Area 78 | Area CA - Area 79 | Area CB - Area 80 | Area CC - Area 81 | Area CD - Area 82 | Area CE - Area 83 | Area CF - Area 84 | Area CG - Area 85 | Area CH - Area 86 | Area CI - Area 87 | Area CJ - Area 88 | Area CK - Area 89 | Area CL - Area 90 | Area CM - Area 91 | Area CN - Area 92 | Area CO - Area 93 | Area CP - Area 94 | Area CQ - Area 95 | Area CR - Area 96 | Area CS - Area 97 | Area CT - Area 98 | Area CU - Area 99 | Area CV - Area 100 | Area CW - Area 101 | Area CX - Area 102 | Area CY - Area 103 | Area CZ - Area 104 | Area DA - Area 105 | Area DB - Area 106 | Area DC - Area 107 | Area DD - Area 108 | Area DE - Area 109 | Area DF - Area 110 | Area DG - Area 111 | Area DH - Area 112 | Area DI - Area 113 | Area DJ - Area 114 | Area DK - Area 115 | Area DL - Area 116 | Area DM - Area 117 | Area DN - Area 118 | Area DO - Area 119 | Area DP - Area 120 | Area DQ - Area 121 | Area DR - Area 122 | Area DS - Area 123 | Area DT - Area 124 | Area DU - Area 125 | Area DV - Area 126 | Area DW - Area 127 | Area DX - Area 128 | Area DY - Area 129 | Area DZ - Area 130 | Area EA - Area 131 | Area EB - Area 132 | Area EC - Area 133 | Area ED - Area 134 | Area EE - Area 135 | Area EF - Area 136 | Area EG - Area 137 | Area EH - Area 138 | Area EI - Area 139 | Area EJ - Area 140 | Area EK - Area 141 | Area EL - Area 142 | Area EM - Area 143 | Area EN - Area 144 | Area EO - Area 145 | Area EP - Area 146 | Area EQ - Area 147 | Area ER - Area 148 | Area ES - Area 149 | Area ET - Area 150 | Area EU - Area 151 | Area EV - Area 152 | Area EW - Area 153 | Area EX - Area 154 | Area EY - Area 155 | Area EZ - Area 156 | Area FA - Area 157 | Area FB - Area 158 | Area FC - Area 159 | Area FD - Area 160 | Area FE - Area 161 | Area FF - Area 162 | Area FG - Area 163 | Area FH - Area 164 | Area FI - Area 165 | Area FJ - Area 166 | Area FK - Area 167 | Area FL - Area 168 | Area FM - Area 169 | Area FN - Area 170 | Area FO - Area 171 | Area FP - Area 172 | Area FQ - Area 173 | Area FR - Area 174 | Area FS - Area 175 | Area FT - Area 176 |
|------|----|-----|-----|-----|-----------------|--|--|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
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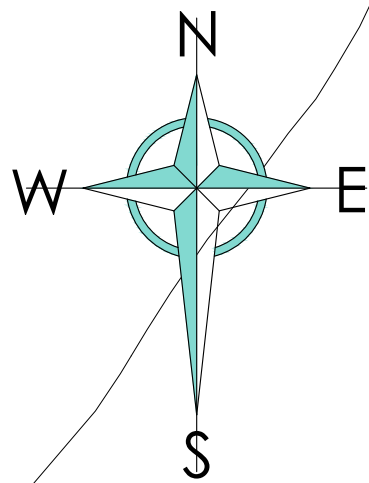
[illegible]

[illegible]

[illegible]

# Appendix D

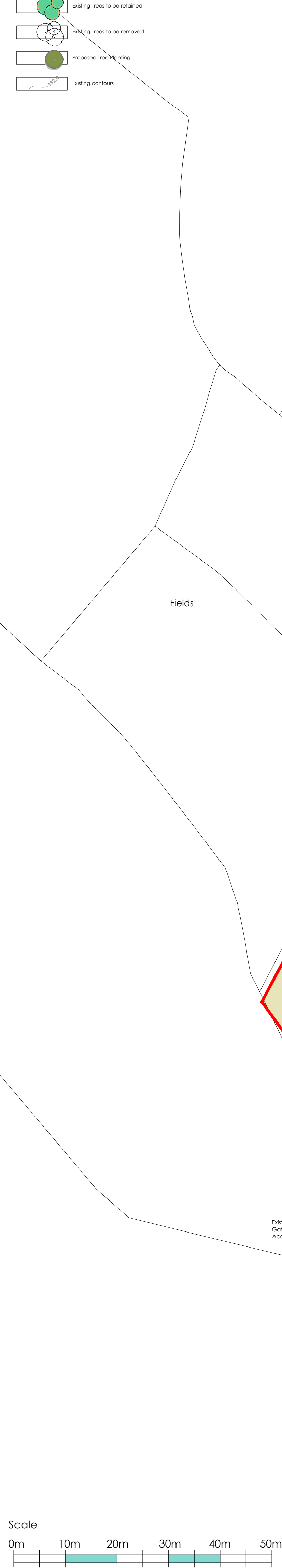
CRABTREE WALK, TREFECHAN, MERTHYR TYDFIL.



**KEY**

- Site Boundary
- Black paved, private drive, Marshalls Regio 120 gauge, traditional colour or similar approved.
- Permeable Paving, shared surface, Marshalls or similar approved.
- 1.8m High Closeboard Timber Fence
- 1.8m High Black Screen wall (to match main house brick)
- 1.8m Weld Fence - Green
- 1.8m High Closeboard Gate
- Plot Number
- Parking Space Number
- Side Aspect House Type
- Bin Collection Point
- Existing Trees to be retained
- Existing Trees to be removed
- Proposed Tree Planting
- Existing contours

| Schedule of Accommodation |             |            |     |
|---------------------------|-------------|------------|-----|
| House Type                | Description | Floor Area | No. |
| Open Market               |             |            |     |
| Oxwich                    | 4B Detached | 1321       | 9   |
| Windsor                   | 4B Detached | 1489       | 5   |
| Ashford                   | 4B Detached | 1395       | 3   |
| Llangenith                | 4B Detached | 1205       | 3   |
| Laugharne                 | 4B Detached | 1205       | 5   |
| Mewslade                  | 4B Detached | 1192       | 1   |
| Aberaeron                 | 3B Detached | 1160       | 1   |
| Whitland                  | 3B Detached | 945        | 4   |
| Pembroke                  | 3B Det/Semi | 805        | 4   |
| Tenby                     | 4B Detached | 1144       | 7   |
| Caswell                   | 4B Detached | 1741       | 3   |
| TOTAL                     |             |            | 45  |



Revision

Date

Amendment

Initials

20

thinkurban

Quest House  
51 Mellons Business Park  
Fortran Road  
Cardiff CF3 0EY

Project Title

CRABTREE WALK,  
TREFECHAN, MERTHYR TYDFIL.

Drawing Title

PLANNING LAYOUT

Scale

1:500 @ A1

Date

30.10.19

Drawn by

SC

Status

TREF-15-04-02

Revision

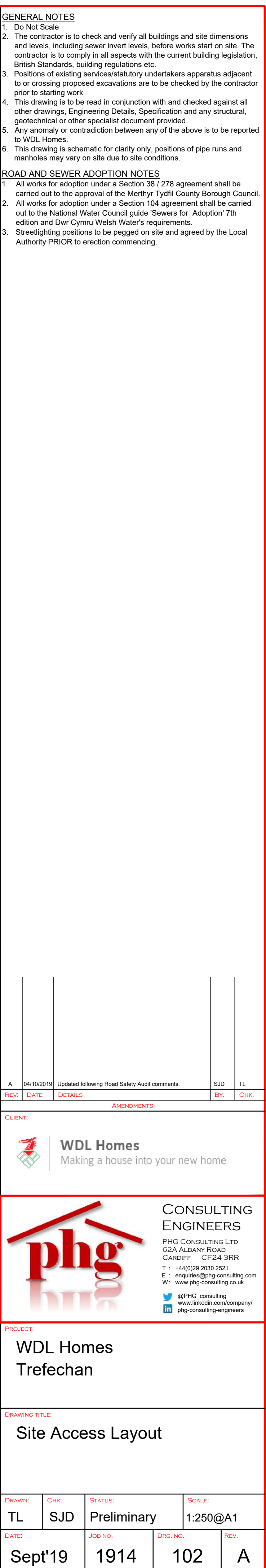
/

Do NOT use of this drawing. Check dimensions before use and notify Think Urban Design Ltd. of any alterations necessary. Contractors, subcontractors and suppliers must verify all dimensions supplied on the drawings and on site before commencing work. Check the contents of this drawing and any related information before ordering materials. © Think Urban Design Ltd.

W.D.L. Homes Limited

STUART QUARRY, FENDERYN,  
ABERDARE, RHONDA CYNON TAFF.  
CF44 9JT  
Telephone 01485 811975  
Fax 01485 814324  
www.wdlhomes.co.uk

# Appendix E



| GENERAL NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                               |          |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------|----------|-----|
| 1. Do Not Scale                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                               |          |     |
| 2. The contractor is to check and verify all buildings and site dimensions and levels, including sewer invert levels, before works start on site. The contractor is to comply in all aspects with the current building legislation, British Standards, building regulations etc.                                                                                                                                                                                   |            |                                               |          |     |
| 3. Positions of existing services/statutory undertakers apparatus adjacent to or crossing proposed excavations are to be checked by the contractor prior to starting work                                                                                                                                                                                                                                                                                          |            |                                               |          |     |
| 4. This drawing is to be read in conjunction with and checked against all other drawings, Engineering Details, Specification and any structural, geotechnical or other specialist document provided.                                                                                                                                                                                                                                                               |            |                                               |          |     |
| 5. Any anomaly or contradiction between any of the above is to be reported to WDL Homes.                                                                                                                                                                                                                                                                                                                                                                           |            |                                               |          |     |
| 6. This drawing is schematic for clarity only, positions of pipe runs and manholes may vary on site due to site conditions.                                                                                                                                                                                                                                                                                                                                        |            |                                               |          |     |
| ROAD AND SEWER ADOPTION NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                               |          |     |
| 1. All works for adoption under a Section 38/278 agreement shall be carried out to the approval of the Merthyr Tydfil County Borough Council.                                                                                                                                                                                                                                                                                                                      |            |                                               |          |     |
| 2. All works for adoption under a Section 104 agreement shall be carried out to the National Water Council guide 'Sewers for Adoption' 7th edition and Dwr Cymru Welsh Water's requirements.                                                                                                                                                                                                                                                                       |            |                                               |          |     |
| 3. Streetlighting positions to be pegged on site and agreed by the Local Authority PRIOR to erection commencing.                                                                                                                                                                                                                                                                                                                                                   |            |                                               |          |     |
| AMENDMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |                                               |          |     |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 04/10/2019 | Updated following Road Safety Audit comments. |          | SJD |
| REV                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DATE       | DETAILS                                       | BY       | CHK |
| CLIENT:                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |                                               |          |     |
| <div style="display: flex; align-items: center;"> <div> <p><b>WDL Homes</b></p> <p>Making a house into your new home</p> </div> </div>                                                                                                                                                                                                                                                                                                                             |            |                                               |          |     |
| <div style="display: flex; align-items: center; justify-content: space-between;"> <div style="text-align: center;"> </div> <div style="text-align: right;"> <p><b>CONSULTING ENGINEERS</b></p> <p>PHG CONSULTING LTD<br/>62A ALBANY ROAD<br/>CARDIFF CF24 3RR</p> <p>T : +44(0)29 2030 2521<br/>E : enquiries@phg-consulting.com<br/>W : www.phg-consulting.co.uk</p> <p> @PHG_consulting<br/> www.linkedin.com/company/phg-consulting-engineers</p> </div> </div> |            |                                               |          |     |
| PROJECT:                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |                                               |          |     |
| <p style="font-size: 24px; margin: 0;">WDL Homes</p> <p style="font-size: 24px; margin: 0;">Trefechan</p>                                                                                                                                                                                                                                                                                                                                                          |            |                                               |          |     |
| DRAWING TITLE:                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                               |          |     |
| <p style="font-size: 24px; margin: 0;">Site Access Layout</p>                                                                                                                                                                                                                                                                                                                                                                                                      |            |                                               |          |     |
| DRAWN                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CHK        | STATUS                                        | SCALE    |     |
| TL                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SJD        | Preliminary                                   | 1:250@A1 |     |
| DATE:                                                                                                                                                                                                                                                                                                                                                                                                                                                              | JOB NO.    | DRG. NO.                                      | REV.     |     |
| Sept'19                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1914       | 102                                           | A        |     |

# Appendix F



# **CRABTREE WALK, TREFECHAN, MERTHYR TYDFIL**

## **PROPOSED RESIDENTIAL DEVELOPMENT ACCESS ARRANGEMENTS**

### **Stage 1 Road Safety Audit**

**September 2019**

**RDW-DL-19-2057-RSA1**

| Revision Status      | Prepared by:<br>(Name) | Checked by:<br>(Name) | Approved by:<br>(Signature)                                                        | Date Approved: |
|----------------------|------------------------|-----------------------|------------------------------------------------------------------------------------|----------------|
| Original             | R Westhead             | D Lord                |  | 27/09/19       |
| Designer's Response  |                        |                       |                                                                                    |                |
| Authority's Response |                        |                       |                                                                                    |                |
| Audit Response       |                        |                       |                                                                                    |                |

| <b>Client:</b>                                                |                                              |
|---------------------------------------------------------------|----------------------------------------------|
| Asbri Transport Ltd                                           | The Safety Forum Ltd                         |
| Suite D<br>1st Floor<br>220 High Street<br>Swansea<br>SA1 1NW | PO Box 831<br>Godalming<br>Surrey<br>GU7 9HT |
| Date: 27/09/19                                                |                                              |

## APPENDIX A Location Plan

## 1.0 INTRODUCTION

- 1.1 This report results from a Stage 1 Road Safety Audit (RSA) carried out on the proposed access arrangements, and highway improvements associated with a 42 unit residential development off Crabtree Walk, Trefechan, Merthyr Tydfil.
- 1.2 The highway proposals include: realignment of an existing private access road to provide access to the new residential development; providing priority to the proposed development access road with a new and realigned priority junction between Crabtree Walk to the southwest, and the development access; a narrowing on Crabtree Walk east of the development. The development is forecast to generate approximately 25 peak hour vehicle trips which will all access the wider highway network via Crabtree Walk.
- 1.3 The Stage 1 RSA was carried out at the request of Asbri Transport Ltd.
- 1.4 No formal RSA Brief was provided, with instruction given within email correspondence on 25<sup>th</sup> September 2019.
- 1.5 The Audit was carried out on 25<sup>th</sup> September 2019 by consultants working on behalf of The Safety Forum Limited. The Audit Team, which is established from The Safety Forum Ltd and independent of the project design team, has had no involvement with the project.

The Auditors were:

R Westhead – Team Leader (MSoRSA, RSA Certificate of Competency)

D Lord – Team Member (IEng, FIHE, RSA Certificate of Competency)

- 1.6 The report has been prepared in accordance with General Principles and Scheme Governance General Information, GG 119, Road Safety Audit (Formerly HD 19/15).
- 1.7 The Audit consisted of a desktop study and a site visit. The site visit was carried out on 25<sup>th</sup> September 2019, between 12:30 and 13:00 hours by all member of the Audit Team together. The weather was dry and sunny and the road surface was dry. Traffic conditions were quiet.
- 1.8 Issues relating to the health & safety of operatives constructing, operating or maintaining the highway are not covered by Road Safety Audit. Only issues relating to the design and construction of facilities for highway maintenance that may potentially contribute to a Road Safety Matter are considered by the Road Safety Audit process.

Road Safety Audit is not a technical check that the design conforms to Standards and/or best practice guidance. Design Organisations are responsible for ensuring that their designs have been subjected to the appropriate design reviews (including, where applicable, Walking, Cycling & Horse Riding Assessment & Review) prior to Road Safety Audit.

Road Safety Audit is not a check that the scheme has been constructed in accordance with the design.

Whilst reference is made to certain design standards, where safety may be compromised by a reduction in standard, this report is not intended to provide a design check. The Auditors have only reported on matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme or the appropriateness of the design. Consequently, the Auditors accept no responsibility for the design or construction of the scheme.

- 1.9 The recommendations in this report are aimed at addressing the road safety problems; however there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities.
- 1.10 The Auditors would be pleased to discuss the acceptability of alternative solutions to problems identified during the Audit, and would encourage the Designer to consult them on this matter.
- 1.11 The Overseeing Organisation response to the RSA should be formally recorded and reported to the Designer and the RSA Team so that a record of the Audit process is contained in the *As Built* design pack to be provided and retained by the Overseeing Organisation on final completion.
- 1.12 All problems identified in this Road Safety Audit Report are indicated on a location plan in Appendix A

## 2.0 ITEMS CONSIDERED

- 2.1 The Road Safety Audit was undertaken on the scheme detailed in the following documentation.

| Drawing No. | Rev | Title                         |
|-------------|-----|-------------------------------|
| 1914 001-2  | -   | Site Access Layout            |
| Figure 2    | -   | Swept Path Analysis 10.2m RCV |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |
|             |     |                               |

- 2.2 No departure from standards or other information was submitted to the Audit Team.

---

### **3.0 MATTERS ARISING FROM THIS STAGE 1 AUDIT.**

#### **3.1 PROBLEM**

LOCATION: Approach to narrowing.

SUMMARY: Lack of priority indication may lead to conflicts.

There is limited inter-visibility through the narrowing to opposing traffic for vehicles as they approach the narrowing due to the horizontal and vertical alignment of the existing and proposed approach carriageways. This could result in vehicles failing to see an opposing vehicle and result in head to head conflicts within the narrowing.

#### **RECOMMENDATION**

Make this a priority narrowing so that traffic approaching from the development is required to give-way.

Also remove overgrown vegetation from the footway around the northern side of the narrowing to keep available visibility clear.

#### **3.2 PROBLEM**

LOCATION: Proposed crossing over Crabtree Walk to west of crossing.

SUMMARY: Vehicle to pedestrian conflicts.

Vehicles accessing the private driveway to north will overrun the northside of the proposed crossing. This may lead to vehicle to pedestrian conflicts, or to damage to the crossing resulting in trip hazards.

#### **RECOMMENDATION**

Locate the crossing away from the private driveway, possibly incorporating it with the proposed road narrowing (subject to visibility requirements).

#### **3.3 PROBLEM**

LOCATION: Footway around narrowing.

SUMMARY: Narrow footway width.

The Audit Team note that the proposed footway widths in areas around the narrowing appear to be restricted to less than 1.5m. They are also further restricted by existing vegetation growth. This may result in pedestrians being forced into the carriageway in possible conflict with vehicles.

## RECOMMENDATION

Ensure that sufficient unobstructed footway width is provided.

---

## 4.0 AUDIT TEAM STATEMENT

4.1 We certify that this audit has been carried out in accordance with GG 119.

### AUDIT TEAM LEADER

Name: R Westhead  
Position: Road Safety Auditor  
The Safety Forum Ltd  
PO Box 831  
Godalming  
Surrey  
GU7 9HT

Signed: 

Date: 27 September 2019

### AUDIT TEAM MEMBER

Name: D Lord  
Position: Road Safety Auditor  
The Safety Forum Ltd  
PO Box 831  
Godalming  
Surrey  
GU7 9HT

Signed: 

Date: 27 September 2019

## APPENDIX A: LOCATION PLAN



# Appendix G



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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# Appendix H

Calculation Reference: AUDIT-317901-190918-0953

# TRIP RATE CALCULATION SELECTION PARAMETERS:

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

## Selected regions and areas:

|    |                 |        |
|----|-----------------|--------|
| 02 | SOUTH EAST      |        |
|    | BD BEDFORDSHIRE | 1 days |
| 03 | SOUTH WEST      |        |
|    | CW CORNWALL     | 1 days |
|    | DC DORSET       | 1 days |
|    | DV DEVON        | 2 days |
| 09 | NORTH           |        |
|    | DH DURHAM       | 1 days |
| 10 | WALES           |        |
|    | CF CARDIFF      | 1 days |
|    | CP CAERPHILLY   | 1 days |
| 11 | SCOTLAND        |        |
|    | FI FIFE         | 1 days |

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

## Secondary Filtering selection:

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

Parameter: Number of dwellings  
Actual Range: 29 to 82 (units: )  
Range Selected by User: 28 to 82 (units: )

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

## Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 28/03/17

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

## Selected survey days:

|           |        |
|-----------|--------|
| Monday    | 4 days |
| Tuesday   | 3 days |
| Wednesday | 2 days |

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

## Selected survey types:

|                       |        |
|-----------------------|--------|
| Manual count          | 9 days |
| Directional ATC Count | 0 days |

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

## Selected Locations:

|                                    |   |
|------------------------------------|---|
| Suburban Area (PPS6 Out of Centre) | 9 |
|------------------------------------|---|

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

## Selected Location Sub Categories:

|                  |   |
|------------------|---|
| Residential Zone | 8 |
| No Sub Category  | 1 |

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

Secondary Filtering selection:

Use Class:

C3 9 days

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

Population within 1 mile:

|                  |        |
|------------------|--------|
| 1,001 to 5,000   | 2 days |
| 5,001 to 10,000  | 2 days |
| 10,001 to 15,000 | 1 days |
| 25,001 to 50,000 | 4 days |

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

Population within 5 miles:

|                    |        |
|--------------------|--------|
| 5,001 to 25,000    | 2 days |
| 25,001 to 50,000   | 2 days |
| 75,001 to 100,000  | 1 days |
| 125,001 to 250,000 | 2 days |
| 250,001 to 500,000 | 2 days |

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

Car ownership within 5 miles:

|            |        |
|------------|--------|
| 0.6 to 1.0 | 4 days |
| 1.1 to 1.5 | 5 days |

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

Travel Plan:

No 9 days

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

PTAL Rating:

No PTAL Present 9 days

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

LIST OF SITES relevant to selection parameters

|   |                                                                                                                                                   |                          |  |              |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|--------------|
| 1 | BD-03-A-02<br>RIDDY LANE<br>LUTON                                                                                                                 | SEMI DETACHED            |  | BEDFORDSHIRE |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 82<br>Survey date: TUESDAY 06/07/04<br>Survey Type: MANUAL   |                          |  |              |
| 2 | CF-03-A-03<br>LLANTRISANT ROAD<br>CARDIFF                                                                                                         | DETACHED                 |  | CARDIFF      |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 29<br>Survey date: MONDAY 08/10/07<br>Survey Type: MANUAL    |                          |  |              |
| 3 | CP-03-A-02<br>THE RISE<br>PENGAM                                                                                                                  | SEMI DETACHED            |  | CAERPHILLY   |
|   | Suburban Area (PPS6 Out of Centre)<br>No Sub Category<br>Total Number of dwellings: 41<br>Survey date: MONDAY 05/09/05<br>Survey Type: MANUAL     |                          |  |              |
| 4 | CW-03-A-02<br>BOSVEAN GARDENS<br>TRURO                                                                                                            | SEMI D./DETACHED         |  | CORNWALL     |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 73<br>Survey date: TUESDAY 18/09/07<br>Survey Type: MANUAL   |                          |  |              |
| 5 | DC-03-A-01<br>ISAACS CLOSE<br>POOLE                                                                                                               | DETACHED                 |  | DORSET       |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 51<br>Survey date: WEDNESDAY 16/07/08<br>Survey Type: MANUAL |                          |  |              |
| 6 | DH-03-A-01<br>GREENFIELDS ROAD<br>BISHOP AUCKLAND                                                                                                 | SEMI DETACHED            |  | DURHAM       |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 50<br>Survey date: TUESDAY 28/03/17<br>Survey Type: MANUAL   |                          |  |              |
| 7 | DV-03-A-01<br>BRONSHILL ROAD<br>TORQUAY                                                                                                           | TERRACED HOUSES          |  | DEVON        |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 37<br>Survey date: WEDNESDAY 30/09/15<br>Survey Type: MANUAL |                          |  |              |
| 8 | DV-03-A-03<br>LOWER BRAND LANE<br>HONITON                                                                                                         | TERRACED & SEMI DETACHED |  | DEVON        |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 70<br>Survey date: MONDAY 28/09/15<br>Survey Type: MANUAL    |                          |  |              |
| 9 | FI-03-A-02<br>WAROUT ROAD<br>GLENROTHES                                                                                                           | SEMI DETACHED            |  | FIFE         |
|   | Suburban Area (PPS6 Out of Centre)<br>Residential Zone<br>Total Number of dwellings: 58<br>Survey date: MONDAY 16/05/05<br>Survey Type: MANUAL    |                          |  |              |

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
VEHICLES

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.073     | 3.079               | 9          | 55          | 0.253     | 10.607              | 9        | 55          | 0.326     | 13.686              |
| 08:00 - 09:00 | 9        | 55          | 0.157     | 6.587               | 9          | 55          | 0.436     | 18.305              | 9        | 55          | 0.593     | 24.892              |
| 09:00 - 10:00 | 9        | 55          | 0.214     | 8.982               | 9          | 55          | 0.222     | 9.324               | 9        | 55          | 0.436     | 18.306              |
| 10:00 - 11:00 | 9        | 55          | 0.165     | 6.929               | 9          | 55          | 0.196     | 8.212               | 9        | 55          | 0.361     | 15.141              |
| 11:00 - 12:00 | 9        | 55          | 0.196     | 8.212               | 9          | 55          | 0.202     | 8.468               | 9        | 55          | 0.398     | 16.680              |
| 12:00 - 13:00 | 9        | 55          | 0.208     | 8.725               | 9          | 55          | 0.183     | 7.699               | 9        | 55          | 0.391     | 16.424              |
| 13:00 - 14:00 | 9        | 55          | 0.185     | 7.784               | 9          | 55          | 0.220     | 9.238               | 9        | 55          | 0.405     | 17.022              |
| 14:00 - 15:00 | 9        | 55          | 0.189     | 7.955               | 9          | 55          | 0.230     | 9.666               | 9        | 55          | 0.419     | 17.621              |
| 15:00 - 16:00 | 9        | 55          | 0.285     | 11.976              | 9          | 55          | 0.185     | 7.784               | 9        | 55          | 0.470     | 19.760              |
| 16:00 - 17:00 | 9        | 55          | 0.336     | 14.114              | 9          | 55          | 0.214     | 8.982               | 9        | 55          | 0.550     | 23.096              |
| 17:00 - 18:00 | 9        | 55          | 0.363     | 15.226              | 9          | 55          | 0.210     | 8.811               | 9        | 55          | 0.573     | 24.037              |
| 18:00 - 19:00 | 9        | 55          | 0.275     | 11.548              | 9          | 55          | 0.177     | 7.442               | 9        | 55          | 0.452     | 18.990              |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 2.646     | 111.117             |            |             | 2.728     | 114.538             |          |             | 5.374     | 225.655             |

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

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

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#### Parameter summary

|                                               |                     |
|-----------------------------------------------|---------------------|
| Trip rate parameter range selected:           | 29 - 82 (units: )   |
| Survey date date range:                       | 01/01/00 - 28/03/17 |
| Number of weekdays (Monday-Friday):           | 9                   |
| Number of Saturdays:                          | 0                   |
| Number of Sundays:                            | 0                   |
| Surveys automatically removed from selection: | 0                   |
| Surveys manually removed from selection:      | 0                   |

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
OGVS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 08:00 - 09:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.008     | 0.342               |
| 09:00 - 10:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.006     | 0.257               |
| 10:00 - 11:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 11:00 - 12:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.002     | 0.086               |
| 12:00 - 13:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.004     | 0.172               |
| 13:00 - 14:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.008     | 0.343               |
| 14:00 - 15:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.006     | 0.257               | 9        | 55          | 0.008     | 0.343               |
| 15:00 - 16:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 16:00 - 17:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 17:00 - 18:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.000     | 0.000               |
| 18:00 - 19:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.002     | 0.086               | 9        | 55          | 0.002     | 0.086               |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 0.020     | 0.857               |            |             | 0.018     | 0.772               |          |             | 0.038     | 1.629               |

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED  
CYCLISTS

Calculation factor: 1 DWELLS

Estimated TRIP rate value per 42 DWELLS shown in shaded columns

BOLD print indicates peak (busiest) period

| Time Range    | ARRIVALS |             |           |                     | DEPARTURES |             |           |                     | TOTALS   |             |           |                     |
|---------------|----------|-------------|-----------|---------------------|------------|-------------|-----------|---------------------|----------|-------------|-----------|---------------------|
|               | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days   | Ave. DWELLS | Trip Rate | Estimated Trip Rate | No. Days | Ave. DWELLS | Trip Rate | Estimated Trip Rate |
| 00:00 - 01:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 01:00 - 02:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 02:00 - 03:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 03:00 - 04:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 04:00 - 05:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 05:00 - 06:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 06:00 - 07:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 07:00 - 08:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.010     | 0.428               |
| 08:00 - 09:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.006     | 0.257               | 9        | 55          | 0.010     | 0.428               |
| 09:00 - 10:00 | 9        | 55          | 0.000     | 0.000               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.004     | 0.171               |
| 10:00 - 11:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.006     | 0.257               |
| 11:00 - 12:00 | 9        | 55          | 0.002     | 0.086               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.006     | 0.257               |
| 12:00 - 13:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.014     | 0.599               |
| 13:00 - 14:00 | 9        | 55          | 0.006     | 0.257               | 9          | 55          | 0.004     | 0.171               | 9        | 55          | 0.010     | 0.428               |
| 14:00 - 15:00 | 9        | 55          | 0.004     | 0.171               | 9          | 55          | 0.000     | 0.000               | 9        | 55          | 0.004     | 0.171               |
| 15:00 - 16:00 | 9        | 55          | 0.016     | 0.684               | 9          | 55          | 0.008     | 0.342               | 9        | 55          | 0.024     | 1.026               |
| 16:00 - 17:00 | 9        | 55          | 0.016     | 0.684               | 9          | 55          | 0.024     | 1.026               | 9        | 55          | 0.040     | 1.710               |
| 17:00 - 18:00 | 9        | 55          | 0.020     | 0.855               | 9          | 55          | 0.018     | 0.770               | 9        | 55          | 0.038     | 1.625               |
| 18:00 - 19:00 | 9        | 55          | 0.018     | 0.770               | 9          | 55          | 0.020     | 0.855               | 9        | 55          | 0.038     | 1.625               |
| 19:00 - 20:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 20:00 - 21:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 21:00 - 22:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 22:00 - 23:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| 23:00 - 24:00 |          |             |           |                     |            |             |           |                     |          |             |           |                     |
| Total Rates:  |          |             | 0.100     | 4.278               |            |             | 0.104     | 4.447               |          |             | 0.204     | 8.725               |

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

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

# Appendix I

| Junctions 9                                                                                                                                                      |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| PICADY 9 - Priority Intersection Module                                                                                                                          |  |  |  |
| Version: 9.5.0.6896<br>© Copyright TRL Limited, 2018                                                                                                             |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+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: Site Access\_Carbtree Walk\_Hawthorn Hill.j9

Path: K:\T19\Jobs\T19.137 - Trefechan\Analysis

Report generation date: 29/10/2019 14:25:53

»2019 Base, AM  
 »2019 Base, PM  
 »2022 Base , AM  
 »2022 Base , PM  
 »2029 Base , AM  
 »2029 Base , PM  
 »2022 + Dev , AM  
 »2022 + Dev , PM  
 »2029 + Dev , AM  
 »2029 + Dev , PM

#### Summary of junction performance

|             | AM          |           |      |     | PM          |           |      |     |
|-------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|             | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| 2019 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 7.69      | 0.02 | A   | 0.0         | 7.77      | 0.02 | A   |
| Stream C-AB | 0.0         | 0.00      | 0.00 | A   | 0.0         | 6.23      | 0.01 | A   |
| 2022 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 7.70      | 0.02 | A   | 0.0         | 7.78      | 0.02 | A   |
| Stream C-AB | 0.0         | 0.00      | 0.00 | A   | 0.0         | 6.23      | 0.01 | A   |
| 2029 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 7.72      | 0.02 | A   | 0.0         | 7.80      | 0.02 | A   |
| Stream C-AB | 0.0         | 0.00      | 0.00 | A   | 0.0         | 6.23      | 0.01 | A   |
| 2022 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 8.13      | 0.07 | A   | 0.0         | 8.02      | 0.05 | A   |
| Stream C-AB | 0.0         | 0.00      | 0.00 | A   | 0.0         | 6.28      | 0.01 | A   |
| 2029 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 8.15      | 0.07 | A   | 0.1         | 8.05      | 0.05 | A   |
| Stream C-AB | 0.0         | 0.00      | 0.00 | A   | 0.0         | 6.29      | 0.01 | A   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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       |              |
| Location    |              |
| Site number |              |
| Date        | 23/10/2019   |
| Version     |              |
| Status      | (new file)   |
| Identifier  |              |
| Client      |              |
| Jobnumber   |              |
| Enumerator  | ATRANS\Katie |
| 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

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D2  | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D3  | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D4  | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D5  | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D6  | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D7  | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D8  | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D9  | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2019 Base, AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.08               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name          | Description | Arm type |
|-----|---------------|-------------|----------|
| A   | Crabtree Walk |             | Major    |
| B   | Site Access   |             | Minor    |
| C   | Hawthorn Hill |             | 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   | 4.87                     |                            |                    | 27.0                          | ✓       | 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       | 2.25           | 50                     | 50                      |

## 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    | 480                | 0.092         | 0.232         | 0.146         | 0.331         |
| 1        | B-C    | 606                | 0.097         | 0.246         | -             | -             |
| 1        | C-B    | 590                | 0.240         | 0.240         | -             | -             |

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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 12                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 8                       | 100.000            |
| C   |            | ONE HOUR     | ✓            | 4                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |   |    |
|--|----|---|---|----|
|  |    | A | B | C  |
|  | A  | 0 | 1 | 11 |
|  | B  | 8 | 0 | 0  |
|  | C  | 4 | 0 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.69          | 0.0             | A       | 7                       | 11                            |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 0.92                    | 1                             |
| A-C    |         |               |                 |         | 10                      | 15                            |

## Main Results for each time segment

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 6                     | 2                       | 478               | 0.013 | 6                   | 0.0               | 0.0             | 7.633     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.015 | 7                   | 0.0               | 0.0             | 7.658     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 477               | 0.018 | 9                   | 0.0               | 0.0             | 7.694     | A                             |
| C-AB   | 0                     | 0                       | 1173              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 477               | 0.018 | 9                   | 0.0               | 0.0             | 7.694     | A                             |
| C-AB   | 0                     | 0                       | 1173              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

### 09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.015 | 7                   | 0.0               | 0.0             | 7.658     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

### 09:15 - 09:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 6                     | 2                       | 478               | 0.013 | 6                   | 0.0               | 0.0             | 7.636     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2019 Base, PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.31               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 27                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 9                       | 100.000            |
| C   |            | ONE HOUR     | ✓            | 5                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |    |    |
|--|----|---|----|----|
|  |    | A | B  | C  |
|  | A  | 0 | 12 | 15 |
|  | B  | 9 | 0  | 0  |
|  | C  | 1 | 4  | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.77          | 0.0             | A       | 8                       | 12                            |
| C-AB   | 0.01    | 6.23          | 0.0             | A       | 4                       | 6                             |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 11                      | 17                            |
| A-C    |         |               |                 |         | 14                      | 21                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 475               | 0.014 | 7                   | 0.0               | 0.0             | 7.686     | A                             |
| C-AB   | 3                     | 0.75                    | 585               | 0.005 | 3                   | 0.0               | 0.0             | 6.187     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 474               | 0.017 | 8                   | 0.0               | 0.0             | 7.724     | A                             |
| C-AB   | 4                     | 0.90                    | 584               | 0.006 | 4                   | 0.0               | 0.0             | 6.204     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 473               | 0.021 | 10                  | 0.0               | 0.0             | 7.775     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.226     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |
| A-C    | 17                    | 4                       |                   |       | 17                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 473               | 0.021 | 10                  | 0.0               | 0.0             | 7.775     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.226     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |
| A-C    | 17                    | 4                       |                   |       | 17                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 474               | 0.017 | 8                   | 0.0               | 0.0             | 7.724     | A                             |
| C-AB   | 4                     | 0.90                    | 584               | 0.006 | 4                   | 0.0               | 0.0             | 6.206     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 475               | 0.014 | 7                   | 0.0               | 0.0             | 7.688     | A                             |
| C-AB   | 3                     | 0.75                    | 585               | 0.005 | 3                   | 0.0               | 0.0             | 6.190     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

# 2022 Base , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.93               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 13                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 8                       | 100.000            |
| C   |            | ONE HOUR     | ✓            | 4                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |   |    |
|--|----|---|---|----|
|  |    | A | B | C  |
|  | A  | 0 | 1 | 12 |
|  | B  | 8 | 0 | 0  |
|  | C  | 4 | 0 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.70          | 0.0             | A       | 7                       | 11                            |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 0.92                    | 1                             |
| A-C    |         |               |                 |         | 11                      | 17                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 6                     | 2                       | 477               | 0.013 | 6                   | 0.0               | 0.0             | 7.636     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.015 | 7                   | 0.0               | 0.0             | 7.661     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 476               | 0.018 | 9                   | 0.0               | 0.0             | 7.698     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 476               | 0.018 | 9                   | 0.0               | 0.0             | 7.698     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.015 | 7                   | 0.0               | 0.0             | 7.662     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 6                     | 2                       | 477               | 0.013 | 6                   | 0.0               | 0.0             | 7.639     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

# 2022 Base , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.21               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 29                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 9                       | 100.000            |
| C   |            | ONE HOUR     | ✓            | 5                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |    |    |
|------|----|---|----|----|
| From |    | A | B  | C  |
|      | A  | 0 | 13 | 16 |
|      | B  | 9 | 0  | 0  |
|      | C  | 1 | 4  | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.78          | 0.0             | A       | 8                       | 12                            |
| C-AB   | 0.01    | 6.23          | 0.0             | A       | 4                       | 6                             |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 12                      | 18                            |
| A-C    |         |               |                 |         | 15                      | 22                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 475               | 0.014 | 7                   | 0.0               | 0.0             | 7.690     | A                             |
| C-AB   | 3                     | 0.75                    | 584               | 0.005 | 3                   | 0.0               | 0.0             | 6.191     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 474               | 0.017 | 8                   | 0.0               | 0.0             | 7.729     | A                             |
| C-AB   | 4                     | 0.90                    | 583               | 0.006 | 4                   | 0.0               | 0.0             | 6.208     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 473               | 0.021 | 10                  | 0.0               | 0.0             | 7.781     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.232     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 473               | 0.021 | 10                  | 0.0               | 0.0             | 7.781     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.232     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 474               | 0.017 | 8                   | 0.0               | 0.0             | 7.729     | A                             |
| C-AB   | 4                     | 0.90                    | 583               | 0.006 | 4                   | 0.0               | 0.0             | 6.211     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 475               | 0.014 | 7                   | 0.0               | 0.0             | 7.694     | A                             |
| C-AB   | 3                     | 0.75                    | 584               | 0.005 | 3                   | 0.0               | 0.0             | 6.194     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

# 2029 Base , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.16               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 13                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 9                       | 100.000            |
| C   |            | ONE HOUR     | ✓            | 4                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |   |    |
|------|----|---|---|----|
| From |    | A | B | C  |
|      | A  | 0 | 1 | 12 |
|      | B  | 9 | 0 | 0  |
|      | C  | 4 | 0 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.72          | 0.0             | A       | 8                       | 12                            |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 0.92                    | 1                             |
| A-C    |         |               |                 |         | 11                      | 17                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.014 | 7                   | 0.0               | 0.0             | 7.648     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 477               | 0.017 | 8                   | 0.0               | 0.0             | 7.676     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 476               | 0.021 | 10                  | 0.0               | 0.0             | 7.716     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 10                    | 2                       | 476               | 0.021 | 10                  | 0.0               | 0.0             | 7.716     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 477               | 0.017 | 8                   | 0.0               | 0.0             | 7.680     | A                             |
| C-AB   | 0                     | 0                       | 1174              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 7                     | 2                       | 477               | 0.014 | 7                   | 0.0               | 0.0             | 7.651     | A                             |
| C-AB   | 0                     | 0                       | 1175              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

# 2029 Base , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.29               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 30                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 10                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 5                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |    |
|------|----|----|----|----|
| From |    | A  | B  | C  |
|      | A  | 0  | 13 | 17 |
|      | B  | 10 | 0  | 0  |
|      | C  | 1  | 4  | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.02    | 7.80          | 0.0             | A       | 9                       | 14                            |
| C-AB   | 0.01    | 6.23          | 0.0             | A       | 4                       | 6                             |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 12                      | 18                            |
| A-C    |         |               |                 |         | 16                      | 23                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 475               | 0.016 | 7                   | 0.0               | 0.0             | 7.705     | A                             |
| C-AB   | 3                     | 0.75                    | 584               | 0.005 | 3                   | 0.0               | 0.0             | 6.193     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 474               | 0.019 | 9                   | 0.0               | 0.0             | 7.747     | A                             |
| C-AB   | 4                     | 0.90                    | 583               | 0.006 | 4                   | 0.0               | 0.0             | 6.211     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 11                    | 3                       | 472               | 0.023 | 11                  | 0.0               | 0.0             | 7.803     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.235     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 11                    | 3                       | 472               | 0.023 | 11                  | 0.0               | 0.0             | 7.803     | A                             |
| C-AB   | 4                     | 1                       | 582               | 0.008 | 4                   | 0.0               | 0.0             | 6.235     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 9                     | 2                       | 474               | 0.019 | 9                   | 0.0               | 0.0             | 7.748     | A                             |
| C-AB   | 4                     | 0.90                    | 583               | 0.006 | 4                   | 0.0               | 0.0             | 6.211     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 8                     | 2                       | 475               | 0.016 | 8                   | 0.0               | 0.0             | 7.709     | A                             |
| C-AB   | 3                     | 0.75                    | 584               | 0.005 | 3                   | 0.0               | 0.0             | 6.193     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

# 2022 + Dev , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 4.78               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 21                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 30                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 4                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |    |   |    |
|--|----|----|---|----|
|  |    | A  | B | C  |
|  | A  | 0  | 9 | 12 |
|  | B  | 30 | 0 | 0  |
|  | C  | 4  | 0 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.07    | 8.13          | 0.1             | A       | 28                      | 41                            |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 8                       | 12                            |
| A-C    |         |               |                 |         | 11                      | 17                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 477               | 0.047 | 22                  | 0.0               | 0.0             | 7.918     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 27                    | 7                       | 476               | 0.057 | 27                  | 0.0               | 0.1             | 8.011     | A                             |
| C-AB   | 0                     | 0                       | 1170              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 33                    | 8                       | 476               | 0.069 | 33                  | 0.1               | 0.1             | 8.132     | A                             |
| C-AB   | 0                     | 0                       | 1168              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 33                    | 8                       | 476               | 0.069 | 33                  | 0.1               | 0.1             | 8.133     | A                             |
| C-AB   | 0                     | 0                       | 1168              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 27                    | 7                       | 476               | 0.057 | 27                  | 0.1               | 0.1             | 8.013     | A                             |
| C-AB   | 0                     | 0                       | 1170              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 477               | 0.047 | 23                  | 0.1               | 0.1             | 7.925     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

# 2022 + Dev , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.58               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 47                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 20                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 5                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |    |
|------|----|----|----|----|
| From |    | A  | B  | C  |
|      | A  | 0  | 31 | 16 |
|      | B  | 20 | 0  | 0  |
|      | C  | 1  | 4  | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.05    | 8.02          | 0.0             | A       | 18                      | 28                            |
| C-AB   | 0.01    | 6.28          | 0.0             | A       | 4                       | 6                             |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 28                      | 43                            |
| A-C    |         |               |                 |         | 15                      | 22                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 474               | 0.032 | 15                  | 0.0               | 0.0             | 7.848     | A                             |
| C-AB   | 3                     | 0.75                    | 581               | 0.005 | 3                   | 0.0               | 0.0             | 6.226     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 23                    | 6                       |                   |       | 23                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 472               | 0.038 | 18                  | 0.0               | 0.0             | 7.922     | A                             |
| C-AB   | 4                     | 0.90                    | 579               | 0.006 | 4                   | 0.0               | 0.0             | 6.250     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 28                    | 7                       |                   |       | 28                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 471               | 0.047 | 22                  | 0.0               | 0.0             | 8.022     | A                             |
| C-AB   | 4                     | 1                       | 577               | 0.008 | 4                   | 0.0               | 0.0             | 6.284     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 471               | 0.047 | 22                  | 0.0               | 0.0             | 8.022     | A                             |
| C-AB   | 4                     | 1                       | 577               | 0.008 | 4                   | 0.0               | 0.0             | 6.284     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 472               | 0.038 | 18                  | 0.0               | 0.0             | 7.923     | A                             |
| C-AB   | 4                     | 0.90                    | 579               | 0.006 | 4                   | 0.0               | 0.0             | 6.253     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 28                    | 7                       |                   |       | 28                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 474               | 0.032 | 15                  | 0.0               | 0.0             | 7.854     | A                             |
| C-AB   | 3                     | 0.75                    | 581               | 0.005 | 3                   | 0.0               | 0.0             | 6.228     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 23                    | 6                       |                   |       | 23                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

# 2029 + Dev , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 4.86               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 21                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 31                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 4                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |   |    |
|------|----|----|---|----|
| From |    | A  | B | C  |
|      | A  | 0  | 9 | 12 |
|      | B  | 31 | 0 | 0  |
|      | C  | 4  | 0 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.07    | 8.15          | 0.1             | A       | 28                      | 43                            |
| C-AB   | 0.00    | 0.00          | 0.0             | A       | 0                       | 0                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 8                       | 12                            |
| A-C    |         |               |                 |         | 11                      | 17                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 477               | 0.049 | 23                  | 0.0               | 0.1             | 7.931     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 28                    | 7                       | 476               | 0.059 | 28                  | 0.1               | 0.1             | 8.027     | A                             |
| C-AB   | 0                     | 0                       | 1170              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 34                    | 9                       | 476               | 0.072 | 34                  | 0.1               | 0.1             | 8.152     | A                             |
| C-AB   | 0                     | 0                       | 1168              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 34                    | 9                       | 476               | 0.072 | 34                  | 0.1               | 0.1             | 8.154     | A                             |
| C-AB   | 0                     | 0                       | 1168              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 28                    | 7                       | 476               | 0.059 | 28                  | 0.1               | 0.1             | 8.029     | A                             |
| C-AB   | 0                     | 0                       | 1170              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 477               | 0.049 | 23                  | 0.1               | 0.1             | 7.940     | A                             |
| C-AB   | 0                     | 0                       | 1172              | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

# 2029 + Dev , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.59               | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 49                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 21                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 5                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |    |
|------|----|----|----|----|
| From |    | A  | B  | C  |
|      | A  | 0  | 32 | 17 |
|      | B  | 21 | 0  | 0  |
|      | C  | 1  | 4  | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.05    | 8.05          | 0.1             | A       | 19                      | 29                            |
| C-AB   | 0.01    | 6.29          | 0.0             | A       | 4                       | 6                             |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 29                      | 44                            |
| A-C    |         |               |                 |         | 16                      | 23                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 473               | 0.033 | 16                  | 0.0               | 0.0             | 7.864     | A                             |
| C-AB   | 3                     | 0.75                    | 581               | 0.005 | 3                   | 0.0               | 0.0             | 6.230     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 24                    | 6                       |                   |       | 24                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 19                    | 5                       | 472               | 0.040 | 19                  | 0.0               | 0.0             | 7.943     | A                             |
| C-AB   | 4                     | 0.90                    | 579               | 0.006 | 4                   | 0.0               | 0.0             | 6.255     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 29                    | 7                       |                   |       | 29                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 470               | 0.049 | 23                  | 0.0               | 0.1             | 8.048     | A                             |
| C-AB   | 4                     | 1                       | 577               | 0.008 | 4                   | 0.0               | 0.0             | 6.289     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 470               | 0.049 | 23                  | 0.1               | 0.1             | 8.048     | A                             |
| C-AB   | 4                     | 1                       | 577               | 0.008 | 4                   | 0.0               | 0.0             | 6.289     | A                             |
| C-A    | 1                     | 0.28                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 19                    | 5                       | 472               | 0.040 | 19                  | 0.1               | 0.0             | 7.944     | A                             |
| C-AB   | 4                     | 0.90                    | 579               | 0.006 | 4                   | 0.0               | 0.0             | 6.257     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 29                    | 7                       |                   |       | 29                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 473               | 0.033 | 16                  | 0.0               | 0.0             | 7.871     | A                             |
| C-AB   | 3                     | 0.75                    | 581               | 0.005 | 3                   | 0.0               | 0.0             | 6.232     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 24                    | 6                       |                   |       | 24                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

# Appendix J

| Junctions 9                                                                                                                                                      |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| PICADY 9 - Priority Intersection Module                                                                                                                          |  |  |  |
| Version: 9.5.0.6896<br>© Copyright TRL Limited, 2018                                                                                                             |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+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: The Green\_Crabtree Walk.j9

Path: K:\T19\Jobs\T19.137 - Trefechan\Analysis

Report generation date: 29/10/2019 14:37:46

»2019 Base, AM  
 »2019 Base , PM  
 »2022 Base , AM  
 »2022 Base , PM  
 »2029 Base, AM  
 »2029 Base , PM  
 »2022 + Dev , AM  
 »2022 + Dev, PM  
 »2029 + Dev, AM  
 »2029 + Dev, PM

#### Summary of junction performance

|             | AM          |           |      |     | PM          |           |      |     |
|-------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|             | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| 2019 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 6.22      | 0.03 | A   | 0.0         | 6.47      | 0.04 | A   |
| Stream C-AB | 0.0         | 6.22      | 0.01 | A   | 0.0         | 6.43      | 0.03 | A   |
| 2022 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 6.23      | 0.03 | A   | 0.0         | 6.47      | 0.04 | A   |
| Stream C-AB | 0.0         | 6.22      | 0.01 | A   | 0.0         | 6.45      | 0.03 | A   |
| 2029 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.0         | 6.24      | 0.04 | A   | 0.0         | 6.48      | 0.04 | A   |
| Stream C-AB | 0.0         | 6.24      | 0.01 | A   | 0.0         | 6.47      | 0.04 | A   |
| 2022 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 6.46      | 0.07 | A   | 0.1         | 6.54      | 0.06 | A   |
| Stream C-AB | 0.0         | 6.34      | 0.03 | A   | 0.1         | 6.75      | 0.07 | A   |
| 2029 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 6.48      | 0.08 | A   | 0.1         | 6.55      | 0.06 | A   |
| Stream C-AB | 0.0         | 6.36      | 0.03 | A   | 0.1         | 6.78      | 0.07 | A   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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       |              |
| Location    |              |
| Site number |              |
| Date        | 23/10/2019   |
| Version     |              |
| Status      | (new file)   |
| Identifier  |              |
| Client      |              |
| Jobnumber   |              |
| Enumerator  | ATRANS\Katie |
| 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

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D2  | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D3  | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D4  | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D5  | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D6  | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D7  | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D8  | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D9  | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2019 Base, AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.56               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name          | Description | Arm type |
|-----|---------------|-------------|----------|
| A   | The Green (S) |             | Major    |
| B   | Crabtree Walk |             | Minor    |
| C   | The Green (N) |             | 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   | 5.10                     |                            |                    | 27.0                          | ✓       | 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       | 2.25           | 50                     | 58                      |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|----------|--------|--------------------|---------------|---------------|---------------|---------------|
| 1        | B-A    | 483                | 0.091         | 0.231         | 0.145         | 0.330         |
| 1        | B-C    | 611                | 0.097         | 0.246         | -             | -             |
| 1        | C-B    | 590                | 0.237         | 0.237         | -             | -             |

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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 18                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 18                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 6                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |   |    |
|--|----|---|---|----|
|  |    | A | B | C  |
|  | A  | 0 | 8 | 10 |
|  | B  | 1 | 0 | 17 |
|  | C  | 0 | 6 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.03    | 6.22          | 0.0             | A       | 17                      | 25                            |
| C-AB   | 0.01    | 6.22          | 0.0             | A       | 6                       | 8                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 7                       | 11                            |
| A-C    |         |               |                 |         | 9                       | 14                            |

## Main Results for each time segment

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 3                       | 599               | 0.023 | 13                  | 0.0               | 0.0             | 6.143     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.008 | 4                   | 0.0               | 0.0             | 6.186     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 599               | 0.027 | 16                  | 0.0               | 0.0             | 6.176     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.202     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 20                    | 5                       | 598               | 0.033 | 20                  | 0.0               | 0.0             | 6.222     | A                             |
| C-AB   | 7                     | 2                       | 585               | 0.011 | 7                   | 0.0               | 0.0             | 6.224     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 20                    | 5                       | 598               | 0.033 | 20                  | 0.0               | 0.0             | 6.222     | A                             |
| C-AB   | 7                     | 2                       | 585               | 0.011 | 7                   | 0.0               | 0.0             | 6.224     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

### 09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 599               | 0.027 | 16                  | 0.0               | 0.0             | 6.177     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.204     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

### 09:15 - 09:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 3                       | 599               | 0.023 | 14                  | 0.0               | 0.0             | 6.143     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.008 | 5                   | 0.0               | 0.0             | 6.186     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2019 Base , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.87               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 44                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 19                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 18                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |    |    |
|--|----|---|----|----|
|  |    | A | B  | C  |
|  | A  | 0 | 28 | 16 |
|  | B  | 3 | 0  | 16 |
|  | C  | 1 | 17 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.04    | 6.47          | 0.0             | A       | 17                      | 26                            |
| C-AB   | 0.03    | 6.43          | 0.0             | A       | 16                      | 23                            |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 26                      | 39                            |
| A-C    |         |               |                 |         | 15                      | 22                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 4                       | 580               | 0.025 | 14                  | 0.0               | 0.0             | 6.358     | A                             |
| C-AB   | 13                    | 3                       | 582               | 0.022 | 13                  | 0.0               | 0.0             | 6.326     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 21                    | 5                       |                   |       | 21                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 17                    | 4                       | 579               | 0.029 | 17                  | 0.0               | 0.0             | 6.403     | A                             |
| C-AB   | 15                    | 4                       | 580               | 0.026 | 15                  | 0.0               | 0.0             | 6.371     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 25                    | 6                       |                   |       | 25                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 21                    | 5                       | 578               | 0.036 | 21                  | 0.0               | 0.0             | 6.466     | A                             |
| C-AB   | 19                    | 5                       | 578               | 0.032 | 19                  | 0.0               | 0.0             | 6.434     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 31                    | 8                       |                   |       | 31                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 21                    | 5                       | 578               | 0.036 | 21                  | 0.0               | 0.0             | 6.466     | A                             |
| C-AB   | 19                    | 5                       | 578               | 0.032 | 19                  | 0.0               | 0.0             | 6.434     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 31                    | 8                       |                   |       | 31                  |                   |                 |           |                               |
| A-C    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 17                    | 4                       | 579               | 0.029 | 17                  | 0.0               | 0.0             | 6.406     | A                             |
| C-AB   | 15                    | 4                       | 580               | 0.026 | 15                  | 0.0               | 0.0             | 6.372     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 25                    | 6                       |                   |       | 25                  |                   |                 |           |                               |
| A-C    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 4                       | 580               | 0.025 | 14                  | 0.0               | 0.0             | 6.359     | A                             |
| C-AB   | 13                    | 3                       | 582               | 0.022 | 13                  | 0.0               | 0.0             | 6.327     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 21                    | 5                       |                   |       | 21                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

# 2022 Base , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.62               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 18                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 19                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 6                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |   |    |
|--|----|---|---|----|
|  |    | A | B | C  |
|  | A  | 0 | 8 | 10 |
|  | B  | 1 | 0 | 18 |
|  | C  | 0 | 6 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.03    | 6.23          | 0.0             | A       | 17                      | 26                            |
| C-AB   | 0.01    | 6.22          | 0.0             | A       | 6                       | 8                             |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 7                       | 11                            |
| A-C    |         |               |                 |         | 9                       | 14                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 4                       | 600               | 0.024 | 14                  | 0.0               | 0.0             | 6.146     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.008 | 4                   | 0.0               | 0.0             | 6.186     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 17                    | 4                       | 599               | 0.028 | 17                  | 0.0               | 0.0             | 6.181     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.202     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 21                    | 5                       | 599               | 0.035 | 21                  | 0.0               | 0.0             | 6.229     | A                             |
| C-AB   | 7                     | 2                       | 585               | 0.011 | 7                   | 0.0               | 0.0             | 6.224     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 21                    | 5                       | 599               | 0.035 | 21                  | 0.0               | 0.0             | 6.229     | A                             |
| C-AB   | 7                     | 2                       | 585               | 0.011 | 7                   | 0.0               | 0.0             | 6.224     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 17                    | 4                       | 599               | 0.028 | 17                  | 0.0               | 0.0             | 6.181     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.204     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 14                    | 4                       | 600               | 0.024 | 14                  | 0.0               | 0.0             | 6.147     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.008 | 5                   | 0.0               | 0.0             | 6.186     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 6                     | 2                       |                   |       | 6                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2022 Base , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 46                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 20                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 19                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |    |    |
|------|----|---|----|----|
| From |    | A | B  | C  |
|      | A  | 0 | 29 | 17 |
|      | B  | 3 | 0  | 17 |
|      | C  | 1 | 18 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.04    | 6.47          | 0.0             | A       | 18                      | 28                            |
| C-AB   | 0.03    | 6.45          | 0.0             | A       | 17                      | 25                            |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 27                      | 40                            |
| A-C    |         |               |                 |         | 16                      | 23                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 581               | 0.026 | 15                  | 0.0               | 0.0             | 6.356     | A                             |
| C-AB   | 14                    | 3                       | 581               | 0.023 | 13                  | 0.0               | 0.0             | 6.339     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 22                    | 5                       |                   |       | 22                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 580               | 0.031 | 18                  | 0.0               | 0.0             | 6.403     | A                             |
| C-AB   | 16                    | 4                       | 580               | 0.028 | 16                  | 0.0               | 0.0             | 6.386     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 26                    | 7                       |                   |       | 26                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 578               | 0.038 | 22                  | 0.0               | 0.0             | 6.469     | A                             |
| C-AB   | 20                    | 5                       | 578               | 0.034 | 20                  | 0.0               | 0.0             | 6.453     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 578               | 0.038 | 22                  | 0.0               | 0.0             | 6.469     | A                             |
| C-AB   | 20                    | 5                       | 578               | 0.034 | 20                  | 0.0               | 0.0             | 6.453     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 580               | 0.031 | 18                  | 0.0               | 0.0             | 6.406     | A                             |
| C-AB   | 16                    | 4                       | 580               | 0.028 | 16                  | 0.0               | 0.0             | 6.387     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 26                    | 7                       |                   |       | 26                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 581               | 0.026 | 15                  | 0.0               | 0.0             | 6.359     | A                             |
| C-AB   | 14                    | 3                       | 581               | 0.023 | 14                  | 0.0               | 0.0             | 6.339     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 22                    | 5                       |                   |       | 22                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

# 2029 Base, AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.59               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 20                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 20                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 7                       | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |   |    |
|------|----|---|---|----|
| From |    | A | B | C  |
|      | A  | 0 | 9 | 11 |
|      | B  | 1 | 0 | 19 |
|      | C  | 0 | 7 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.04    | 6.24          | 0.0             | A       | 18                      | 28                            |
| C-AB   | 0.01    | 6.24          | 0.0             | A       | 6                       | 10                            |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 8                       | 12                            |
| A-C    |         |               |                 |         | 10                      | 15                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 600               | 0.025 | 15                  | 0.0               | 0.0             | 6.153     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.198     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 600               | 0.030 | 18                  | 0.0               | 0.0             | 6.189     | A                             |
| C-AB   | 6                     | 2                       | 585               | 0.011 | 6                   | 0.0               | 0.0             | 6.216     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 599               | 0.037 | 22                  | 0.0               | 0.0             | 6.241     | A                             |
| C-AB   | 8                     | 2                       | 584               | 0.013 | 8                   | 0.0               | 0.0             | 6.242     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 22                    | 6                       | 599               | 0.037 | 22                  | 0.0               | 0.0             | 6.241     | A                             |
| C-AB   | 8                     | 2                       | 584               | 0.013 | 8                   | 0.0               | 0.0             | 6.242     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 18                    | 4                       | 600               | 0.030 | 18                  | 0.0               | 0.0             | 6.192     | A                             |
| C-AB   | 6                     | 2                       | 585               | 0.011 | 6                   | 0.0               | 0.0             | 6.219     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 15                    | 4                       | 600               | 0.025 | 15                  | 0.0               | 0.0             | 6.155     | A                             |
| C-AB   | 5                     | 1                       | 586               | 0.009 | 5                   | 0.0               | 0.0             | 6.198     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 7                     | 2                       |                   |       | 7                   |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2029 Base , PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.88               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 49                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 21                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 20                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |    |    |
|------|----|---|----|----|
| From |    | A | B  | C  |
|      | A  | 0 | 31 | 18 |
|      | B  | 3 | 0  | 18 |
|      | C  | 1 | 19 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.04    | 6.48          | 0.0             | A       | 19                      | 29                            |
| C-AB   | 0.04    | 6.47          | 0.0             | A       | 17                      | 26                            |
| C-A    |         |               |                 |         | 0.92                    | 1                             |
| A-B    |         |               |                 |         | 28                      | 43                            |
| A-C    |         |               |                 |         | 17                      | 25                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 582               | 0.027 | 16                  | 0.0               | 0.0             | 6.357     | A                             |
| C-AB   | 14                    | 4                       | 581               | 0.025 | 14                  | 0.0               | 0.0             | 6.353     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 23                    | 6                       |                   |       | 23                  |                   |                 |           |                               |
| A-C    | 14                    | 3                       |                   |       | 14                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 19                    | 5                       | 581               | 0.033 | 19                  | 0.0               | 0.0             | 6.406     | A                             |
| C-AB   | 17                    | 4                       | 579               | 0.029 | 17                  | 0.0               | 0.0             | 6.403     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 28                    | 7                       |                   |       | 28                  |                   |                 |           |                               |
| A-C    | 16                    | 4                       |                   |       | 16                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 579               | 0.040 | 23                  | 0.0               | 0.0             | 6.475     | A                             |
| C-AB   | 21                    | 5                       | 577               | 0.036 | 21                  | 0.0               | 0.0             | 6.475     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 579               | 0.040 | 23                  | 0.0               | 0.0             | 6.475     | A                             |
| C-AB   | 21                    | 5                       | 577               | 0.036 | 21                  | 0.0               | 0.0             | 6.475     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 19                    | 5                       | 581               | 0.033 | 19                  | 0.0               | 0.0             | 6.409     | A                             |
| C-AB   | 17                    | 4                       | 579               | 0.029 | 17                  | 0.0               | 0.0             | 6.404     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 28                    | 7                       |                   |       | 28                  |                   |                 |           |                               |
| A-C    | 16                    | 4                       |                   |       | 16                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 16                    | 4                       | 582               | 0.027 | 16                  | 0.0               | 0.0             | 6.360     | A                             |
| C-AB   | 14                    | 4                       | 581               | 0.025 | 14                  | 0.0               | 0.0             | 6.353     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 23                    | 6                       |                   |       | 23                  |                   |                 |           |                               |
| A-C    | 14                    | 3                       |                   |       | 14                  |                   |                 |           |                               |

# 2022 + Dev , AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 4.37               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 26                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 41                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 14                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |   |    |    |
|--|----|---|----|----|
|  |    | A | B  | C  |
|  | A  | 0 | 16 | 10 |
|  | B  | 1 | 0  | 40 |
|  | C  | 0 | 14 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.07    | 6.46          | 0.1             | A       | 38                      | 56                            |
| C-AB   | 0.03    | 6.34          | 0.0             | A       | 13                      | 19                            |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 15                      | 22                            |
| A-C    |         |               |                 |         | 9                       | 14                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 31                    | 8                       | 604               | 0.051 | 31                  | 0.0               | 0.1             | 6.280     | A                             |
| C-AB   | 11                    | 3                       | 585               | 0.018 | 10                  | 0.0               | 0.0             | 6.266     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 37                    | 9                       | 603               | 0.061 | 37                  | 0.1               | 0.1             | 6.356     | A                             |
| C-AB   | 13                    | 3                       | 584               | 0.022 | 13                  | 0.0               | 0.0             | 6.298     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 45                    | 11                      | 602               | 0.075 | 45                  | 0.1               | 0.1             | 6.460     | A                             |
| C-AB   | 15                    | 4                       | 583               | 0.026 | 15                  | 0.0               | 0.0             | 6.344     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 45                    | 11                      | 602               | 0.075 | 45                  | 0.1               | 0.1             | 6.460     | A                             |
| C-AB   | 15                    | 4                       | 583               | 0.026 | 15                  | 0.0               | 0.0             | 6.344     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 18                    | 4                       |                   |       | 18                  |                   |                 |           |                               |
| A-C    | 11                    | 3                       |                   |       | 11                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 37                    | 9                       | 603               | 0.061 | 37                  | 0.1               | 0.1             | 6.357     | A                             |
| C-AB   | 13                    | 3                       | 584               | 0.022 | 13                  | 0.0               | 0.0             | 6.301     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 14                    | 4                       |                   |       | 14                  |                   |                 |           |                               |
| A-C    | 9                     | 2                       |                   |       | 9                   |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 31                    | 8                       | 604               | 0.051 | 31                  | 0.1               | 0.1             | 6.283     | A                             |
| C-AB   | 11                    | 3                       | 585               | 0.018 | 11                  | 0.0               | 0.0             | 6.266     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2022 + Dev, PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.35               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 64                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 30                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 37                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |    |    |
|------|----|---|----|----|
| From |    | A | B  | C  |
|      | A  | 0 | 47 | 17 |
|      | B  | 3 | 0  | 27 |
|      | C  | 1 | 36 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.06    | 6.54          | 0.1             | A       | 28                      | 41                            |
| C-AB   | 0.07    | 6.75          | 0.1             | A       | 33                      | 50                            |
| C-A    |         |               |                 |         | 0.91                    | 1                             |
| A-B    |         |               |                 |         | 43                      | 65                            |
| A-C    |         |               |                 |         | 16                      | 23                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 587               | 0.038 | 22                  | 0.0               | 0.0             | 6.373     | A                             |
| C-AB   | 27                    | 7                       | 578               | 0.047 | 27                  | 0.0               | 0.0             | 6.529     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 27                    | 7                       | 586               | 0.046 | 27                  | 0.0               | 0.0             | 6.443     | A                             |
| C-AB   | 32                    | 8                       | 576               | 0.056 | 32                  | 0.0               | 0.1             | 6.621     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 33                    | 8                       | 583               | 0.057 | 33                  | 0.0               | 0.1             | 6.539     | A                             |
| C-AB   | 40                    | 10                      | 573               | 0.069 | 40                  | 0.1               | 0.1             | 6.749     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 33                    | 8                       | 583               | 0.057 | 33                  | 0.1               | 0.1             | 6.539     | A                             |
| C-AB   | 40                    | 10                      | 573               | 0.069 | 40                  | 0.1               | 0.1             | 6.749     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-C    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 27                    | 7                       | 586               | 0.046 | 27                  | 0.1               | 0.0             | 6.447     | A                             |
| C-AB   | 32                    | 8                       | 576               | 0.056 | 32                  | 0.1               | 0.1             | 6.622     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |
| A-C    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 587               | 0.038 | 23                  | 0.0               | 0.0             | 6.376     | A                             |
| C-AB   | 27                    | 7                       | 578               | 0.047 | 27                  | 0.1               | 0.0             | 6.532     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |

# 2029 + Dev, AM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 4.32               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 28                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 42                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 15                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |   |    |    |
|------|----|---|----|----|
| From |    | A | B  | C  |
|      | A  | 0 | 17 | 11 |
|      | B  | 1 | 0  | 41 |
|      | C  | 0 | 15 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.08    | 6.48          | 0.1             | A       | 39                      | 58                            |
| C-AB   | 0.03    | 6.36          | 0.0             | A       | 14                      | 21                            |
| C-A    |         |               |                 |         | 0                       | 0                             |
| A-B    |         |               |                 |         | 16                      | 23                            |
| A-C    |         |               |                 |         | 10                      | 15                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 32                    | 8                       | 604               | 0.052 | 31                  | 0.0               | 0.1             | 6.291     | A                             |
| C-AB   | 11                    | 3                       | 585               | 0.019 | 11                  | 0.0               | 0.0             | 6.278     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 38                    | 9                       | 603               | 0.063 | 38                  | 0.1               | 0.1             | 6.368     | A                             |
| C-AB   | 13                    | 3                       | 584               | 0.023 | 13                  | 0.0               | 0.0             | 6.313     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 46                    | 12                      | 602               | 0.077 | 46                  | 0.1               | 0.1             | 6.476     | A                             |
| C-AB   | 17                    | 4                       | 582               | 0.028 | 16                  | 0.0               | 0.0             | 6.362     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 46                    | 12                      | 602               | 0.077 | 46                  | 0.1               | 0.1             | 6.476     | A                             |
| C-AB   | 17                    | 4                       | 582               | 0.028 | 17                  | 0.0               | 0.0             | 6.362     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 19                    | 5                       |                   |       | 19                  |                   |                 |           |                               |
| A-C    | 12                    | 3                       |                   |       | 12                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 38                    | 9                       | 603               | 0.063 | 38                  | 0.1               | 0.1             | 6.372     | A                             |
| C-AB   | 13                    | 3                       | 584               | 0.023 | 14                  | 0.0               | 0.0             | 6.313     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 15                    | 4                       |                   |       | 15                  |                   |                 |           |                               |
| A-C    | 10                    | 2                       |                   |       | 10                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 32                    | 8                       | 604               | 0.052 | 32                  | 0.1               | 0.1             | 6.296     | A                             |
| C-AB   | 11                    | 3                       | 585               | 0.019 | 11                  | 0.0               | 0.0             | 6.279     | A                             |
| C-A    | 0                     | 0                       |                   |       | 0                   |                   |                 |           |                               |
| A-B    | 13                    | 3                       |                   |       | 13                  |                   |                 |           |                               |
| A-C    | 8                     | 2                       |                   |       | 8                   |                   |                 |           |                               |

# 2029 + Dev, PM

## Data Errors and Warnings

| Severity | Area            | Item                       | Description                                                                                                                                                                                  |
|----------|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Major arm width | Arm C - Major arm geometry | For two-way major roads, please interpret results with caution if the total major carriageway width is less than 6m.                                                                         |
| Warning  | Vehicle Mix     |                            | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 3.31               | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 68                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 31                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 38                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |   | To |    |    |
|------|---|----|----|----|
| From |   | A  | B  | C  |
|      | A | 0  | 50 | 18 |
|      | B | 3  | 0  | 28 |
|      | C | 1  | 37 | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.06    | 6.55          | 0.1             | A       | 28                      | 43                            |
| C-AB   | 0.07    | 6.78          | 0.1             | A       | 34                      | 51                            |
| C-A    |         |               |                 |         | 0.91                    | 1                             |
| A-B    |         |               |                 |         | 46                      | 69                            |
| A-C    |         |               |                 |         | 17                      | 25                            |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 587               | 0.040 | 23                  | 0.0               | 0.0             | 6.380     | A                             |
| C-AB   | 28                    | 7                       | 577               | 0.048 | 28                  | 0.0               | 0.1             | 6.546     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 38                    | 9                       |                   |       | 38                  |                   |                 |           |                               |
| A-C    | 14                    | 3                       |                   |       | 14                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 28                    | 7                       | 586               | 0.048 | 28                  | 0.0               | 0.0             | 6.453     | A                             |
| C-AB   | 33                    | 8                       | 575               | 0.058 | 33                  | 0.1               | 0.1             | 6.642     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 45                    | 11                      |                   |       | 45                  |                   |                 |           |                               |
| A-C    | 16                    | 4                       |                   |       | 16                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 34                    | 9                       | 583               | 0.059 | 34                  | 0.0               | 0.1             | 6.553     | A                             |
| C-AB   | 41                    | 10                      | 572               | 0.071 | 41                  | 0.1               | 0.1             | 6.776     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 55                    | 14                      |                   |       | 55                  |                   |                 |           |                               |
| A-C    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 34                    | 9                       | 583               | 0.059 | 34                  | 0.1               | 0.1             | 6.553     | A                             |
| C-AB   | 41                    | 10                      | 572               | 0.071 | 41                  | 0.1               | 0.1             | 6.776     | A                             |
| C-A    | 1                     | 0.27                    |                   |       | 1                   |                   |                 |           |                               |
| A-B    | 55                    | 14                      |                   |       | 55                  |                   |                 |           |                               |
| A-C    | 20                    | 5                       |                   |       | 20                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 28                    | 7                       | 586               | 0.048 | 28                  | 0.1               | 0.1             | 6.454     | A                             |
| C-AB   | 33                    | 8                       | 575               | 0.058 | 33                  | 0.1               | 0.1             | 6.644     | A                             |
| C-A    | 0.90                  | 0.22                    |                   |       | 0.90                |                   |                 |           |                               |
| A-B    | 45                    | 11                      |                   |       | 45                  |                   |                 |           |                               |
| A-C    | 16                    | 4                       |                   |       | 16                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 23                    | 6                       | 587               | 0.040 | 23                  | 0.1               | 0.0             | 6.384     | A                             |
| C-AB   | 28                    | 7                       | 577               | 0.048 | 28                  | 0.1               | 0.1             | 6.550     | A                             |
| C-A    | 0.75                  | 0.19                    |                   |       | 0.75                |                   |                 |           |                               |
| A-B    | 38                    | 9                       |                   |       | 38                  |                   |                 |           |                               |
| A-C    | 14                    | 3                       |                   |       | 14                  |                   |                 |           |                               |

# Appendix K

| Junctions 9                                                                                                                                                      |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| PICADY 9 - Priority Intersection Module                                                                                                                          |  |  |  |
| Version: 9.5.0.6896<br>© Copyright TRL Limited, 2018                                                                                                             |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+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: Vaynor Rd\_Chreey Tree Close.j9

Path: K:\T19\Jobs\T19.137 - Trefechan\Analysis

Report generation date: 29/10/2019 14:45:45

»2019 Base, AM  
»2019 Base, PM  
»2022 Base, AM  
»2022 Base, PM  
»2029 Base, AM  
»2029 Base, PM  
»2022 + Dev , AM  
»2022 + Dev , PM  
»2029 + Dev , AM  
»2029 + Dev , PM

#### Summary of junction performance

|             | AM          |           |      |     | PM          |           |      |     |
|-------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|             | Queue (PCU) | Delay (s) | RFC  | LOS | Queue (PCU) | Delay (s) | RFC  | LOS |
| 2019 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 6.54      | 0.12 | A   | 0.1         | 6.40      | 0.11 | A   |
| Stream C-AB | 0.0         | 5.68      | 0.01 | A   | 0.0         | 5.96      | 0.01 | A   |
| 2022 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.1         | 6.61      | 0.13 | A   | 0.1         | 6.46      | 0.12 | A   |
| Stream C-AB | 0.0         | 5.69      | 0.01 | A   | 0.0         | 5.98      | 0.01 | A   |
| 2029 Base   |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.2         | 6.71      | 0.14 | A   | 0.1         | 6.58      | 0.13 | A   |
| Stream C-AB | 0.0         | 5.70      | 0.01 | A   | 0.0         | 6.03      | 0.02 | A   |
| 2022 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.2         | 6.97      | 0.17 | A   | 0.2         | 6.70      | 0.14 | A   |
| Stream C-AB | 0.0         | 5.71      | 0.01 | A   | 0.0         | 6.03      | 0.01 | A   |
| 2029 + Dev  |             |           |      |     |             |           |      |     |
| Stream B-AC | 0.2         | 7.08      | 0.18 | A   | 0.2         | 6.80      | 0.15 | A   |
| Stream C-AB | 0.0         | 5.72      | 0.01 | A   | 0.0         | 6.08      | 0.02 | A   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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       |              |
| Location    |              |
| Site number |              |
| Date        | 23/10/2019   |
| Version     |              |
| Status      | (new file)   |
| Identifier  |              |
| Client      |              |
| Jobnumber   |              |
| Enumerator  | ATRANS\Katie |
| 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

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D2  | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D3  | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D4  | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D5  | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D6  | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D7  | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D8  | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |
| D9  | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

## Analysis Set Details

| ID | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------|---------------------------------|-------------------------------------|
| A1 | ✓                 | 100.000                         | 100.000                             |

# 2019 Base, AM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.96               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name              | Description | Arm type |
|-----|-------------------|-------------|----------|
| A   | Vaynor Road (S)   |             | Major    |
| B   | Cherry Tree Close |             | Minor    |
| C   | Vaynor Road (N)   |             | 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   | 6.00                     |                            |                    | 146.0                         | ✓       | 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       | 4.25           | 113                    | 133                     |

## 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    | 655                | 0.119         | 0.302         | 0.190         | 0.431         |
| 1        | B-C    | 796                | 0.122         | 0.309         | -             | -             |
| 1        | C-B    | 659                | 0.255         | 0.255         | -             | -             |

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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2019 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 78                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 70                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 95                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |    |    |    |
|--|----|----|----|----|
|  |    | A  | B  | C  |
|  | A  | 0  | 36 | 42 |
|  | B  | 64 | 0  | 6  |
|  | C  | 92 | 3  | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.12    | 6.54          | 0.1             | A       | 64                      | 96                            |
| C-AB   | 0.01    | 5.68          | 0.0             | A       | 3                       | 4                             |
| C-A    |         |               |                 |         | 84                      | 127                           |
| A-B    |         |               |                 |         | 33                      | 50                            |
| A-C    |         |               |                 |         | 39                      | 58                            |

## Main Results for each time segment

### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 53                    | 13                      | 639               | 0.082 | 52                  | 0.0               | 0.1             | 6.130     | A                             |
| C-AB   | 2                     | 0.56                    | 644               | 0.004 | 2                   | 0.0               | 0.0             | 5.611     | A                             |
| C-A    | 69                    | 17                      |                   |       | 69                  |                   |                 |           |                               |
| A-B    | 27                    | 7                       |                   |       | 27                  |                   |                 |           |                               |
| A-C    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |

### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 63                    | 16                      | 634               | 0.099 | 63                  | 0.1               | 0.1             | 6.302     | A                             |
| C-AB   | 3                     | 0.67                    | 641               | 0.004 | 3                   | 0.0               | 0.0             | 5.639     | A                             |
| C-A    | 83                    | 21                      |                   |       | 83                  |                   |                 |           |                               |
| A-B    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |
| A-C    | 38                    | 9                       |                   |       | 38                  |                   |                 |           |                               |

### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 77                    | 19                      | 627               | 0.123 | 77                  | 0.1               | 0.1             | 6.542     | A                             |
| C-AB   | 3                     | 0.83                    | 637               | 0.005 | 3                   | 0.0               | 0.0             | 5.679     | A                             |
| C-A    | 101                   | 25                      |                   |       | 101                 |                   |                 |           |                               |
| A-B    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |
| A-C    | 46                    | 12                      |                   |       | 46                  |                   |                 |           |                               |

### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 77                    | 19                      | 627               | 0.123 | 77                  | 0.1               | 0.1             | 6.544     | A                             |
| C-AB   | 3                     | 0.83                    | 637               | 0.005 | 3                   | 0.0               | 0.0             | 5.679     | A                             |
| C-A    | 101                   | 25                      |                   |       | 101                 |                   |                 |           |                               |
| A-B    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |
| A-C    | 46                    | 12                      |                   |       | 46                  |                   |                 |           |                               |

### 09:00 - 09:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 63                    | 16                      | 634               | 0.099 | 63                  | 0.1               | 0.1             | 6.307     | A                             |
| C-AB   | 3                     | 0.67                    | 641               | 0.004 | 3                   | 0.0               | 0.0             | 5.639     | A                             |
| C-A    | 83                    | 21                      |                   |       | 83                  |                   |                 |           |                               |
| A-B    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |
| A-C    | 38                    | 9                       |                   |       | 38                  |                   |                 |           |                               |

### 09:15 - 09:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 53                    | 13                      | 639               | 0.082 | 53                  | 0.1               | 0.1             | 6.141     | A                             |
| C-AB   | 2                     | 0.56                    | 644               | 0.004 | 2                   | 0.0               | 0.0             | 5.613     | A                             |
| C-A    | 69                    | 17                      |                   |       | 69                  |                   |                 |           |                               |
| A-B    | 27                    | 7                       |                   |       | 27                  |                   |                 |           |                               |
| A-C    | 32                    | 8                       |                   |       | 32                  |                   |                 |           |                               |

# 2019 Base, PM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.55               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2019 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 167                     | 100.000            |
| B   |            | ONE HOUR     | ✓            | 66                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 70                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |    |
|------|----|----|----|----|
|      | A  | B  | C  |    |
| From | A  | 0  | 89 | 78 |
|      | B  | 49 | 0  | 17 |
|      | C  | 62 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.11    | 6.40          | 0.1             | A       | 61                      | 91                            |
| C-AB   | 0.01    | 5.96          | 0.0             | A       | 7                       | 11                            |
| C-A    |         |               |                 |         | 57                      | 85                            |
| A-B    |         |               |                 |         | 82                      | 123                           |
| A-C    |         |               |                 |         | 72                      | 107                           |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 50                    | 12                      | 651               | 0.076 | 49                  | 0.0               | 0.1             | 5.980     | A                             |
| C-AB   | 6                     | 2                       | 627               | 0.010 | 6                   | 0.0               | 0.0             | 5.797     | A                             |
| C-A    | 47                    | 12                      |                   |       | 47                  |                   |                 |           |                               |
| A-B    | 67                    | 17                      |                   |       | 67                  |                   |                 |           |                               |
| A-C    | 59                    | 15                      |                   |       | 59                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 59                    | 15                      | 644               | 0.092 | 59                  | 0.1               | 0.1             | 6.153     | A                             |
| C-AB   | 7                     | 2                       | 621               | 0.012 | 7                   | 0.0               | 0.0             | 5.865     | A                             |
| C-A    | 56                    | 14                      |                   |       | 56                  |                   |                 |           |                               |
| A-B    | 80                    | 20                      |                   |       | 80                  |                   |                 |           |                               |
| A-C    | 70                    | 18                      |                   |       | 70                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 73                    | 18                      | 635               | 0.114 | 73                  | 0.1               | 0.1             | 6.401     | A                             |
| C-AB   | 9                     | 2                       | 613               | 0.014 | 9                   | 0.0               | 0.0             | 5.961     | A                             |
| C-A    | 68                    | 17                      |                   |       | 68                  |                   |                 |           |                               |
| A-B    | 98                    | 24                      |                   |       | 98                  |                   |                 |           |                               |
| A-C    | 86                    | 21                      |                   |       | 86                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 73                    | 18                      | 635               | 0.114 | 73                  | 0.1               | 0.1             | 6.404     | A                             |
| C-AB   | 9                     | 2                       | 613               | 0.014 | 9                   | 0.0               | 0.0             | 5.961     | A                             |
| C-A    | 68                    | 17                      |                   |       | 68                  |                   |                 |           |                               |
| A-B    | 98                    | 24                      |                   |       | 98                  |                   |                 |           |                               |
| A-C    | 86                    | 21                      |                   |       | 86                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 59                    | 15                      | 644               | 0.092 | 59                  | 0.1               | 0.1             | 6.158     | A                             |
| C-AB   | 7                     | 2                       | 621               | 0.012 | 7                   | 0.0               | 0.0             | 5.866     | A                             |
| C-A    | 56                    | 14                      |                   |       | 56                  |                   |                 |           |                               |
| A-B    | 80                    | 20                      |                   |       | 80                  |                   |                 |           |                               |
| A-C    | 70                    | 18                      |                   |       | 70                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 50                    | 12                      | 651               | 0.076 | 50                  | 0.1               | 0.1             | 5.986     | A                             |
| C-AB   | 6                     | 2                       | 627               | 0.010 | 6                   | 0.0               | 0.0             | 5.800     | A                             |
| C-A    | 47                    | 12                      |                   |       | 47                  |                   |                 |           |                               |
| A-B    | 67                    | 17                      |                   |       | 67                  |                   |                 |           |                               |
| A-C    | 59                    | 15                      |                   |       | 59                  |                   |                 |           |                               |

# 2022 Base, AM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.97               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2022 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 82                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 73                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 99                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |    |
|------|----|----|----|----|
|      | A  | B  | C  |    |
| From | A  | 0  | 38 | 44 |
|      | B  | 67 | 0  | 6  |
|      | C  | 96 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.13    | 6.61          | 0.1             | A       | 67                      | 100                           |
| C-AB   | 0.01    | 5.69          | 0.0             | A       | 3                       | 4                             |
| C-A    |         |               |                 |         | 88                      | 132                           |
| A-B    |         |               |                 |         | 35                      | 52                            |
| A-C    |         |               |                 |         | 40                      | 61                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 55                    | 14                      | 638               | 0.086 | 55                  | 0.0               | 0.1             | 6.171     | A                             |
| C-AB   | 2                     | 0.56                    | 643               | 0.004 | 2                   | 0.0               | 0.0             | 5.617     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 29                    | 7                       |                   |       | 29                  |                   |                 |           |                               |
| A-C    | 33                    | 8                       |                   |       | 33                  |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 66                    | 16                      | 632               | 0.104 | 66                  | 0.1               | 0.1             | 6.353     | A                             |
| C-AB   | 3                     | 0.67                    | 640               | 0.004 | 3                   | 0.0               | 0.0             | 5.647     | A                             |
| C-A    | 86                    | 22                      |                   |       | 86                  |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 80                    | 20                      | 625               | 0.129 | 80                  | 0.1               | 0.1             | 6.608     | A                             |
| C-AB   | 3                     | 0.83                    | 636               | 0.005 | 3                   | 0.0               | 0.0             | 5.689     | A                             |
| C-A    | 106                   | 26                      |                   |       | 106                 |                   |                 |           |                               |
| A-B    | 42                    | 10                      |                   |       | 42                  |                   |                 |           |                               |
| A-C    | 48                    | 12                      |                   |       | 48                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 80                    | 20                      | 625               | 0.129 | 80                  | 0.1               | 0.1             | 6.610     | A                             |
| C-AB   | 3                     | 0.83                    | 636               | 0.005 | 3                   | 0.0               | 0.0             | 5.689     | A                             |
| C-A    | 106                   | 26                      |                   |       | 106                 |                   |                 |           |                               |
| A-B    | 42                    | 10                      |                   |       | 42                  |                   |                 |           |                               |
| A-C    | 48                    | 12                      |                   |       | 48                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 66                    | 16                      | 632               | 0.104 | 66                  | 0.1               | 0.1             | 6.358     | A                             |
| C-AB   | 3                     | 0.67                    | 640               | 0.004 | 3                   | 0.0               | 0.0             | 5.649     | A                             |
| C-A    | 86                    | 22                      |                   |       | 86                  |                   |                 |           |                               |
| A-B    | 34                    | 9                       |                   |       | 34                  |                   |                 |           |                               |
| A-C    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 55                    | 14                      | 638               | 0.086 | 55                  | 0.1               | 0.1             | 6.180     | A                             |
| C-AB   | 2                     | 0.56                    | 643               | 0.004 | 2                   | 0.0               | 0.0             | 5.620     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 29                    | 7                       |                   |       | 29                  |                   |                 |           |                               |
| A-C    | 33                    | 8                       |                   |       | 33                  |                   |                 |           |                               |

# 2022 Base, PM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.56               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2022 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 175                     | 100.000            |
| B   |            | ONE HOUR     | ✓            | 69                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 73                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      |   | To |    |    |
|------|---|----|----|----|
| From |   | A  | B  | C  |
|      | A | 0  | 93 | 82 |
|      | B | 51 | 0  | 18 |
|      | C | 65 | 8  | 0  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |
|------|----|---|---|---|
| From |    | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.12    | 6.46          | 0.1             | A       | 63                      | 95                            |
| C-AB   | 0.01    | 5.98          | 0.0             | A       | 7                       | 11                            |
| C-A    |         |               |                 |         | 60                      | 89                            |
| A-B    |         |               |                 |         | 85                      | 128                           |
| A-C    |         |               |                 |         | 75                      | 113                           |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 52                    | 13                      | 650               | 0.080 | 52                  | 0.0               | 0.1             | 6.014     | A                             |
| C-AB   | 6                     | 2                       | 625               | 0.010 | 6                   | 0.0               | 0.0             | 5.811     | A                             |
| C-A    | 49                    | 12                      |                   |       | 49                  |                   |                 |           |                               |
| A-B    | 70                    | 18                      |                   |       | 70                  |                   |                 |           |                               |
| A-C    | 62                    | 15                      |                   |       | 62                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 62                    | 16                      | 643               | 0.097 | 62                  | 0.1               | 0.1             | 6.198     | A                             |
| C-AB   | 7                     | 2                       | 619               | 0.012 | 7                   | 0.0               | 0.0             | 5.883     | A                             |
| C-A    | 58                    | 15                      |                   |       | 58                  |                   |                 |           |                               |
| A-B    | 84                    | 21                      |                   |       | 84                  |                   |                 |           |                               |
| A-C    | 74                    | 18                      |                   |       | 74                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.120 | 76                  | 0.1               | 0.1             | 6.462     | A                             |
| C-AB   | 9                     | 2                       | 610               | 0.014 | 9                   | 0.0               | 0.0             | 5.983     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 102                   | 26                      |                   |       | 102                 |                   |                 |           |                               |
| A-C    | 90                    | 23                      |                   |       | 90                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.120 | 76                  | 0.1               | 0.1             | 6.464     | A                             |
| C-AB   | 9                     | 2                       | 610               | 0.014 | 9                   | 0.0               | 0.0             | 5.983     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 102                   | 26                      |                   |       | 102                 |                   |                 |           |                               |
| A-C    | 90                    | 23                      |                   |       | 90                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 62                    | 16                      | 643               | 0.097 | 62                  | 0.1               | 0.1             | 6.203     | A                             |
| C-AB   | 7                     | 2                       | 619               | 0.012 | 7                   | 0.0               | 0.0             | 5.883     | A                             |
| C-A    | 58                    | 15                      |                   |       | 58                  |                   |                 |           |                               |
| A-B    | 84                    | 21                      |                   |       | 84                  |                   |                 |           |                               |
| A-C    | 74                    | 18                      |                   |       | 74                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 52                    | 13                      | 650               | 0.080 | 52                  | 0.1               | 0.1             | 6.021     | A                             |
| C-AB   | 6                     | 2                       | 625               | 0.010 | 6                   | 0.0               | 0.0             | 5.812     | A                             |
| C-A    | 49                    | 12                      |                   |       | 49                  |                   |                 |           |                               |
| A-B    | 70                    | 18                      |                   |       | 70                  |                   |                 |           |                               |
| A-C    | 62                    | 15                      |                   |       | 62                  |                   |                 |           |                               |

# 2029 Base, AM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.01               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2029 Base     | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 87                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 79                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 106                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |     |    |    |
|------|----|-----|----|----|
|      | A  | B   | C  |    |
| From | A  | 0   | 40 | 47 |
|      | B  | 72  | 0  | 7  |
|      | C  | 103 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.14    | 6.71          | 0.2             | A       | 72                      | 109                           |
| C-AB   | 0.01    | 5.70          | 0.0             | A       | 3                       | 4                             |
| C-A    |         |               |                 |         | 95                      | 142                           |
| A-B    |         |               |                 |         | 37                      | 55                            |
| A-C    |         |               |                 |         | 43                      | 65                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 59                    | 15                      | 637               | 0.093 | 59                  | 0.0               | 0.1             | 6.230     | A                             |
| C-AB   | 2                     | 0.56                    | 642               | 0.004 | 2                   | 0.0               | 0.0             | 5.626     | A                             |
| C-A    | 78                    | 19                      |                   |       | 78                  |                   |                 |           |                               |
| A-B    | 30                    | 8                       |                   |       | 30                  |                   |                 |           |                               |
| A-C    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 71                    | 18                      | 631               | 0.113 | 71                  | 0.1               | 0.1             | 6.429     | A                             |
| C-AB   | 3                     | 0.67                    | 639               | 0.004 | 3                   | 0.0               | 0.0             | 5.657     | A                             |
| C-A    | 93                    | 23                      |                   |       | 93                  |                   |                 |           |                               |
| A-B    | 36                    | 9                       |                   |       | 36                  |                   |                 |           |                               |
| A-C    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 87                    | 22                      | 623               | 0.140 | 87                  | 0.1               | 0.2             | 6.711     | A                             |
| C-AB   | 3                     | 0.83                    | 635               | 0.005 | 3                   | 0.0               | 0.0             | 5.701     | A                             |
| C-A    | 113                   | 28                      |                   |       | 113                 |                   |                 |           |                               |
| A-B    | 44                    | 11                      |                   |       | 44                  |                   |                 |           |                               |
| A-C    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 87                    | 22                      | 623               | 0.140 | 87                  | 0.2               | 0.2             | 6.714     | A                             |
| C-AB   | 3                     | 0.83                    | 635               | 0.005 | 3                   | 0.0               | 0.0             | 5.701     | A                             |
| C-A    | 113                   | 28                      |                   |       | 113                 |                   |                 |           |                               |
| A-B    | 44                    | 11                      |                   |       | 44                  |                   |                 |           |                               |
| A-C    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 71                    | 18                      | 631               | 0.113 | 71                  | 0.2               | 0.1             | 6.432     | A                             |
| C-AB   | 3                     | 0.67                    | 639               | 0.004 | 3                   | 0.0               | 0.0             | 5.657     | A                             |
| C-A    | 93                    | 23                      |                   |       | 93                  |                   |                 |           |                               |
| A-B    | 36                    | 9                       |                   |       | 36                  |                   |                 |           |                               |
| A-C    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 59                    | 15                      | 637               | 0.093 | 60                  | 0.1               | 0.1             | 6.239     | A                             |
| C-AB   | 2                     | 0.56                    | 642               | 0.004 | 2                   | 0.0               | 0.0             | 5.626     | A                             |
| C-A    | 78                    | 19                      |                   |       | 78                  |                   |                 |           |                               |
| A-B    | 30                    | 8                       |                   |       | 30                  |                   |                 |           |                               |
| A-C    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |

# 2029 Base, PM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.60               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2029 Base     | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 187                     | 100.000            |
| B   |            | ONE HOUR     | ✓            | 74                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 78                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |     |    |
|------|----|----|-----|----|
|      | A  | B  | C   |    |
| From | A  | 0  | 100 | 87 |
|      | B  | 55 | 0   | 19 |
|      | C  | 69 | 9   | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.13    | 6.58          | 0.1             | A       | 68                      | 102                           |
| C-AB   | 0.02    | 6.03          | 0.0             | A       | 8                       | 12                            |
| C-A    |         |               |                 |         | 63                      | 95                            |
| A-B    |         |               |                 |         | 92                      | 138                           |
| A-C    |         |               |                 |         | 80                      | 120                           |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 56                    | 14                      | 647               | 0.086 | 55                  | 0.0               | 0.1             | 6.081     | A                             |
| C-AB   | 7                     | 2                       | 623               | 0.011 | 7                   | 0.0               | 0.0             | 5.839     | A                             |
| C-A    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-B    | 75                    | 19                      |                   |       | 75                  |                   |                 |           |                               |
| A-C    | 65                    | 16                      |                   |       | 65                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 67                    | 17                      | 639               | 0.104 | 66                  | 0.1               | 0.1             | 6.285     | A                             |
| C-AB   | 8                     | 2                       | 616               | 0.013 | 8                   | 0.0               | 0.0             | 5.917     | A                             |
| C-A    | 62                    | 16                      |                   |       | 62                  |                   |                 |           |                               |
| A-B    | 90                    | 22                      |                   |       | 90                  |                   |                 |           |                               |
| A-C    | 78                    | 20                      |                   |       | 78                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 81                    | 20                      | 629               | 0.130 | 81                  | 0.1               | 0.1             | 6.577     | A                             |
| C-AB   | 10                    | 2                       | 607               | 0.016 | 10                  | 0.0               | 0.0             | 6.026     | A                             |
| C-A    | 76                    | 19                      |                   |       | 76                  |                   |                 |           |                               |
| A-B    | 110                   | 28                      |                   |       | 110                 |                   |                 |           |                               |
| A-C    | 96                    | 24                      |                   |       | 96                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 81                    | 20                      | 628               | 0.130 | 81                  | 0.1               | 0.1             | 6.580     | A                             |
| C-AB   | 10                    | 2                       | 607               | 0.016 | 10                  | 0.0               | 0.0             | 6.026     | A                             |
| C-A    | 76                    | 19                      |                   |       | 76                  |                   |                 |           |                               |
| A-B    | 110                   | 28                      |                   |       | 110                 |                   |                 |           |                               |
| A-C    | 96                    | 24                      |                   |       | 96                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 67                    | 17                      | 639               | 0.104 | 67                  | 0.1               | 0.1             | 6.288     | A                             |
| C-AB   | 8                     | 2                       | 616               | 0.013 | 8                   | 0.0               | 0.0             | 5.917     | A                             |
| C-A    | 62                    | 16                      |                   |       | 62                  |                   |                 |           |                               |
| A-B    | 90                    | 22                      |                   |       | 90                  |                   |                 |           |                               |
| A-C    | 78                    | 20                      |                   |       | 78                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 56                    | 14                      | 647               | 0.086 | 56                  | 0.1               | 0.1             | 6.090     | A                             |
| C-AB   | 7                     | 2                       | 623               | 0.011 | 7                   | 0.0               | 0.0             | 5.842     | A                             |
| C-A    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-B    | 75                    | 19                      |                   |       | 75                  |                   |                 |           |                               |
| A-C    | 65                    | 16                      |                   |       | 65                  |                   |                 |           |                               |

# 2022 + Dev , AM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.39               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2022 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 90                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 95                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 99                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |    |
|------|----|----|----|
|      | A  | B  | C  |
| From | A  | 0  | 46 |
|      | B  | 89 | 0  |
|      | C  | 96 | 3  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |
|------|----|---|---|
|      | A  | B | C |
| From | A  | 0 | 0 |
|      | B  | 0 | 0 |
|      | C  | 0 | 0 |

## Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.17    | 6.97          | 0.2             | A       | 87                      | 131                           |
| C-AB   | 0.01    | 5.71          | 0.0             | A       | 3                       | 4                             |
| C-A    |         |               |                 |         | 88                      | 132                           |
| A-B    |         |               |                 |         | 42                      | 63                            |
| A-C    |         |               |                 |         | 40                      | 61                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 72                    | 18                      | 634               | 0.113 | 71                  | 0.0               | 0.1             | 6.385     | A                             |
| C-AB   | 2                     | 0.56                    | 641               | 0.004 | 2                   | 0.0               | 0.0             | 5.631     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 33                    | 8                       |                   |       | 33                  |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 85                    | 21                      | 629               | 0.136 | 85                  | 0.1               | 0.2             | 6.620     | A                             |
| C-AB   | 3                     | 0.67                    | 638               | 0.004 | 3                   | 0.0               | 0.0             | 5.663     | A                             |
| C-A    | 86                    | 22                      |                   |       | 86                  |                   |                 |           |                               |
| A-B    | 41                    | 10                      |                   |       | 41                  |                   |                 |           |                               |
| A-C    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 105                   | 26                      | 621               | 0.168 | 104                 | 0.2               | 0.2             | 6.963     | A                             |
| C-AB   | 3                     | 0.83                    | 634               | 0.005 | 3                   | 0.0               | 0.0             | 5.709     | A                             |
| C-A    | 106                   | 26                      |                   |       | 106                 |                   |                 |           |                               |
| A-B    | 51                    | 13                      |                   |       | 51                  |                   |                 |           |                               |
| A-C    | 48                    | 12                      |                   |       | 48                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 105                   | 26                      | 621               | 0.168 | 105                 | 0.2               | 0.2             | 6.966     | A                             |
| C-AB   | 3                     | 0.83                    | 634               | 0.005 | 3                   | 0.0               | 0.0             | 5.709     | A                             |
| C-A    | 106                   | 26                      |                   |       | 106                 |                   |                 |           |                               |
| A-B    | 51                    | 13                      |                   |       | 51                  |                   |                 |           |                               |
| A-C    | 48                    | 12                      |                   |       | 48                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 85                    | 21                      | 629               | 0.136 | 86                  | 0.2               | 0.2             | 6.630     | A                             |
| C-AB   | 3                     | 0.67                    | 638               | 0.004 | 3                   | 0.0               | 0.0             | 5.666     | A                             |
| C-A    | 86                    | 22                      |                   |       | 86                  |                   |                 |           |                               |
| A-B    | 41                    | 10                      |                   |       | 41                  |                   |                 |           |                               |
| A-C    | 40                    | 10                      |                   |       | 40                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 72                    | 18                      | 634               | 0.113 | 72                  | 0.2               | 0.1             | 6.398     | A                             |
| C-AB   | 2                     | 0.56                    | 641               | 0.004 | 2                   | 0.0               | 0.0             | 5.631     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |
| A-C    | 33                    | 8                       |                   |       | 33                  |                   |                 |           |                               |

# 2022 + Dev , PM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.69               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2022 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 193                     | 100.000            |
| B   |            | ONE HOUR     | ✓            | 80                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 73                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |     |    |
|------|----|----|-----|----|
|      | A  | B  | C   |    |
| From | A  | 0  | 111 | 82 |
|      | B  | 62 | 0   | 18 |
|      | C  | 65 | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.14    | 6.70          | 0.2             | A       | 73                      | 110                           |
| C-AB   | 0.01    | 6.03          | 0.0             | A       | 7                       | 11                            |
| C-A    |         |               |                 |         | 60                      | 89                            |
| A-B    |         |               |                 |         | 102                     | 153                           |
| A-C    |         |               |                 |         | 75                      | 113                           |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 60                    | 15                      | 643               | 0.094 | 60                  | 0.0               | 0.1             | 6.164     | A                             |
| C-AB   | 6                     | 2                       | 622               | 0.010 | 6                   | 0.0               | 0.0             | 5.844     | A                             |
| C-A    | 49                    | 12                      |                   |       | 49                  |                   |                 |           |                               |
| A-B    | 84                    | 21                      |                   |       | 84                  |                   |                 |           |                               |
| A-C    | 62                    | 15                      |                   |       | 62                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 72                    | 18                      | 636               | 0.113 | 72                  | 0.1               | 0.1             | 6.382     | A                             |
| C-AB   | 7                     | 2                       | 615               | 0.012 | 7                   | 0.0               | 0.0             | 5.923     | A                             |
| C-A    | 58                    | 15                      |                   |       | 58                  |                   |                 |           |                               |
| A-B    | 100                   | 25                      |                   |       | 100                 |                   |                 |           |                               |
| A-C    | 74                    | 18                      |                   |       | 74                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 88                    | 22                      | 625               | 0.141 | 88                  | 0.1               | 0.2             | 6.696     | A                             |
| C-AB   | 9                     | 2                       | 605               | 0.015 | 9                   | 0.0               | 0.0             | 6.034     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 122                   | 31                      |                   |       | 122                 |                   |                 |           |                               |
| A-C    | 90                    | 23                      |                   |       | 90                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 88                    | 22                      | 625               | 0.141 | 88                  | 0.2               | 0.2             | 6.698     | A                             |
| C-AB   | 9                     | 2                       | 605               | 0.015 | 9                   | 0.0               | 0.0             | 6.034     | A                             |
| C-A    | 72                    | 18                      |                   |       | 72                  |                   |                 |           |                               |
| A-B    | 122                   | 31                      |                   |       | 122                 |                   |                 |           |                               |
| A-C    | 90                    | 23                      |                   |       | 90                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 72                    | 18                      | 636               | 0.113 | 72                  | 0.2               | 0.1             | 6.388     | A                             |
| C-AB   | 7                     | 2                       | 615               | 0.012 | 7                   | 0.0               | 0.0             | 5.923     | A                             |
| C-A    | 58                    | 15                      |                   |       | 58                  |                   |                 |           |                               |
| A-B    | 100                   | 25                      |                   |       | 100                 |                   |                 |           |                               |
| A-C    | 74                    | 18                      |                   |       | 74                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 60                    | 15                      | 643               | 0.094 | 60                  | 0.1               | 0.1             | 6.173     | A                             |
| C-AB   | 6                     | 2                       | 622               | 0.010 | 6                   | 0.0               | 0.0             | 5.844     | A                             |
| C-A    | 49                    | 12                      |                   |       | 49                  |                   |                 |           |                               |
| A-B    | 84                    | 21                      |                   |       | 84                  |                   |                 |           |                               |
| A-C    | 62                    | 15                      |                   |       | 62                  |                   |                 |           |                               |

# 2029 + Dev , AM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 2.43               | 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) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2029 + Dev    | AM               | ONE HOUR             | 08:00              | 09:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 95                      | 100.000            |
| B   |            | ONE HOUR     | ✓            | 101                     | 100.000            |
| C   |            | ONE HOUR     | ✓            | 106                     | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|  | To |     |    |    |
|--|----|-----|----|----|
|  |    | A   | B  | C  |
|  | A  | 0   | 48 | 47 |
|  | B  | 94  | 0  | 7  |
|  | C  | 103 | 3  | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.18    | 7.08          | 0.2             | A       | 93                      | 139                           |
| C-AB   | 0.01    | 5.72          | 0.0             | A       | 3                       | 4                             |
| C-A    |         |               |                 |         | 95                      | 142                           |
| A-B    |         |               |                 |         | 44                      | 66                            |
| A-C    |         |               |                 |         | 43                      | 65                            |

### Main Results for each time segment

#### 08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.120 | 75                  | 0.0               | 0.1             | 6.448     | A                             |
| C-AB   | 2                     | 0.56                    | 641               | 0.004 | 2                   | 0.0               | 0.0             | 5.639     | A                             |
| C-A    | 78                    | 19                      |                   |       | 78                  |                   |                 |           |                               |
| A-B    | 36                    | 9                       |                   |       | 36                  |                   |                 |           |                               |
| A-C    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |

#### 08:15 - 08:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 91                    | 23                      | 628               | 0.145 | 91                  | 0.1               | 0.2             | 6.704     | A                             |
| C-AB   | 3                     | 0.67                    | 637               | 0.004 | 3                   | 0.0               | 0.0             | 5.673     | A                             |
| C-A    | 93                    | 23                      |                   |       | 93                  |                   |                 |           |                               |
| A-B    | 43                    | 11                      |                   |       | 43                  |                   |                 |           |                               |
| A-C    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |

#### 08:30 - 08:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 111                   | 28                      | 619               | 0.180 | 111                 | 0.2               | 0.2             | 7.075     | A                             |
| C-AB   | 3                     | 0.83                    | 632               | 0.005 | 3                   | 0.0               | 0.0             | 5.721     | A                             |
| C-A    | 113                   | 28                      |                   |       | 113                 |                   |                 |           |                               |
| A-B    | 53                    | 13                      |                   |       | 53                  |                   |                 |           |                               |
| A-C    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |

#### 08:45 - 09:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 111                   | 28                      | 619               | 0.180 | 111                 | 0.2               | 0.2             | 7.082     | A                             |
| C-AB   | 3                     | 0.83                    | 632               | 0.005 | 3                   | 0.0               | 0.0             | 5.721     | A                             |
| C-A    | 113                   | 28                      |                   |       | 113                 |                   |                 |           |                               |
| A-B    | 53                    | 13                      |                   |       | 53                  |                   |                 |           |                               |
| A-C    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |

**09:00 - 09:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 91                    | 23                      | 628               | 0.145 | 91                  | 0.2               | 0.2             | 6.714     | A                             |
| C-AB   | 3                     | 0.67                    | 637               | 0.004 | 3                   | 0.0               | 0.0             | 5.676     | A                             |
| C-A    | 93                    | 23                      |                   |       | 93                  |                   |                 |           |                               |
| A-B    | 43                    | 11                      |                   |       | 43                  |                   |                 |           |                               |
| A-C    | 42                    | 11                      |                   |       | 42                  |                   |                 |           |                               |

**09:15 - 09:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.120 | 76                  | 0.2               | 0.1             | 6.462     | A                             |
| C-AB   | 2                     | 0.56                    | 641               | 0.004 | 2                   | 0.0               | 0.0             | 5.641     | A                             |
| C-A    | 78                    | 19                      |                   |       | 78                  |                   |                 |           |                               |
| A-B    | 36                    | 9                       |                   |       | 36                  |                   |                 |           |                               |
| A-C    | 35                    | 9                       |                   |       | 35                  |                   |                 |           |                               |

# 2029 + Dev, PM

## Data Errors and Warnings

| Severity | Area        | Item | Description                                                                                                                                                                                  |
|----------|-------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Vehicle Mix |      | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

## Junction Network

### Junctions

| Junction | Name     | Junction type | Major road direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|----------------------|-----------------------|--------------------|--------------|
| 1        | untitled | T-Junction    | Two-way              |                       | 1.71               | 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) | Run automatically |
|-----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2029 + Dev    | PM               | ONE HOUR             | 17:00              | 18:30               | 15                        | ✓                 |

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

### Demand overview (Traffic)

| Arm | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|--------------|-------------------------|--------------------|
| A   |            | ONE HOUR     | ✓            | 205                     | 100.000            |
| B   |            | ONE HOUR     | ✓            | 84                      | 100.000            |
| C   |            | ONE HOUR     | ✓            | 78                      | 100.000            |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To |    |     |    |
|------|----|----|-----|----|
|      | A  | B  | C   |    |
| From | A  | 0  | 118 | 87 |
|      | B  | 65 | 0   | 19 |
|      | C  | 69 | 9   | 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 | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|--------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| B-AC   | 0.15    | 6.80          | 0.2             | A       | 77                      | 116                           |
| C-AB   | 0.02    | 6.08          | 0.0             | A       | 8                       | 12                            |
| C-A    |         |               |                 |         | 63                      | 95                            |
| A-B    |         |               |                 |         | 108                     | 162                           |
| A-C    |         |               |                 |         | 80                      | 120                           |

### Main Results for each time segment

#### 17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 63                    | 16                      | 641               | 0.099 | 63                  | 0.0               | 0.1             | 6.221     | A                             |
| C-AB   | 7                     | 2                       | 620               | 0.011 | 7                   | 0.0               | 0.0             | 5.872     | A                             |
| C-A    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-B    | 89                    | 22                      |                   |       | 89                  |                   |                 |           |                               |
| A-C    | 65                    | 16                      |                   |       | 65                  |                   |                 |           |                               |

#### 17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.119 | 75                  | 0.1               | 0.1             | 6.456     | A                             |
| C-AB   | 8                     | 2                       | 612               | 0.013 | 8                   | 0.0               | 0.0             | 5.957     | A                             |
| C-A    | 62                    | 16                      |                   |       | 62                  |                   |                 |           |                               |
| A-B    | 106                   | 27                      |                   |       | 106                 |                   |                 |           |                               |
| A-C    | 78                    | 20                      |                   |       | 78                  |                   |                 |           |                               |

#### 17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 92                    | 23                      | 622               | 0.149 | 92                  | 0.1               | 0.2             | 6.797     | A                             |
| C-AB   | 10                    | 2                       | 602               | 0.016 | 10                  | 0.0               | 0.0             | 6.077     | A                             |
| C-A    | 76                    | 19                      |                   |       | 76                  |                   |                 |           |                               |
| A-B    | 130                   | 32                      |                   |       | 130                 |                   |                 |           |                               |
| A-C    | 96                    | 24                      |                   |       | 96                  |                   |                 |           |                               |

#### 17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 92                    | 23                      | 622               | 0.149 | 92                  | 0.2               | 0.2             | 6.799     | A                             |
| C-AB   | 10                    | 2                       | 602               | 0.016 | 10                  | 0.0               | 0.0             | 6.077     | A                             |
| C-A    | 76                    | 19                      |                   |       | 76                  |                   |                 |           |                               |
| A-B    | 130                   | 32                      |                   |       | 130                 |                   |                 |           |                               |
| A-C    | 96                    | 24                      |                   |       | 96                  |                   |                 |           |                               |

**18:00 - 18:15**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 76                    | 19                      | 633               | 0.119 | 76                  | 0.2               | 0.1             | 6.462     | A                             |
| C-AB   | 8                     | 2                       | 612               | 0.013 | 8                   | 0.0               | 0.0             | 5.957     | A                             |
| C-A    | 62                    | 16                      |                   |       | 62                  |                   |                 |           |                               |
| A-B    | 106                   | 27                      |                   |       | 106                 |                   |                 |           |                               |
| A-C    | 78                    | 20                      |                   |       | 78                  |                   |                 |           |                               |

**18:15 - 18:30**

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------------------------------|
| B-AC   | 63                    | 16                      | 641               | 0.099 | 63                  | 0.1               | 0.1             | 6.234     | A                             |
| C-AB   | 7                     | 2                       | 620               | 0.011 | 7                   | 0.0               | 0.0             | 5.875     | A                             |
| C-A    | 52                    | 13                      |                   |       | 52                  |                   |                 |           |                               |
| A-B    | 89                    | 22                      |                   |       | 89                  |                   |                 |           |                               |
| A-C    | 65                    | 16                      |                   |       | 65                  |                   |                 |           |                               |