

PROPOSED RESIDENTIAL DEVELOPMENT

LAND TO THE NORTH OF ELBA CRESENT, SWANSEA

TRANSPORT ASSESSMENT

21-00758/TA/01_B

NOVEMBER 2023

DOCUMENT SIGNATURE AND MODIFICATION SHEET**Project Details**

Project Title:	Land to North of Elba Crescent, Swansea		
Project No:	21-00758	Document No:	TA/01_B
Client:	Hawkland Estates Ltd		
-	Name	Signature	Date
Prepared by	Lloyd Bastian		December 2021
Checked and approved for Issue by	Mark Murawski		December 2021

Modification Details

Rev	Date	Description	Checked By
B	November 2023	Amended version following comments received from Neath Port Talbot Council Highways on original TA produced in December 2021	MA

Issued By:

Corun Associates
Swansea

T 017 9222 9160
E swansea@corun.uk.com

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1 INTRODUCTION

1.1 Background

- 1.1.1 This Transport Assessment (TA) has been produced by Corun Associates ('Corun') on behalf of Hawkland Estates Ltd (the 'applicant') to examine the highway and transportation issues associated with a proposed development of 152 residential units on land to the north of Elba Crescent, Swansea.
- 1.1.2 The site was previously granted outline planning permission as part of a larger mixed use residential and employment site in September 2011 (Ref: P2008/0514). This consent was varied in 2018 to extend the period of approval for reserved matters thereby extending the life of the permission (Ref: P2017/0800). This consent expired in May 2019. The residential element of the previous application comprised of 100 dwellings. This TA has been developed to support a new application on the same area of land outlined for residential development in the 2018 approved scheme.
- 1.1.3 This TA provides a 'Revision B' to the original TA submitted in December 2021. This revised TA has been developed following comments received from Neath Port Talbot Highways.
- 1.1.4 The aim of this report is to demonstrate the suitability of the site to accommodate a development of this scale without detriment to highway operation or safety.

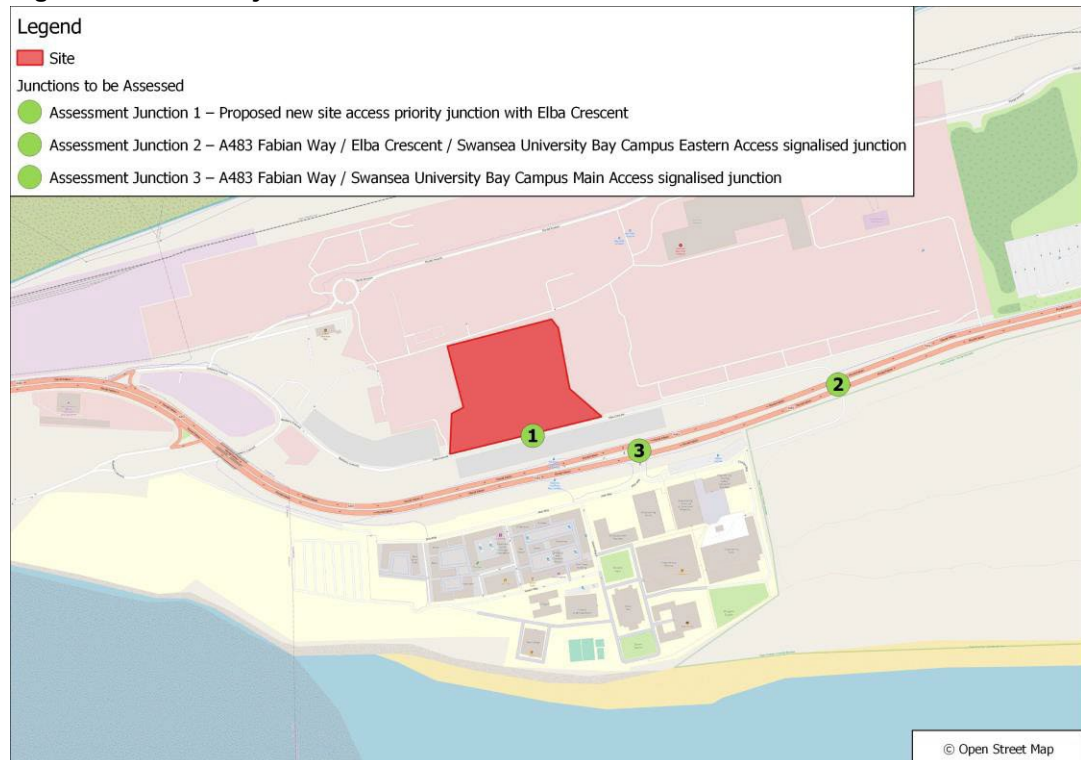
1.2 Scope of Assessment

- 1.2.1 A scoping meeting was held on the 14th of August with Neath Port Talbot Highway officers. It was agreed that 12-hour turning counts would be undertaken at the two signal junctions on Fabian Way that serve Elba Crescent and the University Campus, and that the surveys would be undertaken on the busiest weekday.
- 1.2.2 Following subsequent discussions with Swansea Highways, who have a permanent ATC site near SA1, the busiest days were consistently between Tuesday and Thursday, with Tuesday being the busiest day on the network at this time of year.
- 1.2.3 Full 12-hour turning counts, with queue length, were undertaken by PCCTIC on Tuesday 17th of October at the two signalised junctions. The university was operating normally at that time. Queue length measurements on site were required to validate the LinSig model.
- 1.2.4 In addition, a 7-day ATC was placed on Elba Crescent close to the proposed site access between the 23rd and 28th of October 2023. The ATC obtained the 85th percentile traffic speed, which will be used for visibility splay purposes.
- 1.2.5 This TA discusses the following key transport issues associated with the development of the site:
- the site location;
 - development proposals including proposed access for all modes;
 - the site's compliance with applicable transport planning policy;
 - accessibility to walking, cycling and public transport facilities;
 - trip generation predictions for the proposed development;
 - traffic impact;
 - review and assessment of highway capacity in the vicinity of the site.

1.2.6 With due consideration of the scale of the proposed development, the following junctions will form the study area (please also see **Figure 1.1**):

- **Assessment Junction 1** – Proposed new site access priority junction with Elba Crescent
- **Assessment Junction 2** – A483 Fabian Way / Elba Crescent / Swansea University Bay Campus Eastern Access signalised junction
- **Assessment Junction 3** – A483 Fabian Way / Swansea University Bay Campus Main Access signalised junction

Figure 1.1: TA Study Network Junctions



2 EXISTING CONDITIONS

2.1 Site Description

2.1.1 The site is located on former industrial land to the north of Elba Crescent, approximately 4km to the east of Swansea city centre. Elba Crescent itself is located directly north of both the A483 Fabian Way and the Swansea University Bay Campus.

2.1.2 The site formed a parking area for the previous industrial use and is bordered by Elba Crescent to the south, and further industrial development to the north, east and west. **Figure 2.1** displays the site location in a local context.

Figure 2.1: Site Location in Local Context



2.2 Local Highway Network

Elba Crescent

2.2.1 Access to the site is currently provided via a priority junction in the south east corner along Elba Crescent.

2.2.2 In the vicinity of the site, Elba Crescent is currently 30mph providing access to the residential dwellings located along its southern edge. Neath Port Talbot may reduce the posted speed limit to 20mph, in line with Welsh Government Policy. A speed survey undertaken at a point to the east of the site along Elba Crescent was undertaken between Monday 23 October and Saturday 28 October. This survey identified an average speed of approximately 24mph in both directions along the road, with an 85th percentile speed of approximately

32mph in both directions along the road. A copy of this speed survey is contained at **Appendix A**.

- 2.2.3 West of the site, Elba Crescent continues as Baldwins Crescent for a distance of approximately 250m, where a bus barrier is located preventing continued movements for all other vehicles.
- 2.2.4 East from the site, Elba Crescent continues for a distance of approximately 500m, where it connects to the A483 Fabian Way via a signalised junction (also including the Swansea University Bay Campus Eastern access point).

A483 Fabian Way

- 2.2.5 The A483 Fabian Way is a multiple lane dual carriageway road which in the vicinity of the site has a 50mph speed limit.
- 2.2.6 The A483 Fabian Way extends for a distance of approximately 7km, providing a key strategic route between Swansea City Centre to the west, and the junctions with the M4 J42 and A48 (providing access through the Neath and Port Talbot areas) at its eastern point.
- 2.2.7 The site is shown in a wider strategic context at **Figure 2.2**.

Figure 2.2: Site in Wider Strategic Context

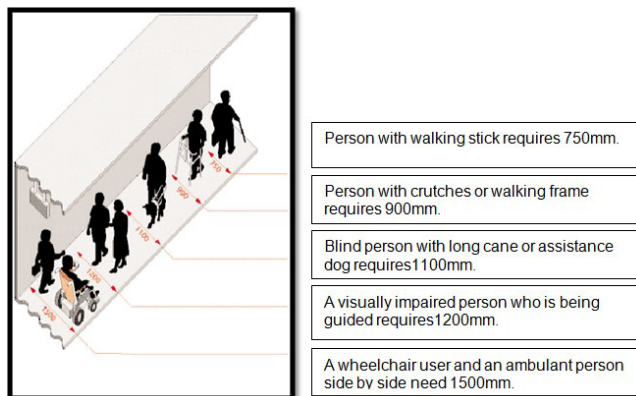


2.3 Pedestrian

- 2.3.1 East from the site access point along Elba Crescent, footways of at least 1.5m in width are present on both sides of the carriageway, and continue for the length of the road, connecting into an onward shared use pedestrian and cyclist route along the northern edge of the A483 Fabian Way carriageway. The signalised junction at this point also provides a pedestrian crossing point into the shared use pedestrian and cyclist route also running along the southern edge of the A483 Fabian Way carriageway.

- 2.3.2 West from the site access point along Elba Crescent, a footway of at least 1.5m in width is present on the southern side of the carriageway, and continues for the length of the road, connecting into onward routes north through the Ffordd Amazon industrial area, and west into the shared use pedestrian and cycle route running along the northern edge of the A483 Fabian Way carriageway.
- 2.3.3 South of the site, at a point between No.18 and No.19 Elba Crescent, a short off-road link also provides direct access to the shared use pedestrian and cycle route running along the northern edge of the A483 Fabian Way carriageway (connecting at a point by the Swansea University Bay Campus eastbound stop). The signalised junction into the Swansea University Bay Campus main entrance is also located approximately 100m to the east of this point, providing a signalised toucan crossing point into the university campus, and onto the shared use pedestrian and cycle route running also along the southern edge of the A483 Fabian Way carriageway.
- 2.3.4 **Extract 2.1** from DfT's 'Inclusive Mobility' document (2002), identifies that aforementioned footway widths of at least 1.5m are suitable for a variety of users, including a wheelchair user and an ambulant person side by side.

Extract 2.1: Footway widths (DfT 'Inclusive Mobility' 2002)

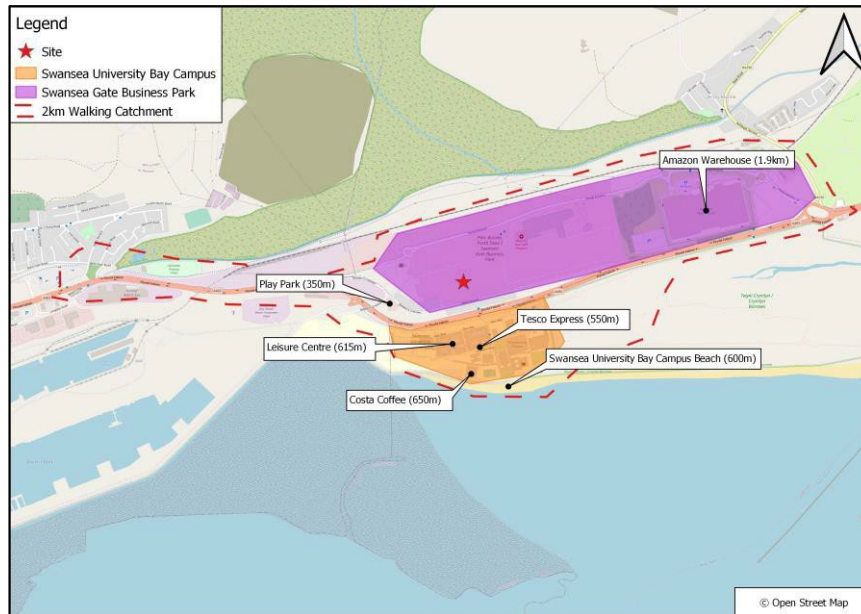


- 2.3.5 The Chartered Institution of Highways and Transportation document 'Providing for Journeys on Foot' provides the following suggested acceptable walking distances, as shown in **Table 2.1**.

Table 2.1: Acceptable Walking Distances (IHT)

	Town Centres (m)	Commuting / School / Sightseeing (m)	Elsewhere / Local Services (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

- 2.3.6 **Figure 2.3** identifies that a variety of facilities, amenities and employment opportunities can be reached within a short walking distance of the site. These include significant employment opportunities from the industrial area to the north of the site along Ffordd Amazon (including the Amazon unit approximately a 1.9km walk). Swansea Bay University Campus is also located approximately just a 260m walk south of the site. Not only providing employment and education opportunities, the campus also offers facilities accessible to the public including a Tesco Express, Costa coffee shop, and gym facilities.

Figure 2.3: Local Facilities

2.3.7 As outlined in **Section 4** of this report, the proposed development will also include a corner shop unit on the site, which will provide an additional retail facility within walking distance for residents.

2.3.8 The nearest school to the site is Crymlyn Primary School, located approximately a 2.5km walk to the north east in the Jersey Marine area. This is an approximate 35-minute walking distance. There are no school bus services operating from the site area to this primary school.

2.3.9 A school bus service however does operate from the site area (Crymlyn Burrows) to Dwr Y Felyn Comprehensive school in Neath. This service would offer potential pupils living at the proposed development the opportunity to travel to this school via bus.

2.4 Cycle Opportunities

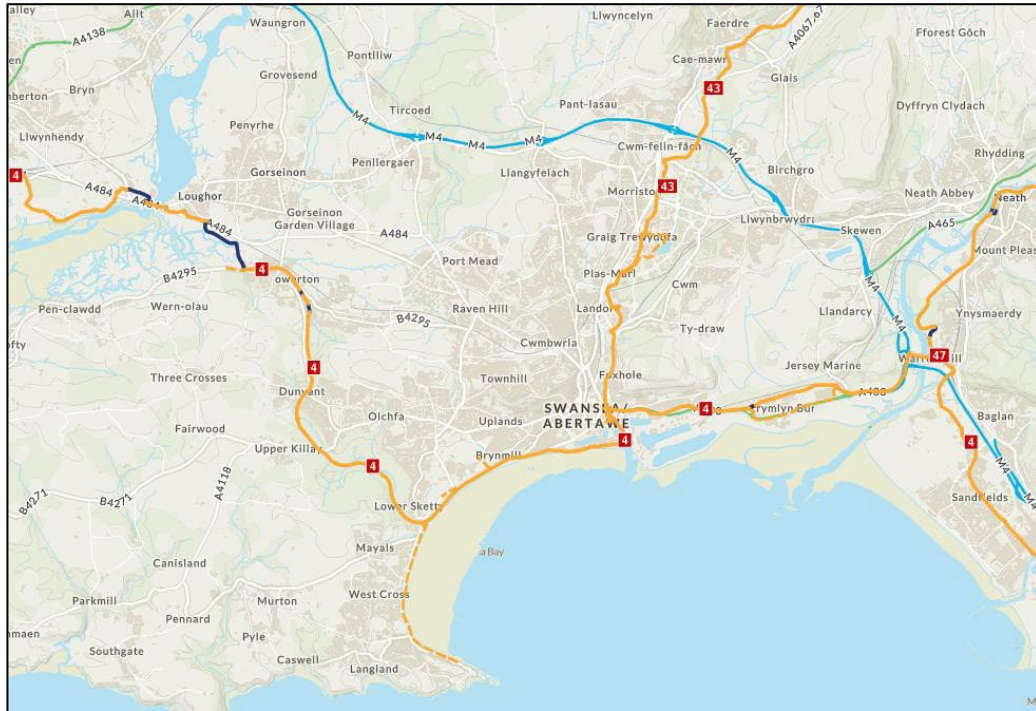
2.4.1 Cycling facilities within the vicinity of the site are outlined on an extract from the Swansea Bay cycle map published by Swansea Council, shown in **Figure 2.4**.

2.4.2 As identified on the Swansea Bay Cycle Map extract, cycling in the immediate vicinity along Elba Crescent is accommodated on-road. As previously identified, however, a short off-road link to the south of the site between No.18 and No.19 Elba Crescent provides direct access to the shared use pedestrian and cycle route running along the northern edge of the A483 Fabian Way carriageway (connecting at a point by the Swansea University Bay Campus eastbound stop), with further signalised toucan crossings also providing direct access into the shared use pedestrian and cycle route also running along the southern edge of the A483 Fabian Way carriageway.

2.4.3 The shared use routes along the A483 Fabian Way carriageway form part of the Red Route of the Swansea Bay Cycle Network. The Blue Route also commences from the eastern point of Elba Crescent approximately just 500m east from the site.

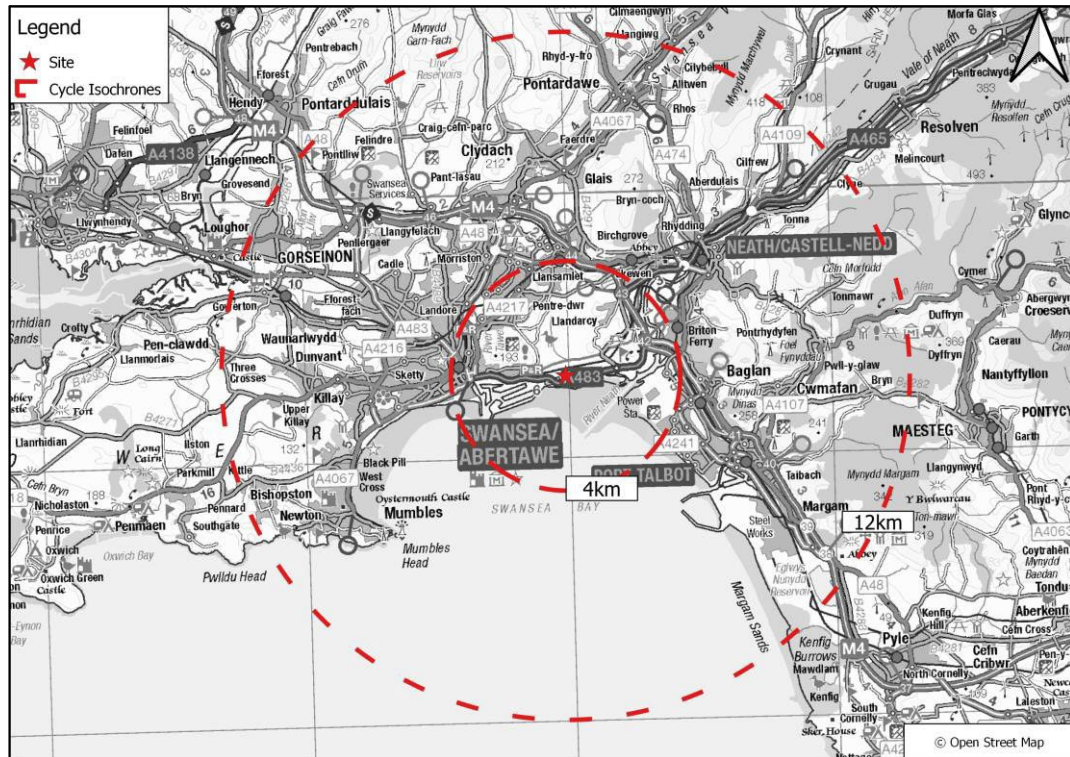
- 2.4.5 The Red Route (also known as the Central Line) is a largely off-road and flat route that continues west into Swansea city centre (approximately a further 16-minute cycle time), and east towards Port Talbot (approximately a 40-minute cycle time). This is a key route on the Swansea Bay Cycle Network, and also forms part of National Cycle Route 4 as shown on **Figure 2.6**.

Figure 2.6: National Cycle Route Network Extract



Source: www.sustrans.org.uk

- 2.4.6 The Blue Route (also known as the Skewen Link) is an approximate 3km advisory on-road route for users of all abilities, routing between the Swansea Bay University Campus at its southern point, and Neath at its northern point. As identified on the Tube Map at **Figure 2.5**, this route can be travelled in approximately 30-minutes, and acts as a link to further routes on the Swansea Bay Cycle Network (Orange, Green, Light Blue).
- 2.4.7 LTN1/04 identifies that the mean average length for cycling is 4km (2.4 miles), although journeys of up to three times this distance are not uncommon for regular commuters. As such, a 12km (7.4 miles) cycle distance normally applies. **Figure 2.7** displays the 4km and 12km indicative cycle catchments from the site.
- 2.4.8 **Figure 2.7** identifies that Swansea city centre is located within a 4km catchment of the site. The wider 12km catchment also covers the whole of the wider Swansea area, and also covers some of the larger neighbouring towns/villages such as Neath, Port Talbot, Gorseinon, and Pontardawe.
- 2.4.9 With its proximity to an extensive network of designated Active Travel cycle routes, the site is located in an excellent position to encourage cycle modes of travel for both local and longer distance journeys.

Figure 2.7: 4km and 12km Cycle Catchments

2.5 Public Transport Facilities

Bus

- 2.5.1 Guidance relating to the accessibility of development proposals to public transport is provided in the Institution of Highways and Transportation (IHT) document 'Planning for Public Transport in Development' (March 1999). The IHT guidance recommends that

“new developments should be located so that public transport trips involve a walking distance of less than 400m from the nearest bus stop ...”.

- 2.5.2 The nearest bus stop to the site is located on Elba Crescent, to the west of the site access (approximately just a 70m walk). This stop is served by First Cymru service 84, which runs between Swansea and Port Talbot.
- 2.5.3 Additional Bus services are also available from the Bay Campus (eastbound) and Bay Campus (westbound) stops located to the south of the site along the A483 Fabian Way. These stops are an approximate 100m and 370m walk away respectively (including for the distance required to cross the A484 Fabian Way carriageway for the westbound stop). These stops provide access to services routing to numerous destinations including, Neath, Bridgend, and Glynneath.
- 2.5.4 A summary of the regular services accessible at all three stops identified are outlined in **Table 2.2**.

Table 2.2: Approximate frequencies of regular services accessible from nearby bus stops

Service	Route	Approximate daytime service frequency		
		Mon-Fri	Saturday	Sunday
Elba Crescent Bus Stop Services				
84 First Cymru	Swansea - Port Talbot	120 minutes	120 minutes	N/A
Bay Campus (Eastbound and Westbound) Bus Stop Services				
38 First Cymru	Swansea - Neath	60 minutes	60 minutes	N/A
90 First Cymru (UT)	Swansea Uni Bay Campus –Swansea Bus Station (via Swansea Rail Station)	5 - 20 minutes	10 - 20 minutes	30 minutes
91 First Cymru (UT)	Swansea Uni Bay Campus – Singleton Campus (via Swansea Bus Station & Uplands)	30 minutes	30 minutes	30 minutes
92 First Cymru (UT)	Swansea Uni Bay Campus – Singleton Campus (via Parc Tawe)	30 minutes	N/A	N/A
93 First Cymru (UT)	Swansea Uni Bay Campus – Fabian Way P&R	30 minutes	N/A	N/A
T6 NAT group	Brecon - Swansea	60 minutes	60 minutes	120 minutes
X1 First Cymru	Swansea - Bridgend	60 minutes	60 minutes	N/A
X5 First Cymru	Swansea - Neath	60 minutes	60 minutes	N/A
X7 First Cymru	Swansea - Glynneath	60 minutes	60 minutes	N/A

Notes: UT = University Terms only

2.5.5 **Table 2.2** identifies that between Monday and Saturdays, hourly bus services are available from the bus stops in proximity to the site. Limited busses operate on Sundays. This service frequency is typical of many bus routes operating in the local area, especially since the Welsh Government announced in October 2023 that it was reducing funding on many of the First Cymru services through south Wales.

2.5.6 During university term times, the First Cymru services 90, 91, 92, and 93 offer an excellent additional service into Swansea city centre, and to Swansea Bus Station. These services

operate across the week with a frequency of between 5-minutes and 30-minutes each. Access on these services to Swansea Bus Station provides onward travel opportunities to a greater range of bus services routing through the wider Swansea area.

- 2.5.7 The Bay Campus bus stop also offers access to longer distance coach services (National Express and Megabus), routing to areas such as Cardiff, Newport, Bristol, Birmingham, and London. These services operate regularly across the week and throughout the year.
- 2.5.8 The site is therefore considered to be in an excellent location to offer residents of the site opportunities to travel via bus modes.

Rail

- 2.5.9 The nearest railway station to the proposed development is Swansea station, which is approximately 5.1km away. Although beyond a reasonable walking distance to the site, the station can be accessed by bike in approximately 30-minutes, or by bus (via service 90) in approximately 10-minutes.
- 2.5.10 Swansea is a key station in Wales, providing access to Transport for Wales services running across south Wales, and onward to Manchester Piccadilly and Shrewsbury. The station also provides access to First Great Western services operating between Carmarthen and London Paddington.
- 2.5.11 Potential commuter stations within a short rail journey time to Swansea include Gowerton (11-minutes) and Llanelli (18-minutes) to the west, and Neath (11-minutes), Port Talbot (18-minutes) and Bridgend (31-minutes) to the east.
- 2.5.12 With the opportunity for a multi-modal cycle / rail or bus / rail trip via Swansea station, rail travel is an option for residents of the site if required, especially for longer distance trips.

2.6 Sustainable Travel Summary

- 2.6.1 It is evident that the site is able to offer potential residents a viable alternative to private car travel, with numerous walking, cycling and public transport options available which will significantly reduce dependency on private car travel.

2.7 Local Highway Safety

- 2.7.1 A review has been carried out on local highway network safety in order to establish whether there are any current accident clusters or safety concerns in the vicinity of the site that may be exacerbated by the development proposal.
- 2.7.2 The website www.crashmap.co.uk has been interrogated to provide a review of accidents in the surrounding area.
- 2.7.3 CrashMap uses data collected by the police about road traffic crashes occurring on British roads where someone has been injured. This data is approved by the National Statistics Authority and reported on by the Department for Transport each year. The website uses data obtained directly from official sources and compiled in an easy to use format showing each incident on a map. Incidents are plotted to within 10 metres of their location and the data includes all incidents up to the end of 2022.

- 2.7.4 An extract showing all CrashMap identified Personal Injury Accidents (PIAs) occurring in the vicinity of the site over the 5-year period between 2018 and 2022 is shown in **Figure 2.8**.

Figure 2.8: PIA Plot Extract



Data source www.crashmap.co.uk - data extracted November 2023

- 2.7.5 No PIAs are identified in the immediate area of the site along Elba Crescent, with just one slight PIA identified at the Elba Crescent / A483 Fabian Way junction to the east of the site. This was a slight PIA which occurred in 2021, and involved a pedestrian casualty. Although all PIAs are regrettable, this is an isolated incident at the junction, which does not identify any significant re-occurring highway safety issue.
- 2.7.6 Three PIAs are identified in the vicinity of the A483 Fabian Way / Bay Campus main access junction. Two of these PIAs were serious, with the remaining PIA identified as slight in severity. One of the serious PIAs involved a pedestrian casualty, with the remaining two PIAs involving motor vehicle casualties. Two of these PIAs occurred in 2018, with the remaining PIA occurring in 2019. No PIAs occurred in 2017, 2020, or 2021. Again, although all PIAs are regrettable, Fabian Way is a key strategic road through Swansea, and an accident rate of less than 1 per year does not suggest any significant highway safety issue at this junction.
- 2.7.7 On a wider basis across the A484 Fabian Way, the CrashMap extract identifies a further six PIAs in the vicinity of the site. These are all slight incidents, with no significant clustering.
- 2.7.8 Three PIAs are also identified to the west of the site on the Baldwins Crescent arm of its junction with the A484 Fabian Way junction. Due to the bus barrier along Baldwins Crescent, the proposed development traffic cannot route to/from the site along this road, and will not impact on this road or junction with the A484.
- 2.7.9 Two further slight PIAs are also located along the industrial area roads to the north of the site. These are both individual incidents, on roads which are not likely to be impacted by the proposed development.

- 2.7.10 The accident data does not therefore appear to identify any significant highway safety issue within the immediate area of the development site, and the increase in traffic generated by the proposed development (as discussed later in this report) is highly unlikely to exacerbate the existing safety record to a significant enough level to warrant concern.

3 LOCAL AND NATIONAL PLANNING GUIDANCE

3.1 Overview

3.1.1 With regard to the transportation implications of the proposed development, this assessment examines the development proposal in the context of relevant planning policy guidance at a national, regional, and local level. The following documents have been reviewed:

- Planning Policy Wales (Edition 11, February 2021);
- Technical Advice Note (Wales) 18 – Transport (2007);
- Wales Transport Strategy (2021);
- Future Wales – The National Plan 2040 (Feb 2021);
- National Transport Delivery Plan 2022 to 2027; and
- Neath Port Talbot County Borough Council Local Development Plan (2011-2026)

3.1.2 Consideration is also given to the following legislation, which has an emphasis on sustainable transport provision:

- Active Travel Wales Act 2013;
- Well-being of Future Generations (Wales) Act 2015.

3.2 Overall Policy Objective

3.2.1 The overarching desire at all tiers of planning policy guidance is to influence a modal shift from single occupancy car travel towards more sustainable modes such as walking, cycling, and public transport.

3.2.2 In order to achieve this, it is recognised that development should be located such that the need to travel by private car is reduced, in locations where there is good access to high quality public transport, walking and cycling provision.

3.3 Planning Policy Wales (February 2021)

3.3.1 Planning Policy Wales (PPW) confirms that transport plays a key role in promoting a healthier Wales, a more equal Wales, cohesive communities and a globally responsible Wales.

3.3.2 For placemaking in rural areas, PPW states that:

‘For most rural areas the opportunities for reducing car use and increasing walking, cycling and use of public transport are more limited than in urban areas. In rural areas, most new development should be located in settlements which have relatively good accessibility by non-car modes when compared to the rural area as a whole. Development in these areas should embrace the national sustainable placemaking outcomes and, where possible, offer good active travel connections to the centres of settlements to reduce the need to travel by car for local journeys.’

3.3.3 PPW identifies the following active and social linkages issues which it aims to address:

- *‘enable sustainable access to housing, employment, shopping, education, health, community, leisure and sports facilities and green infrastructure, maximising opportunities for community development and social welfare;*
- *develop sustainable transportation infrastructure to keep Wales moving and connect people with jobs, housing and leisure. Ensure that the chosen locations and resulting design of new developments reduces reliance on the private car for daily travel, supports sustainable modes of travel and assists in improving the environment, public health and community life;*
- *require developments to encourage modal shift and be easily accessible by walking, cycling and public transport, by virtue of their location, design and provision of on and off site sustainable transport infrastructure’.*

3.3.4 Under the sustainable transport category, PPW identifies that:

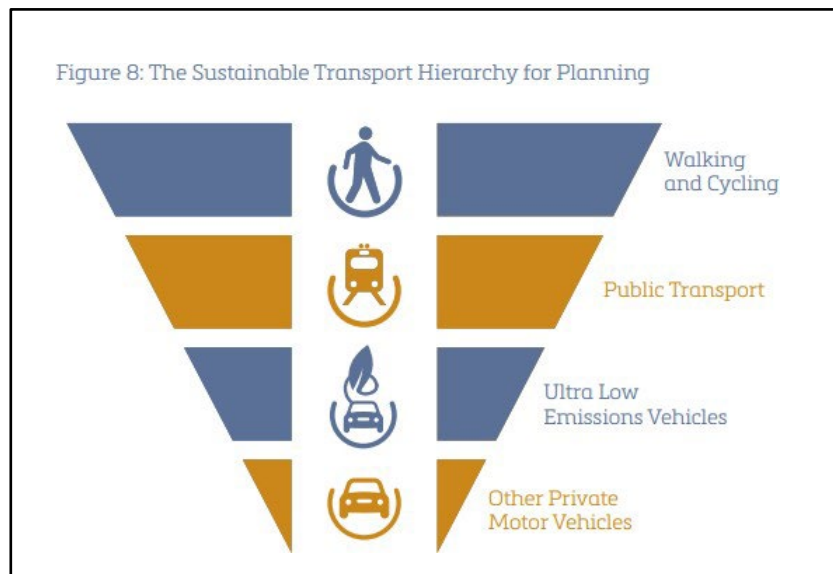
‘The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act.

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.*

Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.

It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport ahead of the private motor vehicles. The transport hierarchy recognises that Ultra Low Emission Vehicles also have an important role to play in the decarbonisation of transport, particularly in rural areas with limited public transport services.



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.

Different approaches to sustainable transport will be required in different parts of Wales, particularly in rural areas, and new development will need to reflect local circumstances.'

3.3.5 With regards to car parking, PPW confirms the widely accepted notion that:

'Car parking provision is a major influence on how people choose to travel and the pattern of development. Where and how cars are parked can in turn be a major factor in the quality of a place.'

3.3.6 It continues that:

'A design-led approach to the provision of car parking should be taken, which ensures an appropriate level of car parking is integrated in a way which does not dominate the development. 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.'

Planning authorities must require good standards of car parking design, which do not allow vehicles to dominate the street or inconvenience people walking and cycling. Car parking should be overlooked by surrounding properties, to provide natural surveillance.

.... Parking standards should be applied flexibly and allow for the provision of lower levels of parking and the creation of high quality places.'

- 3.3.7 PPW promotes walking and cycling for shorter trips and that cycling 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.

3.4 Technical Advice Note (TAN 18)

- 3.4.1 Technical Advice Note 18 (TAN 18) promotes the overall integration of transport in the following ways:

- Integration of transport and land use planning.
- Integration between different types of transport; and
- Integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation.

- 3.4.2 The integration of land use planning and the development of transport has a key role to play in the promotion of sustainable development. TAN 18 identifies the following ways in which integration can help achieve sustainable environmental outcomes:

- promoting resource and travel efficient settlement patterns;
- ensuring new development is located where there is, or will be, good access by public transport, walking and cycling thereby minimising the need for travel and fostering social inclusion;
- managing parking provision;
- ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians (including those with special access and mobility requirements), cycling, public transport, and traffic management and parking/servicing;
- encouraging the location of development near other related uses to encourage multi-purpose trips;
- promoting cycling and walking;
- supporting the provision of high quality, inclusive public transport;
- encouraging good quality design of streets that provide a safe public realm and a distinct sense of place; and
- ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions.

3.5 Future Wales: The National Plan 2040 (February 2021)

3.5.1 'Future Wales: The National Plan 2040' is the Welsh Government national development framework, setting the direction for development in Wales to 2040.

3.5.2 With regards to transport, Future Wales draws the same conclusions to those identified in PPW and TAN 18, identifying that the Welsh Government's aim is to reduce the need to travel, particularly by private vehicles, and support a modal shift to walking, cycling and public transport, with development to be focussed in areas where these modes of travel can be supported.

3.5.3 Future Wales identifies 11 outcomes for where Wales should be within 20 years' time. Outcome 7 reflects the anticipated Outcome for transport as follows:

"Outcome 7 – A Wales where people live in place where travel is sustainable. All methods of travel will have low environmental impact and low emissions, with increased use of public transport and ultra-low emission vehicles replacing today's petrol and diesel vehicles.

Sustainable transport infrastructure will be embedded within development to enable easy and convenient access from one place to another for commuting, business, tourism and leisure purposes. Development will focus on active travel and public transport, allied with a reduced reliance on private vehicles."

3.6 Neath Port Talbot County Borough Council Local Development Plan (2011-2026)

3.6.1 The Neath Port Talbot County Borough Councils Local Development Plan (LDP) is a document that sets out the visions, objectives, strategies and policies for managing development in the county area up to 2026 and was adopted in January 2016.

3.6.2 The LDP outlines aims regarding transport as follows:

'The Strategy seeks to support and develop the transport network to safely and effectively facilitate the movement of people and freight within the County Borough, to reduce reliance on the private car and to improve connectivity to neighbouring areas.

3.6.3 Within the LDP the site is allocated for residential development under policy reference H1/LB/3, for a residential development of around 50 units, to be accessed off Elba Crescent.

3.7 Conclusion

3.7.1 As identified in **Section 2** of this report, the site is well located to offer viable opportunities to travel by non-car modes of transport, and it is therefore concluded that the site complies with transport planning policy at local and national levels.

4 DEVELOPMENT PROPOSALS

4.1 Proposal

- 4.1.1 The proposals are for the development of 152 residential units on the site. At this stage the plans are outline only, so no anticipated bedroom schedule is currently available.
- 4.1.2 The proposed units on the site will consist of a mix of house and apartment units, with a proportion provided as affordable units (to be agreed with NPTC).
- 4.1.3 A corner shop unit is also proposed on the ground floor of an apartment block located in the south east corner of the site.
- 4.1.4 The proposed site layout is contained at **Appendix B**.

4.2 Access Arrangements

- 4.2.1 Two separate vehicle access points are proposed in the south of the site along Elba Crescent. These accesses will consist of priority junction arrangements, with a 5.5m to 6.0m wide access road, and 6.0m radii kerbs on entry and exit. The minimum required visibility identified in Manual for Streets for a road with a 32mph 85th percentile vehicle speed (approximately 41m) can be achieved in both directions from each proposed site access junction.
- 4.2.2 Footways of 2.0m in width will be provided along either side of the site access roads, which will connect directly into the existing footway provision along the northern edge of the Elba Crescent carriageway.
- 4.2.3 These access roads and footways will continue north through the site, looping around a public open space in the centre of the site. Shared surface areas will continue vehicle and pedestrian access to onward areas in the south of the site.

4.3 Car Parking Provision

- 4.3.1 The Neath Port Talbot County Borough Council's parking standards are set out in the Local Development Plans SPG document. This sets out detailed parking requirements according to land use and type of development across the county. These parking standards differ across distinct zones identified within the document. The proposed development falls within 'Zone 4'.
- 4.3.2 The parking standards aim to set a maximum level of parking to be provided at developments, in line with national and regional policies to encourage a move to more sustainable modes of transport.
- 4.3.3 For residential developments (new build and conversions), The Zone 4 parking standards identify that a maximum of 1 parking space is required per bedroom (up to a maximum of 3 parking spaces per dwelling), with an additional 1 visitor parking space is required for every 5 dwellings.

- 4.3.4 Car parking on site will be provided in line with these standards.

4.4 Cycle Parking Provision

- 4.4.1 Appendix D of the NPTCBC SPG also sets out cycle parking standards at proposed developments, and states the following at paragraph 6:

D.6. All residential developments must be accessible by cycles and cycle storage must be a factor of dwelling design. In appropriate circumstances, convenient communal facilities may be provided.'

- 4.4.2 Cycle parking on site will be provided in line with these standards, with parking provided in the curtilage of the house units, and communal cycle parking provision provided for the apartment units.

5 TRIP GENERATION

5.1 Introduction

- 5.1.1 Estimated traffic flows for the proposed development have been forecast using the TRICS database.
- 5.1.2 TRICS is a nationally accepted database providing information relating to the total number of trips generated by various land uses based on existing traffic surveys at similar sites throughout the United Kingdom. From the TRICS database, a trip rate is derived which provides the number of expected trips per unit of measure (in this case per residential unit).
- 5.1.3 This TA outlines a robust TRICS assessment undertaken, in line with comments received from NPTC following submission of the December 2021 TA.
- 5.1.4 Trip rates have been developed for both the typical highway weekday AM and PM peak hour periods of 08:00 to 09:00 and 17:00 to 18:00 respectively. Although as identified in **Section 6** of this TA, the identified weekday peak hour periods in traffic on the local highway network occur between 07:45 to 08:45 and 16:45 to 17:45 respectively, TRICS only outputs trip rates in hourly intervals, so the chosen periods are most applicable.
- 5.1.5 Trip rates have also been developed for the total weekday 12-hour period between 07:00 to 19:00.
- 5.1.6 All TRICS outputs are included in **Appendix C**.
- TRICS Category Selections
- 5.1.7 Trip rates have been developed based on privately owned residential TRICS Categories. Although the proposed development will contain a proportion of affordable units, privately owned units typically generate a greater proportion of vehicular trips, and will therefore provide a more robust estimate of trips for the proposed development.
- Home Working Consideration
- 5.1.8 Home working or flexible / hybrid working is a trend which has been promoted more actively since the start of the recent Covid pandemic period. This trend is likely to continue going forward in the future, as is supported in the 'Wales Transport Strategy 2021' which outlines a target for 30% of the workforce to work remotely in Wales on a regular basis.
- 5.1.9 Home working removes the need for a commuting trip, which would often be undertaken during the typical AM and PM highway peak hour periods. Flexible work patterns can also allow commuting trips to be made at more convenient times, outside of the typical highway peak hours. Increased levels of home working or hybrid / flexible can therefore lead to a reduction on traffic volumes across the highway network, and can help reduce demand during the critical highway peak hour periods (peak spreading).
- 5.1.10 In order to represent current trends in home working, TRICS sites have only been output for surveys undertaken prior to 2021. This period covers the post Covid lockdown period. Any

remaining surveys within this period identified as undertaken during the Covid period have been manually de-selected.

Corner Shop Trips

- 5.1.11 A corner shop unit is also proposed within the site. This unit will be within a comfortable walking distance for all users of the site, and also to the existing residential units in the vicinity of the site who may also utilise this new facility. On this basis it is not anticipated that the corner shop unit will generate any new 'primary' trips on the surrounding highway network, with any vehicle trips it may generate being 'secondary' trips, which already exist on the network. No trips have therefore been forecast for this use on the site, or applied within the capacity assessment work outlined in **Section 6** of this report.

5.2 Proposed Development Anticipated Trip Generation

- 5.2.1 To represent the proposed site, the TRICS category '03 – Residential / K – Mixed Private Housing (Flats and Houses)' was selected. The following initial filtering parameters were applied in TRICS to derive a representative trip forecast for the site:

- All sites in Greater London, Ireland, and Scotland excluded;
- Sites with greater than 300 dwellings excluded;
- Sites with only bungalow units excluded; and
- Includes only 'Neighbourhood Centre' located sites.

- 5.2.2 As requested by NPTC a further detailed filtering process has been undertaken in TRICS to exclude sites which have greater access to local amenities than the proposed site.

- 5.2.3 The proposed development site does not have any major supermarkets or schools within a short walking distance to the site. As such, the filtering process has been aimed at excluding sites with major supermarkets, or schools in close proximity (i.e., within a 1km distance). Many of the TRICS sites include a primary school in close proximity, and to ensure a robust sample of sites has been selected, it has not been possible to exclude all of these sites. Instead, only sites with multiple primary schools in close proximity have been excluded.

- 5.2.4 The TRICS search returned a total of 2 applicable sites. **Table 5.1** shows the vehicular trip forecast for the proposed development based on these trip rates.

Table 5.1: Proposed development, predicted weekday total vehicular trip generation using TRICS 'Mixed Private Housing (Flats and Houses)' category

Weekday Time Period	Trip Rates (Per dwelling)			Total Trips for Proposed Development (152 dwellings)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM Peak Period 08:00-09:00	0.208	0.32	0.528	32	49	80
PM Peak Period 17:00-18:00	0.297	0.178	0.475	45	27	72
12-Hour Period 07:00-19:00	2.257	2.248	4.505	343	342	685

5.2.5 **Table 5.1** demonstrates that based on the 'Mixed Private Housing (Flats and Houses)' TRICS category, the proposed residential development of 152 dwellings would be anticipated to generate approximately 80 and 72 total two-way vehicle trips over the traditional AM and PM highway peak hours respectively. Over the weekday 12-hour period, the proposed development would be anticipated to generate a total of 685 total two-way vehicle trips.

5.2.6 As the above TRICS search returned only 2 applicable sites, an additional TRICS search was undertaken utilising the TRICS category '03 – Residential / A – Houses Privately Owned' category. This TRICS search returned a total of 16 applicable sites. **Table 5.2** shows the vehicular trip forecast for the proposed development based on these TRICS trip rates. As a good selection of sites was included, these included both the average trip rates, and also the 85th percentile trip rates for each of the AM and PM peak hour periods.

Table 5.2: Proposed development, predicted weekday total vehicular trip generation using TRICS 'Houses Privately Owned' category

Weekday Time Period	Trip Rates (Per dwelling)			Total Trips for Proposed Development (152 dwellings)		
	Arr.	Dep.	Total	Arr.	Dep.	Total
Average TRICS trip rate						
AM Peak Period 08:00-09:00	0.124	0.285	0.409	19	43	62
PM Peak Period 17:00-18:00	0.266	0.15	0.416	40	23	63
12-Hour Period 07:00-19:00	1.88	1.931	3.811	286	294	579
85th percentile TRICS trip rate						
AM Peak Period 08:00-09:00	0.182	0.343	0.525	28	52	80
PM Peak Period 17:00-18:00	0.219	0.188	0.407	33	29	62
12-Hour Period 07:00-19:00	2.469	2.469	4.938	375	376	751

5.2.7 **Table 5.2** demonstrates that based on the 'Houses Privately Owned' TRICS category, the proposed residential development of 152 dwellings would be anticipated to generate approximately 62 and 63 total two-way vehicle trips over the traditional AM and PM highway peak hours respectively. Over the weekday 12-hour period, the proposed development would be anticipated to generate a total of 579 total two-way vehicle trips.

5.2.8 Based on the 85th percentile trip rates for the 'Houses Privately Owned' TRICS category, the proposed residential development of 152 dwellings would be anticipated to generate approximately 80 and 62 total two-way vehicle trips over the traditional AM and PM highway peak hours respectively. Over the weekday 12-hour period, the proposed development would be anticipated to generate a total of 751 total two-way vehicle trips.

Summary

5.2.9 This TA has outlined a range of TRICS generated trip rates that could be applicable to the proposed development. This has identified that a total of between approximately 62 and 80 two-way vehicle trips would be anticipated from the site during the typical weekday highway

AM peak hour period between 08:00 to 09:00, and between approximately 63 and 72 two-way vehicle trips anticipated from the site during the typical weekday highway PM peak hour period between 17:00 to 18:00. Over the weekday 12-hour period, the proposed development would be anticipated to generate between approximately 579 and 751 total two-way vehicle trips.

- 5.2.10 In reality, trips from the site will be subject to natural variations in travel demands, which will differ across separate days of the week, and periods of the year. Trips will also be dependent on the exact make-up of residents on the site, and will vary at each home due to things such as household make-up, household income, working / education status, and workplace / education location. As all of these variables cannot be known prior to occupation of the site, and will be constantly changing over the occupation period of the site. The anticipated range of trips identified in this TA should therefore be read with this in mind, and understood that they represent only an estimate for the proposed development. The TRICS methodology outlined however has been undertaken to develop the most robust estimate as possible, in an attempt to represent the site-specific conditions.
- 5.2.11 For robustness, the highest 85th percentile trips for the 'Houses Privately Owned' TRICS category will be taken forward in the traffic impact assessment work outlined in **Section 6** of this report.

6 CAPACITY ASSESSMENT METHODOLOGY

6.1 Introduction

- 6.1.1 An assessment has been undertaken to identify the impact that the proposed development would be anticipated to have on the surrounding highway network. This section discusses the methodology used to create the assessment scenarios.

6.2 Assessment Network and Existing Traffic Flows

- 6.2.1 With due consideration of the scale and location of the proposed development, the following junctions will form the assessment study area (as previously identified in **Figure 1.1**):

- **Assessment Junction 1** – Proposed new site access priority junction with Elba Crescent.
- **Assessment Junction 2** – A483 Fabian Way / Elba Crescent / Swansea University Bay Campus Eastern Access signalised junction.
- **Assessment Junction 3** – A483 Fabian Way / Swansea University Bay Campus Main Access signalised junction.

6.3 Existing Traffic Flows

- 6.3.1 Traffic surveys were undertaken by 'PCC Traffic Information Consultancy' at assessment Junctions 2 and Junction 3 on Tuesday 17th October 2023. The surveys were undertaken over the period between 07:00 to 19:00, and represent the existing flows at each junction. A copy of all MCC survey data is contained at **Appendix D**.
- 6.3.2 Following discussion with NPTC, it has been agreed that a Tuesday period represents the busiest period across the week along the A484 Fabian Way, and represents the most robust period to be assessed.
- 6.3.3 The observed October 2023 traffic flows represent the 'Base Year' flows for the traffic assessment work.

6.4 Assessment Hours

- 6.4.1 From the MCC surveys, the total traffic through each assessment junction has been summarised into 60-minute periods to identify the peak hours in traffic flow across the entire study network. This is summarised in **Appendix E (Diagram 1)**.
- 6.4.2 The resulting observed peak hours in traffic flow across the entire study network are as follows:
- **Weekday AM Peak Hour:** 07:45 to 08:45
 - **Weekday PM Peak Hour:** 16:45 to 17:45
- 6.4.3 Each of these identified peak hour periods have been modelled in the impact assessment work. The 2023 Base Year flows over each model period are shown on the traffic flow diagrams contained at **Appendix E (Diagrams 2 to 5)**.

6.5 Forecast Years

- 6.5.1 Forecast scenarios have been prepared to represent anticipated traffic conditions over the expected development opening year, and for a further future forecast year. The opening year is anticipated to be 2024 (assuming the application progresses as anticipated), with NPTC identifying that a future forecast year of 2032 should be utilised.
- 6.5.2 To provide an understanding of anticipated background traffic growth in each forecast year, factors have been identified using the TEMPro V8 computer program. This is the latest version of the software (published in February 2023), and is suggested for modelling traffic growth in periods of 2023 or later. This new version however does not yet provide the functionality of applying the National Traffic Model (NTM) calculations for calculating a local growth figure. As such an average of TEMPro Origin and Destination factors is suggested.
- 6.5.3 To represent growth factors anticipated for the local highway network, the 'Neath Port Talbot' TEMPro zone was selected, with the TEMPro 'Core' scenario. A summary of the calculated growth factors are provided in **Table 6.1**.

Table 6.1: TEMPro Growth Factors

Years	Growth Factor	
	Weekday AM Period	Weekday PM Period
2023-2024	1.0084	1.0083
2023-2032	1.0547	1.0524

6.6 Without Development Scenario

- 6.6.1 To provide a consistent assessment, a forecast 'Without Development' scenario was developed which represents the basis from which all future 'With Development' scenarios can be compared. In this instance, the Without Development scenario is calculated by factoring all 2023 Base Year flows by TEMPro growth factors, to represent a 2024 (opening year) and 2032 (future assessment year) forecast year respectively.
- 6.6.2 The Without Development flows for both the 2024 and 2032 forecast years are shown on the traffic flow diagrams contained at **Appendix E (Diagrams 6 to 13)**.

6.7 With Development Scenario

- 6.7.1 A forecast 'With Development' scenario has been developed to assess the impact that the proposed development will have on the local highway network.
- 6.7.2 An anticipated range of anticipated trips for the proposed development has previously been described in **Section 5**. For robustness, the highest 85th percentile trips for the 'Houses Privately Owned' TRICS category have been utilised in the traffic impact assessment work (as per **Table 5.2**).
- 6.7.3 Trips for the proposed development have been developed for both the typical highway weekday AM and PM peak hour periods of 08:00 to 09:00 and 17:00 to 18:00 respectively. As identified above however, the identified weekday peak hour periods in traffic on the local highway network occur between 07:45 to 08:45 and 16:45 to 17:45 respectively, TRICS only outputs trip rates in hourly intervals, so the chosen periods are most applicable, and have been applied in the assessment work.

- 6.7.4 The distribution of all development generated trips through the study network has been based on the turning proportions of vehicles at each assessment junction observed during the 2023 MCC surveys. Due to the Swansea University Bay Campus being only a short walking distance away from the site, it is assumed that no development vehicle trips route to/from the university site. These proportions are shown at **Appendix E (Diagram 19)**.
- 6.7.5 Traffic flows for the Elba Crescent straight on movements at the proposed site access junction have been calculated based on the correlating Elba Crescent movements observed at the assessment Junction 2 surveys. This is seen as robust as the bus gate along Baldwins Crescent means that all Elba Crescent traffic (non-bus traffic) routes through assessment Junction 2.
- 6.7.6 The final calculated distribution of site traffic is shown at **Appendix E (Diagram 15)**, with the With Development flows for both the 2024 and 2032 forecast years shown at **Appendix E (Diagrams 16 to 23)**.

7 CAPACITY ANALYSIS

7.1 Junction Modelling Software

- 7.1.1 Capacity analysis for the proposed site access junction has been undertaken using the PICADY computer modelling tool within Junctions 9. The modelling of the signalised assessment Junctions 2 and 3 have been undertaken using the LinSig computer modelling software.
- 7.1.2 The output from the PICADY program provides measurements informing a junction's operation. These relate to the 'Ratio of Flow to Capacity' (RFC), maximum queue length in PCUs, and delay in minutes per vehicle. The main indication of the performance of a junction is given by the RFC for each arm of the junction. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait in the approach. This is reached when the RFC attains a value of 1. An RFC value of 0.85 is normally accepted as being within capacity as this reduces the risk of delays due to traffic count inaccuracies and analytical and modelling assumptions.
- 7.1.3 The output from LinSig provides a number of measurements to provide information of a junction's operation. These relate to the 'Practical Reserve Capacity' (PRC), average queue length (in PCUs), mean maximum average queue length, and delay. The 'PRC' gives the main indicator of the junction's performance, which is calculated from the maximum degree of saturation on a link and is a measure of how much additional traffic could pass through the junction while maintaining a maximum degree of saturation of 90% on all links. A value above '0' is therefore normally accepted as being within capacity as this reduces the risk of delays due to traffic count inaccuracies and analytical and modelling assumptions.
- 7.1.4 A summary of the capacity assessments at each assessment junction for both the Without Development and With Development scenarios are provided in the next sections. Models for each assessment period have been based on the flows identified in the network flow diagrams contained at **Appendix E**.
- 7.1.5 A copy of all PICADY model outputs (assessment Junction 1) are provided at **Appendix F**, and a copy of all LinSig model outputs (assessment Junctions 2 and 3) are provided at **Appendix G**.

Assessment Junction 1 PICADY Model Development

- 7.1.6 The proposed development will have two separate access junctions along Elba Crescent. Both proposed site access junctions will be designed with the same geometry, and so only one assessment model has been developed as part of this TA, to represent both access junctions.
- 7.1.7 Site traffic will be free to route via either site access junction. For robustness therefore, 100% of site traffic has been applied in the assessment model. In reality however, site traffic will be split across each site access junction, and actual capacity at each will therefore be slightly greater than modelled.
- 7.1.8 For the PICADY model, the major arm geometry has been based on existing conditions along Elba Crescent, with minor arm geometry based on a single lane approach of 2.75m in width.

- 7.1.9 Traffic flows for the Elba Crescent straight on movements at the junction have been calculated based on the correlating Elba Crescent movements observed at the assessment Junction 2 surveys. This is seen as robust as the bus gate along Baldwins Crescent means that all Elba Crescent traffic (non-bus traffic) routes through assessment Junction 2.

Assessment Junction 2 LinSig Model Development

- 7.1.10 Lane geometries for the assessment Junction 2 LinSig model have been taken from aerial imagery measurement. The signal staging and green times have been based on both staging diagrams of the junction (included at **Appendix H**), as well as observations from the traffic survey video footage at the junction.
- 7.1.11 From the video survey footage, it was noted that the Fabian Way right turn movements, the Elba Crescent and Swansea University approaches of the junction, and the pedestrian stages of the junction, operate on a demand only basis, and are not called every cycle, with the Swansea University approach and pedestrian stages in particular, being called very infrequently.
- 7.1.12 LinSig models work on a fixed cycle time, and setting all identified demand only stages to be called every cycle can lead to a under estimation of total junction capacity. The LinSig model has been developed using a single cycle, with all vehicle and pedestrian stages called, with the maximum observed cycle time of 140 seconds applied (based on video footage observations at the junction over the period between 07:45 to 08:15).
- 7.1.13 To assess how accurately the LinSig model reflects current operation of the junction, the October 2023 observed queuing at the junction, has been compared to those identified in the 2023 model scenario results.
- 7.1.14 During the October 2023 surveys, a maximum queue of 16 vehicles was observed in the AM peak hour period (07:45 to 08:45), with a maximum queue of 20 vehicles observed in the PM peak hour period (16:45 to 17:45). Both these maximum queues were observed along the Fabian Way approaches. In the 2023 LinSig model however a maximum queue of approximately 34 vehicles is modelled in the AM peak hour period (+18 vehicles greater than observed), with a maximum queue of approximately 30 vehicles modelled in the PM peak hour period (+10 vehicles greater than observed). These were also observed along the Fabian Way approaches of the junction.
- 7.1.15 These differences in queuing can be attributed to the identified staging arrangement applied, which does not take account for demand only operation of some stages at the junction (which in reality are not called every cycle), and therefore underestimates slightly the total capacity of the junction.
- 7.1.16 The identified staging arrangement applied therefore provides a very robust model for assessing junction operation. This should be taken into account when interpreting the overall capacity results at the junction, with the LinSig model simply identifying what impact the addition of the proposed development traffic will have on overall capacity at the junction.

Assessment Junction 3 LinSig Model Development

- 7.1.17 Lane geometries for the assessment Junction 3 LinSig model have also been taken from aerial imagery measurement, with the signal staging and green based on observations from the traffic survey video footage at the junction.
- 7.1.18 From the video survey footage, it was noted that the Fabian Way right turn movement, the Swansea University approach movements, and the pedestrian stages of the junction, operate on a demand only basis, and are not called every cycle.
- 7.1.19 The LinSig model has been developed using a single cycle, with all vehicle and pedestrian stages called, with the maximum observed cycle time of 130 seconds applied (based on video footage observations at the junction over the period between 07:45 to 08:15).
- 7.1.20 To assess how accurately the LinSig model reflects current operation of the junction, the October 2023 observed queuing at the junction, has been compared to those identified in the 2023 model scenario results.
- 7.1.21 During the October 2023 surveys, a maximum queue of 11 vehicles was observed in the AM peak hour period (07:45 to 08:45), with a maximum queue of 20 vehicles observed in the PM peak hour period (16:45 to 17:45). Both these maximum queues were observed along the Fabian Way approaches. In the 2023 LinSig model however a maximum queue of approximately 24 vehicles is modelled in the AM peak hour period (+13 vehicles greater than observed), with a maximum queue of approximately 13 vehicles modelled in the PM peak hour period (-7 vehicles less than observed). These were also observed along the Fabian Way approaches of the junction.
- 7.1.22 Possibly due to fewer vehicles exiting the Swansea University Campus in the morning period, the model assumes this approach arm of the junction is called more than in reality, and is therefore underestimating capacity slightly. The identified staging arrangement applied therefore provides a very robust model for assessing junction operation in this period.
- 7.1.23 In the PM period however, it appears the model is more accurately representing junction operation.
- 7.1.24 These effects should be taken into account when interpreting the overall capacity results at the junction, with the LinSig model simply identifying what impact the addition of the proposed development traffic will have on overall capacity at the junction.

7.2 Assessment Junction 1 - Proposed Site Access Priority Junctions with Elba Crescent

- 7.2.1 As the proposed development site is currently un-occupied, only a With Development scenario has been modelled for the proposed site access junctions.
- 7.2.2 **Table 7.1** provide the results of the Junction 1 PICADY assessment for both the 2024 and 2032 forecast years.

Table 7.1: Assessment Junction J1 – 2024 and 2032 With Development PICADY model outputs summary

Movement	2024 With Development			2032 With Development		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Weekday AM Peak Hour (07:30 to 08:30)						
Stream B - AC	0.1	6.30	0.09	0.1	6.31	0.09
Stream C - AB	0.1	5.39	0.05	0.1	5.38	0.05
Weekday PM Peak Hour (15:45 to 16:45)						
Stream B - AC	0.1	6.11	0.05	0.1	6.11	0.05
Stream C - AB	0.1	5.66	0.06	0.1	5.66	0.06

Stream A = Elba Crescent (Western Arm), B = Proposed Site Access, C = Elba Crescent (Eastern Arm)

- 7.2.3 In the 2024 With Development scenario, a maximum RFC on any arm of just 0.09 is observed on the site access arm in the AM peak. In the 2032 With Development scenario, this maximum RFC remains at just 0.09.
- 7.2.4 In summary, a robust modelling assessment has identified that the proposed access junctions would be expected to operate well within theoretical capacity with the proposed development in operation, in both the 2024 and 2032 forecast year.

7.3 Assessment Junction 2 – A483 Fabian Way / Elba Crescent / Swansea University Bay Campus Eastern Access Signalised Junction

Assessment Junction 2 Development Impact

- 7.3.1 In the 2024 Without Development AM peak forecast scenario, a total of 3,255 vehicles route through assessment Junction 2. The proposed development is anticipated to generate an additional +80 vehicle movements through the junction during this peak hour period. This equates to an increase in movements through the junction of approximately just +2.5%.
- 7.3.2 In the 2024 Without Development PM peak forecast scenario, a total of 3,141 vehicles route through assessment Junction 2. The proposed development is anticipated to generate an additional +62 vehicles movements through the junction during this peak hour period. This equates to an increase in movements through the junction of approximately just +2.0%.
- 7.3.3 The proposed development will therefore have a minimal impact on total vehicle flows through assessment Junction 2, on a scale within what might be expected anyway in daily fluctuations in traffic flows.

Assessment Junction 2 Modelling Results

- 7.3.4 The LinSig modelling has identified that assessment Junction 2 would be anticipated to operate within capacity in both the 2024 and 2032 Without Development and With Development scenarios. For ease of reading, only the more critical 2032 forecast year models have been summarised in this section.
- 7.3.5 **Table 7.2** provides the results of the Junction 2 LinSig assessment for the 2032 forecast scenario.

Table 7.2: Assessment J2 – 2032 Forecast Year LinSig model outputs summary

Junction Entry Stream	Weekday AM Peak		Weekday PM Peak	
	Max Deg. of Sat (%)	Mean Max Queue (PCU)	Max Deg. of Sat (%)	Mean Max Queue (PCU)
Without Development				
A483 Westbound approach (L+S)	86.0%	34.9	52.6%	14.5
A483 Westbound approach (S + R)	87.2%	38.5	54.8%	16.2
Swansea Uni Access	1.8%	0.1	10.7%	0.5
A483 Eastbound approach (L+S)	55.9%	16.0	79.6%	29.4
A483 Eastbound approach (S + R)	57.2%	17.4	80.4%	32.0
Elba Crescent (S + L + R)	33.8%	1.7	37.4%	2.0
Overall PRC	3.2%		11.9%	
With Development				
A483 Westbound approach (L+S)	86.4%	35.4	52.7%	14.6
A483 Westbound approach (S + R)	87.7%	38.8	55.7%	16.1
Swansea Uni Access	1.8%	0.1	10.7%	0.5
A483 Eastbound approach (L+S)	56.5%	16.2	80.1%	29.9
A483 Eastbound approach (S + R)	57.7%	17.8	81.0%	32.6
Elba Crescent (S + L + R)	68.6%	4.0	51.5%	2.9
Overall PRC	2.6%		11.1%	

- 7.3.6 In the 2032 forecast year, the modelling identifies junction PRC values of 3.2% and 11.9% in the AM and PM modelled periods respectively, during the Without Development scenarios. With the inclusion of development traffic through the junction in the With Development scenario, these PRC values are modelled as 2.6% and 11.1% respectively, which represent a decrease in PRC of just -0.6% and -0.8% respectively.

7.4 Assessment Junction 3 - A483 Fabian Way / Swansea University Bay Campus Main Access signal junction

Assessment Junction 3 Development Impact

- 7.4.1 In the 2024 Without Development AM peak forecast scenario, a total of 3,348 vehicles route through assessment Junction 3. The proposed development is anticipated to generate an additional +26 vehicle movements through the junction during this peak hour period. This equates to an increase in movements through the junction of approximately just +0.80%.
- 7.4.2 In the 2024 Without Development PM peak forecast scenario, a total of 3,250 vehicles route through assessment Junction 3. The proposed development is anticipated to generate an additional +31 vehicle movements through the junction during this peak hour period. This equates to an increase in movements through the junction of approximately just +0.96%.
- 7.4.3 The proposed development will therefore have a negligible impact on total vehicle flows through assessment Junction 3, on a scale within what might be expected in daily fluctuations in traffic flows.

Assessment Junction 3 Modelling Results

- 7.4.4 The LinSig modelling has identified that assessment Junction 3 would be anticipated to operate within capacity in both the 2024 and 2032 Without Development and With Development scenarios. For ease of reading, only the more critical 2032 forecast year models have been summarised in this section.
- 7.4.5 **Table 7.3** provides the results of the Junction 3 LinSig assessment for the 2032 forecast scenario.

Table 7.3: Assessment J3 – 2032 Forecast Year LinSig model outputs summary

Junction Entry Stream	Weekday AM Peak		Weekday PM Peak	
	Max Deg. of Sat (%)	Mean Max Queue (PCU)	Max Deg. of Sat (%)	Mean Max Queue (PCU)
Without Development				
A483 Westbound approach (L+S)	79.2%	26.1	54.1%	14.1
A483 Westbound approach (S)	74.8%	25.7	52.5%	14.0
Swansea Uni Access	56.2%	4.2	54.6%	5.4
A483 Eastbound approach (S)	27.3%	4.3	42.0%	8.1
A483 Eastbound approach (S + R)	79.1%	6.1	52.3%	7.9
Overall PRC	13.6%		64.7%	
With Development				
A483 Westbound approach (L+S)	79.8%	26.6	54.8%	14.5
A483 Westbound approach (S)	75.2%	26.1	53.2%	14.4
Swansea Uni Access	56.2%	4.2	54.6%	5.4
A483 Eastbound approach (S)	27.5%	4.5	41.5%	8.0
A483 Eastbound approach (S + R)	79.1%	6.0	42.6%	7.8
Overall PRC	12.8%		64.2%	

- 7.4.6 In the 2032 forecast year, the modelling identifies junction PRC values of 13.6% and 64.7% in the AM and PM modelled periods respectively, during the Without Development scenarios. With the inclusion of development traffic through the junction in the With Development scenarios, these PRC values are modelled as 12.8% and 64.2% respectively, which represent a decrease in PRC of just -0.8% and -0.5% respectively.

7.5 Capacity Assessment Summary

- 7.5.1 The junction capacity assessments have identified that both the proposed new site access junctions, and the A483 signalised junctions tested would be anticipated to operate within capacity in both a 2024 and 2032 forecast year, with the proposed development in full operation.
- 7.5.2 The anticipated increase in traffic on the highway network as a result of the proposed development will have a minimal / negligible impact on overall capacity at each A483 assessment junction.
- 7.5.3 The proposed development, therefore, is not anticipated to cause any significant capacity issues on the local highway network.

8 SUMMARY AND CONCLUSION

8.1 Summary

- 8.1.1 This Transport Assessment (TA) has been produced by Corun Associates on behalf of Hawkland Estates Ltd (the 'applicant') to examine the highway and transportation issues associated with a proposed residential development on land to the north of Elba Crescent, Swansea.
- 8.1.2 The site was previously granted outline planning permission as part of a larger mixed used residential and employment site in September 2011 (Ref: P2008/0514). This consent was varied in 2018 to extend the period of approval for reserved matters thereby extending the life of the permission (Ref: P2017/0800). This consent expired in May 2019. The residential element of the previous application comprised of 100 dwellings. This TA has been developed to support a new application on the same area of land outlined for residential development in the 2011 granted proposal.
- 8.1.3 The proposals are for the development of 152 residential units on the site. At this stage the plans are outline only, so no anticipated bedroom schedule is currently available.
- 8.1.4 The proposed units on the site will consist of a mix of house and apartment units, with a proportion provided as affordable units (to be agreed with NPTC).
- 8.1.5 A ground floor corner shop unit is also proposed on the ground floor of an apartment block located in the south east corner of the site.
- 8.1.6 It is evident that the site is able to offer potential residents a viable alternative to private car travel, with numerous walking, cycling and public transport options available which will significantly reduce dependency on private car travel. The site is therefore compliant with transport planning policy at both local and national level.
- 8.1.7 Two separate vehicle access points are proposed in the south of the site along Elba Crescent. These accesses will consist of priority junction arrangements, with a 5.5m to 6.0m wide access road, and 6.0m radii kerbs on entry and exit.
- 8.1.8 Footways of 2.0m in width will be provided along either side of the site access roads, which will connect directly into the existing footway provision along the northern edge of the Elba Crescent carriageway.
- 8.1.9 These access roads and footways will continue north through the site, looping around a public open space in the centre of the site. Shared surface areas will continue vehicle and pedestrian access to onward areas in the south of the site.
- 8.1.10 Car and cycle parking at the site will be provided in accordance with the standards set out in Neath Port Talbot Council guidance.
- 8.1.11 This TA has outlined a range of trips that the proposed development would be anticipated to generate. This has identified that a total of between approximately 62 and 80 two-way vehicle trips would be anticipated from the site during the typical weekday highway AM peak hour period between 08:00 to 09:00, with between approximately 63 and 72 two-way vehicle trips anticipated from the site during the typical weekday highway PM peak hour period

between 17:00 to 18:00. Over the weekday 12-hour period, the proposed development would be anticipated to generate between approximately 579 and 751 total two-way vehicle trips.

8.1.12 Junction capacity assessments have identified that the proposed development will have a minimal / negligible impact on overall capacity on nearby signalised junctions along the A483 Fabian Way. Assessment has also shown that the proposed new site access junctions along Elba Crescent will operate with no capacity issues. The proposed development will not cause any significant capacity issues on the local highway network.

8.1.13 A review of the accident record has identified no apparent existing highway safety concern in the vicinity of the site. The proposed development is not expected to have an adverse impact on the existing highway safety record.

8.2 Conclusion

8.2.1 There are no reasons, in highway and transportation terms, why the proposed development should not receive consent.

APPENDIX A

Elba Crescent Speed Survey

Site No. 31102023 Site Ref. 31102023
Elba Crescent

Channel: Westbound

Speed Report (Speed Limit 30 Mph)
Week Begin: 23 October 2023

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5Mph	Bin 2 5-<10	Bin 3 10-<15	Bin 4 15-<20	Bin 5 20-<25	Bin 6 25-<30	Bin 7 30-<35	Bin 8 35-<40	Bin 9 40-<45	Bin 10 45-<50	Bin 11 50-<55	Bin 12 55-<60	Bin 13 =>60
Mon 23 Oct																	
Tue 24 Oct	478	31	23	8	0	15	42	105	131	105	49	14	9	2	4	1	1
Wed 25 Oct	402	31	24	8	0	13	29	80	113	102	42	15	4	1	1	0	2
Thu 26 Oct	483	30	22	8	0	34	40	97	144	105	39	17	4	2	1	0	0
Fri 27 Oct	417	31	24	8	0	15	28	73	134	93	42	21	6	3	1	0	1
Sat 28 Oct	221	33	26	8	0	6	15	27	58	62	30	17	2	0	1	3	0
Sun 29 Oct																	
5 Day Ave.	442	31	23	8	0	19	34	88	129	100	44	16	6	2	2	0	1
7 Day Ave.	379	31	24	8	0	15	29	70	109	89	40	17	5	2	1	1	1

Site No. 31102023 Site Ref. 31102023
Elba Crescent

Channel: Eastbound

Speed Report (Speed Limit 30 Mph)
Week Begin: 23 October 2023

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5Mph	Bin 2 5-<10	Bin 3 10-<15	Bin 4 15-<20	Bin 5 20-<25	Bin 6 25-<30	Bin 7 30-<35	Bin 8 35-<40	Bin 9 40-<45	Bin 10 45-<50	Bin 11 50-<55	Bin 12 55-<60	Bin 13 =>60
Mon 23 Oct																	
Tue 24 Oct	425	31	24	8	0	10	32	76	127	104	45	19	7	3	2	0	0
Wed 25 Oct	356	33	25	8	0	14	23	52	105	79	58	18	4	1	1	1	0
Thu 26 Oct	421	30	24	7	0	12	18	91	130	111	41	14	3	0	1	0	0
Fri 27 Oct	376	32	25	7	0	12	16	71	101	102	44	23	5	0	1	1	0
Sat 28 Oct	203	34	25	7	0	4	14	23	60	46	34	19	2	1	0	0	0
Sun 29 Oct																	
5 Day Ave.	392	31	24	7	0	11	23	71	115	98	47	18	5	1	1	0	0
7 Day Ave.	338	32	24	7	0	9	20	58	100	83	43	18	4	1	1	0	0

Site No. 31102023 Site Ref. 31102023
Elba Crescent

Channel: Total Flow

Speed Report (Speed Limit 30 Mph)
Week Begin: 23 October 2023

	Total Volume	85th Percentile	Mean Average	Standard Deviation	Bin 1 <5Mph	Bin 2 5-<10	Bin 3 10-<15	Bin 4 15-<20	Bin 5 20-<25	Bin 6 25-<30	Bin 7 30-<35	Bin 8 35-<40	Bin 9 40-<45	Bin 10 45-<50	Bin 11 50-<55	Bin 12 55-<60	Bin 13 =>60
Mon 23 Oct																	
Tue 24 Oct	903	31	24	8	0	25	74	181	258	209	94	33	16	5	6	1	1
Wed 25 Oct	758	32	24	8	0	27	52	132	218	181	100	33	8	2	2	1	2
Thu 26 Oct	904	30	23	7	0	46	58	188	274	216	80	31	7	2	2	0	0
Fri 27 Oct	793	32	24	8	0	27	44	144	235	195	86	44	11	3	2	1	1
Sat 28 Oct	424	34	25	8	0	10	29	50	118	108	64	36	4	1	1	3	0
Sun 29 Oct																	
5 Day Ave.	833	31	24	8	0	30	57	159	245	199	90	34	11	4	3	1	1
7 Day Ave.	717	32	24	8	0	24	49	128	209	173	83	35	9	3	2	2	1

APPENDIX B

Proposed Site Layout



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Notes
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- LEGEND
- SITE BOUNDARY

■

POTENTIAL OPEN SPACE

■

RESIDENTIAL BLOCK

■

15M LANDSCAPE BUFFER

■

TREES

■

GREEN VERGE

■

PLAY AREA

1

VEHICULAR ROUTE
6M / 5.5M

2

6M WIDE SHARED
SURFACE

3

4.3M WIDE SHARED
SURFACE

■

PAVEMENT /FOOTPATH
- ★

POTENTIAL FLAT
LOCATION
- BUS STOP SHELTER
- SITE ACCESS
- FOOTPATH
CONNECTION
- SUDS
- SWALE

INDICATIVE SCHEDULE OF DEVELOPMENT

	AMOUNT
TOTAL SITE AREA	4.61 HA
FACILITY (CORNER SHOP & EXISTING UTILITY)	0.05 HA
RESIDENTIAL DEVELOPMENT AREA	3.05 HA
SITE DENSITY	50 DPH
NO. OF UNITS	152 NO.
POPULATION	364 NO.
OPEN SPACE PROVISION INCLUDES LANDSCAPE BUFFER	1.51 HA

B	Road layout updated	27/01/23	YT	JS
A	Plan and unit number updated	24/01/23	YT	JS
Rev	Description	Date	Initial	Checked



20 Western Avenue, Milton Park,
Abingdon, Oxfordshire, OX14 4SH
T: +44(0) 1235 821 888

Client **Hawkland Estates Ltd**

Project **Land at Elba Crescent,
Crymlyn Burrows**

Title **Illustrative Masterplan**

Status Preliminary	Drawn By YT	PM/Checked by JS
Job Ref JSL4195	Scale @ A3 1/1250	Date Created January 2023
Drawing Number 101		Rev B

APPENDIX C

TRICS Output

Calculation Reference: AUDIT-751101-231107-1138

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : K - MIXED PRIV HOUS (FLATS AND HOUSES)
TOTAL VEHICLES

Selected regions and areas:

02 SOUTH EAST
HF HERTFORDSHIRE 2 days

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

Primary 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: No of Dwellings
 Actual Range: 100 to 203 (units:)
 Range Selected by User: 15 to 300 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/20 to 02/11/22

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:

Wednesday 1 days
 Thursday 1 days

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

Selected survey types:

Manual count 2 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:

Neighbourhood Centre (PPS6 Local Centre) 2

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:

Village 2

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

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included X days - Selected
 Servicing vehicles Excluded 6 days - Selected

Secondary Filtering selection:

Use Class:

C3 2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

1.1 to 1.5	2 days
------------	--------

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

Travel Plan:

Yes	2 days
-----	--------

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	2 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

- | | | | |
|---|---|----------------------|---------------|
| 1 | HF-03-K-04
THE KESTRELS
BRICKET WOOD | MIXED HOUSES & FLATS | HERTFORDSHIRE |
| | Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 100
Survey date: THURSDAY 23/06/22
Survey Type: MANUAL | | |
| 2 | HF-03-K-05
FRYTHE AVENUE
WELWYN | MIXED HOUSES & FLATS | HERTFORDSHIRE |
| | Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 203
Survey date: WEDNESDAY 02/11/22
Survey Type: MANUAL | | |

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
SC-03-K-01	Undertaken during identified Covid period
WS-03-K-05	Undertaken during identified Covid period

TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	152	0.089	2	152	0.264	2	152	0.353
08:00 - 09:00	2	152	0.208	2	152	0.320	2	152	0.528
09:00 - 10:00	2	152	0.135	2	152	0.211	2	152	0.346
10:00 - 11:00	2	152	0.135	2	152	0.155	2	152	0.290
11:00 - 12:00	2	152	0.155	2	152	0.149	2	152	0.304
12:00 - 13:00	2	152	0.158	2	152	0.152	2	152	0.310
13:00 - 14:00	2	152	0.162	2	152	0.129	2	152	0.291
14:00 - 15:00	2	152	0.099	2	152	0.149	2	152	0.248
15:00 - 16:00	2	152	0.304	2	152	0.198	2	152	0.502
16:00 - 17:00	2	152	0.254	2	152	0.158	2	152	0.412
17:00 - 18:00	2	152	0.297	2	152	0.178	2	152	0.475
18:00 - 19:00	2	152	0.261	2	152	0.185	2	152	0.446
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.257			2.248			4.505

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:	100 - 203 (units:)
Survey date range:	01/01/20 - 02/11/22
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	2

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.

Calculation Reference: AUDIT-751101-231104-1107

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	SC SURREY	2 days
	WS WEST SUSSEX	3 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	1 days

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

Primary 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: No of Dwellings
 Actual Range: 32 to 380 (units:)
 Range Selected by User: 6 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/21 to 29/06/23

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

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

Selected survey types:

Manual count	7 days
Directional ATC Count	1 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:

Neighbourhood Centre (PPS6 Local Centre)	8
--	---

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

Selected Location Sub Categories:

Village	8
---------	---

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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	1 days - Selected
Servicing vehicles Excluded	14 days - Selected

Secondary Filtering selection:

Use Class:

C3	8 days
----	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	4 days
10,001 to 15,000	1 days

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

Population within 5 miles:

25,001 to 50,000	3 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	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	1 days
1.1 to 1.5	6 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	7 days
No	1 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	8 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	AC-03-A-06 COMMON LANE NEAR CHESTER WAVERTON Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 99 Survey date: FRIDAY 29/04/22	DETACHED HOUSES	CHESHIRE WEST & CHESTER	Survey Type: MANUAL
2	NF-03-A-27 YARMOUTH ROAD NEAR NORWICH BLOFIELD Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 93 Survey date: THURSDAY 16/09/21	MIXED HOUSES & FLATS	NORFOLK	Survey Type: MANUAL
3	NF-03-A-44 MILL LANE NEAR NORWICH HORSFORD Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 125 Survey date: WEDNESDAY 21/09/22	MIXED HOUSES	NORFOLK	Survey Type: DIRECTIONAL ATC COUNT
4	SC-03-A-09 AMLETS LANE CRANLEIGH Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 136 Survey date: TUESDAY 24/05/22	MIXED HOUSES & FLATS	SURREY	Survey Type: MANUAL
5	SC-03-A-10 GUILDFORD ROAD ASH Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 32 Survey date: WEDNESDAY 14/09/22	MIXED HOUSES	SURREY	Survey Type: MANUAL
6	WS-03-A-15 HILLAND ROAD BILLINGSHURST Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 380 Survey date: TUESDAY 23/11/21	MIXED HOUSES	WEST SUSSEX	Survey Type: MANUAL
7	WS-03-A-16 BRACKLESHAM LANE BRACKLESHAM BAY Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 58 Survey date: WEDNESDAY 09/11/22	DETACHED & SEMI-DETACHED	WEST SUSSEX	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 WS-03-A-18 MIXED HOUSES & FLATS WEST SUSSEX
 LONDON ROAD
 HASSOCKS

Neighbourhood Centre (PPS6 Local Centre)
 Village
 Total No of Dwellings: 156
 Survey date: MONDAY 15/05/23 Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AC-03-A-05	Undertaken during identified Covid period
CA-03-A-07	Undertaken during identified Covid period
CA-03-A-08	Tesco supermarket in proximity
ES-03-A-06	Undertaken during identified Covid period
GS-03-A-02	Undertaken during identified Covid period
HC-03-A-32	Multiple Schools in proximity

Corun Swansea Road Swansea

Licence No: 751101

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

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	135	0.077	8	135	0.247	8	135	0.324
08:00 - 09:00	8	135	0.124	8	135	0.285	8	135	0.409
09:00 - 10:00	8	135	0.114	8	135	0.151	8	135	0.265
10:00 - 11:00	8	135	0.127	8	135	0.129	8	135	0.256
11:00 - 12:00	8	135	0.112	8	135	0.128	8	135	0.240
12:00 - 13:00	8	135	0.159	8	135	0.137	8	135	0.296
13:00 - 14:00	8	135	0.128	8	135	0.131	8	135	0.259
14:00 - 15:00	8	135	0.120	8	135	0.164	8	135	0.284
15:00 - 16:00	8	135	0.209	8	135	0.156	8	135	0.365
16:00 - 17:00	8	135	0.231	8	135	0.146	8	135	0.377
17:00 - 18:00	8	135	0.266	8	135	0.150	8	135	0.416
18:00 - 19:00	8	135	0.213	8	135	0.107	8	135	0.320
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.880			1.931			3.811

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: 32 - 380 (units:)
Survey date range: 01/01/21 - 29/06/23
Number of weekdays (Monday-Friday): 8
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 1
Surveys manually removed from selection: 6

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.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 08:00-09:00 CALCULATION FACTOR 100m2 DWELLS
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 7 WS-03-A-18 Tot: 0.231
85th Percentile = No. 2 AC-03-A-06 Tot: 0.525

Median Values		Mean Values	
Arrivals:	0.129	Arrivals:	0.115
Departures:	0.264	Departures:	0.269
Totals:	0.392	Totals:	0.383

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	SC-03-A-09	MIXED HOUSES &	CRANLEIGH	SURREY	136	Tue	24/05/22	0.162	0.419	0.581	2.64
2	AC-03-A-06	DETACHED HOUSE	NEAR CHESTER	CHESHIRE WEST & CHE	99	Fri	29/04/22	0.182	0.343	0.525	2.19
3	WS-03-A-15	MIXED HOUSES	BILLINGSHURST	WEST SUSSEX	380	Tue	23/11/21	0.132	0.311	0.443	2.47
4	NF-03-A-44	MIXED HOUSES	NEAR NORWICH	NORFOLK	125	Wed	21/09/22	0.128	0.280	0.408	2.42
5	NF-03-A-27	MIXED HOUSES &	NEAR NORWICH	NORFOLK	93	Thu	16/09/21	0.129	0.247	0.376	2.67
6	SC-03-A-10	MIXED HOUSES	ASH	SURREY	32	Wed	14/09/22	0.063	0.250	0.312	2.63
7	WS-03-A-18	MIXED HOUSES &	HASSOCKS	WEST SUSSEX	156	Mon	15/05/23	0.071	0.160	0.231	2.10
8	WS-03-A-16	DETACHED & SEM	BRACKLESHAM BAY	WEST SUSSEX	58	Wed	09/11/22	0.052	0.138	0.190	2.28

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 09:00-10:00 CALCULATION FACTOR 100m2 DWELLS
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 7 NF-03-A-27 Tot: 0.194
85th Percentile = No. 2 SC-03-A-10 Tot: 0.407

Median Values		Mean Values	
Arrivals:	0.137	Arrivals:	0.127
Departures:	0.113	Departures:	0.164
Totals:	0.250	Totals:	0.291

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	AC-03-A-06	DETACHED HOUSE	NEAR CHESTER	CHESHIRE WEST & CHE	99	Fri	29/04/22	0.172	0.343	0.515	2.19
2	SC-03-A-10	MIXED HOUSES	ASH	SURREY	32	Wed	14/09/22	0.219	0.188	0.407	2.63
3	NF-03-A-44	MIXED HOUSES	NEAR NORWICH	NORFOLK	125	Wed	21/09/22	0.104	0.224	0.328	2.42
4	WS-03-A-16	DETACHED & SEM	BRACKLESHAM BAY	WEST SUSSEX	58	Wed	09/11/22	0.155	0.103	0.258	2.28
5	WS-03-A-15	MIXED HOUSES	BILLINGSHURST	WEST SUSSEX	380	Tue	23/11/21	0.118	0.124	0.242	2.47
6	SC-03-A-09	MIXED HOUSES &	CRANLEIGH	SURREY	136	Tue	24/05/22	0.110	0.088	0.198	2.64
7	NF-03-A-27	MIXED HOUSES &	NEAR NORWICH	NORFOLK	93	Thu	16/09/21	0.065	0.129	0.194	2.67
8	WS-03-A-18	MIXED HOUSES &	HASSOCKS	WEST SUSSEX	156	Mon	15/05/23	0.071	0.115	0.186	2.10

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Ranking Type: TOTALS Time Range: 07:00-19:00 CALCULATION FACTOR 100m2 DWELLS
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under
20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. 7 WS-03-A-18 Tot: 2.198
85th Percentile = No. 2 SC-03-A-10 Tot: 4.938

Median Values		Mean Values	
Arrivals:	2.062	Arrivals:	1.931
Departures:	2.124	Departures:	1.974
Totals:	4.186	Totals:	3.905

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces Per Dwelling
								Arrivals	Departures	Totals	
1	AC-03-A-06	DETACHED HOUSE	NEAR CHESTER	CHESHIRE WEST & CHE	99	Fri	29/04/22	2.747	2.768	5.515	2.19
2	SC-03-A-10	MIXED HOUSES	ASH	SURREY	32	Wed	14/09/22	2.469	2.469	4.938	2.63
3	NF-03-A-44	MIXED HOUSES	NEAR NORWICH	NORFOLK	125	Wed	21/09/22	2.304	2.432	4.736	2.42
4	SC-03-A-09	MIXED HOUSES &	CRANLEIGH	SURREY	136	Tue	24/05/22	2.059	2.140	4.199	2.64
5	NF-03-A-27	MIXED HOUSES &	NEAR NORWICH	NORFOLK	93	Thu	16/09/21	2.065	2.108	4.173	2.67
6	WS-03-A-15	MIXED HOUSES	BILLINGSHURST	WEST SUSSEX	380	Tue	23/11/21	1.853	1.868	3.721	2.47
7	WS-03-A-18	MIXED HOUSES &	HASSOCKS	WEST SUSSEX	156	Mon	15/05/23	1.038	1.160	2.198	2.10
8	WS-03-A-16	DETACHED & SEM	BRACKLESHAM BAY	WEST SUSSEX	58	Wed	09/11/22	0.914	0.845	1.759	2.28

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

APPENDIX D

MCC Survey Data

Junction: 1
Approach: Elba Crescent

Left to A483 Fabian Way (E)									Ahead to University Access								Right to A483 Fabian Way (W)							
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:15 - 07:30	0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
07:30 - 07:45	0	0	5	0	0	0	2	7	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5
07:45 - 08:00	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Hourly Total	0	0	36	0	0	0	2	38	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	11
08:00 - 08:15	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5
08:15 - 08:30	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:30 - 08:45	0	0	11	2	0	0	0	13	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
08:45 - 09:00	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	29	4	0	0	0	33	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	9
09:00 - 09:15	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
09:15 - 09:30	0	0	9	0	0	0	0	9	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	2
09:30 - 09:45	0	0	13	2	1	0	0	16	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5
09:45 - 10:00	0	0	8	1	0	0	0	9	0	0	1	0	0	0	0	1	0	0	7	1	0	0	0	8
Hourly Total	0	0	33	3	1	0	0	37	0	0	2	0	0	0	0	2	0	0	13	3	0	0	0	16
TOTAL	0	0	98	7	1	0	2	108	0	0	2	0	0	0	0	2	0	0	29	7	0	0	0	36
15:00 - 15:15	0	0	7	1	0	0	0	8	0	0	1	0	0	0	0	1	0	0	15	0	0	0	0	15
15:15 - 15:30	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
15:30 - 15:45	0	0	5	1	0	0	1	7	0	0	0	1	0	0	0	1	0	0	7	1	0	0	0	8
15:45 - 16:00	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
Hourly Total	0	0	20	3	0	0	1	24	0	0	1	1	0	0	0	2	0	0	34	1	0	0	0	35
16:00 - 16:15	0	0	8	1	1	0	0	10	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	12
16:15 - 16:30	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
16:30 - 16:45	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	14	2	0	0	0	16
16:45 - 17:00	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	18	1	0	0	0	19
Hourly Total	0	0	24	1	1	0	0	26	0	0	0	0	0	0	0	0	0	0	47	4	0	0	0	51
17:00 - 17:15	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10
17:15 - 17:30	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
17:30 - 17:45	0	0	10	0	0	0	1	11	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
17:45 - 18:00	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	10
Hourly Total	0	0	29	0	0	0	1	30	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	34
TOTAL	0	0	73	4	1	0	2	80	0	0	1	1	0	0	0	2	0	0	115	5	0	0	0	120

Junction: 1

Approach: A483 Fabian Way East

	Left to University Access								Ahead to A483 Fabian Way (W)								Right to Elba Crescent								U-Turn							
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	1	1	0	0	0	2	0	2	156	29	6	9	3	205	0	0	10	0	0	0	0	10	0	0	4	0	0	0	0	4
07:15 - 07:30	0	0	5	0	0	0	0	5	0	1	252	52	7	10	2	324	0	0	12	0	0	0	0	12	0	0	2	0	0	0	0	2
07:30 - 07:45	0	0	0	0	0	0	0	0	0	2	288	46	5	6	0	347	0	0	8	0	0	0	0	8	0	0	2	0	0	0	0	2
07:45 - 08:00	0	0	2	0	0	0	0	2	0	1	362	69	3	3	2	440	0	0	9	0	0	0	0	9	0	0	0	0	0	0	0	0
Hourly Total	0	0	8	1	0	0	0	9	0	6	1058	196	21	28	7	1316	0	0	39	0	0	0	0	39	0	0	8	0	0	0	0	8
08:00 - 08:15	0	0	1	0	0	0	0	1	0	3	424	69	10	7	3	516	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1
08:15 - 08:30	0	0	5	0	0	0	0	5	0	0	428	52	6	3	2	491	0	0	7	1	0	0	0	8	0	0	1	0	0	0	0	1
08:30 - 08:45	0	0	2	1	0	0	0	3	0	1	340	53	6	6	0	406	0	0	13	0	0	0	0	13	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	2	0	0	0	0	2	0	2	321	34	8	2	2	369	0	0	13	0	0	0	1	14	0	0	1	0	0	0	0	1
Hourly Total	0	0	10	1	0	0	0	11	0	6	1513	208	30	18	7	1782	0	0	38	1	0	0	1	40	0	0	3	0	0	0	0	3
09:00 - 09:15	0	0	3	0	0	0	0	3	0	0	299	40	8	4	4	355	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	1	0	0	0	0	1	0	0	282	40	5	5	6	338	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	1	0	0	0	0	1	0	3	231	32	3	8	3	280	0	0	21	2	0	0	0	23	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	3	0	0	0	0	3	0	3	204	39	7	7	1	261	0	0	12	0	0	0	0	12	0	0	0	0	0	0	0	0
Hourly Total	0	0	8	0	0	0	0	8	0	6	1016	151	23	24	14	1234	0	0	45	2	0	0	0	47	0	0	0	0	0	0	0	0
TOTAL	0	0	26	2	0	0	0	28	0	18	3587	555	74	70	28	4332	0	0	122	3	0	0	1	126	0	0	11	0	0	0	0	11
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	173	27	8	11	1	220	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	1	1	0	0	0	2	0	4	206	19	6	3	2	240	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	1	0	0	0	0	1	0	1	180	28	1	4	3	217	0	0	4	1	0	0	0	5	0	0	1	0	0	0	0	1
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	209	34	3	1	2	249	0	0	2	1	0	0	0	3	0	0	0	1	0	0	0	1
Hourly Total	0	0	2	1	0	0	0	3	0	5	768	108	18	19	8	926	0	0	16	3	0	0	0	19	0	0	1	1	0	0	0	2
16:00 - 16:15	0	0	0	0	1	0	0	1	0	1	223	35	3	2	1	265	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	1	0	0	0	0	1	0	2	264	50	2	2	2	322	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	0	0	0	0	0	0	0	1	240	30	2	4	2	279	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	1	0	0	0	0	1	0	1	222	27	3	4	2	259	0	0	4	0	0	0	1	5	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	0	1	0	0	3	0	5	949	142	10	12	7	1125	0	0	22	2	0	0	1	25	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	2	266	32	2	0	1	303	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	4	279	27	0	2	2	314	0	0	1	1	0	0	0	2	0	0	1	0	0	0	0	1
17:30 - 17:45	0	0	0	0	0	0	0	0	0	1	265	23	0	2	3	294	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	4	214	20	0	2	1	241	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	0	0	0	11	1024	102	2	6	7	1152	0	0	16	2	0	0	0	18	0	0	1	0	0	0	0	1
TOTAL	0	0	4	1	1	0	0	6	0	21	2741	352	30	37	22	3203	0	0	54	7	0	0	1	62	0	0	2	1	0	0	0	3

Junction: 1

Approach: University Access

TIME	Left to A483 Fabian Way (W)								Ahead to Elba Crescent								Right to A483 Fabian Way (E)							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
07:30 - 07:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
08:00 - 08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:15 - 08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 - 08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
09:00 - 09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 - 09:30	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	4	1	0	1	0	6	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
15:45 - 16:00	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Hourly Total	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
16:00 - 16:15	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	4	0	0	0	0	4
16:15 - 16:30	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3
16:30 - 16:45	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
16:45 - 17:00	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	0	8	0	0	0	0	8	0	0	0	0	1	0	0	1	0	0	11	1	0	0	0	12
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
17:15 - 17:30	0	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
17:45 - 18:00	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	3	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
TOTAL	0	0	13	1	0	0	0	14	0	0	0	0	1	0	0	1	0	0	21	1	0	0	0	22

Junction: 1

Approach: A483 Fabian Way West

TIME	Left to Elba Crescent								Ahead to A483 Fabian Way (E)								Right to University Access							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	4	0	0	0	0	4	0	1	184	35	4	2	5	231	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	2	0	0	0	0	2	0	2	262	34	4	2	0	304	0	0	0	0	0	2	0	2
07:30 - 07:45	0	0	3	1	0	0	0	4	0	1	275	40	5	5	2	328	0	0	3	0	0	0	0	3
07:45 - 08:00	0	0	7	1	0	0	0	8	0	4	250	37	6	3	1	301	0	0	0	0	0	0	0	0
Hourly Total	0	0	16	2	0	0	0	18	0	8	971	146	19	12	8	1164	0	0	3	0	0	2	0	5
08:00 - 08:15	0	0	7	2	0	0	0	9	0	1	262	43	2	11	2	321	0	0	2	0	0	0	0	2
08:15 - 08:30	0	0	2	1	0	0	0	3	0	1	249	33	4	11	3	301	0	0	4	0	0	0	0	4
08:30 - 08:45	0	0	11	0	0	0	0	11	0	1	201	30	3	4	3	242	0	0	1	0	0	0	0	1
08:45 - 09:00	0	0	22	1	0	0	0	23	0	1	170	32	3	7	0	213	0	0	0	0	0	0	0	0
Hourly Total	0	0	42	4	0	0	0	46	0	4	882	138	12	33	8	1077	0	0	7	0	0	0	0	7
09:00 - 09:15	0	0	9	0	0	0	0	9	0	0	152	31	4	7	2	196	0	0	2	0	0	0	0	2
09:15 - 09:30	0	0	9	1	0	0	0	10	0	3	134	26	9	8	0	180	0	0	0	0	0	0	0	0
09:30 - 09:45	0	0	16	2	0	0	0	18	0	3	177	35	8	5	5	233	0	0	0	0	0	0	0	0
09:45 - 10:00	0	0	25	2	0	0	0	27	0	2	163	29	6	6	2	208	0	0	0	0	0	0	0	0
Hourly Total	0	0	59	5	0	0	0	64	0	8	626	121	27	26	9	817	0	0	2	0	0	0	0	2
TOTAL	0	0	117	11	0	0	0	128	0	20	2479	405	58	71	25	3058	0	0	12	0	0	2	0	14
15:00 - 15:15	0	0	4	0	0	0	0	4	0	6	223	47	4	8	4	292	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	1	0	0	0	1	0	0	272	42	3	4	2	323	0	0	1	0	0	0	0	1
15:30 - 15:45	0	0	12	0	0	0	0	12	0	2	224	40	2	2	4	274	0	0	1	0	0	0	0	1
15:45 - 16:00	0	0	8	1	0	0	0	9	0	3	295	52	5	6	3	364	0	0	1	0	0	0	0	1
Hourly Total	0	0	24	2	0	0	0	26	0	11	1014	181	14	20	13	1253	0	0	3	0	0	0	0	3
16:00 - 16:15	0	0	10	0	0	0	0	10	0	1	346	55	7	7	3	419	0	0	0	0	0	0	0	0
16:15 - 16:30	0	0	3	1	0	0	0	4	0	0	359	50	2	2	1	414	0	0	0	0	0	0	0	0
16:30 - 16:45	0	0	4	0	0	0	0	4	0	2	326	43	1	2	2	376	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	5	1	0	0	0	6	0	1	351	50	4	1	2	409	0	0	0	0	0	0	0	0
Hourly Total	0	0	22	2	0	0	0	24	0	4	1382	198	14	12	8	1618	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	3	1	0	0	0	4	0	2	427	31	5	1	1	467	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	4	0	0	0	0	4	0	2	419	36	1	0	4	462	0	0	1	1	0	0	0	2
17:30 - 17:45	0	0	3	0	0	0	0	3	0	1	387	32	1	1	1	423	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	1	273	24	0	1	2	301	0	0	0	0	0	0	0	0
Hourly Total	0	0	10	1	0	0	0	11	0	6	1506	123	7	3	8	1653	0	0	1	1	0	0	0	2
TOTAL	0	0	56	5	0	0	0	61	0	21	3902	502	35	35	29	4524	0	0	4	1	0	0	0	5

Junction: 2

Approach: A483 Fabian Way East

TIME	Left to Afan Way								Ahead to A483 Fabian Way (W)							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	2	0	0	0	0	2	0	2	151	32	7	9	3	204
07:15 - 07:30	0	0	4	1	0	0	0	5	0	1	246	50	7	9	2	315
07:30 - 07:45	1	0	7	0	0	1	0	9	0	2	286	45	5	6	0	344
07:45 - 08:00	0	0	5	1	1	0	1	8	0	1	366	66	3	4	1	441
Hourly Total	1	0	18	2	1	1	1	24	0	6	1049	193	22	28	6	1304
08:00 - 08:15	0	0	30	2	0	0	0	32	0	3	395	69	9	7	3	486
08:15 - 08:30	0	0	29	1	1	0	0	31	0	0	402	51	6	3	2	464
08:30 - 08:45	0	0	40	0	0	0	0	40	0	0	303	55	7	6	0	371
08:45 - 09:00	0	1	32	1	0	0	0	34	0	2	287	33	7	2	2	333
Hourly Total	0	1	131	4	1	0	0	137	0	5	1387	208	29	18	7	1654
09:00 - 09:15	0	0	24	3	0	0	0	27	0	0	277	36	7	3	4	327
09:15 - 09:30	0	0	14	2	1	0	0	17	0	0	265	41	5	5	7	323
09:30 - 09:45	0	0	15	2	1	0	0	18	0	3	221	31	2	8	2	267
09:45 - 10:00	0	0	16	0	0	0	0	16	0	3	190	42	7	8	1	251
Hourly Total	0	0	69	7	2	0	0	78	0	6	953	150	21	24	14	1168

TOTAL	1	1	218	13	4	1	1	239	0	17	3389	551	72	70	27	4126
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15:00 - 15:15	0	0	10	2	0	0	0	12	0	0	180	23	7	9	1	220
15:15 - 15:30	0	0	4	0	0	0	0	4	0	4	211	19	7	5	2	248
15:30 - 15:45	0	0	4	0	0	0	0	4	0	1	181	29	1	4	3	219
15:45 - 16:00	0	0	4	1	0	0	0	5	0	0	208	34	3	1	2	248
Hourly Total	0	0	22	3	0	0	0	25	0	5	780	105	18	19	8	935
16:00 - 16:15	0	0	1	1	0	0	0	2	0	1	235	33	3	2	1	275
16:15 - 16:30	0	0	2	1	0	0	0	3	0	2	268	50	2	2	2	326
16:30 - 16:45	0	0	10	0	0	0	0	10	0	1	247	32	2	4	2	288
16:45 - 17:00	0	0	9	0	0	0	0	9	0	1	240	29	3	4	2	279
Hourly Total	0	0	22	2	0	0	0	24	0	5	990	144	10	12	7	1168
17:00 - 17:15	0	1	6	0	0	0	0	7	0	2	272	31	2	0	1	308
17:15 - 17:30	0	0	8	2	0	0	0	10	0	3	280	25	0	2	2	312
17:30 - 17:45	0	0	10	0	0	0	0	10	0	1	256	23	0	2	3	285
17:45 - 18:00	0	0	9	0	0	0	0	9	0	4	221	23	0	2	1	251
Hourly Total	0	1	33	2	0	0	0	36	0	10	1029	102	2	6	7	1156

TOTAL	0	1	77	7	0	0	0	85	0	20	2799	351	30	37	22	3259
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Junction: 2

Approach: Afan Way

TIME	Left to A483 Fabian Way (W)								Right to A483 Fabian Way (E)							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0
07:15 - 07:30	0	0	2	0	0	0	2	4	0	0	0	1	0	0	0	1
07:30 - 07:45	0	0	2	1	0	0	0	3	0	0	3	0	0	0	0	3
07:45 - 08:00	0	0	29	3	0	0	1	33	0	0	1	0	0	1	0	2
Hourly Total	0	0	37	4	0	0	3	44	0	0	4	1	0	1	0	6
08:00 - 08:15	0	0	17	1	0	0	2	20	0	0	6	0	0	0	0	6
08:15 - 08:30	0	0	7	0	2	0	4	13	0	0	0	0	0	1	0	1
08:30 - 08:45	0	0	14	0	0	0	1	15	0	0	9	0	0	0	0	9
08:45 - 09:00	0	0	13	1	1	0	2	17	0	0	8	0	0	0	0	8
Hourly Total	0	0	51	2	3	0	9	65	0	0	23	0	0	1	0	24
09:00 - 09:15	0	0	8	1	0	0	1	10	0	0	7	1	0	0	0	8
09:15 - 09:30	0	0	5	2	0	0	3	10	0	0	3	0	0	0	0	3
09:30 - 09:45	0	0	9	1	0	0	1	11	0	0	5	0	1	0	0	6
09:45 - 10:00	0	0	13	1	0	0	4	18	0	0	7	2	1	0	0	10
Hourly Total	0	0	35	5	0	0	9	49	0	0	22	3	2	0	0	27

TOTAL	0	0	123	11	3	0	21	158	0	0	49	4	2	2	0	57
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15:00 - 15:15	0	1	32	2	0	0	2	37	0	0	9	4	0	0	0	13
15:15 - 15:30	0	0	21	1	0	0	4	26	0	0	8	1	0	0	0	9
15:30 - 15:45	0	0	27	0	0	0	1	28	0	0	16	2	0	0	0	18
15:45 - 16:00	0	2	28	2	0	0	2	34	0	0	19	1	0	0	0	20
Hourly Total	0	3	108	5	0	0	9	125	0	0	52	8	0	0	0	60
16:00 - 16:15	0	3	44	2	0	0	3	52	0	0	29	1	0	0	0	30
16:15 - 16:30	0	0	22	0	0	0	2	24	0	0	19	1	0	0	0	20
16:30 - 16:45	0	0	19	1	0	0	3	23	0	1	29	4	0	0	0	34
16:45 - 17:00	0	1	31	0	0	0	1	33	0	1	27	0	0	0	0	28
Hourly Total	0	4	116	3	0	0	9	132	0	2	104	6	0	0	0	112
17:00 - 17:15	0	1	34	1	0	0	3	39	0	0	21	0	0	0	0	21
17:15 - 17:30	0	0	27	0	0	0	2	29	0	1	20	0	0	0	0	21
17:30 - 17:45	0	1	19	0	0	0	3	23	0	0	16	1	0	0	0	17
17:45 - 18:00	0	1	21	1	0	0	2	25	0	0	11	1	0	0	0	12
Hourly Total	0	3	101	2	0	0	10	116	0	1	68	2	0	0	0	71

TOTAL	0	10	325	10	0	0	28	373	0	3	224	16	0	0	0	243
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Junction: 2

Approach: A483 Fabian Way West

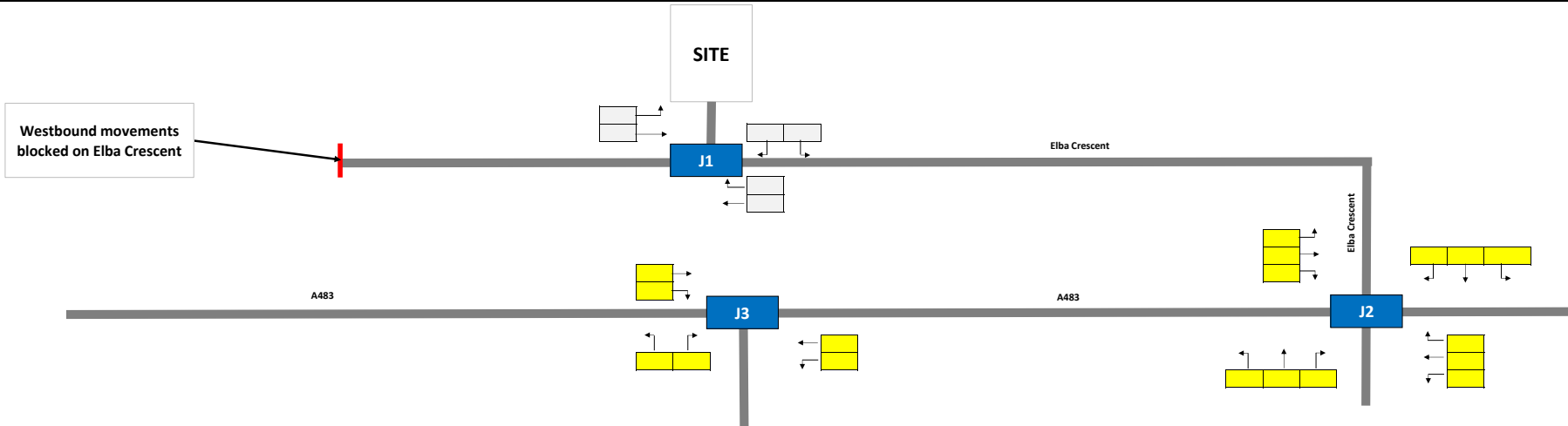
TIME	Ahead to A483 Fabian Way (E)								Right to Afan Way							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	1	188	35	4	3	5	236	0	0	6	1	0	0	2	9
07:15 - 07:30	0	2	260	33	4	3	0	302	0	0	5	1	1	1	0	8
07:30 - 07:45	0	1	278	39	5	5	2	330	0	0	17	2	0	0	2	21
07:45 - 08:00	0	4	262	38	6	3	1	314	0	1	24	0	0	0	1	26
Hourly Total	0	8	988	145	19	14	8	1182	0	1	52	4	1	1	5	64
08:00 - 08:15	0	1	266	44	2	10	2	325	0	0	22	1	2	0	3	28
08:15 - 08:30	0	2	251	34	4	10	3	304	0	1	21	0	0	0	1	23
08:30 - 08:45	0	1	208	31	3	5	3	251	0	1	45	1	0	0	2	49
08:45 - 09:00	0	1	179	33	2	7	1	223	0	6	49	2	0	0	3	60
Hourly Total	0	5	904	142	11	32	9	1103	0	8	137	4	2	0	9	160
09:00 - 09:15	0	0	150	27	5	6	1	189	0	1	28	6	0	0	4	39
09:15 - 09:30	0	3	144	28	9	8	1	193	0	0	32	0	1	0	0	33
09:30 - 09:45	0	2	188	39	7	5	4	245	0	0	44	2	0	0	3	49
09:45 - 10:00	0	2	180	29	5	6	2	224	0	2	33	1	0	0	4	40
Hourly Total	0	7	662	123	26	25	8	851	0	3	137	9	1	0	11	161
TOTAL	0	20	2554	410	56	71	25	3136	0	12	326	17	4	1	25	385
15:00 - 15:15	0	6	217	47	6	8	4	288	0	1	12	0	0	0	3	16
15:15 - 15:30	0	0	257	41	1	4	3	306	0	0	8	0	0	0	1	9
15:30 - 15:45	0	2	221	41	2	2	3	271	0	0	13	0	0	0	1	14
15:45 - 16:00	0	3	283	51	5	6	3	351	0	1	25	0	0	0	0	26
Hourly Total	0	11	978	180	14	20	13	1216	0	2	58	0	0	0	5	65
16:00 - 16:15	0	1	331	54	7	7	3	403	0	0	7	0	0	0	2	9
16:15 - 16:30	0	0	347	48	2	2	1	400	0	0	14	0	0	0	3	17
16:30 - 16:45	0	1	301	37	2	2	2	345	0	0	14	1	0	0	1	16
16:45 - 17:00	0	1	338	48	3	1	2	393	0	0	20	1	0	0	2	23
Hourly Total	0	3	1317	187	14	12	8	1541	0	0	55	2	0	0	8	65
17:00 - 17:15	0	2	409	39	5	1	1	457	0	1	19	1	0	0	3	24
17:15 - 17:30	0	1	399	33	1	0	4	438	0	0	8	0	0	0	1	9
17:30 - 17:45	0	1	372	30	1	1	1	406	0	0	9	1	0	0	4	14
17:45 - 18:00	0	1	265	23	0	1	3	293	0	0	26	2	0	0	3	31
Hourly Total	0	5	1445	125	7	3	9	1594	0	1	62	4	0	0	11	78
TOTAL	0	19	3740	492	35	35	30	4351	0	3	175	6	0	0	24	208

APPENDIX E

Network Flow Diagrams

21-00758 - Land North of Elba Crescent, Swansea

Network Peak Traffic Periods



	TOTAL JUNCTION INBOUND FLOWS			
	J2	J3	TOTAL	PEAKS
07:00 - 08:00	2607	2623	5,230	AM PEAK
07:15 - 08:15	3008	3065	6,073	
07:30 - 08:30	3163	3266	6,429	
07:45 - 08:45	3149	3294	6,443	
08:00 - 09:00	3008	3143	6,151	
08:15 - 09:15	2717	2846	5,563	
08:30 - 09:30	2444	2589	5,033	
08:45 - 09:45	2328	2439	4,767	
09:00 - 10:00	2230	2334	4,564	
15:00 - 16:00	2298	2426	4,724	PM PEAK
15:15 - 16:15	2486	2583	5,069	
15:30 - 16:30	2654	2799	5,453	
15:45 - 16:45	2822	2961	5,783	
16:00 - 17:00	2893	3042	5,935	
16:15 - 17:15	2961	3127	6,088	
16:30 - 17:30	3003	3156	6,159	
16:45 - 17:45	3056	3195	6,251	
17:00 - 18:00	2909	3051	5,960	

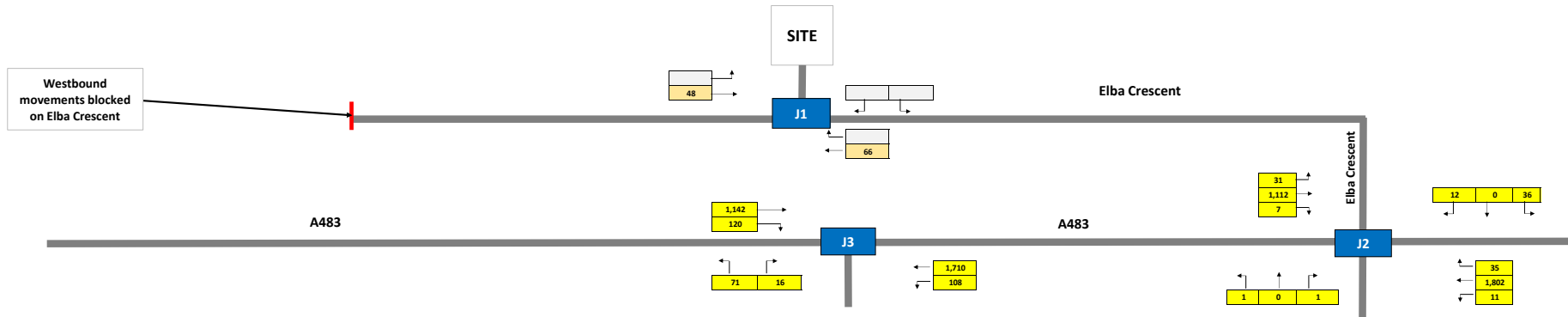
Network Peak Flow Periods

Weekday AM Peak = 07:45 - 08:45
Weekday PM Peak = 16:45 - 17:45

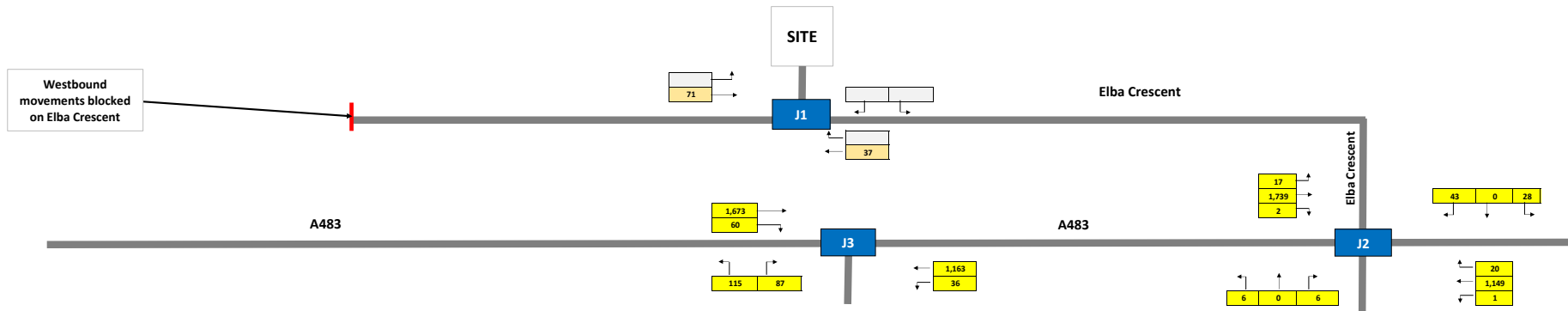
21-00758 - Land North of Elba Crescent, Swansea October 2023 Surveyed Flows - Light Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



Notes:

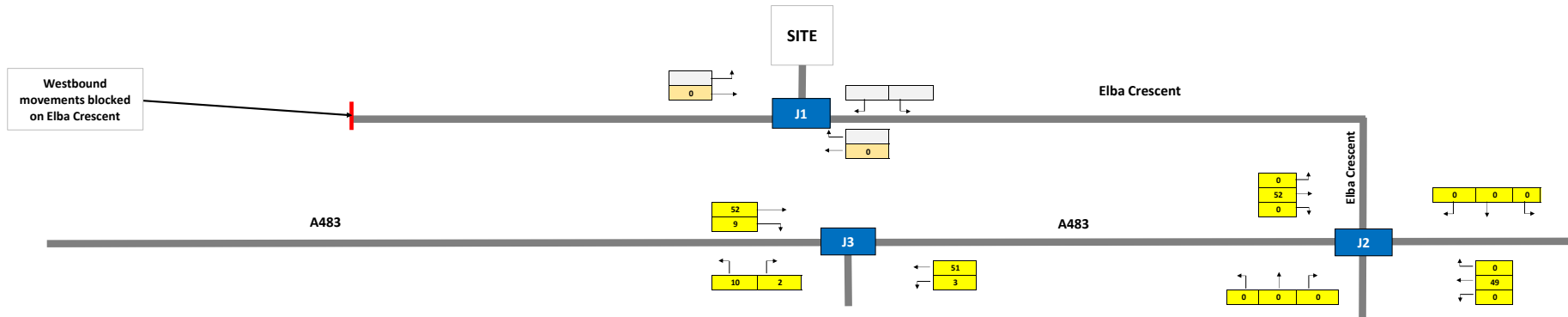
Flows as per MCC surveys undertaken on Friday 17th October 2023. Flows past site access junction calculated from Elba Crescent flows at J2
Light Vehicles = Motorcycle + Car + LGV

X - Light Vehicles (Surveyed)
X - Light Vehicles (Calculated)

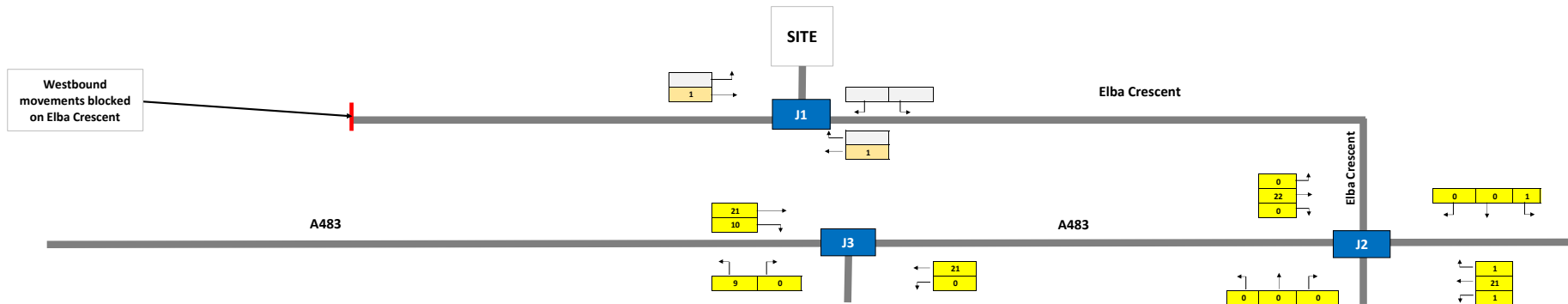
21-00758 - Land North of Elba Crescent, Swansea October 2023 Surveyed Flows - Heavy Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



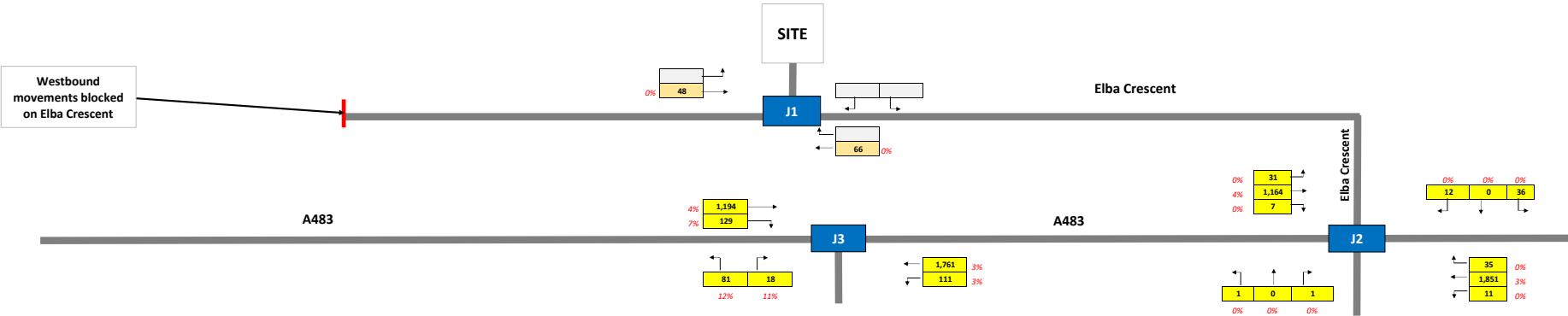
Notes:
Flows as per MCC surveys undertaken on Friday 17th October 2023. Flows past site access junction calculated from Elba Crescent flows at J2
Heavy Vehicles = OGV1 + OGV2 + PSV

← X - Heavy Vehicles (Surveyed)
← X - Heavy Vehicles (Calculated)

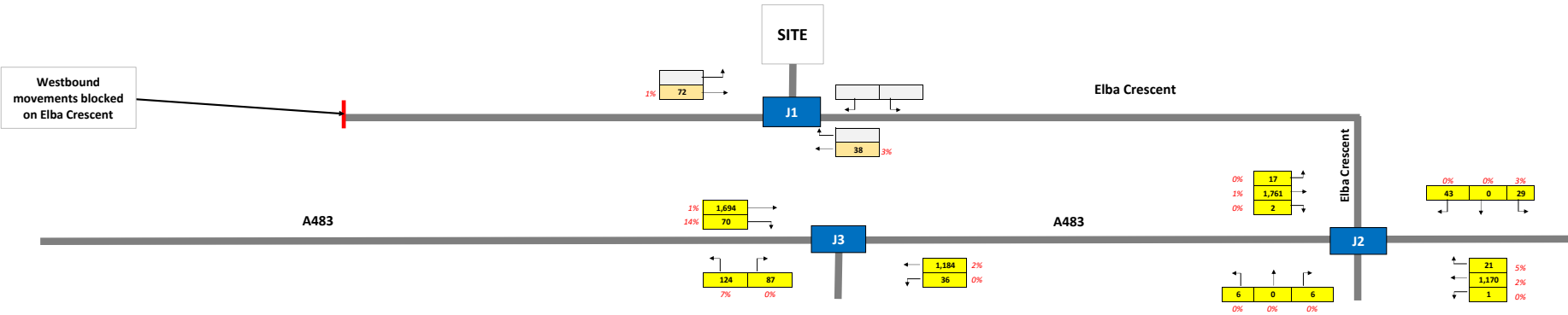
21-00758 - Land North of Elba Crescent, Swansea
October 2023 Surveyed Flows - All Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



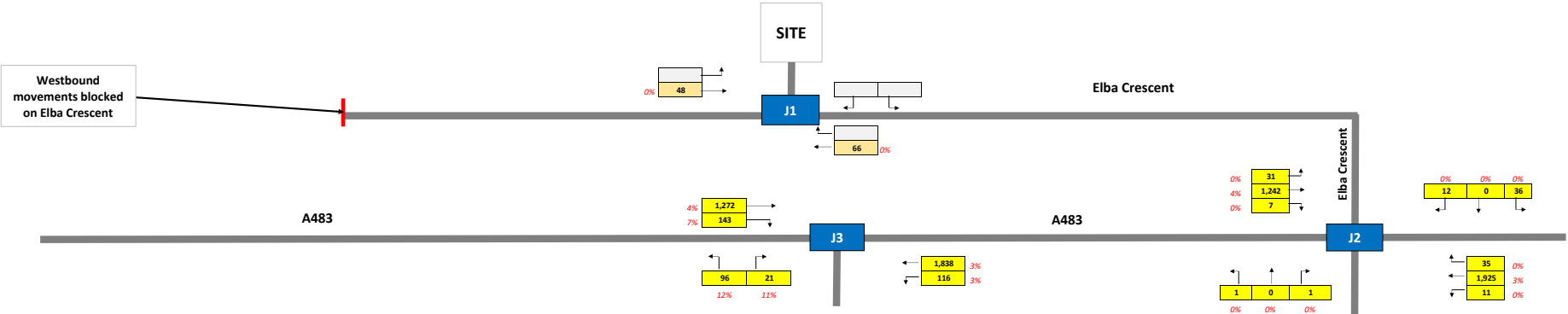
Notes:
Flows as per MCC surveys undertaken on Friday 17th October 2023. Flows past site access junction calculated from Elba Crescent flows at J2

← X - All Vehicles (Surveyed)
← X - All Vehicles (Calculated)
X% - % Heavy Vehicles

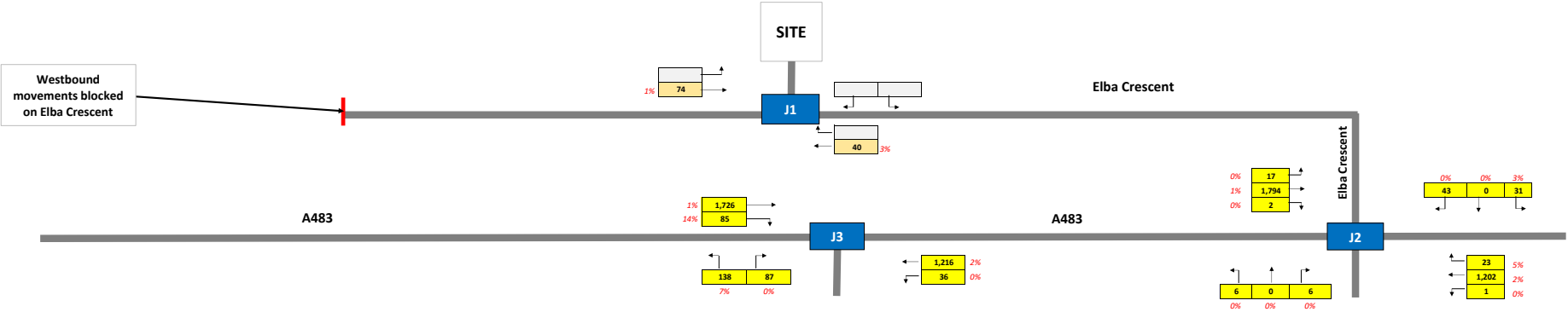
21-00758 - Land North of Elba Crescent, Swansea
October 2023 Surveyed Flows - PCUs



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



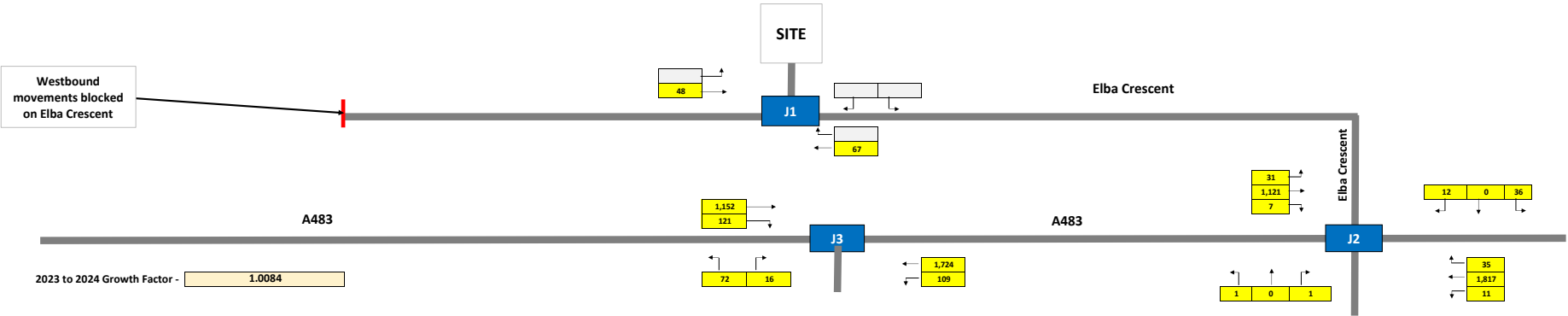
Notes:
PCU conversion factors = Lights - 1 PCU (motorcycle, car, LGV)
Heavies - 2 PCU (OGV1, OGV2, bus)

← X - PCUs (Surveyed)
← X - PCUs (Calculated)
X% - % Heavy Vehicles

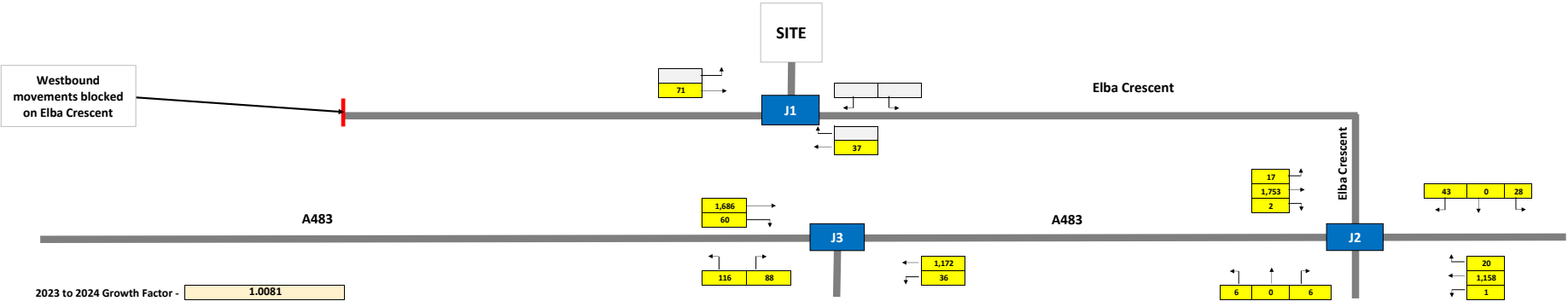
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, No Development - Light Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



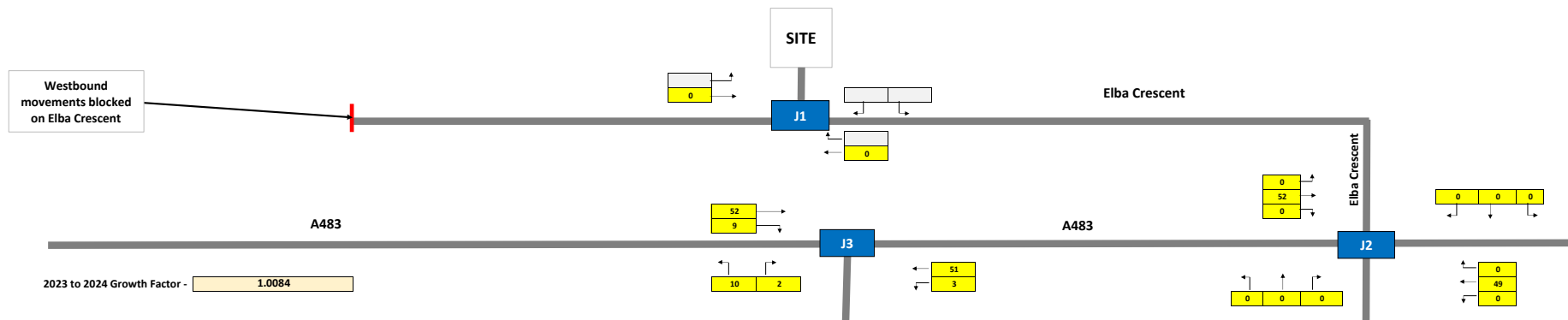
Notes:
Growth factors calculated using TEMPRO V8.0 utilising 'Neath Port Talbot' area, and average of Origin and Destination growth values

← X - Light Vehicles

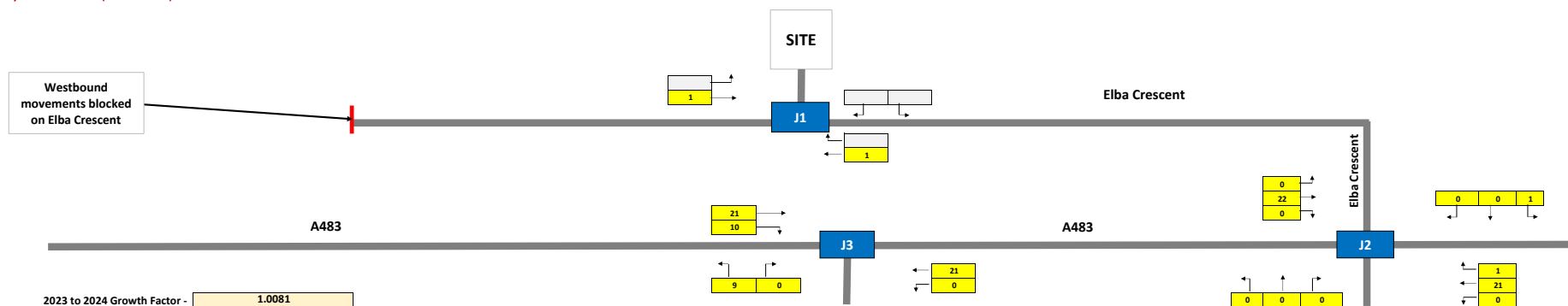
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, No Development - Heavy Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



Notes:

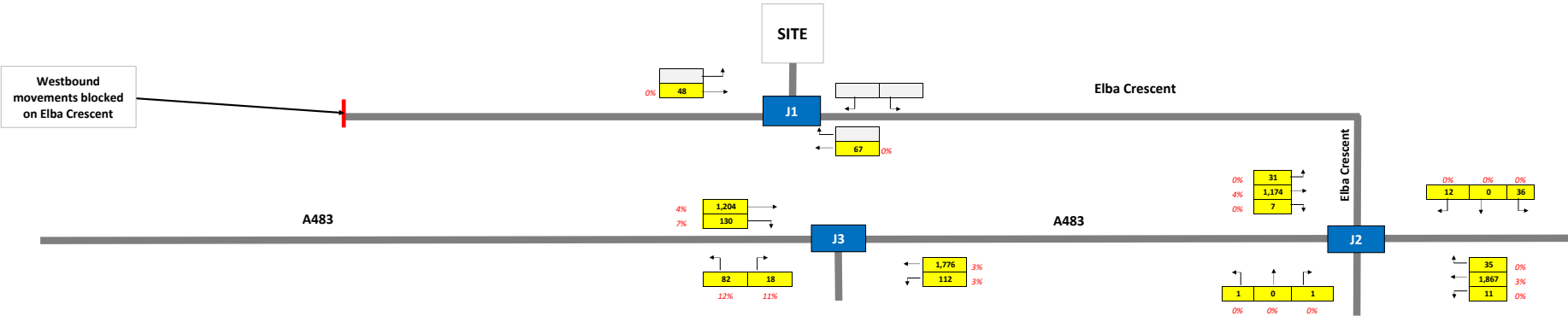
Growth factors calculated using TEMPRO V8.0 utilising 'Neath Port Talbot' area, and average of Origin and Destination growth values

← **X** - Heavy Vehicles

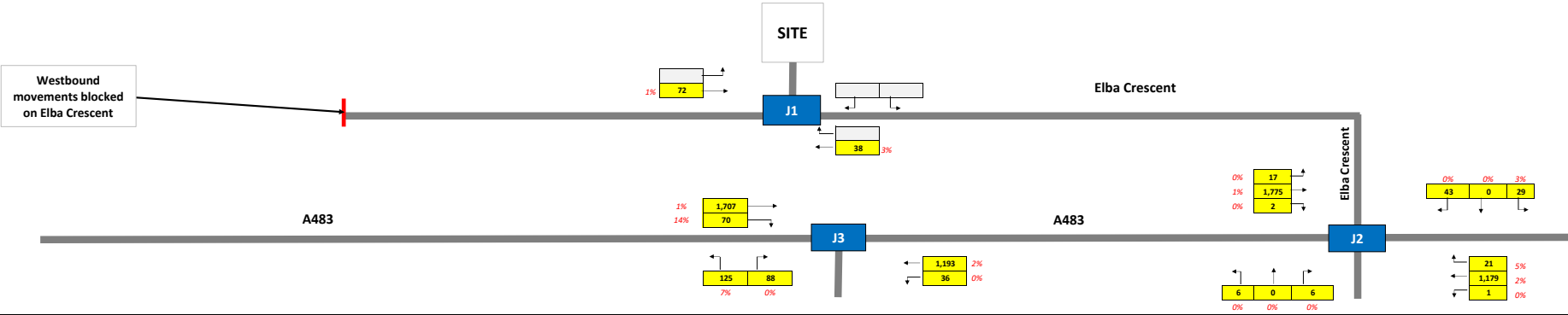
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, No Development - All Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



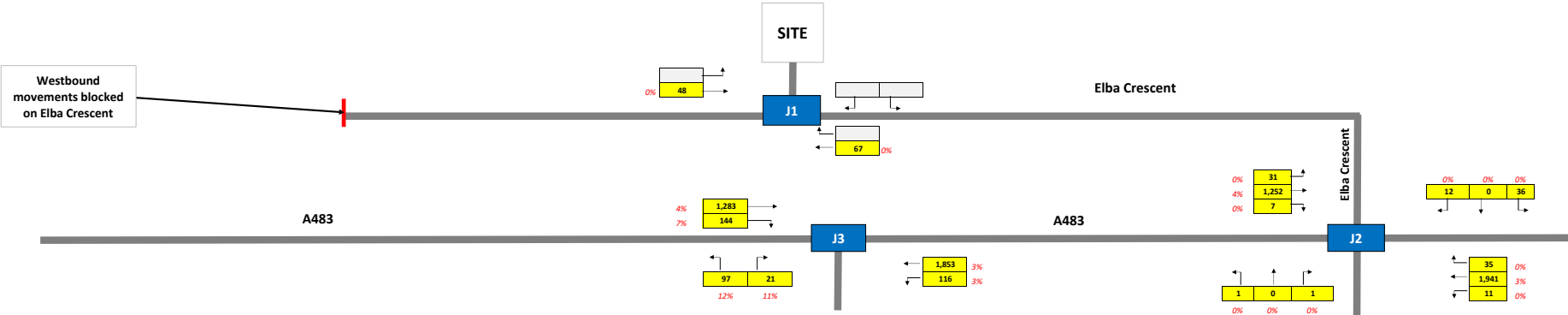
Notes:

← X - All Vehicles
X% - % Heavy Vehicles

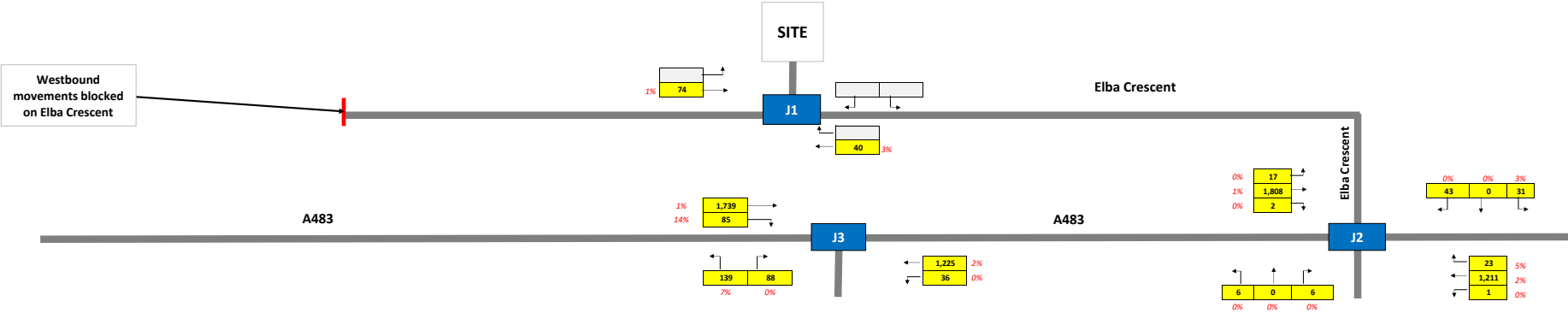
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, No Development - PCUs



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



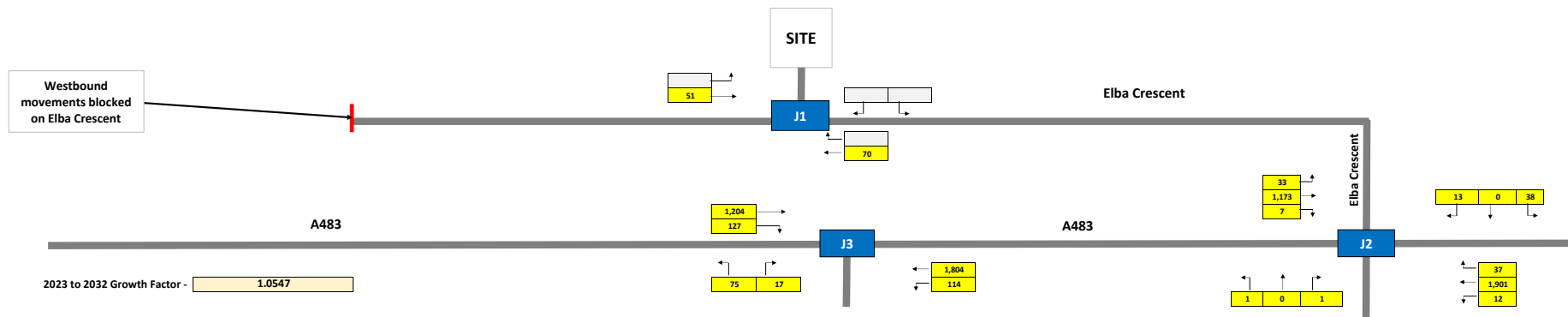
Notes:
PCU conversion factors = Lights - 1 PCU (motorcycle, car, LGV)
Heavies - 2 PCU (OGV1, OGV2, bus)

← X - PCUs
X% - % Heavy Vehicles

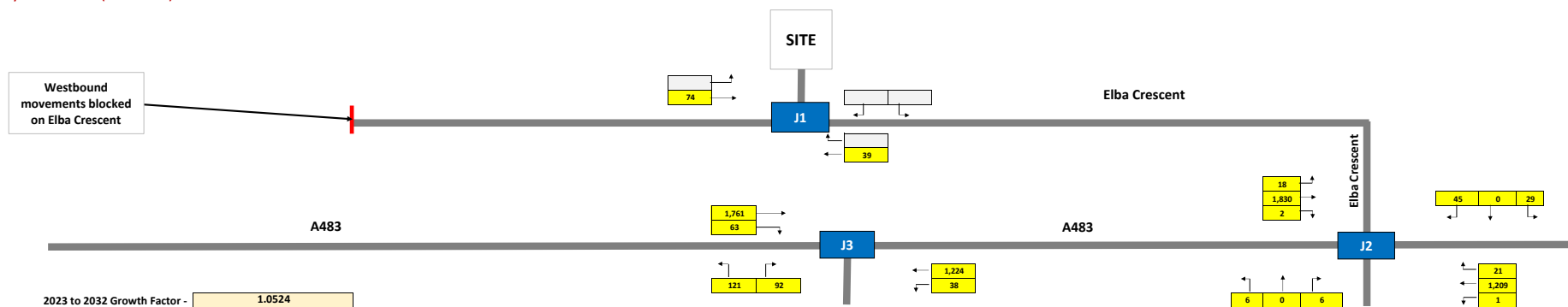
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, No Development - Light Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



Notes:

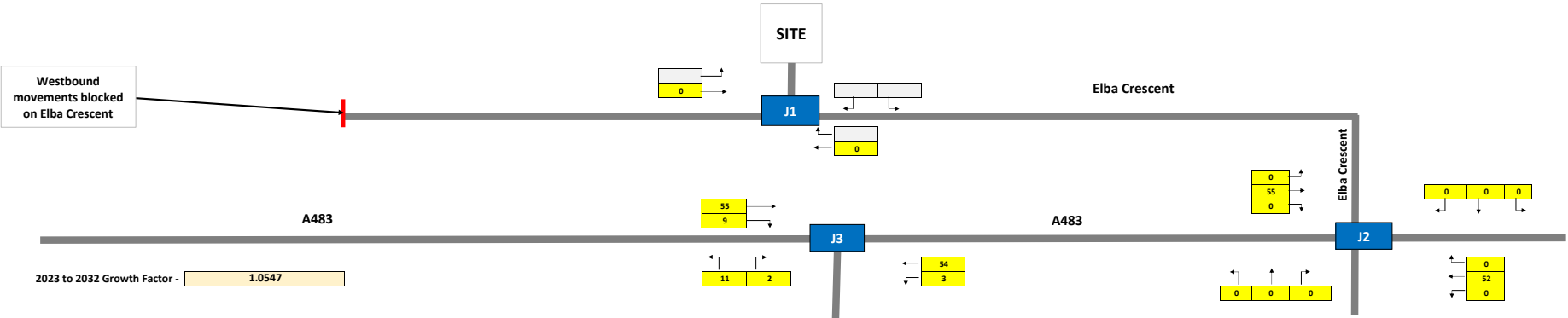
Growth factors calculated using TEMPRO V8.0 utilising 'Neath Port Talbot' area, and average of Origin and Destination growth values

← **x** - Light Vehicles

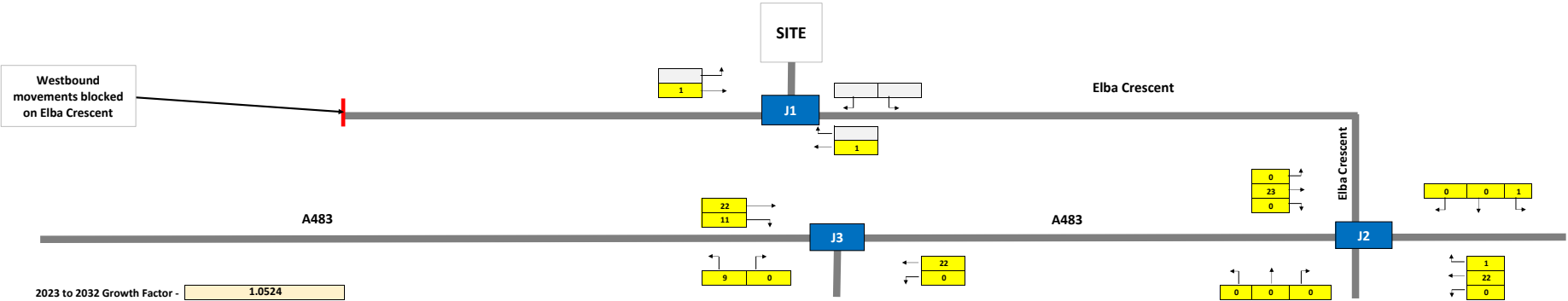
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, No Development - Heavy Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



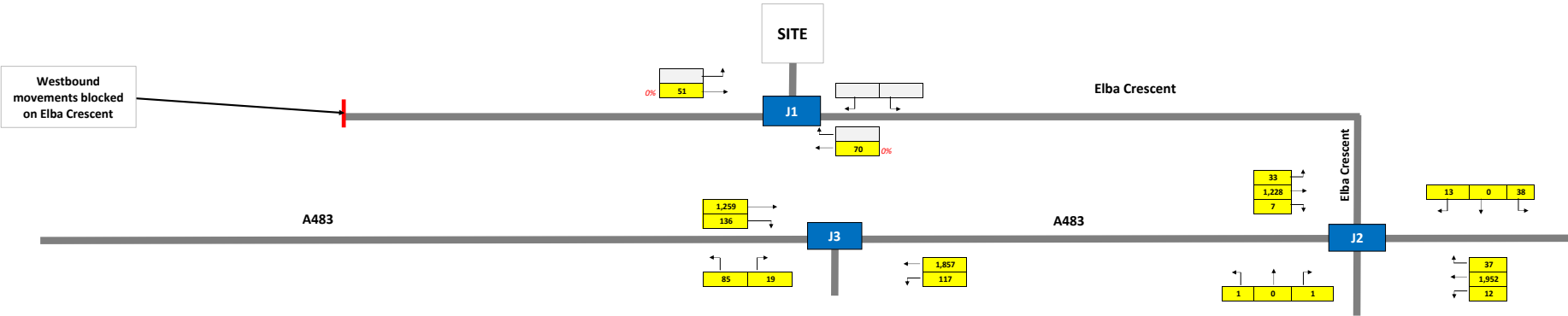
Notes:
Growth factors calculated using TEMPRO V8.0 utilising 'Neath Port Talbot' area, and average of Origin and Destination growth values

← X - Heavy Vehicles

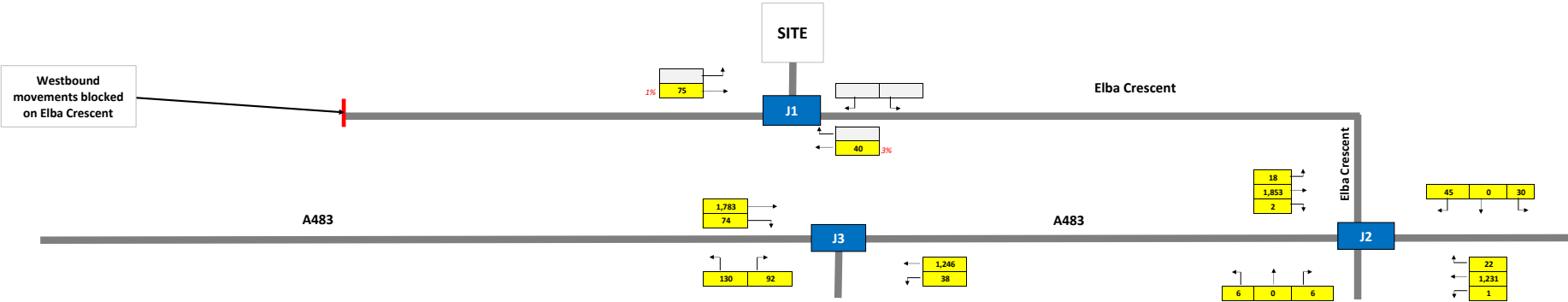
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, No Development - All Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



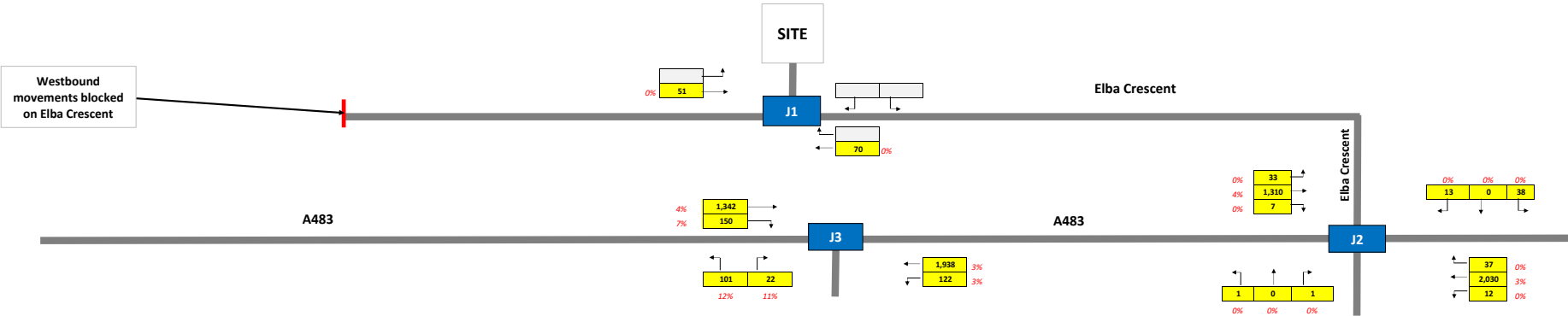
Notes:

← X - All Vehicles
X% - % Heavy Vehicles

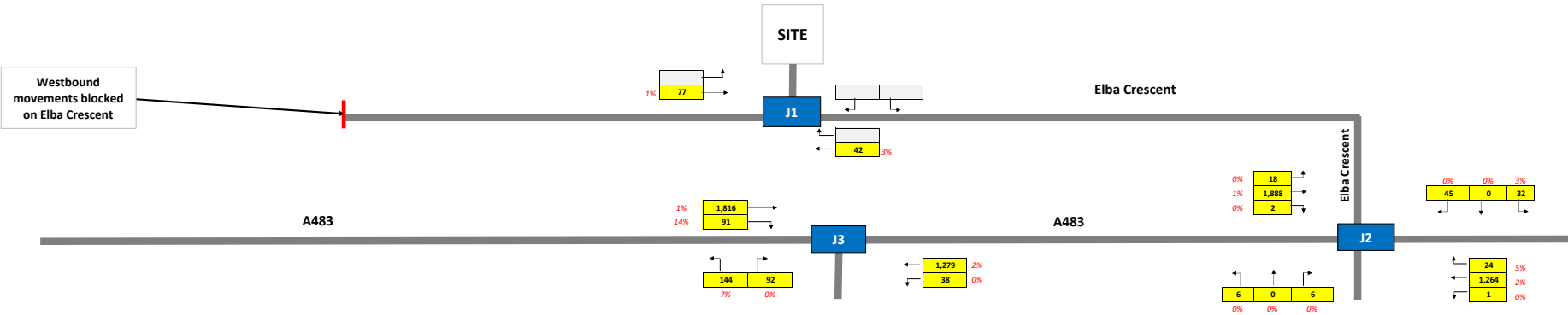
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, No Development - PCUs



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



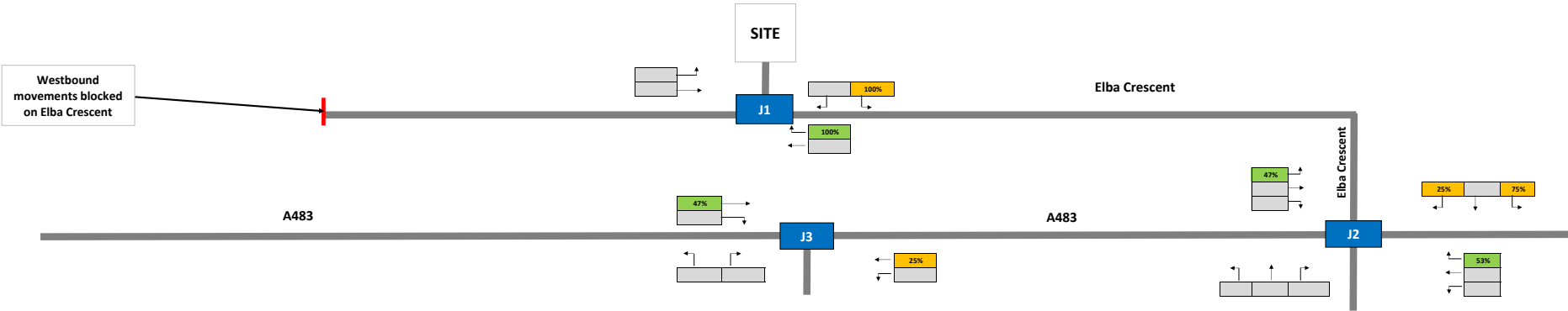
Notes:
PCU conversion factors = Lights - 1 PCU (motorcycle, car, LGV)
Heavies - 2 PCU (OGV1, OGV2, bus)

← X - PCUs
% - % Heavy Vehicles

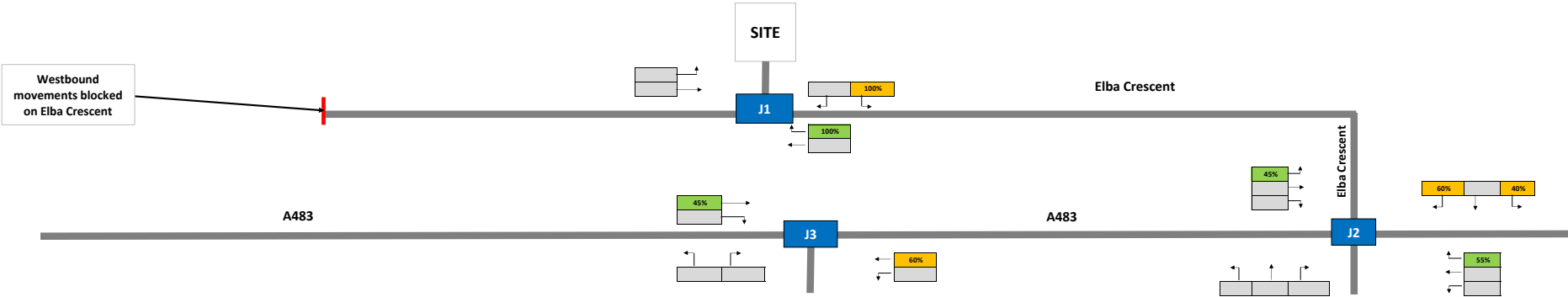
21-00758 - Land North of Elba Crescent, Swansea Development Trip Distribution



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



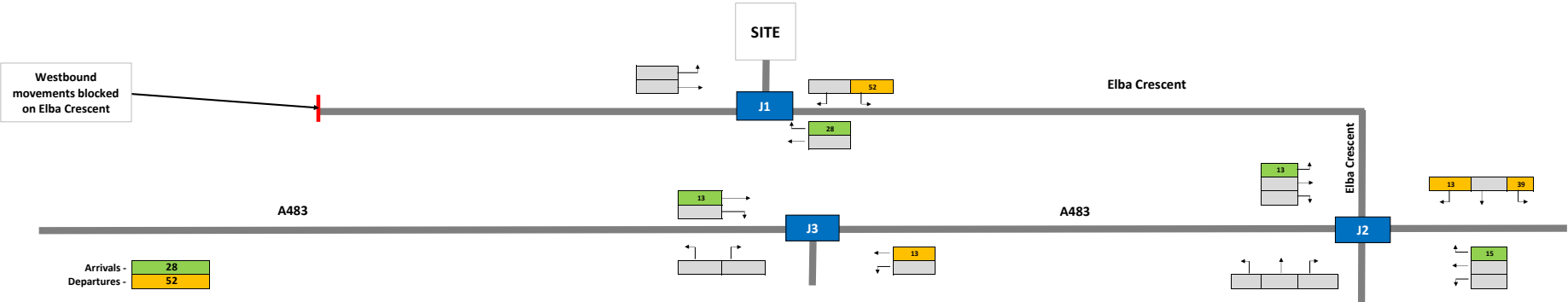
Notes:
Distributions based on proportion of network arrival and departures observed during 2023 MCC surveys
Due to the close proximity to the site, no development car trips have been assumed to route to/from the Swansea University Bay Campus

← X - Departure Proportions
← X - Arrival Proportions

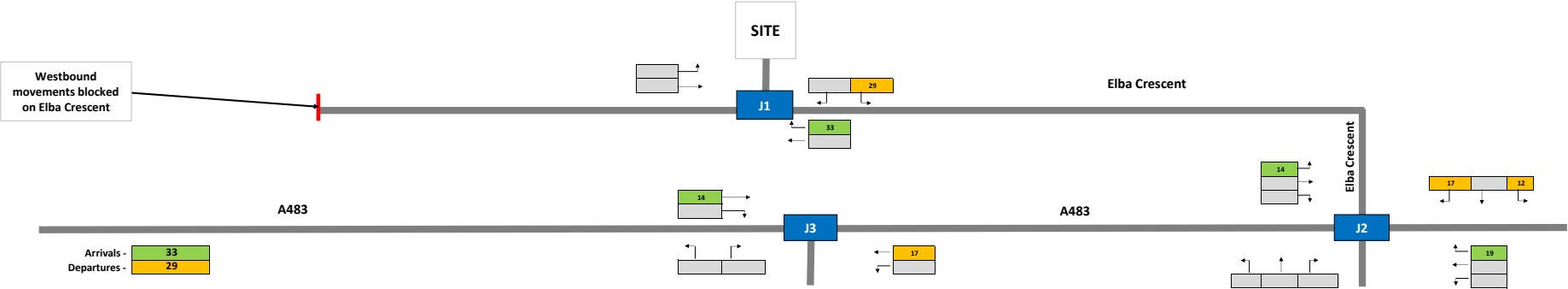
21-00758 - Land North of Elba Crescent, Swansea
Development Trips



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



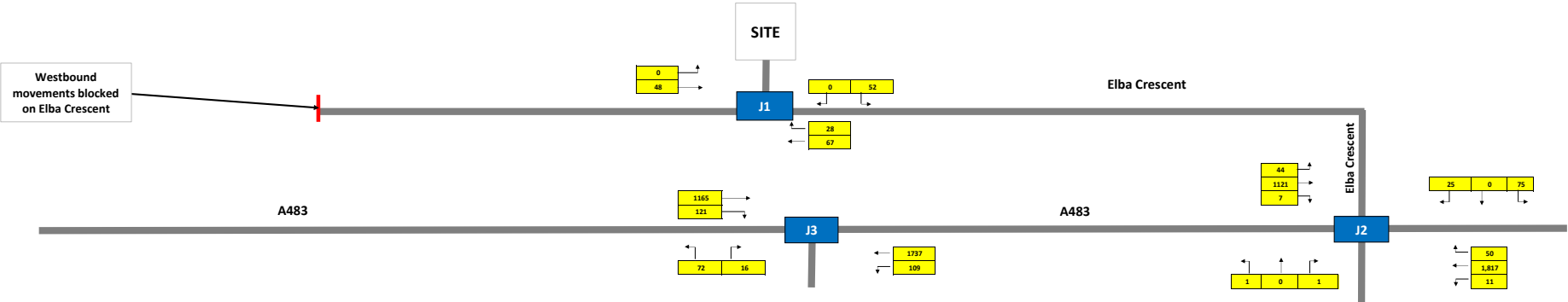
Notes:

- ← X - Departure Trips
- ← X - Arrival Trips

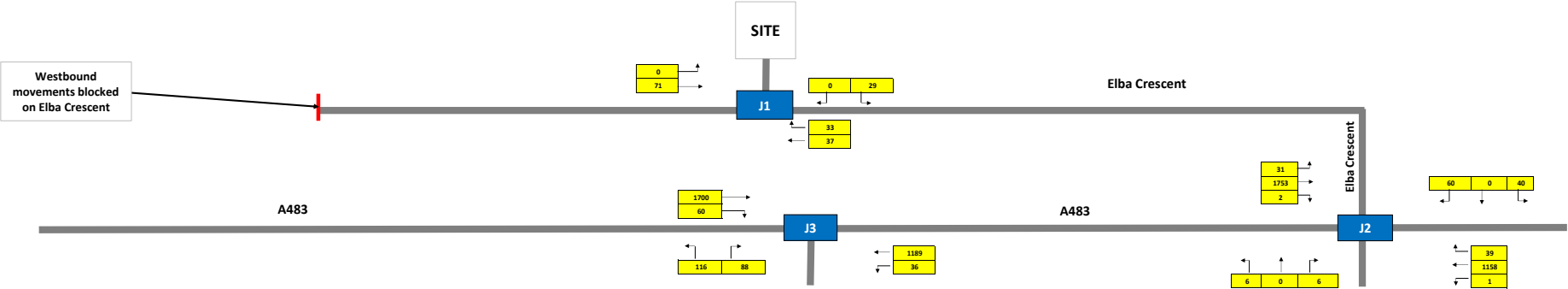
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, With Development - Light Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



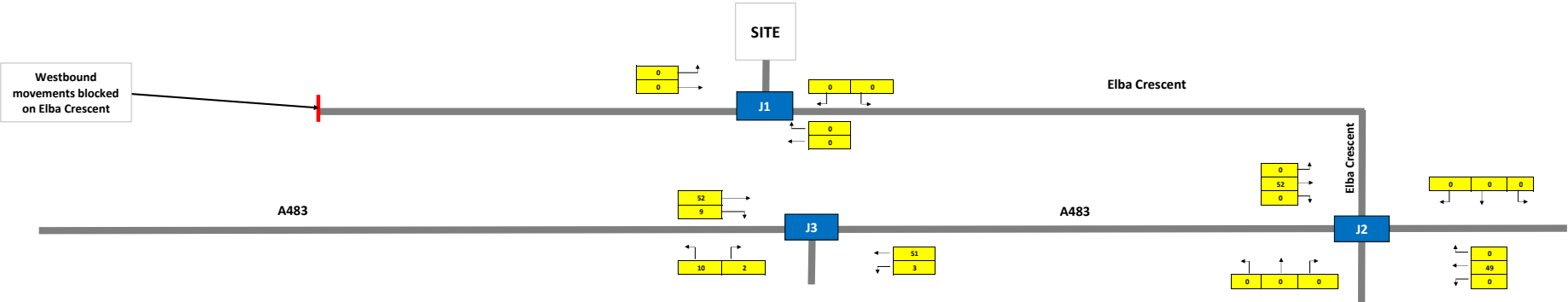
Notes:

← X - Light Vehicles

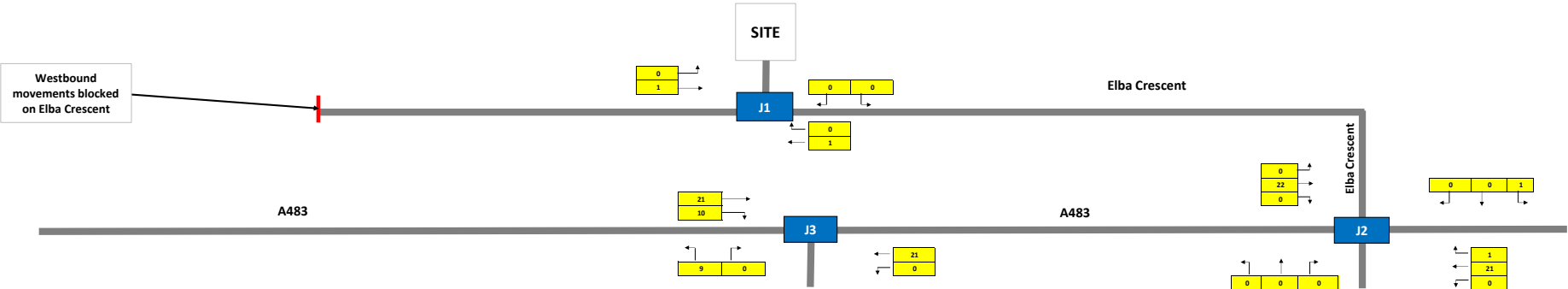
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, With Development - Heavy Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



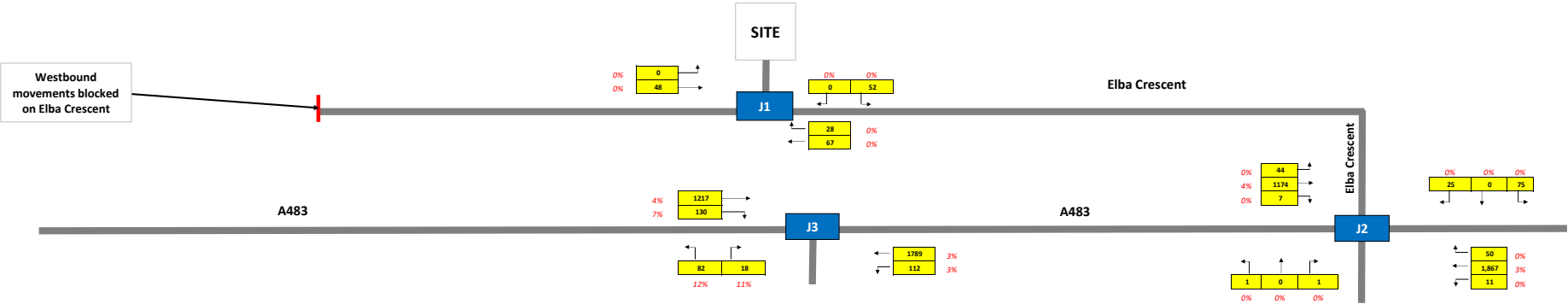
Notes:

← X - Heavy Vehicles

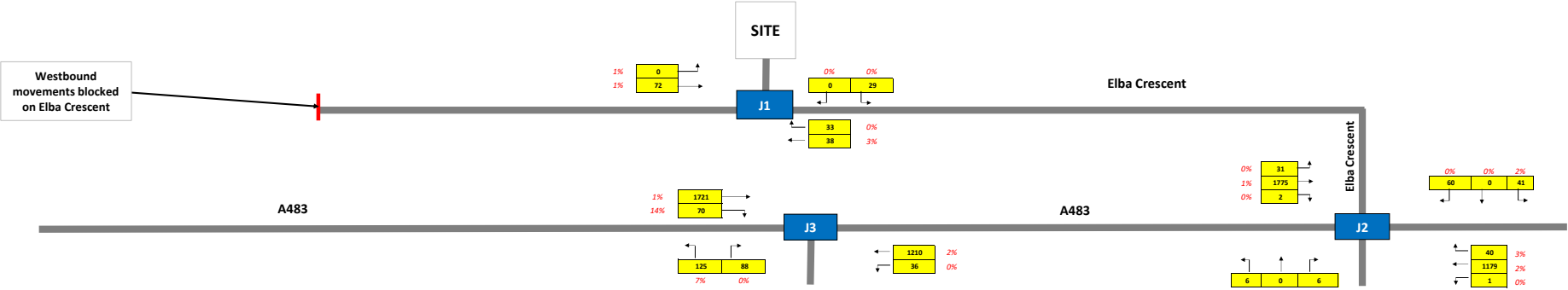
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, With Development - All Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



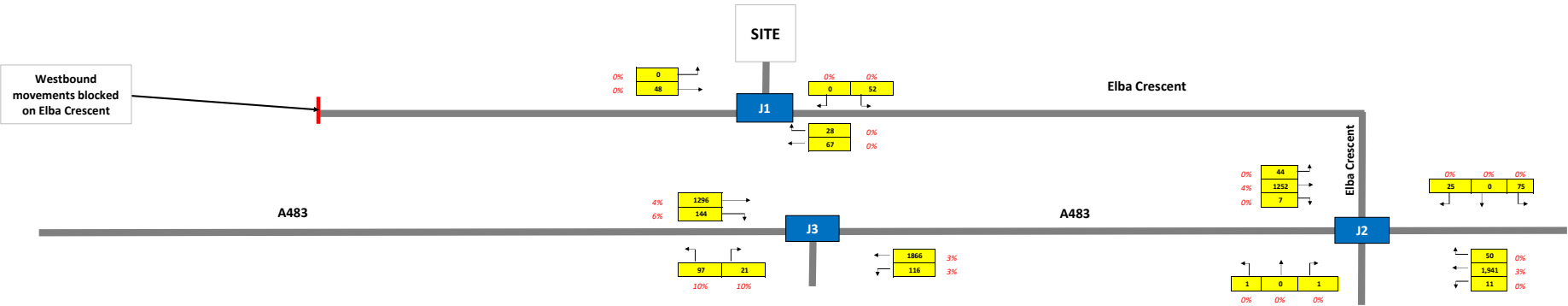
Notes:

← X - All Vehicles
XX - % Heavy Vehicles

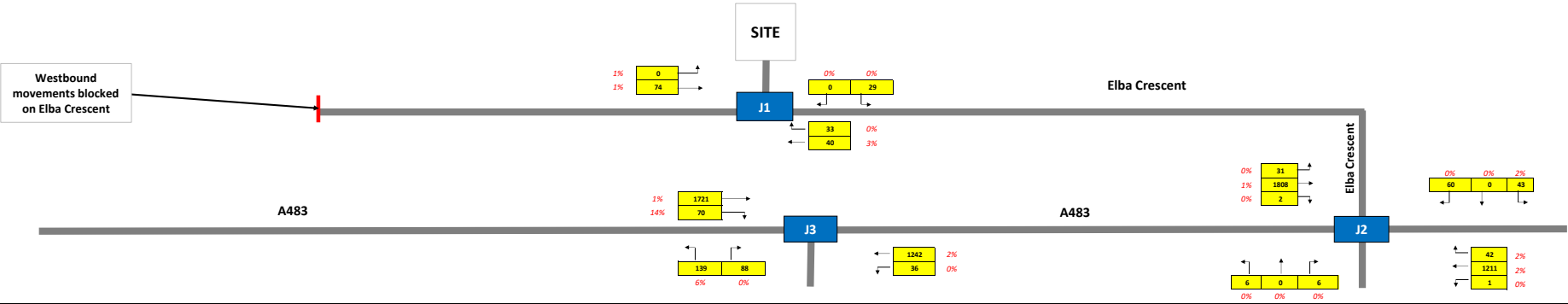
21-00758 - Land North of Elba Crescent, Swansea
2024 Forecast Year, With Development - PCUs



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



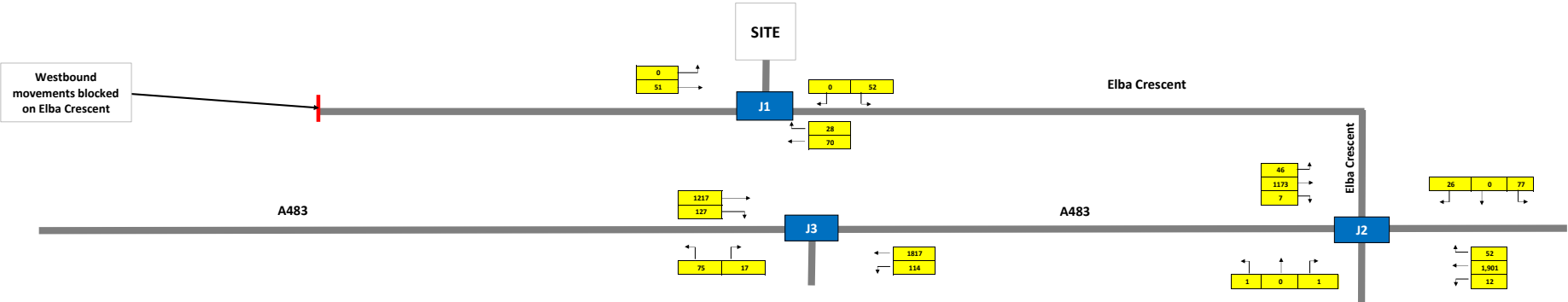
Notes:
PCU conversion factors = Lights - 1 PCU (motorcycle, car, LGV)
Heavies - 2 PCU (OGV1, OGV2, bus)

← X - PCUs
XX - % Heavy Vehicles

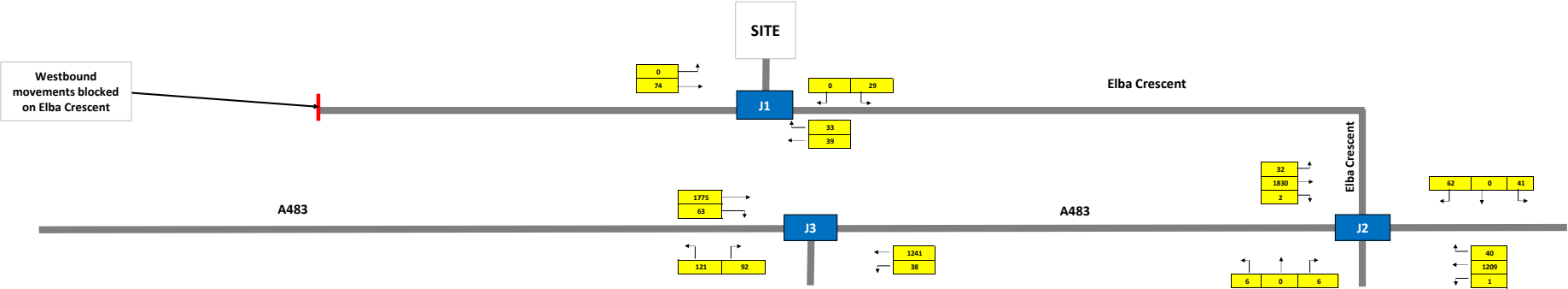
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, With Development - Light Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



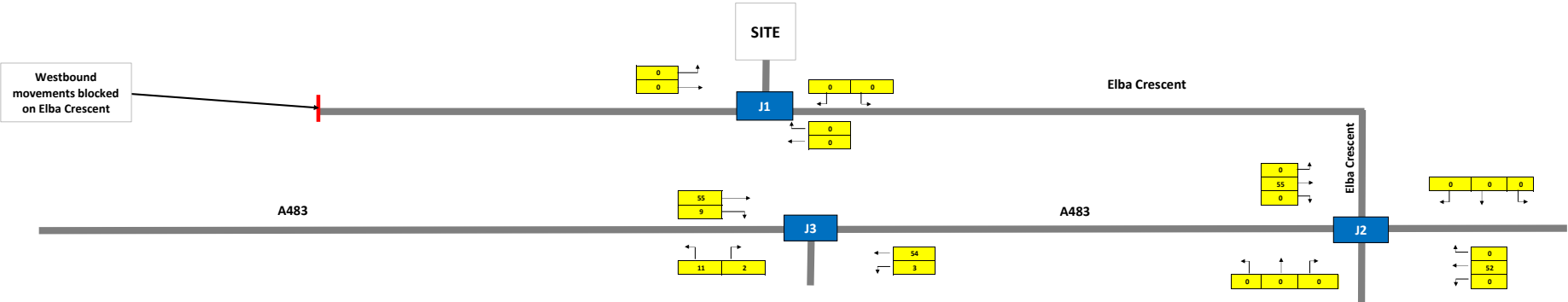
Notes:

← X → - Light Vehicles

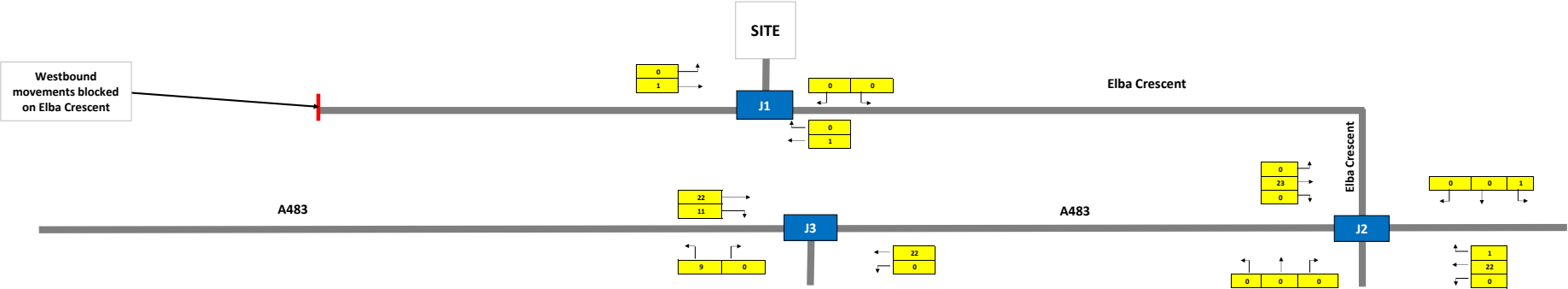
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, With Development - Heavy Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



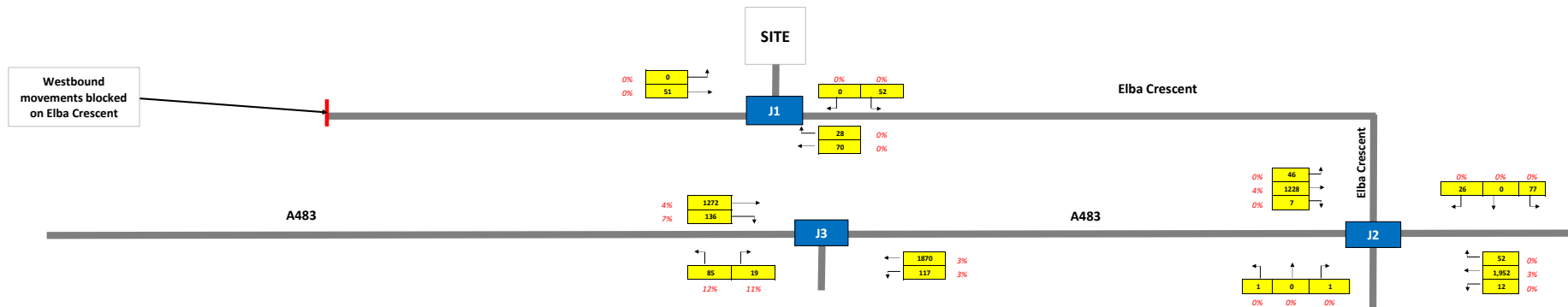
Notes:

← X - Heavy Vehicles

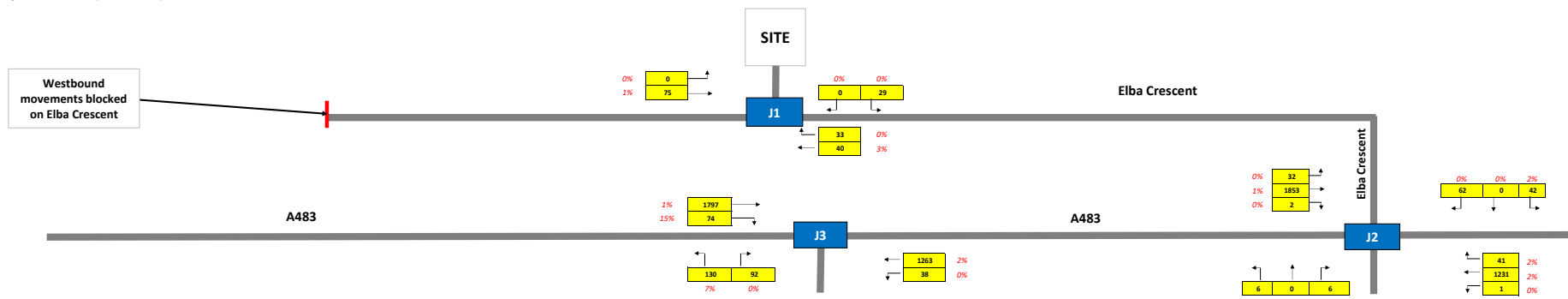
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, With Development - All Vehicles



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



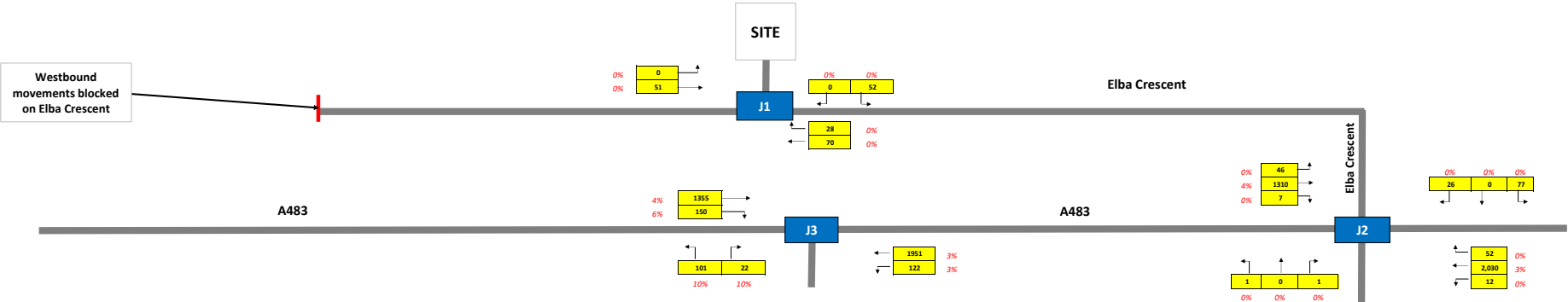
Notes:

← **X** - All Vehicles
X% - % Heavy Vehicles

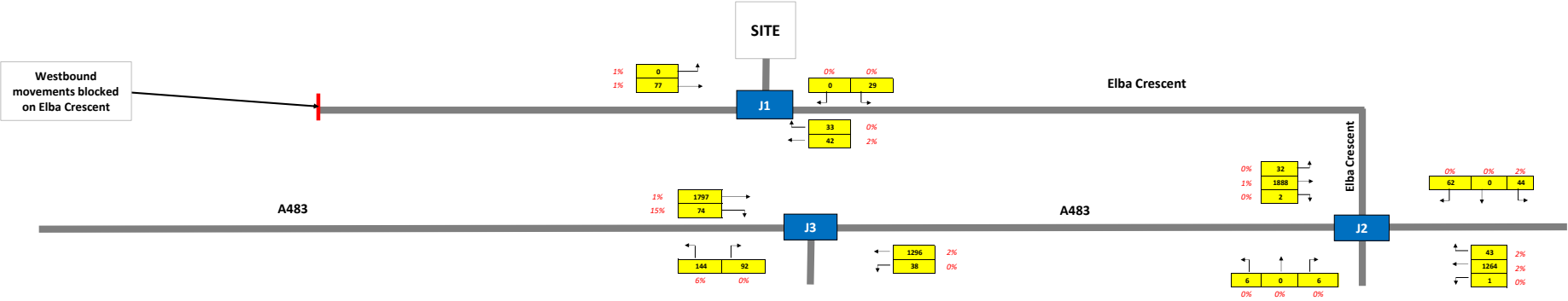
21-00758 - Land North of Elba Crescent, Swansea
2032 Forecast Year, With Development - PCUs



Weekday AM Peak Period (0745 to 0845)



Weekday PM Peak Period (1645 to 1745)



Notes:
PCU conversion factors = Lights - 1 PCU (motorcycle, car, LGV)
Heavies - 2 PCU (OGV1, OGV2, bus)

← X - PCUs
XX - % Heavy Vehicles

APPENDIX F

PICADY Model Outputs

Junctions 9									
PICADY 9 - Priority Intersection Module									
Version: 9.5.1.7462 © Copyright TRL Limited, 2019									
For sales and distribution information, program advice and maintenance, contact TRL: +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.j9

Path: C:\Users\lloyd\Corun Associates Ltd\Communication site - Documents\21-00758 - Land North of Elba Crescent, Swansea\Capacity Analysis\PICADY

Report generation date: 06/11/2023 15:31:57

»2024 With Development, AM

»2024 With Development, PM

»2032 With Development, AM

»2032 With Development, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2024 With Development									
Stream B-AC	D1	0.1	6.30	0.09	A	D2	0.1	6.11	0.05	A
Stream C-AB		0.1	5.39	0.05	A		0.1	5.66	0.06	A
	2032 With Development									
Stream B-AC	D3	0.1	6.31	0.09	A	D4	0.1	6.11	0.05	A
Stream C-AB		0.1	5.38	0.05	A		0.1	5.66	0.06	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	08/12/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	LAPTOP-7PJKROJB\lloyd
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 With Development	AM	ONE HOUR	07:30	09:00	15
D2	2024 With Development	PM	ONE HOUR	16:30	18:00	15
D3	2032 With Development	AM	ONE HOUR	07:30	09:00	15
D4	2032 With Development	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 With Development, 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		2.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Elba Crescent (Western Arm)		Major
B	Proposed Site Access		Minor
C	Elba Crescent (Eastern Arm)		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			164.2	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.75	57	54

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	510	0.093	0.235	0.148	0.335
B-C	641	0.098	0.249	-	-
C-B	669	0.259	0.259	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024 With Development	AM	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	48	100.000
B		✓	52	100.000
C		✓	95	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	0	48
	B	0	0	52
	C	67	28	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 (Veh)	Max LOS
B-AC	0.09	6.30	0.1	A
C-AB	0.05	5.39	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	632	0.062	39	0.1	6.061	A
C-AB	23	692	0.033	23	0.0	5.379	A
C-A	49			49			
A-B	0			0			
A-C	36			36			

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	631	0.074	47	0.1	6.163	A
C-AB	28	696	0.040	28	0.0	5.384	A
C-A	58			58			
A-B	0			0			
A-C	43			43			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	628	0.091	57	0.1	6.303	A
C-AB	34	702	0.049	34	0.1	5.390	A
C-A	70			70			
A-B	0			0			
A-C	53			53			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	628	0.091	57	0.1	6.303	A
C-AB	34	702	0.049	34	0.1	5.390	A
C-A	70			70			
A-B	0			0			
A-C	53			53			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	631	0.074	47	0.1	6.167	A
C-AB	28	696	0.040	28	0.0	5.387	A
C-A	58			58			
A-B	0			0			
A-C	43			43			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	632	0.062	39	0.1	6.067	A
C-AB	23	692	0.033	23	0.0	5.384	A
C-A	49			49			
A-B	0			0			
A-C	36			36			

2024 With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024 With Development	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	72	100.000
B		✓	29	100.000
C		✓	71	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	0	72
	B	0	0	29
	C	38	33	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.05	6.11	0.1	A
C-AB	0.06	5.66	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	628	0.035	22	0.0	5.937	A
C-AB	26	673	0.039	26	0.0	5.563	A
C-A	28			28			
A-B	0			0			
A-C	54			54			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	26	625	0.042	26	0.0	6.008	A
C-AB	31	674	0.046	31	0.1	5.604	A
C-A	33			33			
A-B	0			0			
A-C	65			65			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	621	0.051	32	0.1	6.105	A
C-AB	39	675	0.057	39	0.1	5.660	A
C-A	39			39			
A-B	0			0			
A-C	79			79			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	621	0.051	32	0.1	6.105	A
C-AB	39	675	0.057	39	0.1	5.661	A
C-A	39			39			
A-B	0			0			
A-C	79			79			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	26	625	0.042	26	0.0	6.011	A
C-AB	31	674	0.046	31	0.1	5.606	A
C-A	33			33			
A-B	0			0			
A-C	65			65			

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	628	0.035	22	0.0	5.943	A
C-AB	26	673	0.039	26	0.0	5.567	A
C-A	27			27			
A-B	0			0			
A-C	54			54			

2032 With Development, 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		2.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2032 With Development	AM	ONE HOUR	07:30	09:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	51	100.000
B		✓	52	100.000
C		✓	98	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	0	51
	B	0	0	52
	C	70	28	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 (Veh)	Max LOS
B-AC	0.09	6.31	0.1	A
C-AB	0.05	5.38	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	632	0.062	39	0.1	6.067	A
C-AB	23	693	0.033	23	0.0	5.373	A
C-A	51			51			
A-B	0			0			
A-C	38			38			

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	630	0.074	47	0.1	6.170	A
C-AB	28	697	0.040	28	0.0	5.377	A
C-A	60			60			
A-B	0			0			
A-C	46			46			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	628	0.091	57	0.1	6.312	A
C-AB	35	704	0.049	35	0.1	5.381	A
C-A	73			73			
A-B	0			0			
A-C	56			56			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	628	0.091	57	0.1	6.312	A
C-AB	35	704	0.049	35	0.1	5.383	A
C-A	73			73			
A-B	0			0			
A-C	56			56			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	630	0.074	47	0.1	6.174	A
C-AB	28	697	0.040	28	0.0	5.380	A
C-A	60			60			
A-B	0			0			
A-C	46			46			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	632	0.062	39	0.1	6.073	A
C-AB	23	693	0.033	23	0.0	5.376	A
C-A	51			51			
A-B	0			0			
A-C	38			38			

2032 With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2032 With Development	PM	ONE HOUR	16:30	18:00	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	75	100.000
B		✓	29	100.000
C		✓	73	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	0	75
	B	0	0	29
	C	40	33	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	1
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-AC	0.05	6.11	0.1	A
C-AB	0.06	5.66	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	627	0.035	22	0.0	5.942	A
C-AB	26	673	0.039	26	0.0	5.560	A
C-A	29			29			
A-B	0			0			
A-C	56			56			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	26	625	0.042	26	0.0	6.014	A
C-AB	31	674	0.047	31	0.1	5.600	A
C-A	34			34			
A-B	0			0			
A-C	67			67			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	621	0.051	32	0.1	6.113	A
C-AB	39	675	0.058	39	0.1	5.655	A
C-A	41			41			
A-B	0			0			
A-C	83			83			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	621	0.051	32	0.1	6.113	A
C-AB	39	675	0.058	39	0.1	5.659	A
C-A	41			41			
A-B	0			0			
A-C	83			83			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	26	625	0.042	26	0.0	6.017	A
C-AB	31	674	0.047	31	0.1	5.603	A
C-A	34			34			
A-B	0			0			
A-C	67			67			

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	22	627	0.035	22	0.0	5.945	A
C-AB	26	673	0.039	26	0.0	5.563	A
C-A	29			29			
A-B	0			0			
A-C	56			56			

APPENDIX G

LinSig Model Outputs

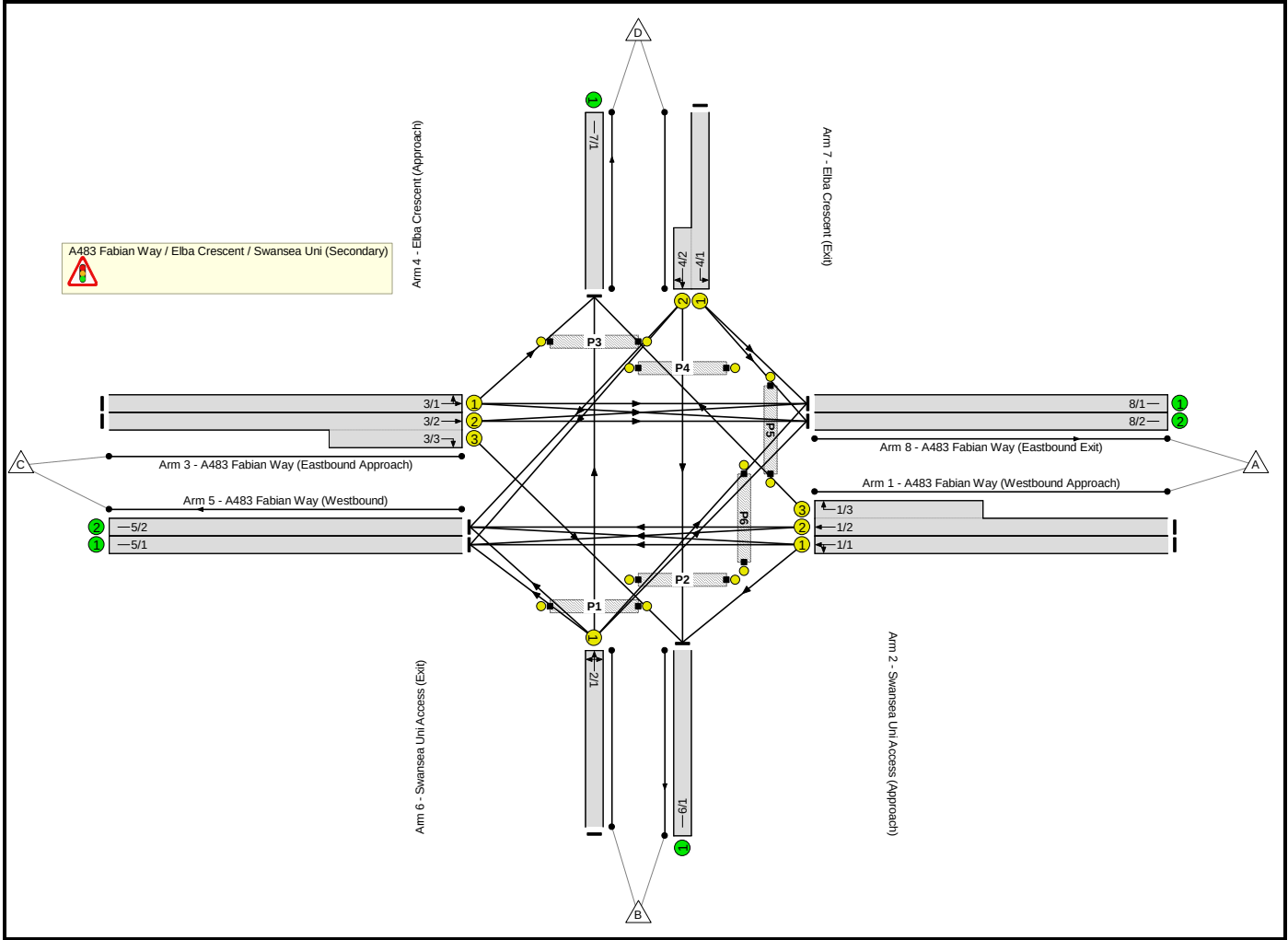
Full Input Data And Results

Full Input Data And Results

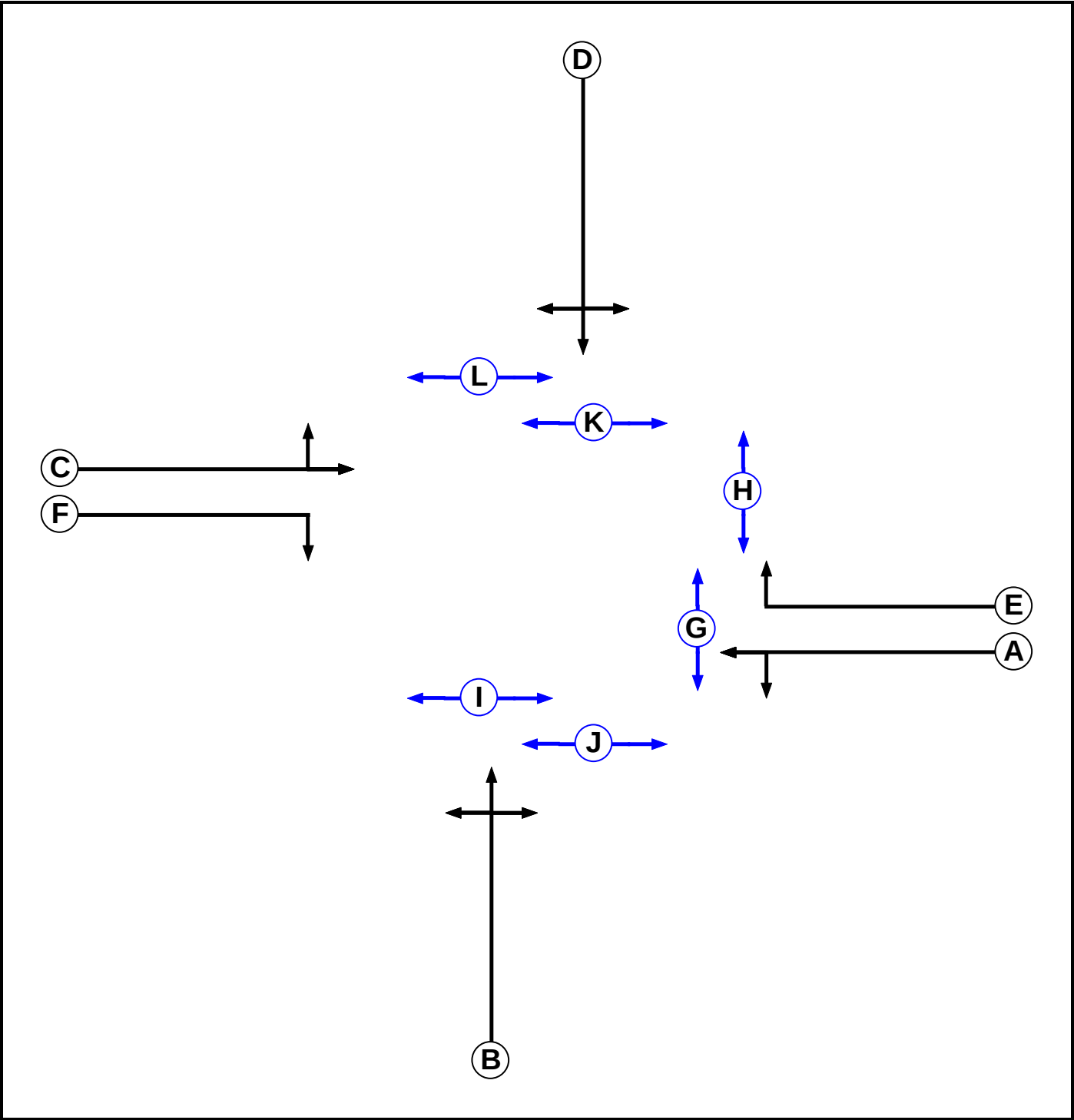
User and Project Details

Project:	Elba Crescent, Swansea
Title:	Assessment Junction J2
Location:	
Date Completed:	November 2023
Additional detail:	
File name:	J2_Fabian Way_Elba Crescent_Swansea Uni.lsg3x
Author:	MM
Company:	Corun Associates
Address:	

Network Layout Diagram



Phase Diagram



Full Input Data And Results

Phase Input Data

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

Phase Intergreens Matrix

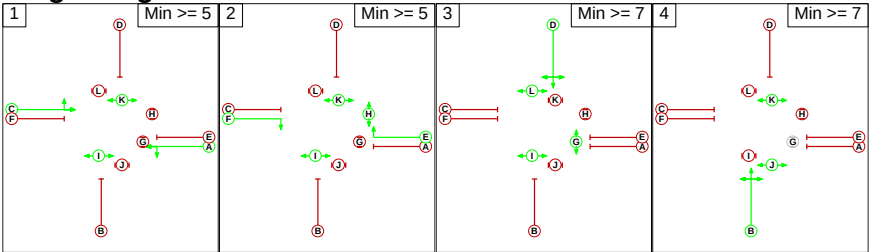
	Starting Phase											
	A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A	9	-	9	-	11	9	-	-	9	-	-
	B	7		7	9	9	-	9	7	-	-	9
	C	-	9		9	11	-	-	11	-	-	9
	D	7	9	7		7	-	7	-	9	9	-
	E	-	11	9	11		-	11	-	-	-	11
	F	9	11	-	11	-		-	-	11	-	-
	G	7	-	-	-	7	-		-	-	-	-
	H	-	11	9	11	-	-	-		-	-	-
	I	-	9	-	-	-	-	-	-		-	-
	J	7	-	-	9	-	9	-	-	-		-
	K	-	-	-	11	-	-	-	-	-	-	
	L	-	9	7	-	7	-	-	-	-	-	

Phases in Stage

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

Full Input Data And Results

Stage Diagram



Phase Delays

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

Prohibited Stage Change

	To Stage			
	1	2	3	4
From Stage	1	11	11	9
	2	9	11	11
	3	9	9	9
	4	7	9	11

Full Input Data And Results

Give-Way Lane Input Data

Junction: A483 Fabian Way / Elba Crescent / Swansea Uni (Secondary)
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: A483 Fabian Way / Elba Crescent / Swansea Uni (Secondary)												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A483 Fabian Way (Westbound Approach))	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Left	Inf
1/2 (A483 Fabian Way (Westbound Approach))	U	A	2	3	60.0	Geom	-	3.50	0.00	N	Arm 5 Ahead	Inf
1/3 (A483 Fabian Way (Westbound Approach))	U	E	2	3	14.3	Geom	-	3.50	0.00	N	Arm 7 Right	Inf
2/1 (Swansea Uni Access (Approach))	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	Inf
											Arm 7 Ahead	Inf
											Arm 8 Right	Inf
3/1 (A483 Fabian Way (Eastbound Approach))	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Left	Inf
											Arm 8 Ahead	Inf
3/2 (A483 Fabian Way (Eastbound Approach))	U	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm 8 Ahead	Inf
3/3 (A483 Fabian Way (Eastbound Approach))	U	F	2	3	11.3	Geom	-	3.50	0.00	N	Arm 6 Right	Inf
4/1 (Elba Crescent (Approach))	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 8 Left	Inf
4/2 (Elba Crescent (Approach))	U	D	2	3	5.2	Geom	-	3.50	0.00	N	Arm 5 Right	Inf
											Arm 6 Ahead	Inf
5/1 (A483 Fabian Way (Westbound))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2 (A483 Fabian Way (Westbound))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Swansea Uni Access (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

7/1 (Elba Crescent (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A483 Fabian Way (Eastbound Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2 (A483 Fabian Way (Eastbound Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2023 Surveyed Flows (AM)'	07:45	08:45	01:00	
2: '2023 Surveyed Flows (PM)'	16:45	17:45	01:00	
3: '2024 Without Development (AM)'	07:45	08:45	01:00	
4: '2024 Without Development (PM)'	16:45	17:45	01:00	
5: '2024 With Development (AM)'	07:45	08:45	01:00	
6: '2024 With Development (PM)'	16:45	17:45	01:00	
7: '2032 Without Development (AM)'	07:45	08:45	01:00	
8: '2032 Without Development (PM)'	16:45	17:45	01:00	
9: '2032 With Development (AM)'	07:45	08:45	01:00	
10: '2032 With Development (PM)'	16:45	17:45	01:00	

Traffic Flows, Desired

Scenario 1: '2023 Surveyed AM' (FG1: '2023 Surveyed Flows (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
Origin	A	B	C	D	Tot.	
	A	0	11	1925	35	1971
	B	1	0	1	0	2
	C	1242	7	0	31	1280
	D	36	0	12	0	48
	Tot.	1279	18	1938	66	3301

Full Input Data And Results

Scenario 2: '2023 Surveyed PM' (FG2: '2023 Surveyed Flows (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	1	1202	23	1226
	B	6	0	6	0	12
	C	1794	2	0	17	1813
	D	31	0	43	0	74
	Tot.	1831	3	1251	40	3125

Scenario 3: '2024 Without Development AM' (FG3: '2024 Without Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	11	1941	35	1987
	B	1	0	1	0	2
	C	1252	7	0	31	1290
	D	36	0	12	0	48
	Tot.	1289	18	1954	66	3327

Scenario 4: '2024 Without Development PM' (FG4: '2024 Without Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	1	1211	23	1235
	B	6	0	6	0	12
	C	1808	2	0	17	1827
	D	31	0	43	0	74
	Tot.	1845	3	1260	40	3148

Scenario 5: '2024 With Development AM' (FG5: '2024 With Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	11	1941	50	2002
	B	1	0	1	0	2
	C	1252	7	0	44	1303
	D	75	0	25	0	100
	Tot.	1328	18	1967	94	3407

Full Input Data And Results

Scenario 6: '2024 With Development PM' (FG6: '2024 With Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	1	1211	42	1254
	B	6	0	6	0	12
	C	1808	2	0	31	1841
	D	43	0	60	0	103
	Tot.	1857	3	1277	73	3210

Scenario 7: '2032 Without Development AM' (FG7: '2032 Without Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	12	2030	37	2079
	B	1	0	1	0	2
	C	1310	7	0	33	1350
	D	38	0	13	0	51
	Tot.	1349	19	2044	70	3482

Scenario 8: '2032 Without Development PM' (FG8: '2032 Without Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	1	1264	24	1289
	B	6	0	6	0	12
	C	1888	2	0	18	1908
	D	32	0	45	0	77
	Tot.	1926	3	1315	42	3286

Scenario 9: '2032 With Development AM' (FG9: '2032 With Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	12	2030	52	2094
	B	1	0	1	0	2
	C	1310	7	0	46	1363
	D	77	0	26	0	103
	Tot.	1388	19	2057	98	3562

Full Input Data And Results

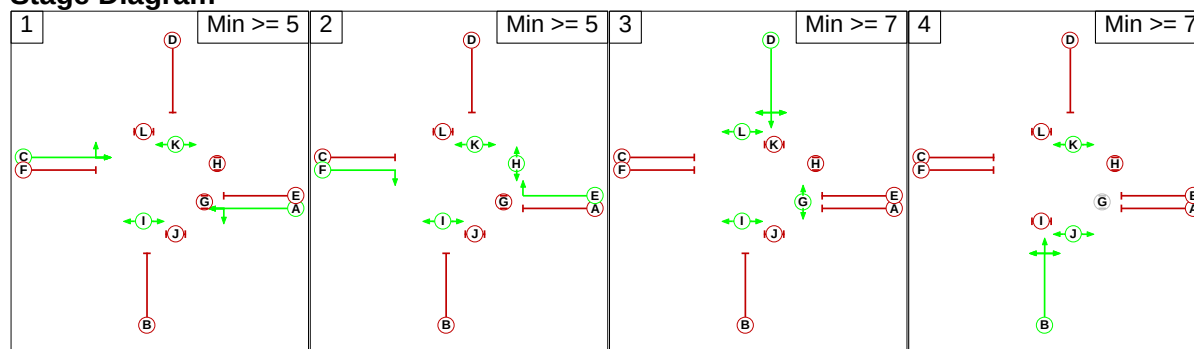
Scenario 10: '2032 With Development PM' (FG10: '2032 With Development (PM)', Plan 1: 'Network Control Plan 1')
Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	1	1264	43	1308
	B	6	0	6	0	12
	C	1888	2	0	32	1922
	D	44	0	62	0	106
	Tot.	1938	3	1332	75	3348

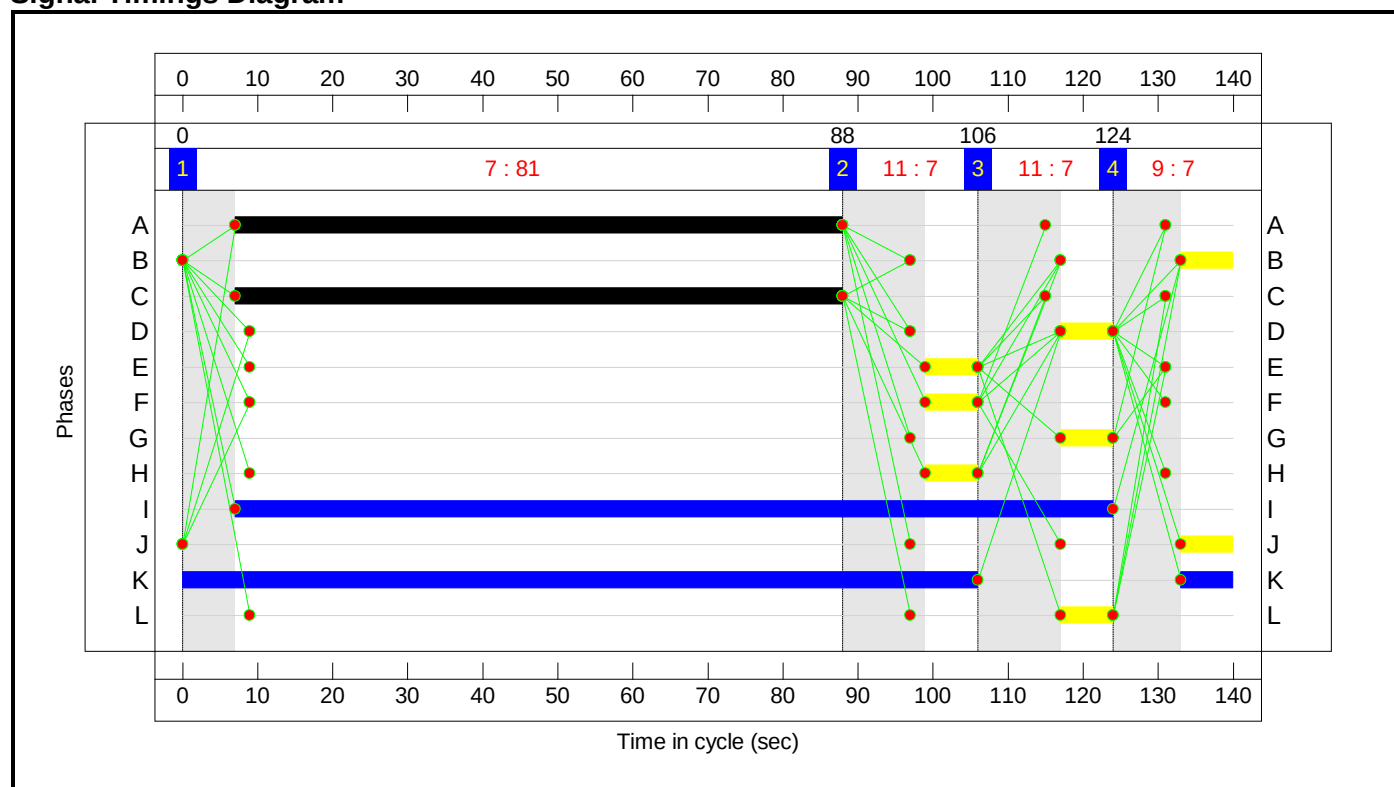
Full Input Data And Results

Scenario 1: '2023 Surveyed AM' (FG1: '2023 Surveyed Flows (AM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

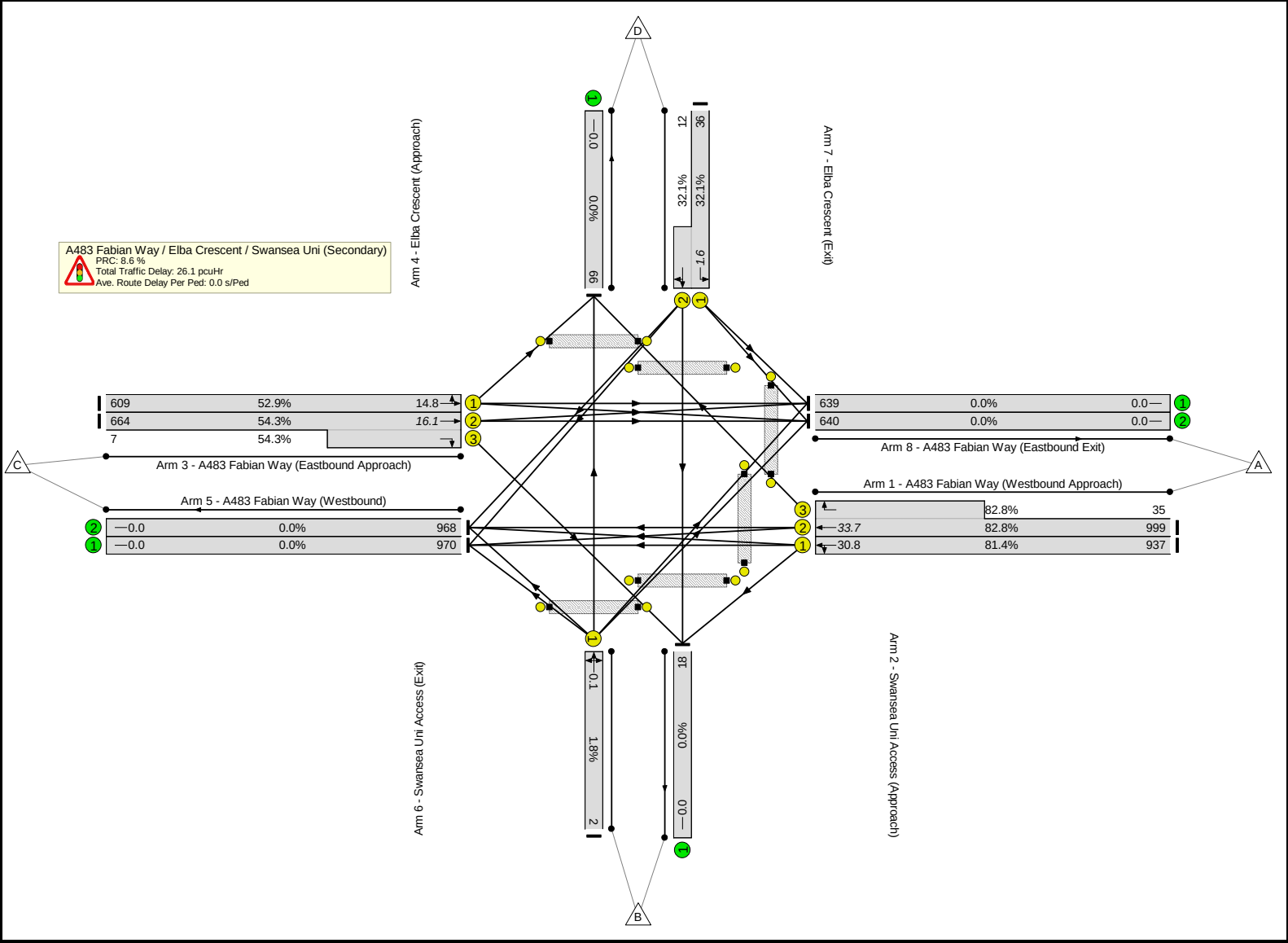


Signal Timings Diagram



Full Input Data And Results

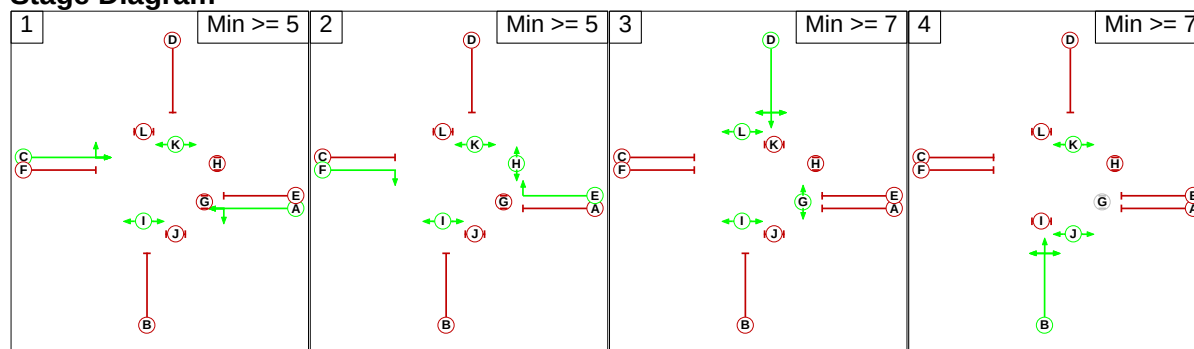
Network Layout Diagram



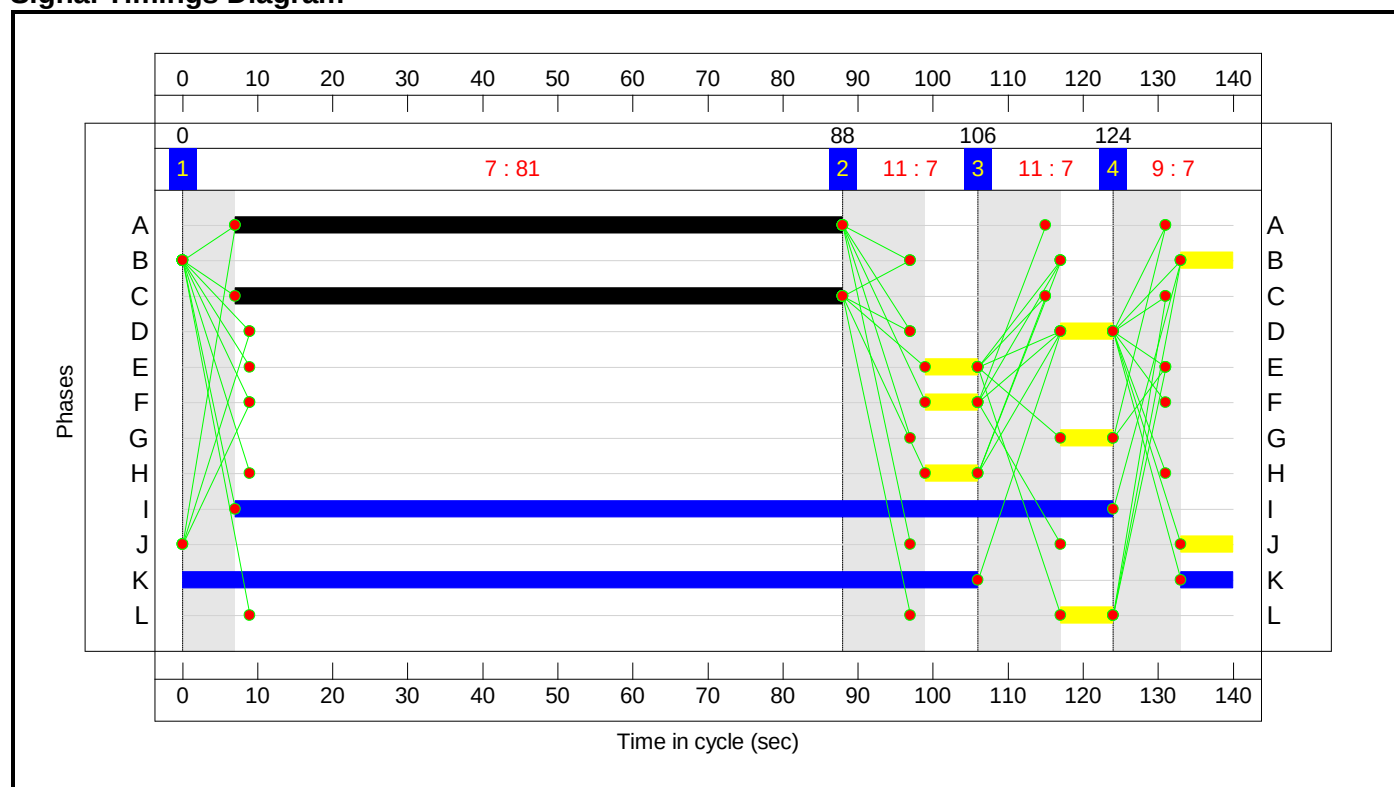
Full Input Data And Results

Scenario 2: '2023 Surveyed PM' (FG2: '2023 Surveyed Flows (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

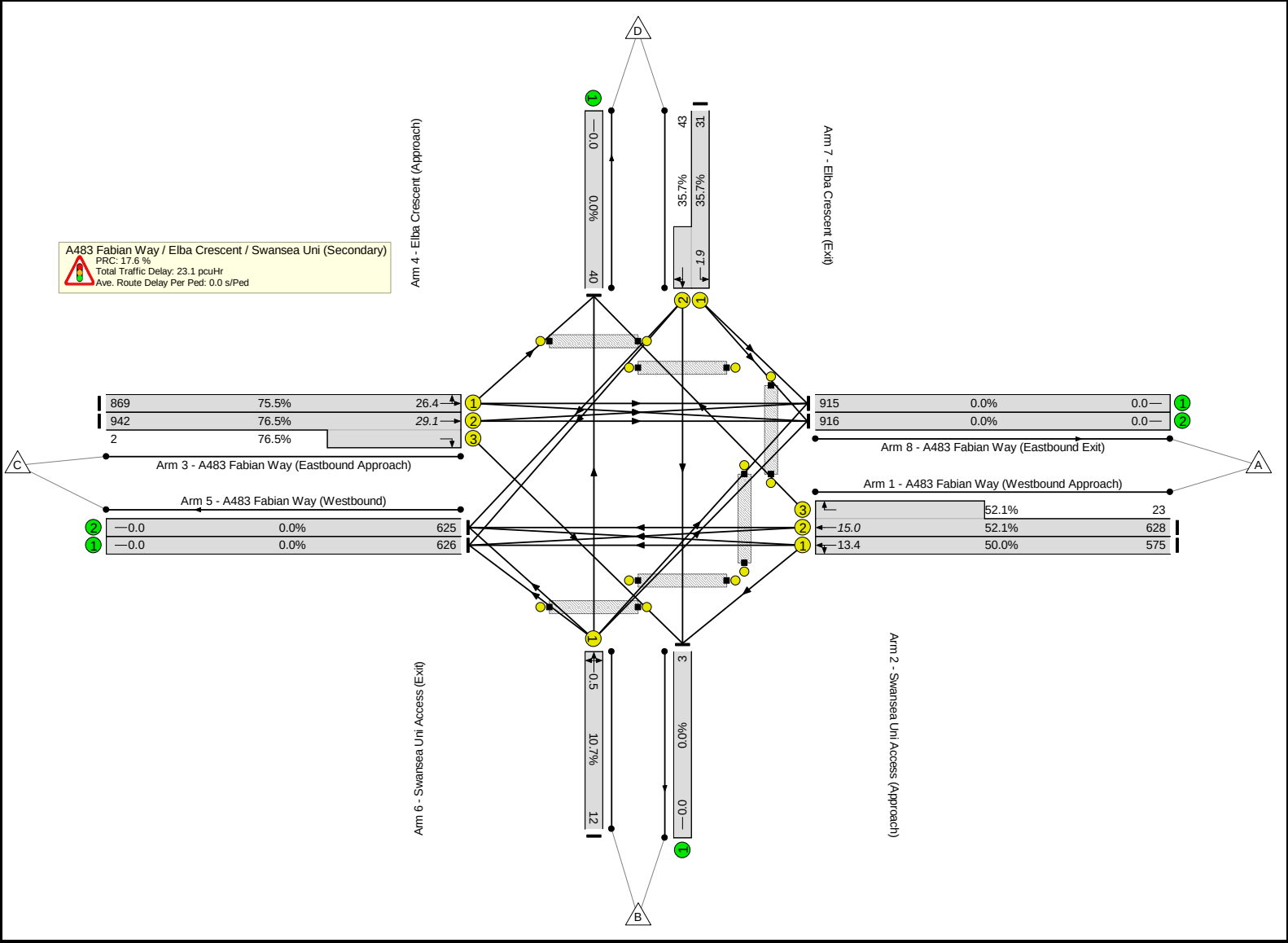


Signal Timings Diagram



Full Input Data And Results

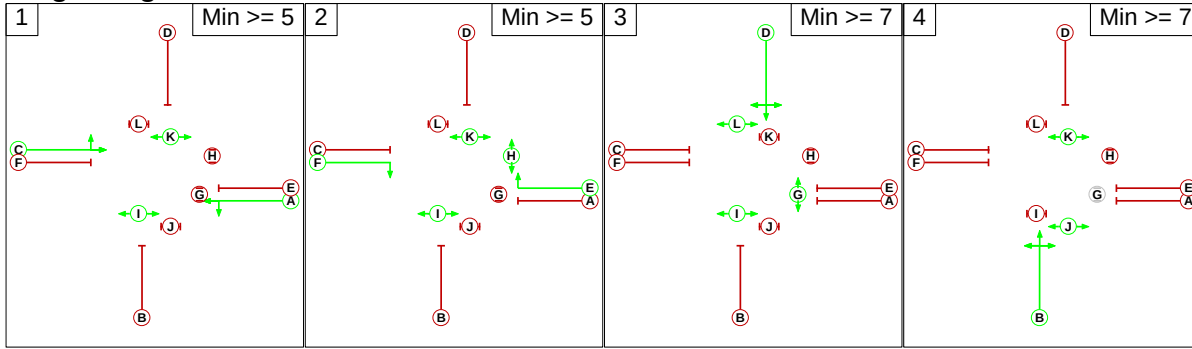
Network Layout Diagram



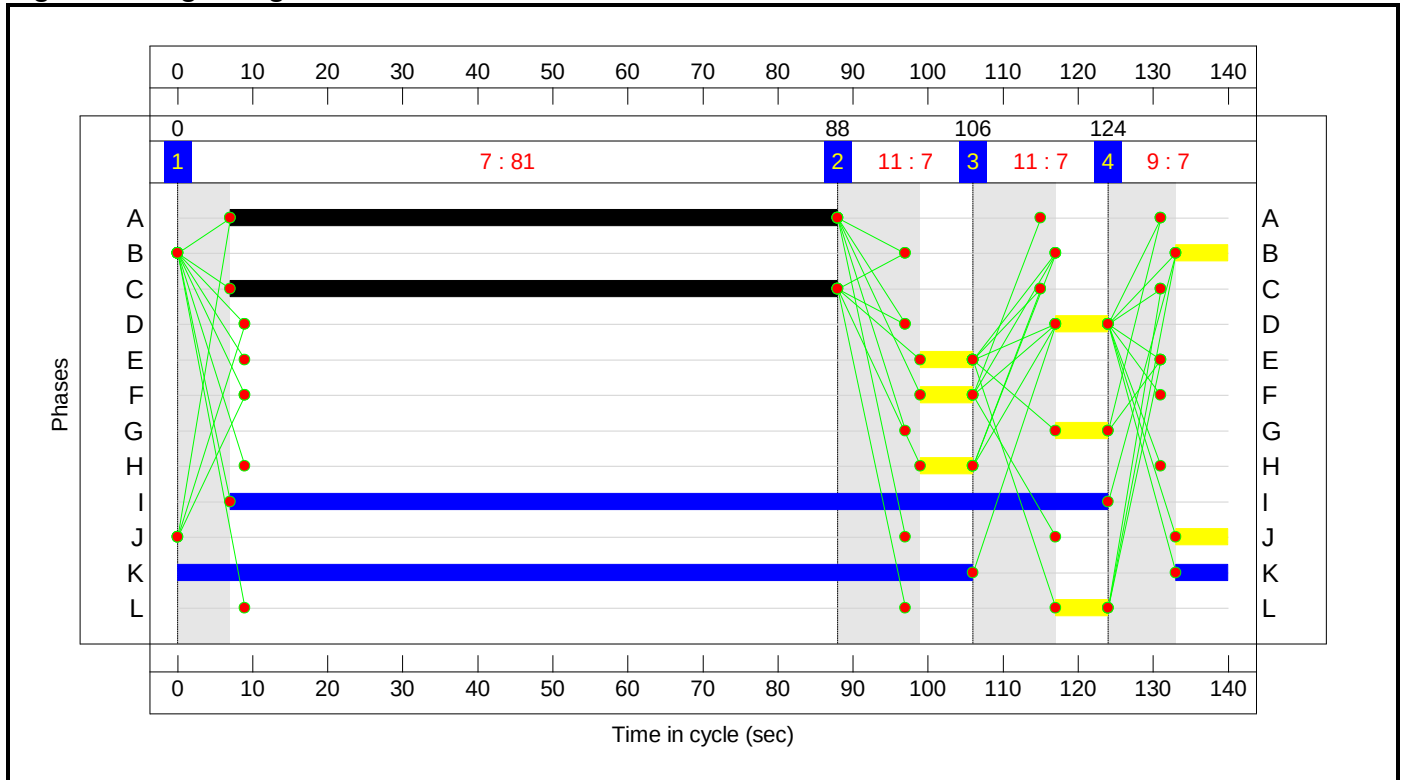
Full Input Data And Results

Scenario 3: '2024 Without Development AM' (FG3: '2024 Without Development (AM)', Plan 1: 'Network Control Plan 1')

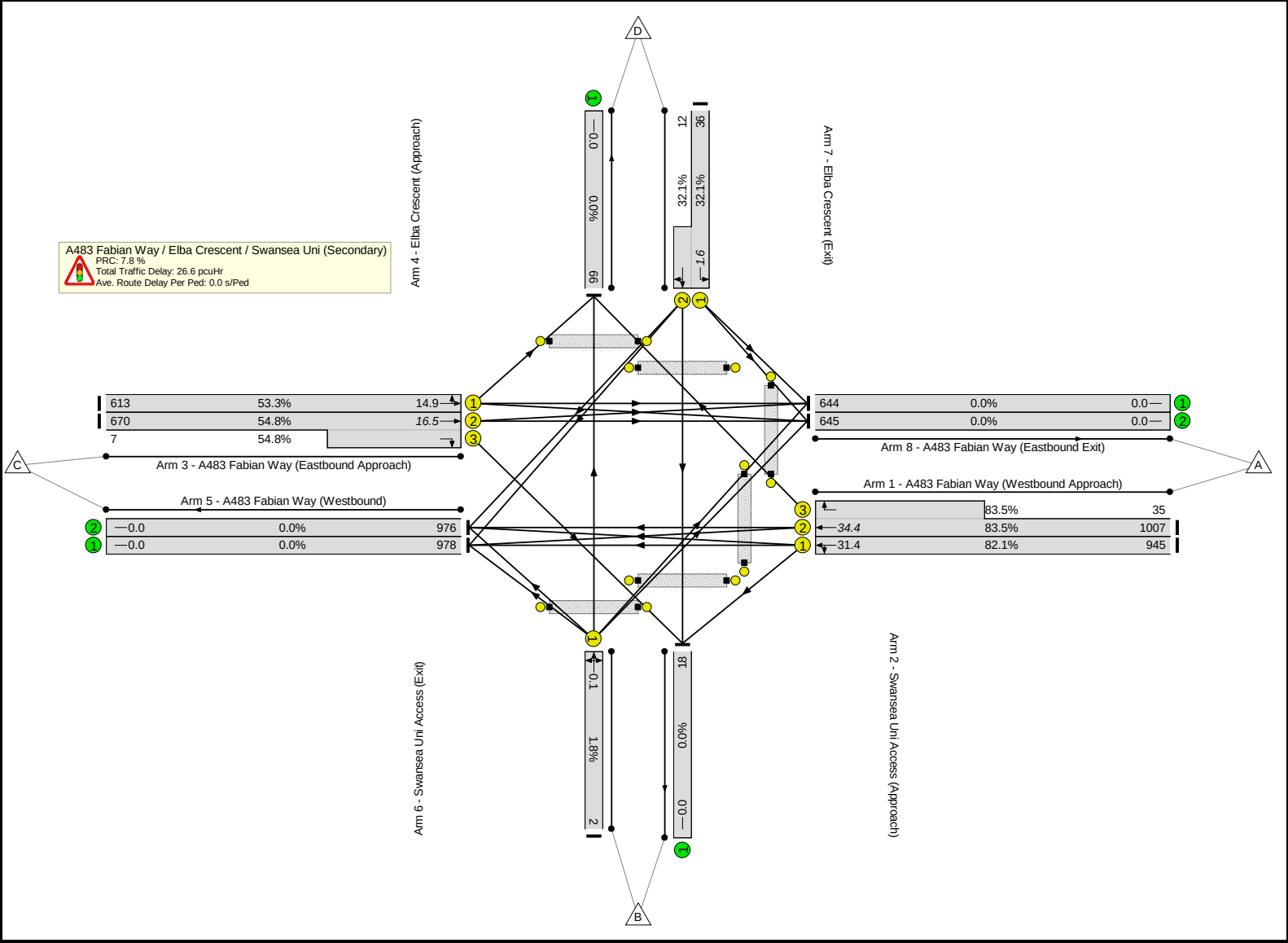
Stage Diagram



Signal Timings Diagram



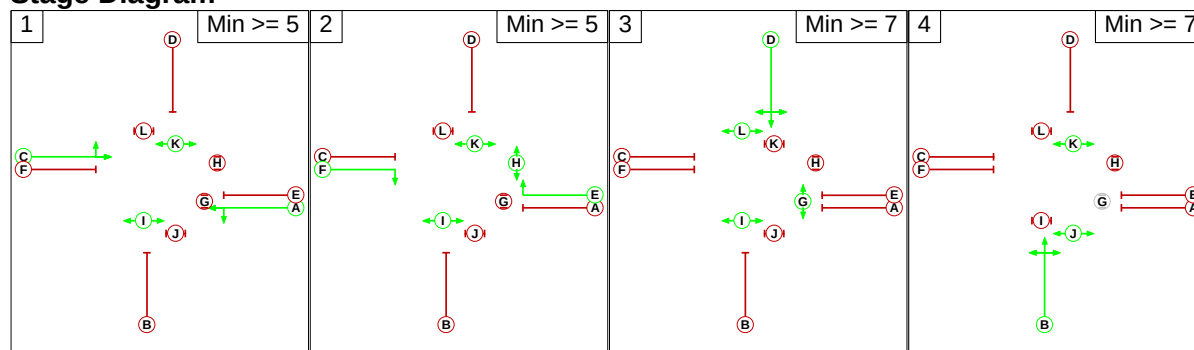
Full Input Data And Results
Network Layout Diagram



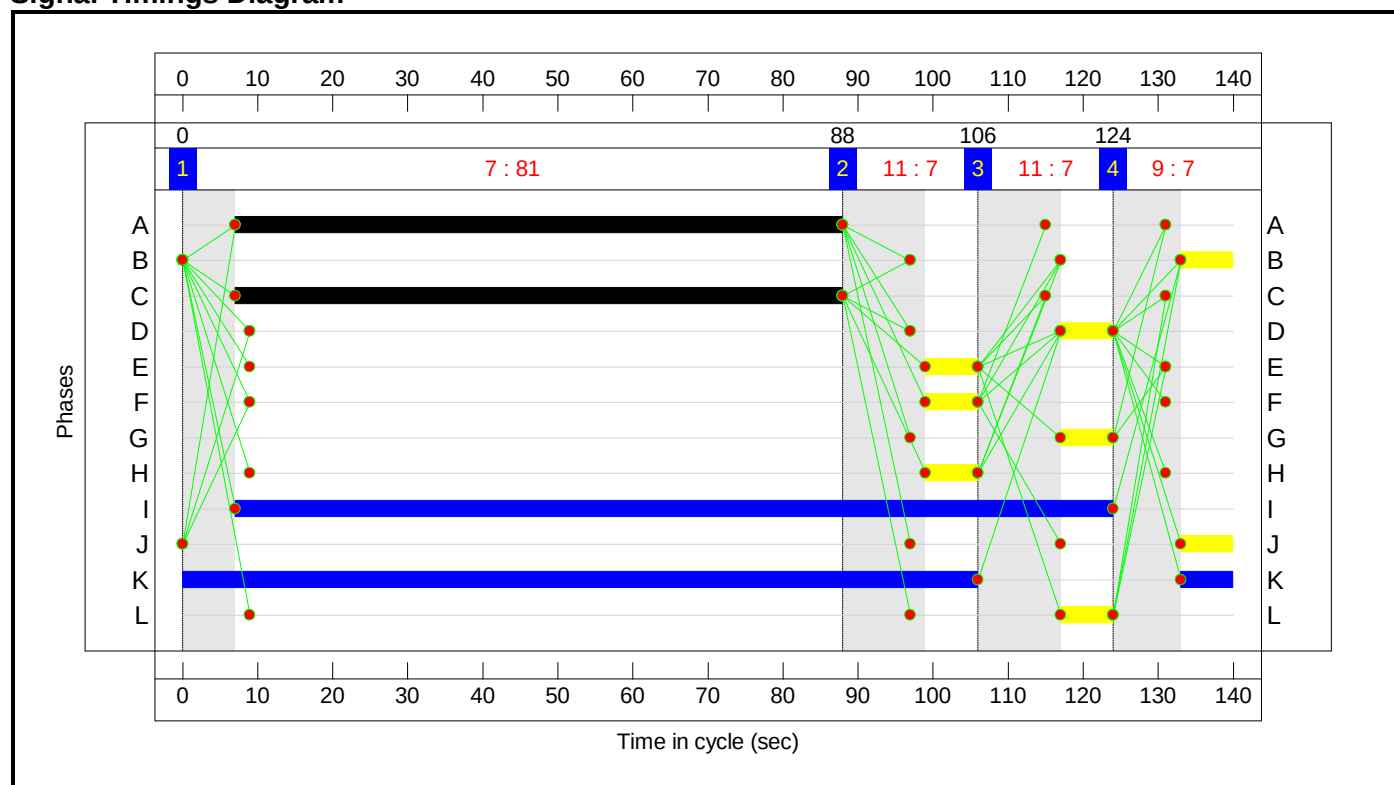
Full Input Data And Results

Scenario 4: '2024 Without Development PM' (FG4: '2024 Without Development (PM)', Plan 1: 'Network Control Plan 1')

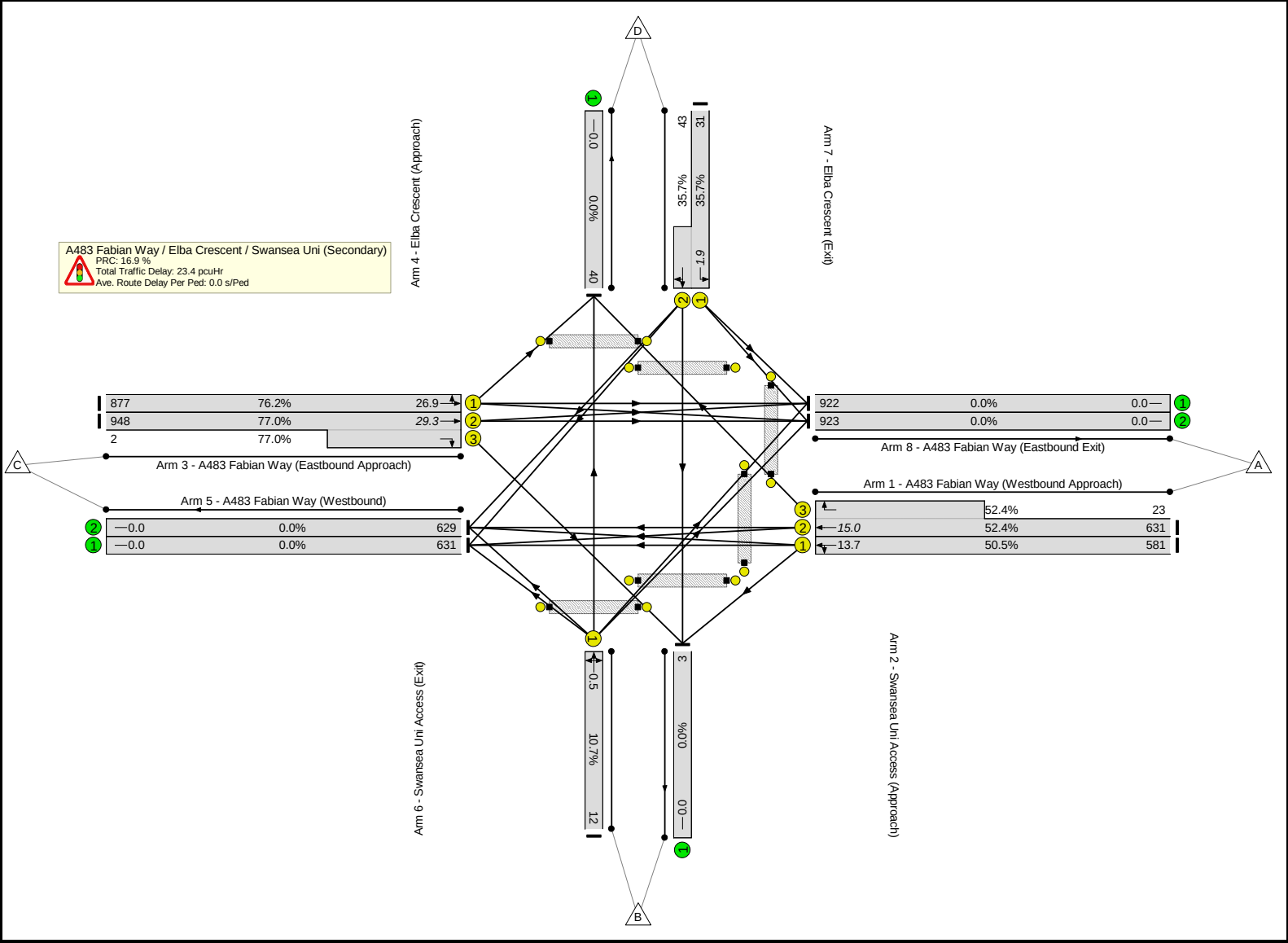
Stage Diagram



Signal Timings Diagram



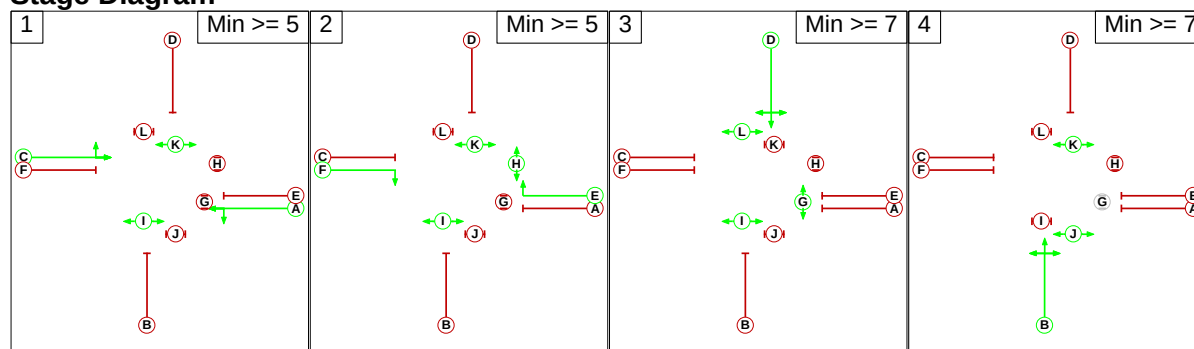
Full Input Data And Results
Network Layout Diagram



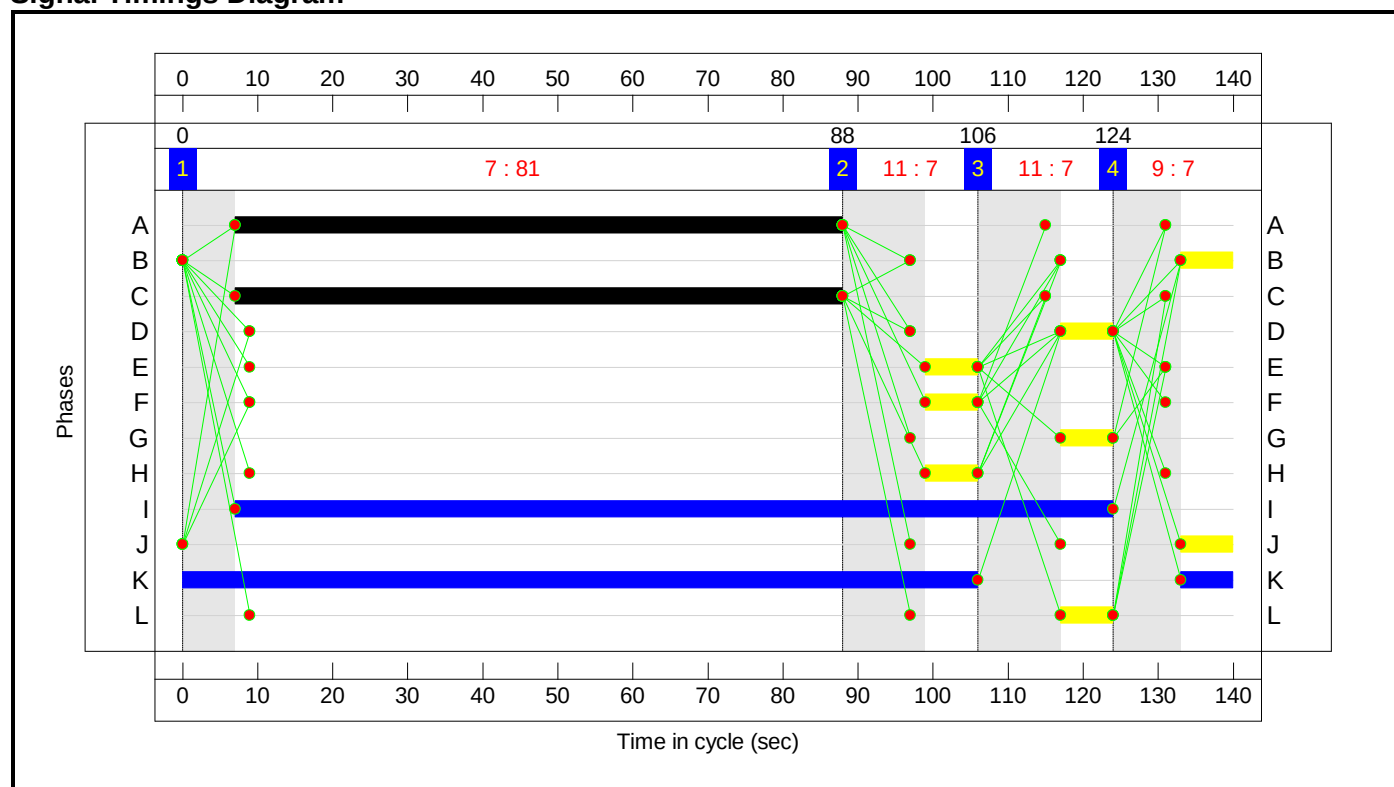
Full Input Data And Results

Scenario 5: '2024 With Development AM' (FG5: '2024 With Development (AM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

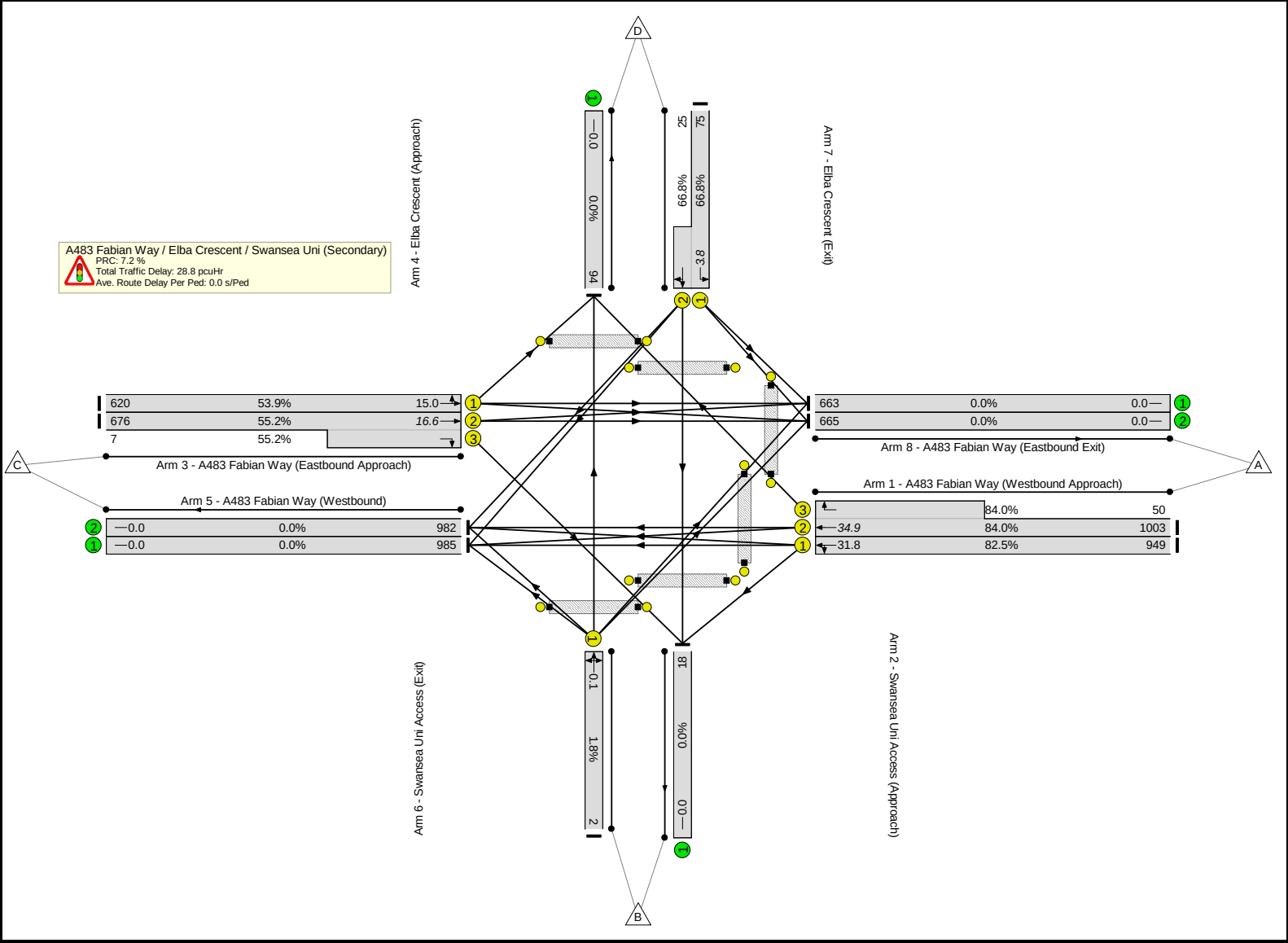


Signal Timings Diagram



Full Input Data And Results

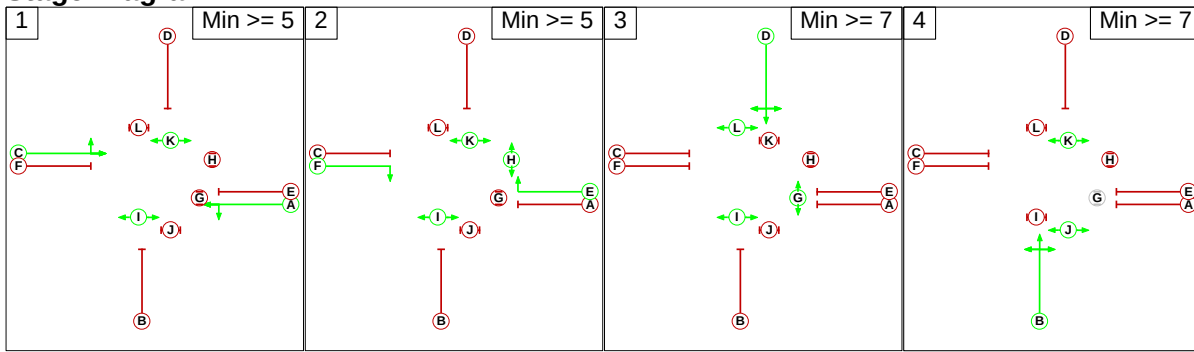
Network Layout Diagram



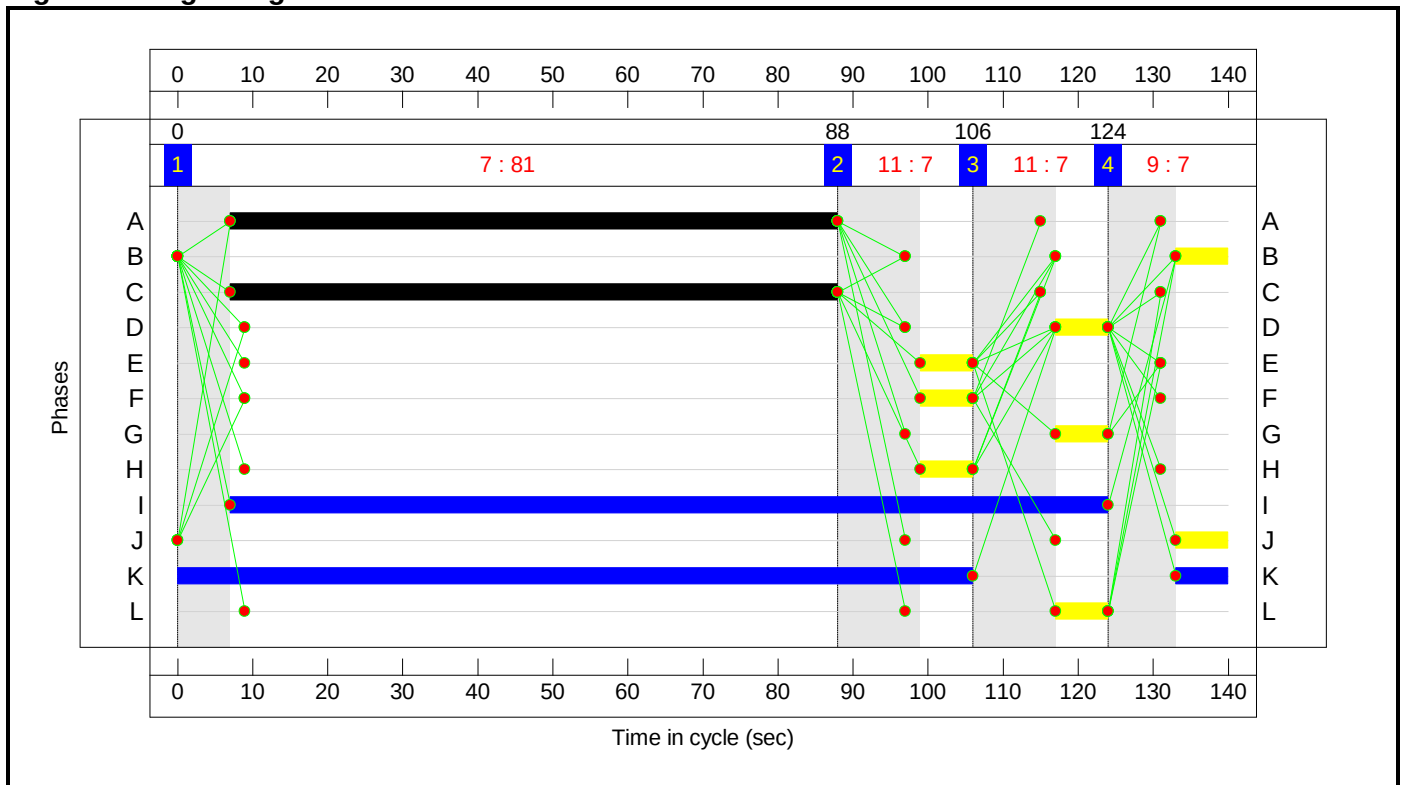
Full Input Data And Results

Scenario 6: '2024 With Development PM' (FG6: '2024 With Development (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

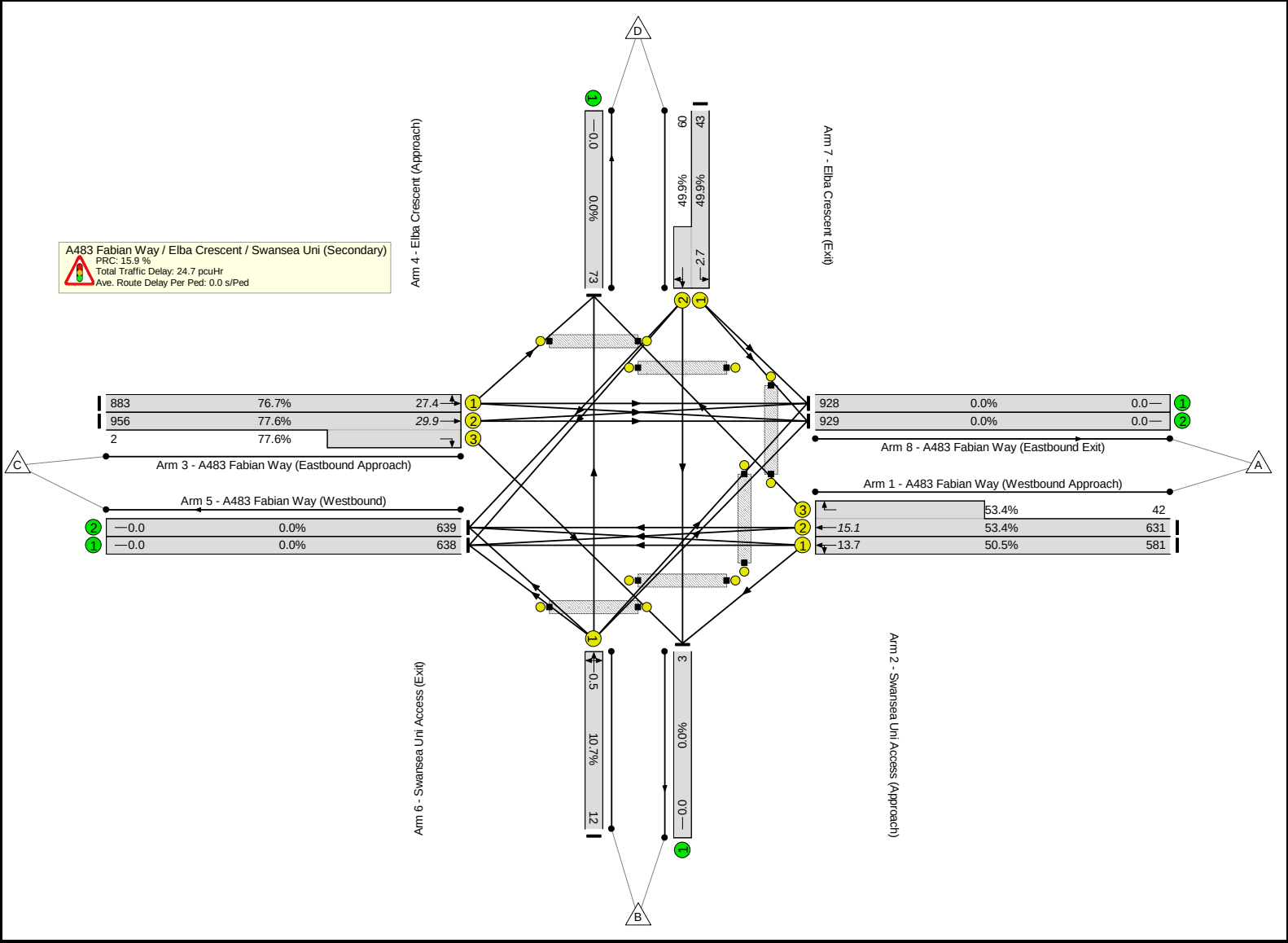


Signal Timings Diagram



Full Input Data And Results

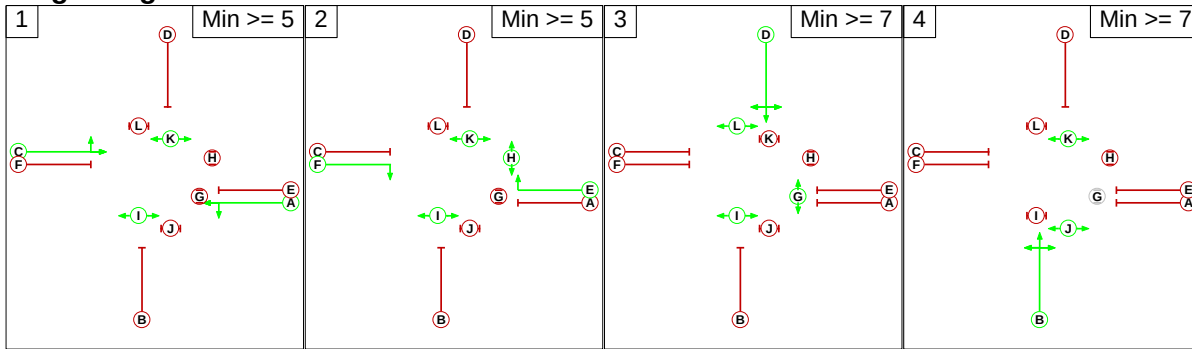
Network Layout Diagram



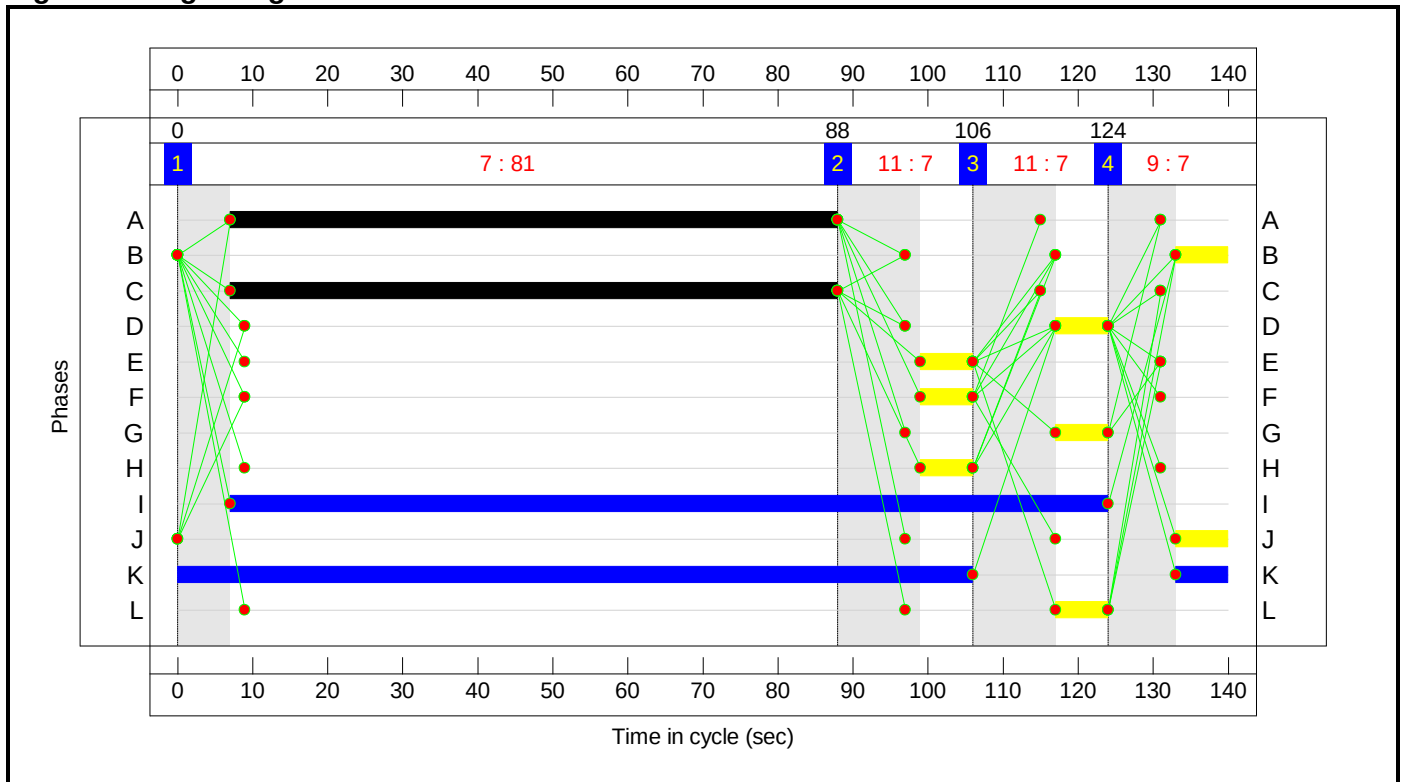
Full Input Data And Results

Scenario 7: '2032 Without Development AM' (FG7: '2032 Without Development (AM)', Plan 1: 'Network Control Plan 1')

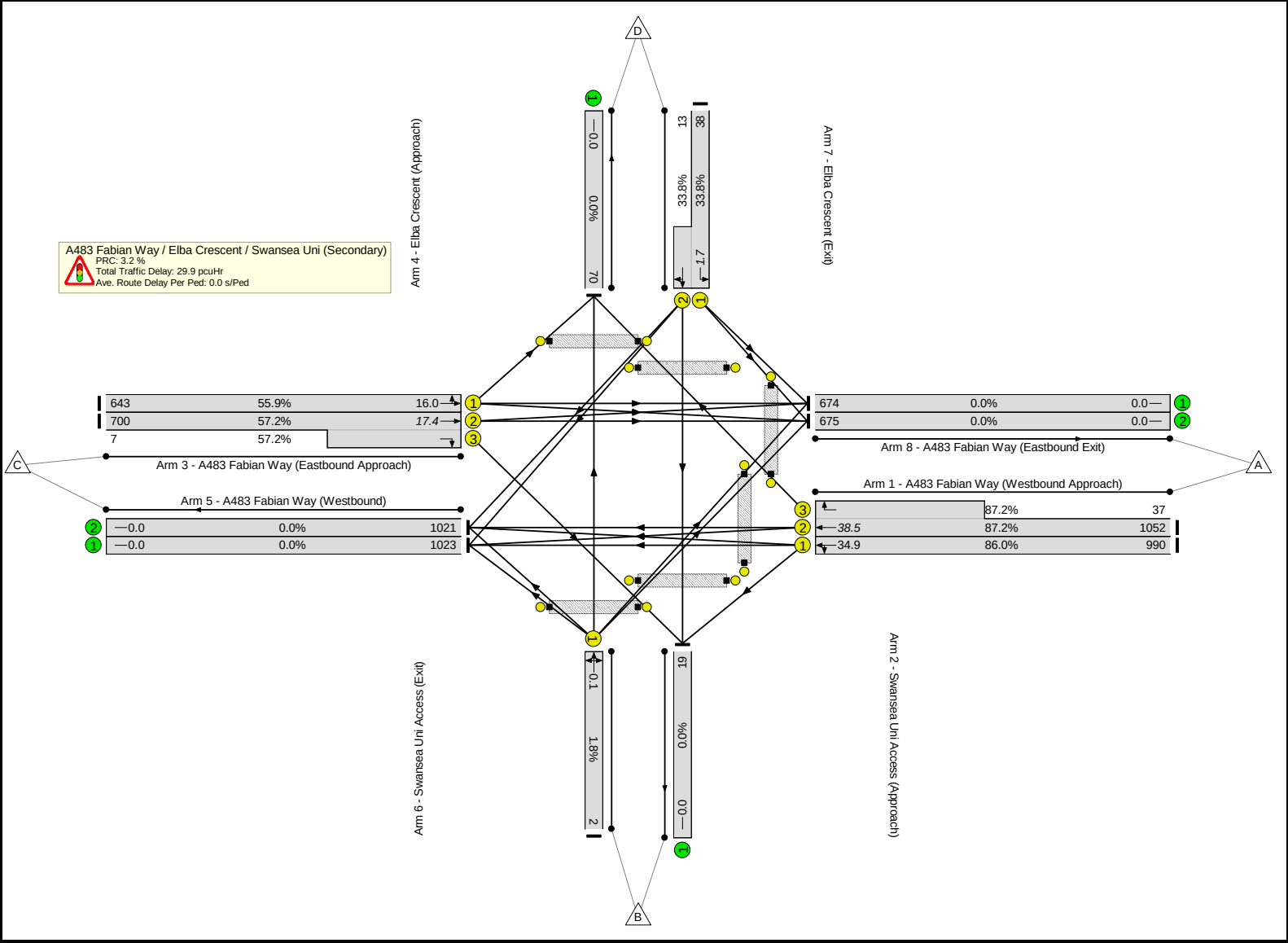
Stage Diagram



Signal Timings Diagram



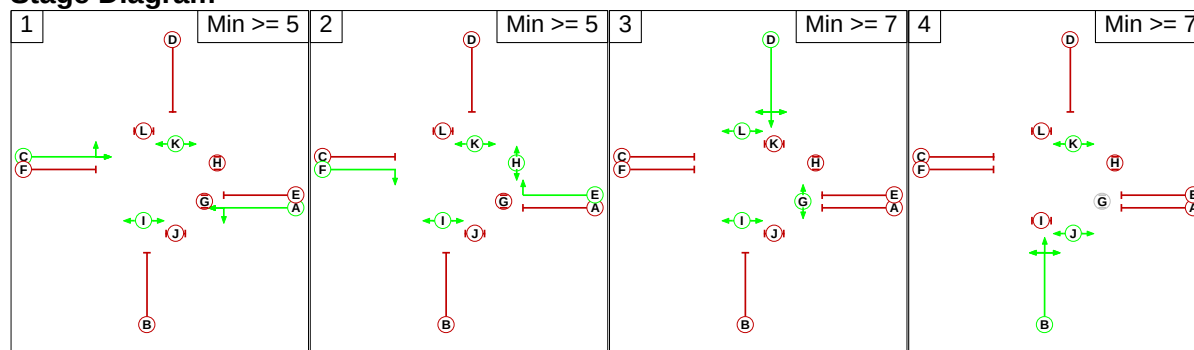
Full Input Data And Results
Network Layout Diagram



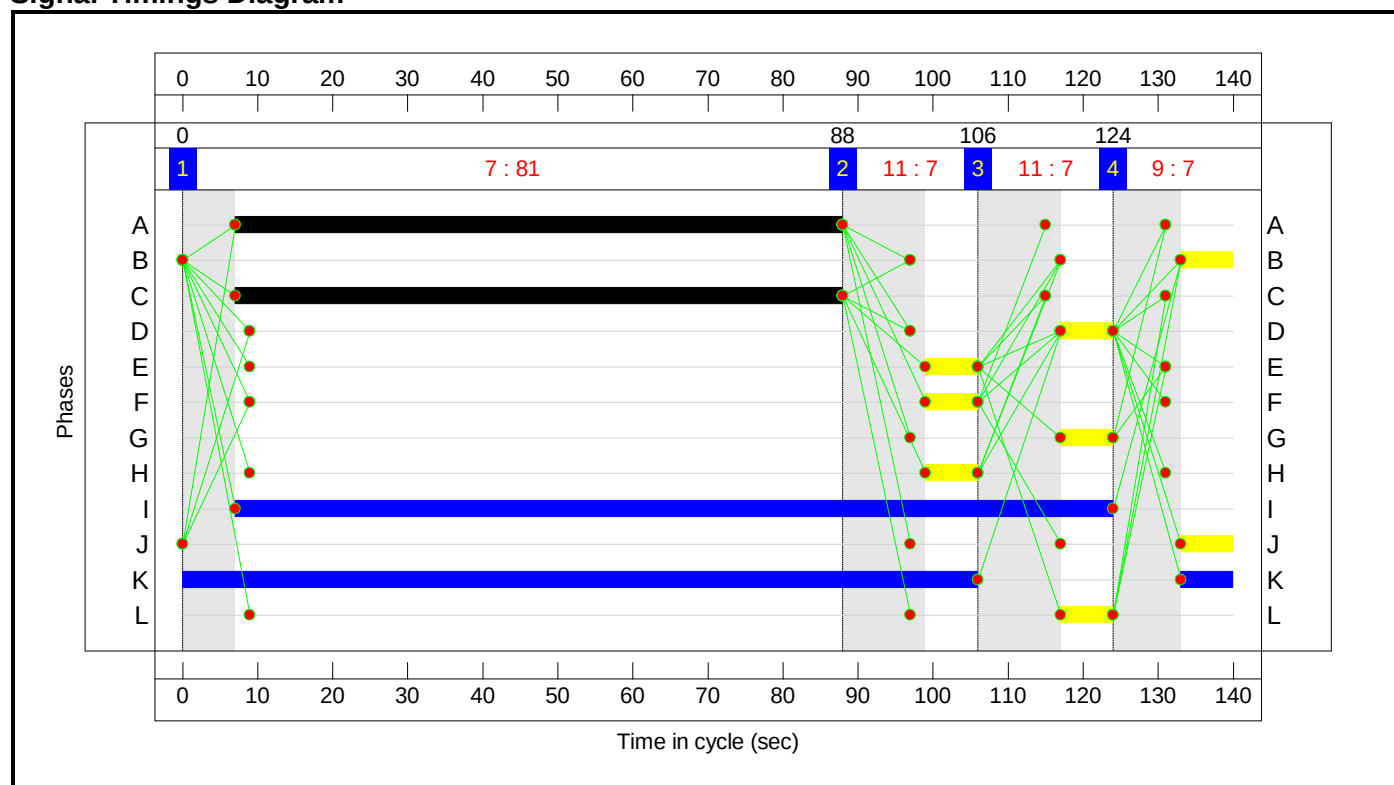
Full Input Data And Results

Scenario 8: '2032 Without Development PM' (FG8: '2032 Without Development (PM)', Plan 1: 'Network Control Plan 1')

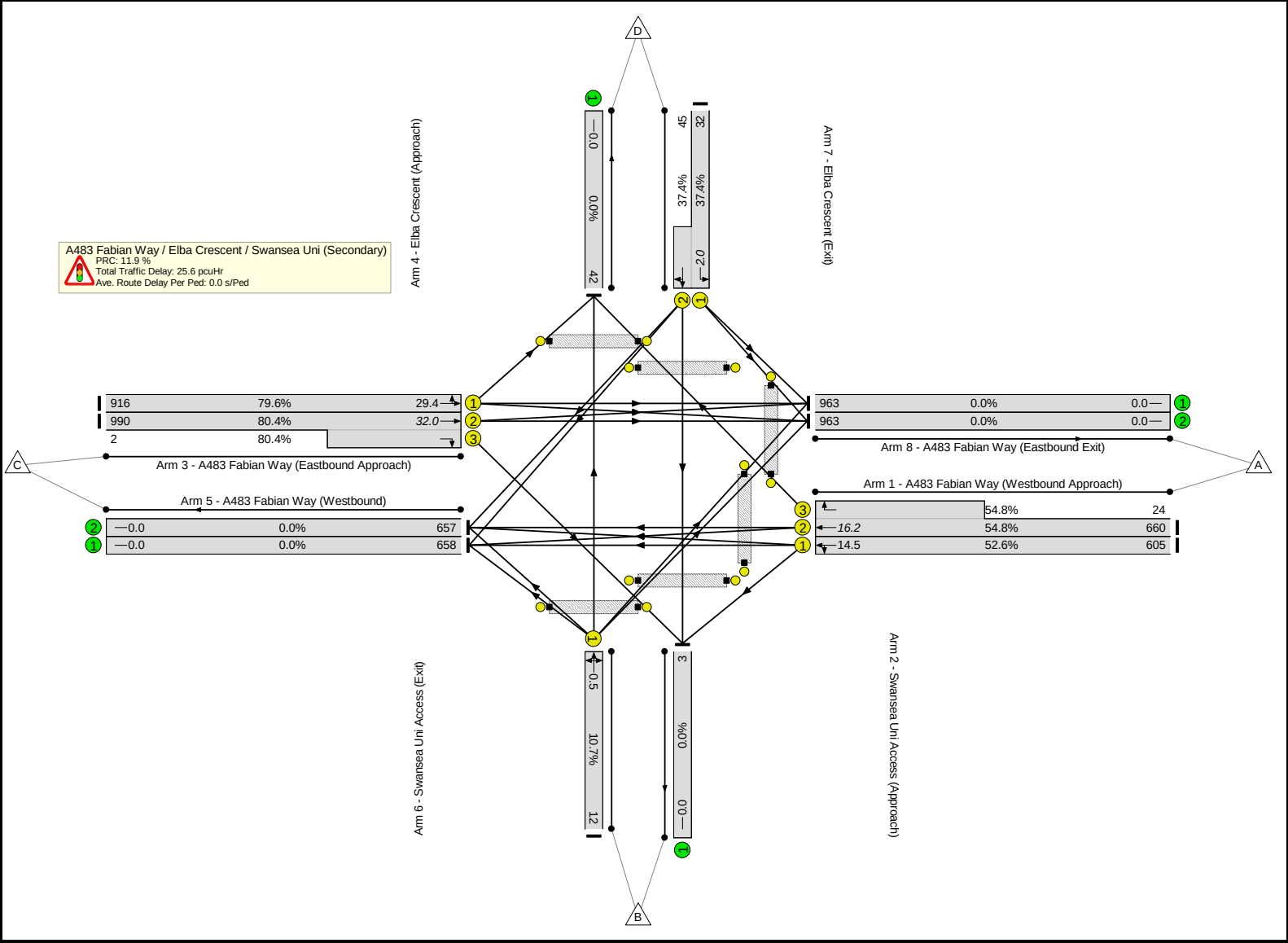
Stage Diagram



Signal Timings Diagram



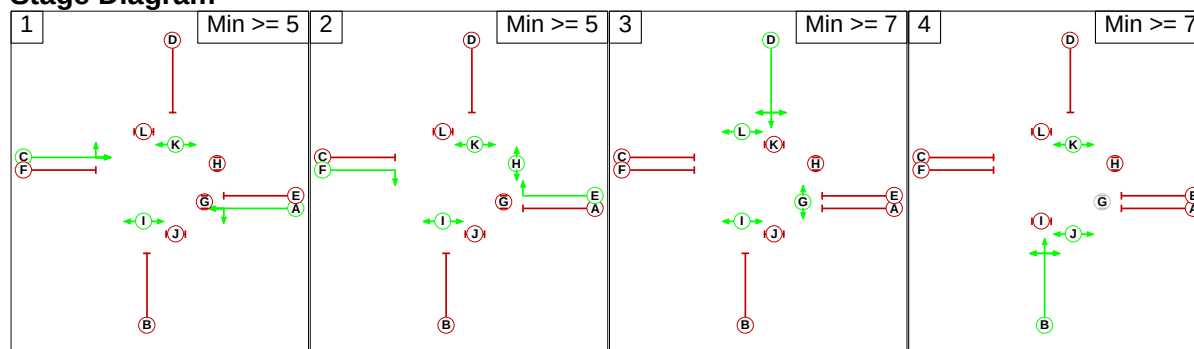
Full Input Data And Results
Network Layout Diagram



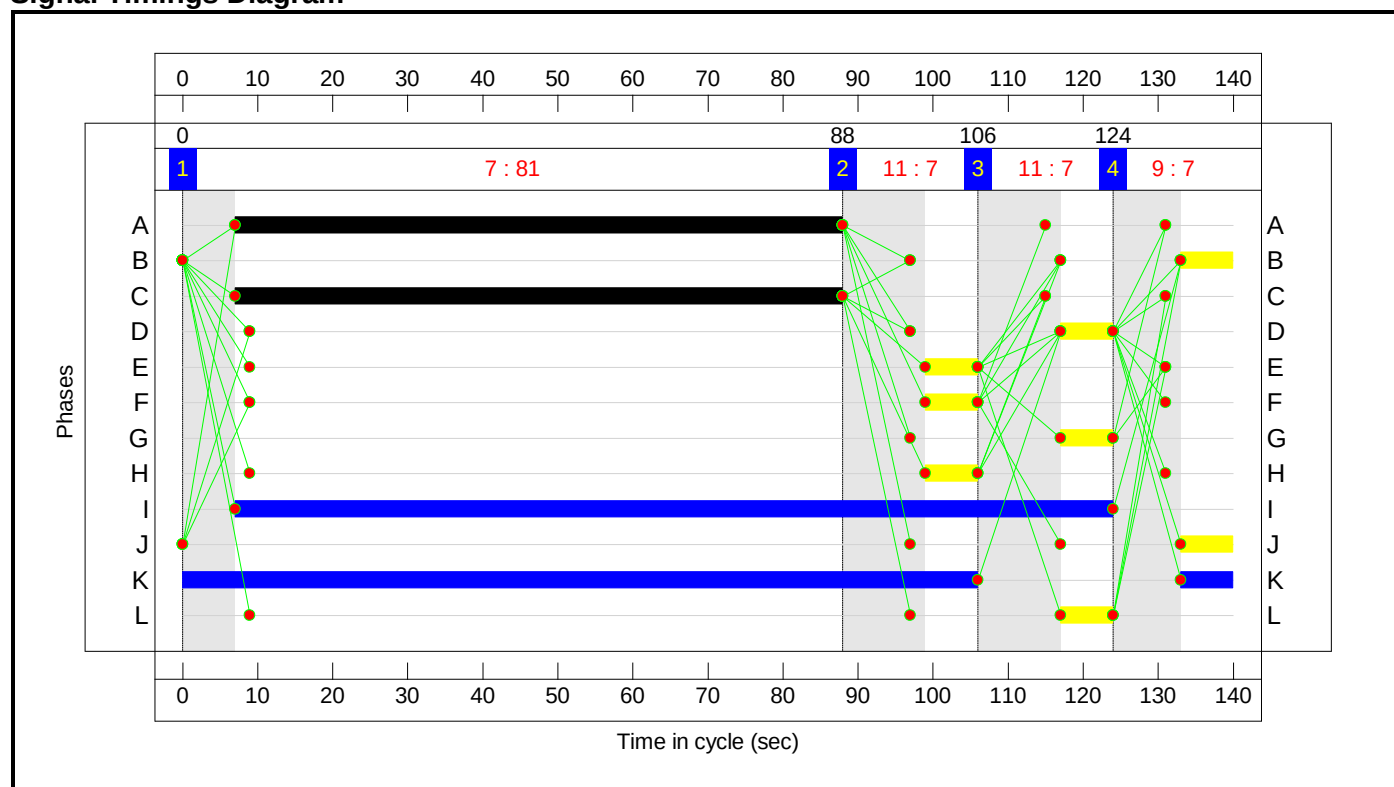
Full Input Data And Results

Scenario 9: '2032 With Development AM' (FG9: '2032 With Development (AM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

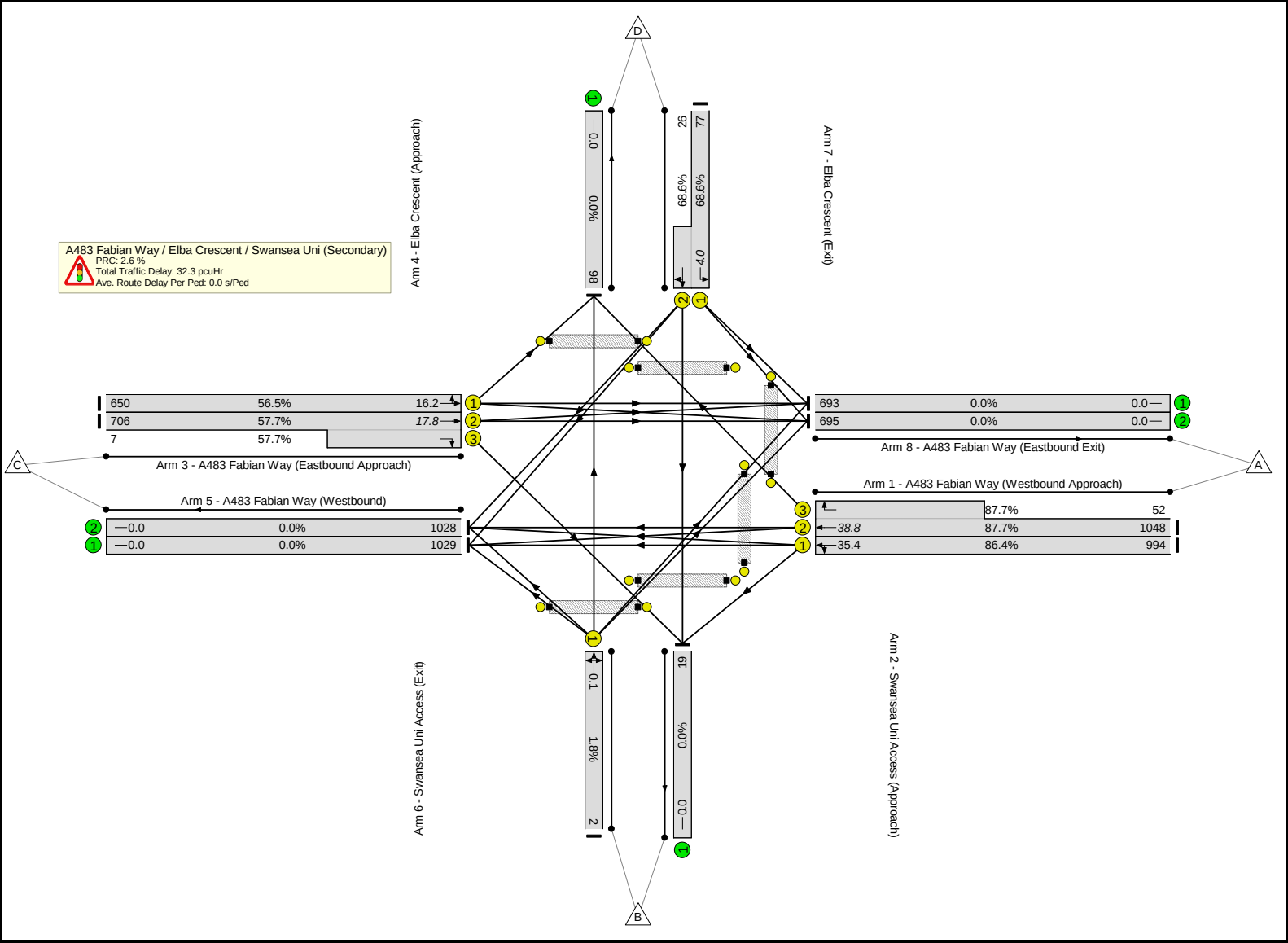


Signal Timings Diagram



Full Input Data And Results

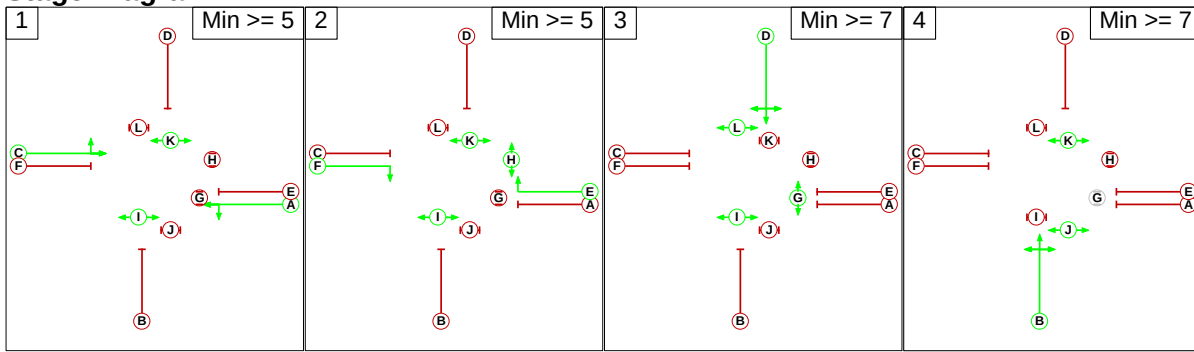
Network Layout Diagram



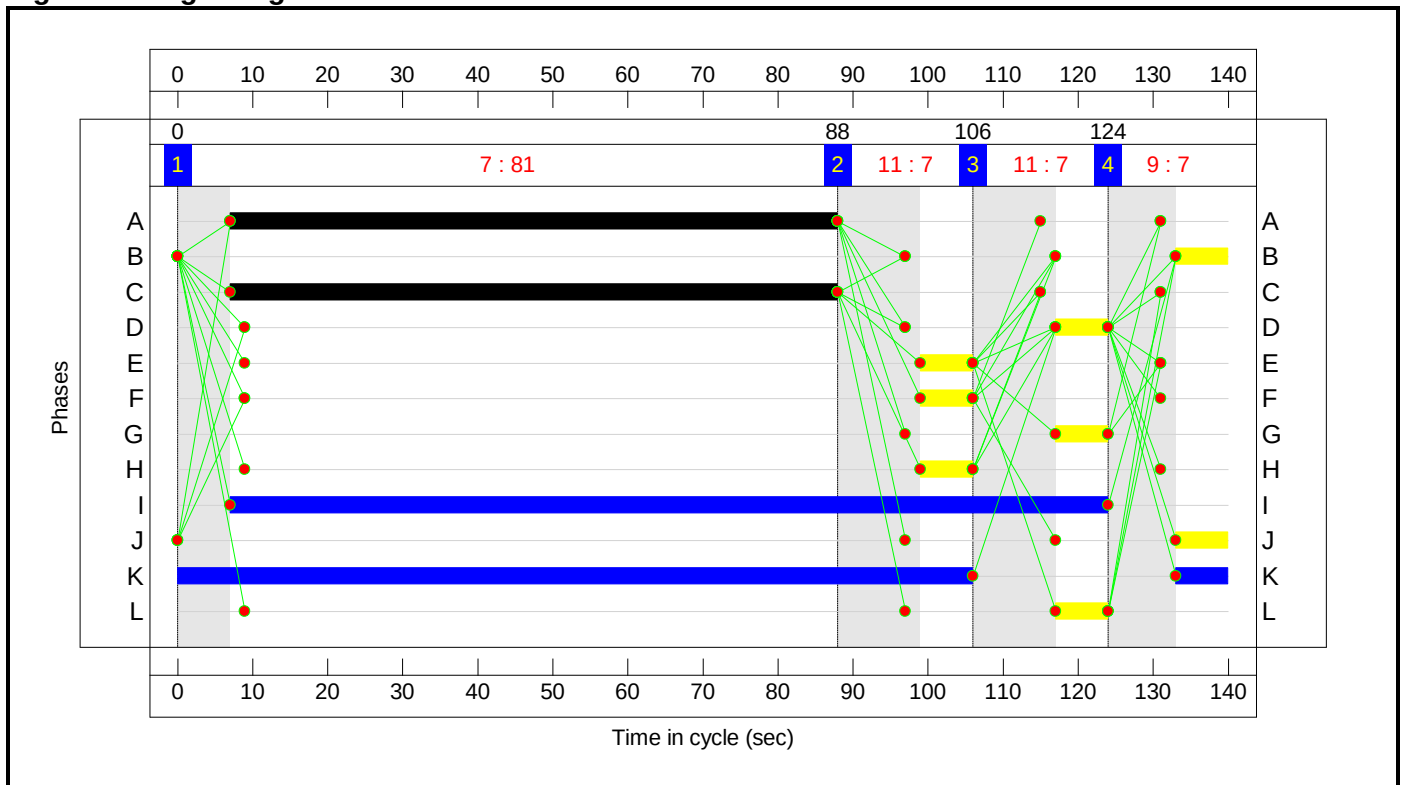
Full Input Data And Results

Scenario 10: '2032 With Development PM' (FG10: '2032 With Development (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

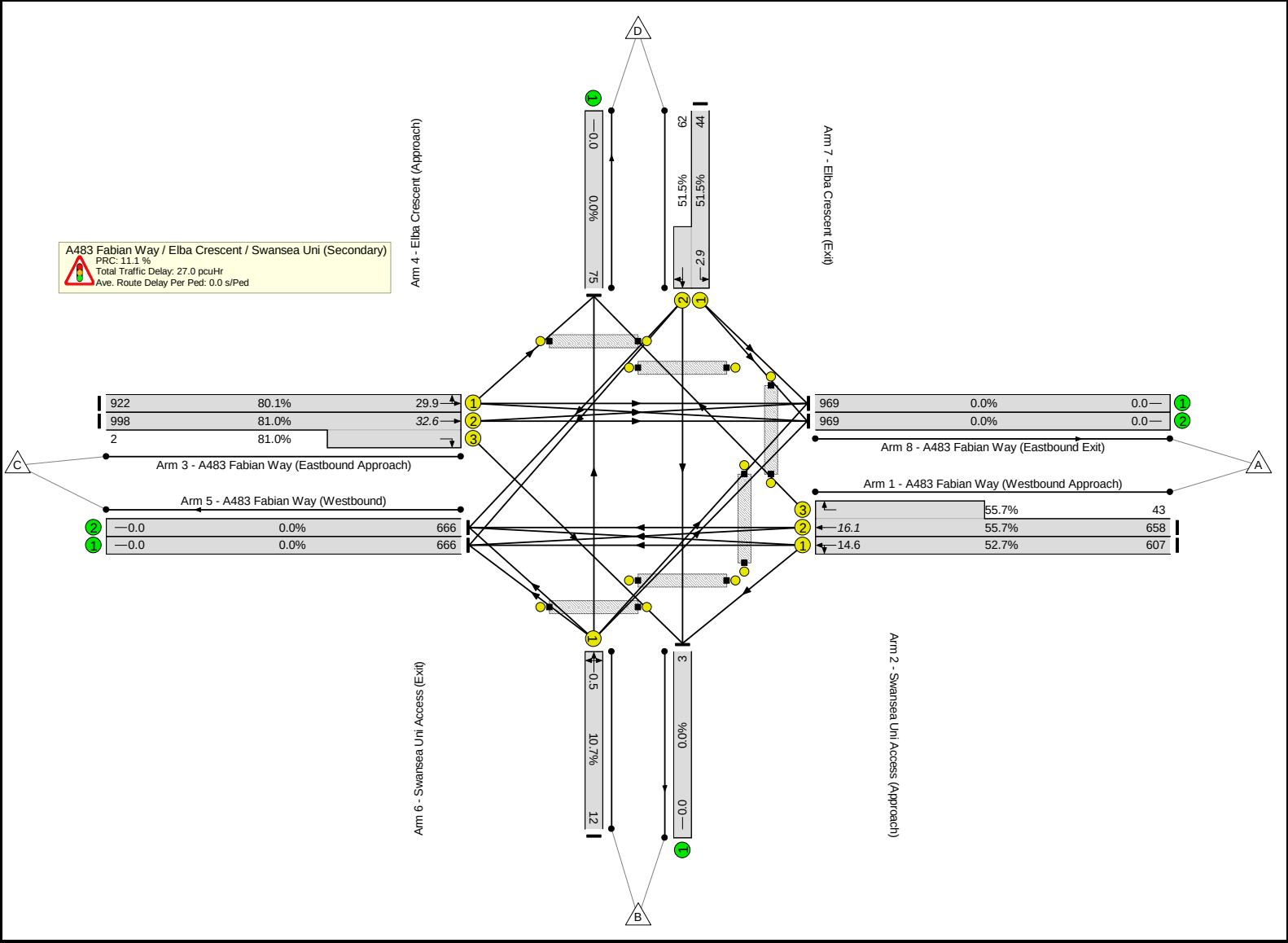


Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



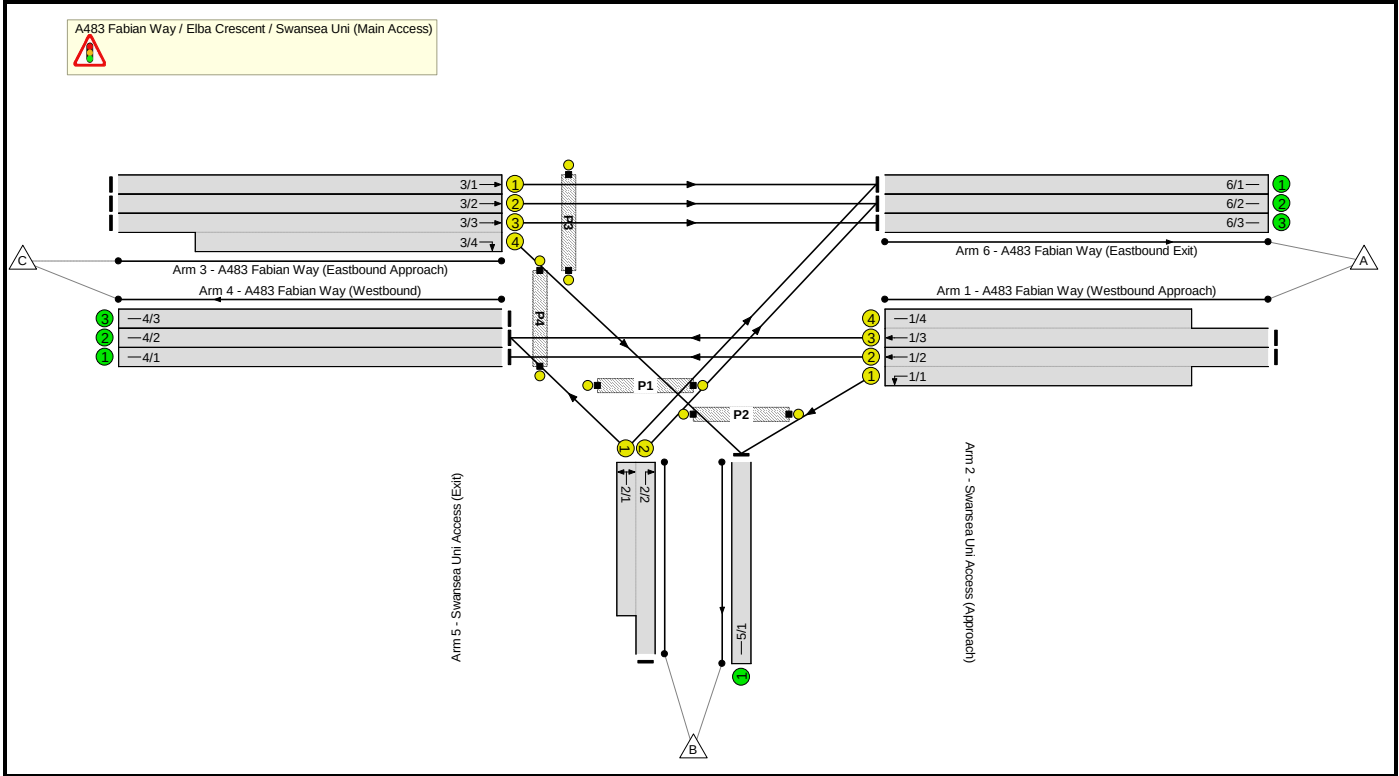
Full Input Data And Results

Full Input Data And Results

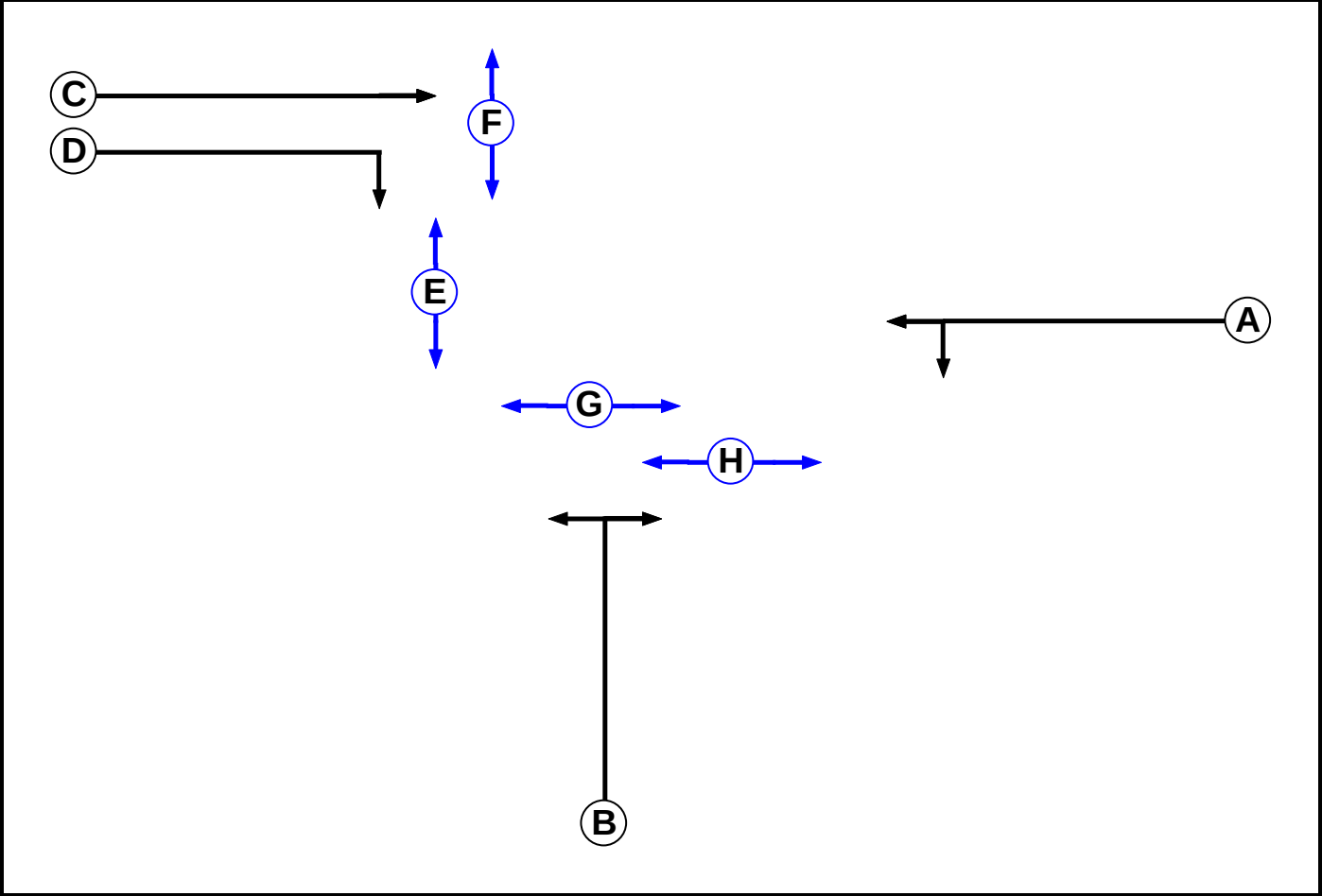
User and Project Details

Project:	Elba Crescent
Title:	Assessment Junction J3
Location:	
Date Started:	November 2023
Additional detail:	
File name:	J3_Fabian Way_Swansea Uni Main Access.lsg3x
Author:	MM
Company:	Corun Associates
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		10	10
C	Traffic		7	7
D	Traffic		10	10
E	Pedestrian		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7

Full Input Data And Results

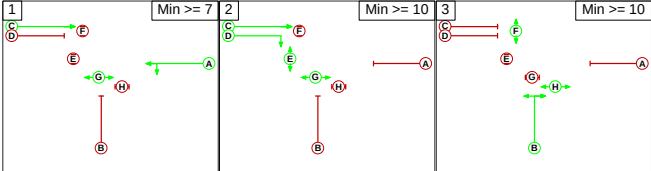
Phase Intergreens Matrix

Terminating Phase	Starting Phase								
		A	B	C	D	E	F	G	H
	A		9	-	11	11	-	-	9
	B	6		6	7	7	-	6	-
	C	-	11		-	-	11	-	-
	D	1	11	-		-	11	-	11
	E	8	11	-	-		-	-	-
	F	-	-	6	7	-		-	-
	G	-	11	-	-	-	-		-
	H	6	-	-	7	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A C G
2	C D E G
3	B F H

Stage Diagram



Phase Delays

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

Prohibited Stage Change

From Stage	To Stage		
	1	2	3
	1	11	11
	2	8	11
3	6	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A483 Fabian Way / Elba Crescent / Swansea Uni (Main Access)
There are no Opposed Lanes in this Junction

Lane Input Data

Junction: A483 Fabian Way / Elba Crescent / Swansea Uni (Main Access)												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A483 Fabian Way (Westbound Approach))	U	A	2	3	26.1	Geom	-	3.00	0.00	Y	Arm 5 Left	Inf
1/2 (A483 Fabian Way (Westbound Approach))	U	A	2	3	54.1	Geom	-	3.00	0.00	N	Arm 4 Ahead	Inf
1/3 (A483 Fabian Way (Westbound Approach))	U	A	2	3	54.1	Geom	-	3.00	0.00	N	Arm 4 Ahead	Inf
1/4 (A483 Fabian Way (Westbound Approach))	U	A	2	3	37.4	Geom	-	3.00	0.00	Y		
2/1 (Swansea Uni Access (Approach))	U	B	2	3	17.4	Geom	-	4.00	0.00	Y	Arm 4 Left Arm 6 Right	Inf Inf
2/2 (Swansea Uni Access (Approach))	U	B	2	3	60.9	Geom	-	4.00	0.00	N	Arm 6 Right	Inf
3/1 (A483 Fabian Way (Eastbound Approach))	U	C	2	3	87.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
3/2 (A483 Fabian Way (Eastbound Approach))	U	C	2	3	87.0	Geom	-	3.00	0.00	N	Arm 6 Ahead	Inf
3/3 (A483 Fabian Way (Eastbound Approach))	U	C	2	3	87.0	Geom	-	3.00	0.00	N	Arm 6 Ahead	Inf
3/4 (A483 Fabian Way (Eastbound Approach))	U	D	2	3	26.1	Geom	-	3.00	0.00	N	Arm 5 Right	Inf
4/1 (A483 Fabian Way (Westbound))	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

4/2 (A483 Fabian Way (Westbound))	U		2	3	60.0	Inf	-	-	-	-	-	-
4/3 (A483 Fabian Way (Westbound))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Swansea Uni Access (Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A483 Fabian Way (Eastbound Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (A483 Fabian Way (Eastbound Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-
6/3 (A483 Fabian Way (Eastbound Exit))	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2023 Surveyed Flows (AM)'	07:45	08:45	01:00	
2: '2023 Surveyed Flows (PM)'	16:45	17:45	01:00	
3: '2024 Without Development (AM)'	07:45	08:45	01:00	
4: '2024 Without Development (PM)'	16:45	17:45	01:00	
5: '2024 With Development (AM)'	07:45	08:45	01:00	
6: '2024 With Development (PM)'	16:45	17:45	01:00	
7: '2032 Without Development (AM)'	07:45	08:45	01:00	
8: '2032 Without Development (PM)'	16:45	17:45	01:00	
9: '2032 With Development (AM)'	07:45	08:45	01:00	
10: '2032 With Development (PM)'	16:45	17:45	01:00	

Traffic Flows, Desired

Scenario 1: '2023 Surveyed AM' (FG1: '2023 Surveyed Flows (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	116	1838	1954
	B	21	0	96	117
	C	1272	143	0	1415
	Tot.	1293	259	1934	3486

Scenario 2: '2023 Surveyed PM' (FG2: '2023 Surveyed Flows (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	36	1216	1252
	B	87	0	138	225
	C	1726	85	0	1811
	Tot.	1813	121	1354	3288

Scenario 3: '2024 Without Development AM' (FG3: '2024 Without Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	116	1853	1969
	B	21	0	97	118
	C	1283	144	0	1427
	Tot.	1304	260	1950	3514

Scenario 4: '2024 Without Development PM' (FG4: '2024 Without Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	36	1225	1261
	B	88	0	139	227
	C	1739	85	0	1824
	Tot.	1827	121	1364	3312

Full Input Data And Results

Scenario 5: '2024 With Development AM' (FG5: '2024 With Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	116	1866	1982
	B	21	0	97	118
	C	1296	144	0	1440
	Tot.	1317	260	1963	3540

Scenario 6: '2024 With Development PM' (FG6: '2024 With Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	36	1242	1278
	B	88	0	139	227
	C	1721	70	0	1791
	Tot.	1809	106	1381	3296

Scenario 7: '2032 Without Development AM' (FG7: '2032 Without Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	122	1938	2060
	B	22	0	101	123
	C	1342	150	0	1492
	Tot.	1364	272	2039	3675

Scenario 8: '2032 Without Development PM' (FG8: '2032 Without Development (PM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	38	1279	1317
	B	92	0	144	236
	C	1816	91	0	1907
	Tot.	1908	129	1423	3460

Scenario 9: '2032 With Development AM' (FG9: '2032 With Development (AM)', Plan 1: 'Network Control Plan 1')

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	122	1951	2073
	B	22	0	101	123
	C	1355	150	0	1505
	Tot.	1377	272	2052	3701

Full Input Data And Results

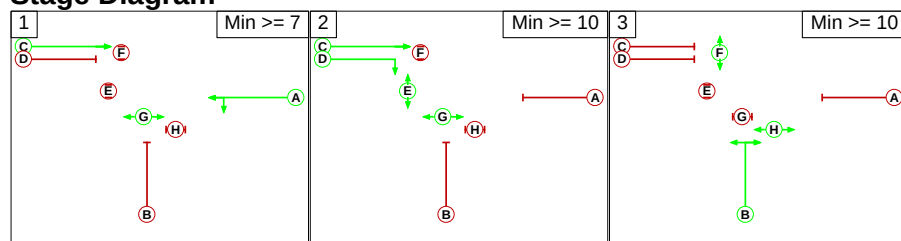
Scenario 10: '2032 With Development PM' (FG10: '2032 With Development (PM)', Plan 1: 'Network Control Plan 1')
Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	38	1296	1334
	B	92	0	144	236
	C	1797	74	0	1871
	Tot.	1889	112	1440	3441

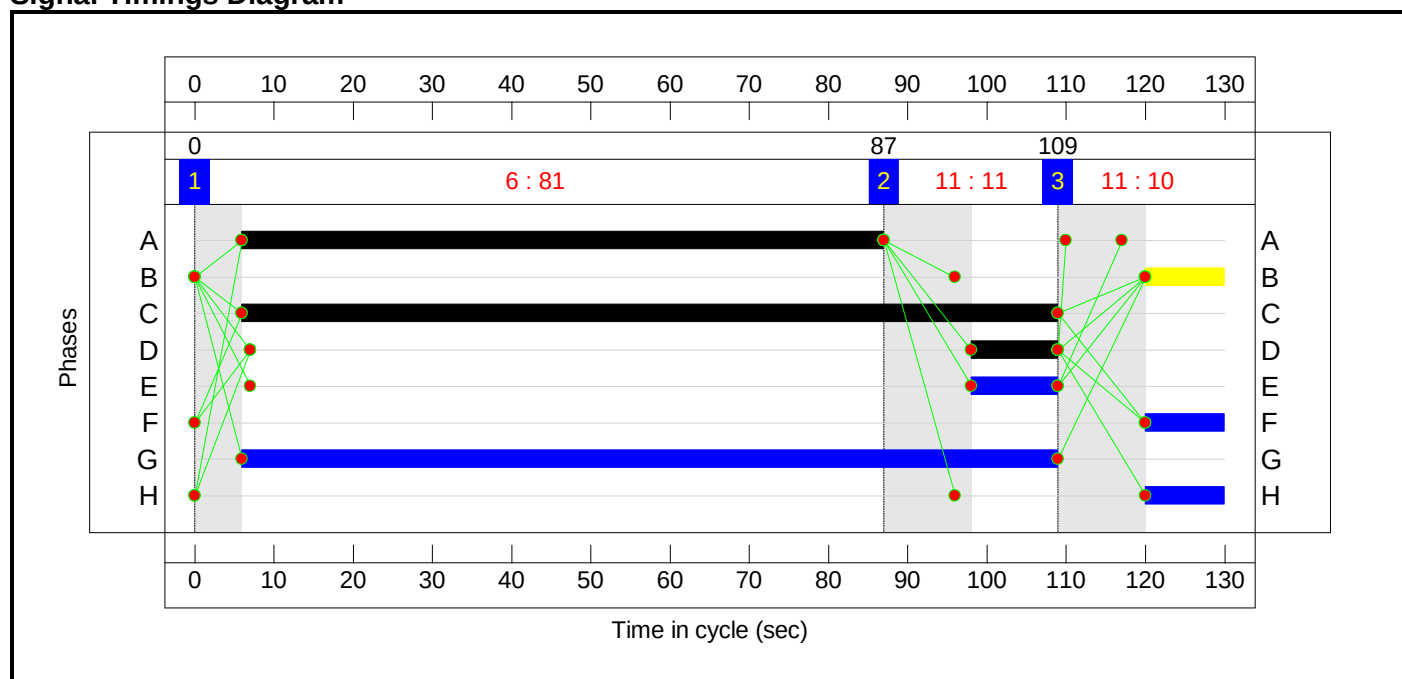
Full Input Data And Results

Scenario 1: '2023 Surveyed AM' (FG1: '2023 Surveyed Flows (AM)', Plan 1: 'Network Control Plan 1')

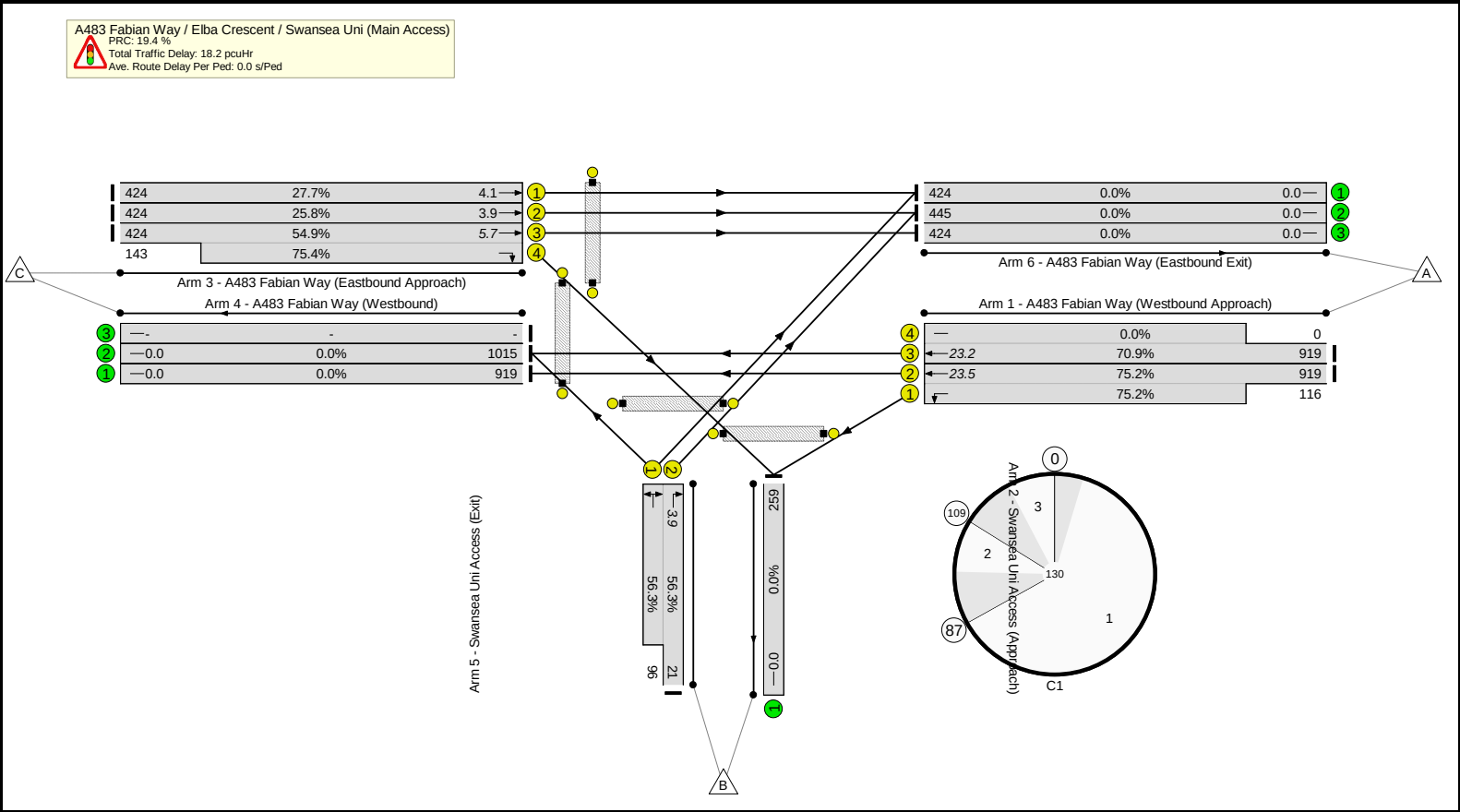
Stage Diagram



Signal Timings Diagram



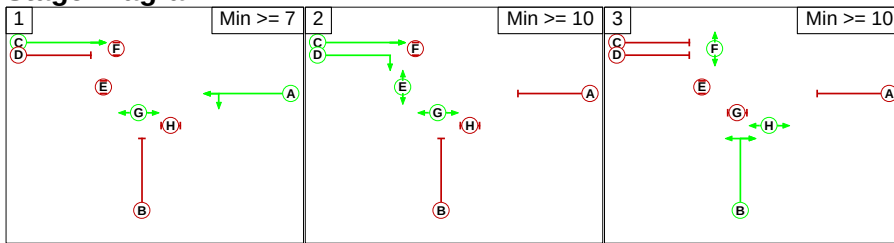
Full Input Data And Results
Network Layout Diagram



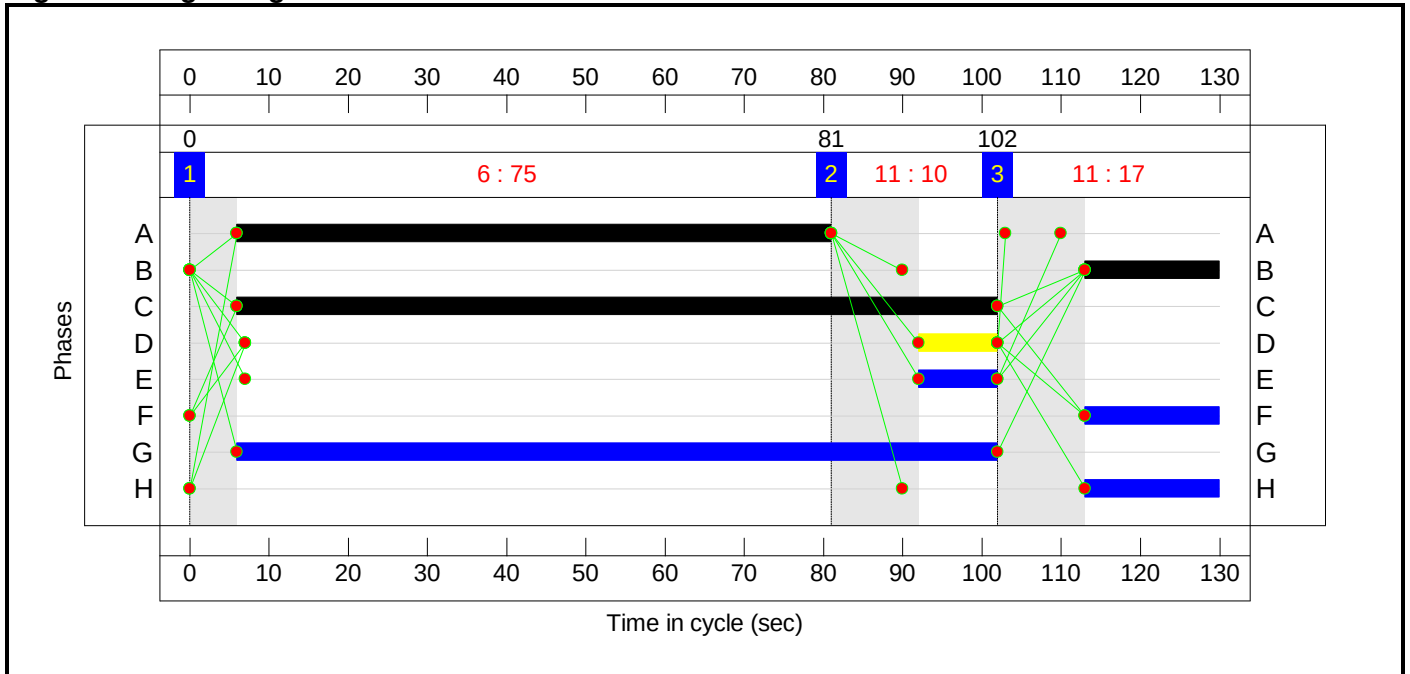
Full Input Data And Results

Scenario 2: '2023 Surveyed PM' (FG2: '2023 Surveyed Flows (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

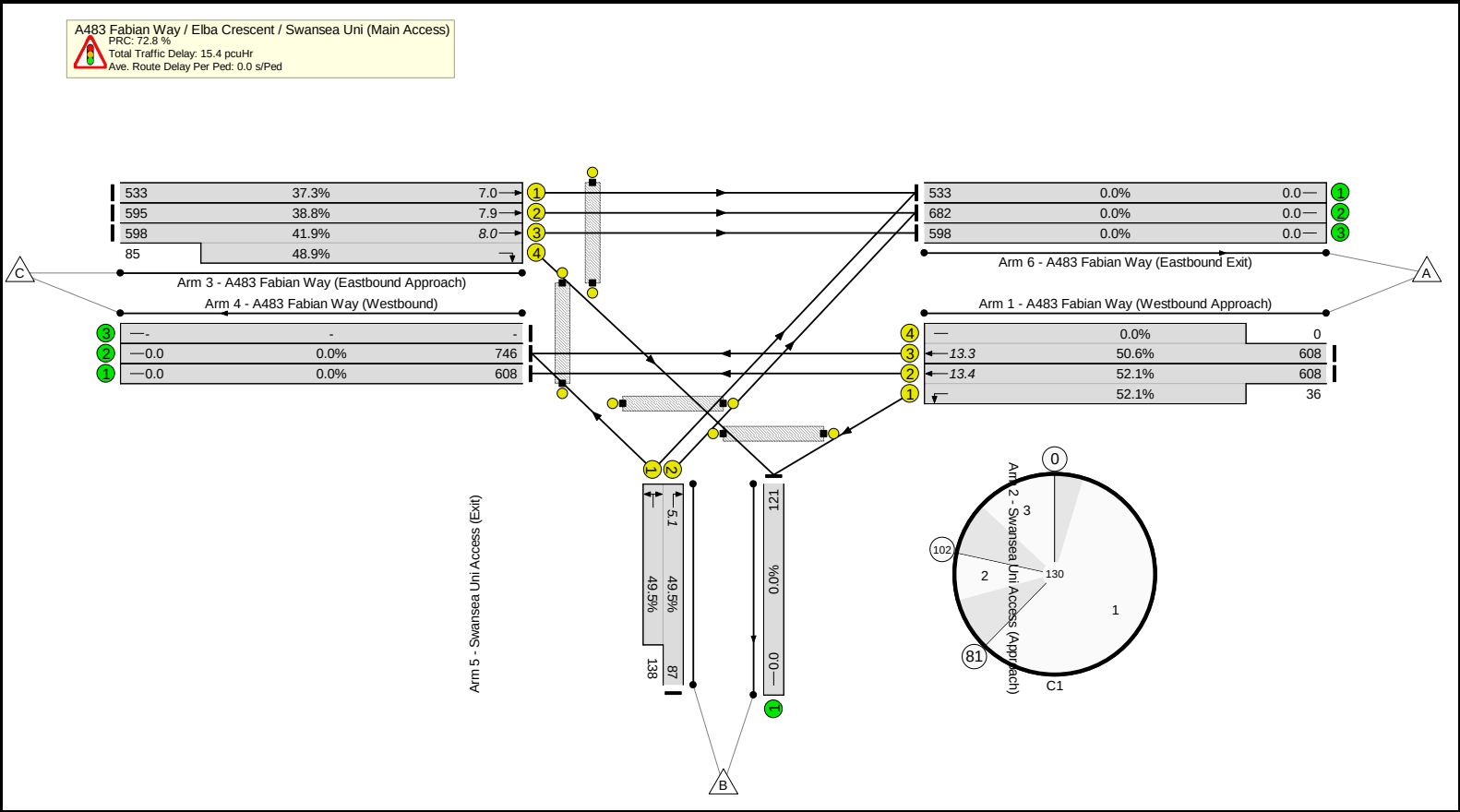


Signal Timings Diagram



Full Input Data And Results

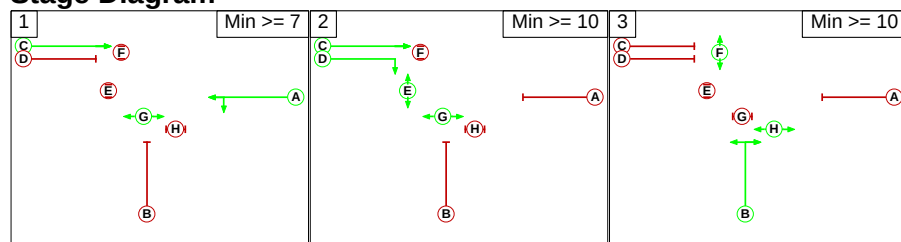
Network Layout Diagram



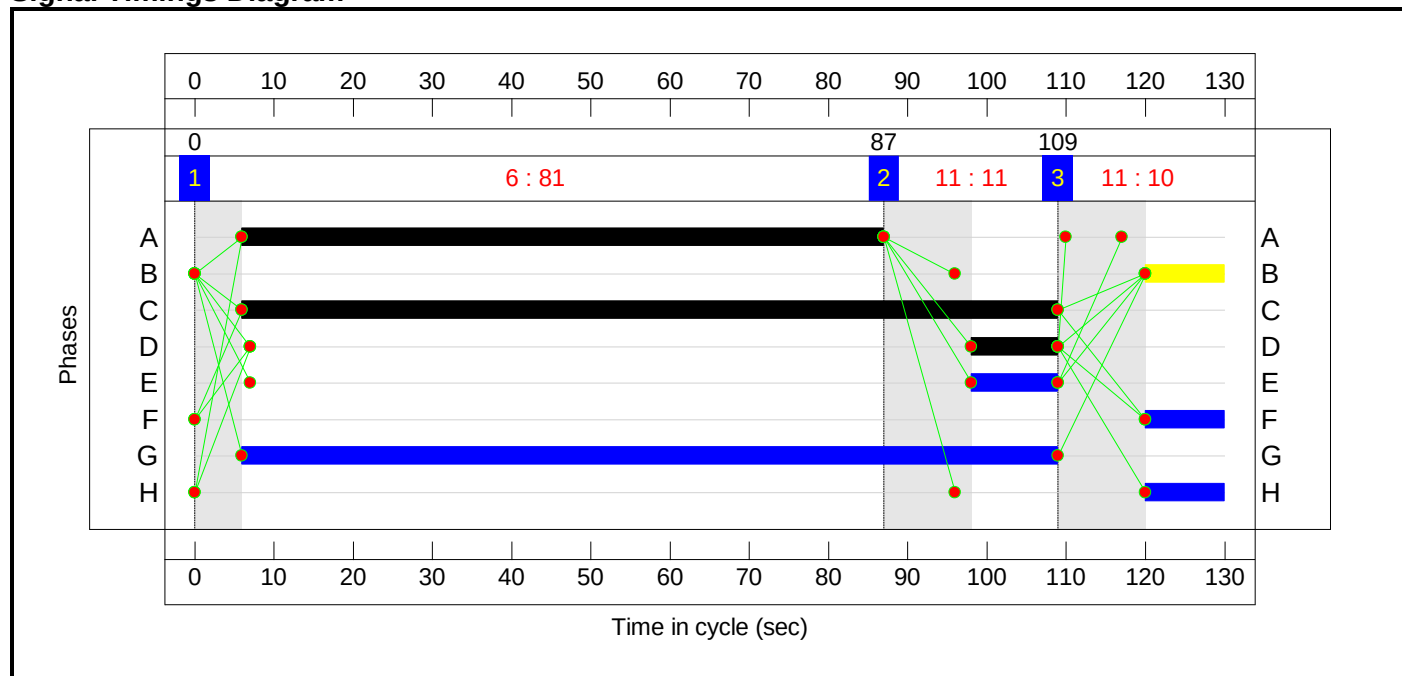
Full Input Data And Results

Scenario 3: '2024 Without Development AM' (FG3: '2024 Without Development (AM)', Plan 1: 'Network Control Plan 1')

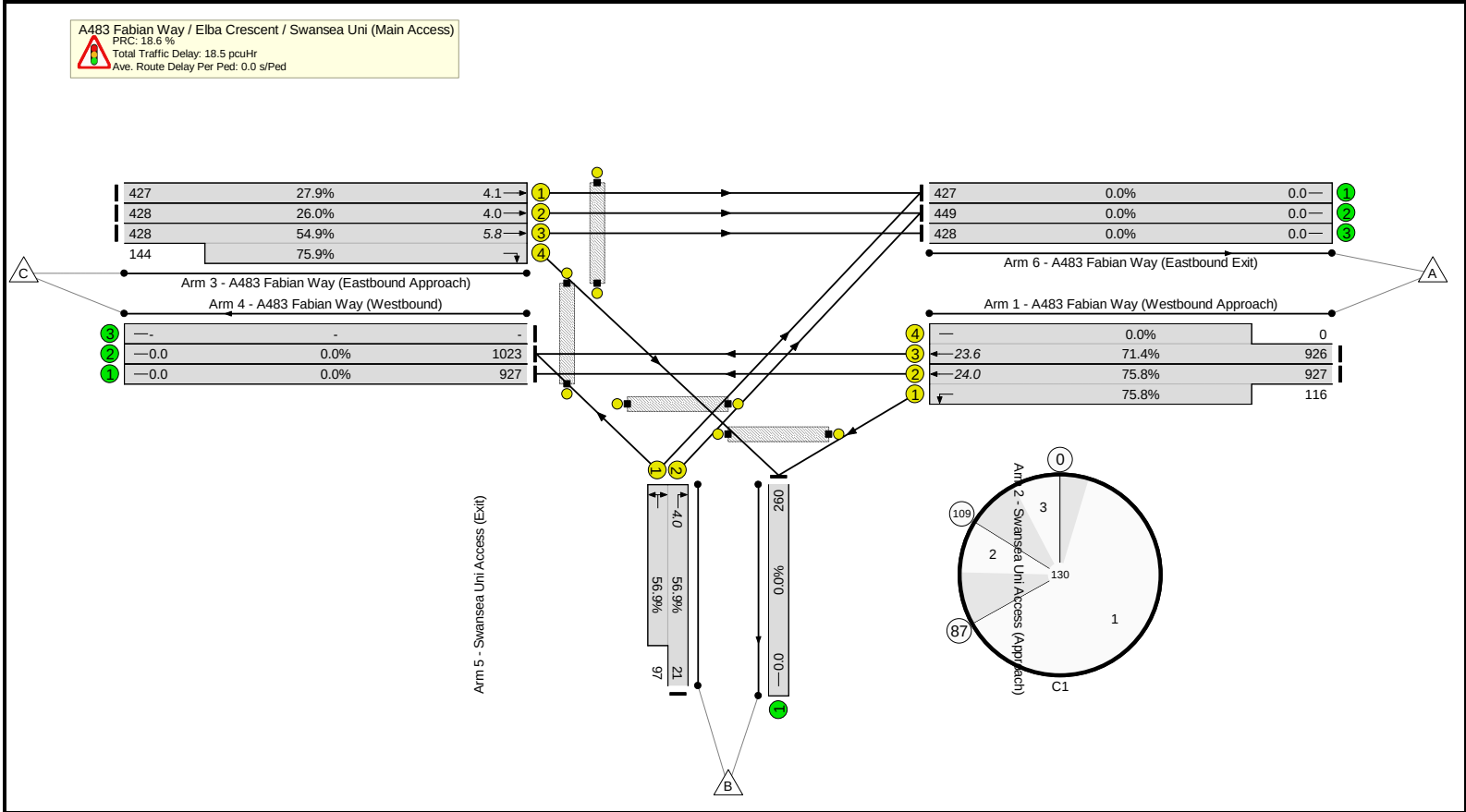
Stage Diagram



Signal Timings Diagram



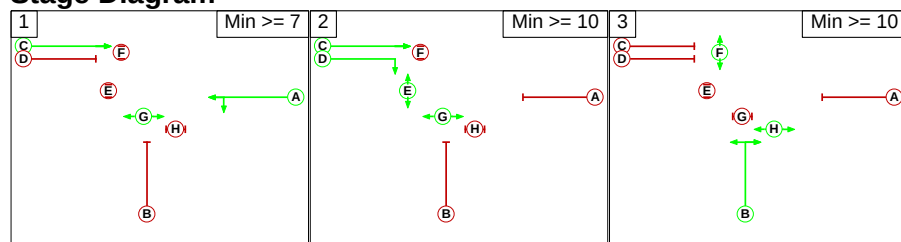
Network Layout Diagram



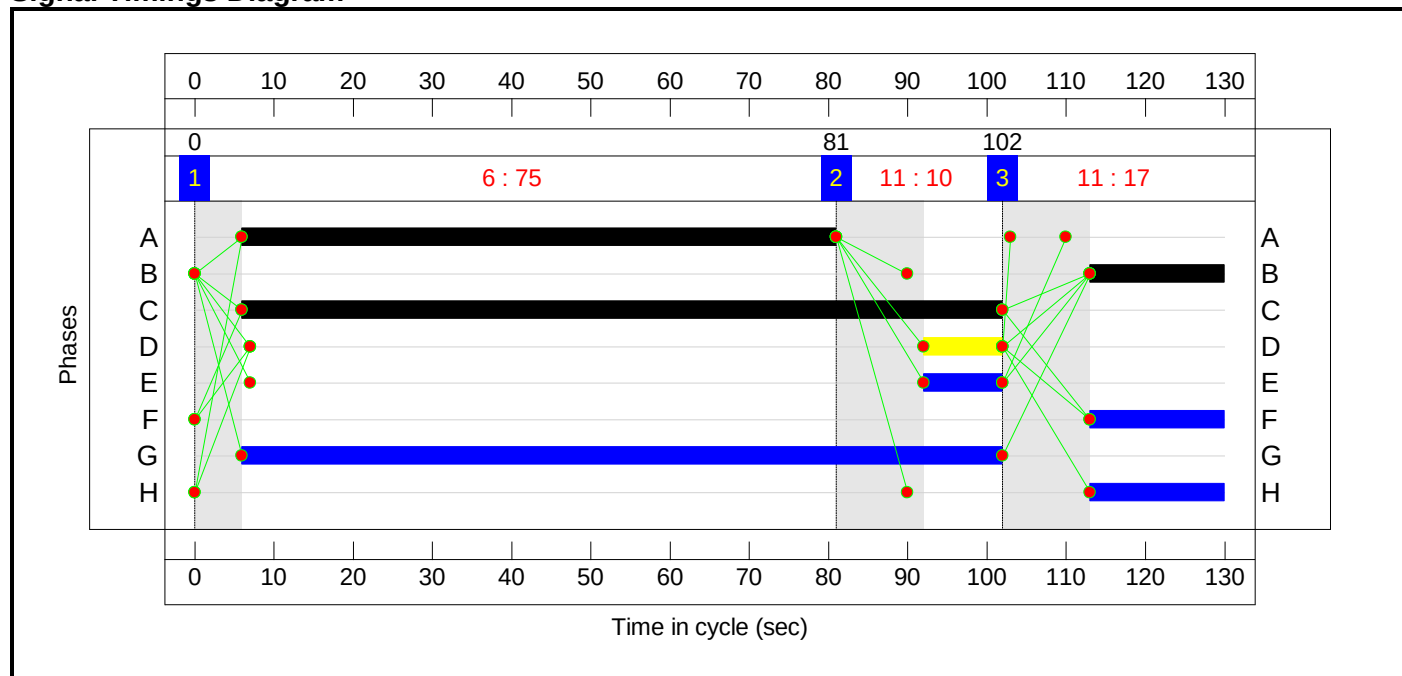
Full Input Data And Results

Scenario 4: '2024 Without Development PM' (FG4: '2024 Without Development (PM)', Plan 1: 'Network Control Plan 1')

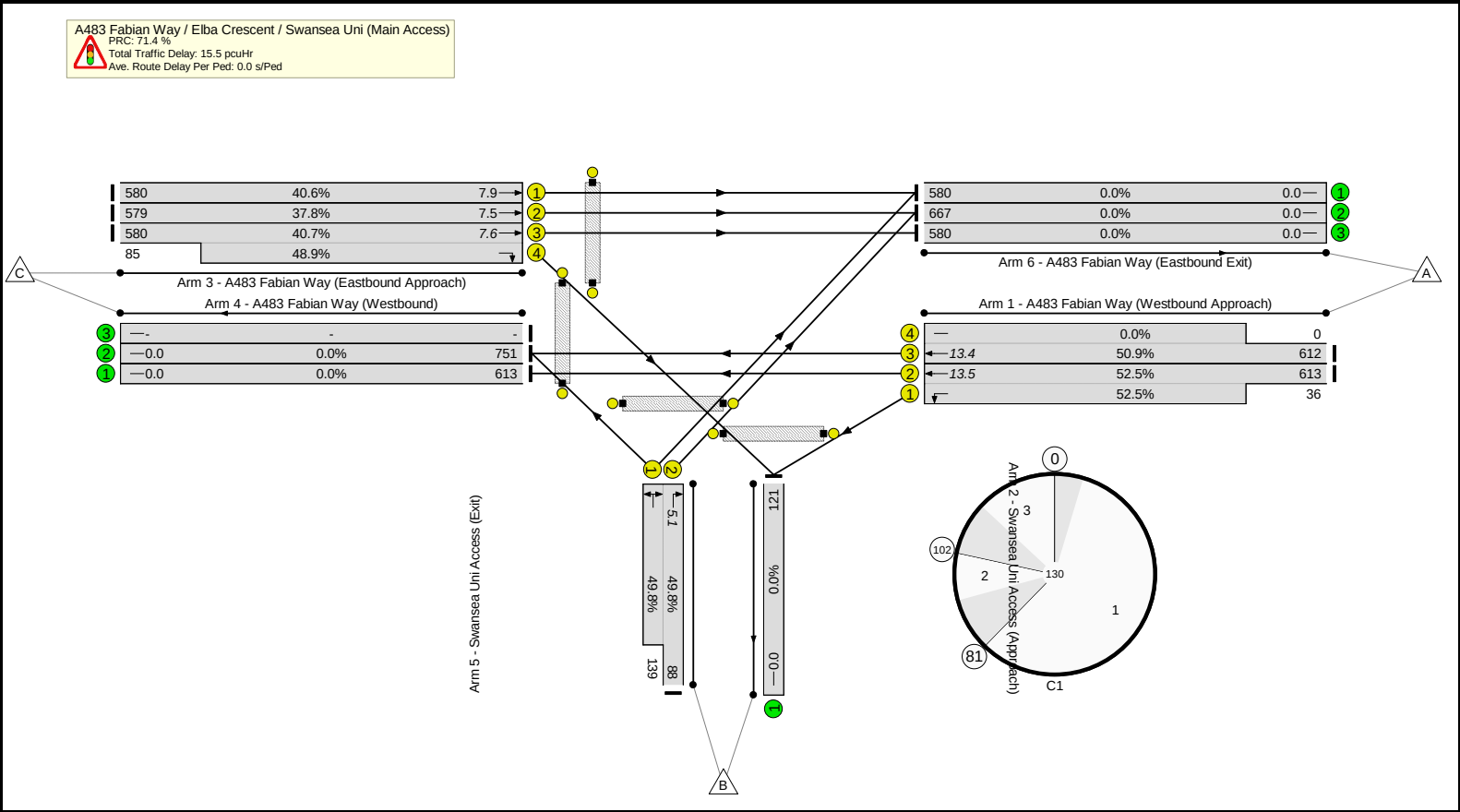
Stage Diagram



Signal Timings Diagram



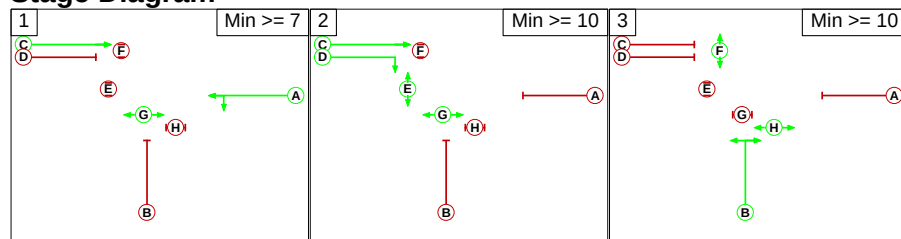
Full Input Data And Results
Network Layout Diagram



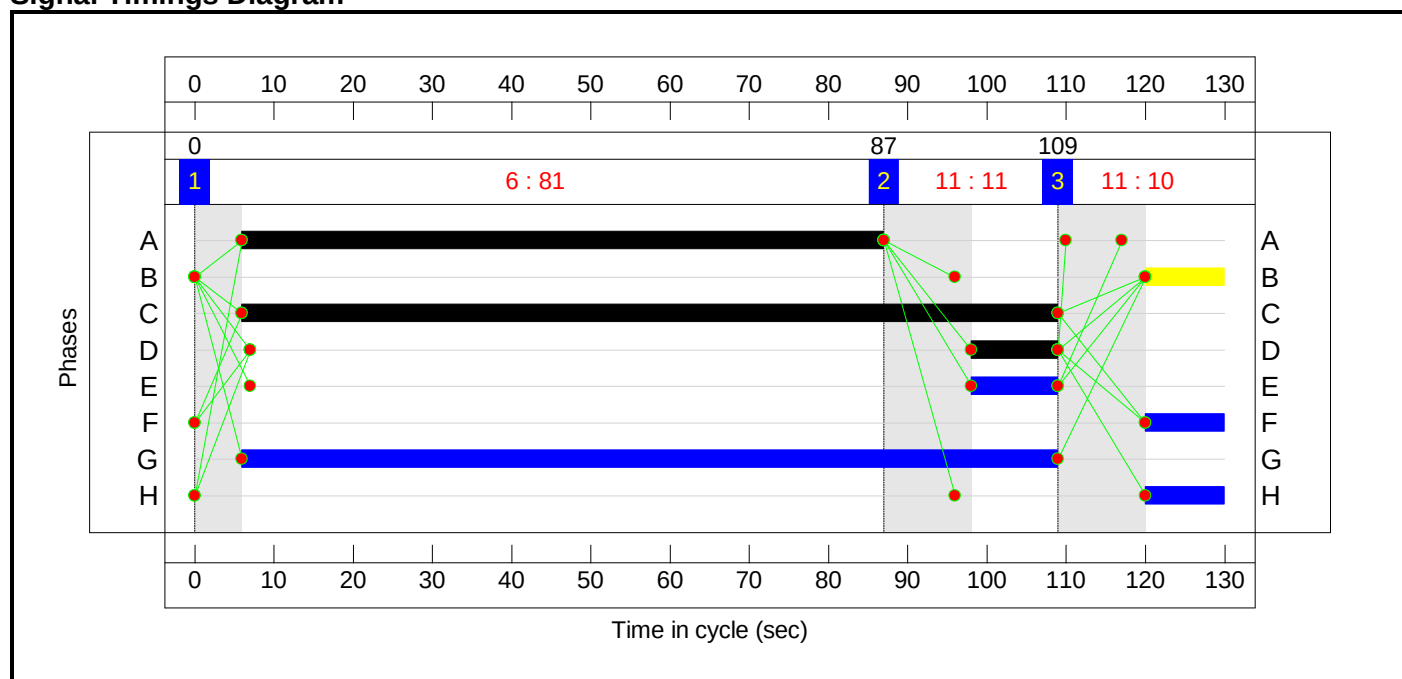
Full Input Data And Results

Scenario 5: '2024 With Development AM' (FG5: '2024 With Development (AM)', Plan 1: 'Network Control Plan 1')

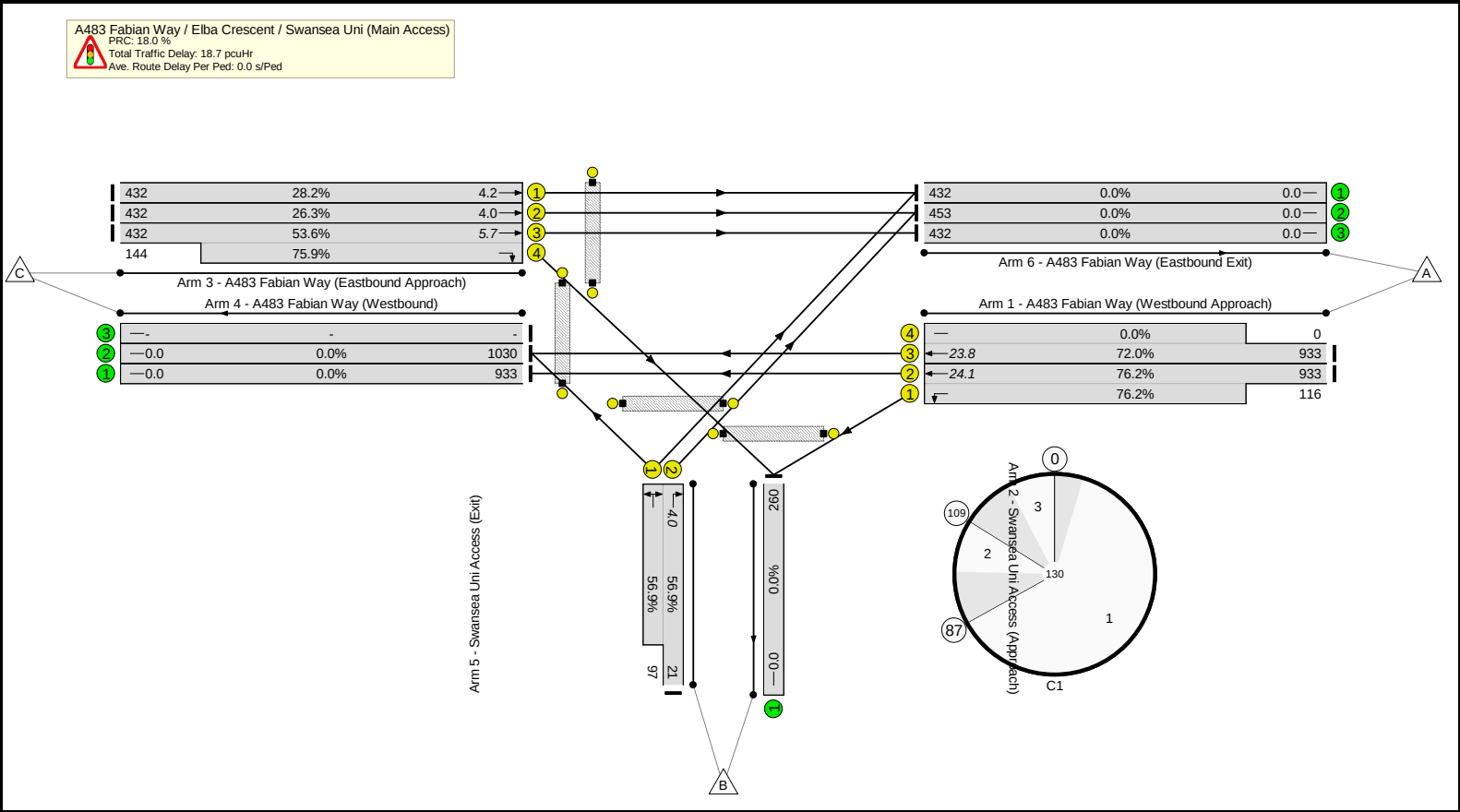
Stage Diagram



Signal Timings Diagram



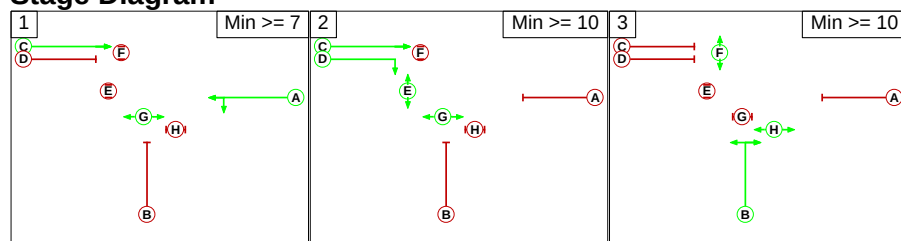
Full Input Data And Results
Network Layout Diagram



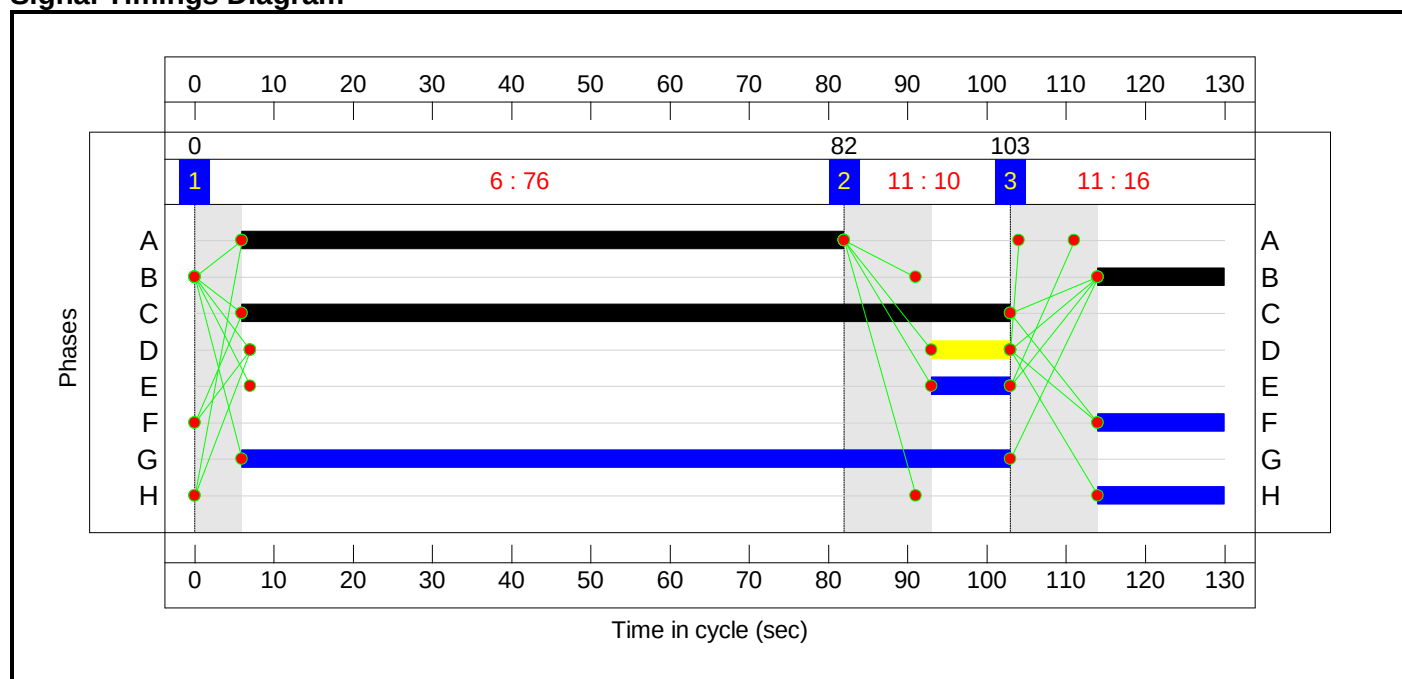
Full Input Data And Results

Scenario 6: '2024 With Development PM' (FG6: '2024 With Development (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

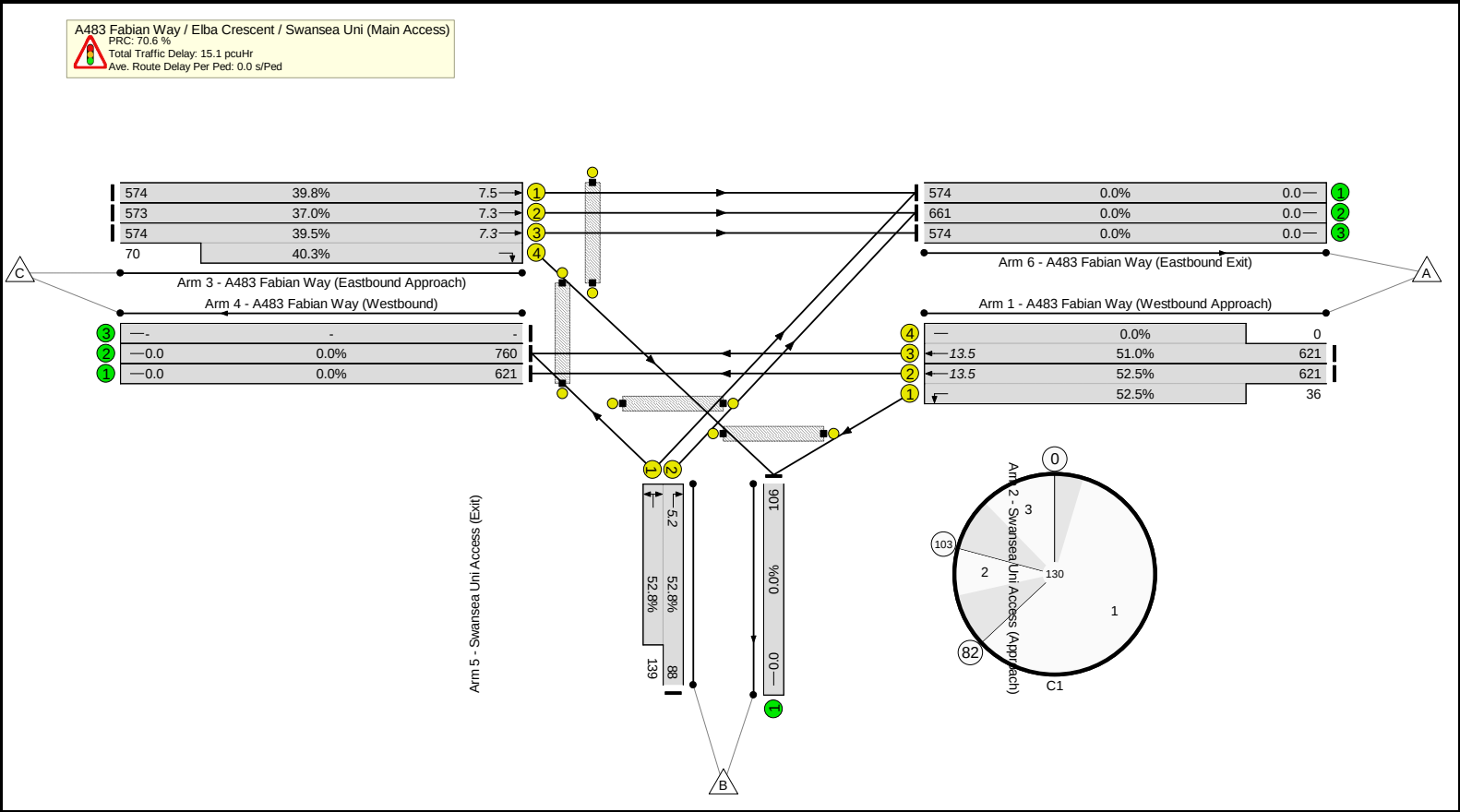


Signal Timings Diagram



Full Input Data And Results

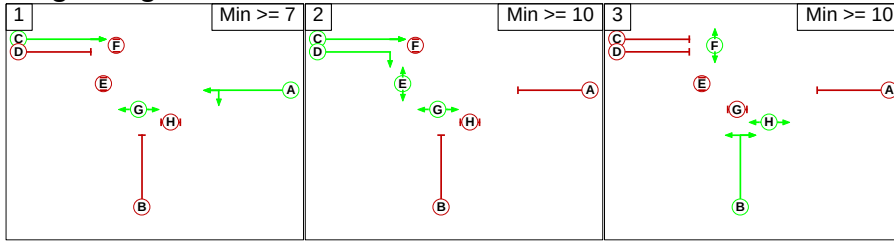
Network Layout Diagram



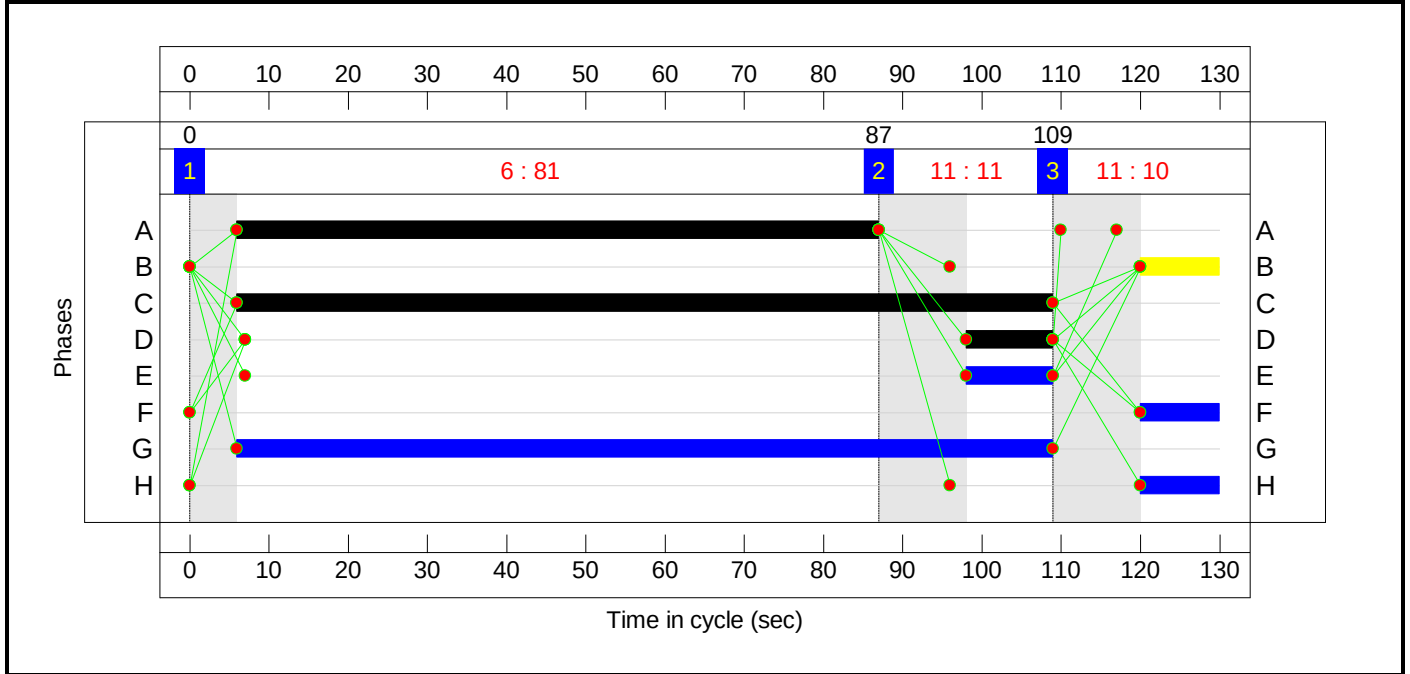
Full Input Data And Results

Scenario 7: '2032 Without Development AM' (FG7: '2032 Without Development (AM)', Plan 1: 'Network Control Plan 1')

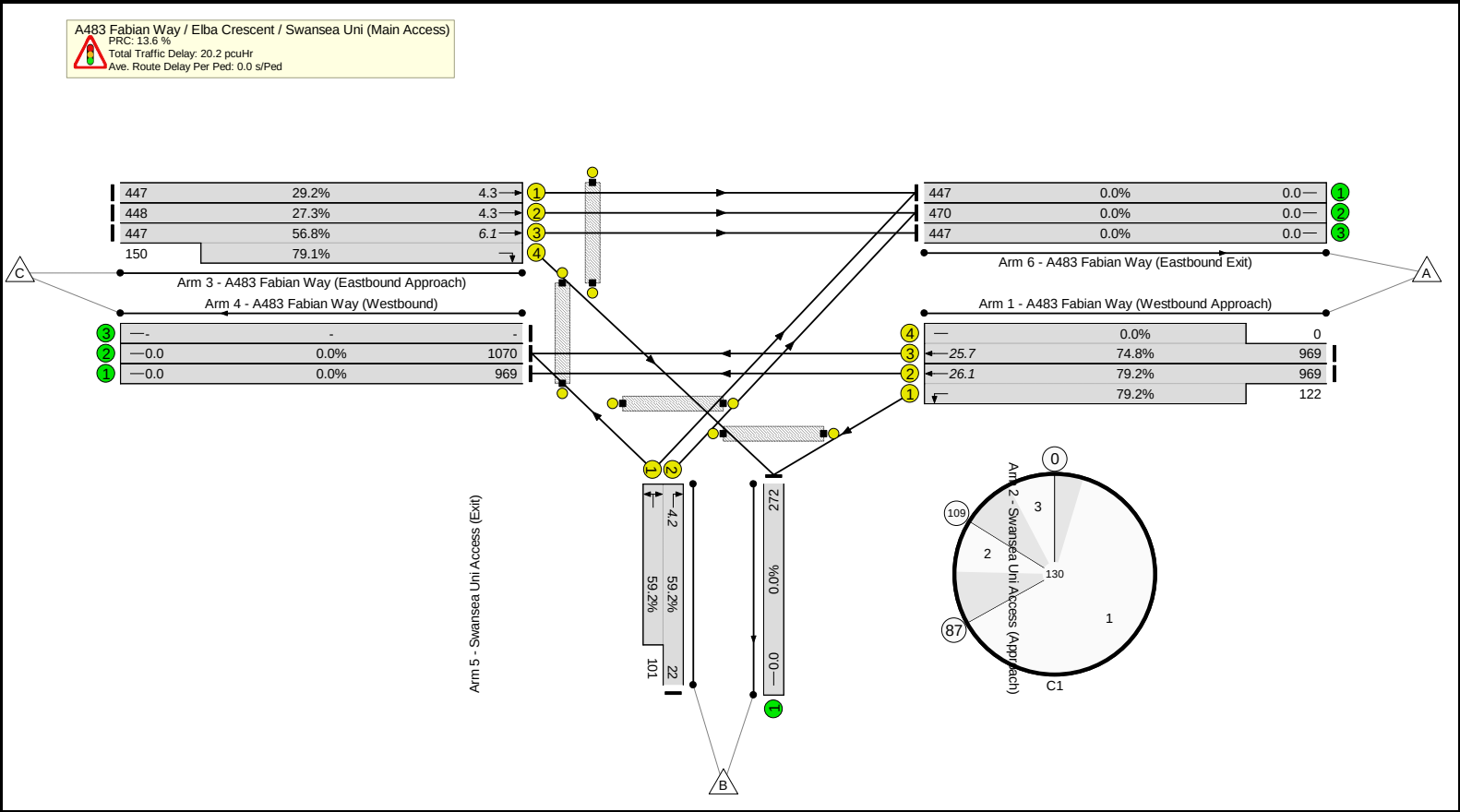
Stage Diagram



Signal Timings Diagram



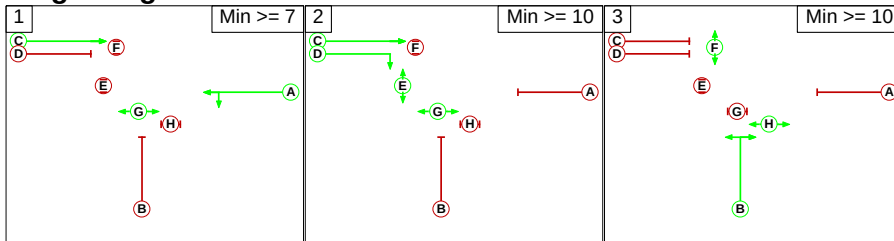
Full Input Data And Results
Network Layout Diagram



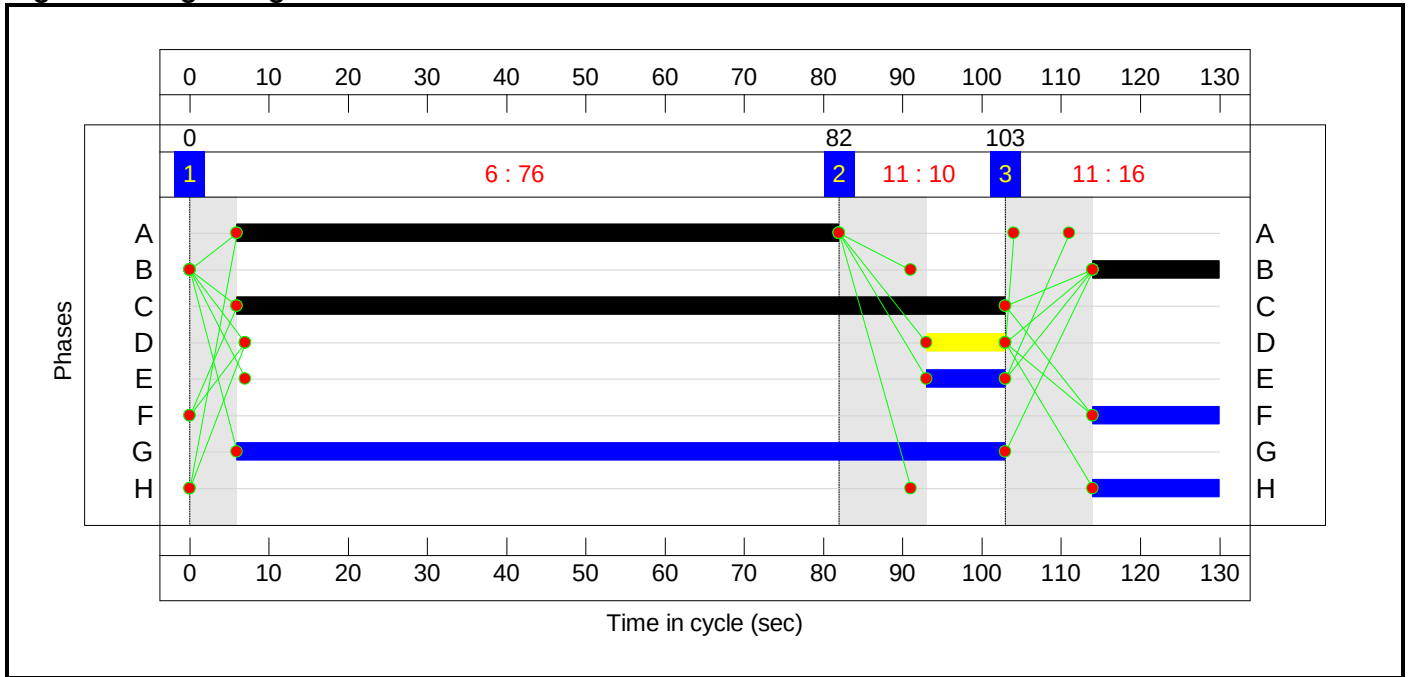
Full Input Data And Results

Scenario 8: '2032 Without Development PM' (FG8: '2032 Without Development (PM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

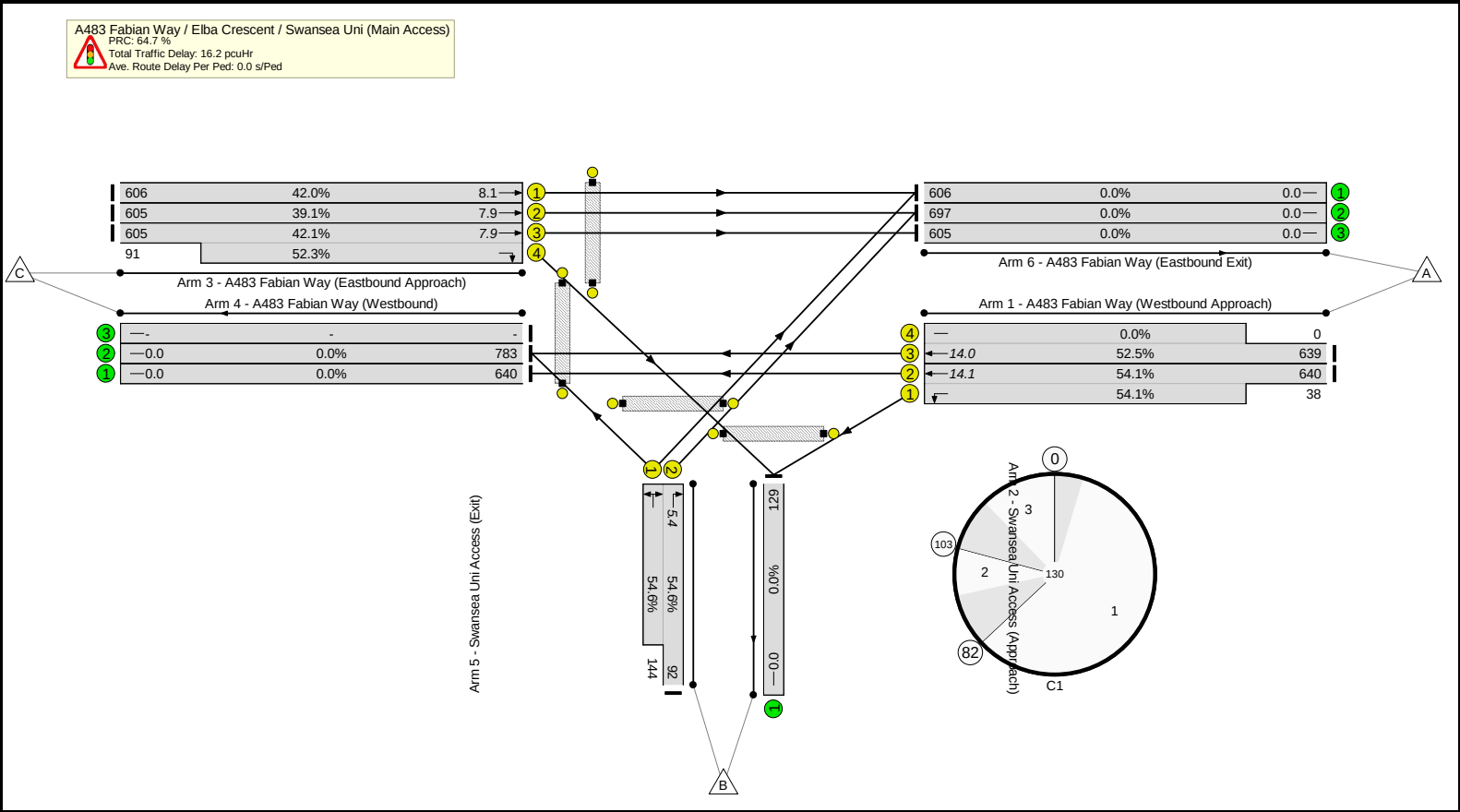


Signal Timings Diagram



Full Input Data And Results

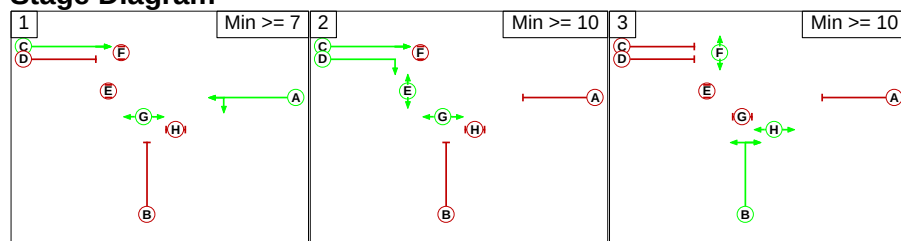
Network Layout Diagram



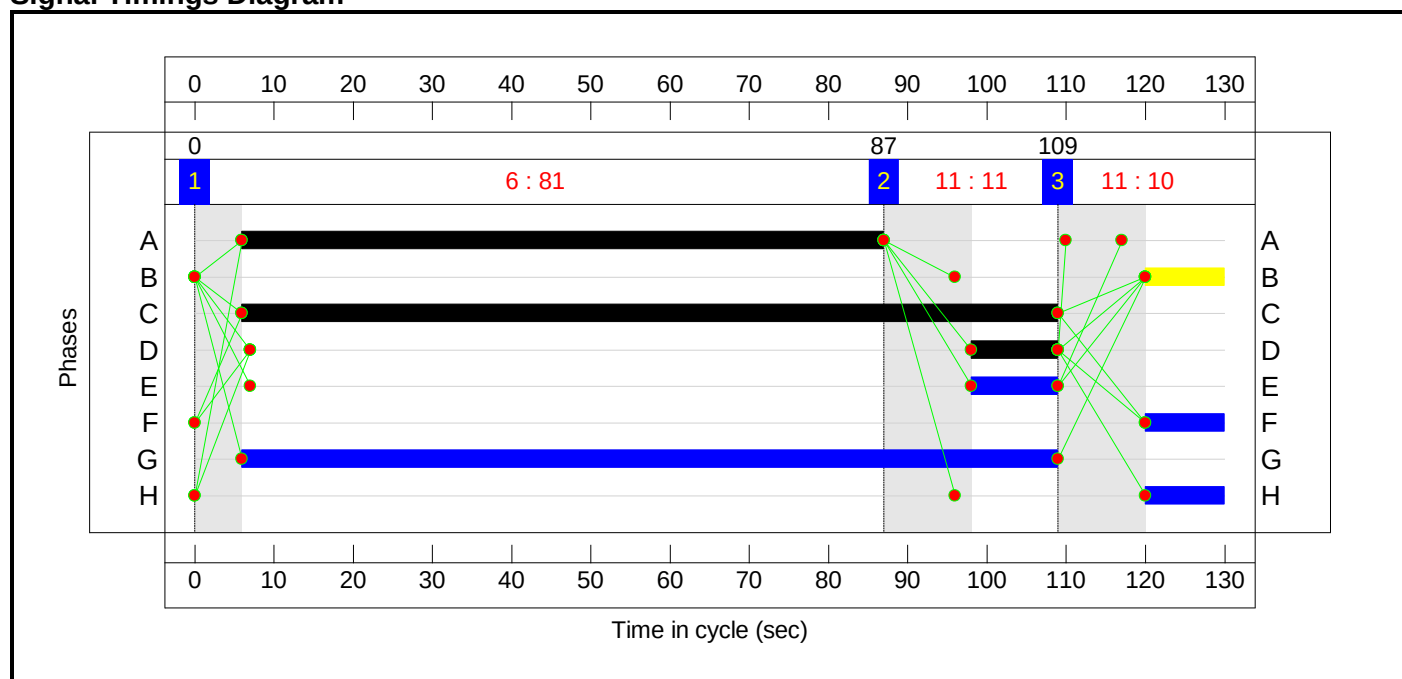
Full Input Data And Results

Scenario 9: '2032 With Development AM' (FG9: '2032 With Development (AM)', Plan 1: 'Network Control Plan 1')

Stage Diagram

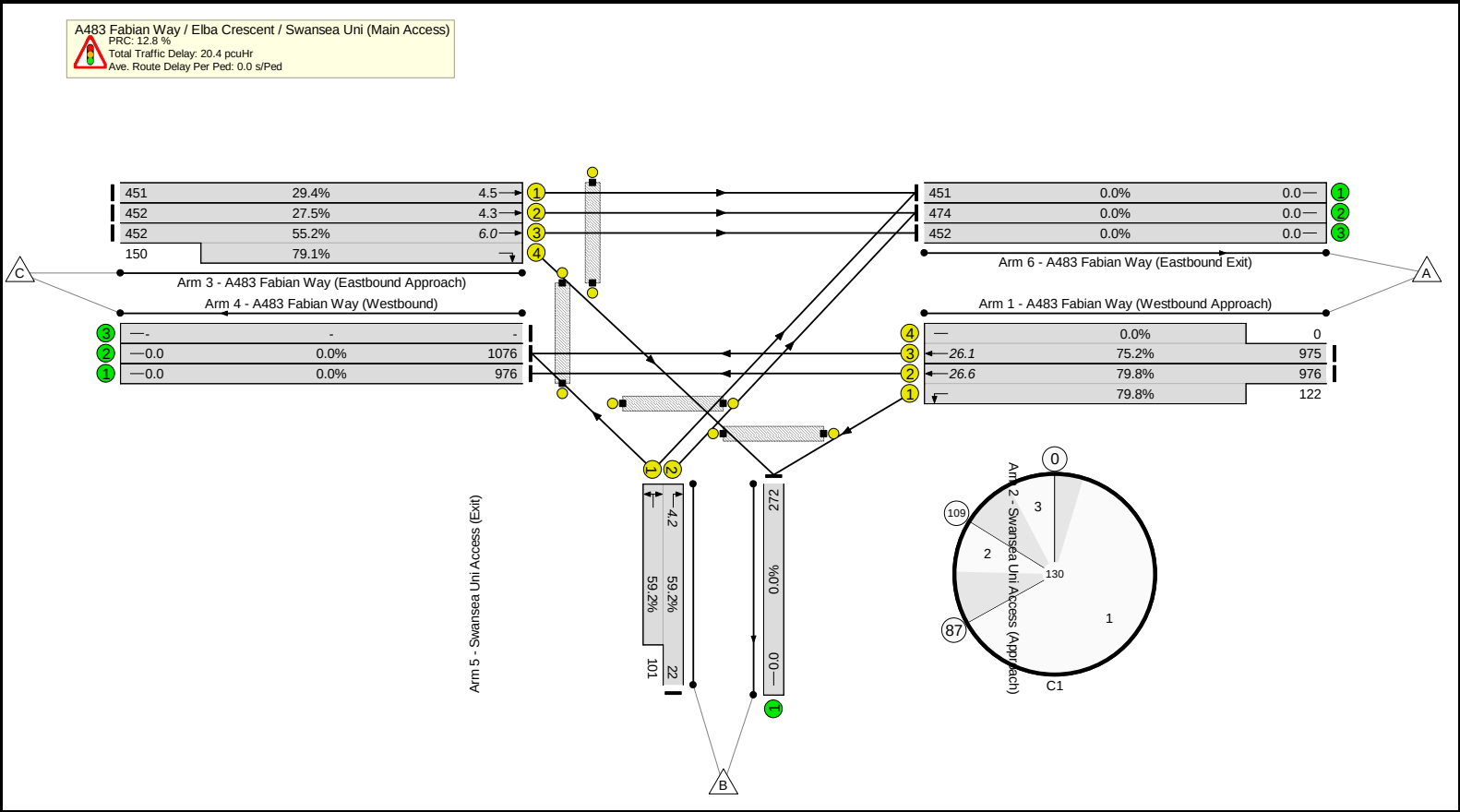


Signal Timings Diagram



Full Input Data And Results

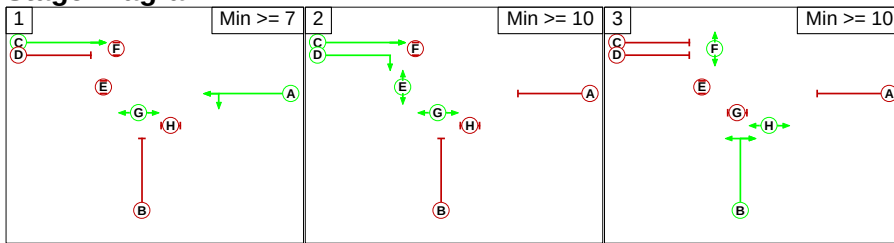
Network Layout Diagram



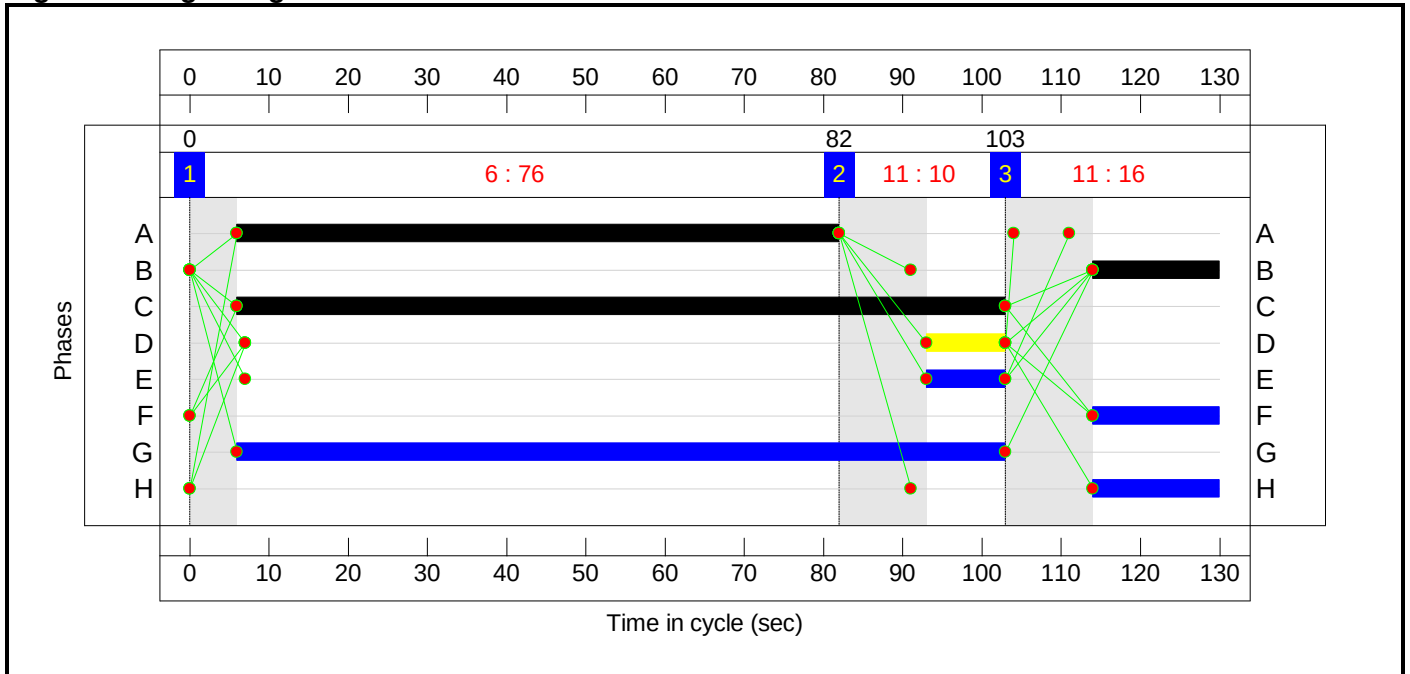
Full Input Data And Results

Scenario 10: '2032 With Development PM' (FG10: '2032 With Development (PM)', Plan 1: 'Network Control Plan 1')

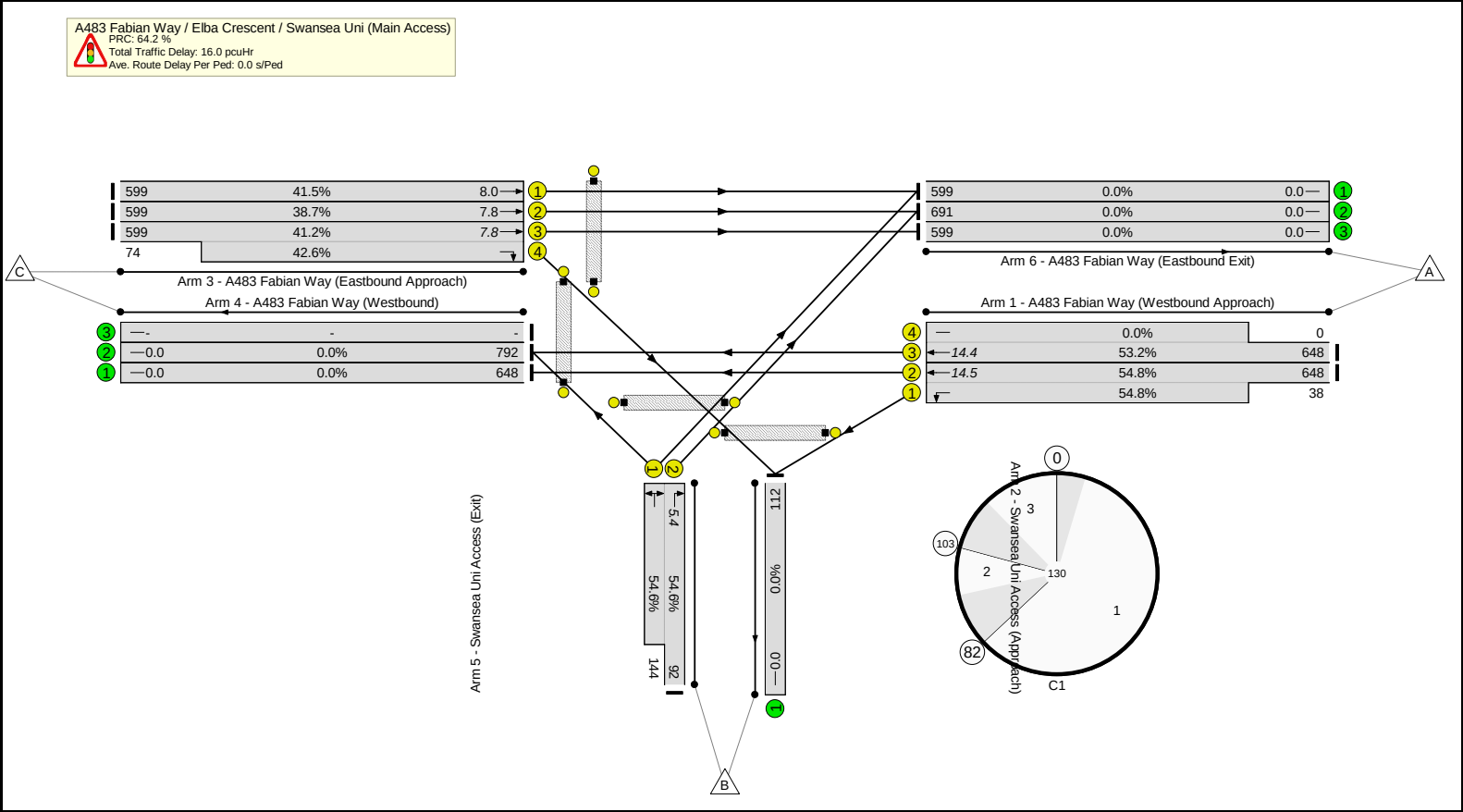
Stage Diagram



Signal Timings Diagram



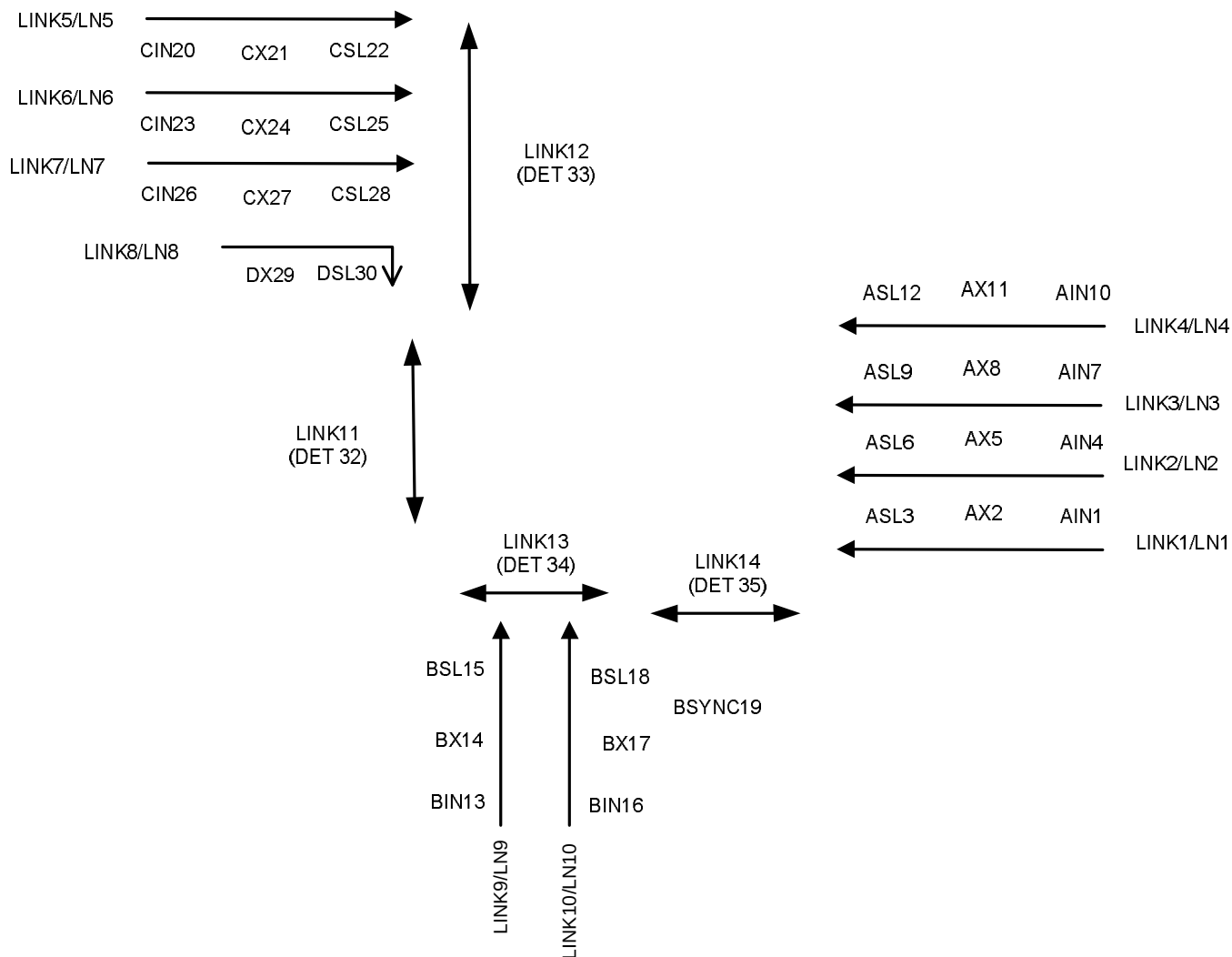
Full Input Data And Results
Network Layout Diagram



APPENDIX H

Signal Junction Staging Diagram

Main Access Road, Swansea Campus

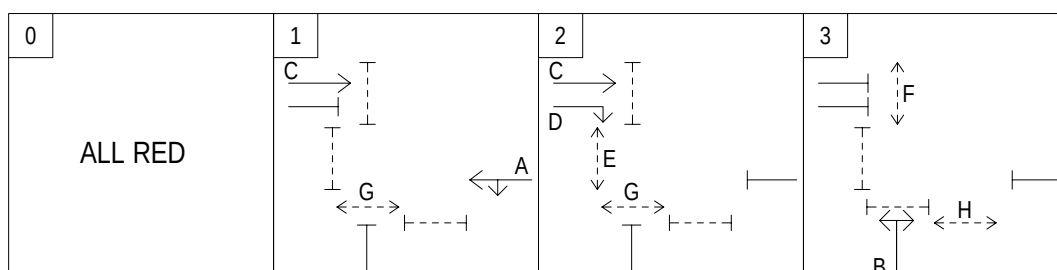


Link 15 – Bus Priority Input (BP1) – MOVADET31
 Link 16 – Linked Input (C2PHAFL) – MOVADET36
 Link 17 – Linked Input (C2PHAFL) – MOVADET37
 Link 18 – Linked Input (C2PHBFL) – MOVADET38
 Link 19 – Linked Input (C2PHBFL) – MOVADET39

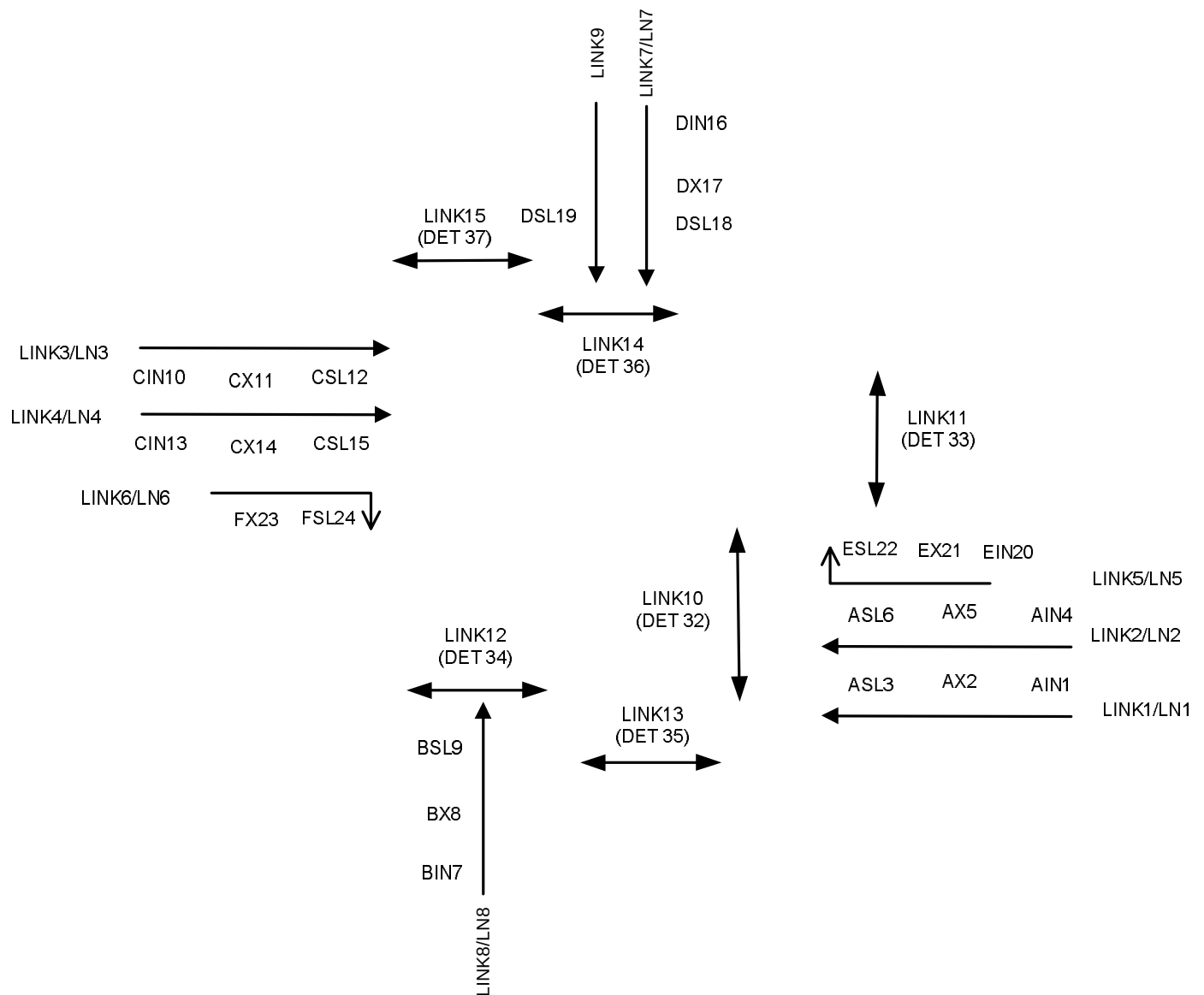
F1	F2	F3	
G1	G2	G3	GC

	1	2	3
1		11	9
2	8		11
3	6	7	

STAGING DIAGRAM



Elba Crescent, Swansea Campus



Link 16 – Bus Priority Input (BP1) – MOVADET31
 Link 17 – Linked Input (C1PHCFL) – MOVADET38
 Link 18 – Linked Input (C1PHCFL) – MOVADET39
 Link 19 – Linked Input (C1PHBFL) – MOVADET40
 Link 20 – Linked Input (C1PHBFL) – MOVADET41

F1	F2	F3	F4
G1	G2	G3	G4

	1	2	3	4
1		11	9	9
2	9		11	11
3	7	7		9
4	7	9	9	

STAGING DIAGRAM

