

THOMAS, REES, GRANT & KNIGHT

LAND ADJACENT TO A48, PYLE, BRIDGEND

TRANSPORT ASSESSMENT


18-00592/TA/01

OCTOBER 2020



DOCUMENT SIGNATURE AND MODIFICATION SHEET

Project Details

Project Title:	Land Adjacent to A48, Pyle, Bridgend		
	18-00592	Document No:	TA/01
Client:	Thomas, Rees, Grant & Knight		
-	Name	Signature	Date
Prepared by	Lloyd Bastian		October 2020
Checked and Approved for Issue by	Joseph Cassinelli		October 2020

Modification Details

Rev	Date	Description	Checked By

Issued By:

**Corun Associates Limited
Swansea**

**T 01792 229155
E swansea@corun.uk.com**

CONTENTS		Page
1	INTRODUCTION	5
1.1	Background	5
1.2	Scope	5
2	EXISTING CONDITIONS	7
2.1	Site Summary	7
2.2	Local Highway Network	7
2.3	Pedestrian Facilities	8
2.4	Cycle Facilities	10
2.5	Public Transport Facilities	12
2.6	Local Highway Safety	12
3	LOCAL AND NATIONAL PLANNING GUIDANCE	14
3.1	Overview	14
3.2	Policy Objective	14
3.3	Planning Policy Wales (December 2018)	14
3.4	Technical Advice Note (TAN 18)	18
3.5	Bridgend CBC LDP (Adopted September 2013)	19
3.6	Active Travel (Wales) Act 2013	20
3.7	Conclusion	20
4	DEVELOPMENT PROPOSAL	21
4.1	Proposed Development	21
4.2	Access	21
4.3	Parking	22
4.4	Servicing	22
4.5	Active Travel	22
5	SITE TRAFFIC	24
5.1	Introduction	24
5.2	Proposed Residential Traffic	24
5.3	Primary School Traffic	24
5.4	Neighbourhood Centre	25
5.5	Park & Ride	26
5.6	Modal Split	26
6	CAPACITY ASSESSMENT METHODOLOGY	28
7.3	Capacity Analysis – Proposed Site Access	33
7.6	Capacity Analysis – Junction 3 – A473/B4622 signals	38

7.8	Capacity Analysis – Junction 5 – A4229 / Porthcawl Road Roundabout	43
7.9	Capacity Analysis – Junction 7 – A48 / Heol Mostyn priority junction	45
8	SUMMARY AND CONCLUSION	47
8.1	Summary	47
8.2	Conclusion	48

FIGURES

Figure 1.1 - TA Study Network Junctions

Figure 2.1 - Site Location

Figure 2.2 - Site in Local Context with Pedestrian Distance Isochrones (within text)

Figure 2.3 - Site in Strategic Context with Cycle Distance Isochrones (within text)

APPENDICES

Appendix A – Concept Masterplans

Appendix B – Active Travel Assessment

Appendix C – Preliminary Access Designs

Appendix D – TRICS

Appendix E – Network Flow Diagrams

Appendix F – LINSIG

Appendix G – ARCADY/PICADY

1 INTRODUCTION

1.1 Background

1.1.1 This Transport Assessment (TA) has been produced by Corun Associates Ltd (Corun) on behalf of Thomas, Rees, Grant & Knight, to examine the highway and transportation issues associated with land adjacent to the A48, Pyle, Bridgend.

1.1.2 The site is being submitted as a candidate site for Bridgend County Borough Council's replacement Local Development Plan (LDP) (2018-2033). The site is separated into two parcels of land one to the east of the A48 and one to the west of the A48. The assessment considers the following:

Eastern Parcel Total: 22.2 ha

- Phase 1 - 3.2ha;
- Phase 2 - 4.8ha;
- Phase 3 - 5.8ha; and
- Phase 4 - 8.4ha.

1.1.3 Anticipated residential unit numbers for the eastern parcel are between approximately 780-890.

Western Parcel Total: 35.8 ha

- Phase 1 - 4.9ha;
- Phase 2 - 5.9ha;
- Phase 3 - 13.1ha; and
- Phase 4 - 11.8ha.

1.1.4 Anticipated unit numbers for the western parcel are between approximately 1250-1430.

1.1.5 In addition to the residential elements, the site is able to accommodate a 200-space park and ride facility (eastern land parcel) a 1.5 ha mixed-use neighbourhood centre and a 2.3 ha primary school (western land parcel), all of which will be considered in this report.

1.1.6 The aim of the report is to demonstrate that there are no reasons, in highway and transportation terms, why the site should not be allocated in the replacement LDP.

1.1.7 A concept masterplan is contained herein as **Appendix A**.

1.2 Scope

1.2.1 This report will therefore discuss the following key transportation issues arising from the proposals:

- (i) the existing site location and transport infrastructure;
- (ii) analysis of personal injury traffic accident data;

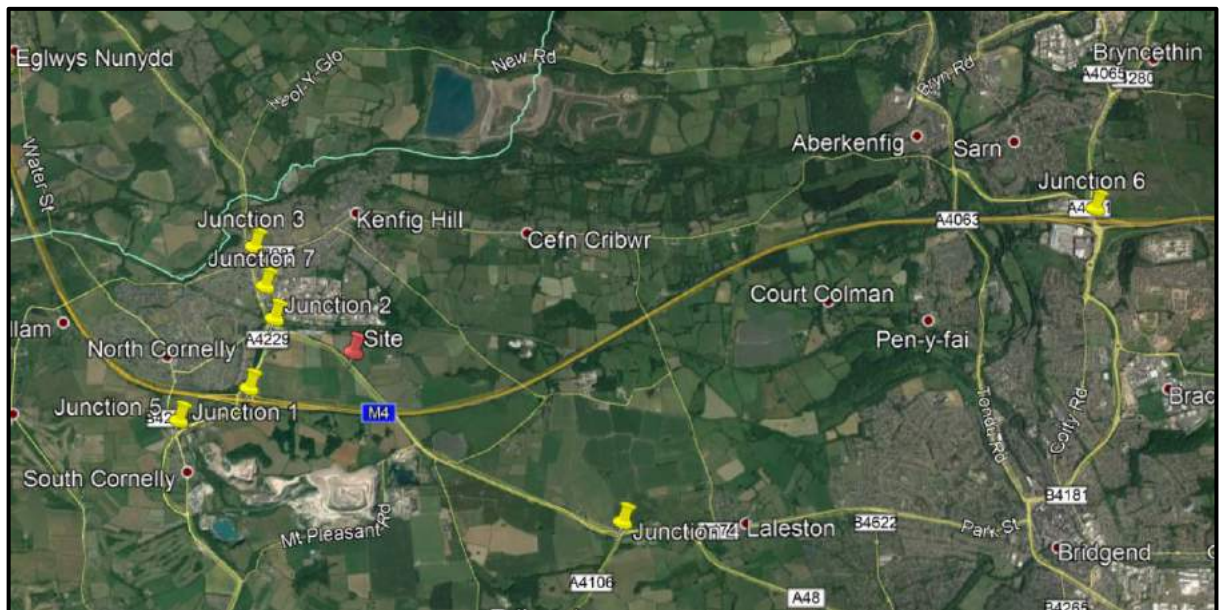
- (iii) the site's compliance with applicable transport policy;
- (iv) the development proposal;
- (v) development-generated vehicular traffic; and
- (vi) development impact on the surrounding highway network.

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

- Junction 1 - M4 Junction 37.
- Junction 2 - The A48/A4229 roundabout,
- Junction 3 - Pyle Road/Marlas Road signal junction.
- Junction 4 - A48 / A4106 Roundabout
- Junction 5 - A4229 / Porthcawl Road Roundabout
- Junction 6 – M4 Junction 37
- Junction 7 - A48 / Heol Mostyn priority junction.

1.2.3 The scope of this assessment has been agreed with Bridgend County Borough Council (BCBC).

Figure 1.1: TA study network junctions



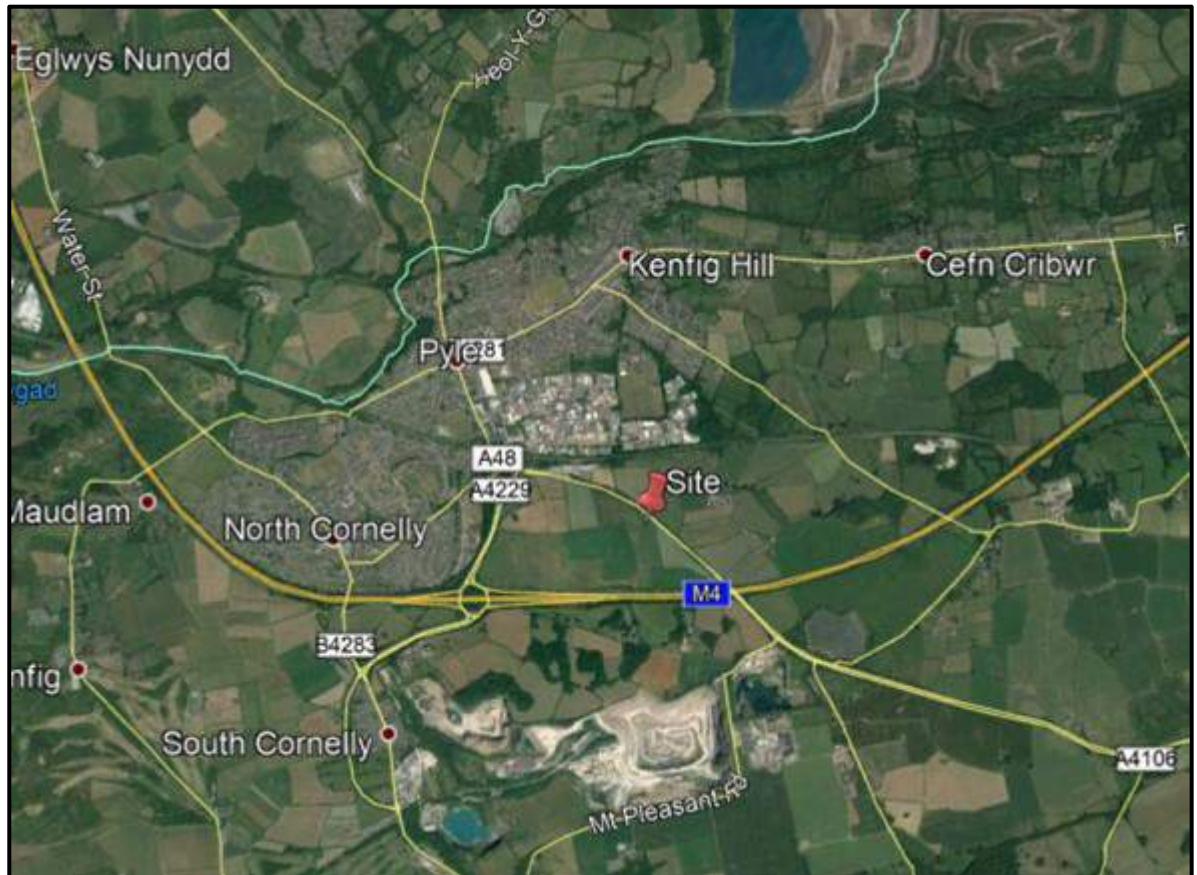
2 EXISTING CONDITIONS

2.1 Site Summary

2.1.1 The proposed residential site currently comprises of undeveloped land and is bound by the A4229 to the west, the railway line to the north, further undeveloped land to the east and the M4 to the south. It is situated approximately 1.1km south east of Pyle town centre.

2.1.2 **Figure 2.1** below illustrates the site location.

Figure 2.1: Site in Local Context



Source: © Google Maps 2020

2.2 Local Highway Network

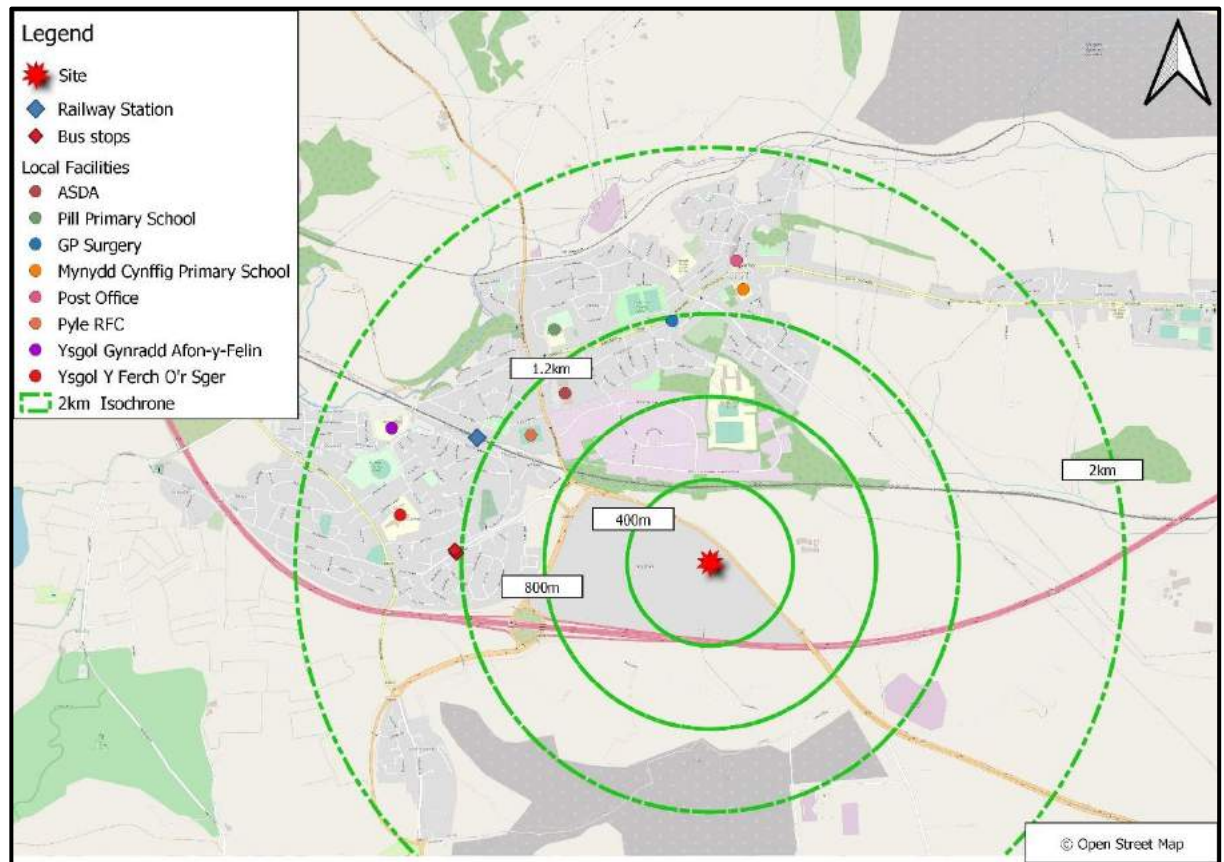
2.2.1 The site is bound by the A4229 to the west and the A48 runs through the centre of the site and splits the development into a western and eastern parcel.

2.2.2 The A4229 is a dual carriageway subject to the national speed limit and provides access to the A48 in the north, which in turn provides access to central Pyle and Junction 37 of the M4 motorway to the south.

2.2.3 In terms of the wider highway network, the M4 motorway provides access to Swansea, Port Talbot and Llanelli to the west of the proposed development and to Cardiff, Newport and Bristol to the east.

- 2.2.4 The site is also shown in a local context, along with local facilities and amenities in **Figure 2.2**.

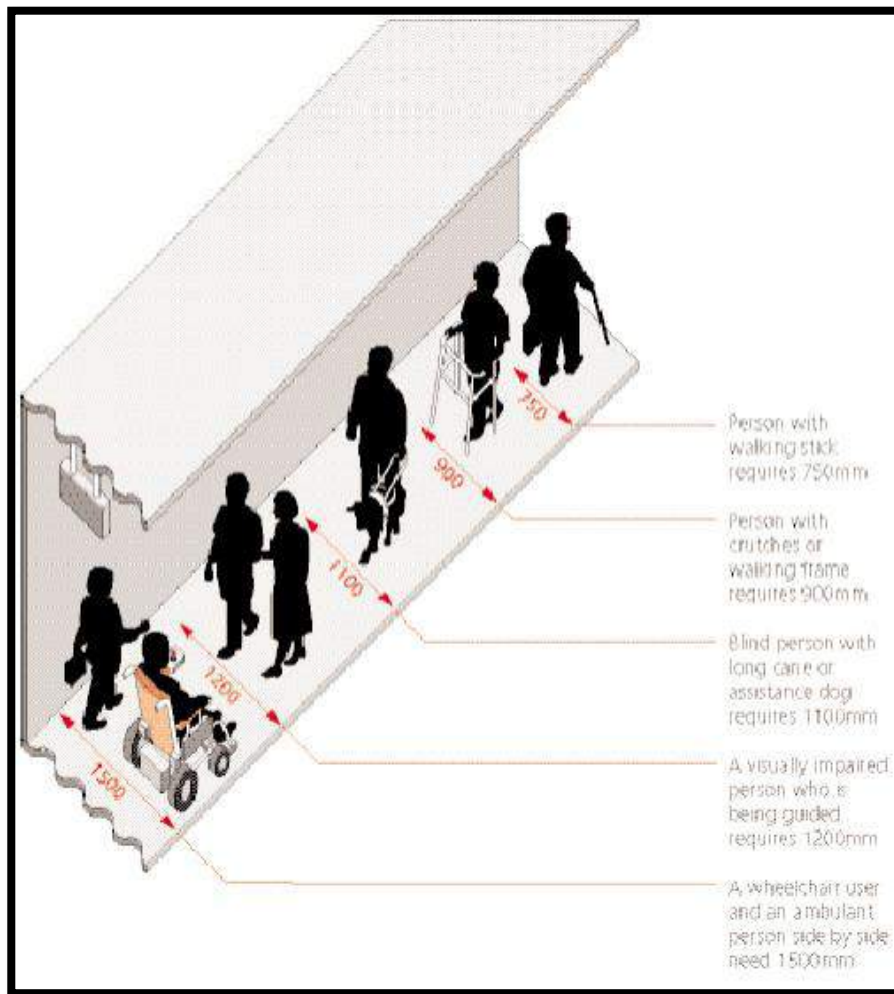
Figure 2.2: Site in Local Context with straight line Isochrones



2.3 Pedestrian Facilities

- 2.3.1 Currently there are no pedestrian footways on the A4229, which forms the western boundary of the western parcel of land. However, there is an existing footway along the southern side of the A48 which runs for the full length of the potential development site.
- 2.3.2 An active travel assessment has also been conducted, which provides a more detailed assessment of the surrounding pedestrian facilities, the results of which can be found in **Appendix B**.
- 2.3.3 As shown in the extract from DfT's 'Inclusive Mobility' document (2002), which is also acknowledged in the design guidance for the Active Travel (Wales) Act 2013, widths of 2.0m are more than suitable for a variety of users, including a wheelchair user and an ambulant person side by side and represents the target for existing and future provision in the area.

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



2.3.4 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	1000	800
Preferred Maximum	800	2000	1200

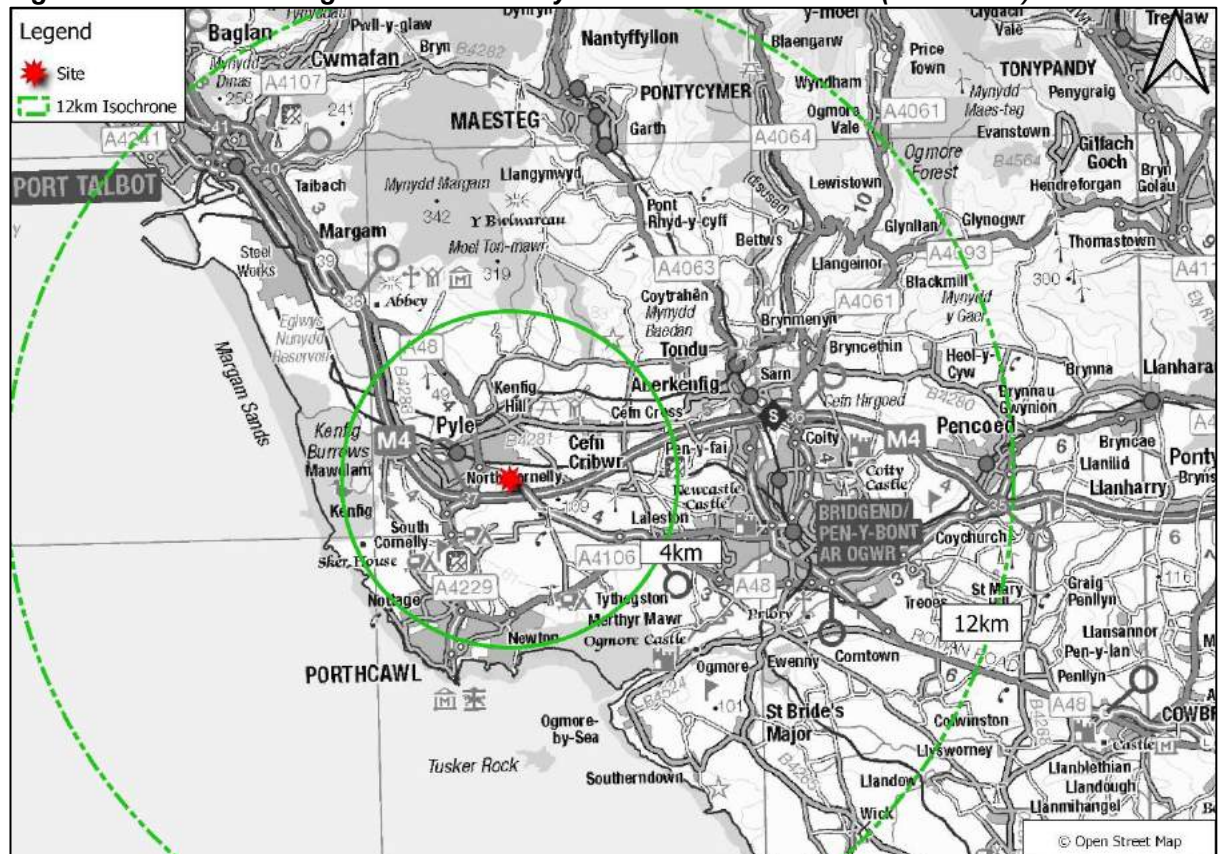
2.3.5 Pedestrian isochrones are shown in **Figure 2.1** with distance isochrones for 400m, 800m, 1200m and 2000m, which equates to 5, 10, 15 and 25-minute walk times based on an average walking speed of 4.8 km/h.

2.3.6 **Figure 2.2** demonstrates that the site is within walking distance of primary and secondary schools, food stores, a GP surgery as well as numerous employment opportunities.

2.4 Cycle Facilities

2.4.1 **Figure 2.3** displays the site in a wider strategic context.

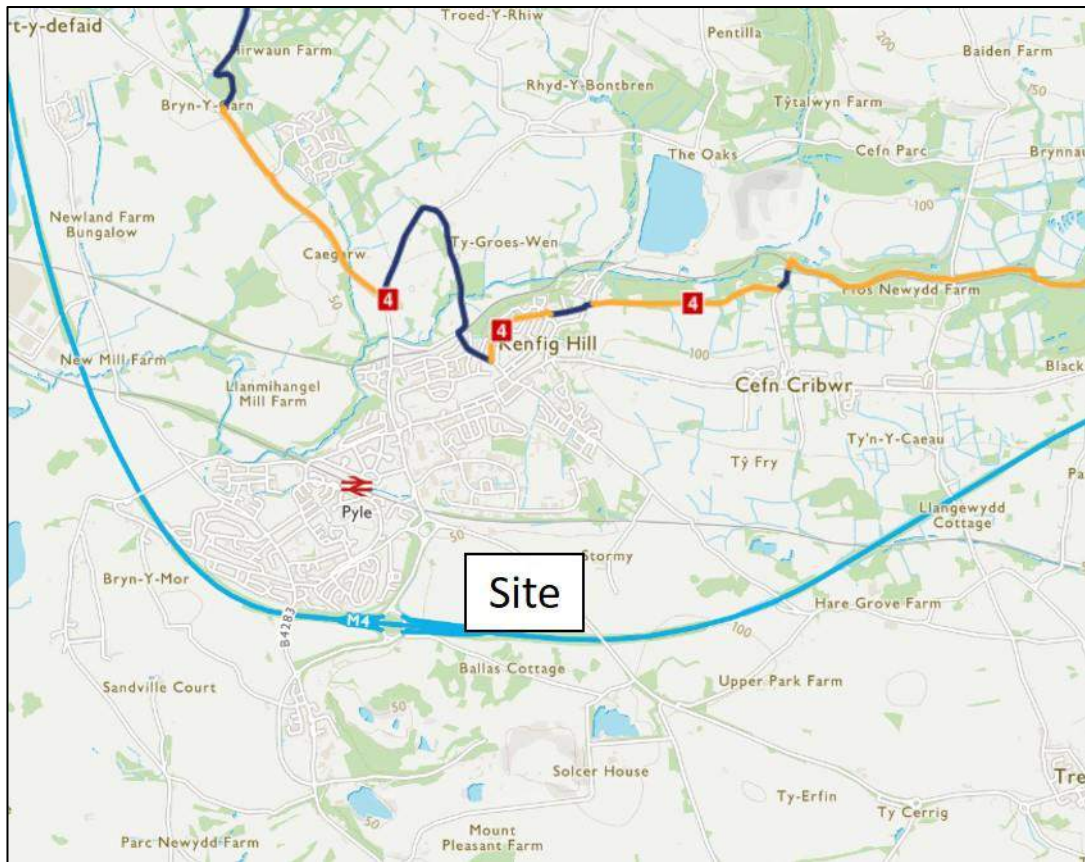
Figure 2.3 - Site in Strategic Context with Cycle Distance Isochrones (within text)



2.4.2 Cycling in the immediate vicinity of the site is accommodated on-carriageway, with limited traffic-free route options available. However, there are a number of routes identified in the Council’s integrated network map which would be of benefit to users of the site.

2.4.3 National Cycle Network (NCN) Routes 4 can be found approximately 1.6km to the north of the development site. NCN 4 is a long-distance cycle route, that runs between London and Fishguard.

Figure 2.4: National Cycle Network



2.4.4 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 mile) cycle distance normally applies. A 12km cycle distance covers the centre of Bridgend.

2.5 Public Transport Facilities

Bus

- 2.5.1 The nearest bus stop can be found approximately 1km to the west of the site in North Cornelly. A bus cage, shelter, and timetable information are provided at this stop. Service 63 operates at a 20-minute frequency between 6:15 and 18:35 and routes between Porthcawl and Bridgend, providing access to Pyle, Kenfig Hill, Aberkenfig and North Cornelly.

Rail

- 2.5.2 The nearest railway station is found in Pyle, approximately 1.5km north west of the centre of the site, which is within acceptable walking distance and also represents an approximate cycle time of just five minutes, based on an average cycle time of 16.4km/hr.
- 2.5.3 Pyle railway station comprises two platforms. Routes to Bridgend, Cardiff Central and Newport to the east, and Swansea, Carmarthen and Llanelli to the west.
- 2.5.4 Travel by train, to key destinations i.e. Cardiff and Swansea, offers a viable alternative to private car travel.

2.6 Local Highway Safety

- 2.6.1 A review has been carried out on local highway network safety in order to establish whether there are any current accident clusters or blackspots in the vicinity of the site that could be exacerbated by the development proposal. In this instance, a cluster is identified as a closely defined area of five or more accidents.
- 2.6.2 The website www.crashmap.co.uk has been interrogated to provide a review of accidents in the surrounding area.
- 2.6.3 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 2019.
- 2.6.4 An assessment of the study area has found no evident accident clusters present on the immediate highway network. No accidents were recorded on the A4229 in the vicinity of the proposed primary access. Along the A48, four accidents occurred in the same five year period, including three slight and one serious. At the A4229/A48 roundabout, six slight accidents were recorded. At Junction 37 to the south, on the circulatory path only (not M4) 10 accidents were recorded included nine slight and one serious.
- 2.6.5 Figure 2.5 below provides an extract from the Crashmap website and illustrates the location of each accident on the network under test.

Figure 2.5: Crashmap Extract

- 2.6.6 Given the proposed improvements and new junctions to be provided as part of the development on the A4229 and A48, it is unlikely that the proposed development will lead to an increase in accidents risk, or severity, as the proposed junction forms are likely to be signalised, with pedestrian and cycle infrastructure included.
- 2.6.7 Traffic speeds on the A48 and A4229 will therefore be curtailed by the proposed signal junctions, which will help to mitigate any development impact on accident risk.

3 LOCAL AND NATIONAL PLANNING GUIDANCE

3.1 Overview

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

- Planning Policy Wales (Edition 10, December 2018);
- Technical Advice Note (Wales) (2007) 18 – Transport;
- Bridgend CBC LDP (Adopted September 2013);
- Bridgend CBC Local Transport Plan 2015 – 2030; and
- Design Guidance: Active Travel (Wales) Act 2013.

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 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 is reduced, especially by private car, by locating development where there is good access to high quality public transport, walking and cycling provision.

3.3 Planning Policy Wales (December 2018)

3.3.1 Planning Policy Wales (PPW) identifies five ways of working to enhance proposals and ideas and to maximise their contribution to the well-being goals. It is stated that:

‘Good design is about avoiding the creation of car-based developments. It contributes to minimising the need to travel and reliance on the car, whilst maximising opportunities for people to make sustainable and healthy travel choices for their daily journeys. Achieving these objectives requires the selection of sites which can be made easily accessible by sustainable modes as well as incorporating appropriate, safe and sustainable links (including active travel networks) within and between developments using legal agreements where appropriate.

Existing infrastructure must be utilised and maximised, wherever possible. Where new infrastructure is necessary to mitigate transport impacts of a development and to maximise accessibility by sustainable

non-car modes, it should be integrated within the development layout and beyond the boundary, as appropriate. This could include works to connect cycle routes within a site to a wider strategic cycling network or provision of bus priority measures on highway corridors serving a new development.'

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

3.3.4 PPW identifies the following active and social trend issues which it aims to address:

- *'assisting in the delivery of cohesive communities which will meet the needs and are accessible to all members of society, including older people;*
- *tackling inequalities between communities, delivering services and jobs closer to where people live and acknowledging the importance of inclusive communities and the wider environment for good health and well-being;*
- *improve sustainable access to services, cultural opportunities and recreation facilities to support people to adopt healthy, culturally fulfilled lifestyles which will assist in improving health and wellbeing;*
- *reducing reliance on travel by private car, and the adverse impacts of motorised transport on the environment and people's health, by prioritising and increasing active travel and public transport;*
- *ensure our transportation infrastructure is adaptable to future advances in innovation such as the mainstreaming of electric vehicles or possible advent of autonomous or driverless vehicles in the next ten to 15 years'.*

3.3.5 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’.

3.3.6 PPW identifies that:

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

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

3.3.7 Under the sustainable transport category, PPW identifies that:

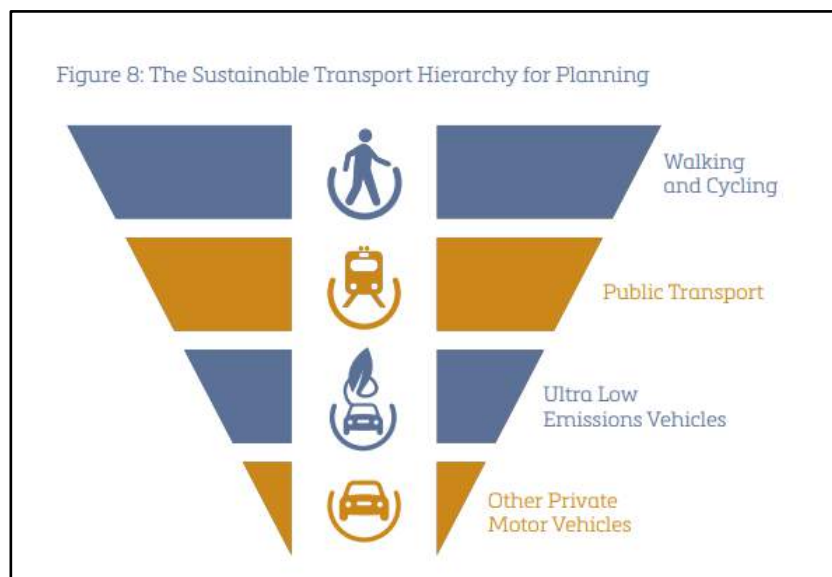
‘The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health 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.'

3.3.8 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.'

3.3.9 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.'

- 3.3.10 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;
- supporting provision of a reliable and efficient freight network;
- promoting the location of warehousing and manufacturing developments to facilitate the use of rail and sea transport for freight;
- 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 Bridgend CBC LDP (Adopted September 2013)

3.5.1 The adopted LDP will guide and manage development in the area up to 2020.

3.5.2 Key strategic objectives of the LDP, which are applicable to the application site from a transport planning perspective, are:

Strategic Policy SP2: Design and Sustainable Place Making

All development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located, whilst having full regard to the natural, historic and built environment by:

- 1) Complying with all relevant national policy and guidance where appropriate;
- 2) Having a design of the highest quality possible, whilst respecting and enhancing local character and distinctiveness and landscape character;
- 3) Being of an appropriate scale, size and prominence;
- 4) Using land efficiently by:
 - (i) being of a density which maximises the development potential of the land whilst respecting that of the surrounding development; and
 - (ii) having a preference for development on previously developed land over greenfield land;
- 5) Providing for an appropriate mix of land uses;
- 6) Having good walking, cycling, public transport and road connections within and outside the site to ensure efficient access;
- 7) Minimising opportunities for crime to be generated or increased;
- 8) Avoiding or minimising noise, air, soil and water pollution;

- 9) Incorporating methods to ensure the site is free from contamination (including invasive species);
- 10) Safeguarding and enhancing biodiversity and green infrastructure;
- 11) Ensuring equality of access by all;
- 12) Ensuring that the viability and amenity of neighbouring uses and their users/occupiers will not be adversely affected;
- 13) Incorporating appropriate arrangements for the disposal of foul sewage, waste and water;
- 14) Make a positive contribution towards tackling the causes of, and adapting to the impacts of Climate Change; and
- 15) Appropriately contributing towards local, physical, social and community infrastructure which is affected by the development.

3.6 Active Travel (Wales) Act 2013

3.6.1 The Active Travel (Wales) Act 2013 aims to:

make active travel the most attractive option for most shorter journeys. Its purpose is to enable more people to undertake active travel, meaning more people can enjoy the benefits of active travel. We want to encourage people to leave their cars behind and use active travel where it is suitable for them to do so.

The Act requires local authorities in Wales to produce active travel maps and deliver year on year improvements in active travel routes and facilities. It requires highways authorities in Wales to make enhancements to routes and facilities for pedestrians and cyclists in all new road schemes and to have regard to the needs of walkers and cyclists in a range of other highway authority functions. It also requires the Welsh Ministers and local authorities to promote active travel journeys in exercising their functions under this Act.

3.7 Conclusion

3.7.1 The site is well located to encourage sustainable modes of travel due the proposed mixed-use nature of the scheme, its integration with surrounding urban areas and close links to the town centre.

3.7.2 The site is also highly accessible by sustainable modes of transport and it is therefore concluded that the site complies with transport planning policy at local and national level.

4 DEVELOPMENT PROPOSAL

4.1 Proposed Development

4.1.1 The site is separated into two parcels of land one to the east of the A48 and one to the west of the A48. The assessment considers the following:

Eastern Parcel Total: 22.2 ha

- Phase 1 - 3.2ha
- Phase 2 - 4.8ha
- Phase 3 - 5.8ha
- Phase 4 - 8.4ha

4.1.2 Anticipated residential unit numbers for the eastern parcel are between approximately 780-890.

Western Parcel Total: 35.8 ha

- Phase 1 - 4.9ha
- Phase 2 - 5.9ha
- Phase 3 - 13.1ha
- Phase 4 - 11.8ha

4.1.3 Anticipated unit numbers for the western parcel are between approximately 1250-1430.

4.1.4 In addition to the residential element, the site is able to accommodate a 200-space park and ride facility (eastern land parcel) a 1.5 ha mixed-use neighbourhood centre and a 2.3 ha primary school (western land parcel), all of which will be considered in this report.

4.1.5 For the purpose of this assessment, the upper total of 2320 residential units has been considered.

4.1.6 A concept masterplan is contained herein as **Appendix A**.

4.2 Access

Vehicle Access

4.2.1 It is proposed that the parcels of land will be accessed via three separate junctions, one on the A4229 and two on the A48.

4.2.2 The proposed junction on the A4229 will provide access to the western parcel of land. The junction will form a 3-arm MOVA controlled signal junction with a 7.3m access road leading into the development site. On the northbound approach, an additional 3m wide dedicated right turn lane is proposed to maintain ahead flows and provide controlled access into the development for right turning vehicles. This proposed access is displayed in **Drawing 18-00592 PA01** contained in **Appendix C**.

- 4.2.3 An additional access to the western land parcel will be provided via a new 4-arm MOVA controlled staggered signal junction on the A48. The southern side of the junction will provide access to the western parcel via a 7.3m wide access road. Access to the eastern parcel on the northern side of the junction will also be provided by a 7.3m wide access road. This access is displayed in **Drawing 18-00592 PA02** contained in **Appendix C**.
- 4.2.4 The final access on the A48 will provide access to the eastern parcel of land. The junction will form a 3-arm MOVA controlled signal junction with a 7.3m wide access road. This access is displayed in **Drawing 18-00592 PA03** contained in **Appendix C**.
- 4.2.5 All proposed access points will be designed to ensure that pedestrian and cycle accessibility is provided via new shared-use cycle/footways and controlled crossing points linking all parcels of land.

Pedestrian and Cycle Access

- 4.2.6 Pedestrian and cycle access will be provided via new 3m wide shared footway/cycleways which will be provided at all access points and along the full site boundary. Toucan crossings will also be provided to allow pedestrians and cycles to safely cross the A48 and A4229 and access the wider footway network.
- 4.2.7 The proposed development provides significant opportunities to enhance and improve pedestrian and cycle accessibility and linkages between the proposed development sites, Pyle and North Cornelly via improved pedestrian and cycle infrastructure.
- 4.2.8 New pedestrian/cycle bridges are also proposed at the existing railway bridge leading into Pyle and a second bridge linking the northern parcel of land with the Cynffig Comprehensive School. Further detail of the proposed foot/cycle bridge improvements is provided within the suite of documents supporting this application.
- 4.2.9 Furthermore, the Active Travel Assessment (**Appendix B**) identifies a number of existing deficiencies in the local pedestrian and cycle environment that could be improved as part of the development of the site.

4.3 Parking

- 4.3.1 Car and bicycle parking will be provided in line with BCBC's parking standards.

4.4 Servicing

- 4.4.1 The site layout will be designed to ensure that all vehicles needing to gain access will be able to do so, and for those vehicles to navigate the development site parcels in a forward gear.

4.5 Active Travel

- 4.5.1 The Active Travel Assessment (**Appendix B**) has identified that the site is favourably located to help deliver several active travel route improvements. These can be delivered either via a S106 or S278 agreement to be secured at the planning application stage.

4.6 Public Transport

- 4.6.1 At the planning application stage, new bus stops will be proposed to serve the site. These stops are expected to provide shelters, seating and a raised platform as a minimum. Discussions will also take place with local bus operators to establish whether new or diverted services can be secured at the site.

5 SITE TRAFFIC

5.1 Introduction

5.1.1 Estimated traffic flows for the residential and school elements of the development have been forecast using the TRICS database. 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.

5.1.2 From the TRICS database, a trip rate is derived which provides the number of expected trips per unit of measurement and by mode of transport.

5.2 Proposed Residential Traffic

5.2.1 To generate the residential traffic forecasts within the TRICS database, the category '03 – Residential A – Houses privately owned' was utilised.

5.2.2 In order to extract a representative sample of survey sites from the TRICS database, the following parameters were applied:

- All sites in Greater London and Ireland excluded;
- Includes only 'edge of town' and 'Suburban Area' sites.

5.2.3 **Table 5.1** shows the vehicular trip forecast for the proposed development during the traditional highways network peaks hours and also for a 12-hour period (0700-1900).

Table 5.1: Proposed Residential Vehicular Traffic - Weekday (based on 2320 dwellings)

Time Period	Trip Rates (per unit)			Trips		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM peak (0800-0900)	0.137	0.377	0.514	318	875	1192
PM Peak (1700-1800)	0.35	0.162	0.512	812	376	1188
12hr total (0700-1900)	2.102	2.114	4.216	4877	4904	9781

5.2.4 **Table 5.1** shows that the residential element is predicted to generate 1192 two-way vehicular trips during the typical weekday AM peak hour and 1188 two-way trips during the PM peak hour. Between the hours of 7:00-19:00 the development will generate 9781 two-way vehicular trips.

5.3 Primary School Traffic

5.3.1 The primary school is expected to be a three-form entry school on a parcel of land covering 2.3 hectares.

- 5.3.2 To generate trip rates for this land use, the TRICS category '04 – Education A- Primary' was applied.
- 5.3.3 The TRICS database requires the gross floor area to calculate school trip rates and so the database was further interrogated to establish the largest school in the dataset, which was 3,900m² GFA.
- 5.3.4 Based on the above and in the absence of further information, it is robustly assumed for the purposes of this assessment that the school associated with this submission will be approximately 4,000m² GFA.
- 5.3.5 The resulting trip rates are displayed in **Table 5.2:**

Table 5.2: Proposed Primary School Vehicular Traffic - Weekday (per 100sqm)

Time Period	Trip Rates			Trips		
	Arr.	Dep.	Total	Arr.	Dep.	Total
AM peak (0800-0900)	3.408	1.757	5.165	136	70	207
PM Peak (1700-1800)	0.343	0.005	0.348	14	25	39
12hr total (0700-1900)	8.699	8.486	17.185	348	339	687

- 5.3.6 **Table 5.3** shows that the proposed development is predicted to generate 207 two-way vehicular trips during the traditional weekday AM peak hour and 39 two-way trips during the traditional PM peak hour. Between the hours of 7:00-19:00 the development will generate 687 two-way vehicular trips.
- 5.3.7 It should be noted that the majority of trips generated by the school will be internal to the wider site or comprise of pass-by or diverted traffic (e.g. parents dropping children to school as part of the commute to work) and thus will not impact the surrounding highway network. However, in the interest of providing a robust assessment, it will be assumed that 20% of the trips generated by the development will be external.

5.4 Neighbourhood Centre

- 5.4.1 The development proposal includes a neighbourhood centre on the western parcel land. This will include retail, small business use and community facilities, comprising of approximately 1.5 hectares of land.
- 5.4.2 The vast majority of vehicle trips generated by the neighbourhood centre are likely to consist of internal trips as well as pass-by, linked and diverted trips and thus are not anticipated to have a tangible impact on the surrounding highway network so have not been considered further in the assessment.

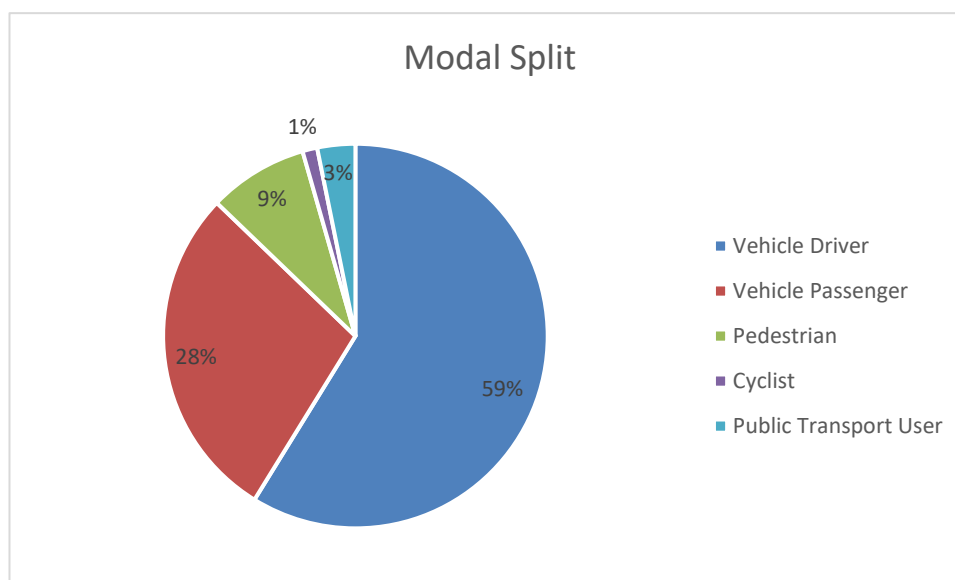
5.5 Park & Ride

- 5.5.1 The eastern parcel of land is also able to accommodate a park and ride facility which will be able to accommodate up to 200 vehicles. Discussions will be needed with Bridgend County Borough Council to determine an appropriate forecast usage which can be used to assess the impact on the local highway network in greater detail as part of the planning process.
- 5.5.2 However, for the purposes of this report, it is assumed that 40% of private motor vehicles will arrive in the AM peak hour (no departures), 25% in the hour before and after the AM peak hour and 10% after these three peak hour periods. It is further assumed for assessment purposes that there will be a quarter-hourly bus service (thus 4 inbound and 4 outbound buses per hour).
- 5.5.3 As the traffic survey data indicated that the PM peak hour at Junction 37 of the M4 is 1545-1645, it is assumed that approximately 25% of departures will occur during this period, 25% in the hour before and 40% in the hour after. The higher weighting for the hour after the assessment period reflects the fact that the majority of employment uses in Cardiff close at 5pm, so the associated workers would be expected to arrive back to the park and ride site after the local network peak hour. It is further assumed that there will be no private motor vehicle arrivals in the PM peak hour and that there will be a quarter-hourly bus service (thus 4 inbound and 4 outbound buses).

5.6 Modal Split

- 5.6.1 **Chart 5.1** shows the typical modal split for the residential element of the proposal, which represents the most significant trip generator of the site.

Chart 5.1: Residential Daily Modal Split (0700-1900)



- 5.6.2 As shown, the total person trips for a development of this nature would typically comprise of approximately 9% pedestrians, 3% public transport users and 1% cyclists. The remaining trips comprise of a vehicle driver (59%) and vehicle passenger (28%).

- 5.6.3 It should be noted that the site's favourable sustainable credentials and mixed-use nature will likely serve to influence a higher proportion of sustainable travel trips, particularly with a comprehensive Travel Plan in operation and a suitable package of sustainable transport improvements in place.
- 5.6.4 All TRICS output data is provided in **Appendix D**.

6 CAPACITY ASSESSMENT METHODOLOGY

6.1 Introduction

6.1.1 This section discusses the methodology used to create the 'forecast base' (i.e. without development) and 'total traffic' (i.e. with the addition of development traffic) scenarios.

6.1.2 The assessment will focus on an 'opening year' of 2021 and a 'future year' scenario of 2033 in order to align with the Council's replacement LDP lifespan.

6.2 Forecast Base Scenario (Traffic Growth Assumption)

6.2.1 To provide a consistent assessment, a forecast base scenario was developed which represents the basis from which all future scenarios are compared (i.e. a 'without development' scenario). In this instance, the forecast base scenario is calculated by factoring all traffic survey data to 2021 and 2033.

6.2.2 The forecast base flows have been factored using the TEMPRO V7.2 computer program, to obtain local traffic growth factors from the NTEM 7.2 datasets with RTF 2018 forecasts (as per current DfT advice). The local area has been selected as 'Bridgend'.

6.2.3 TEMPRO is the nationally accepted industry standard computer program for the production of traffic growth rates using a combination of national long-term forecasts and local development data.

6.2.4 To avoid double-counting, it is assumed that all committed developments are included within the TEMPRO forecasts, which are based partly on the quantum of local housing and job creation over the coming years. No reduction has been applied to the TEMPRO growth rates to account for the proposed development site which in theory results in some double-counting, but ultimately represents a robust approach.

6.2.5 A summary of the calculated growth factors is provided in **Table 6.1**.

Table 6.1: TEMPRO Growth Factors

Period	Years	Growth Factor	
		AM Peak Hour	PM Peak Hour
Weekday	2020-2021	1.009948003	1.009698029
Weekday	2020-2033	1.113038832	1.113450801

6.2.6 It should be noted that the growth factors represent a reference case – they simply indicate traffic projections if all things remain constant. There are many factors that can influence these projections, such as the saturation of a local network, significant changes to petrol/car/road use prices, the economic situation, new government legislation and/or changes to social travel habits. No allowance is made for this in this assessment.

6.2.7 It is important to note that this report has been produced during the Covid-19 pandemic which has imposed restrictions on the collation of traffic survey data. However, surveys were undertaken when schools returned to full capacity w/c September 14th 2020.

- 6.2.8 Data released by the DfT, as well as traffic survey data obtained by Corun elsewhere in Bridgend indicate that traffic during the survey period was near enough to pre-Covid levels to enable a robust assessment.
- 6.2.9 On this basis, no Covid-19 adjustment factor was deemed necessary and the data obtained from the manual junction turning movement counts is considered representative and robust for assessment purposes.
- 6.2.10 All traffic survey data can be provided in Excel format on request.

6.3 Total Traffic Scenario

- 6.3.1 The 'Total Traffic' scenario represents the sum of the forecast base scenario and the additional proposed development traffic. It presents the highway network with the development in place.
- 6.3.2 For assessment purposes, it is assumed that in both the 2021 and 2033 scenarios, the full scale of development will be in place. Whilst in reality a phasing strategy will be in place, this approach ensures that the full development impact can be recognised.
- 6.3.3 It should be noted that to assist with a robust assessment, no allowance has been made within the development trip forecasts for trip rate reducing factors, such as modal shift, peak spreading, demand suppression, or delay reducing behaviour. Furthermore, the peak residential traffic (as derived by TRICS) has been applied to the peak junction traffic regardless of whether they coincide.

6.4 Development Trip Distribution and Assignment

- 6.4.1 The residential and school element of the proposal has been distributed using gravity model principles.
- 6.4.2 Using the identified study network that formed the basis of the traffic surveys, a number of 'zones' were identified (as depicted on the network flow diagrams).
- 6.4.3 Using the survey data, the observed proportion of vehicular traffic entering and exiting the study network at each zone was established. This data was used as a localised gravity model to produce an origin/demand matrix which was then applied to the development-generated traffic (as shown in **Tables 6.4 and 6.5**).

Table 6.4: AM Distribution Matrix

Zone	In	Out	In%	Out%
A	236	222	0.04	0.04
B	361	213	0.06	0.04
C	498	443	0.09	0.07
D	306	547	0.05	0.09
E	545	666	0.10	0.11
F	703	824	0.12	0.14
G	148	91	0.03	0.02
H	773	779	0.14	0.13
I	494	577	0.09	0.10
J	287	162	0.05	0.03
K	820	1040	0.15	0.18
L	455	349	0.08	0.06

Table 6.5: PM Distribution Matrix

Zone	In	%	Out	%
A	220	263	0.03	0.04
B	308	343	0.05	0.05
C	554	471	0.08	0.07
D	438	428	0.07	0.07
E	736	600	0.11	0.09
F	891	851	0.14	0.13
G	123	77	0.02	0.01
H	899	848	0.14	0.13
I	544	578	0.08	0.09
J	251	318	0.04	0.05
K	1117	1077	0.17	0.17
L	483	519	0.07	0.08

- 6.4.4 All development traffic was subsequently assigned to the most logical route with due consideration of distance and journey times.
- 6.4.5 For the park and ride element, it has been assumed for assessment purposes that 60% of private motor vehicles will be via the M4 West (at Junction 37), 10% from Pyle (North), 10% via Porthcawl (South), 10% via the M4 East (as Junction 37) and 10% via the A48 to/from Bridgend.
- 6.4.6 In addition to the above, appropriate reductions have been applied to movements where vehicles are assumed to have otherwise driven to/from Cardiff.
- 6.4.7 It has further been assumed that there will be a quarter-hourly bus service, equating to 4 inbound and 4 outbound busses per peak hour. These have been assigned to the primary site access and Junction 37 of the M4.
- 6.4.8 All network flow diagrams are provided in **Appendix E**.

7 CAPACITY ANALYSIS

7.1 Junction Impact Assessment

- 7.1.1 It is commonly accepted that traffic impact on a junction of greater than 5% constitutes a significant impact, whereas less than 5% is accepted as being well within daily traffic fluctuations (typically +/- 10%) and can therefore be considered negligible.
- 7.1.2 Whilst it is acknowledged that this 5% threshold is no longer contained in current guidance, it remains a useful indicator in determining an appropriate scope of detailed capacity analysis by focussing on where development impact is greatest.
- 7.1.3 The following junctions have been considered in this exercise:
- Proposed A4229 Site Access
 - Junction 1- M4 Junction 37
 - Junction 2 - A48/A4229 roundabout,
 - Junction 3 - Pyle Road/Marlas Road signal junction.
 - Junction 4 - A48 / A4106 Roundabout
 - Junction 5 - A4229 / Porthcawl Road Roundabout
 - Junction 6 – M4 Junction 36
 - Junction 7 - A48 / Heol Mostyn priority junction.
- 7.1.4 Please note that it was only deemed necessary to assess the proposed A4229 site access junction, as this is considered to be the most critical in terms of a potential adverse impact on the wider highway network. The A48 access junctions can be designed according to the outcome of the capacity analysis results at the planning application stage.
- 7.1.5 The result of the initial impact assessment for the full development scale, as described in the previous chapters, is provided in **Table 7.1** and **Table 7.2**.

Table 7.1: AM Peak Impact Assessment

Junction	2021 Base	Dev Traffic	Impact 2021
1	4224	1504	35.6%
2	2205	342	15.5%
3	1410	199	14.1%
4	1886	295	15.6%
5	1955	354	18.1%
6	4465	63*	1.4%
7	1534	300	19.6%

* Assumes that a robust 50% of eastbound traffic passes through the junction on/off slips

Table 7.2: PM Peak Impact Assessment

Junction	2021 Base	Dev Traffic	Impact 2021
1	4421	1421	32.1%
2	2464	334	13.6%
3	1541	199	12.9%
4	2240	299	13.4%
5	2127	344	16.2%
6	4464	61*	1.4%
7	1652	279	16.9%

* Assumes that a robust 50% of eastbound traffic passes through the junction on/off slips

7.1.6 As shown in **Table 7.1** and **Table 7.2**, the development will have a significant impact on all junctions, except Junction 6. Detailed capacity analysis will therefore be conducted at the significantly affected junctions to provide a comprehensive assessment of the development impact on junction queueing and delay.

7.2 Junction Modelling Software

7.2.1 Analysis of non-signalised junctions has been undertaken using the ARCADY and PICADY computer modelling tools.

7.2.2 The output from the ARCADY/PICADY programs provides a number of measurements to provide information of 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.

7.2.3 Operational analysis of the signalised junction has been undertaken using the LINSIG computer-modelling tool.

- 7.2.4 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.

7.3 Capacity Analysis – Proposed Site Access

- 7.3.1 The proposed A4229 site access has been modelled as a signalised junction with parameters optimised within the Linsig model.
- 7.3.2 **Table 7.3** shows the result of the A4229 site access capacity assessment for the 2021 total traffic scenario.

Table 7.3: Site Access Capacity Analysis – Weekday Total Traffic 2021

Link		AM Peak		PM Peak	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	A4229 S/B Ahead Left	74.0	12.1	59.7	8.0
2	Site Access Left Right	73.2	17.6	68.9	9.9
3	A4229 N/B Ahead	43.0	0.4	42.3	0.4
4	A4229 N/B Ahead Right	60.6	6.4	70.5	10.1
Cycle Time: 120		PRC: 21.6 Delay (pcuHr): 16.45		PRC: 27.7 Delay (pcuHr): 11.63	

- 7.3.3 The results of **Table 7.3** demonstrate that the junction is forecast to operate within capacity during both the AM and PM peak period in the 2021 Total Traffic scenario.

7.3.4 **Table 7.4** shows the result of the site access capacity assessment for the 2033 total traffic hour.

Table 7.4: Site Access Capacity Analysis – Weekday 2033 Total Traffic

Link		AM Peak		PM Peak	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	A4229 S/B Ahead Left	77.3	14.5	64.2	8.8
2	Site Access Left Right	77.5	18.6	71.5	10.1
3	A4229 N/B Ahead	47.4	0.5	46.7	0.4
4	A4229 N/B Ahead Right	61.6	6.4	74.0	10.7
Cycle Time: 120		PRC: 16.2 Delay (pcuHr): 17.73		PRC: 21.7 Delay (pcuHr): 12.58	

7.3.5 The results of **Table 7.4** demonstrate that the junction is forecast to operate within capacity during the 2033 total traffic scenario.

A4229 Access Capacity Summary

7.3.6 It is concluded that the proposed primary A4229 site access will operate well within capacity during the AM and PM peaks in both 2021 and 2033 total traffic scenarios.

7.3.7 Full LINSIG outputs are provided in **Appendix F**.

7.4 Capacity Analysis - Junction 1 – M4 Junction 37

7.4.1 This junction has been modelled as a standard priority junction using Junctions 9 (ARCADY module).

7.4.2 **Table 7.5** provides the results of the Junction 1 assessment for the 2021 AM peak hour.

Table 7.5: Junction 1 Capacity Analysis – Weekday AM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – M4 East Slips	0.4	2.36	0.28	0.6	3.12	0.36
Arm 2 – A4229 South	0.6	2.16	0.37	0.8	2.52	0.43
Arm 3 - M4 West	0.4	2.92	0.31	0.6	3.45	0.38
Arm 4 - A4229 North	0.5	2.31	0.36	1.2	3.23	0.55

7.4.3 The results of **Table 7.5** show the junction to operate well within theoretical capacity in the 2021 AM peak hour.

7.4.4 **Table 7.6** provides the results of the Junction 1 assessment for the 2021 PM peak hour.

Table 7.6: Junction 1 Capacity Analysis – Weekday PM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – M4 East Slips	0.7	2.91	0.4	0.9	3.68	0.48
Arm 2 – A4229 South	0.5	2.06	0.34	0.9	2.72	0.47
Arm 3 - M4 West	0.5	2.85	0.32	0.7	3.95	0.43
Arm 4 - A4229 North	0.5	2.26	0.35	0.8	2.67	0.45

7.4.5 The results of **Table 7.6** show the junction to operate well within theoretical capacity in the 2021 AM peak hour.

7.4.6 **Table 7.7** provides the results of the Junction 1 assessment for the 2033 AM peak hour.

Table 7.7: Junction 1 Capacity Analysis – Weekday AM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – M4 East Slips	0.5	2.59	0.32	0.7	3.52	0.41
Arm 2 – A4229 South	0.7	2.4	0.42	0.9	2.86	0.48
Arm 3 - M4 West	0.5	3.27	0.35	0.8	3.96	0.43
Arm 4 - A4229 North	0.7	2.57	0.4	1.5	3.75	0.6

7.4.7 The results of **Table 7.7** show the junction to operate well within theoretical capacity in the 2033 AM peak hour.

7.4.8 **Table 7.8** provides the results of the Junction 1 assessment for the 2033 PM peak hour.

Table 7.8: Junction 1 Capacity Analysis – Weekday PM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – M4 East Slips	0.8	3.37	0.46	1.2	4.44	0.55
Arm 2 – A4229 South	0.6	2.28	0.39	1.1	3.1	0.52
Arm 3 - M4 West	0.6	3.21	0.37	1	4.65	0.49
Arm 4 - A4229 North	0.7	2.53	0.4	1	3.05	0.5

7.4.9 The results of **Table 7.8** show the junction to operate well within theoretical capacity in the 2033 PM peak hour.

Junction 1 Capacity Summary

7.4.10 The junction is shown to operate within capacity with the full quantum of development generated traffic.

7.4.11 Full ARCADY outputs are provided in **Appendix G**.

7.5 Capacity Analysis – Junction 2 – A48/A4229 roundabout

7.5.1 **Table 7.9** and **Table 7.10** show the results of the Junction 2 capacity assessment for the 2021 AM and PM peak hour respectively.

Table 7.9: Junction 2 Capacity Analysis – Weekday AM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 East	0.3	1.77	0.21	0.3	1.9	0.25
Arm 2 – A4229 South	0.5	2.04	0.32	0.6	2.35	0.39
Arm 3 - A48 West	0.2	2.12	0.16	0.2	2.44	0.19
Arm 4 – A4229 North	0.5	2.65	0.35	0.7	2.84	0.4

Table 7.10: Junction 2 Capacity Analysis – Weekday PM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 East	0.4	1.92	0.27	0.4	2.15	0.31
Arm 2 – A4229 South	0.5	2.28	0.35	0.6	2.45	0.39
Arm 3 - A48 West	0.2	2.14	0.14	0.2	2.3	0.17
Arm 4 – A4229 North	0.6	2.68	0.39	1	3.21	0.49

7.5.2 The results of **Table 7.9** and **Table 7.10** show that all arms of the junction are operating with significant levels of spare capacity in both the AM and PM peak hours during the 2021 assessment scenario.

7.5.3 **Table 7.11** and **Table 7.12** show the results of the Junction 2 capacity assessment for the 2033 AM and PM peak hour respectively.

Table 7.11: Junction 2 Capacity Analysis – Weekday AM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 East	0.3	1.88	0.24	0.4	2.04	0.28
Arm 2 – A4229 South	0.6	2.19	0.36	0.8	2.54	0.43
Arm 3 - A48 West	0.2	2.29	0.18	0.3	2.67	0.22
Arm 4 – A4229 North	0.7	2.93	0.4	0.8	3.17	0.44

Table 7.12: Junction 2 Capacity Analysis – Weekday PM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 East	0.4	2.08	0.31	0.5	2.36	0.35
Arm 2 – A4229 South	0.7	2.5	0.4	0.8	2.72	0.44
Arm 3 - A48 West	0.2	2.31	0.16	0.2	2.51	0.19
Arm 4 – A4229 North	0.8	2.99	0.45	1.2	3.67	0.54

- 7.5.4 The results of **Table 7.11** and **Table 7.12** show that all arms of the junction are operating with significant levels of spare capacity in both the AM and PM peak hours during the 2033 assessment scenario.

Junction 2 Capacity Summary

- 7.5.5 The junction is shown to operate within capacity with the full quantum of development generated traffic.
- 7.5.6 Full ARCADY outputs are provided in **Appendix G**.

7.6 Capacity Analysis – Junction 3 – A473/B4622 signals

7.6.1 This junction has been modelled as a signalised junction with parameters optimised within the Linsig model.

7.6.2 **Table 7.13** shows the result of the Junction 3 capacity assessment for the 2021 AM peak hour.

Table 7.13: Junction 3 Capacity Analysis – Weekday AM Peak 2021

Link		Forecast Base		Total Traffic	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	B4281 W/B Ahead Right	74.0	9.2	85.7	10.9
2	A48 N/B Left Ahead	76.6	8.7	86.7	14.1
3	Marlas Road E/B Ahead Right Left	74.8	9.2	83.5	10.8
4	A48 Pyle Road S/B Southbound Left Ahead Right	76.3	12.4	85.8	14.9
Cycle Time: 120		PRC: 17.6 Delay (pcuHr): 23.41		PRC: 3.8 Delay (pcuHr): 30.32	

7.6.3 The results of **Table 7.13** demonstrate that the junction is forecast to operate within capacity during the 2021 AM peak assessment scenarios.

7.6.4 **Table 7.14** shows the result of the Junction 3 capacity assessment for the 2021 PM peak hour.

Table 7.14: Junction 3 Capacity Analysis – Weekday PM Peak 2021

Link		Forecast Base		Total Traffic	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	B4281 W/B Ahead Right	78.1	11.1	88.7	13.3
2	A48 N/B Left Ahead	80.7	11.1	86.8	14.2
3	Marlas Road E/B Ahead Right Left	77.1	8.9	86.9	11.2
4	A48 Pyle Road S/B Southbound Left Ahead Right	79.4	11.2	85.8	13.6
Cycle Time: 120		PRC: 11.5 Delay (pcuHr): 25.33		PRC: 1.4 Delay (pcuHr): 33.01	

7.6.5 The results of **Table 7.14** demonstrate that the junction is forecast to operate within capacity during the 2021 PM peak assessment scenarios.

7.6.6 **Table 7.15** shows the result of the Junction 3 capacity assessment for the 2033 AM peak hour.

Table 7.15: Junction 3 Capacity Analysis – Weekday AM Peak 2033

Link		Forecast Base		Total Traffic	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	B4281 W/B Ahead Right	81.7	10.7	94.6	13.0
2	A48 N/B Left Ahead	84.1	11.0	93.2	17.9
3	Marlas Road E/B Ahead Right Left	82.7	10.9	91.8	13.7
4	A48 Pyle Road S/B Southbound Left Ahead Right	84.1	14.9	94.2	19.4
Cycle Time: 120		PRC: 7.0 Delay (pcuHr): 28.83		PRC: -5.1 Delay (pcuHr): 40.82	

7.6.7 The results of **Table 7.15** demonstrate that the junction will operate within capacity in the 2033 AM base but over capacity with the introduction of development traffic.

7.6.8 The increase in queuing on all arms is evident but is considered to be of minimal material impact. For example, the largest queue increase is on the A48 northbound approach whereby development traffic causes the queue to extend past Marlas Close. It is therefore likely that 'keep clear' marking can be provided at the junction to allow right turns into Marlas Close and prevent any impedance on southbound traffic flows.

7.6.9 **Table 7.16** shows the result of the Junction 3 capacity assessment for the 2033 PM peak hour.

Table 7.16: Junction 3 Capacity Analysis – Weekday PM Peak 2033

Link		Forecast Base		Total Traffic	
		Degree of Sat (%)	Mean Max Queue (PCU)	Degree of Sat (%)	Mean Max Queue (PCU)
1	B4281 W/B Ahead Right	86.0	13.3	93.4	16.5
2	A48 N/B Left Ahead	89.1	14.7	94.7	19.6
3	Marlas Road E/B Ahead Right Left	84.9	10.6	94.7	14.5
4	A48 Pyle Road S/B Southbound Left Ahead Right	87.4	13.8	96.9	19.6
Cycle Time: 120		PRC: 1.1 Delay (pcuHr): 32.56		PRC: -7.7 Delay (pcuHr): 47.76	

7.6.10 The results of **Table 7.16** demonstrate that the junction will operate within capacity in the 2033 PM base but over capacity with the introduction of development traffic.

7.6.11 The increase in queueing on all arms is evident but is considered to be of minimal material impact.

Junction 3 Capacity Summary

7.6.12 It is concluded that the quantum of development at the site will have a moderate impact on the operation of Junction 3 in the majority of the assessed scenarios.

7.6.13 Capacity issues are more prevalent in the 2033 scenario, but this is primarily as a result of background traffic growth and the worst-case assumptions that have been applied.

7.6.14 However, as the junction is marginally over capacity, it is likely that a suitable S106 contribution will be required at the planning application stage either to enable the upgrade of this junction to Microprocessor Optimised Vehicle Actuation (MOVA) control and/or to optimise the existing signal controller configuration. TRL/Department of Transport (DOT) trials have shown that MOVA reduces delays by an average of 13% compared to vehicle actuated systems which will therefore help to minimise queues and delay if it is not already in place.

7.6.15 Full LINSIG outputs are provided in **Appendix F**.

7.7 Capacity Analysis – Junction 4 – A48 / A4106 Roundabout

7.7.1 **Table 7.17** and **Table 7.18** show the results of the Junction 4 capacity assessment for the 2021 AM and PM peak hour respectively.

Table 7.17: Junction 4 Capacity Analysis – Weekday AM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 (East)	0.6	2.27	0.37	0.7	2.4	0.39
Arm 2 – A1016 South	0.6	4.25	0.37	0.7	4.56	0.4
Arm 3 – A48 (West)	0.5	2.5	0.31	0.7	2.91	0.42

Table 7.18: Junction 4 Capacity Analysis – Weekday PM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 (East)	1	2.8	0.49	1.2	3.21	0.55
Arm 2 – A48 (West)	0.7	4.75	0.41	1	5.81	0.49
Arm 3 – B4622 (North)	0.5	2.53	0.33	0.6	2.73	0.38

7.7.2 The results of **Table 7.17** and **Table 7.18** show that all arms of the junction are operating within capacity in both the AM and PM peak hours during the 2021 assessment scenario.

7.7.3 **Table 7.19** and **Table 7.20** show the results of the Junction 4 capacity assessment for the 2033 AM and PM peak hour respectively.

Table 7.19: Junction 4 Capacity Analysis – Weekday AM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 (East)	0.7	2.42	0.4	0.8	2.57	0.43
Arm 2 – A48 (West)	0.7	4.68	0.42	0.8	5.07	0.45
Arm 3 – B4622 (North)	0.5	2.68	0.35	0.8	3.17	0.46

Table 7.20: Junction 4 Capacity Analysis – Weekday PM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A48 (East)	1.2	3.11	0.54	1.5	3.62	0.6
Arm 2 – A48 (West)	0.9	5.39	0.47	1.2	6.79	0.55
Arm 3 – B4622 (North)	0.6	2.72	0.36	0.7	2.96	0.42

7.7.4 The results of **Table 7.19** and **Table 7.20** show that all arms of the junction are operating with significant levels of spare capacity in both the AM and PM peak hours during the 2033 assessment scenario.

Junction 4 Capacity Summary

7.7.5 The junction is shown to operate within capacity with the full quantum of development generated traffic.

7.7.6 Full ARCADY outputs are provided in **Appendix G**.

7.8 Capacity Analysis – Junction 5 – A4229 / Porthcawl Road Roundabout

7.8.1 **Table 7.23** and **Table 7.24** show the results of the Junction 5 capacity assessment for the 2021 AM and PM peak hour respectively.

Table 7.23: Junction 5 Capacity Analysis – Weekday AM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A4229 East	0.2	1.64	0.14	0.3	1.87	0.25
Arm 2 – Porthcawl Road South	1	4.8	0.51	1.3	5.78	0.57
Arm 3 – A4229 West	0.1	2.44	0.1	0.1	2.67	0.11
Arm 4 – Porthcawl Road North	1.4	5.83	0.58	1.7	6.73	0.63

Table 7.24: Junction 5 Capacity Analysis – Weekday PM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A4229 East	0.7	2.5	0.41	0.7	2.36	0.42
Arm 2 – Porthcawl Road South	0.2	4.74	0.15	0.2	5.3	0.18
Arm 3 – A4229 West	0.9	3.22	0.47	1.2	3.77	0.54
Arm 4 – Porthcawl Road North	0.3	5.51	0.25	0.6	6.41	0.37

7.8.2 The results of **Table 7.23** and **Table 7.24** show that all arms of the junction are operating with significant levels of spare capacity in both the AM and PM peak hours during the 2021 assessment scenario.

7.8.3 **Table 7.25** and **Table 7.26** show the results of the Junction 5 capacity assessment for the 2033 AM and PM peak hour respectively.

Table 7.25: Junction 5 Capacity Analysis – Weekday AM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A4229 East	0.2	1.73	0.16	0.4	2	0.27
Arm 2 – Porthcawl Road South	1.3	5.5	0.57	1.7	6.82	0.63
Arm 3 – A4229 West	0.1	2.6	0.12	0.2	2.86	0.13
Arm 4 – Porthcawl Road North	1.8	7.01	0.65	2.3	8.35	0.7

Table 7.26: Junction 5 Capacity Analysis – Weekday PM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Arm 1 – A4229 East	0.8	2.72	0.45	0.9	2.6	0.47
Arm 2 – Porthcawl Road South	0.2	5.49	0.19	0.3	6.22	0.22
Arm 3 – A4229 West	1.1	3.6	0.52	1.5	4.32	0.6
Arm 4 – Porthcawl Road North	0.4	6.13	0.29	0.7	7.27	0.42

7.8.4 The results of **Table 7.25** and **Table 7.26** show that all arms of the junction are operating with spare capacity in both the AM and PM peak hours during the 2033 assessment scenario.

Junction 5 Capacity Summary

7.8.5 The junction is shown to operate within capacity with the full quantum of development generated traffic.

7.8.6 Full ARCADY outputs are provided in **Appendix G**.

7.9 Capacity Analysis – Junction 7 – A48 / Heol Mostyn Priority Junction

7.9.1 **Table 7.27** and **Table 7.28** show the results of the Junction 7 capacity assessment for the 2021 AM and PM peak hour respectively.

Table 7.27: Junction 7 Capacity Analysis – Weekday AM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Heol Mostyn Left	1.3	16.52	0.57	18.5	168.95	1.22
Heol Mostyn Right	0.5	37.88	0.33	4.1	333.07	1.15
A48 Southbound	0	4.84	0.01	0	5.44	0.01
A48 Northbound	0	0	0	0	0	0
Unclassified access road	24.7	107.91	1	108.8	468.26	1.23

Table 7.28: Junction 7 Capacity Analysis – Weekday PM Peak 2021

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Heol Mostyn Left	3.2	28.98	0.78	17.2	126.34	1.03
Heol Mostyn Right	0.6	33.16	0.39	4.6	249.35	0.99
A48 Southbound	0	4.91	0.01	0	4.54	0.01
A48 Northbound	0	0	0	0	0	0
Unclassified access road	4.5	18.05	0.75	10.1	33.25	0.86

7.9.2 The results of **Table 7.27** and **Table 7.28** show that the junction is within capacity without development traffic, but over capacity in the 2021 with the site in full operation.

7.9.3 **Table 7.29** and **Table 7.30** show the results of the Junction 7 capacity assessment for the 2033 AM and PM peak hour respectively.

Table 7.29: Junction 7 Capacity Analysis – Weekday AM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Heol Mostyn Left	2.4	28.4	0.73	205.9	5695.94	999
Heol Mostyn Right	1.3	93.94	0.61	32.9	5893.96	999
A48 Southbound	0	4.96	0.01	0	6.01	0.02
A48 Northbound	0	0	0	0	0	0
Unclassified access road	64.6	282.39	1.14	186.9	811.31	1.38

Table 7.30: Junction 7 Capacity Analysis – Weekday PM Peak 2033

Junction Arm	Forecast Base			Total Traffic		
	Max Q	Delay (s)	Max RFC	Max Q	Delay (s)	Max RFC
Heol Mostyn Left	7.6	63.57	0.92	54.9	357.91	1.28
Heol Mostyn Right	2.3	119.67	0.76	9.1	482.89	1.19
A48 Southbound	0	4.82	0.01	0	4.47	0.01
A48 Northbound	0	0	0	0	0	0
Unclassified access road	8.5	28.83	0.84	25.1	81.64	0.97

7.9.4 The results of **Table 7.30** and **Table 7.31** show that the junction is over the 0.85 RFC threshold in the 2033 scenario before development traffic is added. The additional of development generated traffic causes further queueing and delay.

7.9.5 Despite the above 2033 results, it should be reiterated that the capacity results are not a strict forecast, but represent a reference case. In reality, once a junction reaches operational capacity, traffic demand does not continue to increase in a linear manner but instead adjusts route patterns, departure time or modal choice.

Junction 7 Capacity Summary

7.9.6 Junction 7 is forecast to experience capacity issues in the assessment scenarios which will likely be magnified to some extent by site traffic.

7.9.7 Corun is aware from pre-application discussions that BCBC is investigating the signalisation of the junction which will provide significant capacity and safety improvements and allow queues and delay to be managed at each approach.

7.9.8 Further assessment of this junction will be required at the planning application stage and may require the installation of the signals as part of a S106 or S278 agreement. The junction will also be expected to provide MOVA control to minimise delay.

7.9.9 Full PICADY outputs are provided in **Appendix G**.

8 SUMMARY AND CONCLUSION

8.1 Summary

8.1.1 This Transport Assessment (TA) has been produced by Corun Associates Ltd (Corun) on behalf of Thomas, Rees, Grant & Knight, to examine the highway and transportation issues associated with land adjacent to the A48, Pyle, Bridgend.

8.1.2 The site is being submitted as a candidate site for Bridgend County Borough Council's replacement local development plan (2018-2033). The site is separated into two parcels of land one to the east of the A48 and one to the west of the A48. The assessment considers the following:

Eastern Parcel Total: 22.2 ha

- Phase 1 - 3.2ha;
- Phase 2 - 4.8ha;
- Phase 3 - 5.8ha; and
- Phase 4 - 8.4ha.

8.1.3 Anticipated residential unit numbers for the eastern parcel are between approximately 780-890.

Western Parcel Total: 35.8 ha

- Phase 1 - 4.9ha;
- Phase 2 - 5.9ha;
- Phase 3 - 13.1ha; and
- Phase 4 - 11.8ha.

8.1.4 Anticipated unit numbers for the western parcel are between approximately 1250-1430.

8.1.5 In addition to the residential element, the site is able to accommodate a 200-space park and ride facility (eastern land parcel) a 1.5 ha mixed-use neighbourhood centre and a 2.3 ha primary school (western land parcel), all of which will be considered in this report.

8.1.6 The site is located in a sustainable location in terms of access to facilities and amenities, which will be further enhanced by the mixed-use nature of the site which will reduce the need to travel further afield.

8.1.7 The proposed site accesses will be taken via three separate junctions, one on the A4229 and two on the A48.

8.1.8 The access on the A4229 will provide access to the western parcel of land. The junction will form a 3 arm MOVA controlled signal junction with a 7.3m access road. At the southern arm of the junction, an additional 3m right turn lane is proposed to allow access to the proposed development.

- 8.1.9 An additional access to the western land parcel will be provided via a new MOVA controlled staggered signal crossroad junction on the A48. The southern side of the junction will provide access to the western parcel via a 7.3m, likewise access to the eastern parcel on the northern side of the junction.
- 8.1.10 The final access on the A48 will provide access to the eastern parcel of land. The junction will form a 3 arm MOVA controlled signal junction with a 7.3m access road. At the southern arm of the junction, an additional 3m right turn lane is proposed to allow access to the proposed development.
- 8.1.11 Pedestrian and cycle access will be provided by new 3m wide shared footway/cycleway which will be provided at all access points and along the full site boundary. Toucan crossings will also be provided to allow pedestrians and cycles to safely cross the A48 and A4229 and access the wider footway network.
- 8.1.12 The site is also favourably positioned to contribute significantly towards Bridgend's integrated transport strategy and help deliver local active travel improvements to Pyle, North Cornelly, South Cornelly, Porthcawl and Bridgend in line with the Active Travel Wales 2013 Act.
- 8.1.13 It is concluded following a preliminary accident investigation that there are no evident clusters and therefore no obvious highway safety concerns within the vicinity of the application site.
- 8.1.14 Capacity analysis has been undertaken and the results identify that of the seven junctions assessed, only two are forecast to experience queueing and delay that may warrant mitigation as part of the development of the site.

8.2 Conclusion

- 8.2.1 The site is concluded to be compliant with existing and emerging transport planning policy at a local and national level.
- 8.2.2 There are therefore no reasons, in highway and transportation terms, why the site should not be allocated for development in the replacement LDP.

APPENDIX A

Concept Masterplan



Total Site Area:	98ha
Total Development Area:	61.4ha
of which:	
Residential:	57ha
School:	2.3ha
Mixed Use:	1.5ha
Park & Ride:	0.6ha

Approximate number of homes 1755-2340

STATUS: SUBMISSION



Client: Geraint John Planning

Project: Land East of Pyle

Title: Proposed Strategic Masterplan

Project ID	Organiser	Role	Block	Level	Type	Series	Dwg	Rev	Status
1760	URB	XX	XX	GA	90	05	-	-	PL

Drawn LP Date 05/06/20 Checked LP Scale 1:5000@A2

The Urbanists - The Creative Quarter - BA Morgan Arcade - Cardiff - CF10 1AF
 T: 029 2023 6133 E: info@theurbanists.net W: www.theurbanists.net
 © This drawing is copyright and may not be reproduced in whole or part without written authority.

APPENDIX B

Active Travel Assessment

Design Guidance: Active Travel (Wales) Act 2013

Active Travel Assessment

Proposed Mixed-Use Development Land at Pyle

18-00592/TN02

October 2020



Introduction

This Transport Note ('TN') has been produced by Corun Associates Ltd (Corun) as part of a proposed mixed-use development in Pyle, Bridgend.

The land is divided into two development parcels; land to the east of A48 and land to the west of A48. At the time of writing, the development is envisaged to include:

Eastern Parcel Total: 22.2 ha

- Phase 1 - 3.2ha;
- Phase 2 - 4.8ha;
- Phase 3 - 5.8ha; and
- Phase 4 - 8.4ha.

Anticipated residential unit numbers for the eastern parcel are between approximately 780-890.

Western Parcel Total: 35.8 ha

- Phase 1 - 4.9ha;
- Phase 2 - 5.9ha;
- Phase 3 - 13.1ha; and
- Phase 4 - 11.8ha.

Anticipated unit numbers for the western parcel are between approximately 1250-1430.

In addition to the residential elements, the site is able to accommodate a 200-space park and ride facility (eastern land parcel) a 1.5 ha mixed-use neighbourhood centre and a 2.3 ha primary school (western land parcel), all of which will be considered in this report.

The assessment has been produced via a combination of site visits and desktop appraisal. It should be noted that, at the time of writing, the Covid-19 pandemic was having a significant impact on business travel and practices. It is therefore recommended that a revised audit is undertaken at the application stage.

The report provides an assessment of the key walking and cycling routes associated with the site. It is assumed that all internal highway infrastructure will be designed in line with the transport hierarchy, with walking and cycling afforded a high priority and to a standard appropriate for inclusion in the Council's integrated transport network.

Please note that the purpose of the report is to identify deficiencies in the existing off-site highway network, which will offer the opportunity for the development of the site to contribute towards appropriate improvements at the planning stage. However, the report also goes a step further by suggesting some of the key improvement measures that can be expected of the site.

Existing Active Travel Assessment Methodology

This report provides an assessment of the key routes in the vicinity of the site using the Welsh Government Active Travel (Wales) Act 2013 Design Guidance Walking and Cycling Route Audit Tools (full guidance notes provided herein as **Appendix A**) which provides a comprehensive approach to the above requirement.

The scope of assessment has been derived with consideration of the Council's Integrated Network mapping (**Appendix B**) and a concept masterplan (**Appendix C**).

An isochrone map (**Appendix D**) divides the scope of assessment into segments A-E.

The walking and cycling audits are referenced as shown in Table 1 and provided in full as **Appendix E**.

Table 1: Existing Route Walking and Cycling Audit Schedule

Route reference	Audit Mode	Route description	Map segment(s)
WRA01E	Walking	A4229 Site Access to Ysgol Y Ferch o'r Sgêr	A
WRA02E	Walking	Heol Tydraw to Pyle Railway Station	B
WRA03E	Walking	A48/A4229 Roundabout to Village Farm Industrial Estate	C
WRA04E	Walking	Heol Mostyn to Pyle Town Centre	D
WRA05E	Walking	Northeast of Site to Mynydd Cynffig Infants School via Waun Bant Road	E
CRA01E	Cycling	A4229 Site Access to Ysgol Y Ferch o'r Sgêr	A
CRA02E	Cycling	Heol Tydraw to Pyle Railway Station	B
CRA03E	Cycling	A48/A4229 Roundabout to Village Farm Industrial Estate	C
CRA04E	Cycling	Heol Mostyn to Pyle Town Centre	D
CRA05E	Cycling	Northeast of Site to Mynydd Cynffig Infants School via Waun Bant Road	E

In addition to the audits, photographic evidence is provided of various aspects of the assessed routes (**Appendix F**).

This report is intended to assist the LHA in the delivery of the integrated transport network and set out the obstacles and opportunities associated with active modes of travel associated with the mixed-use development of the site.

B	<ol style="list-style-type: none"> 1. There are opportunities to widen the footway on Heol Tydraw which, for the first 100m from School Terrace is restricted to the western side of the carriageway and is currently below current standards in terms of width. 2. The pedestrian lane between Heol Tydraw and Bryn-Yr-Orsaf could be improved to encourage use. This could involve widening, improved lighting and the removal of overgrown foliage. 3. There is a pedestrian lane linking Heol Tydraw with Tydraw Crescent which could also be improved to encourage use. This could involve improved lighting and the removal of overgrown foliage. There are also sections of missing footway along Tydraw Crescent which could be provided, subject to land ownership checks, to improve links between the site and Pyle Railway Station. 4. There is limited cycle parking provision at Pyle railway station (Two 'Sheffield Style' hoops). The development of the site offers the opportunity to increase cycle parking provision through the planning process. 	<p>Walking</p> <p>Walking</p> <p>Walking</p> <p>Cycling</p>
C	<ol style="list-style-type: none"> 1. The existing uncontrolled crossing over the A48 should be improved to provide a Toucan crossing. 2. To assist with the Council's integrated transport network proposals, the site will play a key role in the delivery of route reference INM-PY-18 which runs along the A48 and across Pyle Road to Pyle railway station. 3. Improved pedestrian and cycle links over the railway line to the north of the site. Options, depending on land ownership, include a segregated pedestrian/cycle 	<p>Walking and Cycling</p> <p>Walking and Cycling</p> <p>Walking and Cycling</p>

	<p>footbridge or widening/replacement of the existing bridge.</p> <p>4. It is understood that there are aspirations to upgrade the existing A48/Heol Mostyn junction to a signalised arrangement. This would include pedestrian crossing stages and advanced cycle stop lines. If this has not been delivered then the site offers the opportunity to fund these works.</p> <p>5. Several junctions on Heol Mostyn lack dropped kerbs and tactile paving which the site can help rectify.</p>	<p>Walking and Cycling</p> <p>Walking</p>
D	<p>1. Several junctions on the A48 Pyle Road lack dropped kerbs and tactile paving which the site can help rectify.</p> <p>2. There is limited cycle parking provision in Pyle, which the site can help rectify.</p>	<p>Walking</p> <p>Cycling</p>
E	<p>1. The existing carriageway links into Kenfig Hill via Waunbant Road offer an attractive on-road cycle route. Areas of the carriageway are in poor condition (e.g. potholes or overgrown vegetation) but can be rectified as part of the site development to further promote cycle trips.</p> <p>2. Further land ownership checks will be required at the application stage to find an appropriate link between the site and the Council's integrated network shared use path INM-PY-9 on Village Farm Road. This is likely to require a new shared pedestrian/cycle bridge over the railway.</p> <p>3. As well as item 2 above, the site would be expected to contribute toward INM-PY-8 to improve pedestrian and cycle links to Cynffig Comprehensive School.</p>	<p>Cycling</p> <p>Walking/Cycling</p> <p>Walking/Cycling</p>

In addition to the above assessment of links to existing trip attractors/generators, it should be noted that the development of the site will also be required to provide the necessary internal infrastructure to encourage pedestrian and cycle links with due consideration of Active Travel Wales design guidance.

Preliminary access designs are included herein as **Appendix G** and indicate how the various access points can provide a high standard of active travel infrastructure.

Furthermore, the internal site highway network will be required to make provision for suitable active travel links to any other Local Development Plan sites to the east or south of the site and this will need to be considered at the application stage.

Conclusion

The site is concluded to benefit from many advantages with regards to existing active travel infrastructure. There are also numerous opportunities to enhance links to existing trip attractors/generators which have been identified in this document as being desirable to help maximise the adoption of active modes of travel associated with the development of the site.

Further, more detailed assessment of active travel improvements, to include preliminary design, will be required at the planning application stage.

Appendix A

Welsh Government Active Travel (Wales) Act 2013 Design Guidance Walking and Cycling Route Audit
Tools



Llywodraeth Cymru
Welsh Government

Appendix B

Walking Route Audit Tool



Walking Route Audit Tool – Guidance notes

This tool has been developed to assist local authorities in the auditing of walking routes.

The tool can be used for both existing and proposed routes.

- On existing routes the current conditions should be audited.
- On proposed routes the proposed schemes should be audited.

Scoring

The tool as shown in the table on p.384, requires the auditor to score the route against each of the factors using the following scale:

- 0 for poor provision,
- 1 for provision which is adequate but should be improved if possible
- 2 for good quality provision

Any route which scores less than 28 (out of a potential 40 points, ie a score of 70%) will require further improvement before it is included in the Existing or Integrated Network Maps. This threshold will be kept under review in the light of experience.

Comments

As the scoring is sometimes qualitative the tool also allows the auditor to add comments explaining their score allocation.

For example where a route has scored 1 for Gradient, it may be useful to explain that although there is a steep uphill chapter there is a path which climbs the side of the valley in gentle steps, thereby allowing the cyclist to comfortably use the route.

The addition of text allows the audit scoring to be better understood when reviewed by other stakeholders.

Actions

There is an additional column for Actions. This allows auditors to record any solutions to any of the issues identified on the route e.g. narrowing a junction mouth to reduce speeds or removing redundant street clutter along a chapter of the route to improve its attractiveness.

The assessment relies on an understanding of the route type (ie primary route, secondary route or local route) to be provided for as well as a

full understanding of the existing traffic conditions (i.e. urban or rural, distributor or residential street).

If the route is assessed as suitable in its current condition according to the network requirements and design standards it can be included in the Existing Routes Map.

Table Appendix B - Walking Route Audit Tool

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
1. ATTRACTIVENESS - maintenance	Footways well maintained, with no significant issues noted.	Minor littering. Overgrown vegetation. Street furniture falling into mi-nor disrepair (for example, peeling paint).	Littering and/or dog mess prevalent. Seriously overgrown vegetation, including low branches. Street furniture falling into major disrepair.	
2. ATTRACTIVENESS - fear of crime	No evidence of vandalism with appropriate natural surveillance.	Minor vandalism. Lack of active frontage and natural surveillance (e.g. houses set back or back onto street).	Major or prevalent vandalism. Evidence of criminal/antisocial activity. Route is isolated, not subject to natural surveillance (including where sight lines are inadequate).	
3. ATTRACTIVENESS - traffic noise and pollution	Traffic noise and pollution do not affect the attractiveness	Levels of traffic noise and/or pollution could be improved	Severe traffic pollution and/or severe traffic noise	
4. ATTRACTIVENESS - other	Examples of 'other' attractiveness issues include: - Evidence that lighting is not present, or is deficient; - Temporary features affecting the attractiveness of routes (e.g. refuse sacks). - Excessive use of guardrail or bollards			
Score 0-2 as appropriate				

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
5. COMFORT - condition	Footways level and in good condition, with no trip hazards.	Some defects noted, typically isolated (such as trenching or patching) or minor (such as cracked, but level pavers). Defects unlikely to result in trips or difficulty for wheelchairs, prams etc. Some footway crossovers resulting in uneven surface.	- subsided or fretted pavement, or - significant uneven patching or trenching. Large number of footway crossovers resulting in uneven surface.	
6. COMFORT - footway width	Able to accommodate all users without 'give and take' between users or walking on roads. Footway widths generally in excess of 2m.	Footway widths of between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads.	Footway widths of less than 1.5m (i.e. standard wheelchair width). Limited footway width requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay.	
7. COMFORT - width on staggered crossings/ pedestrian islands/refuges	Able to accommodate all users without 'give and take' between users or walking on roads. Widths generally in excess of 2m to accommodate wheel-chair users.	Widths of between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads.	Widths of less than 1.5m (i.e. standard wheelchair width). Limited width requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay.	
8. COMFORT - footway parking	No instances of vehicles parking on footways noted. Clearance widths generally in excess of 2m between permanent obstructions.	Clearance widths between approximately 1.5m and 2m. Occasional need for 'give and take' between users and walking on roads due to footway parking. Footway parking causes some deviation from desire lines.	Clearance widths less than 1.5m. Footway parking requires users to 'give and take' frequently, walk on roads and/or results in crowding/delay. Footway parking causes significant deviation from desire lines.	

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
9.COMFORT -gradient	There are no slopes on footway.	Slopes exist but gradients do not exceed 8 per cent (1 in 12).	Gradients exceed 8 per cent (1 in 12).	
10.COMFORT - other	<p>Examples of 'other' comfort issues include:</p> <ul style="list-style-type: none"> - Temporary obstructions restricting clearance width for pedestrians (e.g. driveway gates opened into footway); - Barriers/gates restricting access; and - Bus shelters restricting clearance width. - Poorly drained footways resulting in noticeable ponding issues/slippery surfaces <p>Score 0-2 as appropriate</p>			
11.DIRECTNESS - footway provision	Footways are provided to cater for pedestrian desire lines (e.g. adjacent to road).	Footway provision could be improved to better cater for pedestrian desire lines.	Footways are not provided to cater for pedestrian desire lines.	
12.DIRECTNESS - location of crossings in relation to desire lines	Crossings follow desire lines.	Crossings partially diverting pedestrians away from desire lines.	Crossings deviate significantly from desire lines.	
13.DIRECTNESS - gaps in traffic (where no controlled crossings present or if likely to cross outside of con-trolled crossing)	Crossing of road easy, direct, and comfortable and without delay (< 5s average).	Crossing of road direct, but associated with some delay (up to 15s average).	Crossing of road associated indirect, or associated with significant delay (>15s average).	

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
14. DIRECTNESS - impact of controlled crossings on journey time	Crossings are single phase pelican/puffin or zebra crossings.	Crossings are staggered but do not add significantly to journey time. Unlikely to wait >5s in pedestrian island.	Staggered crossings add significantly to journey time. Likely to wait >10s in pedestrian is-land.	
15. DIRECTNESS - green man time	Green man time is of sufficient length to cross comfortably.	Pedestrians would benefit from extended green man time but current time unlikely to deter users.	Green man time would not give vulnerable users sufficient time to cross comfortably.	
16. DIRECTNESS - other	Examples of 'other' directness issues include: - Routes to/from bus stops not accommodated; - Steps restricting access for all users; - Confusing layout for pedestrians creating severance issues for users. Score 0-2 as appropriate			
17. SAFETY - traffic volume	Traffic volume low, or pedestrians can keep distance from moderate traffic volumes.	Traffic volume moderate and pedestrians in close proximity.	High traffic volume, with pedestrians unable to keep their distance from traffic.	
18. SAFETY - traffic speed	Traffic speeds low, or pedestrians can keep distance from moderate traffic speeds.	Traffic speeds moderate and pedestrians in close proximity.	High traffic speeds, with pedestrians unable to keep their distance from traffic.	

Audit Categories	2 (Green)	1 (Amber)	0 (Red)	Comments
19. SAFETY - visibility	Good visibility for all users.	Visibility could be somewhat improved but unlikely to result in collisions.	Poor visibility, likely to result in collisions.	
20. COHERENCE - dropped kerbs and tactile paving	Adequate dropped kerb and tactile paving provision.	Dropped kerbs and tactile paving provided, albeit not to current standards.	Dropped kerbs and tactile paving absent or incorrect.	
COHERENCE	Signage - Note the presence and quality of route signage (no score is required for this factor)			



Llywodraeth Cymru
Welsh Government

Appendix C

Cycle Route Audit Tool



Cycle Route Audit Tool – Guidance notes

This tool has been developed to assist local authorities in the auditing of routes.

The tool can be used for both existing and proposed routes.

- On existing routes the current conditions should be audited.
- On proposed routes the proposed schemes should be audited.

Scoring

The tool as shown in the table on p.394, requires the auditor to score the route against each of the factors using the following scale:

- 0 for poor provision,
- 1 for provision which is adequate but should be improved if possible
- 2 for good quality provision

Any route which scores less than 35 (out of a potential 50 points, ie a score of 70%) will require further improvement before it is included in the Existing or Integrated Network Maps. This threshold will be kept under review in the light of experience.

Critical factors

Some of the criteria have been given a ‘critical’ rating.

Routes which fail to pass any of the critical factors require further development and should not be included on the Existing or Integrated Network Maps.

Comments

As the scoring is sometimes qualitative the tool also allows the auditor to add comments explaining their score allocation.

For example where a route has scored 1 for Gradient, it may be useful to explain that although there is a steep uphill chapter there is a path which climbs the side of the valley in gentle steps, thereby allowing the cyclist to comfortably use the route.

The addition of text allows the audit scoring to be better understood when reviewed by other stakeholders.

Actions

There is an additional column for Actions. This allows auditors to record any solutions to any of the issues identified on the route e.g. narrowing a junction mouth to reduce speeds or removing redundant street clutter along a chapter of the route to improve its attractiveness.

The assessment relies on an understanding of the route type (ie primary route, secondary route or local route) to be provided for as well as a full understanding of the existing traffic conditions (i.e. urban or rural, distributor or residential street).

If the route is assessed as suitable in its current condition according to the network requirements and design standards it can be included in the Existing Routes Map.

Table Appendix C - Cycling Route Audit Tool

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Cohesion	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	1. Ability to join/leave route safely and easily: consider left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey		
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed - cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	2. Provision for cyclists throughout the whole length of the route		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions		
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	3. Density of routes based on mesh width ie distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 - 1000m	Route contributes to a network density mesh width <250m		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as-the-crow-flies' distance as possible.	4. Deviation of route Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2		
	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	5. Stopping and give way frequency		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km		
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	6. Delay at junctions		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (eg bypass at signals)		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	7. Ability to maintain own speed on links		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.		
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	8. Gradient		Route includes sections steeper than the gradients recommended in Figure 4.4	There are no sections of route steeper than the gradients recommended in Figure 4.4	There are no sections of route which steeper than 2%		
Safety	Reduce/ remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		
			10. Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Avoid high motor traffic volumes where cyclists are sharing the carriageway	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	11. Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour	>10000 AADT, or >5% HGV	5000-10000 AADT and <2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT		
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Table 6.2. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	12. Segregation to reduce risk of collision alongside or from behind	Cyclists sharing carriageway - nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
		A high proportion of collisions involving cyclists occur at junctions. Junctions there-fore need particular attention to reduce the risk of collision. Junction treatments include: Minor/side roads - cyclist priority and/or speed reduction across side roads Major roads - separation of cyclists from motor traffic through junctions.	13. Conflicting movements at junctions		Side road junctions frequent and/ or untreated. Major junctions, conflicting cycle/ motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/ motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.		
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	14. Legible road markings and road layout		Faded, old, unclear, complex road markings/ unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Comfort	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	15. Conflict with kerbside activity	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (eg cycle lane < 2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity - eg less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.		
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	16. Evasion room and unnecessary hazards		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.		
	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/gullies, potholes, poor quality carriageway paint (eg from previous cycle lane)	17. Major and minor defects		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
		Pavement or carriageway construction providing smooth and level surface	18.Surface type		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete pavements with frequent joints.	Machine laid smooth and non-slip surface - eg Thin Surfacing, or firm and closely-jointed blocks undisturbed by turning heavy vehicles.		
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	19.Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route		
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	20.Signing		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	21. Lighting		Most or all of route is unlit	Short and infrequent unlit/poorly lit sections	Route is lit to highway standards throughout		
			22. Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length		
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well-used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	23. Impact on pedestrians, Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 4.7)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A		

Key Requirement	Factor	Design Principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
	Minimise street clutter	Signing required to support scheme layout	24. Signs informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/ or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.		
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on street	25. Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure non-overlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand		
								Audit Score Total	

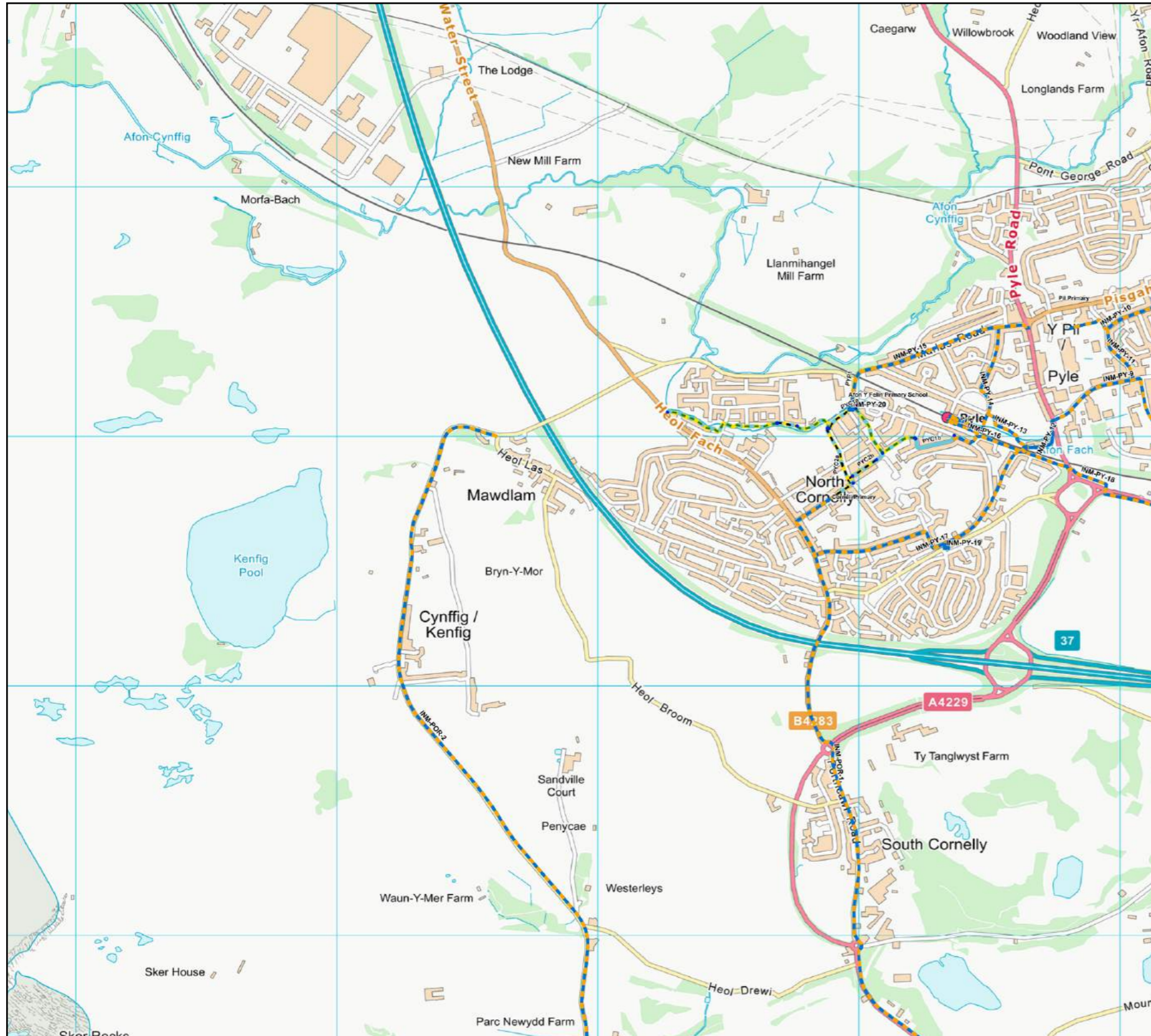
Appendix B

Bridgend Integrated Network Map (Map 10 and 11 apply)

Map Rhwydwaith Integredig/Integrated Network Map 9

Produced by the Active Travel web site. Gynhyrchwyd gan y wefan Teithio Llesol.

Bridgend County Borough Council
Civic Offices
Angel Street
Bridgend, CF31 4WB



Legend / Eglurhad

Active Travel Routes / Llwybrau Teithio Llesol

- Undefined path design / Dyluniad llwybr heb ei ddiffinio
- Footpath (away from road) / Llwybr troed (i ffwrdd o'r ffordd)
- Footway (alongside road) / Troedffordd (ochr yn ochr â ffordd)
- Cycle track (away from road) / Trac beicio (i ffwrdd o'r ffordd)
- Cycle track (alongside road) / Trac beicio (ochr yn ochr â ffordd)
- Shared use foot/cycle path (away from road) / Llwybr cerdded/beicio a rennir (i ffwrdd o'r ffordd)
- Shared use foot/cycle path (alongside road) / Llwybr cerdded/beicio a rennir (ochr yn ochr â ffordd)
- Segregated foot/cycle path (away from road) / Llwybr cerdded/beicio wedi'i wahanu (i ffwrdd o'r ffordd)
- Segregated foot/cycle path (alongside road) / Llwybr cerdded/beicio wedi'i wahanu (ochr yn ochr â ffordd)
- Cycle route (on road, not segregated) / Lôn feicio (ar y ffordd, heb ei gwahanu)
- Cycle lane (on road, segregated) / Lôn feicio (ar y ffordd, wedi'i gwahanu)
- Pedestrian zone / Ardal cerdded
- Pedestrian and cycle zone / Ardal cerdded a beicio
- Road without footway / Ffordd heb droedffordd

Line end points / Pwyntiau diwedd llinell

Integrated Network Walking



Integrated Network Cycling



Integrated Network Shared Use



Landmarks / Tirnodau

Bus Station / Gorsaf Fysus

Hospital / Ysbyty

Railway Station / Gorsaf Reilffordd

Schools / Ysgolion

Labels / Labeli

© Crown Copyright and database right 2014. Ordnance Survey 100021874. Welsh Government. © Hawlfraint a hawliau cronfa ddata'r Goron 2014. Rhif Trwydded yr Arolwg Ordnans 100021874.

Whilst the Welsh Government have made every effort to ensure that the information on this website is accurate and up-to-date, the Welsh Government takes no responsibility for any incorrect information. The data is compiled from Public Rights of Way, Ordnance Survey ITN, Ordnance Survey ITN Urban Path and aerial photography derived data supplemented by field survey. The online map is provided for guidance only and is not a legal record.

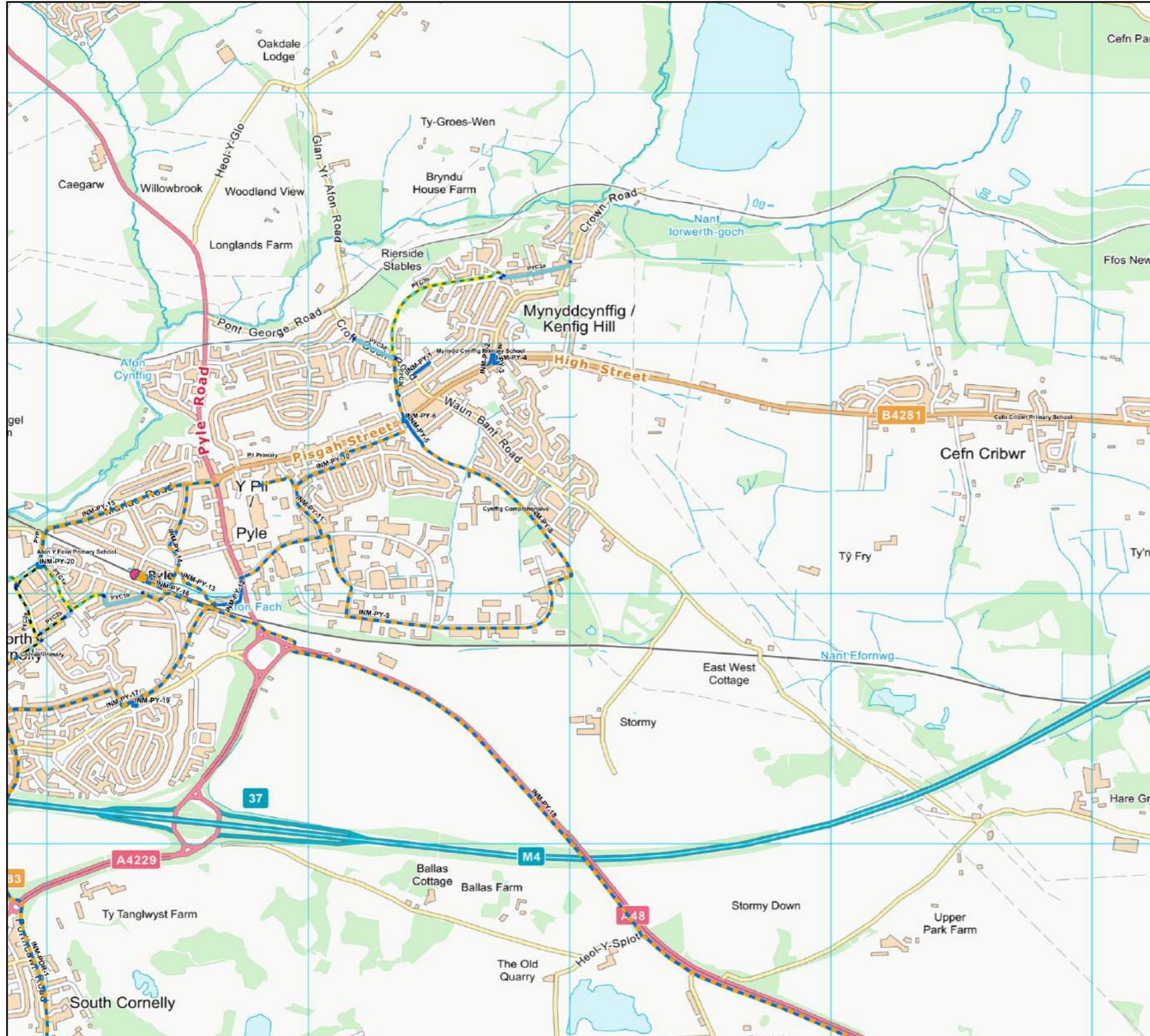
Er bod Llywodraeth Cymru wedi gwneud pob ymdrech i sicrhau bod y wybodaeth ar y wefan hon yn gywir ac yn gyfredol, mae Llywodraeth Cymru yn cymryd unrhyw gyfrifoldeb am unrhyw wybodaeth anghywir. Lluniwyd y data o hawliau tramwy cyhoeddus, RhTI yr AO, Llwybrau Trefol RhTI yr AO a data sy'n deillio o ffotograffau o'r awyr wedi'i ategu gan arolwg maes. Yn y map ar-lein yn darparu canllaw yn unig ac nid yw cofnod cyfreithiol.



Map Rhwydwaith Integredig/Integrated Network Map 10

Produced by the Active Travel web site. Gynhyrchwyd gan y wefan Teithio Llesol.

Bridgend County Borough Council
Civic Offices
Angel Street
Bridgend, CF31 4WB



Legend / Eglurhad

Active Travel Routes / Llwybrau Teithio Llesol

- Undefined path design / Dyluniad llwybr heb ei ddiffinio
- Footpath (away from road) / Llwybr troed (i ffordd o'r ffordd)
- Footway (alongside road) / Troedffordd (ochr yn ochr â ffordd)
- Cycle track (away from road) / Trac beicio (i ffordd o'r ffordd)
- Cycle track (alongside road) / Trac beicio (ochr yn ochr â ffordd)
- Shared use foot/cycle path (away from road) / Llwybr cerdded/beicio a rennir (i ffordd o'r ffordd)
- Shared use foot/cycle path (alongside road) / Llwybr cerdded/beicio a rennir (ochr yn ochr â ffordd)
- Segregated foot/cycle path (away from road) / Llwybr cerdded/beicio wedi'i wahanu (i ffordd o'r ffordd)
- Segregated foot/cycle path (alongside road) / Llwybr cerdded/beicio wedi'i wahanu (ochr yn ochr â ffordd)
- Cycle route (on road, not segregated) / Lôn feicio (ar y ffordd, heb ei gwahanu)
- Cycle lane (on road, segregated) / Lôn feicio (ar y ffordd, wedi'i gwahanu)
- Pedestrian zone / Ardal cerdded
- Pedestrian and cycle zone / Ardal cerdded a beicio
- Road without footway / Ffordd heb droedffordd

Line end points / Pwyntiau diwedd llinell

Integrated Network Walking



Integrated Network Cycling



Integrated Network Shared Use



Landmarks / Tirnodau

Bus Station / Gorsaf Fysus

Hospital / Ysbyty

Railway Station / Gorsaf Reilffordd

Schools / Ysgolion

Labels / Labeli

© Crown Copyright and database right 2014. Ordnance Survey 100021874. Welsh Government. © Hawlfraint a hawliau cronfa ddata'r Goron 2014. Rhif Trwydded yr Arolwg Ordnans 100021874.

Whilst the Welsh Government have made every effort to ensure that the information on this website is accurate and up-to-date, the Welsh Government takes no responsibility for any incorrect information. The data is compiled from Public Rights of Way, Ordnance Survey ITN, Ordnance Survey ITN Urban Path and aerial photography derived data supplemented by field survey. The online map is provided for guidance only and is not a legal record.

Er bod Llywodraeth Cymru wedi gwneud pob ymdrech i sicrhau bod y wybodaeth ar y wefan hon yn gywir ac yn gyfredol, mae Llywodraeth Cymru yn cymryd unrhyw gyfrifoldeb am unrhyw wybodaeth anghywir. Lluniwyd y data o hawliau tramwy cyhoeddus, RhTI yr AO, Llwybrau Trefol RhTI yr AO a data sy'n deillio o ffotograffau o'r awyr wedi'i ategu gan arolwg maes. Yn y map ar-lein yn darparu canllaw yn unig ac nid yw cofnod cyfreithiol.



Appendix C

Concept Masterplan



Total Site Area:	98ha
Total Development Area:	61.4ha
of which:	
Residential:	57ha
School:	2.3ha
Mixed Use:	1.5ha
Park & Ride:	0.6ha

Approximate number of homes 1755-2340

STATUS: SUBMISSION

theurbanists
planning & design

Client: Geraint John Planning

Project: Land East of Pyle

Title: Proposed Strategic Masterplan

Project ID	Organiser	Role	Block	Level	Type	Series	Dwg	Rev	Status
1760	URB	XX	XX	GA	90	05	-	-	PL

Drawn LP Date 05/06/20 Checked LP Scale 1:5000@A2

The Urbanists - The Creative Quarter - BA Morgan Arcade - Cardiff - CF10 1AF
 T: 029 2023 6133 E: info@theurbanists.net W: www.theurbanists.net
 © This drawing is copyright and may not be reproduced in whole or part without written authority.






Appendix D

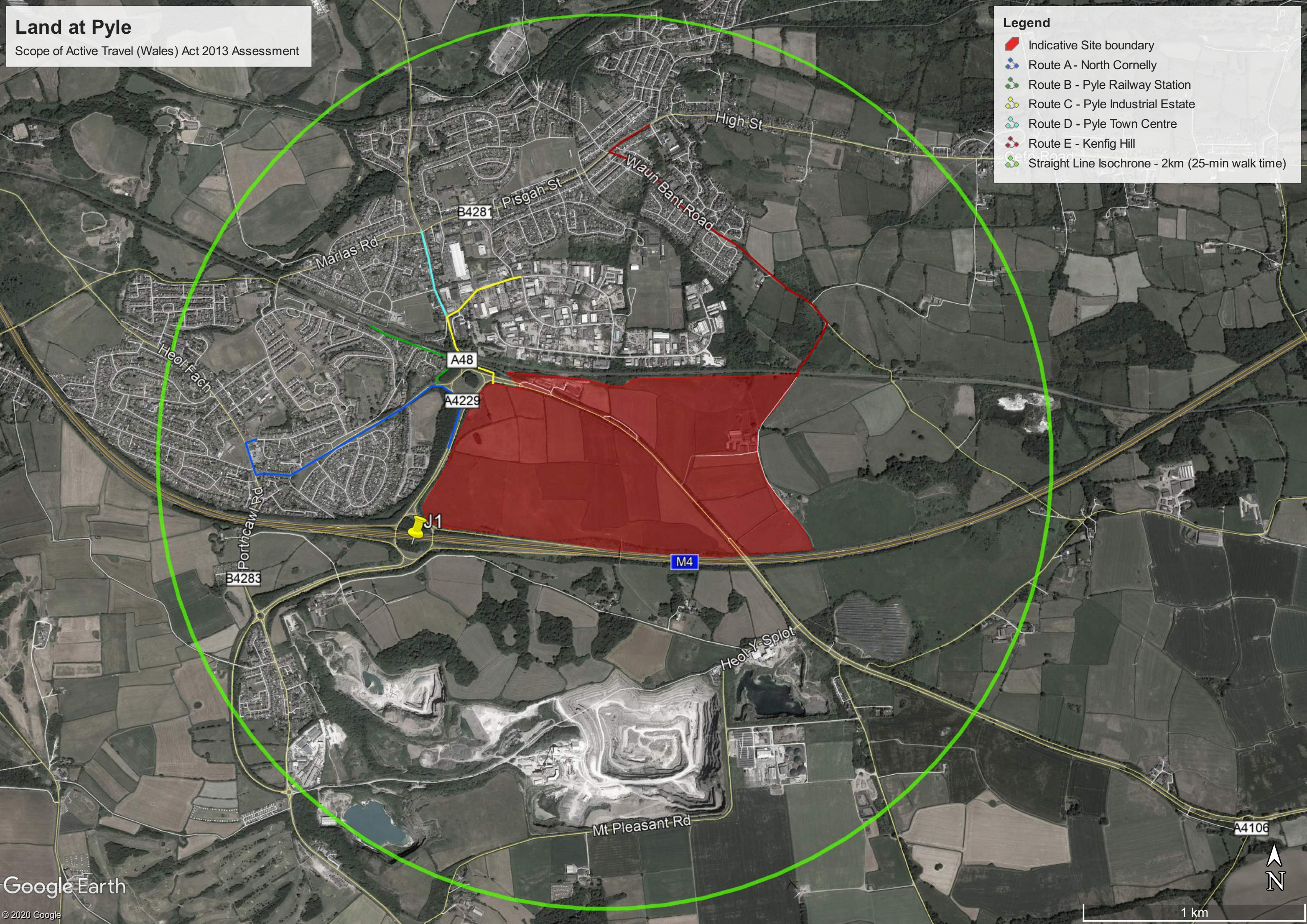
Isochrone Map and Scope of Assessment

Land at Pyle

Scope of Active Travel (Wales) Act 2013 Assessment

Legend

-  Indicative Site boundary
-  Route A - North Cornelly
-  Route B - Pyle Railway Station
-  Route C - Pyle Industrial Estate
-  Route D - Pyle Town Centre
-  Route E - Kenfig Hill
-  Straight Line Isochrone - 2km (25-min walk time)



Appendix E

Active Travel Wales Walking and Cycling Audits

Walking Route Audit		
Project Name:	Pyle	Route Reference: WRA01E - Existing (Site - N.Cornelly)
Project Reference:	18-00592	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	2	
2. Attractiveness - fear of crime	2	
3. Attractiveness - traffic noise and pollution	1	Part of route is an A Road. Relatively high traffic volume
4. Attractiveness - other	2	Plenty of green space along route
5. Comfort - condition	2	Some minor areas of defects and overgrown verges but generally good condition
6. Comfort - footway width	0	Footways not provided on the A4229, narrow footway on northern side of school terrace
7. Comfort - width on staggered crossings/pedestrian islands/refuges	2	
8. Comfort - footway parking	2	
9. Comfort gradient	1	
10. Comfort - other	2	
11. Directness - footway provision	0	Currently no footway on section of A4229
12. Directness - location of crossings in relation to desire lines	1	Some missing dropped kerb and tactile paving crossings at junctions along route
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	2	
14. Directness - impact of controlled crossings on journey time	1	
15. Directness - green man time	1	Zebra crossing
16. Directness - other	1	Missing crossings (e.g. to Railway Station)
17. Safety - traffic volume	1	
18. Safety - traffic speed	1	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	1	
Final Score:		27

Walking Route Audit		
Project Name:	Pyle	Route Reference: WRA02E - Existing (Route to Pyle Railway St.)
Project Reference:	18-00592	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	1	Overgrown pedestrian footpaths
2. Attractiveness - fear of crime	1	Lighting could be improved e.g. in footpath links through to Tydraw Crescent and Bryn Yr
3. Attractiveness - traffic noise and pollution	2	Light traffic on route
4. Attractiveness - other	2	
5. Comfort - condition	2	
6. Comfort - footway width	1	Some narrow sections of footway
7. Comfort - width on staggered crossings/pedestrian islands/refuges	0	No pedestrian crossings provided
8. Comfort - footway parking	2	
9. Comfort gradient	2	
10. Comfort - other	2	
11. Directness - footway provision	1	No footway provision at Heol Tydraw/School Terrace junction but otherwise direct links are
12. Directness - location of crossings in relation to desire lines	0	No crossing to Heol Tydraw from School Terrace
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	2	Road is very lightly trafficked
14. Directness - impact of controlled crossings on journey time	0	No crossings provided
15. Directness - green man time	0	
16. Directness - other	2	
17. Safety - traffic volume	2	
18. Safety - traffic speed	2	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	1	Limited dropped kerb/tactile paving crossings
Final Score:		27

Walking Route Audit		
Project Name:	Pyle	Route Reference: WRA03E - Existing (Site to Pyle Ind. Estate)
Project Reference:	18-00592	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	1	
2. Attractiveness - fear of crime	0	Lack of lighting in some areas can be intimidating at night
3. Attractiveness - traffic noise and pollution	1	Busy route with relatively high traffic
4. Attractiveness - other	1	
5. Comfort - condition	1	Some areas in poor state of repair
6. Comfort - footway width	1	Narrow footway on eastern side of A48 Pyle Road railway bridge
7. Comfort - width on staggered crossings/pedestrian islands/refuges	0	No pedestrian crossings provided
8. Comfort - footway parking	2	
9. Comfort gradient	2	
10. Comfort - other	2	
11. Directness - footway provision	1	Satisfactory but narrow footway on eastern side of A48 Pyle Road railway bridge
12. Directness - location of crossings in relation to desire lines	2	
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	1	Roads are generally busy during peak periods
14. Directness - impact of controlled crossings on journey time	0	No crossings provided
15. Directness - green man time	0	
16. Directness - other	1	
17. Safety - traffic volume	1	
18. Safety - traffic speed	1	High speeds on A48 and lack of traffic calming in industrial estate
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	0	
Final Score:		20

Walking Route Audit		
Project Name:	Pyle	Route Reference: WRA04E - Existing (Heol Mostyn to Pyle)
Project Reference:	18-00592	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	2	
2. Attractiveness - fear of crime	2	
3. Attractiveness - traffic noise and pollution	1	Busy route with congestion at peak times
4. Attractiveness - other	2	
5. Comfort - condition	2	
6. Comfort - footway width	2	
7. Comfort - width on staggered crossings/pedestrian islands/refuges	2	
8. Comfort - footway parking	1	Evidence of footway parking but not a barrier to pedestrians
9. Comfort gradient	2	
10. Comfort - other	2	
11. Directness - footway provision	2	
12. Directness - location of crossings in relation to desire lines	1	
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	1	
14. Directness - impact of controlled crossings on journey time	1	
15. Directness - green man time	1	
16. Directness - other	0	
17. Safety - traffic volume	1	
18. Safety - traffic speed	1	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	0	Several missing tactile paving/dropped kerb crossings
Final Score:		28

Walking Route Audit		
Project Name:	Pyle	Route Reference: WRA05E - Existing (Site to Kenfig Hill)
Project Reference:	18-00592	Weather Conditions: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
1. Attractiveness - maintenance	0	
2. Attractiveness - fear of crime	0	Lack of lighting in sections
3. Attractiveness - traffic noise and pollution	2	
4. Attractiveness - other	2	Mature trees increase attraction of the route
5. Comfort - condition	0	
6. Comfort - footway width	0	Missing footways
7. Comfort - width on staggered crossings/pedestrian islands/refuges	0	
8. Comfort - footway parking	1	
9. Comfort gradient	1	
10. Comfort - other	1	
11. Directness - footway provision	0	Missing footways
12. Directness - location of crossings in relation to desire lines	0	
13. Directness - gaps in traffic (where no controlled crossings present or if likely to cross outside of controlled crossing)	2	
14. Directness - impact of controlled crossings on journey time	2	
15. Directness - green man time	2	
16. Directness - other	2	
17. Safety - traffic volume	2	
18. Safety - traffic speed	1	
19. Safety - visibility	2	
20. Coherence - dropped kerbs and tactile paving	0	Missing tactile paving and dropped kerb crossings
Final Score:		20

Cycling Route Audit		
Project Name:	Pyle	Route Reference: CRA01E - Existing (Site - N.Cornelly)
Project Reference:	18-00592	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	1	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	1	No traffic free route on the A4229
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	0	Deviation factor over 2
Directness - 5. Stopping and give way frequency	1	
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	1	
Directness - 8. Gradient	2	No major inclines present
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	1	
Safety - 10. Motor traffic speed on sections of shared carriageway	0	85th percentile speeds estimated to be above 30mph along site frontage
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	0	
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	No traffic free route provided on A4229
Safety - 13. Conflicting movements at junctions	1	
Safety - 14. Legible road markings and road layout	2	
Safety - 15. Conflict with kerbside activity	0	No cycle lane provided
Safety - 16. Evasion room and unnecessary hazards	2	Wide roads and dual carriage way on the A4229 provides good amount of evasion room
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Road surface in good condition
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	2	Route well-lit
Attractiveness - 22. Isolation	1	Route is mostly overlooked
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	No cycle parking provided on route
Final Score:	26	

Cycling Route Audit		
Project Name:	Pyle	Route Reference: CRA02E - Existing (Site - Pyle Railway Station)
Project Reference:	18-00592	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	2	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	1	
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	1	Deveation factor of 1.25
Directness - 5. Stopping and give way frequency	2	
Directness - 6. Delay at junctions	2	Very few junctions on this route
Directness - 7. Ability to maintain own speed on links	2	
Directness - 8. Gradient	1	Some minor inclines present
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	2	Low speed road
Safety - 10. Motor traffic speed on sections of shared carriageway	2	see 9
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	2	Minor roads which will be lightly
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	Partly segregated
Safety - 13. Conflicting movements at junctions	1	
Safety - 14. Legible road markings and road layout	2	
Safety - 15. Conflict with kerbside activity	1	
Safety - 16. Evasion room and unnecessary hazards	2	
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Consistently smooth road surface
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	1	
Attractiveness - 22. Isolation	1	Route is mostly overlooked
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	
Final Score:	35	

Cycling Route Audit		
Project Name:	Pyle	Route Reference: CRA03E - Existing (Site to Pyle Ind. Estate)
Project Reference:	18-00592	Weather: Dry
Date of Audit:	Various	Auditor(s) L Bastian - Graduate Transport Planner
Time of Audit:	Various	J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	1	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	1	
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	0	Deveation factor of 1.5
Directness - 5. Stopping and give way frequency	1	
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	2	
Directness - 8. Gradient	1	
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	2	Low speed road
Safety - 10. Motor traffic speed on sections of shared carriageway	2	see 9
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	0	A road traffic
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	
Safety - 13. Conflicting movements at junctions	0	Risk of rear shunts at A48/Heol Mostyn
Safety - 14. Legible road markings and road layout	2	
Safety - 15. Conflict with kerbside activity	0	
Safety - 16. Evasion room and unnecessary hazards	1	
Comfort - 17. Major and minor defects	2	Road surface is in reasonable condition
Comfort - 18. Surface type	2	
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	1	Mostly well lit
Attractiveness - 22. Isolation	1	
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	
Final Score:	26	

Cycling Route Audit		
Project Name:	Pyle	Route Reference: CRA04E - Existing (Heol Mostyn to Pyle)
Project Reference:	18-00592	Weather Conditions Dry
Date of Audit:	Various	Auditor name: L Bastian - Graduate Transport Planner
Time of Audit:	Various	Auditor job title: J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	2	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	1	
Cohesion - 3. Density of routes based on mesh width	1	
Directness - 4. Deviation of route	2	Deveation factor of 1.1
Directness - 5. Stopping and give way frequency	2	
Directness - 6. Delay at junctions	1	
Directness - 7. Ability to maintain own speed on links	2	
Directness - 8. Gradient	2	
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	1	Low speed road
Safety - 10. Motor traffic speed on sections of shared carriageway	2	see 9
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	1	
Safety - 12. Segregation to reduce risk of collision alongside or from behind	1	Partly segregated
Safety - 13. Conflicting movements at junctions	0	
Safety - 14. Legible road markings and road layout	2	Advanced stop lines at signals
Safety - 15. Conflict with kerbside activity	0	No cycle lane provided
Safety - 16. Evasion room and unnecessary hazards	1	
Comfort - 17. Major and minor defects	2	Road surface is in good condition
Comfort - 18. Surface type	2	Consitently smooth road surface
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	2	Route is well lit
Attractiveness - 22. Isolation	1	
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	2	
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	
Final Score:		33

Cycling Route Audit		
Project Name:	Pyle	Route Reference: CRA05E - Existing (Site to Kenfig Hill)
Project Reference:	18-00592	Weather Conditions Dry
Date of Audit:	Various	Auditor name: L Bastian - Graduate Transport Planner
Time of Audit:	Various	Auditor job title: J Cassinelli - Associate
Audit Category	Score (0-2)	Comments
Cohesion - 1. Ability to join/leave route safely and easily	1	
Cohesion - 2. Provision for cyclists throughout the whole length of the route	0	
Cohesion - 3. Density of routes based on mesh width	0	
Directness - 4. Deviation of route	0	Deveation factor of 1.44
Directness - 5. Stopping and give way frequency	2	Very few junctions on route
Directness - 6. Delay at junctions	2	
Directness - 7. Ability to maintain own speed on links	2	
Directness - 8. Gradient	2	
Safety - 9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	0	60mph section
Safety - 10. Motor traffic speed on sections of shared carriageway	2	see 9
Safety - 11. Motor traffic volume on sections of shared carriageway expressed as vehicles per peak hour	1	
Safety - 12. Segregation to reduce risk of collision alongside or from behind	0	
Safety - 13. Conflicting movements at junctions	1	
Safety - 14. Legible road markings and road layout	1	
Safety - 15. Conflict with kerbside activity	1	
Safety - 16. Evasion room and unnecessary hazards	0	The road is narrow over large sections of the route which may make passing obstacles difficult for cyclists
Comfort - 17. Major and minor defects	0	Potholes
Comfort - 18. Surface type	1	Tarmac
Comfort - 19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles)	1	
Comfort - 20. Signing	1	
Attractiveness - 21. Lighting	0	Existing route is largely unlit
Attractiveness - 22. Isolation	0	
Attractiveness - 23. Impacts on pedestrians, pedestrian comfort level based on pedestrian comfort	1	
Attractiveness - 24. Signs informative and consistent but not overbearing or of inappropriate size	0	Signing on route is minimal
Attractiveness - 25. Evidence of bicycles parked to street furniture or cycle stands	0	No cycle facilities provided
Final Score:		19

Appendix F

Route Audit Images

Design Guidance: Active Travel (Wales) Act 2013

Walking & Cycling Audit – Photographic Survey

Pyle

18-00592/PS01

March 2020

ROUTE A – Site to North Cornelly



Image 1 – Lack of footway provision or crossings on A4229 (© Google Streetview 05/18)



Image 2 – Lack of footway provision from roundabout towards North Cornelly (© Google Streetview 05/18)



Image 3 – Substandard footway and overgrown foliage on School Terrace but note that suitable footway provision has since been installed on southern side (© Google Streetview 06/11)



Image 4 – Missing dropped kerbs and tactile paving on Maes Yr Haf Road junction (© Google Satellite 6/27/2018)



Image 4 – Missing dropped kerbs and tactile paving on Heol Y Sheet junction (© Google Satellite 6/27/2018)



Image 5 – Dropped kerbs, tactile paving and pedestrian refuge island on School Terrace (© Google Streetview 06/2011)



Image 6 – Missing dropped kerbs and tactile paving on School Terrace/Porthcawl Rd junction (© Google Satellite 6/27/2018)



Image 7 – Zebra crossing on Pyle Road (© Google Streetview 05/2016)



Image 8 – Missing tactile paving Pyle Road (© Google Streetview 05/2016)



Image 9 – Missing tactile paving on Hall Drive (© Google Streetview 05/2016)

ROUTE B – Railway Station via Heol Tydraw



Image 10 – Lack of crossing to Heol Tydraw (© Google Satellite 6/27/2018)



Image 11 – Pedestrian footpath through to Tydraw Crescent is overgrown and lacks lighting (© Google Streetview 06/2011)



Image 12 – Pedestrian footpath through to Bryn Yr Orsaf is overgrown (© Google Streetview 06/2011)

ROUTE C – Site to Pyle Industrial Estate via Pyle Road and Heol Mostyn



Image 13 – Uncontrolled crossing on A48 north of site near roundabout lacks tactile paving (© Google Streetview 09/15)



Image 14 – Pedestrian footpath through to A48 Pyle Road is poorly lit, overgrown and narrow (Photo: 16/10/18)

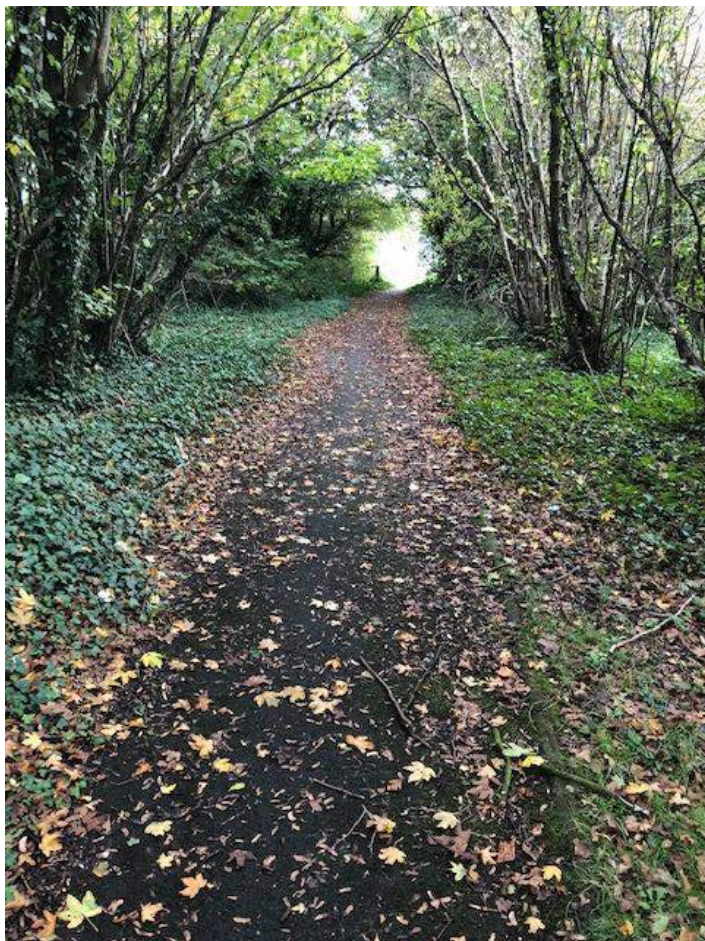


Image 15 – Pedestrian footpath through to A48 Pyle Road is poorly lit, overgrown and narrow (Photo: 16/10/18)



Image 16 – Footways on eastern side of A48 Pyle Road are narrow (Photo: 16/10/18)



Image 17 – Footways on eastern side of A48 Pyle Road are narrow (Photo: 16/10/18)



Image 18 – Lack of crossing opportunities at A48/Heol Mostyn junction (© Google Streetview 05/18)



Image 19 – Lack of dropped kerbs and tactile paving at junctions along Heol Mostyn (© Google Streetview 05/18)



Image 20 – Uncontrolled crossing on Heol Mostyn near Marshfield Avenue in poor state of repair. (© Google Streetview 05/18)

ROUTE D – Heol Mostyn to Pyle



Image 21 – Lack of dropped kerbs and tactile paving at junctions along A48 Pyle Road (© Google Streetview 05/18)



Image 22 – Evidence of on-street parking obstructions on both sides of A48 Pyle Road (© Google Streetview 05/18)

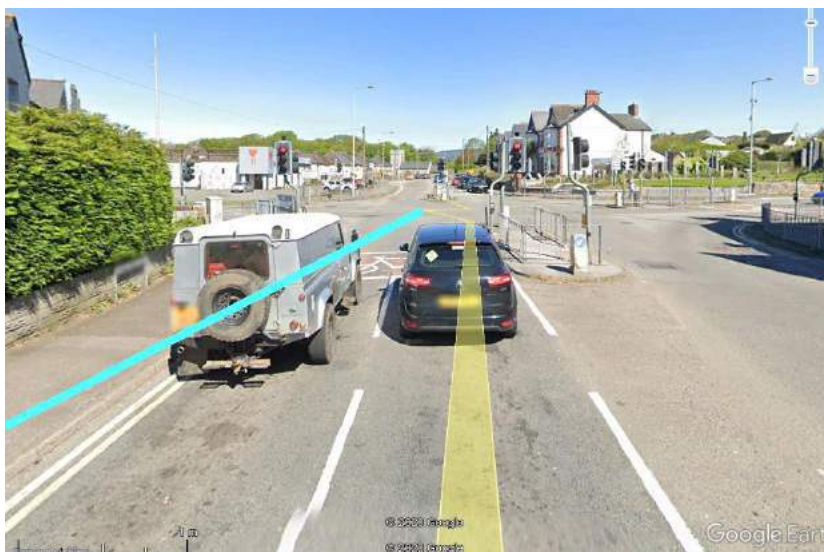


Image 23 – Pedestrian crossing phases and advanced cycle stop lines on A48/B4281 signal junction (© Google Streetview 05/18)

ROUTE E – Northeast of Site to Kenfig Hill via Waun Bant Road



Image 24 – No pedestrian footway over railway bridge leading to Waun Bant Road. Also, no street lighting. (© Google Streetview 03/11)



Image 25 – Poor drainage on country lane leading to Waun Bant Road. (© Google Streetview 03/11)



Image 26 – Evidence of vehicle overrun which suggests narrow widths that could intimidate pedestrians/cyclists. Carriageway also in poor state of repair with potholes evident. (© Google Streetview 03/11)



Image 27 – No pedestrian footway provision and lack of street lighting on Waun Bant Road south of Woodlands Park. (© Google Streetview 03/11)



Image 28 – Missing tactile paving and dropped kerb crossing at several junctions along Waun Bant Road. (© Google Streetview 06/11)

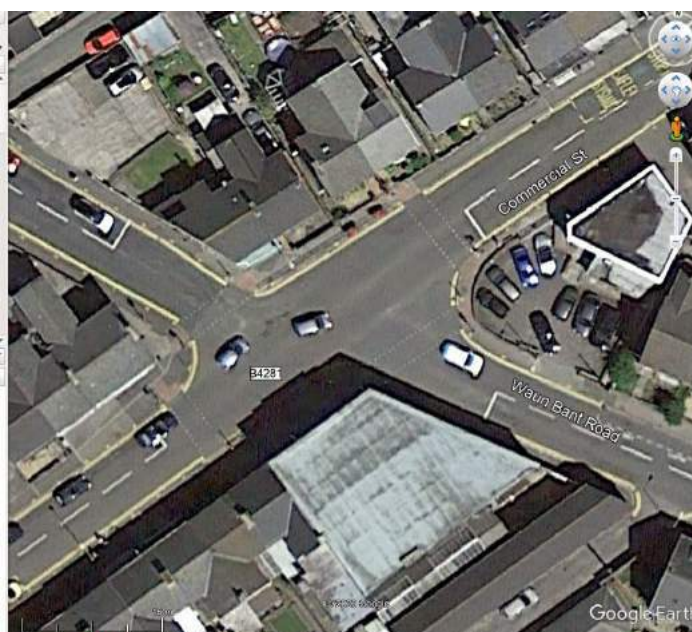
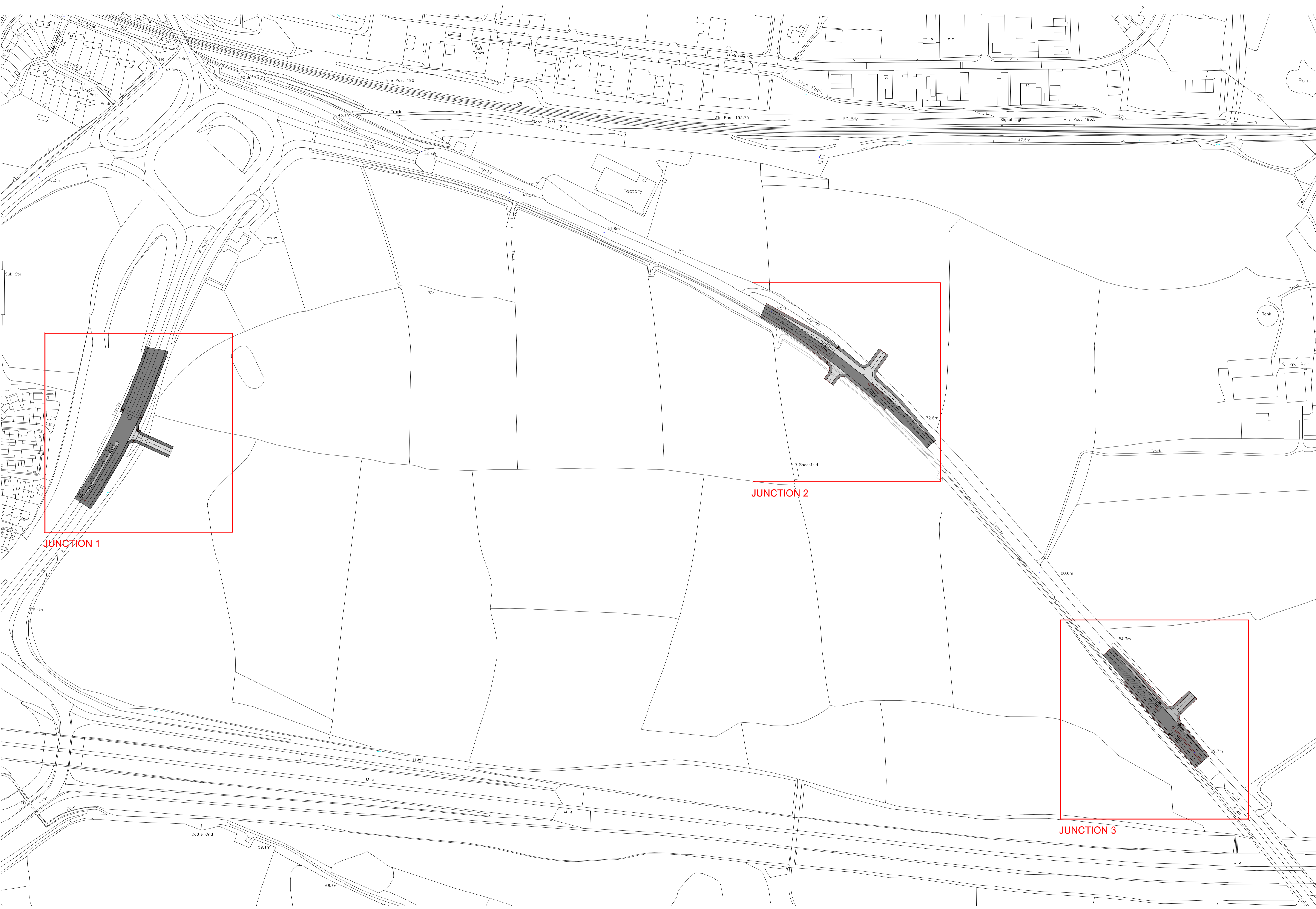


Image 29 – Pedestrian crossing phases (Puffin) at Waun Bant Road/Commercial Street junction. No advanced cycle stop lines. (© Google Streetview 06/11)

Appendix G

Preliminary Site Access Junction Designs



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL10034023
This drawing is based on (Company's Name) Drawing No:

No	Date	Drawn	Checked



CLIENT: THOMAS, REES, GRANT & KNIGHT

PROJECT: LAND EAST OF PYLE




TITLE: PROPOSED ACCESS LOCATION PLAN

STATUS: PRELIMINARY

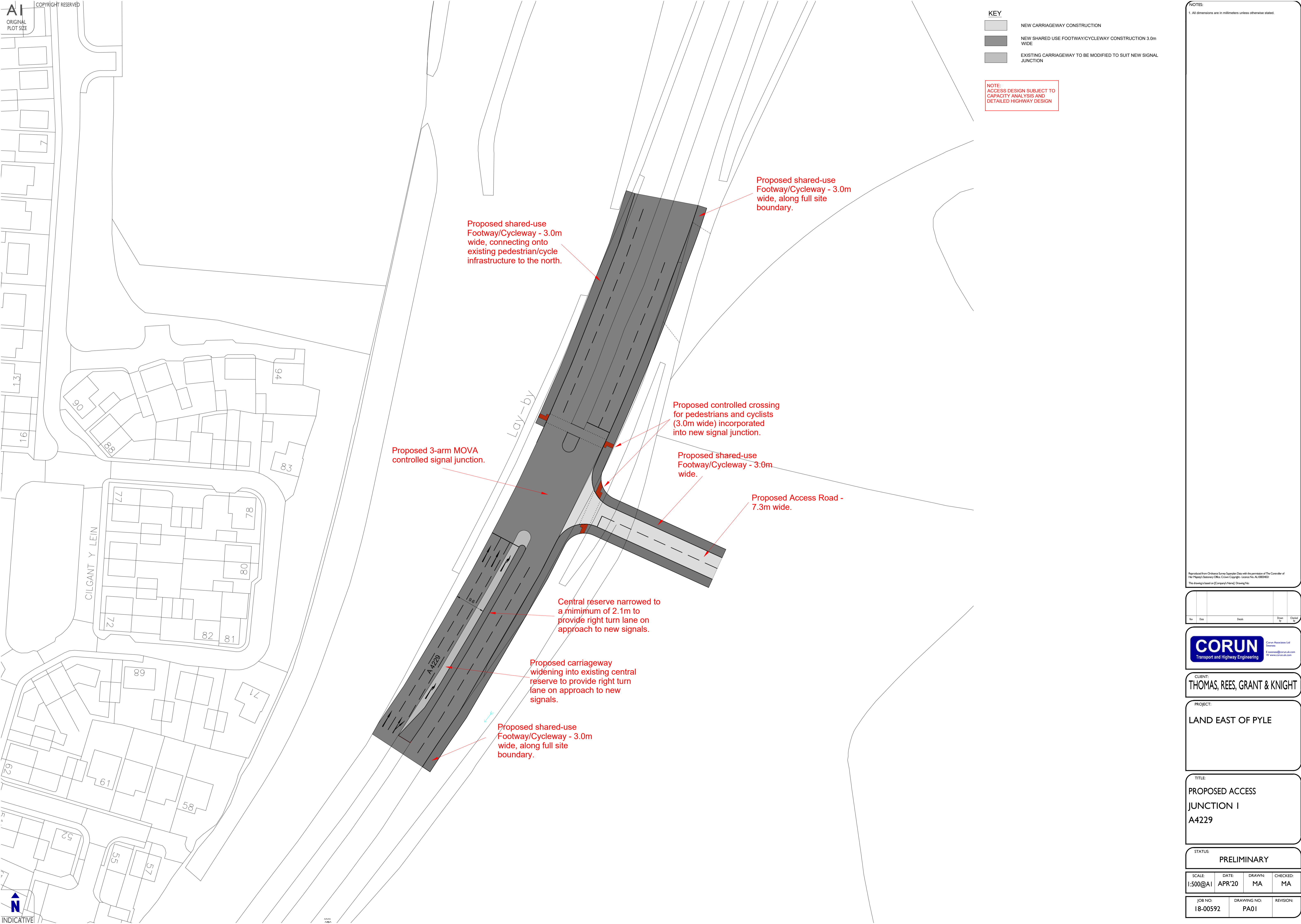
SCALE:	DATE:	DRAWN:	CHECKED:
NTS	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	LPO1	

KEY

	NEW CARRIAGEWAY CONSTRUCTION
	NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
	EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO CAPACITY ANALYSIS AND DETAILED HIGHWAY DESIGN



Proposed shared-use Footway/Cycleway - 3.0m wide, connecting onto existing pedestrian/cycle infrastructure to the north.

Proposed shared-use Footway/Cycleway - 3.0m wide, along full site boundary.

Proposed 3-arm MOVA controlled signal junction.

Proposed controlled crossing for pedestrians and cyclists (3.0m wide) incorporated into new signal junction.

Proposed shared-use Footway/Cycleway - 3.0m wide.

Proposed Access Road - 7.3m wide.

Central reserve narrowed to a minimum of 2.1m to provide right turn lane on approach to new signals.

Proposed carriageway widening into existing central reserve to provide right turn lane on approach to new signals.

Proposed shared-use Footway/Cycleway - 3.0m wide, along full site boundary.

Lay-by

A 4229

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
PROPOSED ACCESS JUNCTION 1 A4229

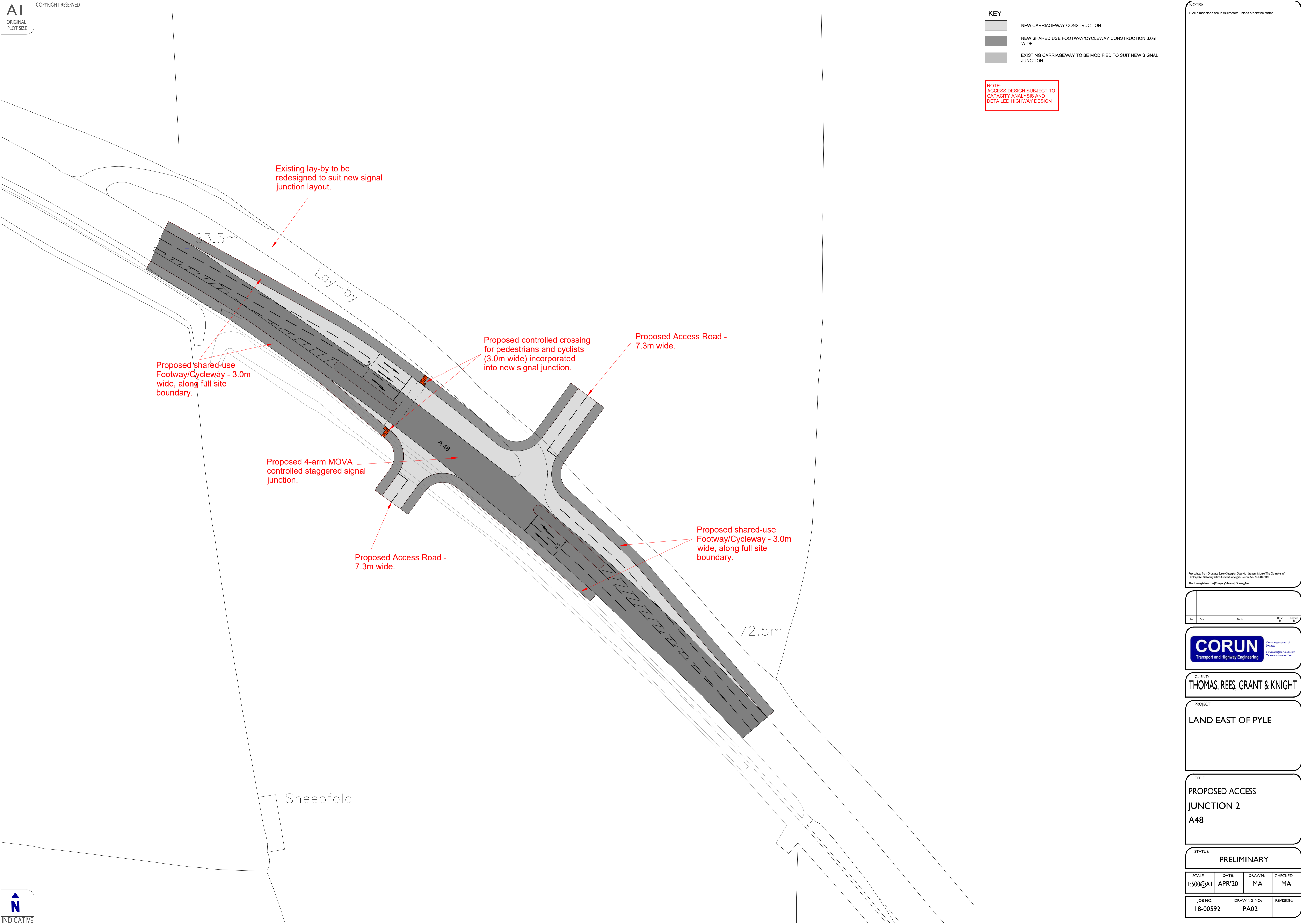
STATUS:
PRELIMINARY

SCALE	DATE	DRAWN	CHECKED
1:500@A1	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA01	

- KEY**
- NEW CARRIAGEWAY CONSTRUCTION
 - NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
 - EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO CAPACITY ANALYSIS AND DETAILED HIGHWAY DESIGN



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL1003403
This drawing is based on [Company's Name] Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
PROPOSED ACCESS JUNCTION 2 A48

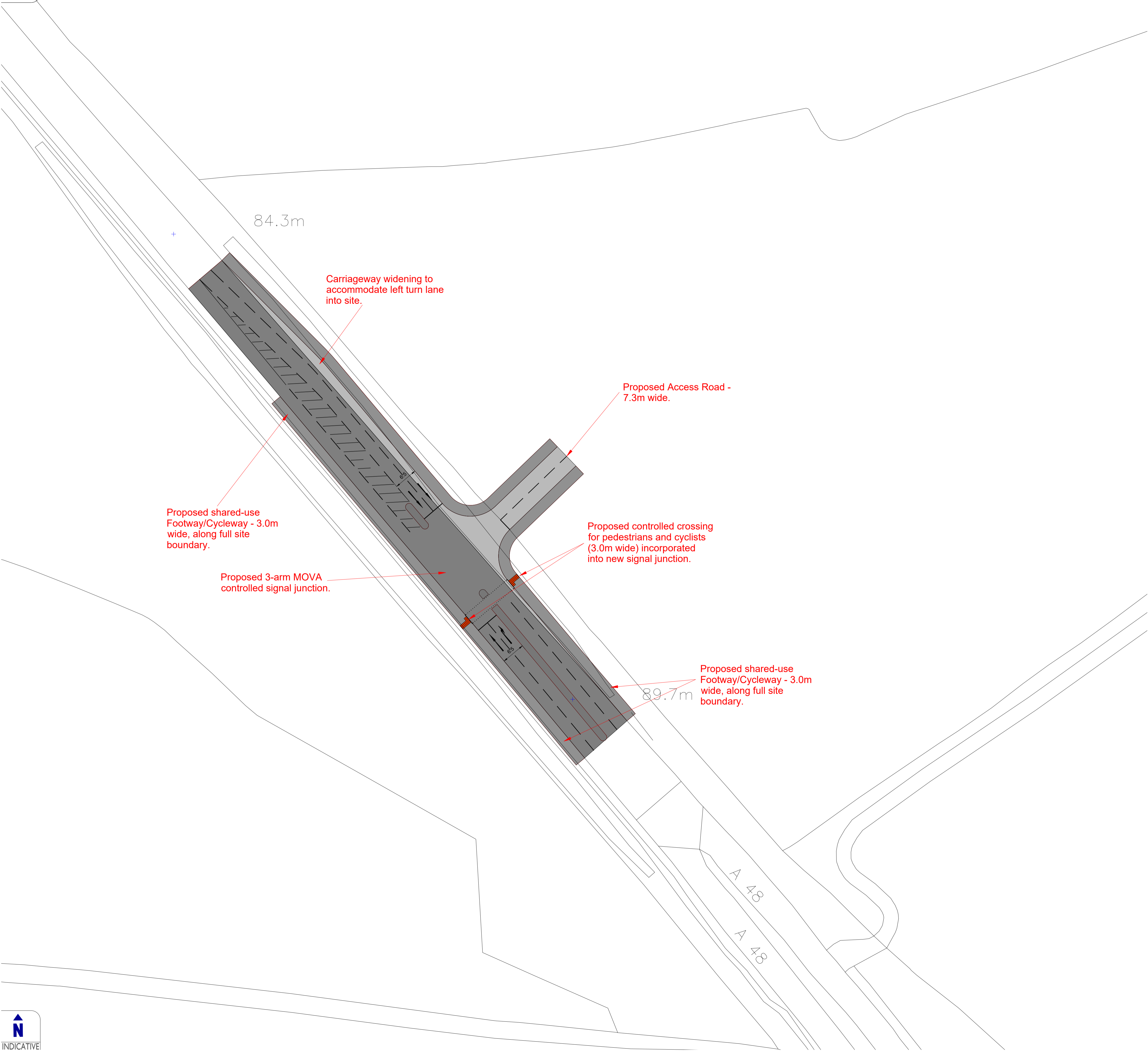
STATUS:
PRELIMINARY

SCALE	DATE	DRAWN	CHECKED
1:500@AI	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA02	

- KEY**
- NEW CARRIAGEWAY CONSTRUCTION
 - NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
 - EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO
CAPACITY ANALYSIS AND
DETAILED HIGHWAY DESIGN



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL1003403
This drawing is based on [Company Name] Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
**PROPOSED ACCESS
JUNCTION 3
A48**

STATUS:
PRELIMINARY

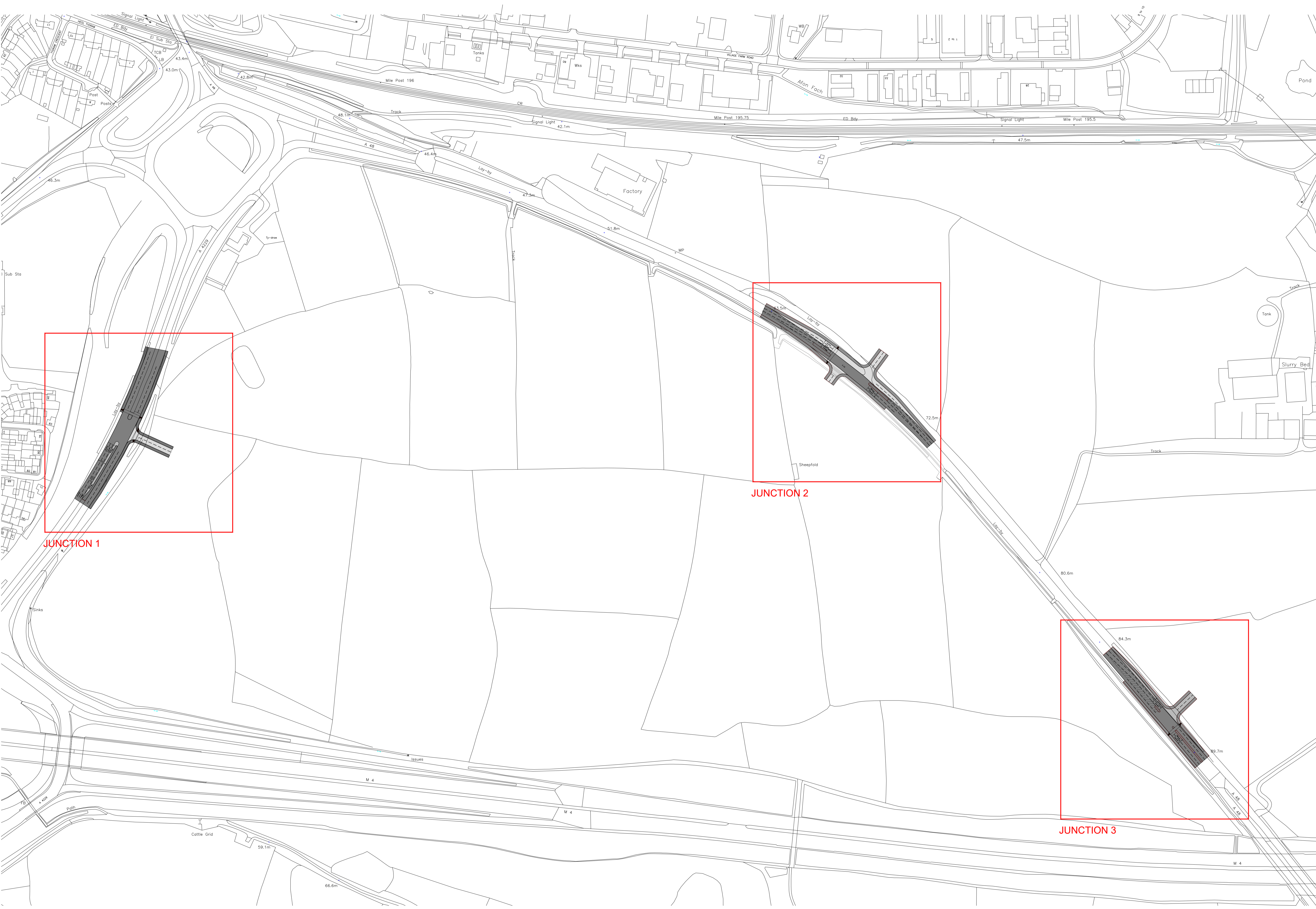
SCALE	DATE	DRAWN	CHECKED
1:500@A1	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA03	



APPENDIX C

Preliminary Access Designs



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. License No. AL10034023
This drawing is based on (Company's Name) Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE




TITLE:
PROPOSED ACCESS LOCATION PLAN

STATUS:
PRELIMINARY

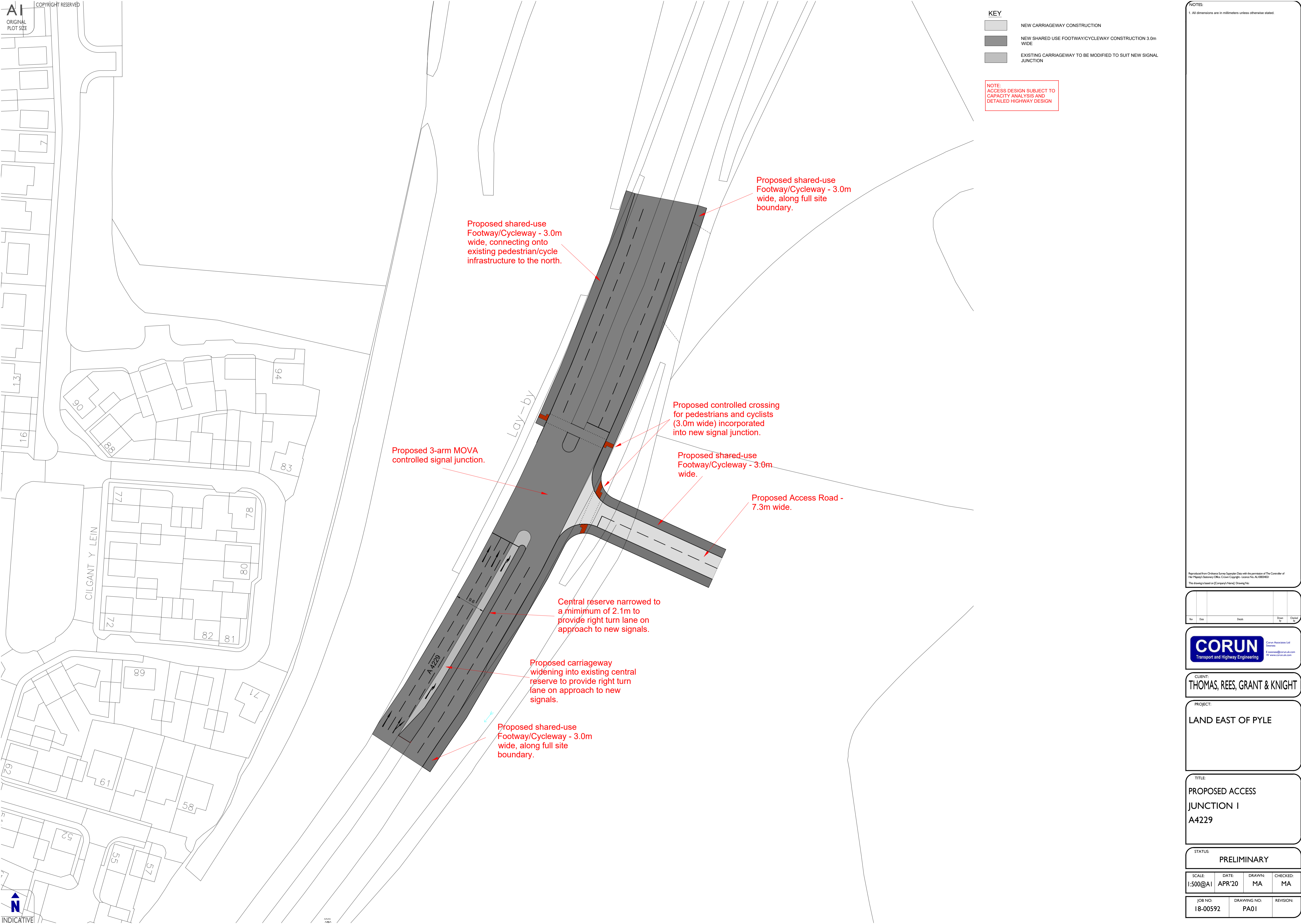
SCALE:	DATE:	DRAWN:	CHECKED:
NTS	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	LPO1	

KEY

	NEW CARRIAGEWAY CONSTRUCTION
	NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
	EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO CAPACITY ANALYSIS AND DETAILED HIGHWAY DESIGN



Reproduced from Ordnance Survey Satellite Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL1003403
This drawing is based on (Company Name) Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
PROPOSED ACCESS JUNCTION 1 A4229

STATUS:
PRELIMINARY

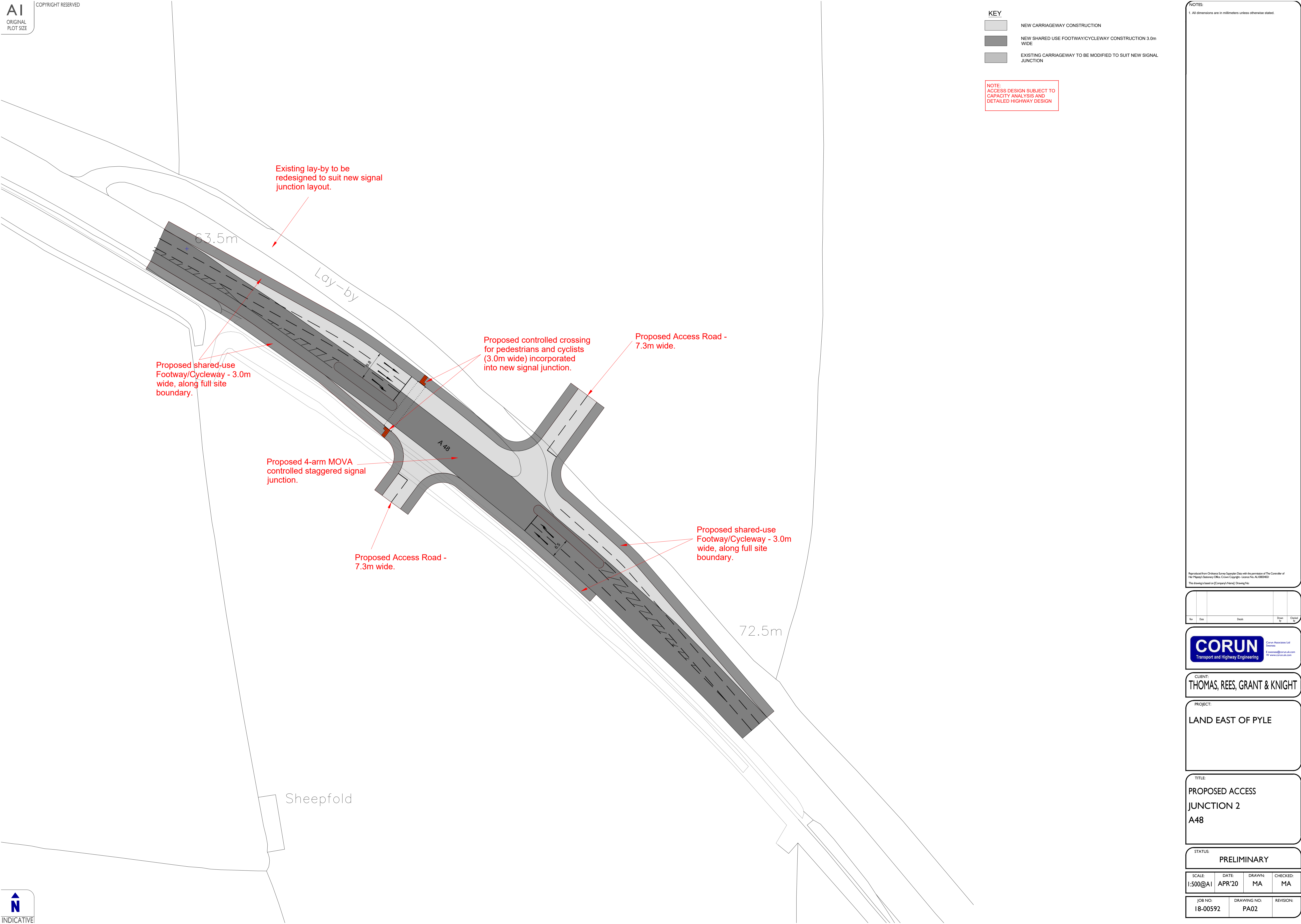
SCALE	DATE	DRAWN	CHECKED
1:500@A1	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA01	



- KEY**
- NEW CARRIAGEWAY CONSTRUCTION
 - NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
 - EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO CAPACITY ANALYSIS AND DETAILED HIGHWAY DESIGN



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL1003403
This drawing is based on [Company's Name] Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
PROPOSED ACCESS JUNCTION 2 A48

STATUS:
PRELIMINARY

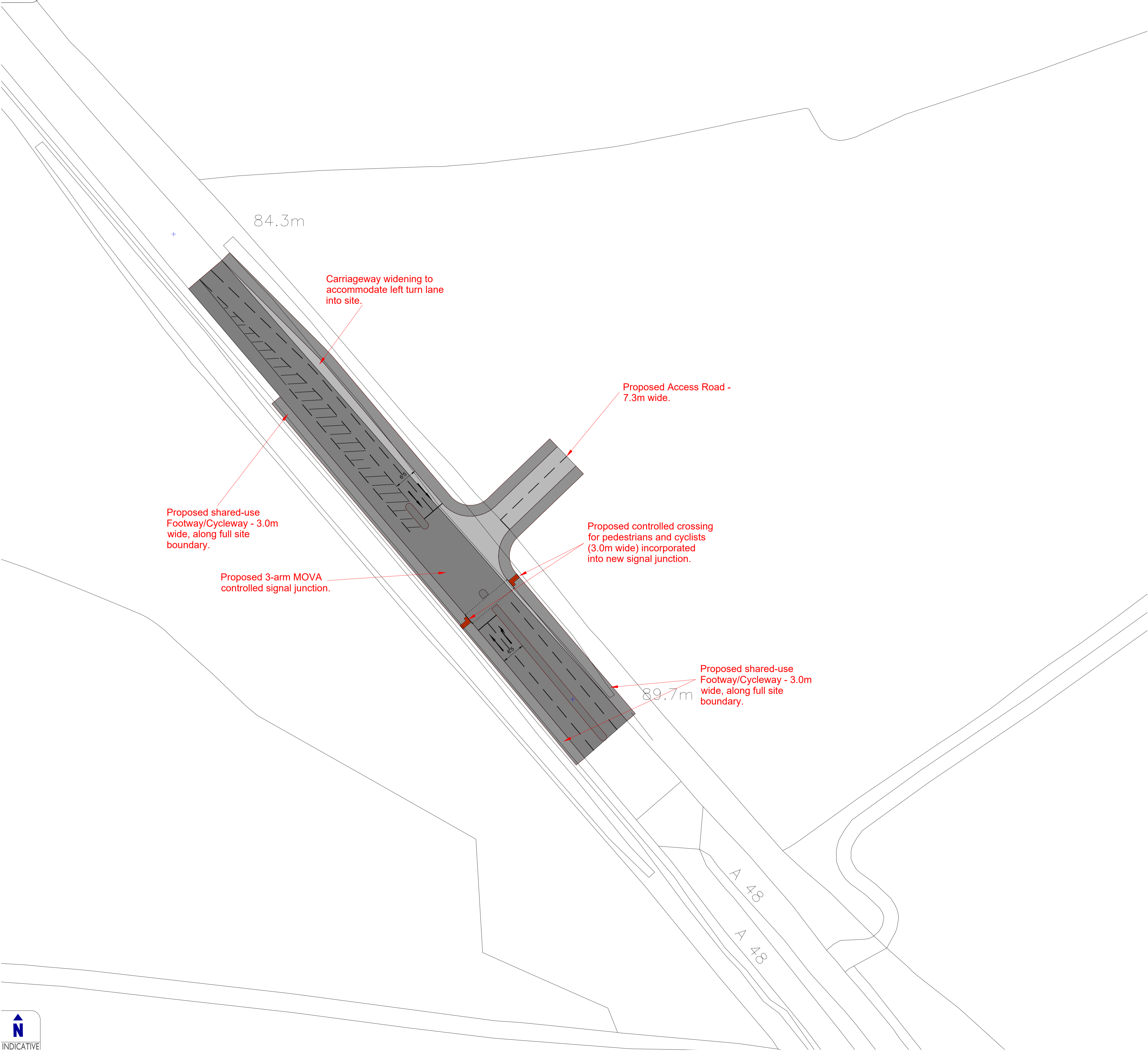
SCALE	DATE	DRAWN	CHECKED
1:500@AI	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA02	



- KEY**
- NEW CARRIAGEWAY CONSTRUCTION
 - NEW SHARED USE FOOTWAY/CYCLEWAY CONSTRUCTION 3.0m WIDE
 - EXISTING CARRIAGEWAY TO BE MODIFIED TO SUIT NEW SIGNAL JUNCTION

NOTE:
ACCESS DESIGN SUBJECT TO
CAPACITY ANALYSIS AND
DETAILED HIGHWAY DESIGN



Reproduced from Ordnance Survey Supermap Data with the permission of The Controller of Her Majesty's Stationery Office. Crown Copyright. Licence No. AL1000403
This drawing is based on [Company Name] Drawing No:

No	Date	Drawn	Checked



CLIENT:
THOMAS, REES, GRANT & KNIGHT

PROJECT:
LAND EAST OF PYLE

TITLE:
PROPOSED ACCESS JUNCTION 3 A48

STATUS:
PRELIMINARY

SCALE	DATE	DRAWN	CHECKED
1:500@A1	APR'20	MA	MA

JOB NO:	DRAWING NO:	REVISION:
18-00592	PA03	



APPENDIX D

TRICS Output

Calculation Reference: AUDIT-751101-200428-0412

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	2 days
	WS WEST SUSSEX	1 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	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: 275 to 984 (units:)
 Range Selected by User: 275 to 1817 (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: 01/01/12 to 24/09/19

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	2 days
Tuesday	3 days
Wednesday	2 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

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

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

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

C3 7 days

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

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
20,001 to 25,000	1 days

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

Population within 5 miles:

50,001 to 75,000	3 days
75,001 to 100,000	2 days
125,001 to 250,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	3 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	3 days
No	4 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	7 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	DS-03-A-02 RADBOURNE LANE DERBY	MIXED HOUSES	DERBYSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	371	
	Survey date: TUESDAY	10/07/18	Survey Type: MANUAL
2	KC-03-A-06 MARGATE ROAD HERNE BAY	MIXED HOUSES & FLATS	KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:	363	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
3	KC-03-A-07 RECVLVER ROAD HERNE BAY	MIXED HOUSES	KENT
	Edge of Town Residential Zone Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
4	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED	NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings:	432	
	Survey date: MONDAY	12/05/14	Survey Type: MANUAL
5	NF-03-A-06 BEAUFORT WAY GREAT YARMOUTH BRADWELL	MIXED HOUSES	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:	275	
	Survey date: MONDAY	23/09/19	Survey Type: MANUAL
6	NF-03-A-09 ROUND HOUSE WAY NORWICH CRINGLEFORD	MIXED HOUSES & FLATS	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:	984	
	Survey date: TUESDAY	24/09/19	Survey Type: MANUAL
7	WS-03-A-11 ELLIS ROAD WEST HORSHAM S BROADBRIDGE HEATH	MIXED HOUSES	WEST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings:	918	
	Survey date: TUESDAY	02/04/19	Survey Type: MANUAL

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

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	519	0.061	7	519	0.299	7	519	0.360
08:00 - 09:00	7	519	0.137	7	519	0.377	7	519	0.514
09:00 - 10:00	7	519	0.132	7	519	0.154	7	519	0.286
10:00 - 11:00	7	519	0.097	7	519	0.123	7	519	0.220
11:00 - 12:00	7	519	0.106	7	519	0.108	7	519	0.214
12:00 - 13:00	7	519	0.134	7	519	0.130	7	519	0.264
13:00 - 14:00	7	519	0.131	7	519	0.123	7	519	0.254
14:00 - 15:00	7	519	0.150	7	519	0.154	7	519	0.304
15:00 - 16:00	7	519	0.228	7	519	0.164	7	519	0.392
16:00 - 17:00	7	519	0.264	7	519	0.153	7	519	0.417
17:00 - 18:00	7	519	0.350	7	519	0.162	7	519	0.512
18:00 - 19:00	7	519	0.312	7	519	0.167	7	519	0.479
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.102			2.114			4.216

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

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

Parameter summary

Trip rate parameter range selected:	275 - 984 (units:)
Survey date range:	01/01/12 - 24/09/19
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

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

MULTI-MODAL CYCLISTS

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	7	519	0.004	7	519	0.005	7	519	0.009
08:00 - 09:00	7	519	0.005	7	519	0.012	7	519	0.017
09:00 - 10:00	7	519	0.001	7	519	0.002	7	519	0.003
10:00 - 11:00	7	519	0.001	7	519	0.002	7	519	0.003
11:00 - 12:00	7	519	0.001	7	519	0.002	7	519	0.003
12:00 - 13:00	7	519	0.002	7	519	0.002	7	519	0.004
13:00 - 14:00	7	519	0.002	7	519	0.001	7	519	0.003
14:00 - 15:00	7	519	0.002	7	519	0.001	7	519	0.003
15:00 - 16:00	7	519	0.004	7	519	0.002	7	519	0.006
16:00 - 17:00	7	519	0.008	7	519	0.005	7	519	0.013
17:00 - 18:00	7	519	0.008	7	519	0.005	7	519	0.013
18:00 - 19:00	7	519	0.006	7	519	0.006	7	519	0.012
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.044			0.045			0.089

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

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

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

MULTI-MODAL VEHICLE OCCUPANTS

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	7	519	0.082	7	519	0.433	7	519	0.515
08:00 - 09:00	7	519	0.180	7	519	0.639	7	519	0.819
09:00 - 10:00	7	519	0.176	7	519	0.226	7	519	0.402
10:00 - 11:00	7	519	0.137	7	519	0.180	7	519	0.317
11:00 - 12:00	7	519	0.151	7	519	0.163	7	519	0.314
12:00 - 13:00	7	519	0.191	7	519	0.182	7	519	0.373
13:00 - 14:00	7	519	0.184	7	519	0.177	7	519	0.361
14:00 - 15:00	7	519	0.211	7	519	0.220	7	519	0.431
15:00 - 16:00	7	519	0.410	7	519	0.232	7	519	0.642
16:00 - 17:00	7	519	0.454	7	519	0.225	7	519	0.679
17:00 - 18:00	7	519	0.549	7	519	0.237	7	519	0.786
18:00 - 19:00	7	519	0.489	7	519	0.269	7	519	0.758
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.214			3.183			6.397

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

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

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

MULTI-MODAL PEDESTRIANS

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	7	519	0.010	7	519	0.039	7	519	0.049
08:00 - 09:00	7	519	0.024	7	519	0.088	7	519	0.112
09:00 - 10:00	7	519	0.014	7	519	0.020	7	519	0.034
10:00 - 11:00	7	519	0.014	7	519	0.017	7	519	0.031
11:00 - 12:00	7	519	0.013	7	519	0.011	7	519	0.024
12:00 - 13:00	7	519	0.013	7	519	0.009	7	519	0.022
13:00 - 14:00	7	519	0.014	7	519	0.017	7	519	0.031
14:00 - 15:00	7	519	0.023	7	519	0.020	7	519	0.043
15:00 - 16:00	7	519	0.058	7	519	0.021	7	519	0.079
16:00 - 17:00	7	519	0.040	7	519	0.012	7	519	0.052
17:00 - 18:00	7	519	0.032	7	519	0.022	7	519	0.054
18:00 - 19:00	7	519	0.038	7	519	0.032	7	519	0.070
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.293			0.308			0.601

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS

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	7	519	0.001	7	519	0.023	7	519	0.024
08:00 - 09:00	7	519	0.002	7	519	0.028	7	519	0.030
09:00 - 10:00	7	519	0.004	7	519	0.012	7	519	0.016
10:00 - 11:00	7	519	0.004	7	519	0.007	7	519	0.011
11:00 - 12:00	7	519	0.004	7	519	0.009	7	519	0.013
12:00 - 13:00	7	519	0.005	7	519	0.004	7	519	0.009
13:00 - 14:00	7	519	0.006	7	519	0.004	7	519	0.010
14:00 - 15:00	7	519	0.010	7	519	0.005	7	519	0.015
15:00 - 16:00	7	519	0.016	7	519	0.008	7	519	0.024
16:00 - 17:00	7	519	0.026	7	519	0.004	7	519	0.030
17:00 - 18:00	7	519	0.019	7	519	0.004	7	519	0.023
18:00 - 19:00	7	519	0.018	7	519	0.006	7	519	0.024
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.115			0.114			0.229

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.

Calculation Reference: AUDIT-751101-200428-0404

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
 Category : A - PRIMARY
 MULTI-MODAL VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	CW CORNWALL	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
08	NORTH WEST	
	LC LANCASHIRE	1 days
	MS MERSEYSIDE	1 days
10	WALES	
	MT MERTHYR TYDFIL	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: Gross floor area
 Actual Range: 625 to 3900 (units: sqm)
 Range Selected by User: 625 to 4520 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 03/04/19

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:

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

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

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	1

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

Selected Location Sub Categories:

Residential Zone	4
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

D1 5 days

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

Population within 1 mile:

1,001 to 5,000 1 days
5,001 to 10,000 2 days
15,001 to 20,000 1 days
25,001 to 50,000 1 days

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

Population within 5 miles:

5,001 to 25,000 1 days
50,001 to 75,000 2 days
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:

0.6 to 1.0 2 days
1.1 to 1.5 3 days

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

Travel Plan:

No 5 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 5 days

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

LIST OF SITES relevant to selection parameters

1	CW-04-A-03 TREVERBYN RISE PENRYN	PRIMARY ACADEMY	CORNWALL
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 3900 sqm <i>Survey date: THURSDAY 28/03/19</i>		
2	LC-04-A-05 NEWTON STREET BLACKBURN	PRIMARY SCHOOL	LANCASHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total Gross floor area: 3359 sqm <i>Survey date: WEDNESDAY 28/09/16</i>		
3	MS-04-A-02 BOOKER AVENUE LIVERPOOL ALVERTON	PRIMARY SCHOOL	MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 2500 sqm <i>Survey date: THURSDAY 13/06/13</i>		
4	MT-04-A-01 BRECON ROAD MERTHYR TYDFIL	PRIMARY SCHOOL	MERTHYR TYDFIL
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 1000 sqm <i>Survey date: FRIDAY 18/10/13</i>		
5	NE-04-A-01 SUNNINGDALE ROAD SCUNTHORPE	PRIMARY SCHOOL	NORTH EAST LINCOLNSHIRE
	Edge of Town Residential Zone Total Gross floor area: 625 sqm <i>Survey date: TUESDAY 20/05/14</i>		

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	5	2277	0.966	5	2277	0.422	5	2277	1.388
08:00 - 09:00	5	2277	3.408	5	2277	1.757	5	2277	5.165
09:00 - 10:00	5	2277	0.448	5	2277	0.527	5	2277	0.975
10:00 - 11:00	5	2277	0.176	5	2277	0.202	5	2277	0.378
11:00 - 12:00	5	2277	0.343	5	2277	0.237	5	2277	0.580
12:00 - 13:00	5	2277	0.325	5	2277	0.360	5	2277	0.685
13:00 - 14:00	5	2277	0.220	5	2277	0.343	5	2277	0.563
14:00 - 15:00	5	2277	0.439	5	2277	0.307	5	2277	0.746
15:00 - 16:00	5	2277	1.203	5	2277	2.328	5	2277	3.531
16:00 - 17:00	5	2277	0.712	5	2277	1.283	5	2277	1.995
17:00 - 18:00	5	2277	0.343	5	2277	0.624	5	2277	0.967
18:00 - 19:00	4	2596	0.116	4	2596	0.096	4	2596	0.212
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			8.699			8.486			17.185

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

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

Parameter summary

Trip rate parameter range selected:	625 - 3900 (units: sqm)
Survey date range:	01/01/12 - 03/04/19
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	5	2277	0.009	5	2277	0.000	5	2277	0.009
08:00 - 09:00	5	2277	0.211	5	2277	0.000	5	2277	0.211
09:00 - 10:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
10:00 - 11:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
11:00 - 12:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
12:00 - 13:00	5	2277	0.000	5	2277	0.026	5	2277	0.026
13:00 - 14:00	5	2277	0.026	5	2277	0.000	5	2277	0.026
14:00 - 15:00	5	2277	0.000	5	2277	0.009	5	2277	0.009
15:00 - 16:00	5	2277	0.000	5	2277	0.184	5	2277	0.184
16:00 - 17:00	5	2277	0.000	5	2277	0.026	5	2277	0.026
17:00 - 18:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
18:00 - 19:00	4	2596	0.000	4	2596	0.000	4	2596	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.246			0.245			0.491

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

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	5	2277	1.344	5	2277	0.334	5	2277	1.678
08:00 - 09:00	5	2277	5.385	5	2277	1.590	5	2277	6.975
09:00 - 10:00	5	2277	0.518	5	2277	0.492	5	2277	1.010
10:00 - 11:00	5	2277	0.193	5	2277	0.228	5	2277	0.421
11:00 - 12:00	5	2277	0.387	5	2277	0.246	5	2277	0.633
12:00 - 13:00	5	2277	0.325	5	2277	0.360	5	2277	0.685
13:00 - 14:00	5	2277	0.228	5	2277	0.369	5	2277	0.597
14:00 - 15:00	5	2277	0.351	5	2277	0.325	5	2277	0.676
15:00 - 16:00	5	2277	1.063	5	2277	3.891	5	2277	4.954
16:00 - 17:00	5	2277	0.782	5	2277	2.099	5	2277	2.881
17:00 - 18:00	5	2277	0.290	5	2277	0.957	5	2277	1.247
18:00 - 19:00	4	2596	0.019	4	2596	0.144	4	2596	0.163
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			10.885			11.035			21.920

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

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	5	2277	0.299	5	2277	0.018	5	2277	0.317
08:00 - 09:00	5	2277	9.628	5	2277	2.855	5	2277	12.483
09:00 - 10:00	5	2277	0.729	5	2277	1.001	5	2277	1.730
10:00 - 11:00	5	2277	0.158	5	2277	0.430	5	2277	0.588
11:00 - 12:00	5	2277	0.351	5	2277	0.404	5	2277	0.755
12:00 - 13:00	5	2277	0.659	5	2277	0.483	5	2277	1.142
13:00 - 14:00	5	2277	0.264	5	2277	0.597	5	2277	0.861
14:00 - 15:00	5	2277	0.720	5	2277	0.351	5	2277	1.071
15:00 - 16:00	5	2277	3.347	5	2277	8.600	5	2277	11.947
16:00 - 17:00	5	2277	0.281	5	2277	1.230	5	2277	1.511
17:00 - 18:00	5	2277	0.079	5	2277	0.167	5	2277	0.246
18:00 - 19:00	4	2596	0.000	4	2596	0.125	4	2596	0.125
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			16.515			16.261			32.776

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

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

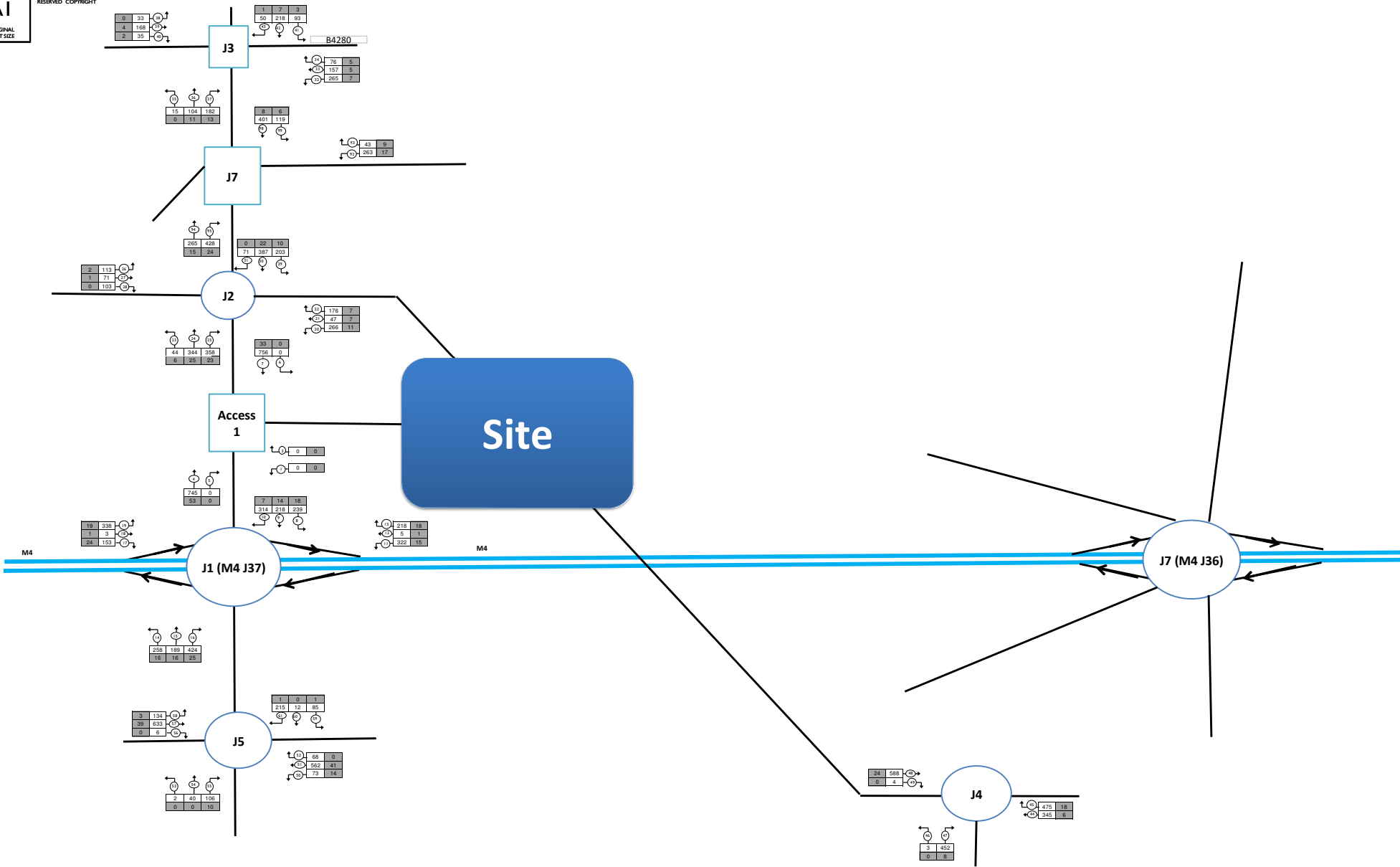
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	2277	0.035	5	2277	0.000	5	2277	0.035
08:00 - 09:00	5	2277	1.362	5	2277	0.439	5	2277	1.801
09:00 - 10:00	5	2277	0.264	5	2277	0.220	5	2277	0.484
10:00 - 11:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
11:00 - 12:00	5	2277	0.000	5	2277	0.000	5	2277	0.000
12:00 - 13:00	5	2277	0.123	5	2277	0.061	5	2277	0.184
13:00 - 14:00	5	2277	0.070	5	2277	0.123	5	2277	0.193
14:00 - 15:00	5	2277	0.176	5	2277	0.000	5	2277	0.176
15:00 - 16:00	5	2277	0.360	5	2277	1.370	5	2277	1.730
16:00 - 17:00	5	2277	0.061	5	2277	0.184	5	2277	0.245
17:00 - 18:00	5	2277	0.000	5	2277	0.018	5	2277	0.018
18:00 - 19:00	4	2596	0.000	4	2596	0.000	4	2596	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.451			2.415			4.866

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

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

APPENDIX E

Network Flow Diagrams



NOTES:
 [Vehicles symbol] Vehicles
 [HGVs symbol] HGVs
 [Arrow symbol] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

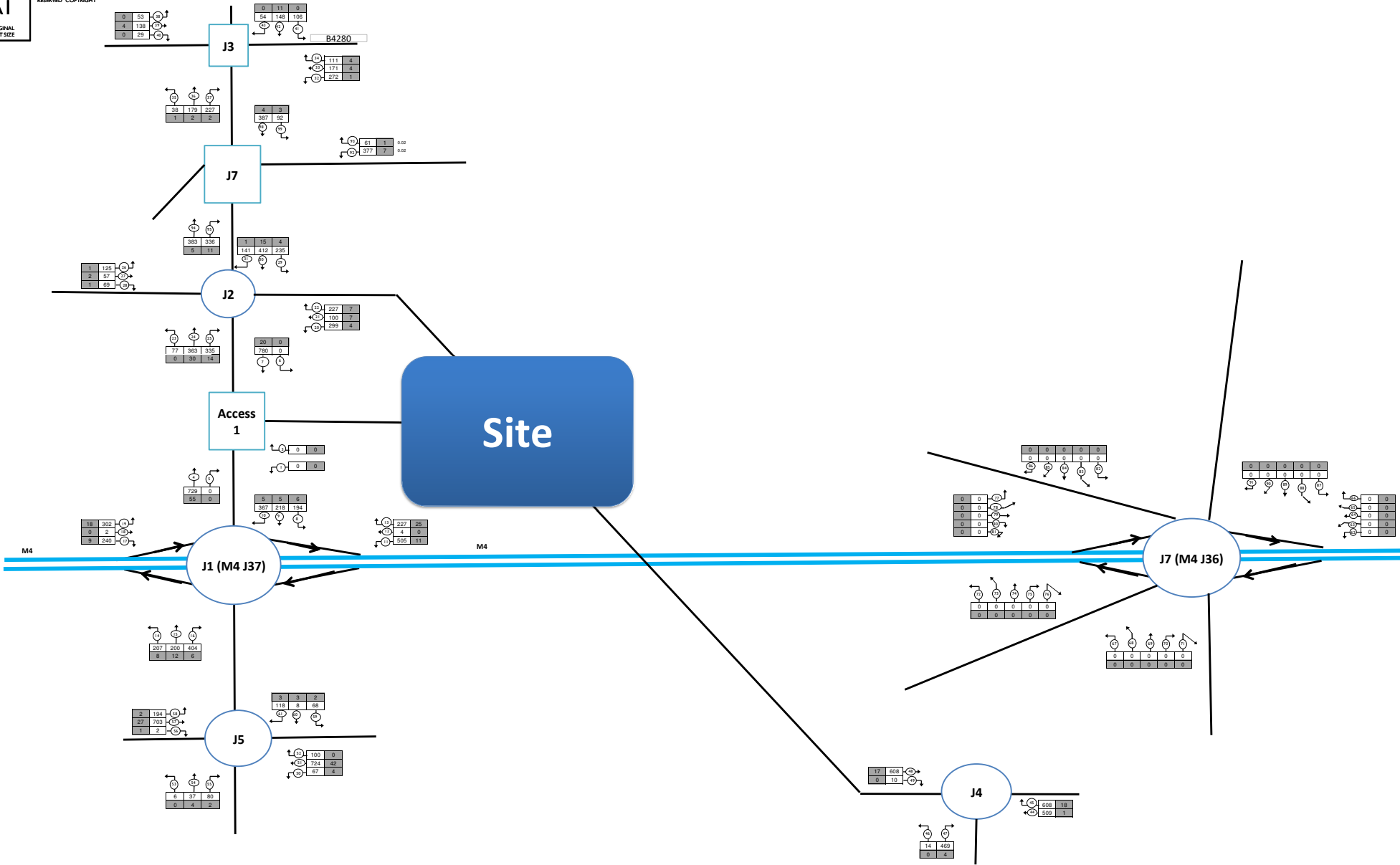
PROJECT:

A48, Pyle

TITLE: 2020 Survey Traffic
Weekday AM Peak

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 1a	REVISION	





NOTES:
 [Square with circle] Vehicles
 [Square with square] HGVs
 [Circle with arrow] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT:

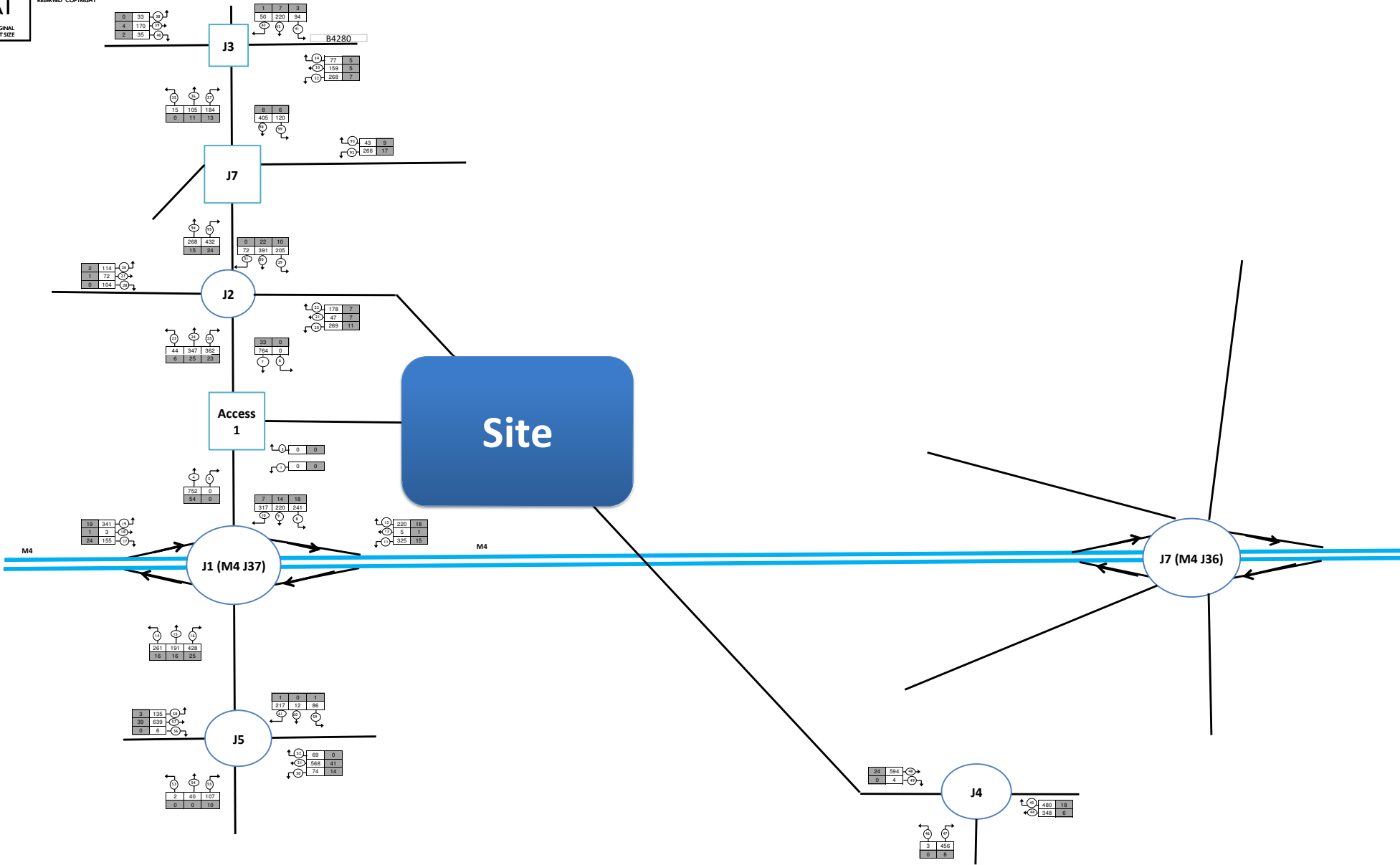
TITLE:

A48, Pyle

2020 Survey Traffic
Weekday PM Peak

STATUS: FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	1b		



Site

J1 (M4 J37)

J7 (M4 J36)

J5

J4

Access 1

J3

J7

J2

* encircled number denotes unique turning movement reference used for internal purposes only

NOTES:
 [Square with circle] Vehicles
 [Square with circle and 'H'] HGVs
 [Circle with arrow] Direction of movement

CLIENT: -

PROJECT:

A48, Pyle

TITLE:

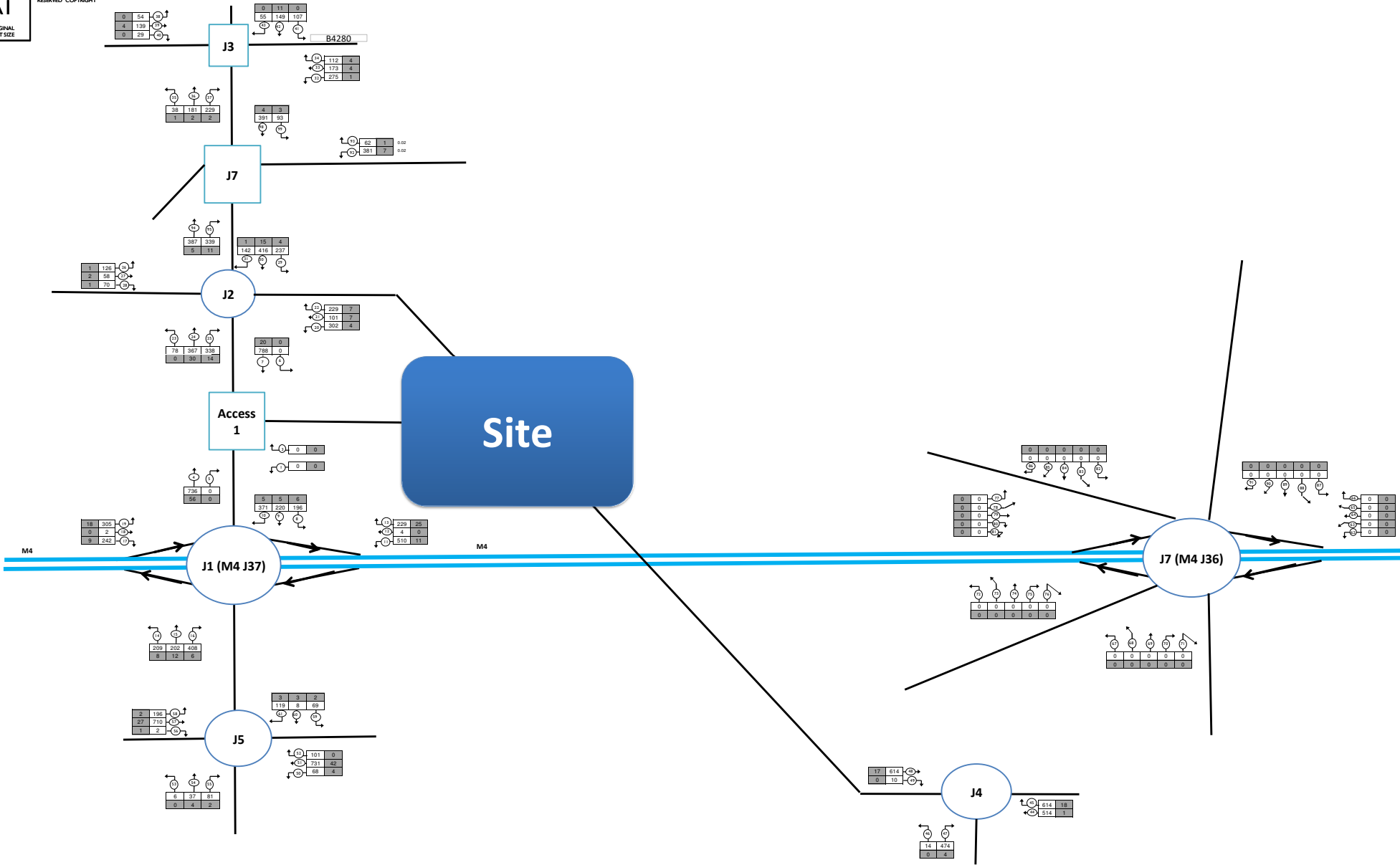
2021 Base Traffic
Weekday AM Peak

STATUS:

FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	2a		





CORUN
Transport and Highway Engineering

NOTES:
 [Square with diagonal line] Vehicles
 [Square with horizontal line] HGVs
 [Circle with arrow] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

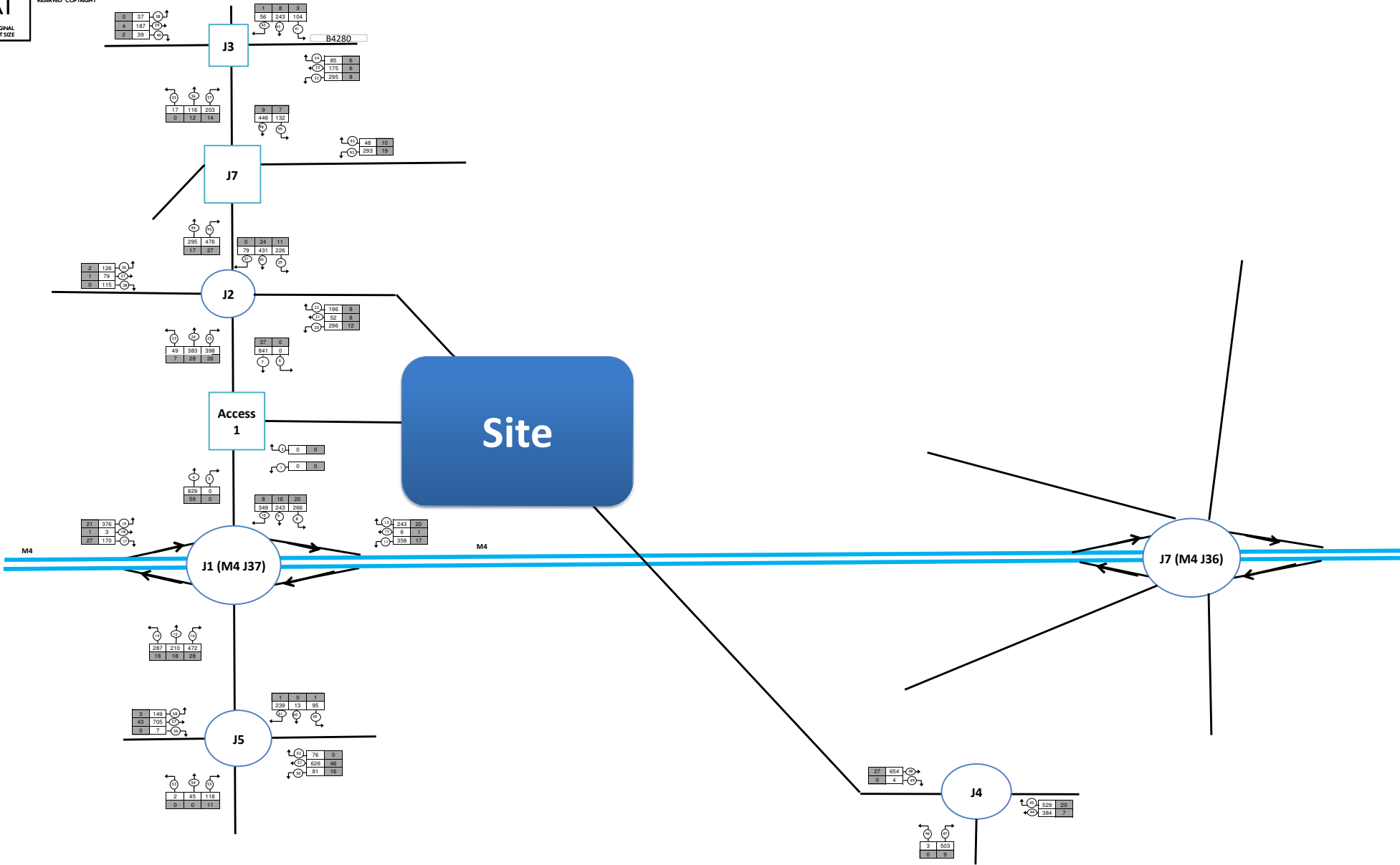
CLIENT: -

PROJECT:

2021 Base Traffic
Weekday PM Peak

CLIENT:

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO.: 18-00592	DRAWING: 2b	REVISION:	



NOTES:

- Vehicles
 - HGVs
 - Direction of movement
- * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT:

-

PROJECT:

A48, Pyle

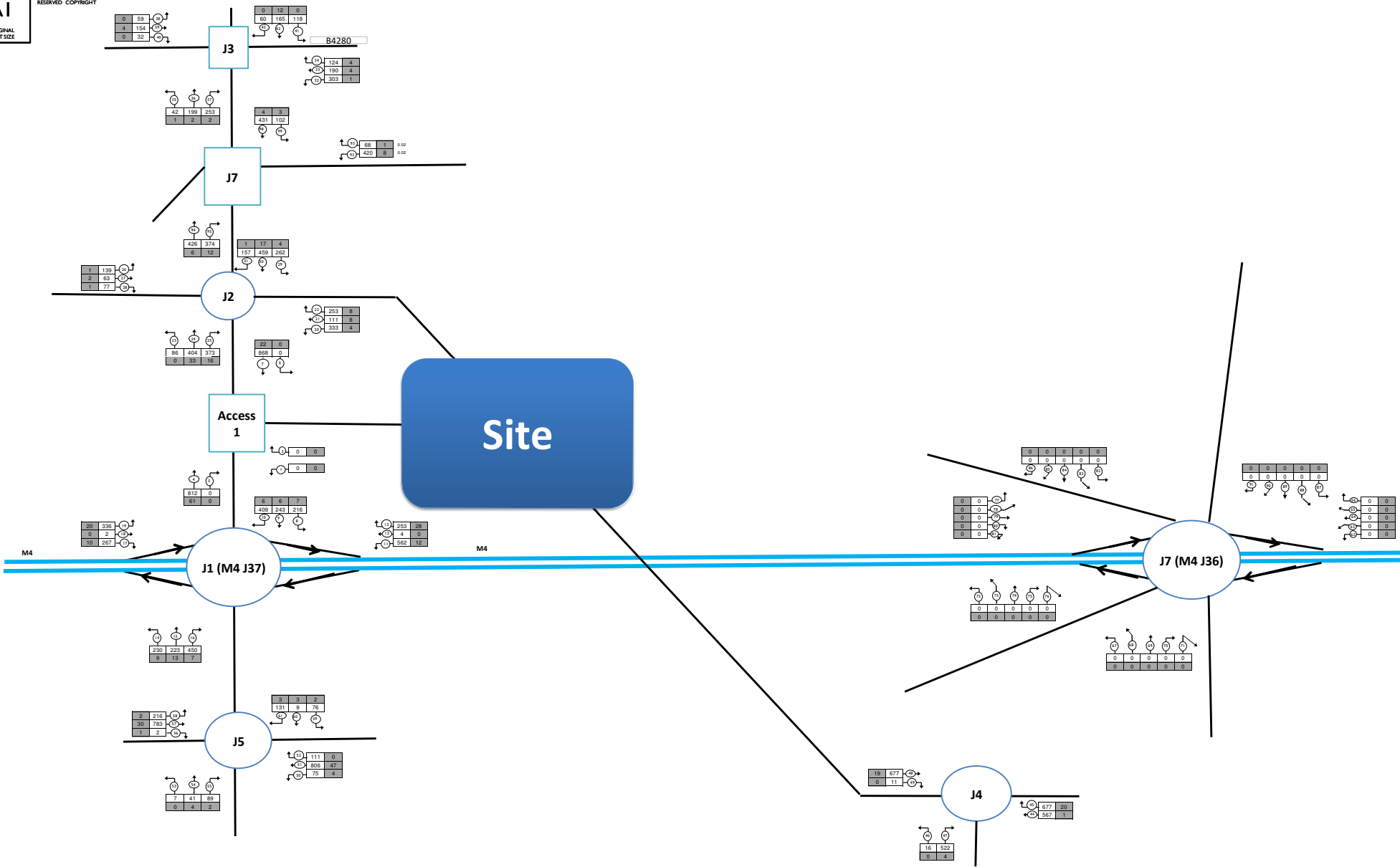
TITLE:

2033 Base
Weekday AM Peak

STATUS:

FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	3a		



NOTES:

- Vehicles
- HGVs
- Direction of movement
- * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT:

-

PROJECT:

A48, Pyle

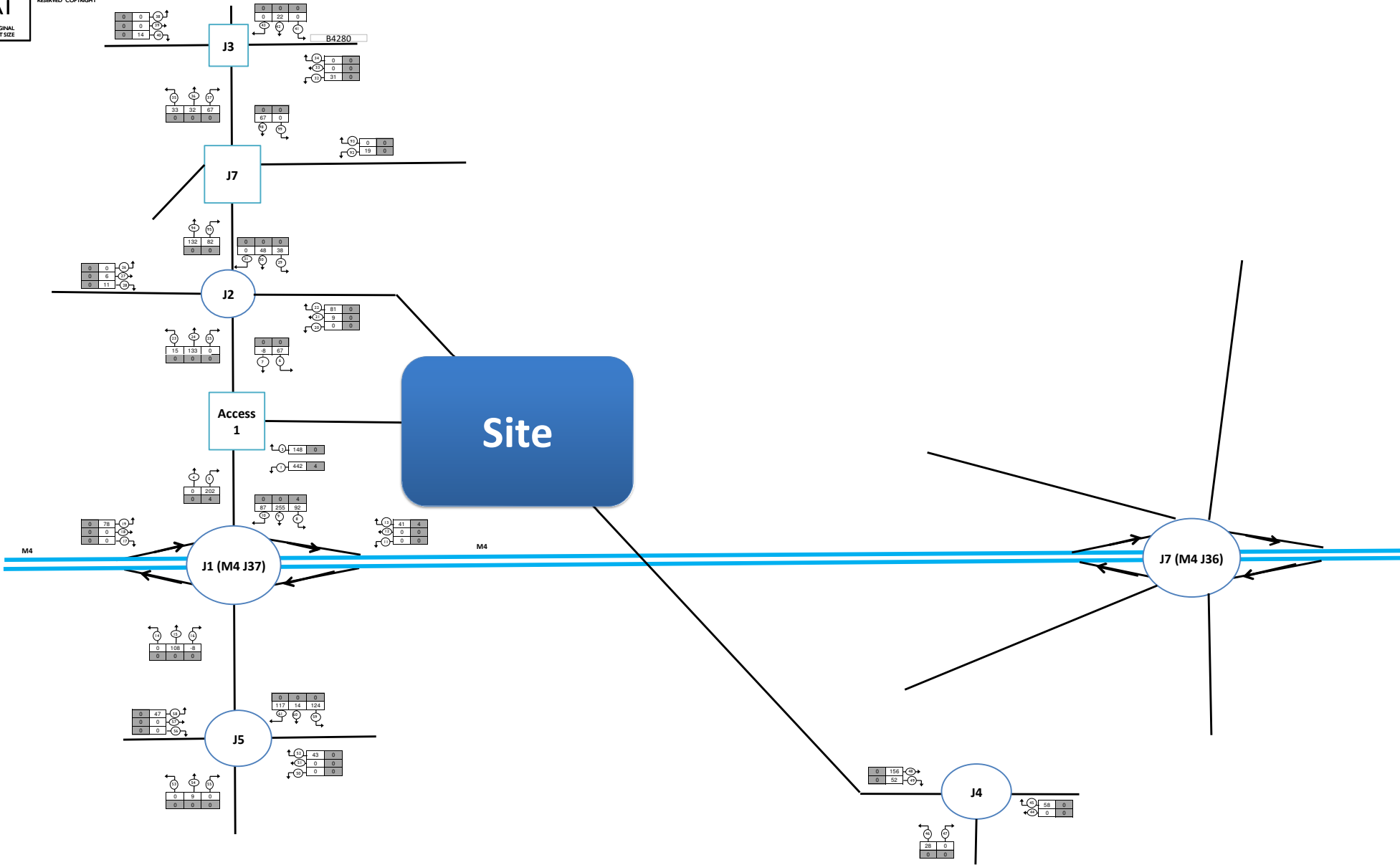
TITLE:

2033 Base
Weekday PM Peak

STATUS:

FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING:	REVISION	
18-00592	3b		



CORUN
Transport and Highway Engineering

NOTES:
 [Symbol] Vehicles
 [Symbol] HGVs
 [Symbol] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

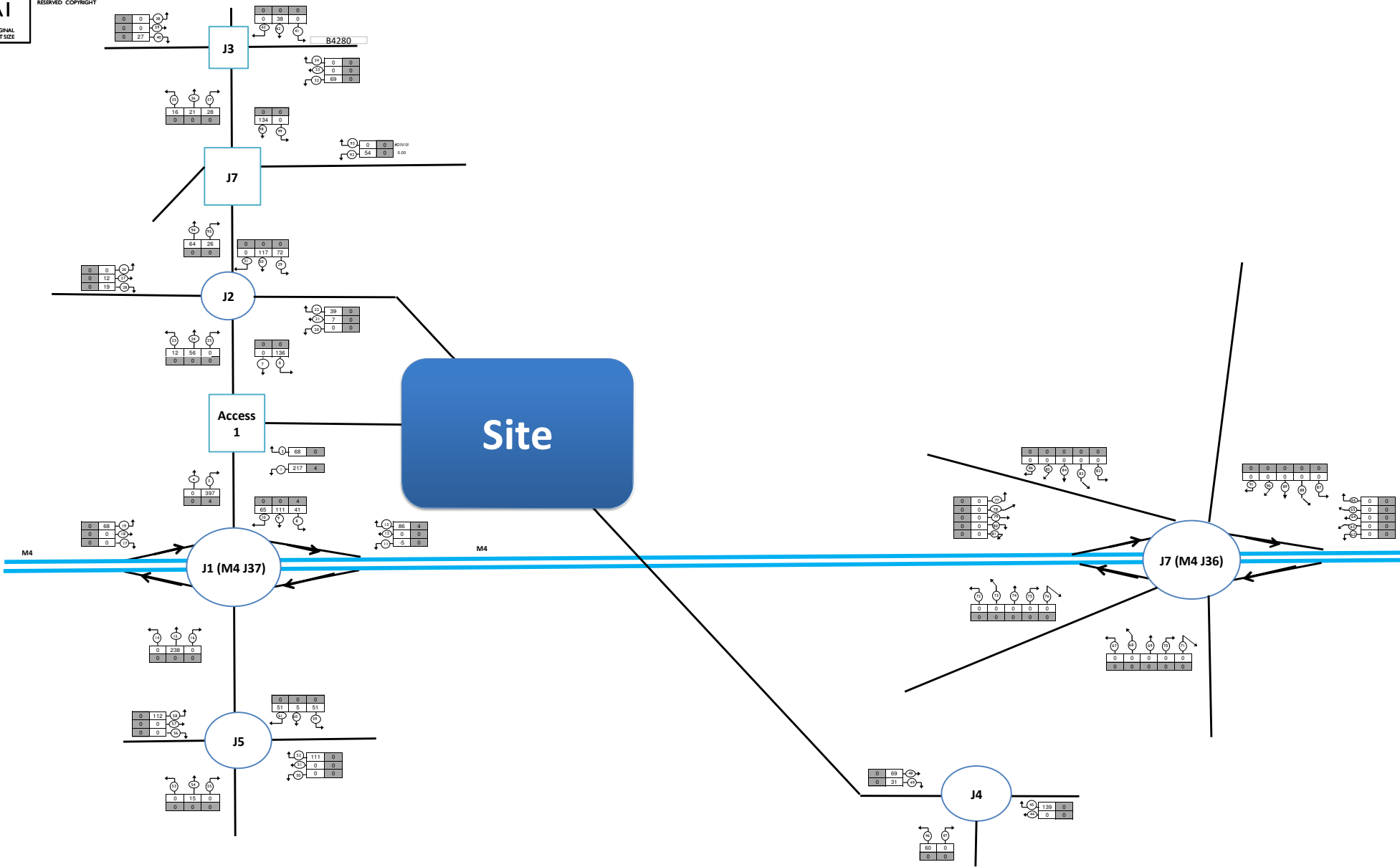
PROJECT:

A48, Pyle

Proposed Development Flows
Weekday AM Peak

TITLE:

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 4a		REVISION:



NOTES:
 [Square with circle] Vehicles
 [Square with circle and dot] HGVs
 [Arrow with circle] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT:

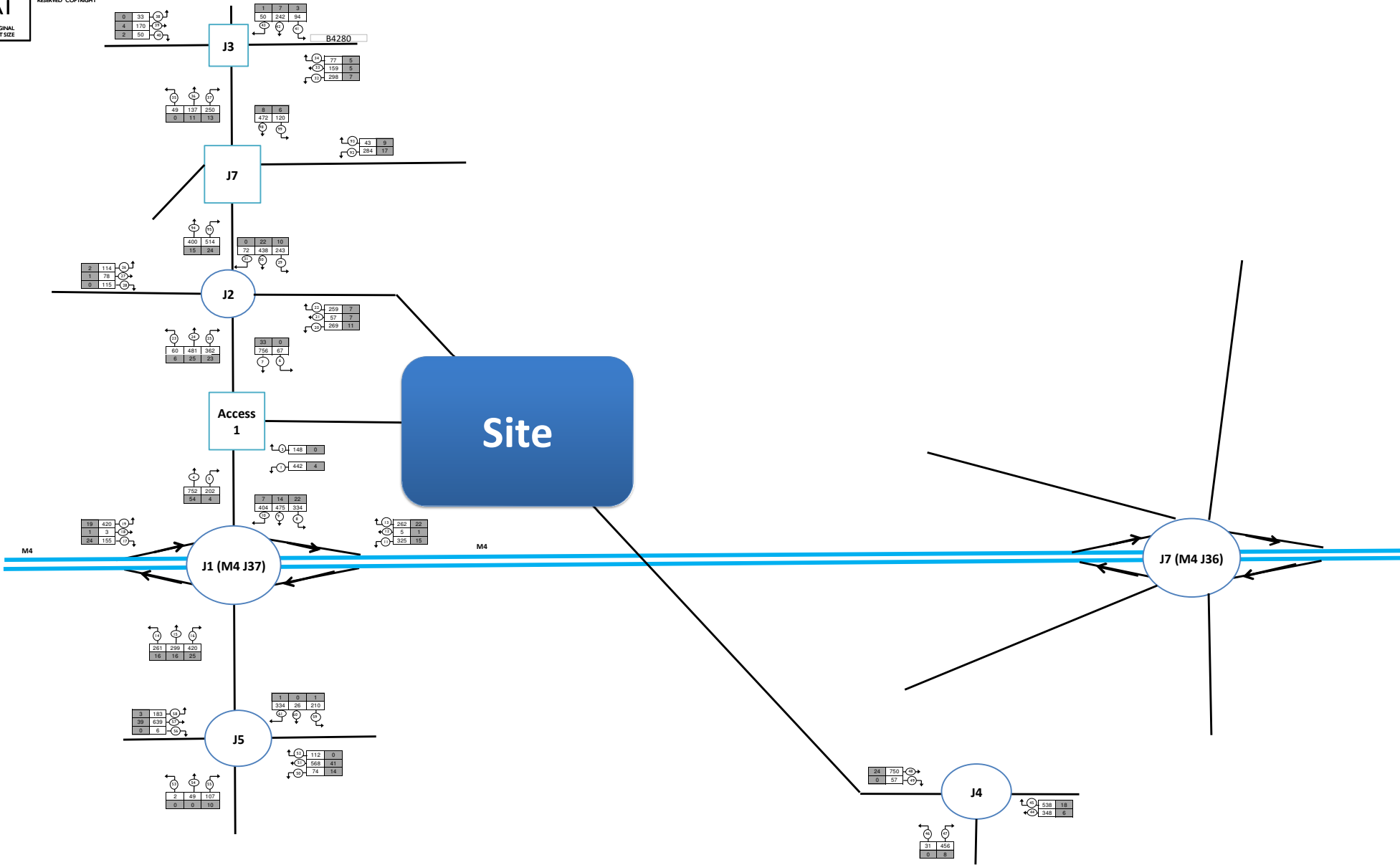
TITLE:

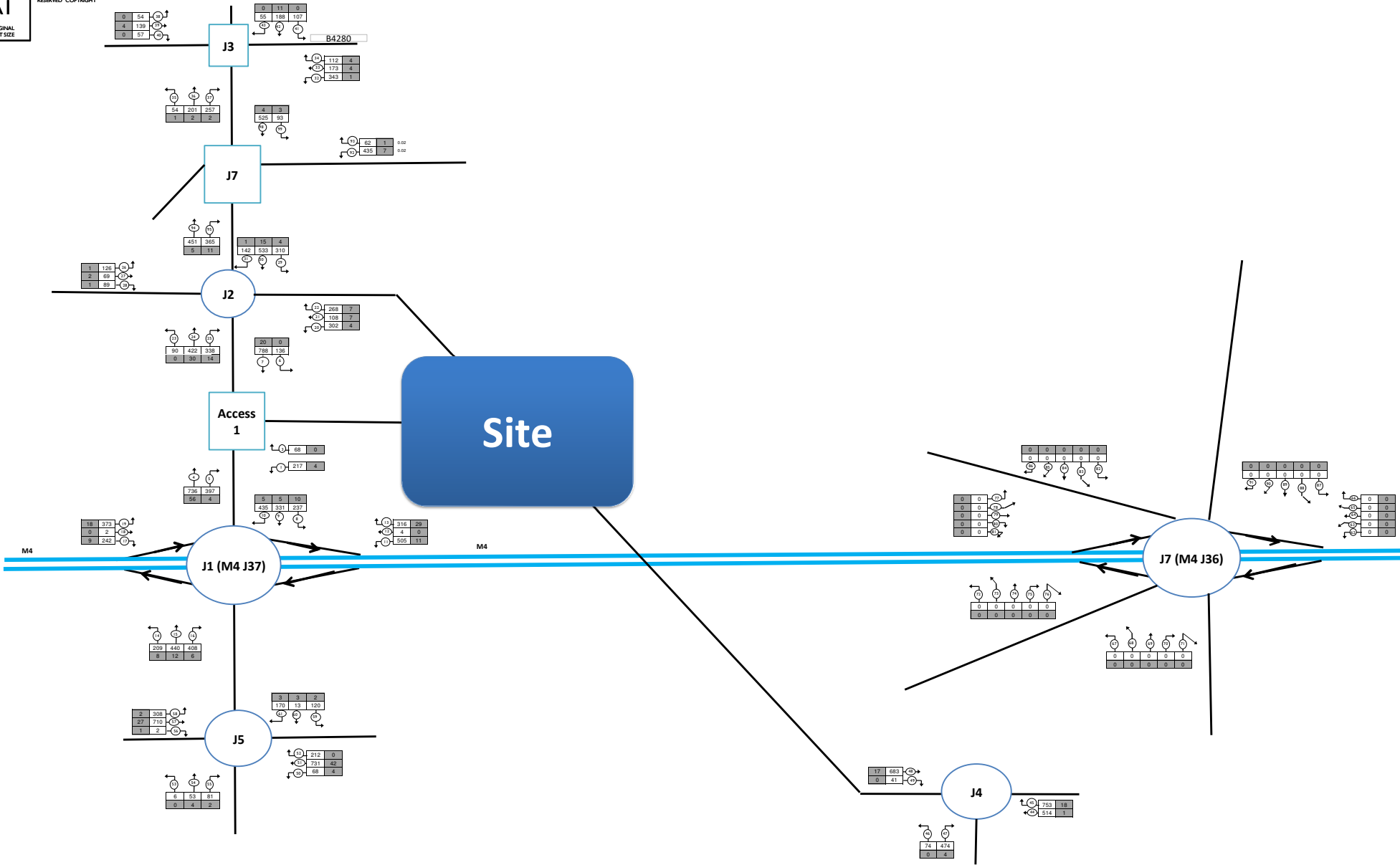
A48, Pyle

Proposed Development Flows
 Weekday PM Peak

STATUS: FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING:	REVISION	
18-00592	4b		

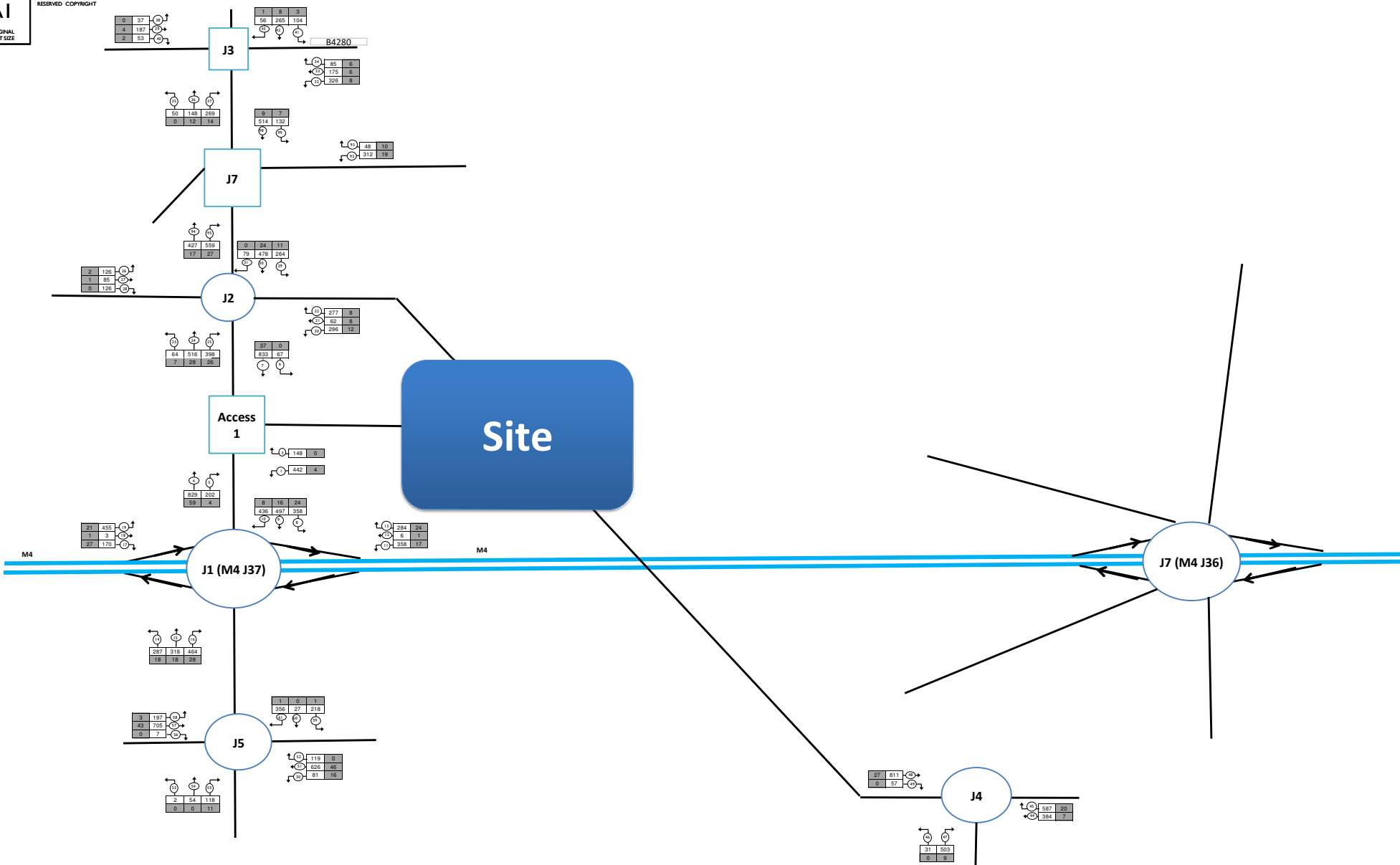




	NOTES: [Square with circle] Vehicles [Square with circle] HGVs [Arrow with circle] Direction of movement	* encircled number denotes unique turning movement reference used for internal purposes only
	CLIENT: -	

PROJECT: TITLE: 2021 Total Traffic Weekday PM Peak	A48, Pyle
---	------------------

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO.: 18-00592	DRAWING: 5b	REVISION	



Site

J1 (M4 J37)

J7 (M4 J36)

J5

J4

Access 1

J3

J7

J2

M4

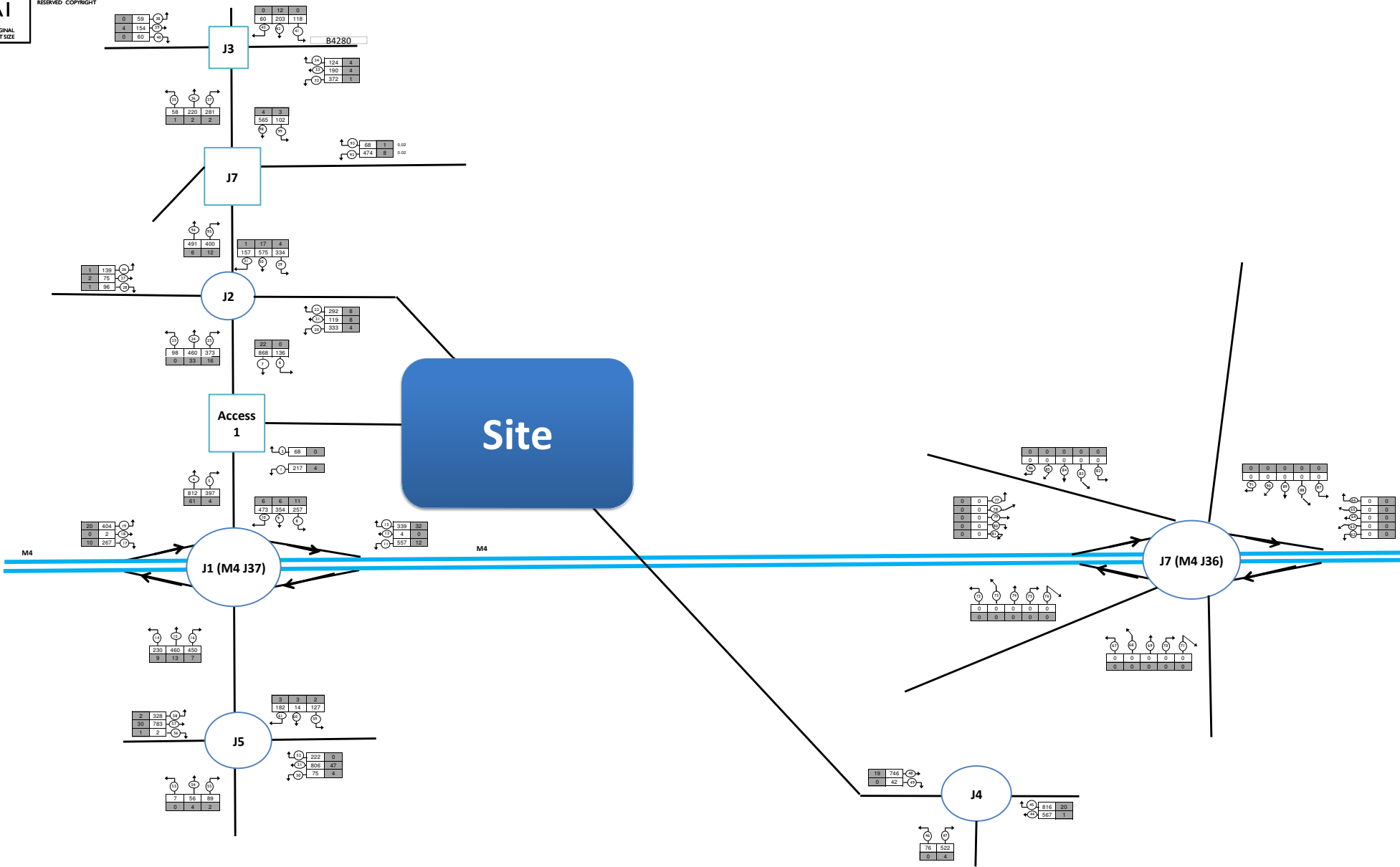
M4



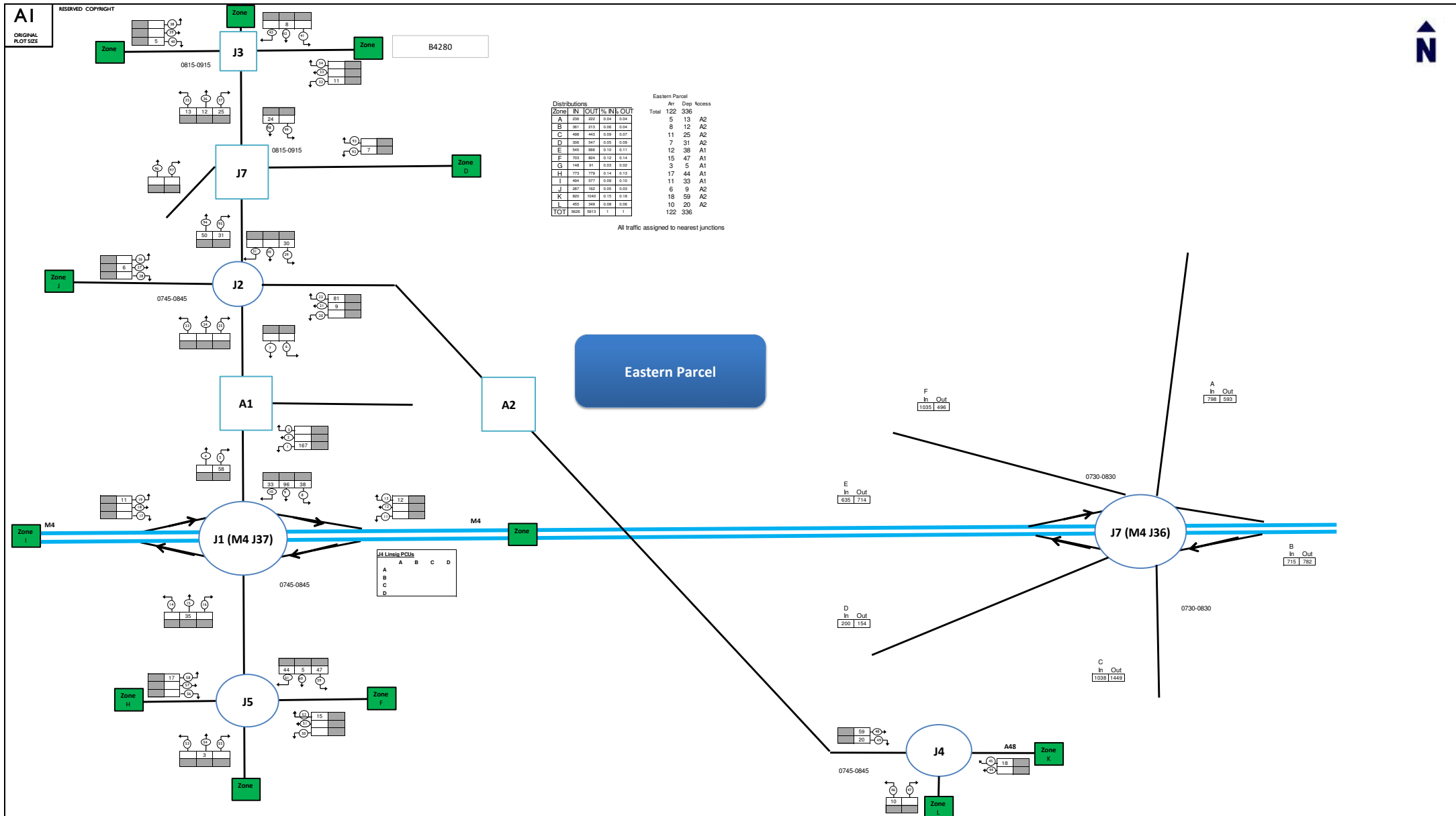
NOTES:
 [Square with circle] Vehicles
 [Square with square] HGVs
 [Circle with arrow] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

PROJECT: **A48, Pyle**
 TITLE: **2033 Total Traffic Weekday AM Peak**

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 6a	REVISION	



SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO.: 18-00592	DRAWING: 6b	REVISION	



Distributions

Zone	IN	TOT	% IN	OUT
A	238	322	0.54	0.54
B	361	213	0.06	0.04
C	488	443	0.08	0.07
D	306	547	0.05	0.09
E	545	686	0.10	0.11
F	793	864	0.12	0.14
G	184	91	0.002	0.00
H	773	779	0.14	0.13
I	464	577	0.09	0.10
J	287	182	0.05	0.03
K	887	1569	0.12	0.14
L	455	549	0.08	0.06
TOT	5828	9313	1	1

Eastern Parcel

Total	Av	Dep	Access
122	13	A2	
5	12	A2	
8	25	A2	
11	31	A2	
7	38	A1	
12	47	A1	
15	5	A1	
9	17	44	A1
17	11	33	A1
11	6	9	A2
18	59	A2	
10	20	A2	
122	336		

All traffic assigned to nearest junctions

J1 Linkage PCUs

	A	B	C	D
A				
B				
C				
D				

A48, Pyle

Development Distribution Eastern Parcel
Weekday AM Peak

CORUN
Transport and Highway Engineering

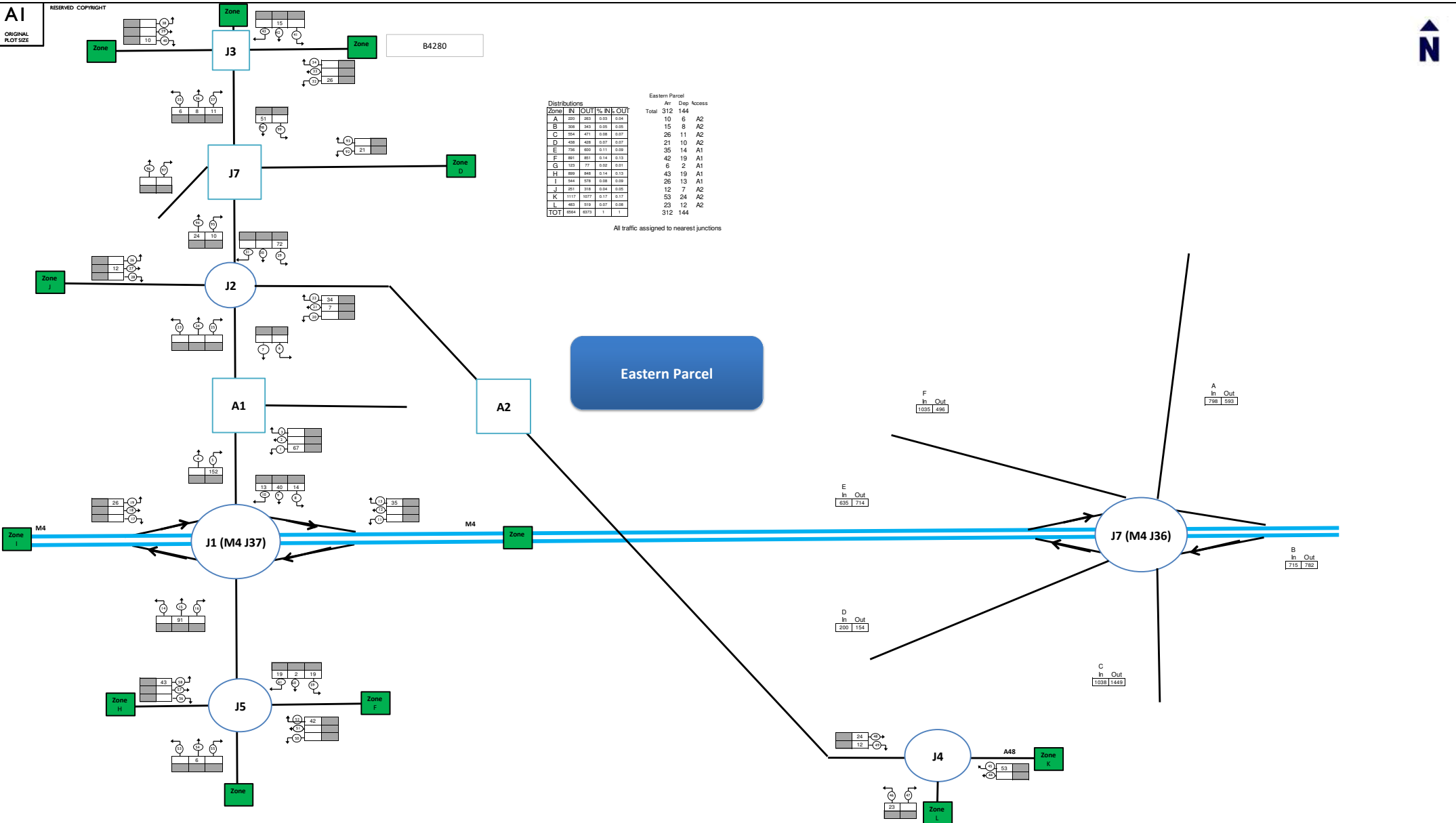
NOTES:
 - Vehicles
 - HGVs
 - Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

PROJECT: _____

TITLE: _____

STATUS: FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	7a		



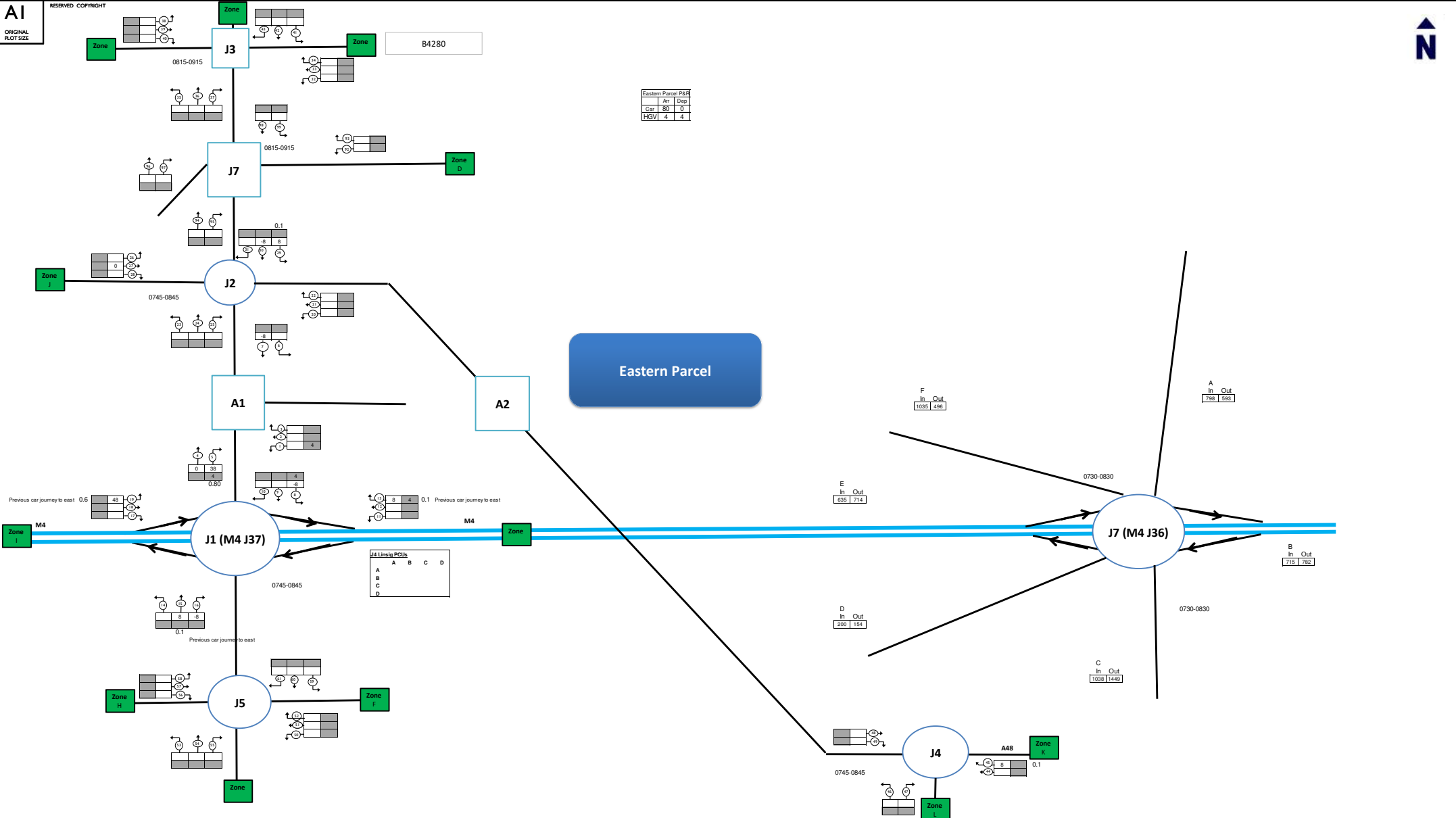
NOTES:
 - Vehicles
 - HGVs
 - Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

PROJECT:
TITLE:

A48, Pyle

Development Distribution Eastern Parcel
 Weekday PM Peak

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 7b	REVISION	



Eastern Parcel P&R		
	Av	Disp
Car	30	0
HGV	4	4

J4 Linking PCUs				
	A	B	C	D
A				
B				
C				
D				

CORUN
Transport and Highway Engineering

NOTES:
 - Vehicles
 - HGVs
 - Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT:

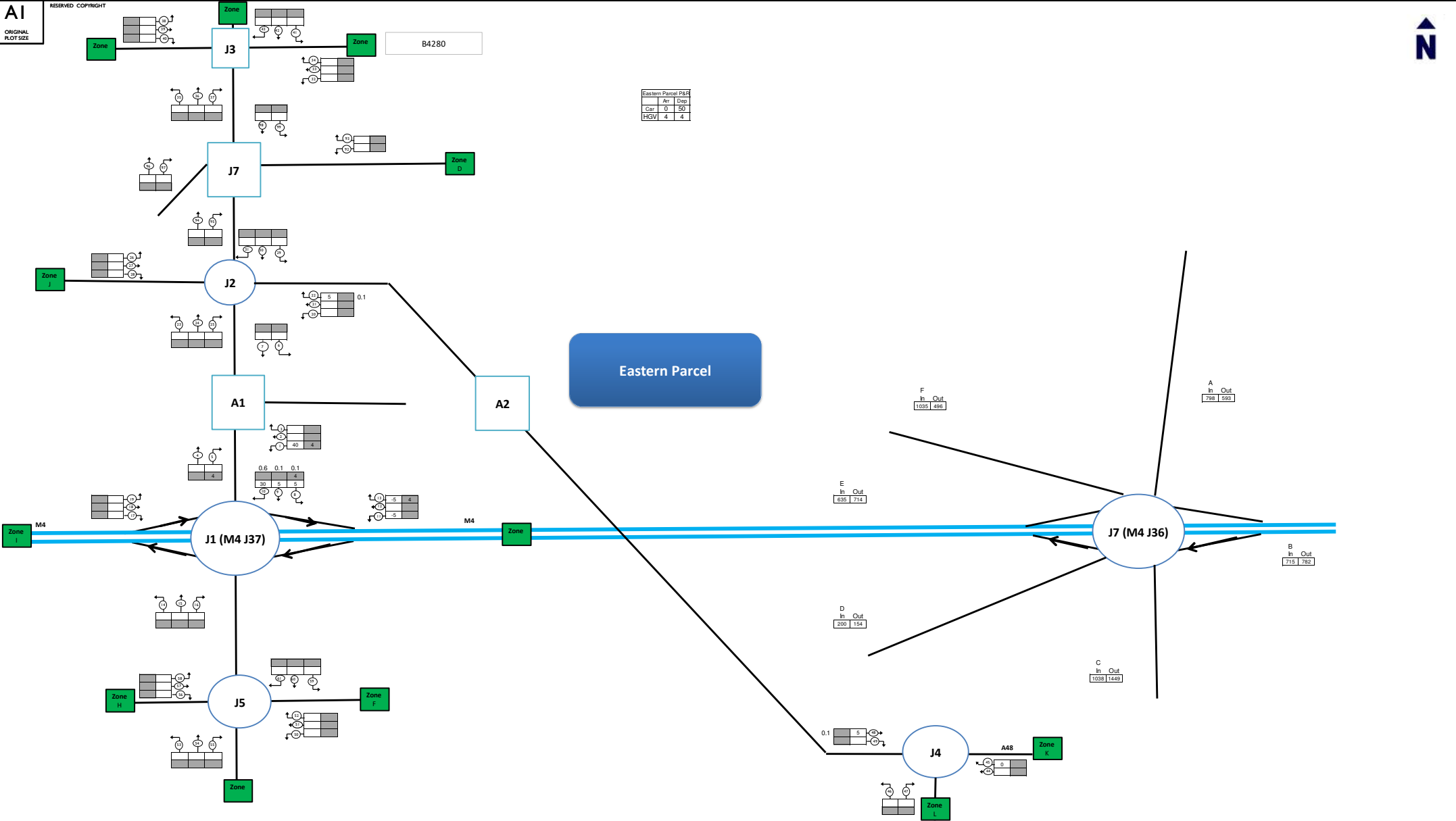
TITLE: **A48, Pyle**
Park and Ride Distribution Eastern Parcel
Weekday AM Peak

STATUS: FOR INFORMATION			
SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	8a		

AI

RESERVED COPYRIGHT

ORIGINAL PLOT SIZE



Eastern Parcel P&R		
	Car	HGV
In	0	4
Out	50	4

Eastern Parcel

F	In	Out
	1035	496

A	In	Out
	798	693

E	In	Out
	635	714

B	In	Out
	713	782

D	In	Out
	300	154

C	In	Out
	1038	1449

0.1	In	Out
	5	5

A48	In	Out
	0	0



NOTES:

- Vehicles
- HGVs
- Direction of movement
- * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT:

PROJECT:

A48, Pyle

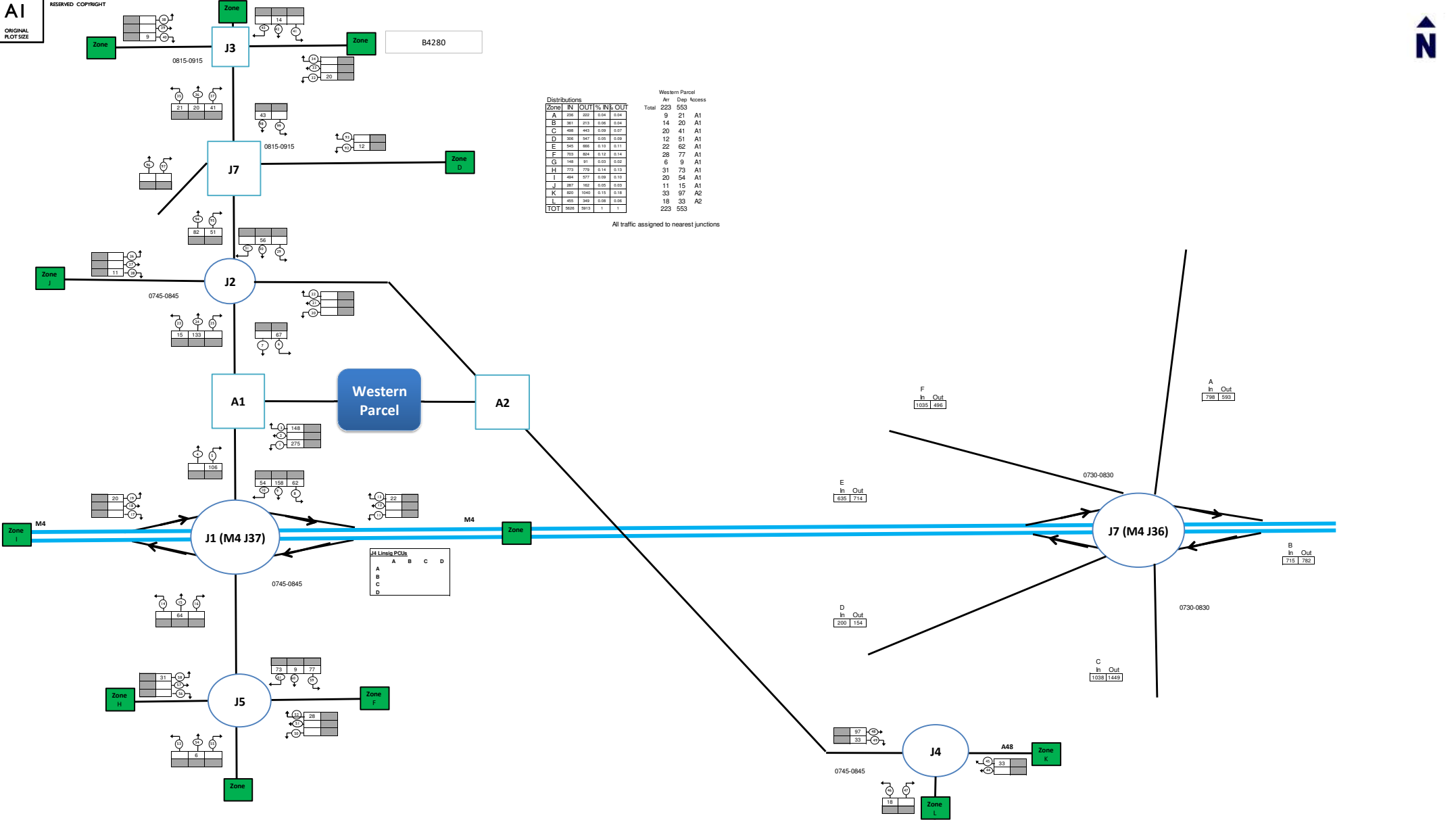
TITLE:

Park and Ride Distribution Eastern Parcel
Weekday PM Peak

STATUS:

FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING	REVISION	
18-00592	8b		



Distributions

Zone	IN	OUT	% IN	% OUT
A	208	222	0.54	0.54
B	361	213	0.96	0.54
C	488	443	1.08	0.57
D	306	347	0.92	0.59
E	345	686	0.19	1.11
F	793	864	0.32	1.14
G	184	91	0.02	0.48
H	773	779	0.14	0.33
I	464	337	0.59	0.30
J	287	162	0.68	0.25
K	887	1569	0.12	0.34
L	455	349	0.68	0.26
TOT	5828	5813	1	1

Western Parcel

Total	Av	Dep	Access
2228	553		
9	21	A1	
14	20	A1	
20	41	A1	
12	51	A1	
22	62	A1	
28	77	A1	
6	9	A1	
31	73	A1	
20	54	A1	
11	15	A1	
33	97	A2	
18	33	A2	
223	553		

All traffic assigned to nearest junctions

J1 Linkage PCUs

	A	B	C	D
A				
B				
C				
D				

A48, Pyle

Development Distribution Western Parcel
Weekday AM Peak

NOTES:
 Vehicles
 HGVs
 Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

PROJECT:

TITLE:

CLIENT:

STATUS: FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:
NTS	OCT 2020	LB	JC
JOB NO:	DRAWING:	REVISION	
18-00592	9a		



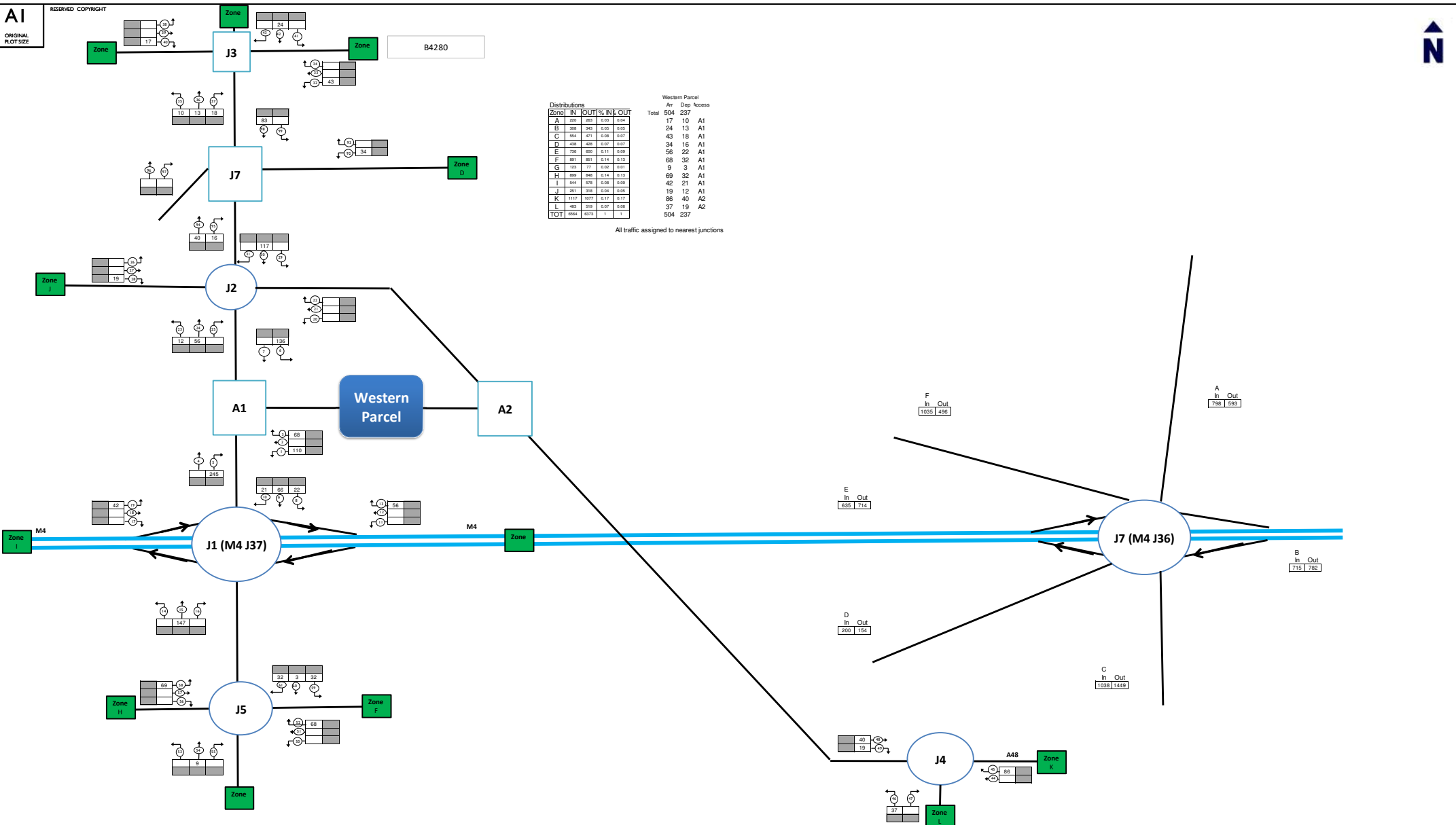
Distributions

Zone	IN	OUT	% IN	% OUT
A	228	202	0.03	0.04
B	308	343	0.05	0.05
C	584	471	0.08	0.07
D	428	428	0.07	0.07
E	738	800	0.11	0.09
F	891	801	0.14	0.12
G	152	77	0.02	0.01
H	889	248	0.14	0.13
I	544	578	0.08	0.09
J	251	378	0.04	0.05
K	1117	1077	0.17	0.17
L	483	519	0.07	0.08
TOT	6564	6373	1	1

Western Parcel

Av	Dep	Access
Total	504	237
17	10	A1
24	13	A1
43	18	A1
34	16	A1
56	22	A1
68	32	A1
9	3	A1
69	32	A1
42	21	A1
19	12	A1
86	40	A2
37	19	A2
504	237	

All traffic assigned to nearest junctions



CORUN
Transport and Highway Engineering

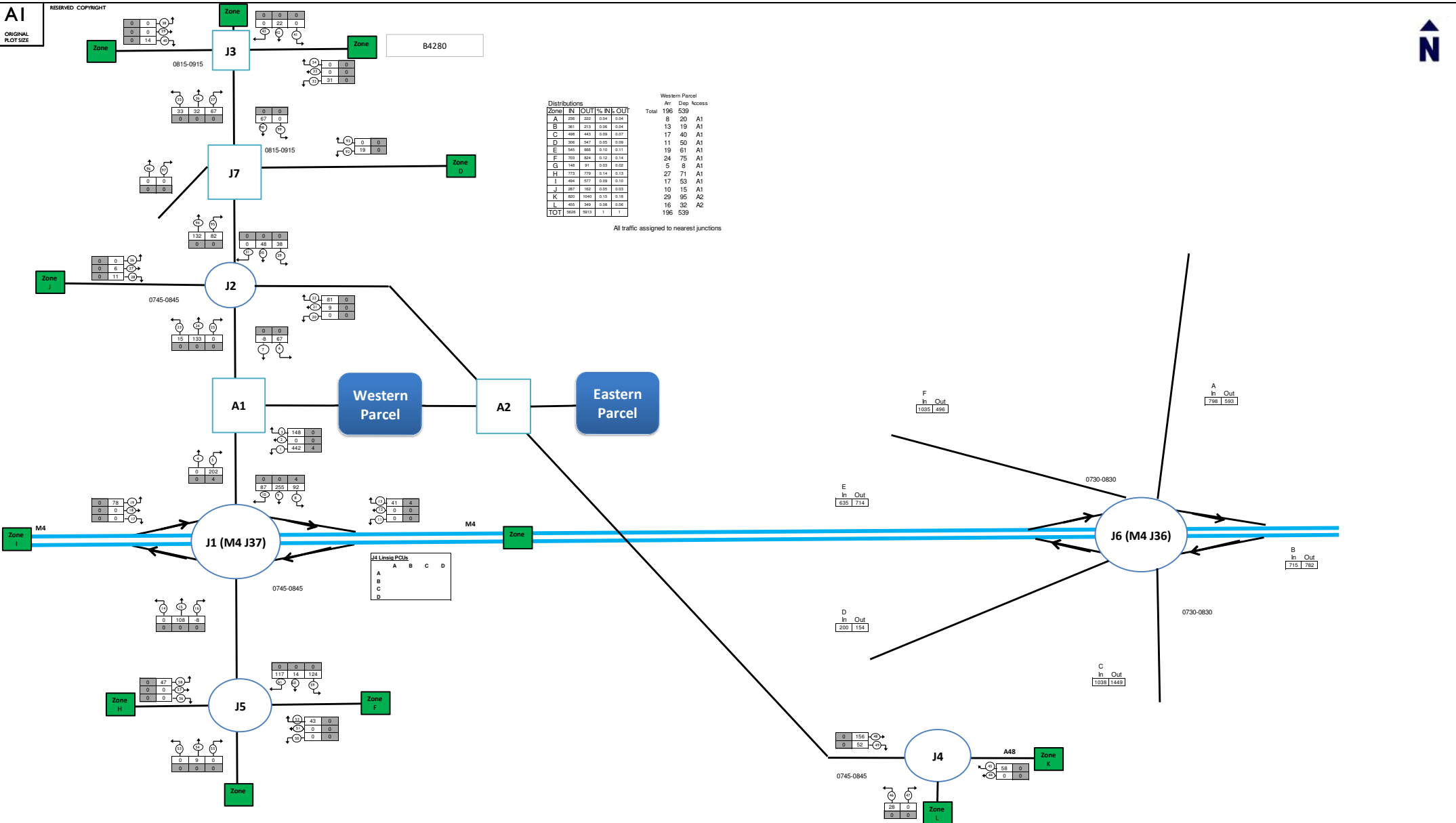
NOTES:
 - Vehicles
 - HGVs
 - Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT:
A48, Pyle
 Development Distribution Western Parcel
 Weekday PM Peak

TITLE:

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 9b	REVISION	



CORUN
Transport and Highway Engineering

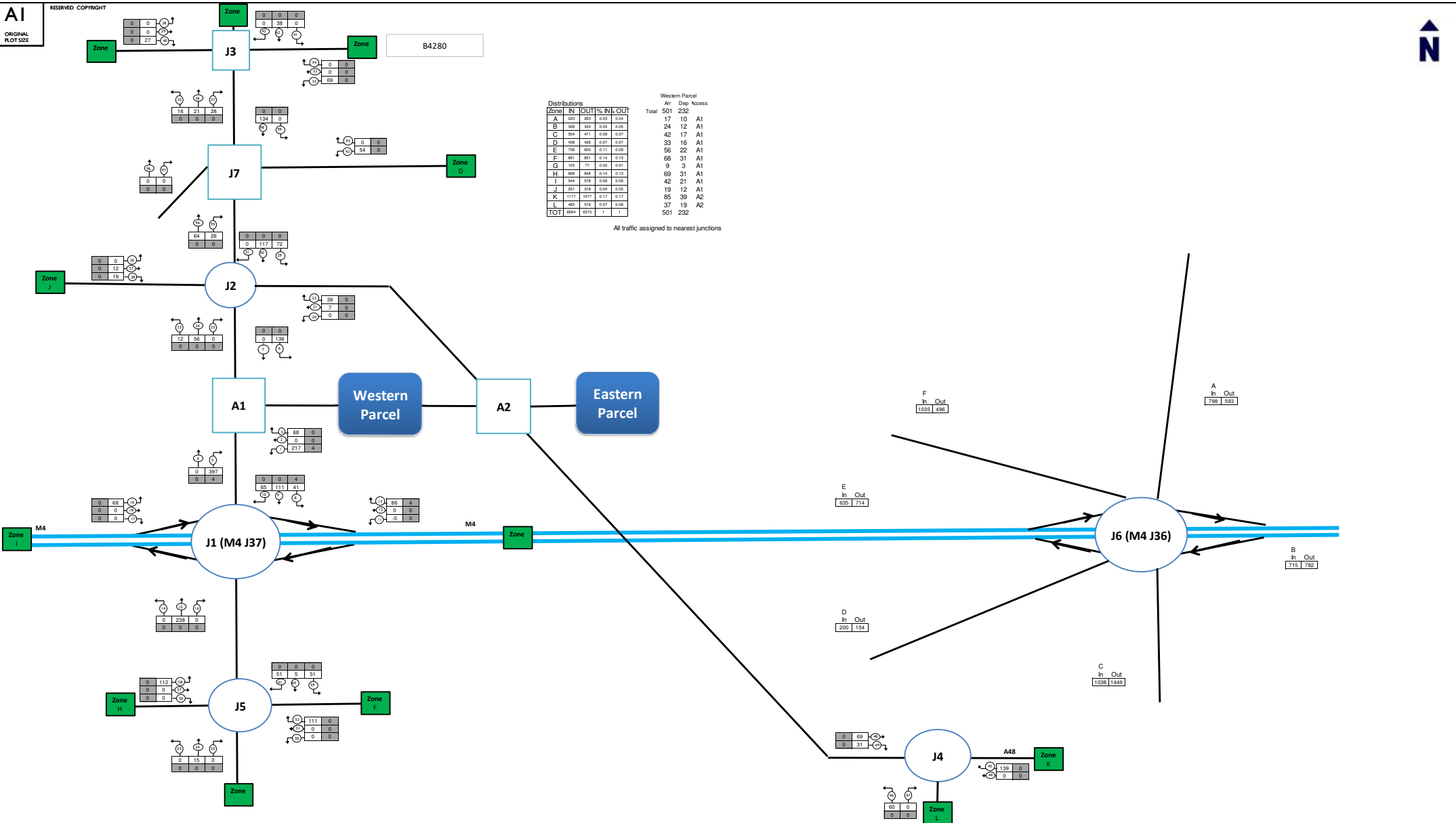
NOTES:
 - Vehicles
 - HGVs
 - Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT: A48, Pyle

TITLE: Development Distribution Combined
Weekday AM Peak

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 10a	REVISION	



NOTES:
 [Symbol] Vehicles
 [Symbol] HGVs
 [Symbol] Direction of movement
 * encircled number denotes unique turning movement reference used for internal purposes only

CLIENT: -

PROJECT:

TITLE:

A48, Pyle
 Development Distribution Combined
 Weekday PM Peak

STATUS: FOR INFORMATION			
SCALE: NTS	DATE: OCT 2020	DRAWN: LB	CHECKED: JC
JOB NO: 18-00592	DRAWING: 10b	REVISION	

APPENDIX F

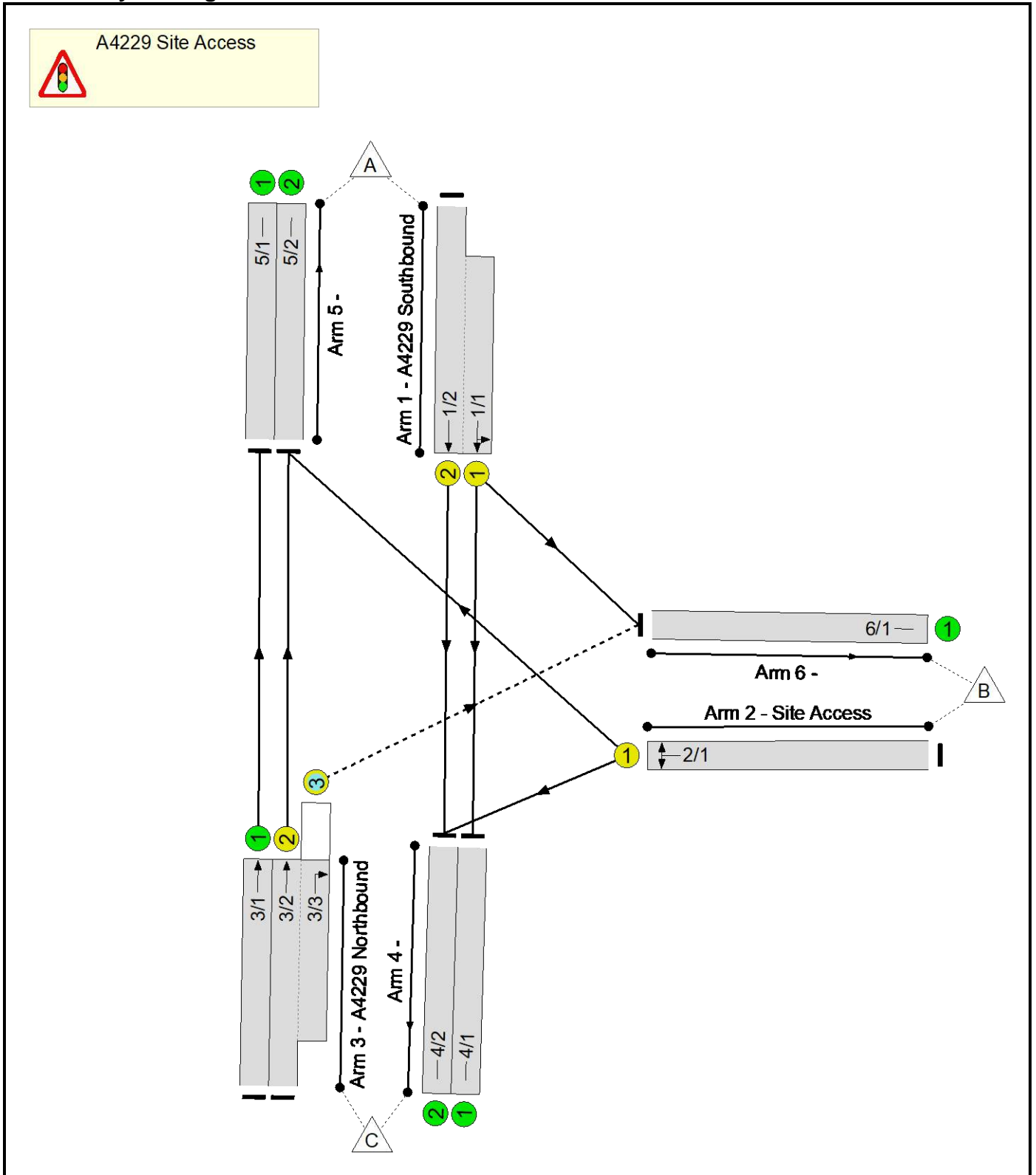
Linsig Output

Full Input Data And Results
Full Input Data And Results

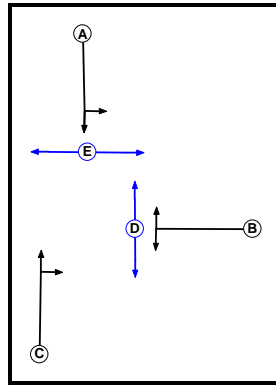
User and Project Details

Project:	Pyle
Title:	Primary Site Access – A4229
Location:	
Additional detail:	
File name:	A4229 Site Access.lsg3x
Author:	
Company:	
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		7	7
C	Traffic		7	7
D	Pedestrian		7	7
E	Pedestrian		7	7

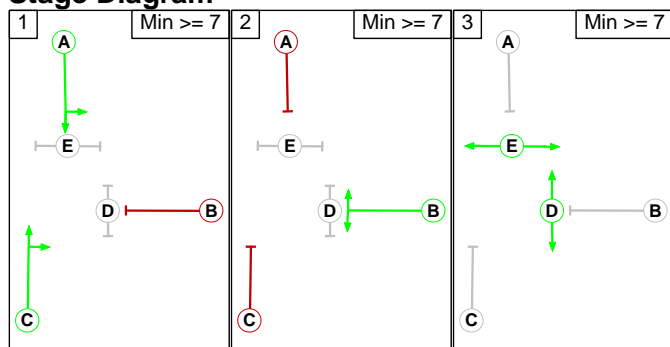
Phase Intergreens Matrix

	Starting Phase					
	A	B	C	D	E	
Terminating Phase	A	6	-	-	-	
	B	6	6	-	-	
	C	-	6	-	-	
	D	-	-	-	-	-
	E	-	-	-	-	-

Phases in Stage

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

Stage Diagram



Full Input Data And Results

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
From Stage	1	6	0
	2	6	0
	3	2	2

Full Input Data And Results

Give-Way Lane Input Data

Junction: A4229 Site Access											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
3/3 (A4229 Northbound)	6/1 (Right)	1439	0	1/2	1.09	All	3.00	-	0.50	3	3.00

Full Input Data And Results

Lane Input Data

Junction: A4229 Site 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 (A4229 Southbound)	U	A	2	3	10.4	Geom	-	3.60	0.00	Y	Arm 4 Ahead	Inf
											Arm 6 Left	15.00
1/2 (A4229 Southbound)	U	A	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 4 Ahead	Inf
2/1 (Site Access)	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Left	15.00
											Arm 5 Right	20.00
3/1 (A4229 Northbound)	U		2	3	60.0	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
3/2 (A4229 Northbound)	U	C	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 5 Ahead	Inf
3/3 (A4229 Northbound)	O	C	2	3	10.4	Geom	-	3.20	0.00	Y	Arm 6 Right	20.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/2	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Total Traffic AM'	08:00	09:00	01:00	
2: '2033 Total Traffic AM'	08:00	09:00	01:00	
3: '2021 Total Traffic PM'	17:00	18:00	01:00	
4: '2033 Total Traffic PM'	17:00	18:00	01:00	

Scenario 1: '2021 Total Traffic AM' (FG1: '2021 Total Traffic AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
	A	B	C	Tot.	
Origin	A	0	67	806	873
	B	148	0	448	596
	C	833	208	0	1041
	Tot.	981	275	1254	2510

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2021 Total Traffic AM
Junction: A4229 Site Access	
1/1 (short)	433
1/2 (with short)	873(In) 440(Out)
2/1	596
3/1	833
3/2 (with short)	208(In) 0(Out)
3/3 (short)	208
4/1	366
4/2	888
5/1	833
5/2	148
6/1	275

Lane Saturation Flows

Junction: A4229 Site Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	84.5 %	1945	1945
				Arm 6 Left	15.00	15.5 %		
1/2 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
2/1 (Site Access)	3.65	0.00	Y	Arm 4 Left	15.00	75.2 %	1810	1810
				Arm 5 Right	20.00	24.8 %		
3/1 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
3/2 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	0.0 %	1935	1935
3/3 (A4229 Northbound)	3.20	0.00	Y	Arm 6 Right	20.00	100.0 %	1800	1800
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2033 Total Traffic AM' (FG2: '2033 Total Traffic AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	67	889	956
	B	148	0	448	596
	C	918	208	0	1126
	Tot.	1066	275	1337	2678

Traffic Lane Flows

Lane	Scenario 2: 2033 Total Traffic AM
Junction: A4229 Site Access	
1/1 (short)	475
1/2 (with short)	956(In) 481(Out)
2/1	596
3/1	918
3/2 (with short)	208(In) 0(Out)
3/3 (short)	208
4/1	408
4/2	929
5/1	918
5/2	148
6/1	275

Full Input Data And Results

Lane Saturation Flows

Junction: A4229 Site Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	85.9 %	1948	1948
				Arm 6 Left	15.00	14.1 %		
1/2 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
2/1 (Site Access)	3.65	0.00	Y	Arm 4 Left	15.00	75.2 %	1810	1810
				Arm 5 Right	20.00	24.8 %		
3/1 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
3/2 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	0.0 %	1935	1935
3/3 (A4229 Northbound)	3.20	0.00	Y	Arm 6 Right	20.00	100.0 %	1800	1800
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2021 Total Traffic PM' (FG3: '2021 Total Traffic PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	136	818	954
	B	68	0	223	291
	C	819	403	0	1222
	Tot.	887	539	1041	2467

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2021 Total Traffic PM
Junction: A4229 Site Access	
1/1 (short)	470
1/2 (with short)	954(In) 484(Out)
2/1	291
3/1	819
3/2 (with short)	403(In) 0(Out)
3/3 (short)	403
4/1	334
4/2	707
5/1	819
5/2	68
6/1	539

Lane Saturation Flows

Junction: A4229 Site Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	71.1 %	1919	1919
				Arm 6 Left	15.00	28.9 %		
1/2 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
2/1 (Site Access)	3.65	0.00	Y	Arm 4 Left	15.00	76.6 %	1810	1810
				Arm 5 Right	20.00	23.4 %		
3/1 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
3/2 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	0.0 %	1935	1935
3/3 (A4229 Northbound)	3.20	0.00	Y	Arm 6 Right	20.00	100.0 %	1800	1800
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: '2033 Total Traffic PM' (FG4: '2033 Total Traffic PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	136	902	1038
	B	68	0	223	291
	C	904	403	0	1307
	Tot.	972	539	1125	2636

Traffic Lane Flows

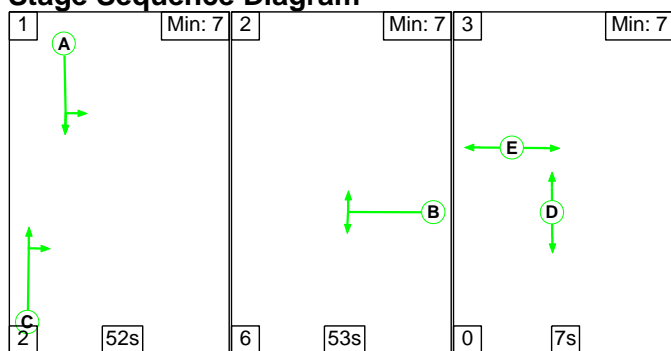
Lane	Scenario 4: 2033 Total Traffic PM
Junction: A4229 Site Access	
1/1 (short)	512
1/2 (with short)	1038(In) 526(Out)
2/1	291
3/1	904
3/2 (with short)	403(In) 0(Out)
3/3 (short)	403
4/1	376
4/2	749
5/1	904
5/2	68
6/1	539

Lane Saturation Flows

Junction: A4229 Site Access								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	73.4 %	1924	1924
				Arm 6 Left	15.00	26.6 %		
1/2 (A4229 Southbound)	3.60	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1975	1975
2/1 (Site Access)	3.65	0.00	Y	Arm 4 Left	15.00	76.6 %	1810	1810
				Arm 5 Right	20.00	23.4 %		
3/1 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1935	1935
3/2 (A4229 Northbound)	3.20	0.00	Y	Arm 5 Ahead	Inf	0.0 %	1935	1935
3/3 (A4229 Northbound)	3.20	0.00	Y	Arm 6 Right	20.00	100.0 %	1800	1800
4/1	Infinite Saturation Flow						Inf	Inf
4/2	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2021 Total Traffic AM' (FG1: '2021 Total Traffic AM', Plan 1: 'Network Control Plan 1')

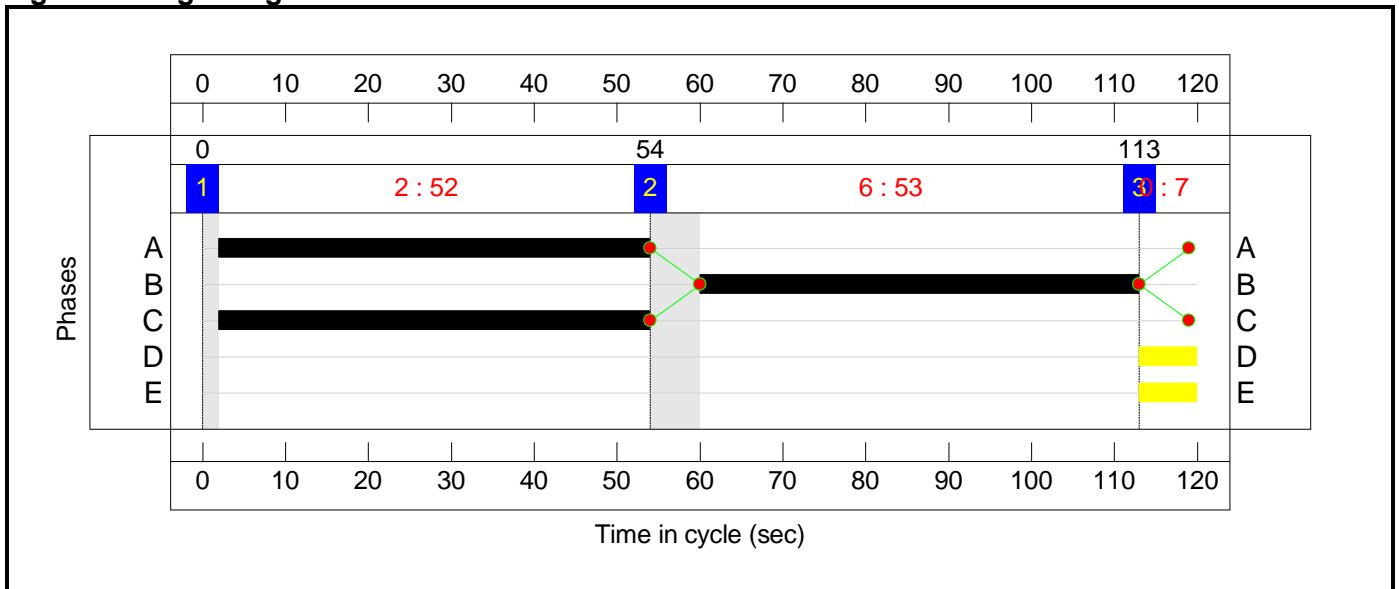
Stage Sequence Diagram



Stage Timings

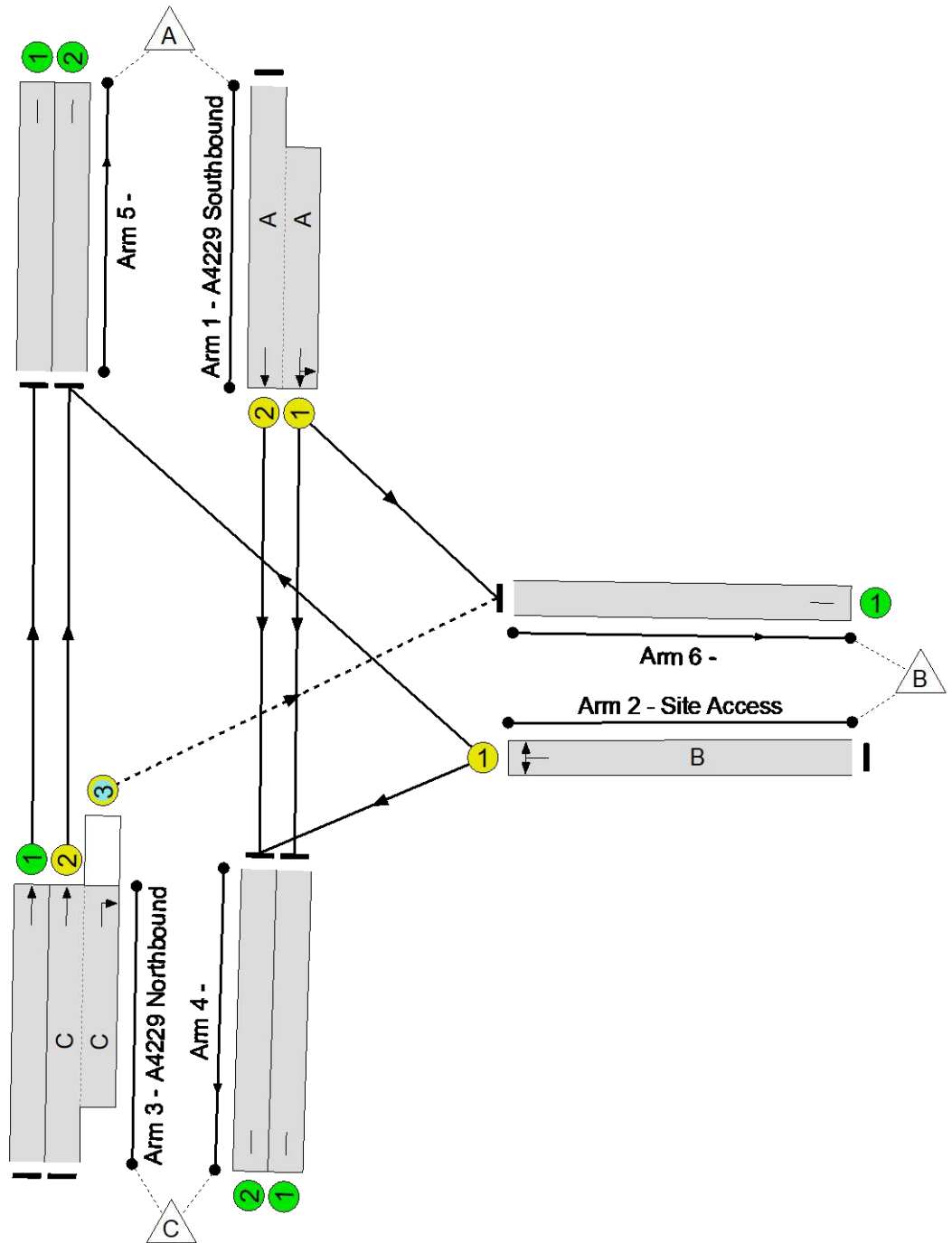
Stage	1	2	3
Duration	52	53	7
Change Point	0	54	113

Signal Timings Diagram



Network Layout Diagram

A4229 Site Access
PRC: 21.6 %
Total Traffic Delay: 16.5 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.0%
A4229 Site Access	-	-	N/A	-	-		-	-	-	-	-	-	74.0%
1/2+1/1	A4229 Southbound Ahead Left	U	N/A	N/A	A		1	52	-	873	1975:1945	595+585	74.0 : 74.0%
2/1	Site Access Left Right	U	N/A	N/A	B		1	53	-	596	1810	815	73.2%
3/1	A4229 Northbound Ahead	U	N/A	N/A	-		-	-	-	833	1935	1935	43.0%
3/2+3/3	A4229 Northbound Ahead Right	U+O	N/A	N/A	C		1	52	-	208	1935:1800	0+343	0.0 : 60.6%
4/1		U	N/A	N/A	-		-	-	-	366	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	888	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	833	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%

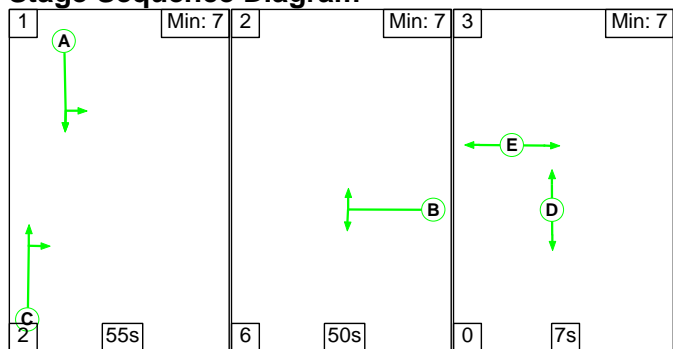
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	206	0	2	11.8	3.9	0.7	16.5	-	-	-	-
A4229 Site Access	-	-	206	0	2	11.8	3.9	0.7	16.5	-	-	-	-
1/2+1/1	873	873	-	-	-	5.8	1.4	-	7.2	29.9	10.6	1.4	12.1
2/1	596	596	-	-	-	4.5	1.3	-	5.8	35.2	16.2	1.3	17.6
3/1	833	833	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
3/2+3/3	208	208	206	0	2	1.5	0.8	0.7	3.0	51.9	5.7	0.8	6.4
4/1	366	366	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	888	888	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	833	833	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		21.6	Total Delay for Signalled Lanes (pcuHr):		16.07	Cycle Time (s): 120				
			PRC Over All Lanes (%):		21.6	Total Delay Over All Lanes(pcuHr):		16.45					

Full Input Data And Results

Scenario 2: '2033 Total Traffic AM' (FG2: '2033 Total Traffic AM', Plan 1: 'Network Control Plan 1')

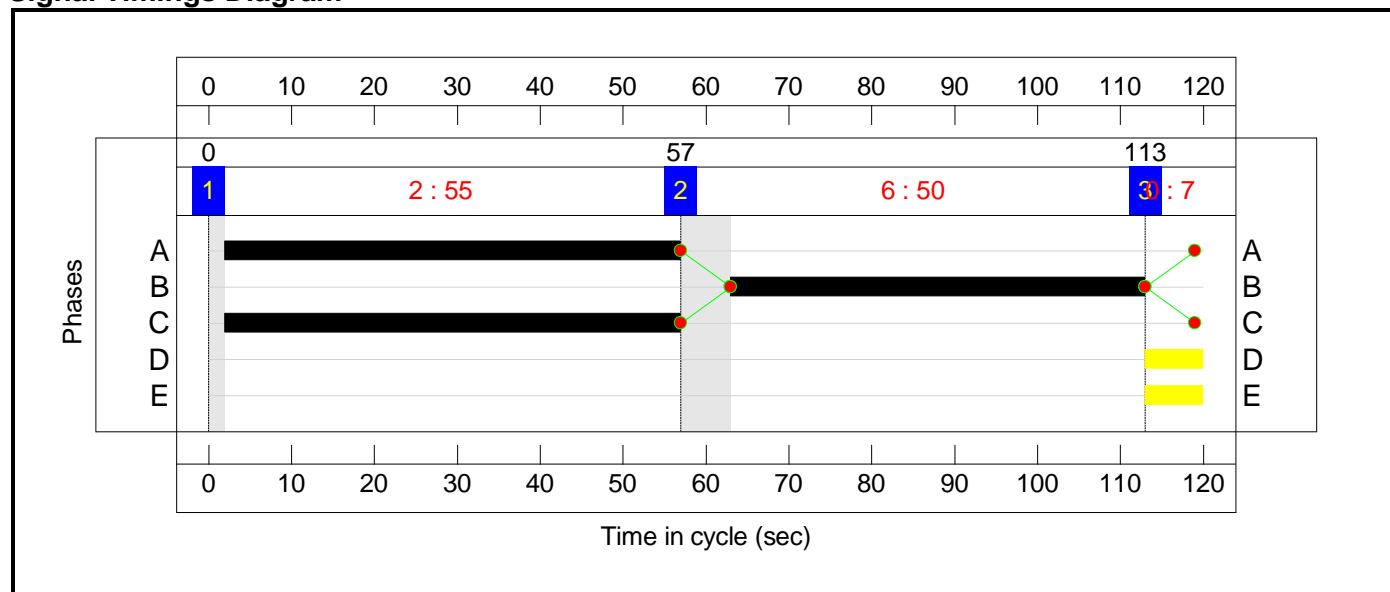
Stage Sequence Diagram



Stage Timings

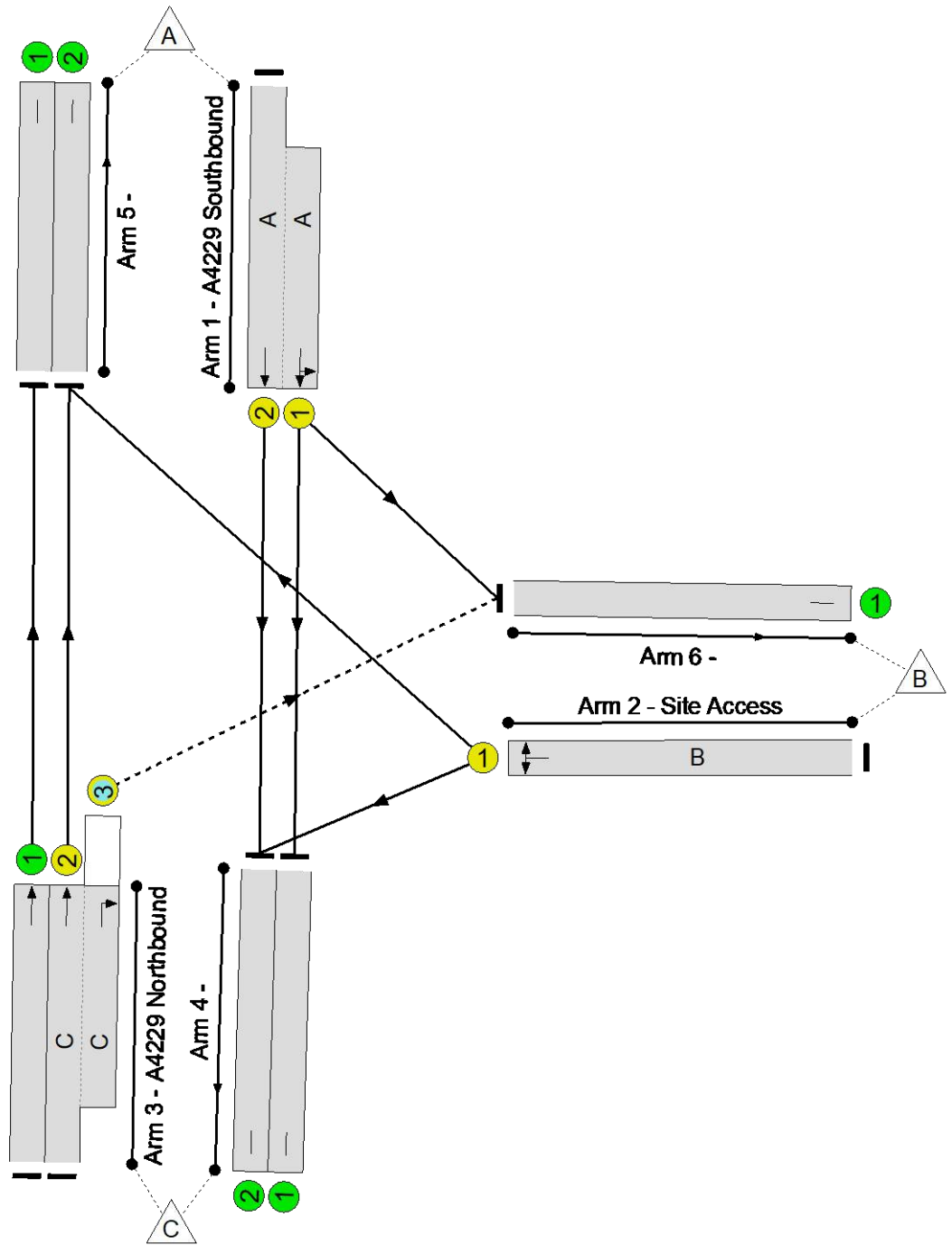
Stage	1	2	3
Duration	55	50	7
Change Point	0	57	113

Signal Timings Diagram



Network Layout Diagram

A4229 Site Access
PRC: 16.2 %
Total Traffic Delay: 17.7 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.5%
A4229 Site Access	-	-	N/A	-	-		-	-	-	-	-	-	77.5%
1/2+1/1	A4229 Southbound Ahead Left	U	N/A	N/A	A		1	55	-	956	1975:1948	622+615	77.3 : 77.3%
2/1	Site Access Left Right	U	N/A	N/A	B		1	50	-	596	1810	769	77.5%
3/1	A4229 Northbound Ahead	U	N/A	N/A	-		-	-	-	918	1935	1935	47.4%
3/2+3/3	A4229 Northbound Ahead Right	U+O	N/A	N/A	C		1	55	-	208	1935:1800	0+338	0.0 : 61.6%
4/1		U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	929	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	918	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	275	Inf	Inf	0.0%

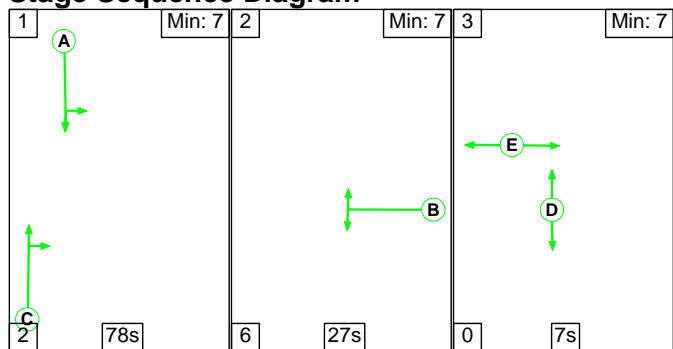
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	206	0	2	12.3	4.6	0.8	17.7	-	-	-	-
A4229 Site Access	-	-	206	0	2	12.3	4.6	0.8	17.7	-	-	-	-
1/2+1/1	956	956	-	-	-	6.0	1.7	-	7.7	28.9	12.8	1.7	14.5
2/1	596	596	-	-	-	4.9	1.7	-	6.6	39.8	16.9	1.7	18.6
3/1	918	918	-	-	-	0.0	0.5	-	0.5	1.8	0.0	0.5	0.5
3/2+3/3	208	208	206	0	2	1.4	0.8	0.8	3.0	52.2	5.6	0.8	6.4
4/1	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	929	929	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	275	275	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		16.2	Total Delay for Signalled Lanes (pcuHr):		17.28	Cycle Time (s): 120				
			PRC Over All Lanes (%):		16.2	Total Delay Over All Lanes(pcuHr):		17.73					

Full Input Data And Results

Scenario 3: '2021 Total Traffic PM' (FG3: '2021 Total Traffic PM', Plan 1: 'Network Control Plan 1')

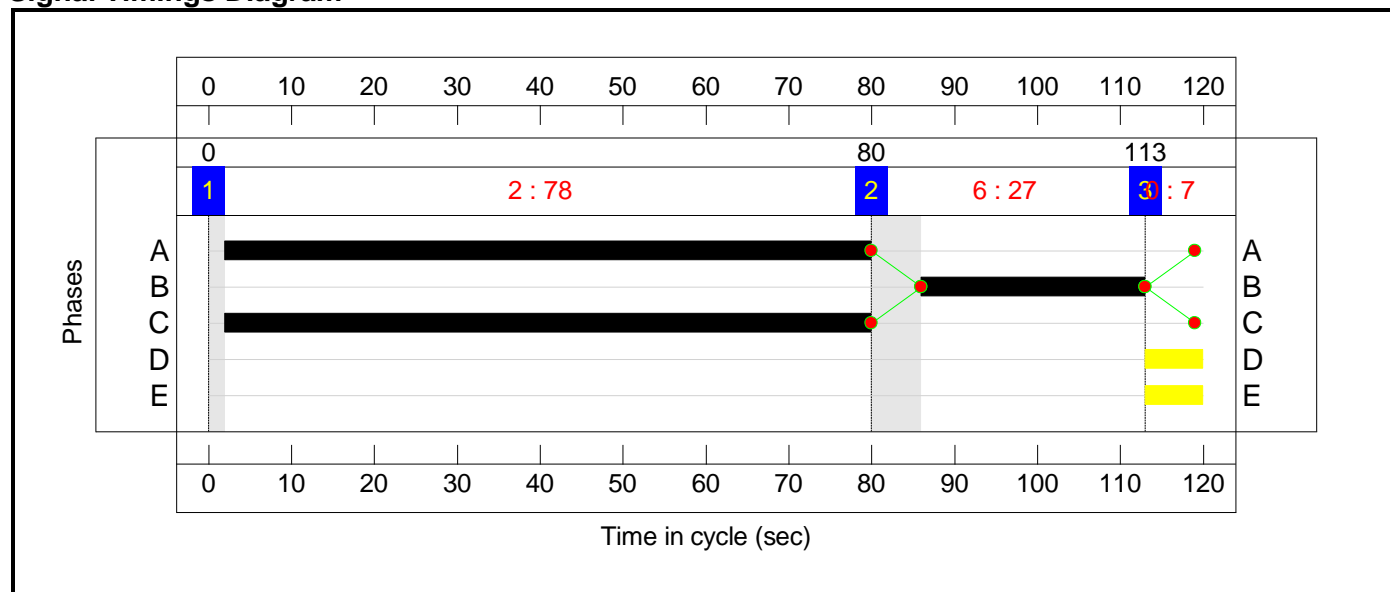
Stage Sequence Diagram



Stage Timings

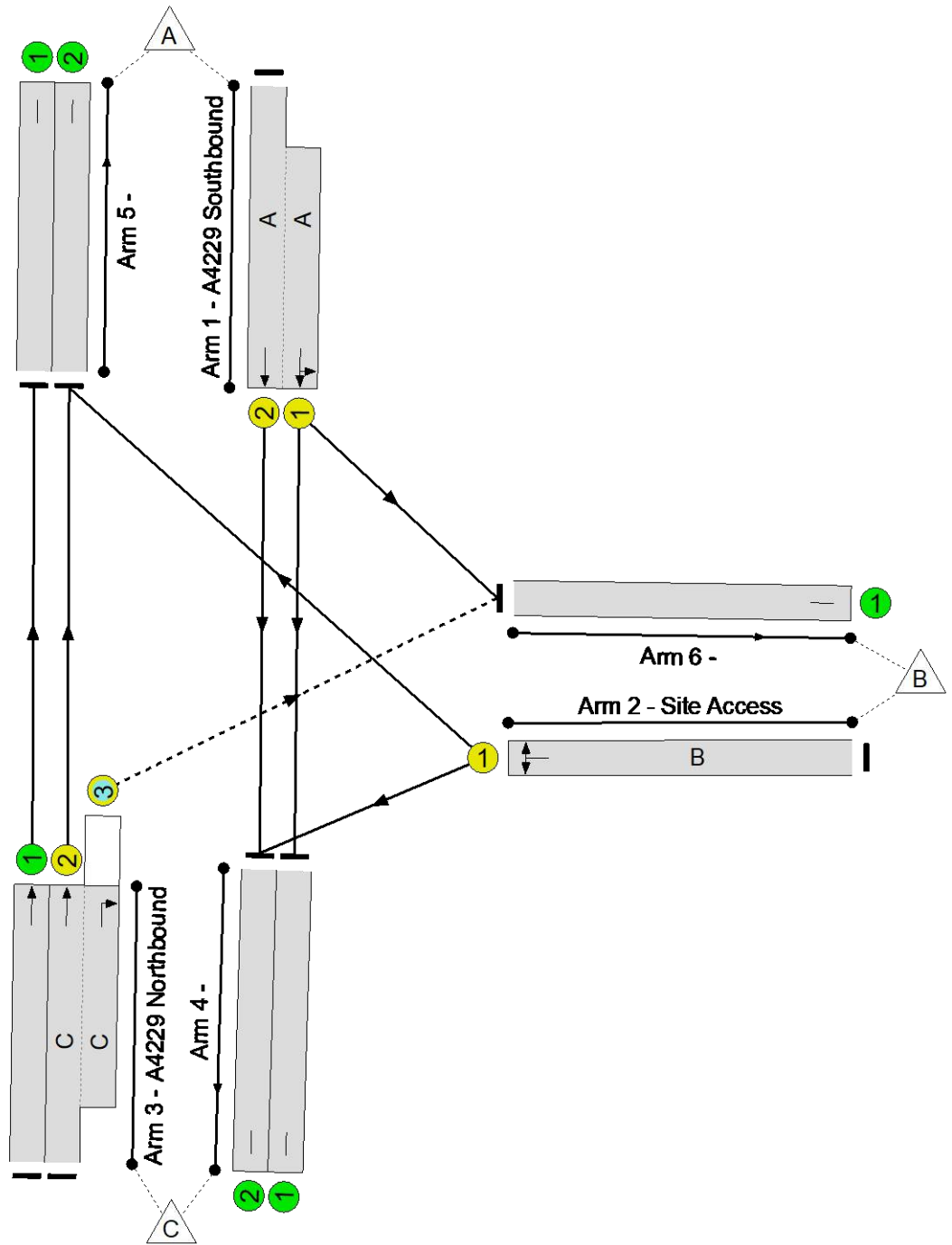
Stage	1	2	3
Duration	78	27	7
Change Point	0	80	113

Signal Timings Diagram



Network Layout Diagram

A4229 Site Access
PRC: 27.7 %
Total Traffic Delay: 11.6 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	70.5%
A4229 Site Access	-	-	N/A	-	-		-	-	-	-	-	-	70.5%
1/2+1/1	A4229 Southbound Ahead Left	U	N/A	N/A	A		1	78	-	954	1975:1919	811+788	59.7 : 59.7%
2/1	Site Access Left Right	U	N/A	N/A	B		1	27	-	291	1810	422	68.9%
3/1	A4229 Northbound Ahead	U	N/A	N/A	-		-	-	-	819	1935	1935	42.3%
3/2+3/3	A4229 Northbound Ahead Right	U+O	N/A	N/A	C		1	78	-	403	1935:1800	0+572	0.0 : 70.5%
4/1		U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	707	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	819	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	68	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	539	Inf	Inf	0.0%

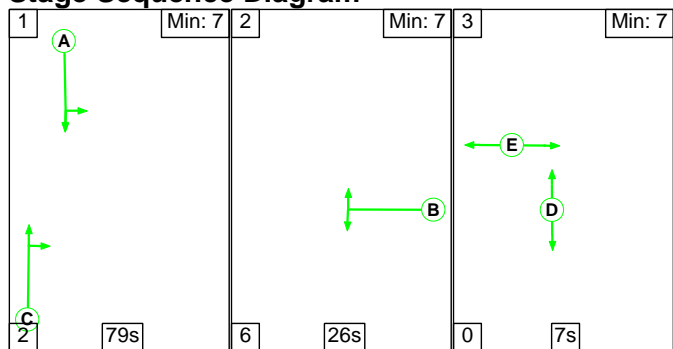
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	400	0	3	7.4	3.4	0.9	11.6	-	-	-	-
A4229 Site Access	-	-	400	0	3	7.4	3.4	0.9	11.6	-	-	-	-
1/2+1/1	954	954	-	-	-	2.5	0.7	-	3.2	12.1	7.3	0.7	8.0
2/1	291	291	-	-	-	3.4	1.1	-	4.5	55.5	8.8	1.1	9.9
3/1	819	819	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.4	0.4
3/2+3/3	403	403	400	0	3	1.5	1.2	0.9	3.6	31.9	9.0	1.2	10.1
4/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	707	707	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	819	819	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	68	68	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	539	539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		27.7	Total Delay for Signalled Lanes (pcuHr):		11.26	Cycle Time (s): 120				
			PRC Over All Lanes (%):		27.7	Total Delay Over All Lanes(pcuHr):		11.63					

Full Input Data And Results

Scenario 4: '2033 Total Traffic PM' (FG4: '2033 Total Traffic PM', Plan 1: 'Network Control Plan 1')

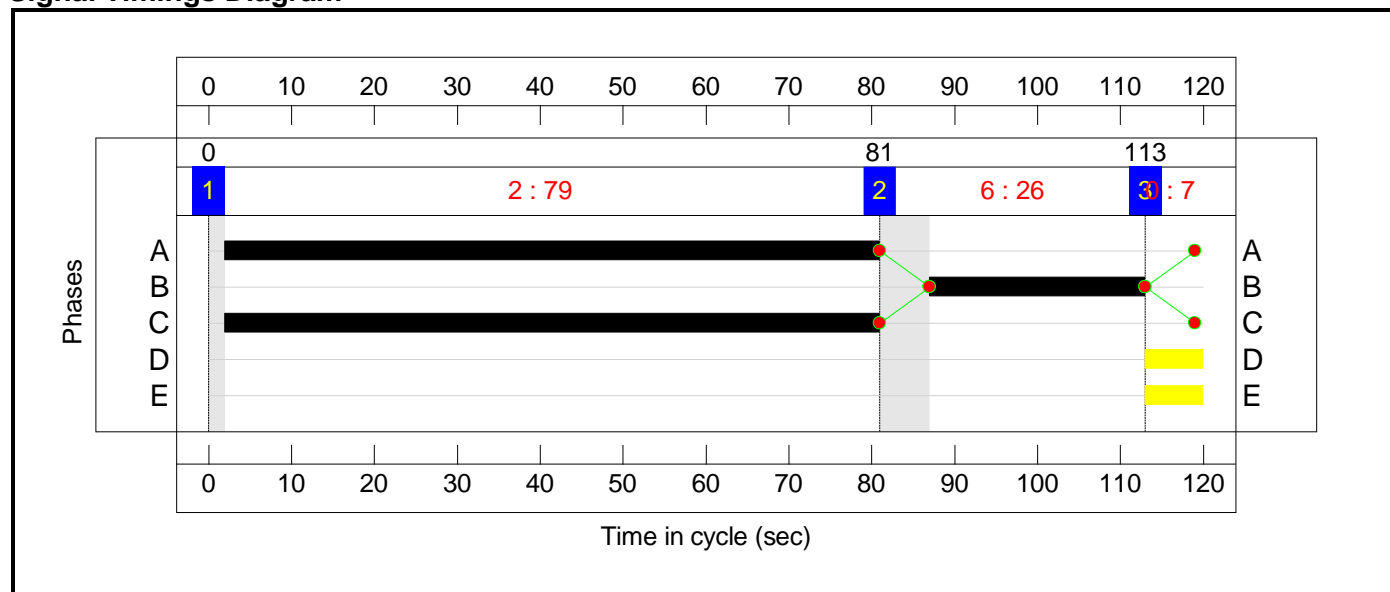
Stage Sequence Diagram



Stage Timings

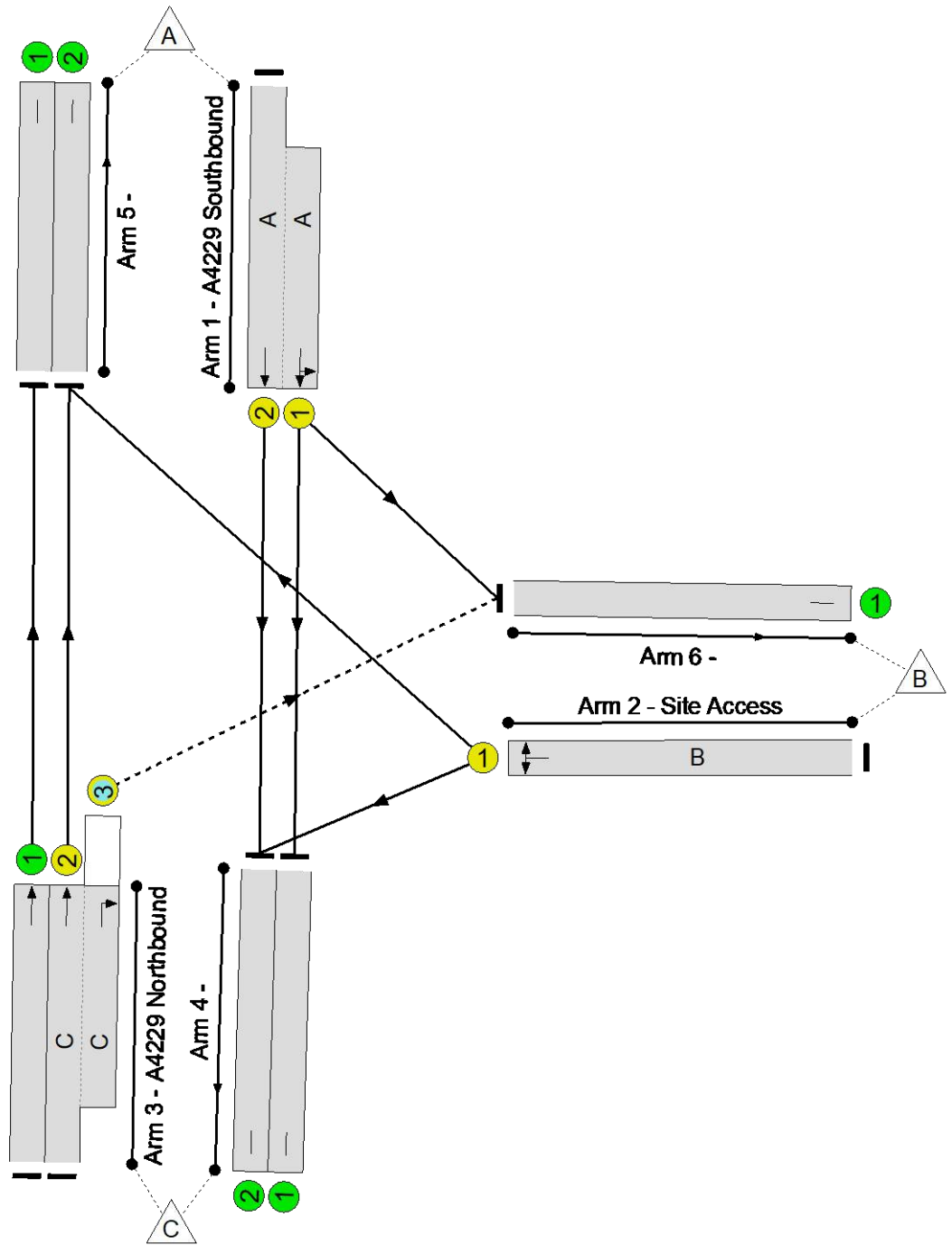
Stage	1	2	3
Duration	79	26	7
Change Point	0	81	113

Signal Timings Diagram



Network Layout Diagram

A4229 Site Access
PRC: 21.7 %
Total Traffic Delay: 12.6 pcuHr



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	74.0%
A4229 Site Access	-	-	N/A	-	-		-	-	-	-	-	-	74.0%
1/2+1/1	A4229 Southbound Ahead Left	U	N/A	N/A	A		1	79	-	1038	1975:1924	819+797	64.2 : 64.2%
2/1	Site Access Left Right	U	N/A	N/A	B		1	26	-	291	1810	407	71.5%
3/1	A4229 Northbound Ahead	U	N/A	N/A	-		-	-	-	904	1935	1935	46.7%
3/2+3/3	A4229 Northbound Ahead Right	U+O	N/A	N/A	C		1	79	-	403	1935:1800	0+545	0.0 : 74.0%
4/1		U	N/A	N/A	-		-	-	-	376	Inf	Inf	0.0%
4/2		U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	904	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	68	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	539	Inf	Inf	0.0%

Full Input Data And Results

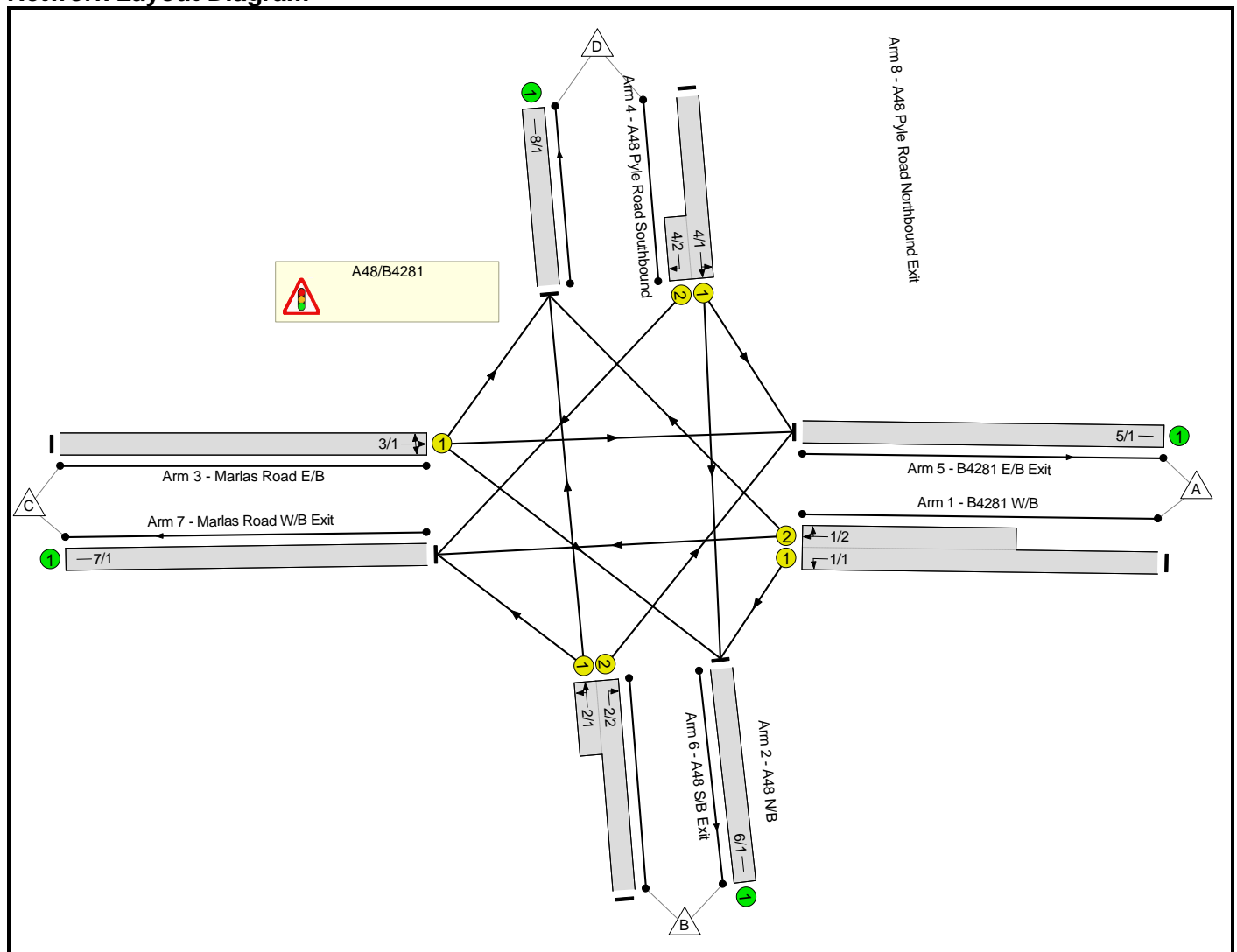
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	400	0	3	7.6	4.0	1.0	12.6	-	-	-	-
A4229 Site Access	-	-	400	0	3	7.6	4.0	1.0	12.6	-	-	-	-
1/2+1/1	1038	1038	-	-	-	2.6	0.9	-	3.5	12.2	7.9	0.9	8.8
2/1	291	291	-	-	-	3.5	1.2	-	4.7	58.1	8.9	1.2	10.1
3/1	904	904	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
3/2+3/3	403	403	400	0	3	1.5	1.4	1.0	3.9	35.1	9.3	1.4	10.7
4/1	376	376	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	904	904	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	68	68	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	539	539	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		21.7	Total Delay for Signalled Lanes (pcuHr):		12.15	Cycle Time (s): 120				
			PRC Over All Lanes (%):		21.7	Total Delay Over All Lanes(pcuHr):		12.58					

Full Input Data And Results
Full Input Data And Results

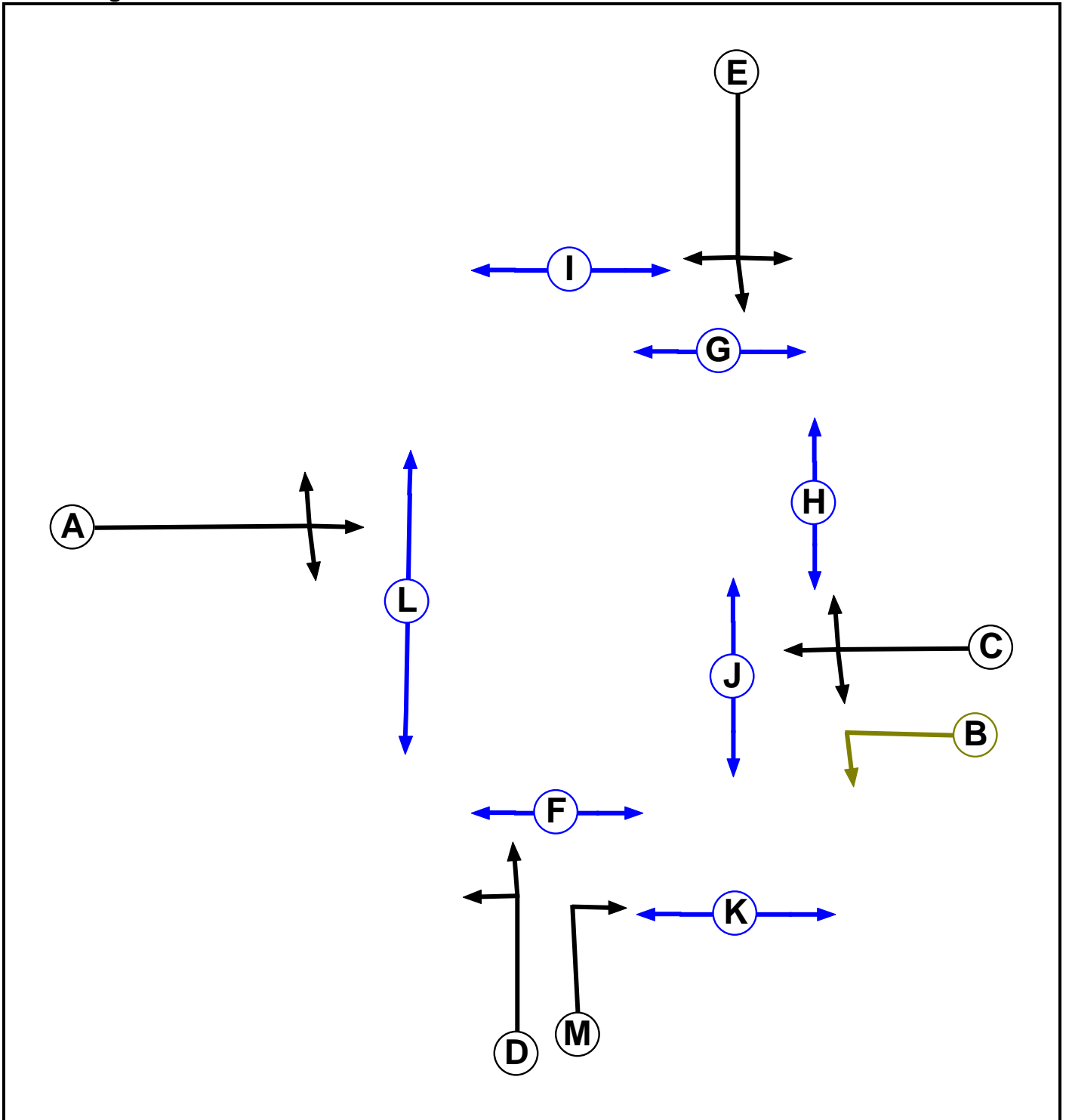
User and Project Details

Project:	Pyle
Title:	
Location:	
Additional detail:	
File name:	J3 A48 Pyle Road_B4281_Existing Layout.lsg3x
Author:	
Company:	
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	Filter	C	4	0
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		7	7
I	Pedestrian		5	5
J	Pedestrian		7	7
K	Pedestrian		5	5
L	Pedestrian		7	7
M	Traffic		7	7

Phase Intergreens Matrix

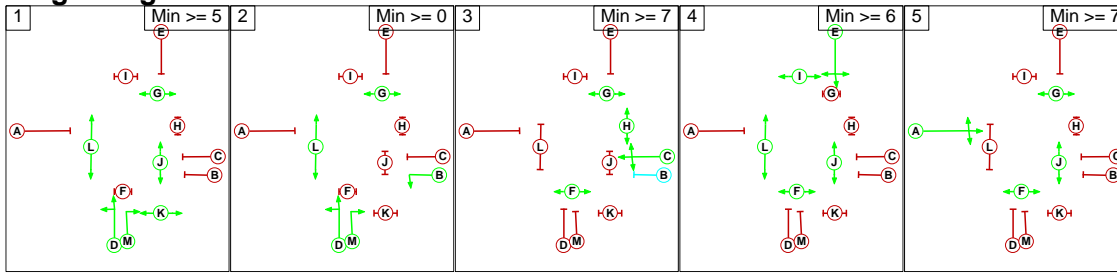
		Starting Phase												
		A	B	C	D	E	F	G	H	I	J	K	L	M
Terminating Phase	A		5	5	5	5	-	-	8	8	-	8	5	5
	B	5		-	-	5	-	-	-	-	5	8	-	-
	C	5	-		5	5	-	-	-	8	5	8	7	5
	D	5	-	5		6	5	-	-	8	-	-	-	-
	E	5	5	5	5		-	5	7	-	-	8	-	5
	F	-	-	-	7	-		-	-	-	-	-	-	7
	G	-	-	-	-	7	-		-	-	-	-	-	-
	H	7	-	-	-	7	-	-		-	-	-	-	7
	I	7	-	7	7	-	-	-	-		-	-	-	-
	J	-	7	7	-	-	-	-	-	-		-	-	-
	K	7	7	7	-	7	-	-	-	-	-		-	-
	L	7	-	5	-	-	-	-	-	-	-	-		-
	M	5	-	5	-	5	5	-	7	-	-	-	-	

Phases in Stage

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

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	5
From Stage	1		7	7	8	7
	2	X		7	X	X
	3	8	7		8	7
	4	8	7	7		7
	5	8	7	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A48/B4281

There are no Opposed Lanes in this Junction

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	07:00	08:00	01:00	
2: '2021 Base PM'	17:00	18:00	01:00	
3: '2021 Total Traffic AM'	07:00	08:00	01:00	
4: '2021 Total Traffic PM'	17:00	18:00	01:00	
5: '2033 Base AM'	07:00	08:00	01:00	
6: '2033 Base PM'	17:00	18:00	01:00	
7: '2033 Total Traffic AM'	07:00	08:00	01:00	
8: '2033 Total Traffic PM'	17:00	18:00	01:00	

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	278	166	84	528
	B	204	0	15	122	341
	C	176	38	0	33	247
	D	98	231	52	0	381
	Tot.	478	547	233	239	1497

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2021 Base AM
Junction: A48/B4281	
1/1 (with short)	528(In) 278(Out)
1/2 (short)	250
2/1 (short)	137
2/2 (with short)	341(In) 204(Out)
3/1	247
4/1 (with short)	381(In) 329(Out)
4/2 (short)	52
5/1	478
6/1	547
7/1	233
8/1	239

Full Input Data And Results

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	66.4 %	1842	1842
				Arm 8 Right	10.00	33.6 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	10.9 %	1891	1891
				Arm 8 Ahead	Inf	89.1 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.3 %	1887	1887
				Arm 6 Right	20.00	15.4 %		
				Arm 8 Left	12.00	13.4 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	29.8 %	1798	1798
				Arm 6 Ahead	Inf	70.2 %		
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 7 Right	9.50	100.0 %	1611	1611
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	276	179	118	573	
B	232	0	40	184	456	
C	145	29	0	54	228	
D	107	166	55	0	328	
Tot.	484	471	274	356	1585	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2021 Base PM
Junction: A48/B4281	
1/1 (with short)	573(In) 276(Out)
1/2 (short)	297
2/1 (short)	224
2/2 (with short)	456(In) 232(Out)
3/1	228
4/1 (with short)	328(In) 273(Out)
4/2 (short)	55
5/1	484
6/1	471
7/1	274
8/1	356

Full Input Data And Results

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	60.3 %	1826	1826
				Arm 8 Right	10.00	39.7 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	17.9 %	1869	1869
				Arm 8 Ahead	Inf	82.1 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	63.6 %	1867	1867
				Arm 6 Right	20.00	12.7 %		
				Arm 8 Left	12.00	23.7 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	39.2 %	1778	1778
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 6 Ahead	Inf	60.8 %		
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2021 Total Traffic AM' (FG3: '2021 Total Traffic AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	309	166	84	559	
B	270	0	49	154	473	
C	176	53	0	33	262	
D	98	253	52	0	403	
Tot.	544	615	267	271	1697	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2021 Total Traffic AM
Junction: A48/B4281	
1/1 (with short)	559(In) 309(Out)
1/2 (short)	250
2/1 (short)	203
2/2 (with short)	473(In) 270(Out)
3/1	262
4/1 (with short)	403(In) 351(Out)
4/2 (short)	52
5/1	544
6/1	615
7/1	267
8/1	271

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	66.4 %	1842	1842
				Arm 8 Right	10.00	33.6 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	24.1 %	1851	1851
				Arm 8 Ahead	Inf	75.9 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	67.2 %	1882	1882
				Arm 6 Right	20.00	20.2 %		
				Arm 8 Left	12.00	12.6 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	27.9 %	1802	1802
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 6 Ahead	Inf	72.1 %		
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2021 Total Traffic PM' (FG4: '2021 Total Traffic PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	345	179	118	642	
B	260	0	56	204	520	
C	145	57	0	54	256	
D	107	204	55	0	366	
Tot.	512	606	290	376	1784	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2021 Total Traffic PM
Junction: A48/B4281	
1/1 (with short)	642(In) 345(Out)
1/2 (short)	297
2/1 (short)	260
2/2 (with short)	520(In) 260(Out)
3/1	256
4/1 (with short)	366(In) 311(Out)
4/2 (short)	55
5/1	512
6/1	606
7/1	290
8/1	376

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	60.3 %	1826	1826
				Arm 8 Right	10.00	39.7 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	21.5 %	1858	1858
				Arm 8 Ahead	Inf	78.5 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	56.6 %	1860	1860
				Arm 6 Right	20.00	22.3 %		
				Arm 8 Left	12.00	21.1 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	34.4 %	1788	1788
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 6 Ahead	Inf	65.6 %		
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2033 Base AM' (FG5: '2033 Base AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	307	183	93	583	
B	224	0	17	134	375	
C	194	42	0	37	273	
D	109	254	57	0	420	
Tot.	527	603	257	264	1651	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2033 Base AM
Junction: A48/B4281	
1/1 (with short)	583(In) 307(Out)
1/2 (short)	276
2/1 (short)	151
2/2 (with short)	375(In) 224(Out)
3/1	273
4/1 (with short)	420(In) 363(Out)
4/2 (short)	57
5/1	527
6/1	603
7/1	257
8/1	264

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	66.3 %	1842	1842
				Arm 8 Right	10.00	33.7 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	11.3 %	1890	1890
				Arm 8 Ahead	Inf	88.7 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.1 %	1886	1886
				Arm 6 Right	20.00	15.4 %		
				Arm 8 Left	12.00	13.6 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	30.0 %	1798	1798
				Arm 6 Ahead	Inf	70.0 %		
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 7 Right	9.50	100.0 %	1611	1611
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2033 Base PM' (FG6: '2033 Base PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	305	197	130	632	
B	256	0	44	203	503	
C	160	32	0	59	251	
D	118	183	60	0	361	
Tot.	534	520	301	392	1747	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2033 Base PM
Junction: A48/B4281	
1/1 (with short)	632(In) 305(Out)
1/2 (short)	327
2/1 (short)	247
2/2 (with short)	503(In) 256(Out)
3/1	251
4/1 (with short)	361(In) 301(Out)
4/2 (short)	60
5/1	534
6/1	520
7/1	301
8/1	392

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	60.2 %	1826	1826
				Arm 8 Right	10.00	39.8 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	17.8 %	1869	1869
				Arm 8 Ahead	Inf	82.2 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	63.7 %	1867	1867
				Arm 6 Right	20.00	12.7 %		
				Arm 8 Left	12.00	23.5 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	39.2 %	1778	1778
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 6 Ahead	Inf	60.8 %		
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2033 Total Traffic AM' (FG7: '2033 Total Traffic AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination					
	A	B	C	D	Tot.	
A	0	337	183	93	613	
B	291	0	50	166	507	
C	194	57	0	37	288	
D	109	276	57	0	442	
Tot.	594	670	290	296	1850	

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: 2033 Total Traffic AM
Junction: A48/B4281	
1/1 (with short)	613(In) 337(Out)
1/2 (short)	276
2/1 (short)	216
2/2 (with short)	507(In) 291(Out)
3/1	288
4/1 (with short)	442(In) 385(Out)
4/2 (short)	57
5/1	594
6/1	670
7/1	290
8/1	296

Full Input Data And Results

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	66.3 %	1842	1842
				Arm 8 Right	10.00	33.7 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	23.1 %	1853	1853
				Arm 8 Ahead	Inf	76.9 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	67.4 %	1882	1882
				Arm 6 Right	20.00	19.8 %		
				Arm 8 Left	12.00	12.8 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	28.3 %	1801	1801
				Arm 6 Ahead	Inf	71.7 %		
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 7 Right	9.50	100.0 %	1611	1611
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2033 Total Traffic PM' (FG8: '2033 Total Traffic PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	373	197	130	700
	B	284	0	60	223	567
	C	160	60	0	59	279
	D	118	221	60	0	399
	Tot.	562	654	317	412	1945

Full Input Data And Results

Traffic Lane Flows

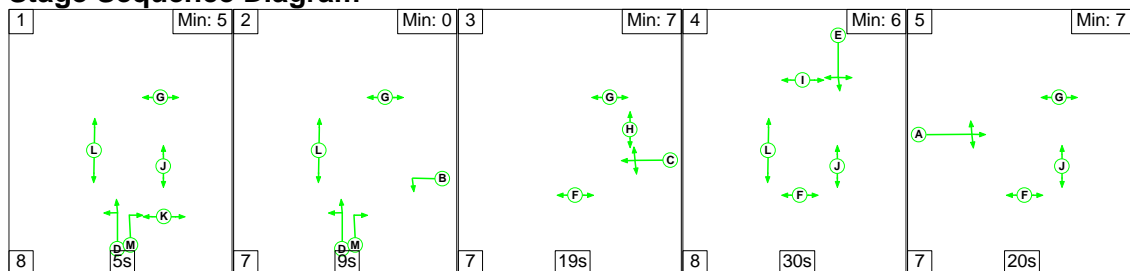
Lane	Scenario 8: 2033 Total Traffic PM
Junction: A48/B4281	
1/1 (with short)	700(In) 373(Out)
1/2 (short)	327
2/1 (short)	283
2/2 (with short)	567(In) 284(Out)
3/1	279
4/1 (with short)	399(In) 339(Out)
4/2 (short)	60
5/1	562
6/1	654
7/1	317
8/1	412

Lane Saturation Flows

Junction: A48/B4281								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B4281 W/B)	3.20	0.00	Y	Arm 6 Left	13.00	100.0 %	1735	1735
1/2 (B4281 W/B)	3.20	0.00	Y	Arm 7 Ahead	Inf	60.2 %	1826	1826
				Arm 8 Right	10.00	39.8 %		
2/1 (A48 N/B)	3.10	0.00	Y	Arm 7 Left	9.00	21.2 %	1859	1859
				Arm 8 Ahead	Inf	78.8 %		
2/2 (A48 N/B)	3.10	0.00	Y	Arm 5 Right	14.00	100.0 %	1739	1739
3/1 (Marlas Road E/B)	3.25	0.00	Y	Arm 5 Ahead	Inf	57.3 %	1861	1861
				Arm 6 Right	20.00	21.5 %		
				Arm 8 Left	12.00	21.1 %		
4/1 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 5 Left	12.00	34.8 %	1787	1787
4/2 (A48 Pyle Road Southbound)	2.50	0.00	Y	Arm 6 Ahead	Inf	65.2 %		
5/1 (B4281 E/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A48 S/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Marlas Road W/B Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A48 Pyle Road Northbound Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

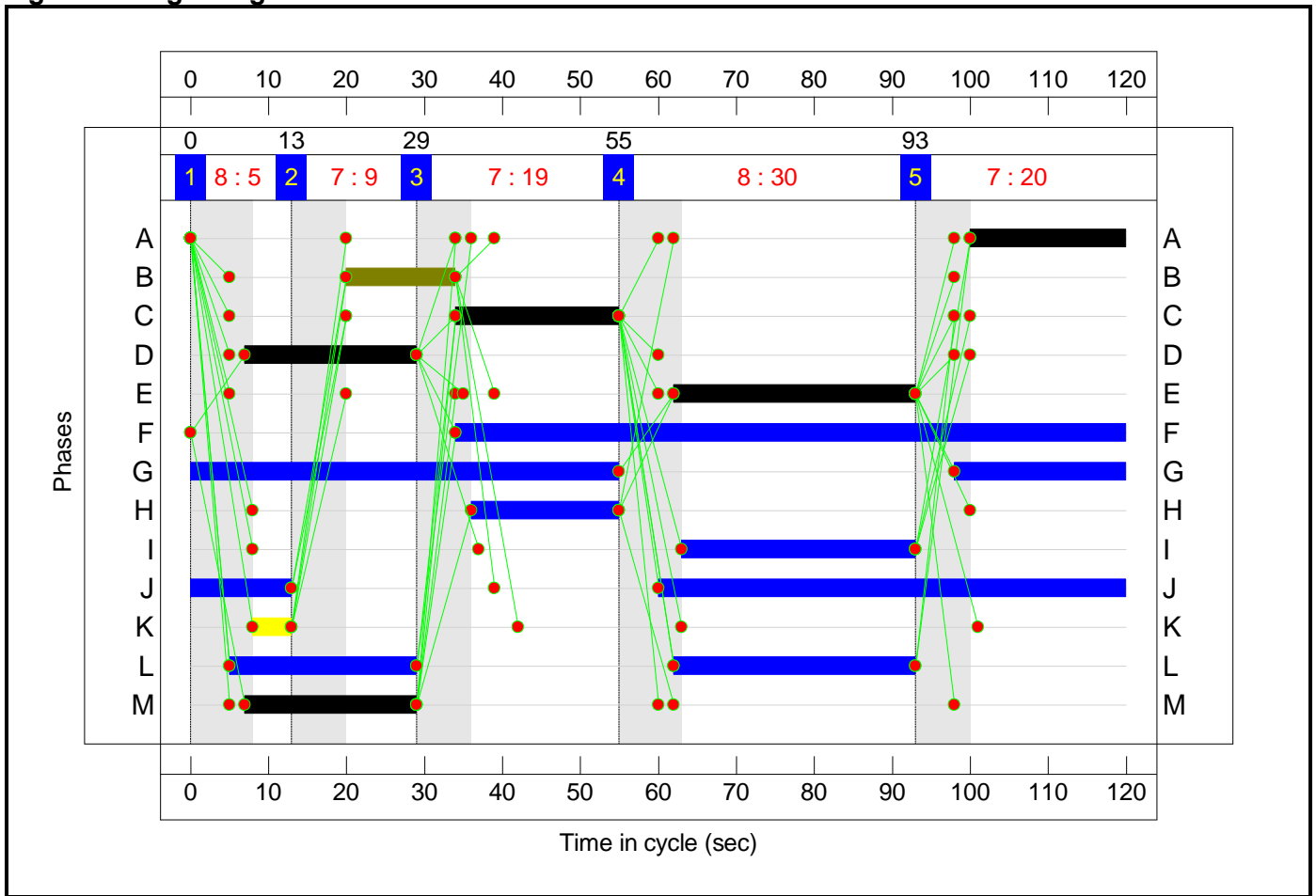
Stage Sequence Diagram



Stage Timings

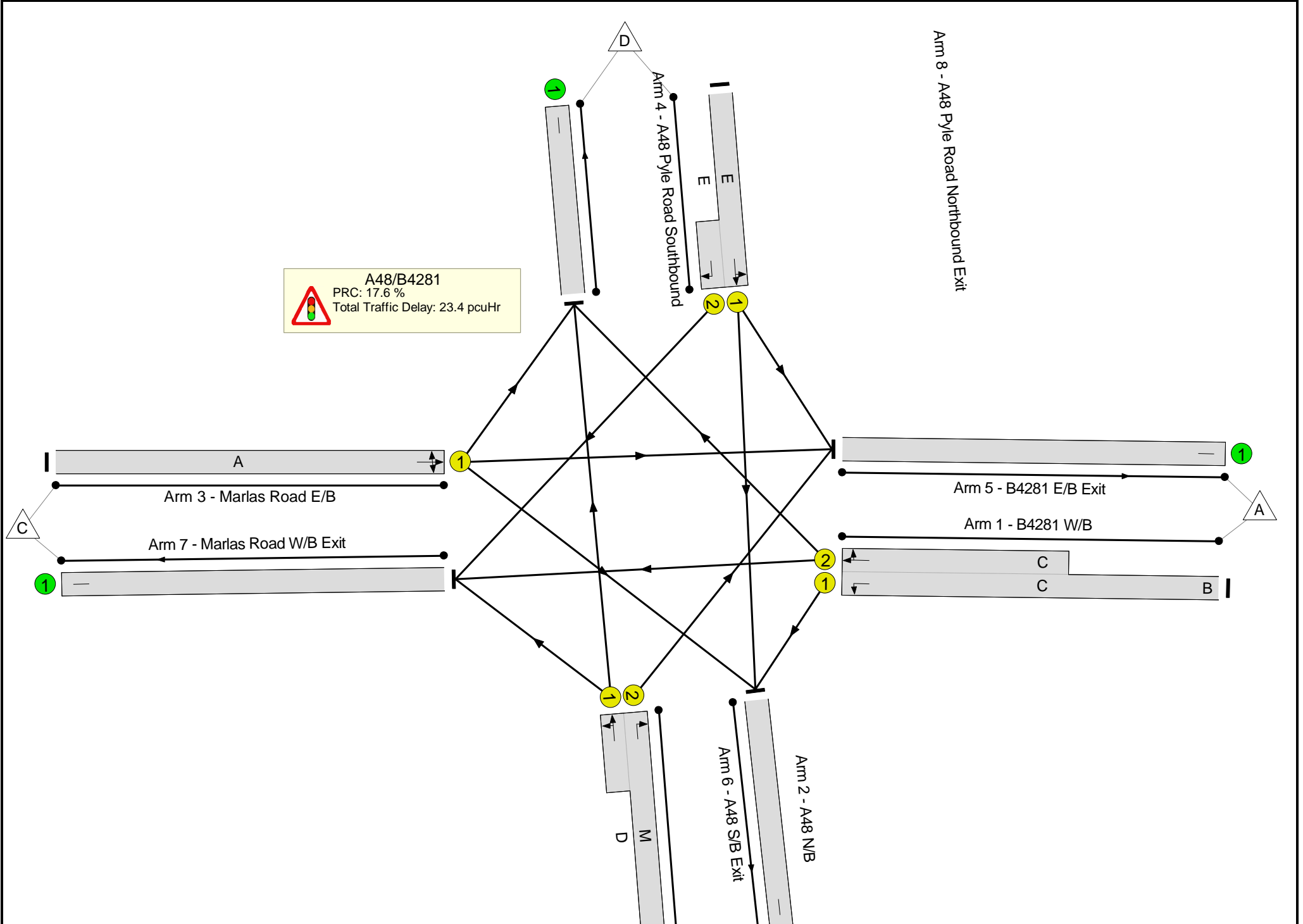
Stage	1	2	3	4	5
Duration	5	9	19	30	20
Change Point	0	13	29	55	93

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	76.6%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	35:21	14	528	1735:1842	388+338	71.7 : 74.0%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	22	-	341	1739:1891	266+179	76.6 : 76.6%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	20	-	247	1887	330	74.8%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	31	-	381	1798:1611	431+68	76.3 : 76.3%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	478	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	547	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	233	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	239	Inf	Inf	0.0%

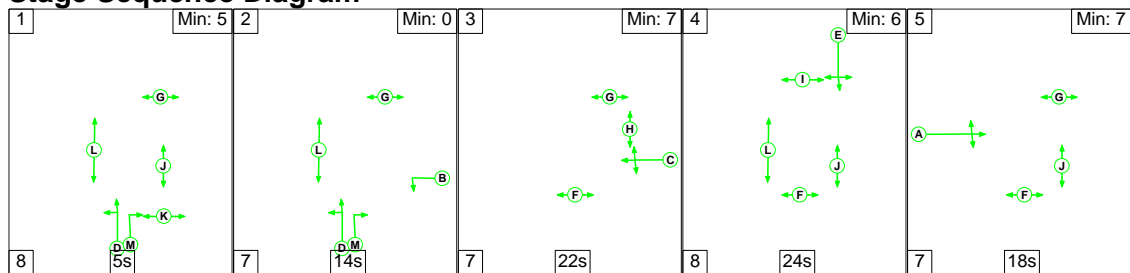
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.5	5.9	0.0	23.4	-	-	-	-
A48/B4281	-	-	0	0	0	17.5	5.9	0.0	23.4	-	-	-	-
1/1+1/2	528	528	-	-	-	5.9	1.3	-	7.2	49.4	7.8	1.3	9.2
2/2+2/1	341	341	-	-	-	4.2	1.6	-	5.7	60.7	7.2	1.6	8.7
3/1	247	247	-	-	-	3.2	1.4	-	4.7	67.9	7.8	1.4	9.2
4/1+4/2	381	381	-	-	-	4.2	1.6	-	5.8	54.5	10.9	1.6	12.4
5/1	478	478	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	547	547	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	233	233	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	239	239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		17.6	Total Delay for Signalled Lanes (pcuHr):		23.41	Cycle Time (s): 120				
			PRC Over All Lanes (%):		17.6	Total Delay Over All Lanes(pcuHr):		23.41					

Full Input Data And Results

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

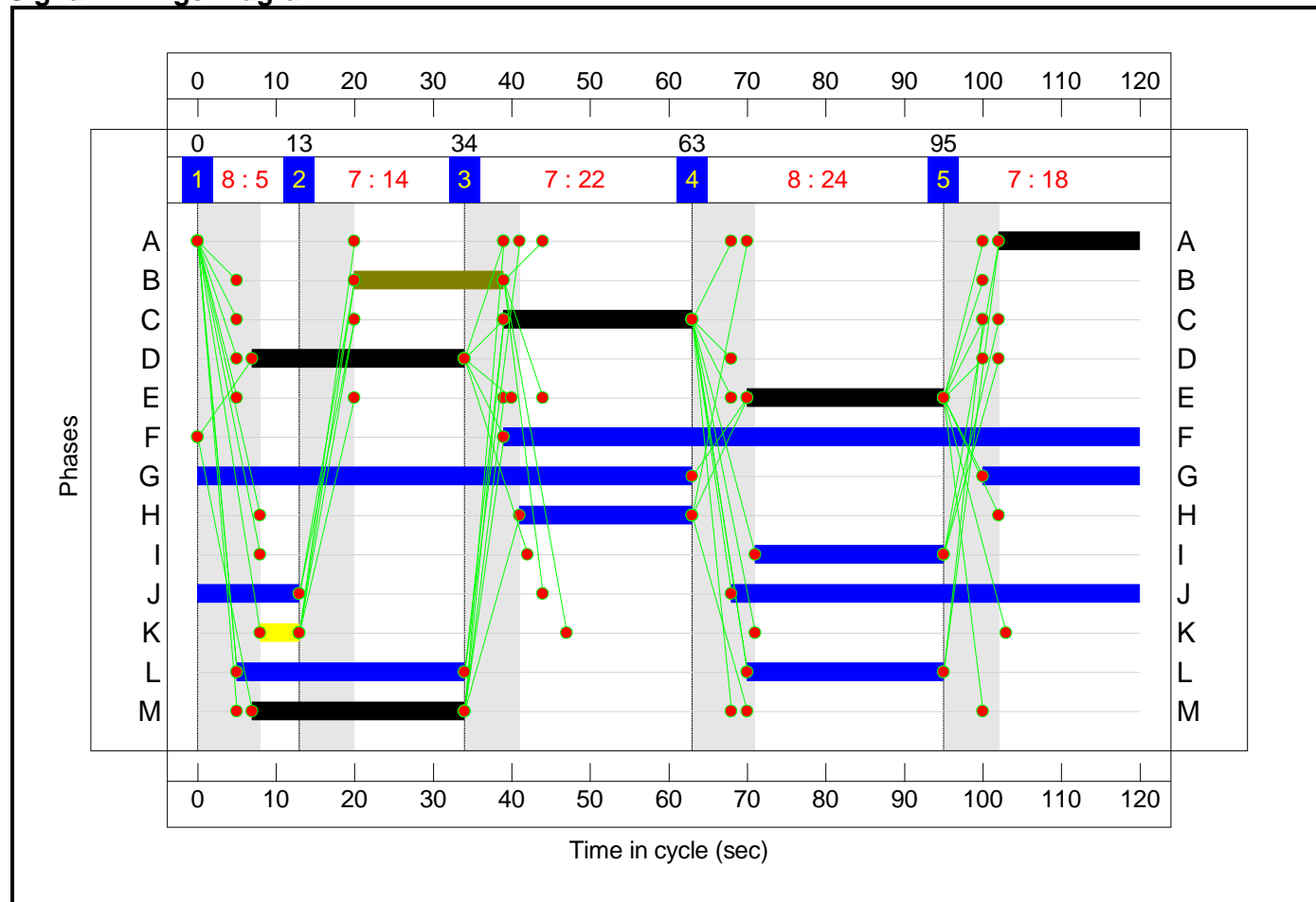
Stage Sequence Diagram



Stage Timings

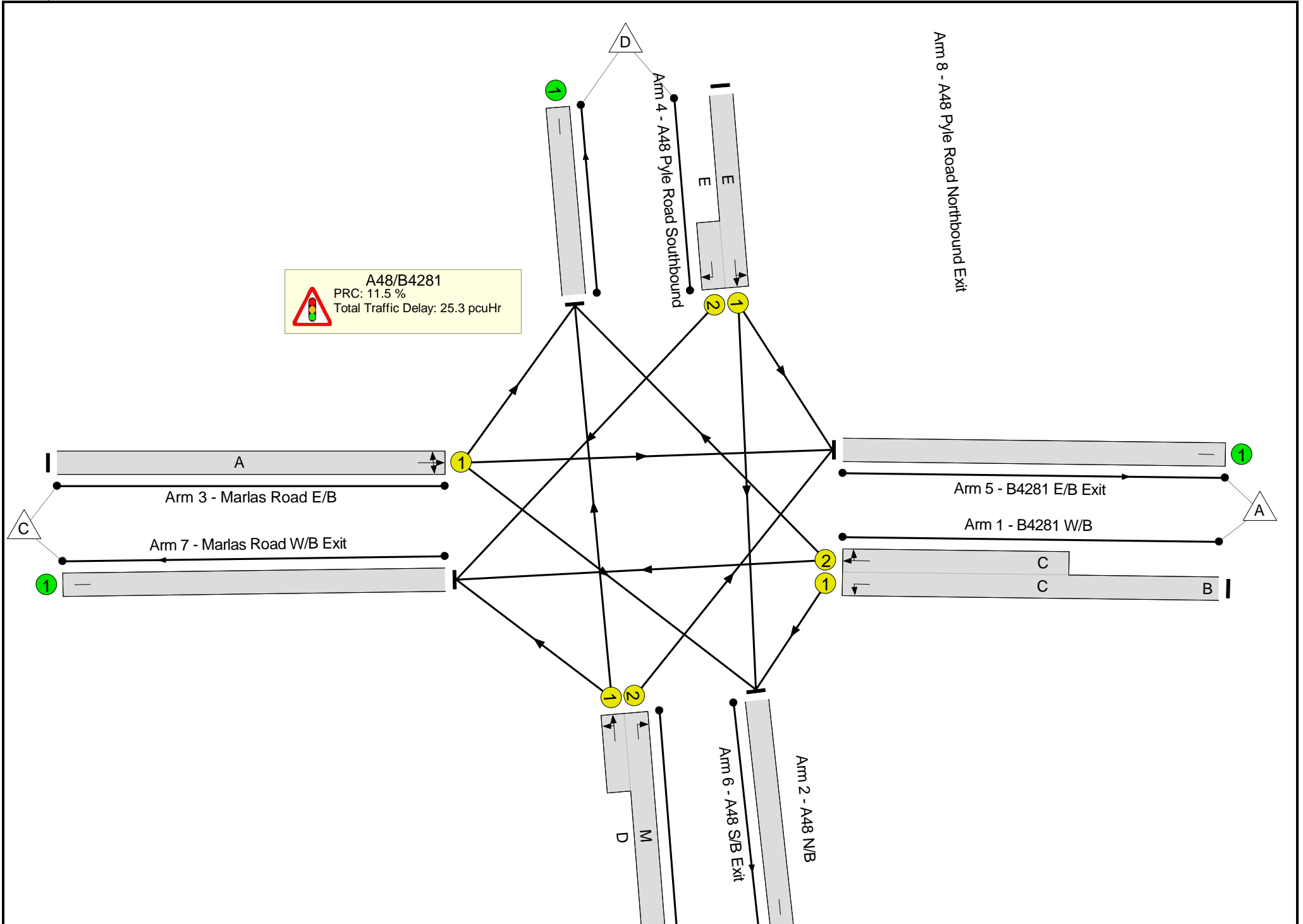
Stage	1	2	3	4	5
Duration	5	14	22	24	18
Change Point	0	13	34	63	95

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.7%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	80.7%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	43:24	19	573	1735:1826	354+380	78.1 : 78.1%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	27	-	456	1739:1869	287+277	80.7 : 80.7%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	18	-	228	1867	296	77.1%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	25	-	328	1778:1611	344+69	79.4 : 79.4%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	484	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	471	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	274	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	356	Inf	Inf	0.0%

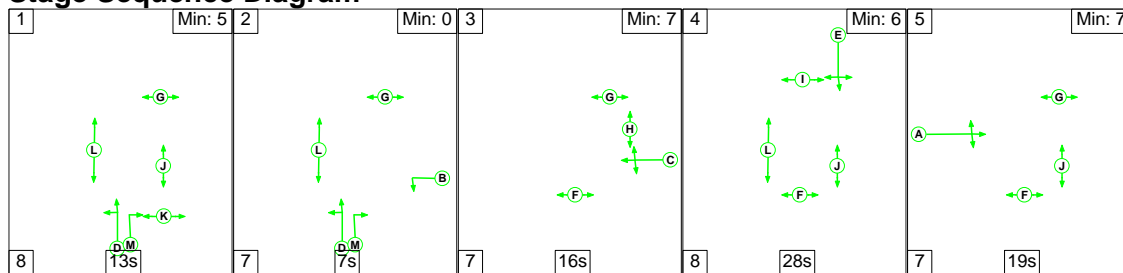
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	18.1	7.2	0.0	25.3	-	-	-	-
A48/B4281	-	-	0	0	0	18.1	7.2	0.0	25.3	-	-	-	-
1/1+1/2	573	573	-	-	-	5.9	1.7	-	7.6	48.0	9.3	1.7	11.1
2/2+2/1	456	456	-	-	-	5.2	2.0	-	7.2	56.9	9.1	2.0	11.1
3/1	228	228	-	-	-	3.1	1.6	-	4.7	73.8	7.3	1.6	8.9
4/1+4/2	328	328	-	-	-	4.0	1.8	-	5.8	63.7	9.3	1.8	11.2
5/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	471	471	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	274	274	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	356	356	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		11.5	Total Delay for Signalled Lanes (pcuHr):		25.33	Cycle Time (s): 120				
			PRC Over All Lanes (%):		11.5	Total Delay Over All Lanes(pcuHr):		25.33					

Full Input Data And Results

Scenario 3: '2021 Total Traffic AM' (FG3: '2021 Total Traffic AM', Plan 1: 'Network Control Plan 1')

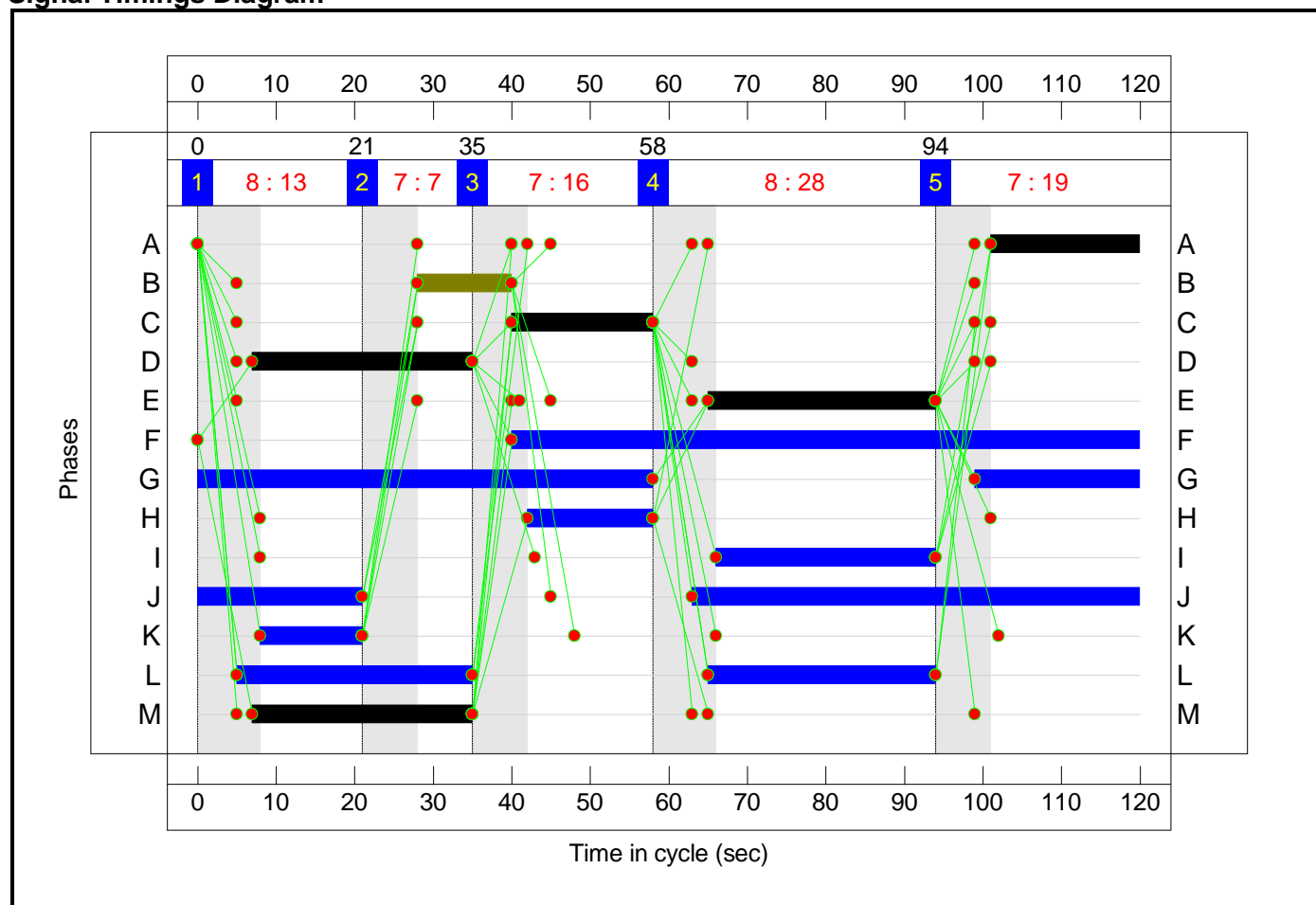
Stage Sequence Diagram



Stage Timings

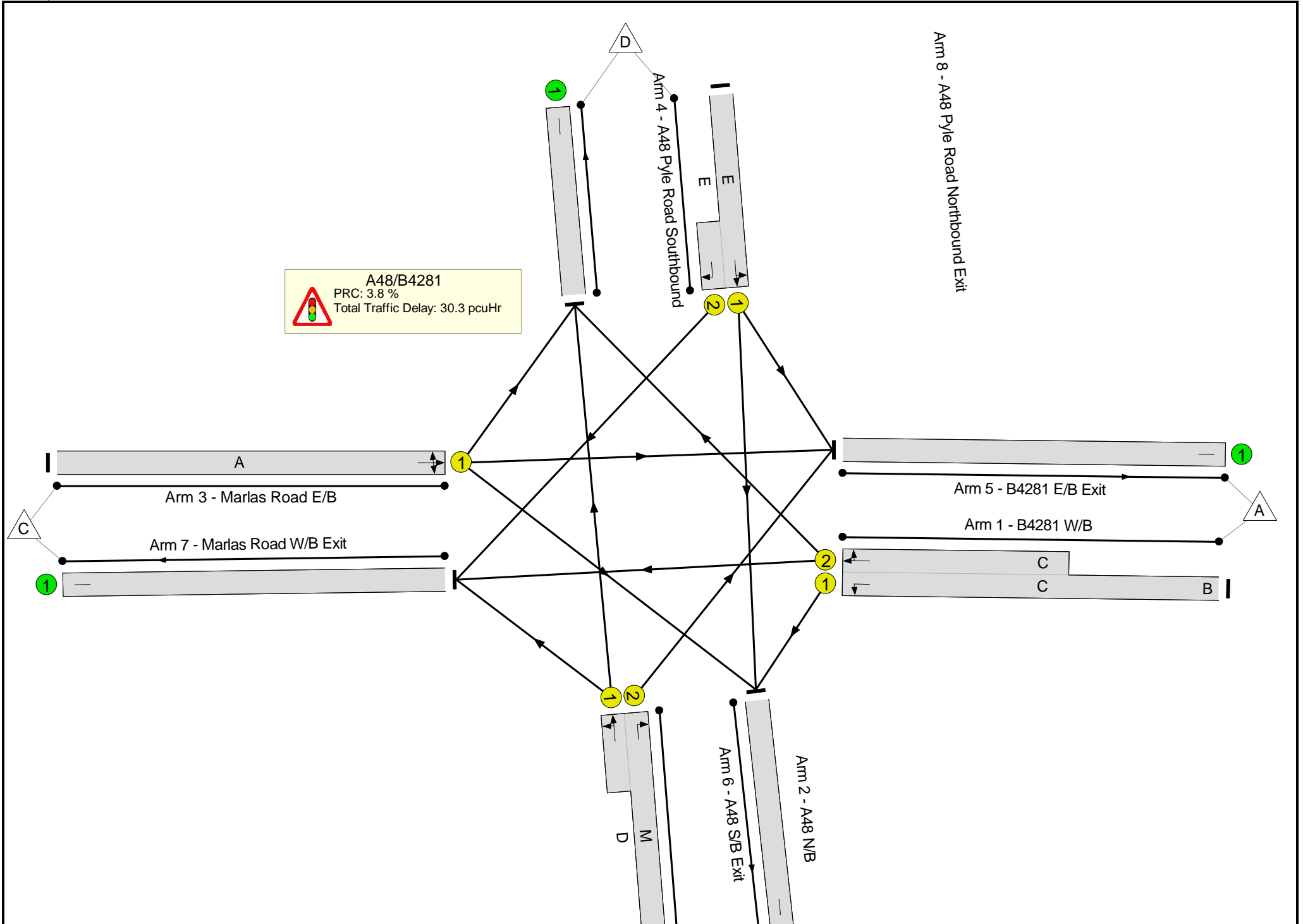
Stage	1	2	3	4	5
Duration	13	7	16	28	19
Change Point	0	21	35	58	94

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	86.7%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	86.7%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	30:18	12	559	1735:1842	433+292	71.4 : 85.7%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	28	-	473	1739:1851	311+234	86.7 : 86.7%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	19	-	262	1882	314	83.5%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	29	-	403	1802:1611	409+61	85.8 : 85.8%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	544	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	615	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%

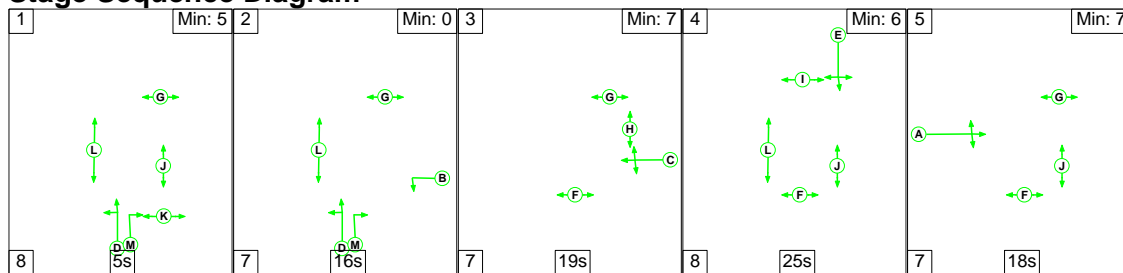
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	20.5	9.8	0.0	30.3	-	-	-	-
A48/B4281	-	-	0	0	0	20.5	9.8	0.0	30.3	-	-	-	-
1/1+1/2	559	559	-	-	-	6.9	1.7	-	8.5	54.9	9.3	1.7	10.9
2/2+2/1	473	473	-	-	-	5.4	3.0	-	8.4	64.2	11.1	3.0	14.1
3/1	262	262	-	-	-	3.5	2.3	-	5.8	80.4	8.4	2.3	10.8
4/1+4/2	403	403	-	-	-	4.7	2.8	-	7.5	67.2	12.1	2.8	14.9
5/1	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	615	615	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1		PRC for Signalled Lanes (%): 3.8			PRC Over All Lanes (%): 3.8		Total Delay for Signalled Lanes (pcuHr): 30.32		Total Delay Over All Lanes(pcuHr): 30.32		Cycle Time (s): 120		

Full Input Data And Results

Scenario 4: '2021 Total Traffic PM' (FG4: '2021 Total Traffic PM', Plan 1: 'Network Control Plan 1')

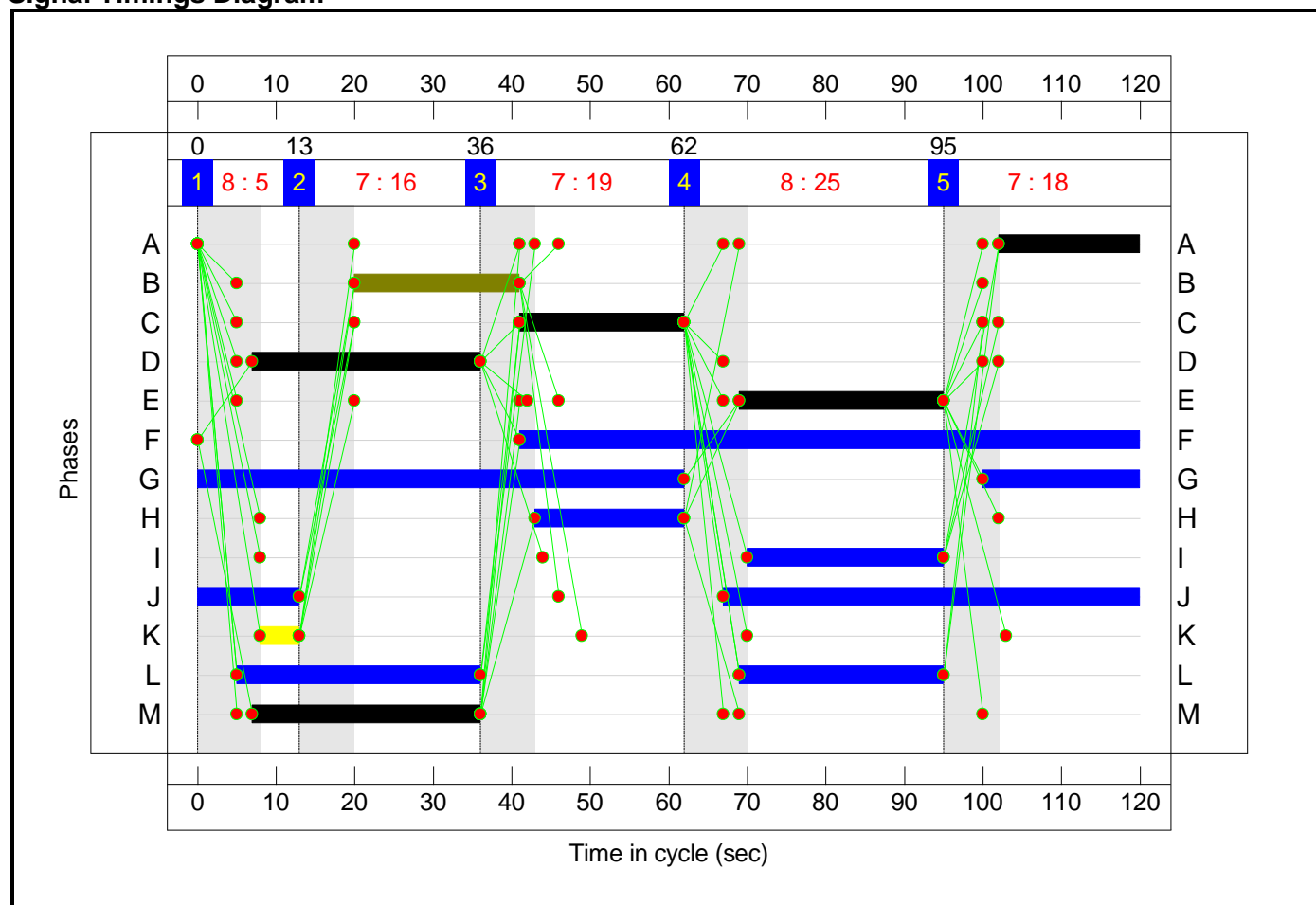
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5
Duration	5	16	19	25	18
Change Point	0	13	36	62	95

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	88.7%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	88.7%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	42:21	21	642	1735:1826	389+335	88.7 : 88.7%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	29	-	520	1739:1858	300+300	86.8 : 86.8%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	18	-	256	1860	295	86.9%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	26	-	366	1788:1611	362+64	85.8 : 85.8%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	512	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	606	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	290	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	376	Inf	Inf	0.0%

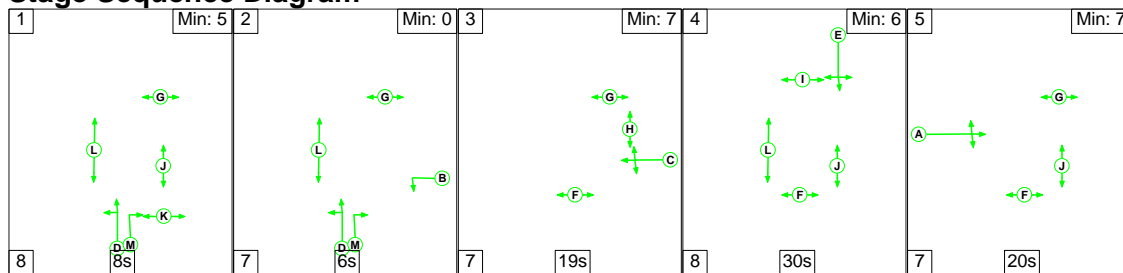
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	20.7	12.3	0.0	33.0	-	-	-	-
A48/B4281	-	-	0	0	0	20.7	12.3	0.0	33.0	-	-	-	-
1/1+1/2	642	642	-	-	-	6.9	3.6	-	10.5	58.9	9.7	3.6	13.3
2/2+2/1	520	520	-	-	-	5.8	3.0	-	8.9	61.5	11.2	3.0	14.2
3/1	256	256	-	-	-	3.5	2.9	-	6.4	89.9	8.3	2.9	11.2
4/1+4/2	366	366	-	-	-	4.5	2.8	-	7.2	71.1	10.8	2.8	13.6
5/1	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	606	606	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	290	290	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	376	376	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		1.4	Total Delay for Signalled Lanes (pcuHr):		33.01	Cycle Time (s): 120				
			PRC Over All Lanes (%):		1.4	Total Delay Over All Lanes(pcuHr):		33.01					

Full Input Data And Results

Scenario 5: '2033 Base AM' (FG5: '2033 Base AM', Plan 1: 'Network Control Plan 1')

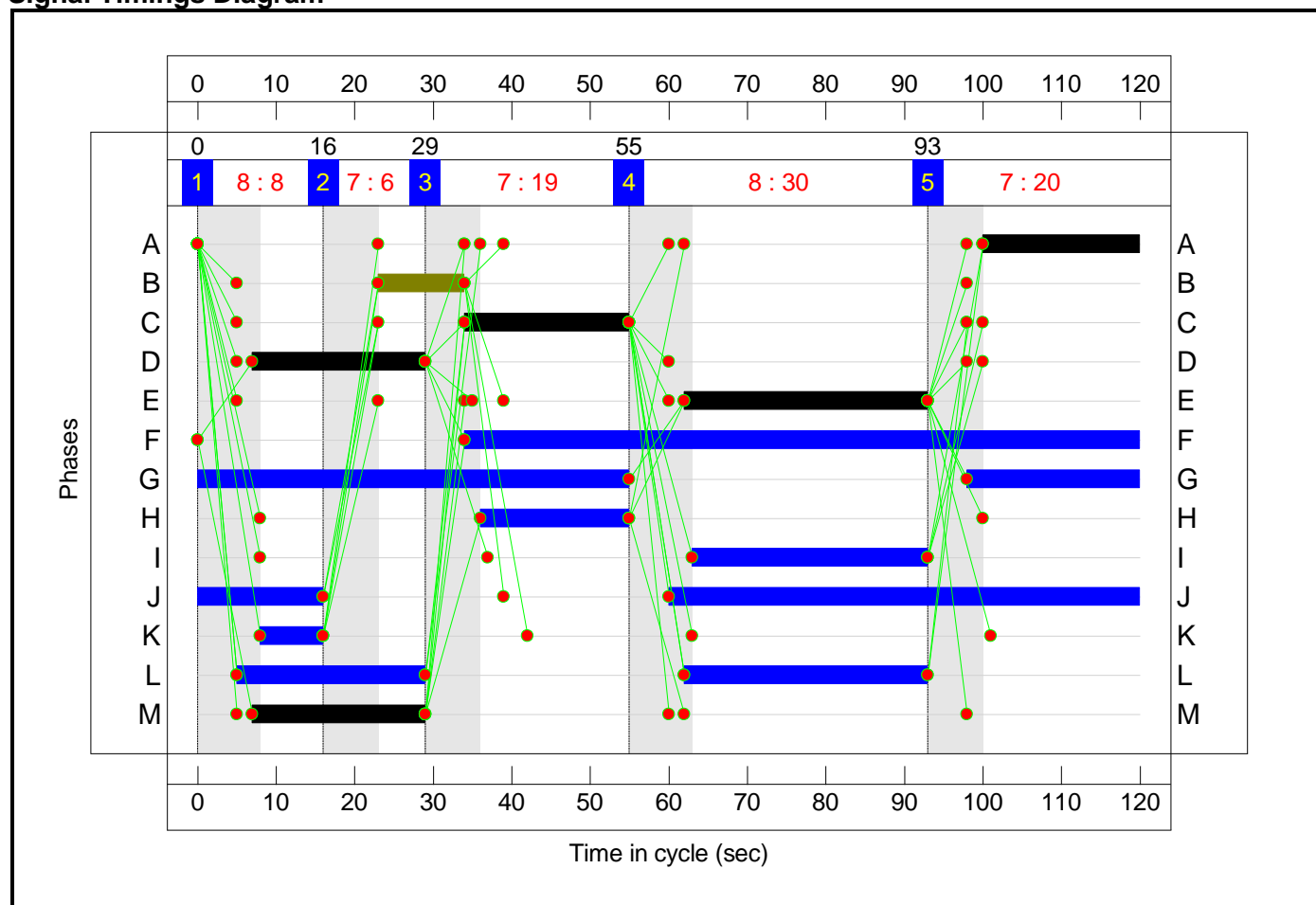
Stage Sequence Diagram



Stage Timings

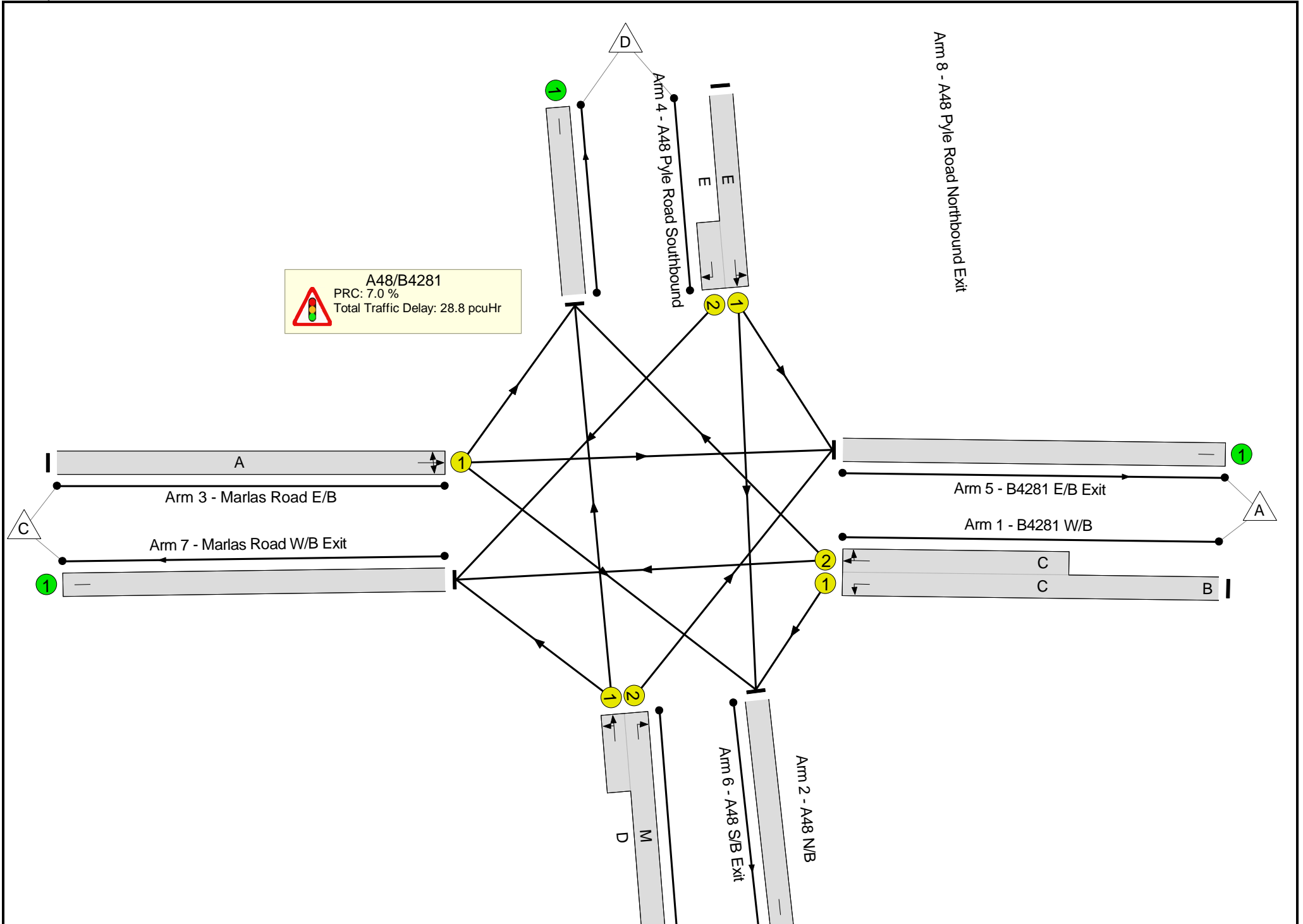
Stage	1	2	3	4	5
Duration	8	6	19	30	20
Change Point	0	16	29	55	93

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	84.1%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	84.1%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	32:21	11	583	1735:1842	412+338	74.6 : 81.7%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	22	-	375	1739:1890	266+179	84.1 : 84.1%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	20	-	273	1886	330	82.7%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	31	-	420	1798:1611	432+68	84.1 : 84.1%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	527	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	257	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	264	Inf	Inf	0.0%

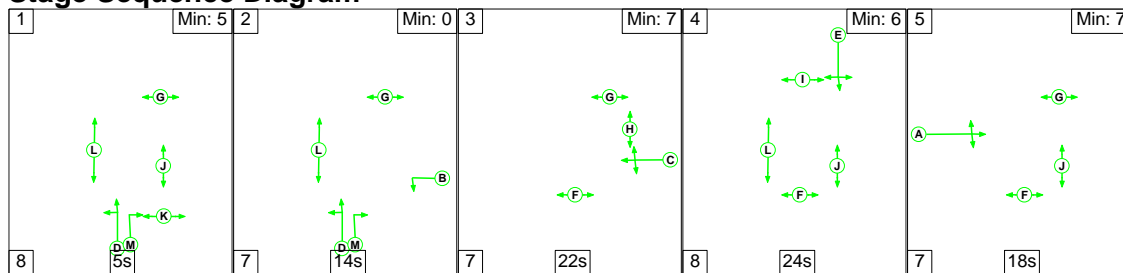
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	19.9	8.9	0.0	28.8	-	-	-	-
A48/B4281	-	-	0	0	0	19.9	8.9	0.0	28.8	-	-	-	-
1/1+1/2	583	583	-	-	-	6.9	1.7	-	8.6	53.1	9.0	1.7	10.7
2/2+2/1	375	375	-	-	-	4.7	2.5	-	7.1	68.5	8.5	2.5	11.0
3/1	273	273	-	-	-	3.6	2.2	-	5.8	77.0	8.7	2.2	10.9
4/1+4/2	420	420	-	-	-	4.8	2.5	-	7.3	62.2	12.4	2.5	14.9
5/1	527	527	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	257	257	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		7.0	Total Delay for Signalled Lanes (pcuHr):		28.83	Cycle Time (s): 120				
			PRC Over All Lanes (%):		7.0	Total Delay Over All Lanes(pcuHr):		28.83					

Full Input Data And Results

Scenario 6: '2033 Base PM' (FG6: '2033 Base PM', Plan 1: 'Network Control Plan 1')

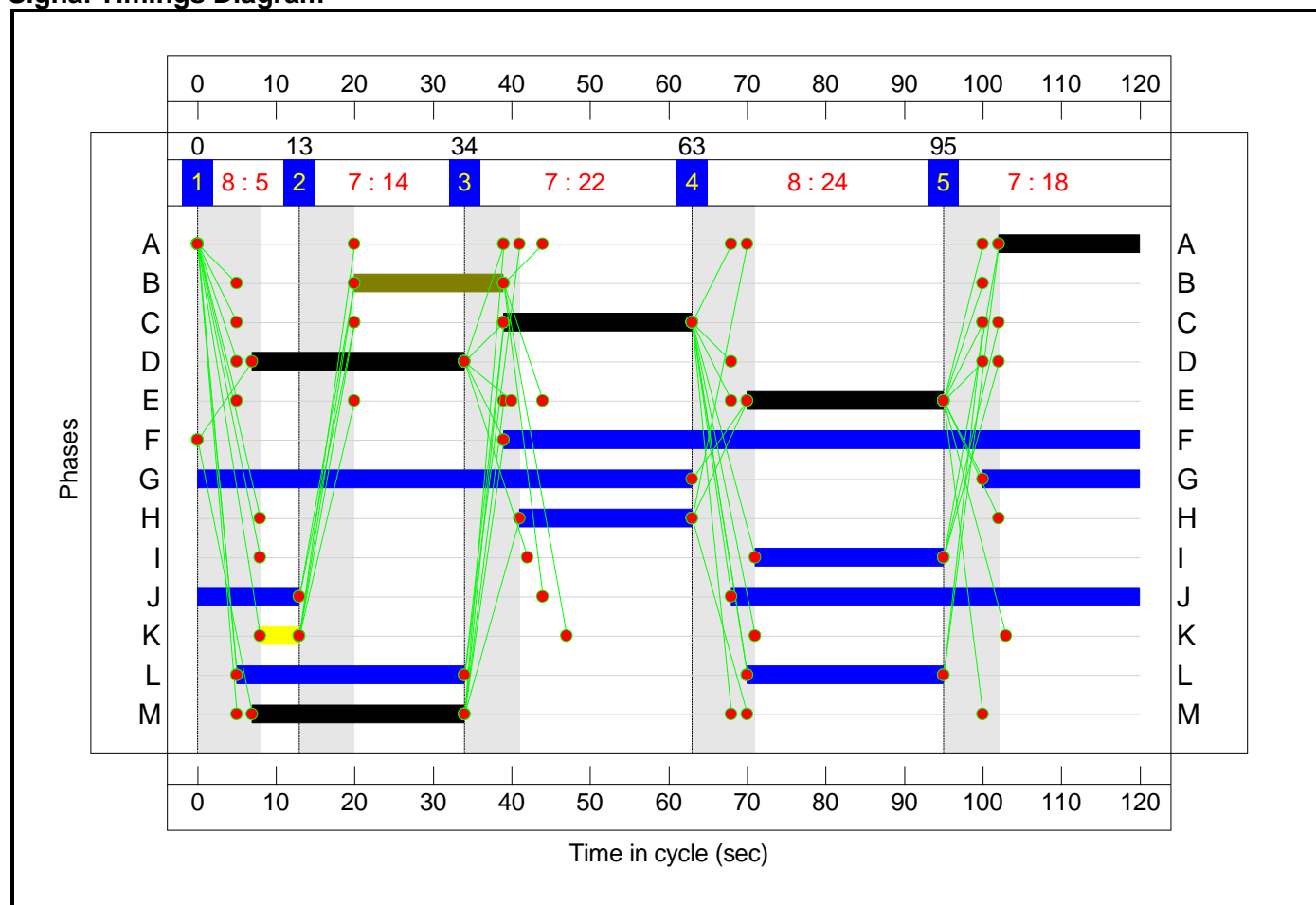
Stage Sequence Diagram



Stage Timings

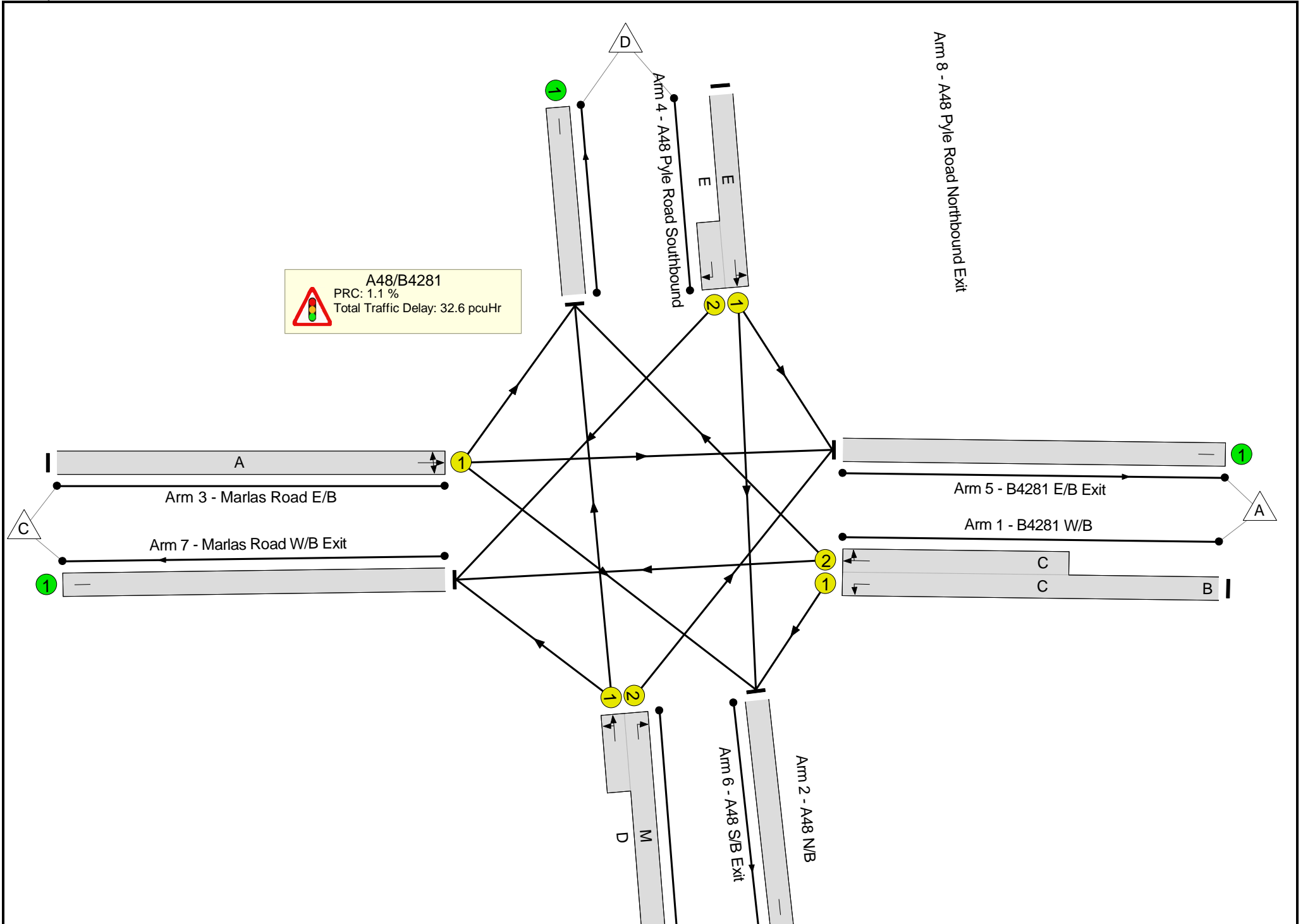
Stage	1	2	3	4	5
Duration	5	14	22	24	18
Change Point	0	13	34	63	95

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.1%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	89.1%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	43:24	19	632	1735:1826	355+380	86.0 : 86.0%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	27	-	503	1739:1869	287+277	89.1 : 89.1%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	18	-	251	1867	296	84.9%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	25	-	361	1778:1611	344+69	87.4 : 87.4%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	534	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	301	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%

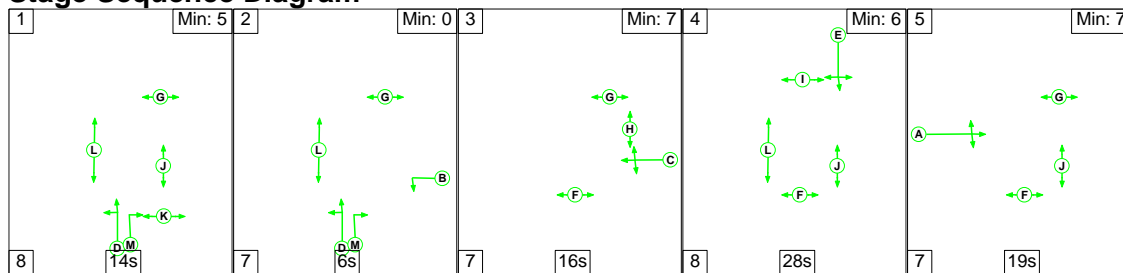
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	20.4	12.2	0.0	32.6	-	-	-	-
A48/B4281	-	-	0	0	0	20.4	12.2	0.0	32.6	-	-	-	-
1/1+1/2	632	632	-	-	-	6.6	2.9	-	9.5	54.3	10.4	2.9	13.3
2/2+2/1	503	503	-	-	-	5.9	3.6	-	9.5	68.1	11.1	3.6	14.7
3/1	251	251	-	-	-	3.4	2.5	-	6.0	85.4	8.1	2.5	10.6
4/1+4/2	361	361	-	-	-	4.5	3.1	-	7.6	75.4	10.7	3.1	13.8
5/1	534	534	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	301	301	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): 1.1 Total Delay for Signalled Lanes (pcuHr): 32.56 Cycle Time (s): 120</p> <p> PRC Over All Lanes (%): 1.1 Total Delay Over All Lanes(pcuHr): 32.56</p>													

Full Input Data And Results

Scenario 7: '2033 Total Traffic AM' (FG7: '2033 Total Traffic AM', Plan 1: 'Network Control Plan 1')

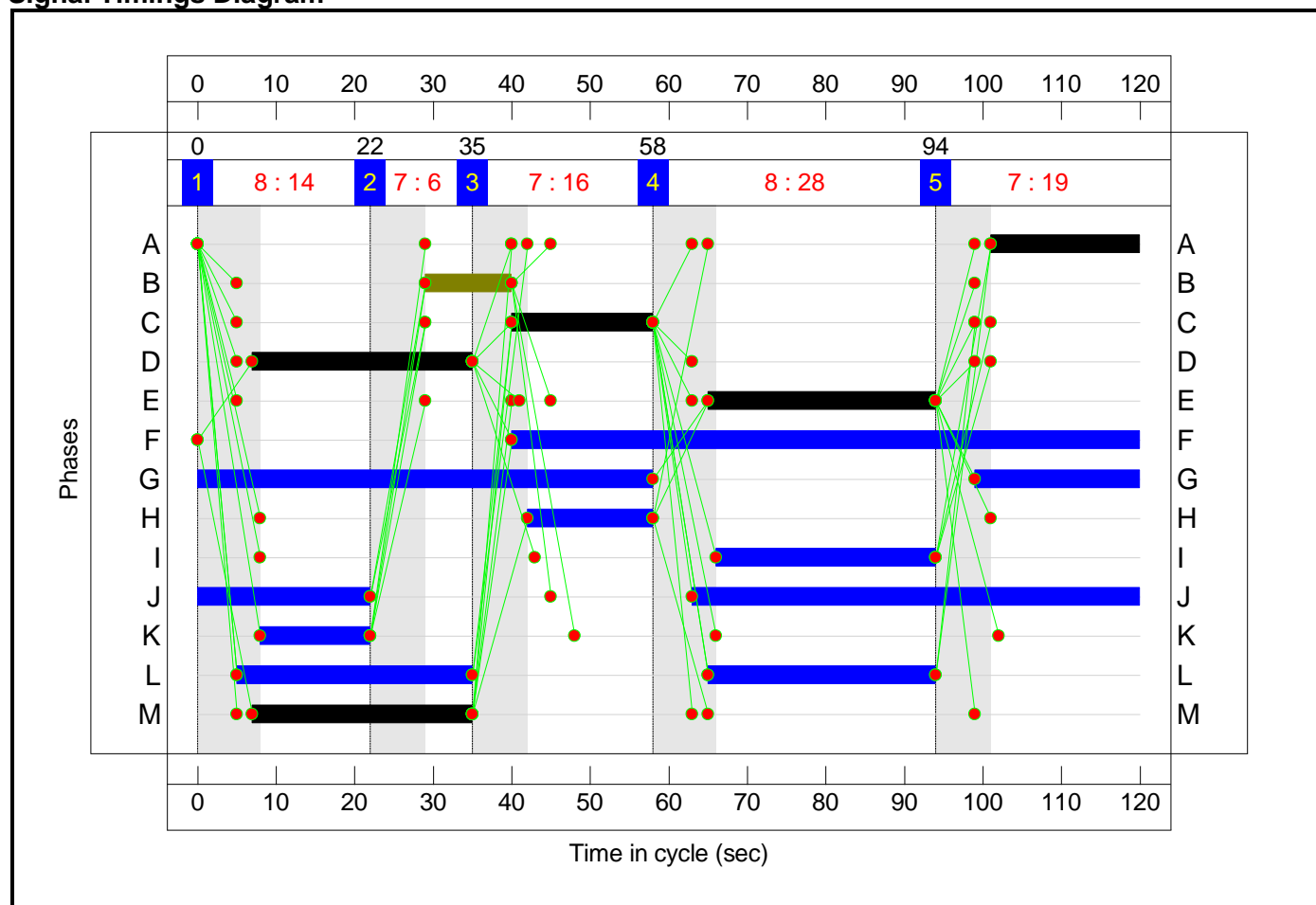
Stage Sequence Diagram



Stage Timings

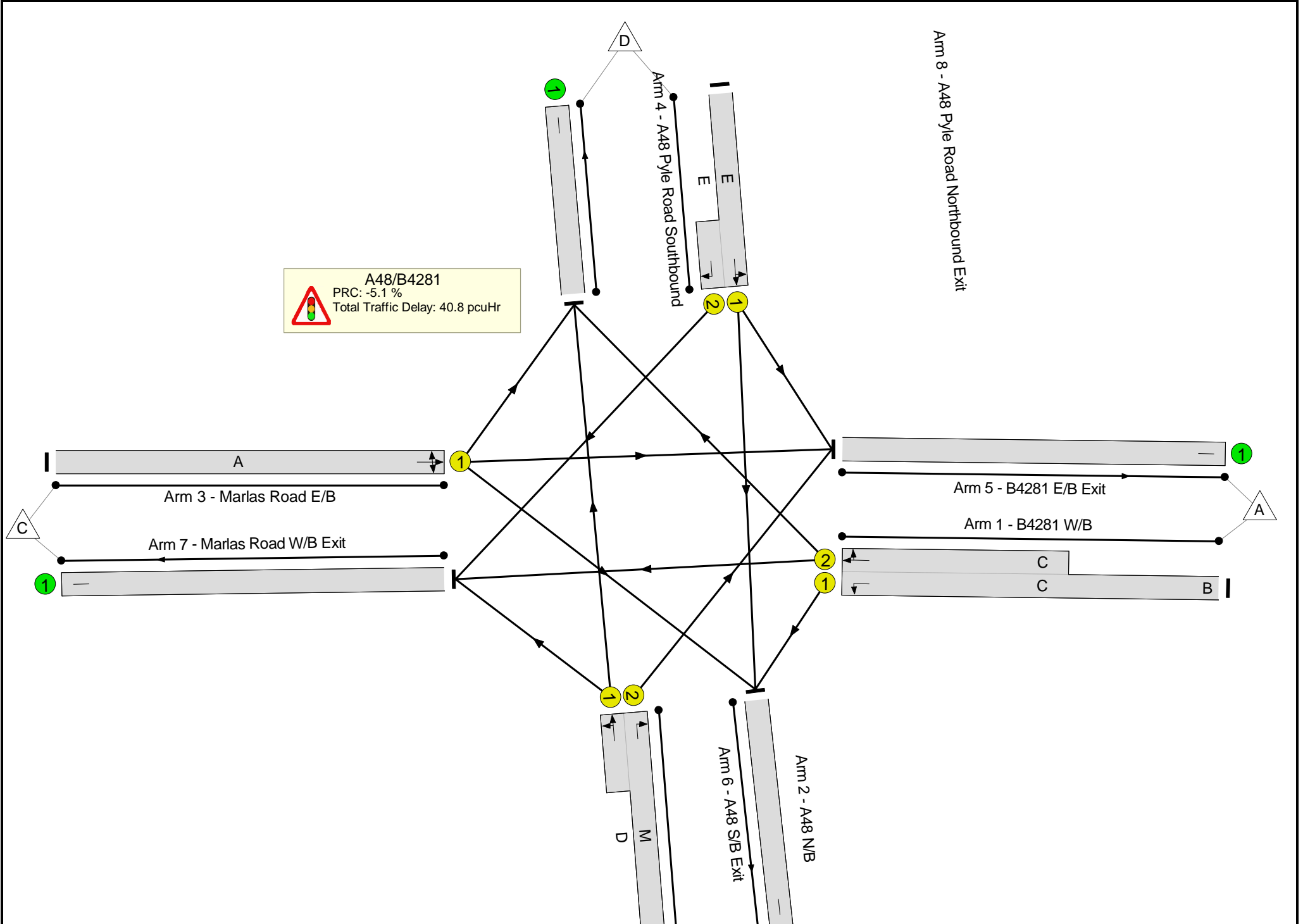
Stage	1	2	3	4	5
Duration	14	6	16	28	19
Change Point	0	22	35	58	94

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	94.6%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	94.6%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	29:18	11	613	1735:1842	434+292	77.7 : 94.6%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	28	-	507	1739:1853	312+232	93.2 : 93.2%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	19	-	288	1882	314	91.8%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	29	-	442	1801:1611	409+61	94.2 : 94.2%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	594	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	670	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	290	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	296	Inf	Inf	0.0%

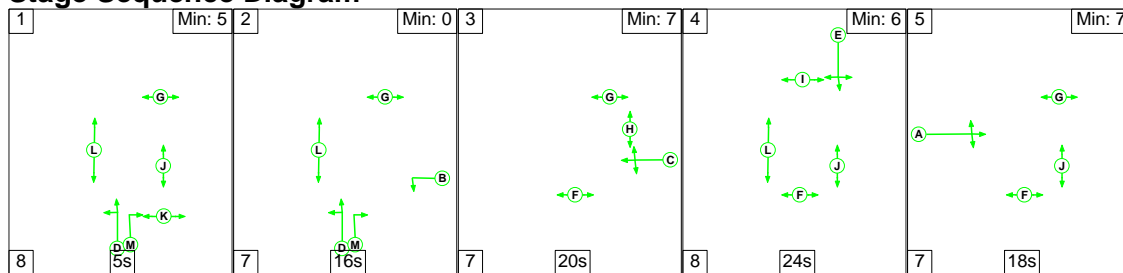
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	23.0	17.8	0.0	40.8	-	-	-	-
A48/B4281	-	-	0	0	0	23.0	17.8	0.0	40.8	-	-	-	-
1/1+1/2	613	613	-	-	-	7.8	2.6	-	10.4	60.8	10.4	2.6	13.0
2/2+2/1	507	507	-	-	-	5.9	5.3	-	11.3	79.9	12.6	5.3	17.9
3/1	288	288	-	-	-	3.9	4.2	-	8.2	102.0	9.4	4.2	13.7
4/1+4/2	442	442	-	-	-	5.3	5.7	-	11.0	89.9	13.7	5.7	19.4
5/1	594	594	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	670	670	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	290	290	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	296	296	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1 PRC for Signalled Lanes (%): -5.1 Total Delay for Signalled Lanes (pcuHr): 40.82 Cycle Time (s): 120 PRC Over All Lanes (%): -5.1 Total Delay Over All Lanes(pcuHr): 40.82</p>													

Full Input Data And Results

Scenario 8: '2033 Total Traffic PM' (FG8: '2033 Total Traffic PM', Plan 1: 'Network Control Plan 1')

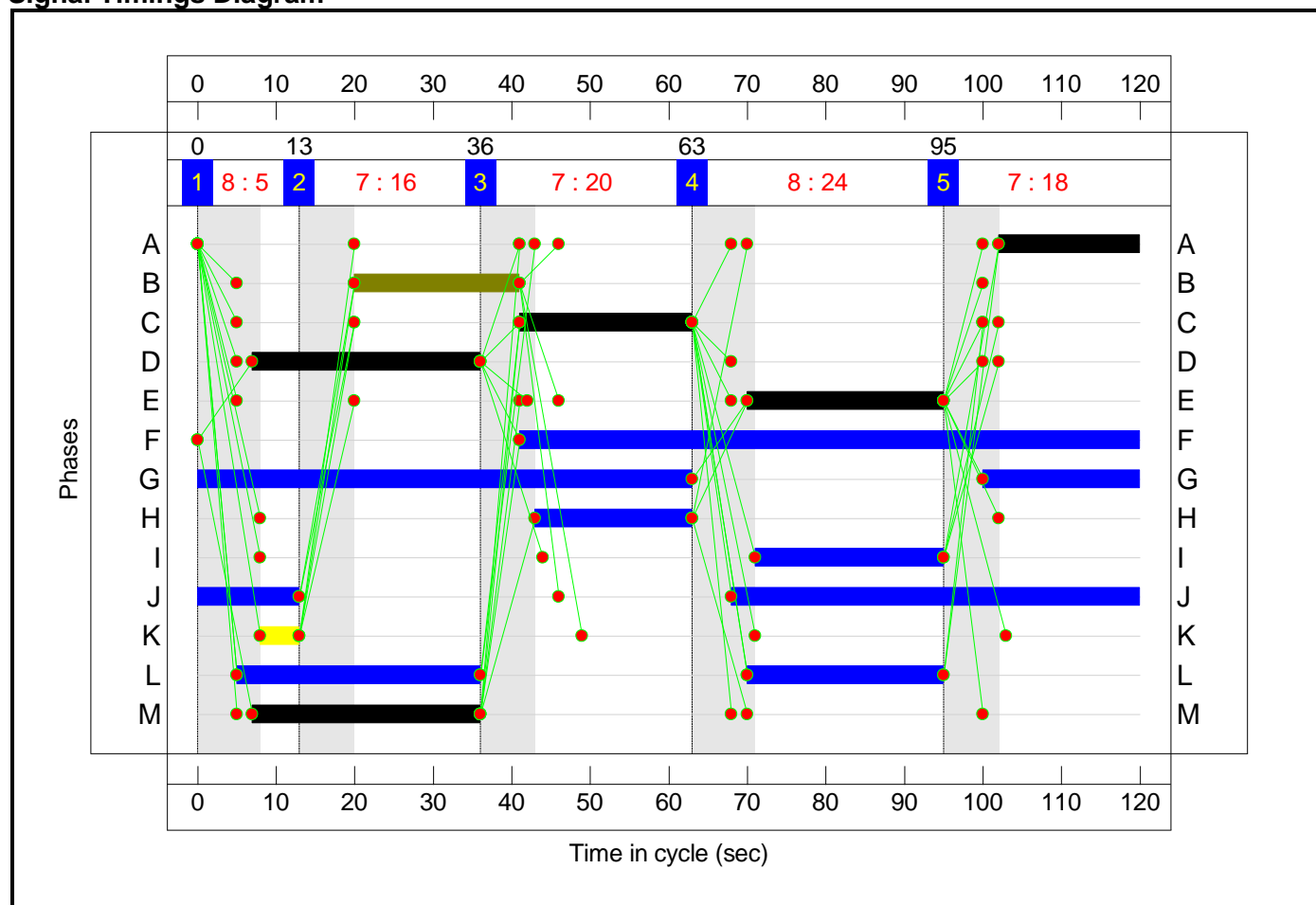
Stage Sequence Diagram



Stage Timings

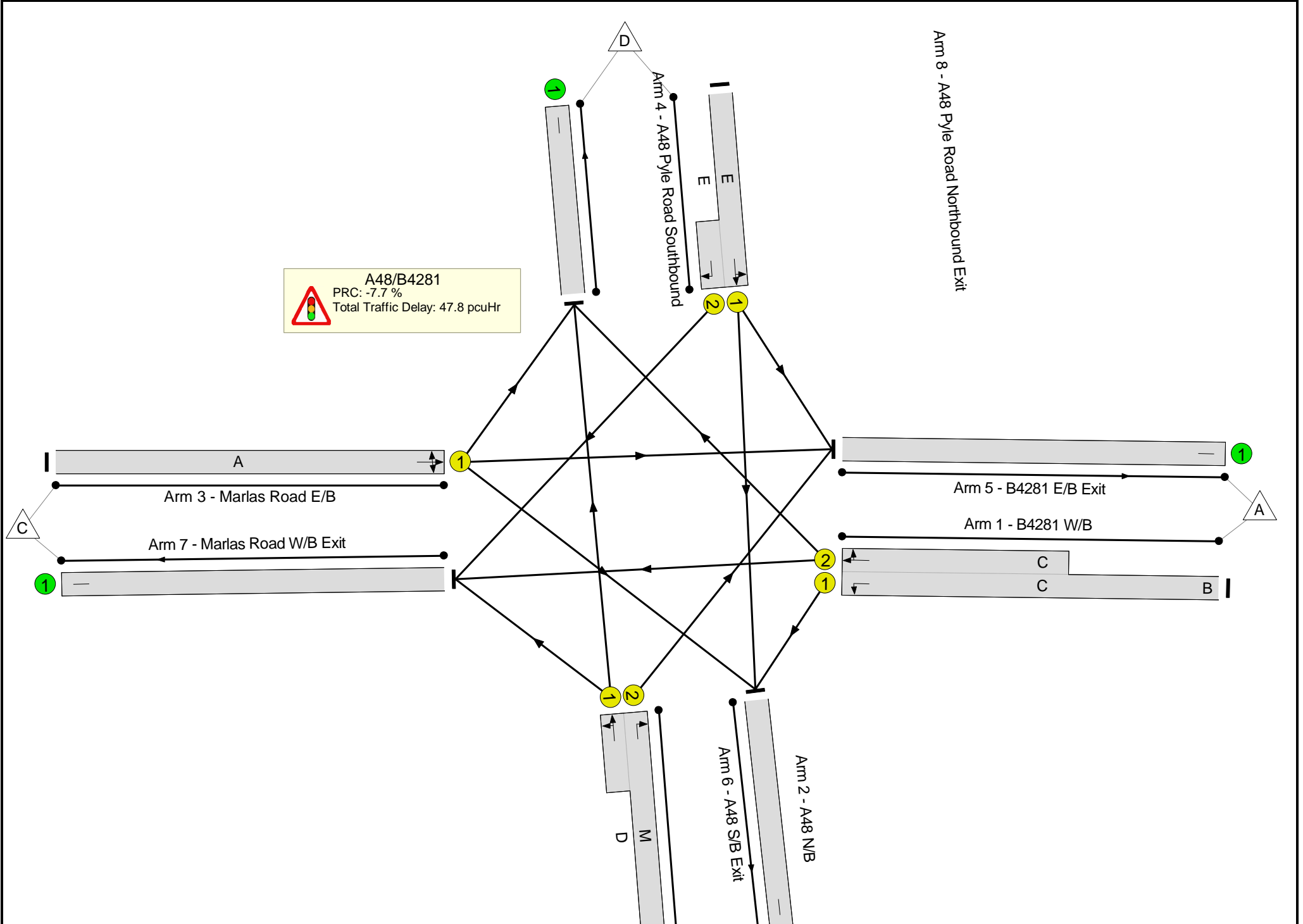
Stage	1	2	3	4	5
Duration	5	16	20	24	18
Change Point	0	13	36	63	95

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	96.9%
A48/B4281	-	-	N/A	-	-		-	-	-	-	-	-	96.9%
1/1+1/2	B4281 W/B Left Ahead Right	U	N/A	N/A	C	B	1	43:22	21	700	1735:1826	399+350	93.4 : 93.4%
2/2+2/1	A48 N/B Right Left Ahead	U	N/A	N/A	M D		1	29	-	567	1739:1859	300+299	94.7 : 94.7%
3/1	Marlas Road E/B Ahead Right Left	U	N/A	N/A	A		1	18	-	279	1861	295	94.7%
4/1+4/2	A48 Pyle Road Southbound Left Ahead Right	U	N/A	N/A	E		1	25	-	399	1787:1611	350+62	96.9 : 96.9%
5/1	B4281 E/B Exit	U	N/A	N/A	-		-	-	-	562	Inf	Inf	0.0%
6/1	A48 S/B Exit	U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%
7/1	Marlas Road W/B Exit	U	N/A	N/A	-		-	-	-	317	Inf	Inf	0.0%
8/1	A48 Pyle Road Northbound Exit	U	N/A	N/A	-		-	-	-	412	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	23.0	24.7	0.0	47.8	-	-	-	-
A48/B4281	-	-	0	0	0	23.0	24.7	0.0	47.8	-	-	-	-
1/1+1/2	700	700	-	-	-	7.5	5.8	-	13.3	68.3	10.7	5.8	16.5
2/2+2/1	567	567	-	-	-	6.6	6.3	-	12.9	81.9	13.3	6.3	19.6
3/1	279	279	-	-	-	3.9	5.3	-	9.2	118.5	9.1	5.3	14.5
4/1+4/2	399	399	-	-	-	5.1	7.3	-	12.4	111.8	12.3	7.3	19.6
5/1	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	317	317	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	412	412	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): -7.7 Total Delay for Signalled Lanes (pcuHr): 47.76 Cycle Time (s): 120 PRC Over All Lanes (%): -7.7 Total Delay Over All Lanes(pcuHr): 47.76													

APPENDIX G

ARCADY/PICADY (Junctions 9) Output

Junctions 9
ARCADY 9 - Roundabout Module 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.trisoftware.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: 1800592 Pyle.j9
 Path: C:\OneDrive\18-00592 - Land Adjacent to A48, Pyle, Bridgend\Capacity Analysis
 Report generation date: 13/10/2020 15:17:48

- »Existing Layout - 2021 Base, AM
- »Existing Layout - 2021 Base, PM
- »Existing Layout - 2021 Total Traffic, AM
- »Existing Layout - 2021 Total Traffic, PM
- »Existing Layout - 2033 Base, AM
- »Existing Layout - 2033 Base, PM
- »Existing Layout - 2033 Total Traffic, AM
- »Existing Layout - 2033 Total Traffic, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
Existing Layout - 2021 Base										
1 - M4 J37 - 1 - M4 East Slips	D1	0.5	2.49	0.32	A	D2	0.8	3.30	0.45	A
1 - M4 J37 - 2 - A4229 South		0.7	2.29	0.40	A		0.6	2.20	0.38	A
1 - M4 J37 - 3 - M4 West slips		0.5	3.20	0.35	A		0.6	3.12	0.37	A
1 - M4 J37 - 4 - A4229 North		0.6	2.48	0.39	A		0.6	2.44	0.39	A
2 - A48_A4229 - 1 - A48 East		0.3	1.82	0.23	A		0.4	2.02	0.30	A
2 - A48_A4229 - 2 - A4229 South		0.5	2.07	0.34	A		0.6	2.38	0.39	A
2 - A48_A4229 - 3 - School Terrace		0.2	2.29	0.18	A		0.2	2.34	0.17	A
2 - A48_A4229 - 4 - A48 North		0.6	2.79	0.39	A		0.8	2.81	0.43	A
4 - A48_A4106 - 1 - A48 East		0.7	2.41	0.40	A		1.2	3.10	0.54	A
4 - A48_A4106 - 2 - A4106 South		0.7	4.67	0.42	A		0.9	5.37	0.47	A
4 - A48_A4106 - 3 - A48 West		0.5	2.67	0.35	A		0.6	2.72	0.36	A
5 - A4229_B4283 - 1 - A4229 East		0.2	1.73	0.15	A		0.8	2.71	0.45	A
5 - A4229_B4283 - 2 - Porthcawl Road South		1.3	5.48	0.57	A		0.2	5.48	0.19	A
5 - A4229_B4283 - 3 - A4229 West		0.1	2.59	0.12	A		1.1	3.59	0.52	A
5 - A4229_B4283 - 4 - B4283 North		1.8	6.97	0.65	A		0.4	6.12	0.29	A
7 - Heol Mostyn_A48 - Stream B-CD		2.4	27.67	0.72	D		7.4	61.96	0.91	F
7 - Heol Mostyn_A48 - Stream B-AD		1.2	90.86	0.60	F		2.1	112.62	0.74	F
7 - Heol Mostyn_A48 - Stream A-BCD		0.0	4.95	0.01	A		0.0	4.82	0.01	A
7 - Heol Mostyn_A48 - Stream D-ABC		0.0	0.00	0.00	A		0.0	0.00	0.00	A
7 - Heol Mostyn_A48 - Stream C-ABD		63.5	276.46	1.14	F		8.3	28.36	0.84	D
Existing Layout - 2021 Total Traffic										
1 - M4 J37 - 1 - M4 East Slips		0.5	2.88	0.35	A		0.9	3.83	0.49	A
1 - M4 J37 - 2 - A4229 South		0.8	2.53	0.45	A		0.7	2.44	0.42	A
1 - M4 J37 - 3 - M4 West slips		0.6	3.67	0.38	A		0.7	3.60	0.40	A
1 - M4 J37 - 4 - A4229 North		0.9	2.76	0.48	A		0.9	2.66	0.47	A

2 - A48_A4229 - 1 - A48 East	D3	0.3	1.91	0.25	A	D4	0.4	2.04	0.30	A
2 - A48_A4229 - 2 - A4229 South		0.6	2.14	0.36	A		0.7	2.43	0.40	A
2 - A48_A4229 - 3 - School Terrace		0.2	2.41	0.19	A		0.2	2.41	0.17	A
2 - A48_A4229 - 4 - A48 North		0.7	2.85	0.42	A		0.8	2.84	0.45	A
4 - A48_A4106 - 1 - A48 East		0.7	2.43	0.40	A		1.2	3.15	0.54	A
4 - A48_A4106 - 2 - A4106 South		0.7	4.77	0.42	A		0.9	5.46	0.47	A
4 - A48_A4106 - 3 - A48 West		0.6	2.76	0.39	A		0.7	2.81	0.40	A
5 - A4229_B4283 - 1 - A4229 East		0.3	1.80	0.22	A		0.7	2.25	0.40	A
5 - A4229_B4283 - 2 - Porthcawl Road South		1.4	5.80	0.58	A		0.2	5.12	0.17	A
5 - A4229_B4283 - 3 - A4229 West		0.1	2.67	0.12	A		1.1	3.53	0.52	A
5 - A4229_B4283 - 4 - B4283 North		1.9	7.47	0.66	A		0.8	7.27	0.45	A
7 - Heol Mostyn_A48 - Stream B-CD		13.4	122.60	1.09	F		10.2	83.44	0.96	F
7 - Heol Mostyn_A48 - Stream B-AD		3.5	274.90	1.03	F		3.5	194.06	0.92	F
7 - Heol Mostyn_A48 - Stream A-BCD		0.0	5.01	0.01	A		0.0	4.72	0.01	A
7 - Heol Mostyn_A48 - Stream D-ABC		0.0	0.00	0.00	A		0.0	0.00	0.00	A
7 - Heol Mostyn_A48 - Stream C-ABD		93.8	414.69	1.21	F		11.6	35.48	0.88	E
Existing Layout - 2033 Base										
1 - M4 J37 - 1 - M4 East Slips	D5	0.6	2.81	0.36	A	D6	1.1	4.09	0.53	A
1 - M4 J37 - 2 - A4229 South		0.8	2.60	0.46	A		0.8	2.50	0.43	A
1 - M4 J37 - 3 - M4 West slips		0.7	3.78	0.41	A		0.8	3.71	0.43	A
1 - M4 J37 - 4 - A4229 North		0.8	2.85	0.45	A		0.8	2.82	0.45	A
2 - A48_A4229 - 1 - A48 East		0.4	1.97	0.27	A		0.5	2.24	0.34	A
2 - A48_A4229 - 2 - A4229 South		0.6	2.24	0.38	A		0.8	2.67	0.44	A
2 - A48_A4229 - 3 - School Terrace		0.3	2.57	0.22	A		0.2	2.63	0.20	A
2 - A48_A4229 - 4 - A48 North		0.8	3.16	0.44	A		0.9	3.22	0.49	A
4 - A48_A4106 - 1 - A48 East		0.8	2.59	0.44	A		1.5	3.53	0.60	A
4 - A48_A4106 - 2 - A4106 South		0.9	5.27	0.47	A		1.1	6.30	0.53	A
4 - A48_A4106 - 3 - A48 West		0.6	2.91	0.39	A		0.7	2.97	0.41	A
5 - A4229_B4283 - 1 - A4229 East		0.2	1.85	0.18	A		1.0	3.01	0.50	A
5 - A4229_B4283 - 2 - Porthcawl Road South		1.7	6.51	0.63	A		0.3	6.63	0.23	A
5 - A4229_B4283 - 3 - A4229 West		0.2	2.78	0.13	A		1.4	4.14	0.58	A
5 - A4229_B4283 - 4 - B4283 North		2.5	8.88	0.72	A		0.5	6.99	0.34	A
7 - Heol Mostyn_A48 - Stream B-CD		64.9	732.76	2.08	F		35.8	232.78	1.16	F
7 - Heol Mostyn_A48 - Stream B-AD	11.6	985.72	1.88	F	7.4	352.30	1.08	F		
7 - Heol Mostyn_A48 - Stream A-BCD	0.0	5.40	0.02	A	0.0	4.73	0.01	A		
7 - Heol Mostyn_A48 - Stream D-ABC	0.0	0.00	0.00	A	0.0	0.00	0.00	A		
7 - Heol Mostyn_A48 - Stream C-ABD	124.7	610.58	1.30	F	21.4	70.44	0.96	F		
Existing Layout - 2033 Total Traffic										
1 - M4 J37 - 1 - M4 East Slips	D7	0.9	3.97	0.47	A	D8	2.0	6.91	0.67	A
1 - M4 J37 - 2 - A4229 South		1.3	3.48	0.57	A		1.2	3.32	0.54	A
1 - M4 J37 - 3 - M4 West slips		1.1	5.71	0.54	A		1.2	5.66	0.55	A
1 - M4 J37 - 4 - A4229 North		1.5	3.89	0.60	A		1.4	3.73	0.59	A
2 - A48_A4229 - 1 - A48 East		0.5	2.27	0.32	A		0.6	2.54	0.39	A
2 - A48_A4229 - 2 - A4229 South		0.8	2.53	0.44	A		1.0	3.13	0.51	A
2 - A48_A4229 - 3 - School Terrace		0.4	3.10	0.27	A		0.3	3.13	0.24	A
2 - A48_A4229 - 4 - A48 North		1.1	3.80	0.53	A		1.3	3.79	0.56	A
4 - A48_A4106 - 1 - A48 East		0.9	2.82	0.49	A		1.9	4.15	0.65	A
4 - A48_A4106 - 2 - A4106 South		1.1	6.17	0.53	A		1.5	7.76	0.60	A
4 - A48_A4106 - 3 - A48 West		0.9	3.37	0.48	A		1.0	3.40	0.49	A
5 - A4229_B4283 - 1 - A4229 East		0.4	2.07	0.27	A		1.0	2.78	0.50	A
5 - A4229_B4283 - 2 - Porthcawl Road South		2.5	8.74	0.72	A		0.4	7.40	0.27	A
5 - A4229_B4283 - 3 - A4229 West		0.2	3.12	0.16	A		1.7	4.85	0.64	A
5 - A4229_B4283 - 4 - B4283 North		4.2	13.80	0.81	B		1.3	10.46	0.57	B
7 - Heol Mostyn_A48 - Stream B-CD		345.1	59999940.00	999999999.00	F		137.0	1143.84	1.98	F
7 - Heol Mostyn_A48 - Stream B-AD	51.9	59999940.00	999999999.00	F	21.0	1210.62	1.91	F		
7 - Heol Mostyn_A48 - Stream A-BCD	0.1	6.21	0.07	A	0.0	4.69	0.02	A		
7 - Heol Mostyn_A48 - Stream D-ABC	0.0	0.00	0.00	A	0.0	0.00	0.00	A		

7 - Heol Mostyn_A48 - Stream C-ABD	273.5	1241.73	1.55	F	79.5	258.10	1.12	F
------------------------------------	-------	---------	------	---	------	--------	------	---

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	Pyle
Location	
Site number	
Date	12/10/2020
Version	
Status	TA
Identifier	
Client	
Jobnumber	
Enumerator	
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	00:00	01:30	15	✓
D2	2021 Base	PM	ONE HOUR	00:00	01:30	15	✓
D3	2021 Total Traffic	AM	ONE HOUR	00:00	01:30	15	✓
D4	2021 Total Traffic	PM	ONE HOUR	00:00	01:30	15	✓
D5	2033 Base	AM	ONE HOUR	00:00	01:30	15	✓
D6	2033 Base	PM	ONE HOUR	00:00	01:30	15	✓
D7	2033 Total Traffic	AM	ONE HOUR	00:00	01:30	15	✓
D8	2033 Total Traffic	PM	ONE HOUR	00:00	01:30	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	100.000	100.000

Existing Layout - 2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	2.55	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.26	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.04	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	5.28	A
7	Heol Mostyn_A48	Crossroads	Two-way			124.41	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description	Arm type
1 - M4 J37	1	M4 East Slips		
	2	A4229 South		
	3	M4 West slips		
	4	A4229 North		
2 - A48_A4229	1	A48 East		
	2	A4229 South		
	3	School Terrace		
	4	A48 North		
4 - A48_A4106	1	A48 East		
	2	A4106 South		
	3	A48 West		
5 - A4229_B4283	1	A4229 East		
	2	Porthcawl Road South		
	3	A4229 West		
	4	B4283 North		
7 - Heol Mostyn_A48	A	A48 North		Major
	B	Heol Mostyn		Minor
	C	A48 South		Major
	D	Minor access (unclassified)		Minor

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - M4 J37	1 - M4 East Slips	7.53	8.33	3.7	39.6	212.0	38.0	
	2 - A4229 South	7.31	10.81	24.9	20.2	191.0	44.4	
	3 - M4 West slips	6.04	9.12	7.8	41.1	213.0	40.3	
	4 - A4229 North	7.26	8.79	27.1	40.5	174.0	39.0	
2 - A48_A4229	1 - A48 East	7.55	9.78	14.0	25.1	150.0	32.8	
	2 - A4229 South	7.29	9.71	4.8	37.5	161.0	47.0	
	3 - School Terrace	3.95	9.16	46.8	37.9	151.0	31.8	
	4 - A48 North	3.42	8.69	27.4	45.2	161.0	32.2	
4 - A48_A4106	1 - A48 East	7.15	9.35	5.8	48.0	73.2	25.5	
	2 - A4106 South	3.83	7.58	8.1	40.8	72.4	31.0	
	3 - A48 West	7.63	9.07	3.3	37.5	73.2	36.0	
5 - A4229_B4283	1 - A4229 East	7.42	11.51	23.4	62.0	51.3	6.5	
	2 - Porthcawl Road South	3.78	7.28	19.8	12.0	49.3	22.5	
	3 - A4229 West	3.65	12.96	24.0	17.9	53.1	13.5	
	4 - B4283 North	4.00	9.37	10.5	23.2	50.5	52.6	

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

Junction	Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
7 - Heol Mostyn_A48	A - A48 North	6.50			100.0	✓	0.00
	C - A48 South	6.50			130.0	✓	1.00

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

Minor Arm Geometry

Junction	Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
7 - Heol Mostyn_A48	B - Heol Mostyn	One lane plus flare		10.00	10.00	4.80	3.59	3.52		3.00	91	47
	D - Minor access (unclassified)	One lane	2.20								94	18

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - M4 J37	1 - M4 East Slips	1.164	3287
	2 - A4229 South	1.258	3673
	3 - M4 West slips	1.103	3088
	4 - A4229 North	1.211	3447
2 - A48_A4229	1 - A48 East	1.261	3607
	2 - A4229 South	1.145	3270
	3 - School Terrace	1.169	3271
	4 - A48 North	1.070	2932
4 - A48_A4106	1 - A48 East	0.637	2576
	2 - A4106 South	0.493	1651
	3 - A48 West	0.616	2499
5 - A4229_B4283	1 - A4229 East	0.952	3392
	2 - Porthcawl Road South	0.631	1811
	3 - A4229 West	0.754	2487
	4 - B4283 North	0.586	1699

The slope and intercept shown above include any corrections and adjustments.

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
7 - Heol Mostyn_A48	A-D	632	-	-	-	-	-	-	0.240	0.342	0.240	-	-	-
	B-A	562	0.100	0.253	0.253	-	-	-	0.159	0.361	-	0.253	0.253	0.127
	B-C	734	0.110	0.278	-	-	-	-	-	-	-	-	-	-
	B-D, nearside lane	596	0.106	0.268	0.268	-	-	-	0.169	0.383	0.169	-	-	-
	B-D, offside lane	562	0.100	0.253	0.253	-	-	-	0.159	0.361	0.159	-	-	-
	C-B	649	0.246	0.246	0.352	-	-	-	-	-	-	-	-	-
	D-A	584	-	-	-	-	-	-	0.222	-	0.088	-	-	-
	D-B, nearside lane	475	0.135	0.135	0.306	-	-	-	0.214	0.214	0.085	-	-	-
	D-B, offside lane	475	0.135	0.135	0.306	-	-	-	0.214	0.214	0.085	-	-	-
D-C	475	-	0.135	0.306	0.107	0.214	0.214	0.214	0.214	0.085	-	-	-	

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	606	100.000
	2 - A4229 South		ONE HOUR	✓	968	100.000
	3 - M4 West slips		ONE HOUR	✓	548	100.000
	4 - A4229 North		ONE HOUR	✓	857	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	544	100.000
	2 - A4229 South		ONE HOUR	✓	829	100.000
	3 - School Terrace		ONE HOUR	✓	319	100.000
	4 - A48 North		ONE HOUR	✓	735	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	911	100.000
	2 - A4106 South		ONE HOUR	✓	505	100.000
	3 - A48 West		ONE HOUR	✓	657	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	346	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	781	100.000
	3 - A4229 West		ONE HOUR	✓	164	100.000
	4 - B4283 North		ONE HOUR	✓	859	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	579	100.000
	B - Heol Mostyn		ONE HOUR	✓	340	100.000
	C - A48 South		ONE HOUR	✓	769	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	358	6	242
		2 - A4229 South	471	0	287	210
		3 - M4 West slips	3	170	0	375
		4 - A4229 North	266	242	349	0

Demand (Veh/hr)

		To				
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North	
2 - A48_A4229	From					
		1 - A48 East	0	296	52	196
		2 - A4229 South	398	0	49	382
		3 - School Terrace	79	114	0	126
		4 - A48 North	226	430	79	0

Demand (Veh/hr)

		To			
		1 - A48 East	2 - A4106 South	3 - A48 West	
4 - A48_A4106	From				
		1 - A48 East	0	383	528
		2 - A4106 South	502	0	3
		3 - A48 West	653	4	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	94	13	239
	2 - Porthcawl Road South	76	0	81	624
	3 - A4229 West	44	118	0	2
	4 - B4283 North	149	703	7	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	132	445	2
	B - Heol Mostyn	48	0	292	0
	C - A48 South	294	475	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	5	20	8
	2 - A4229 South	6	0	6	8
	3 - M4 West slips	33	16	0	6
	4 - A4229 North	8	6	2	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	4	15	4
	2 - A4229 South	6	0	14	7
	3 - School Terrace	1	0	0	2
	4 - A48 North	5	6	0	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	2	4
	2 - A4106 South	2	0	0
	3 - A48 West	4	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	0	0
	2 - Porthcawl Road South	0	0	19	7
	3 - A4229 West	0	9	0	0
	4 - B4283 North	2	6	0	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	5	2	0
	B - Heol Mostyn	21	0	6	0
	C - A48 South	6	6	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.32	2.49	0.5	A	556	834
	2 - A4229 South	0.40	2.29	0.7	A	888	1332
	3 - M4 West slips	0.35	3.20	0.5	A	503	754
	4 - A4229 North	0.39	2.48	0.6	A	786	1180
2 - A48_A4229	1 - A48 East	0.23	1.82	0.3	A	499	749
	2 - A4229 South	0.34	2.07	0.5	A	761	1141
	3 - School Terrace	0.18	2.29	0.2	A	293	439
	4 - A48 North	0.39	2.79	0.6	A	674	1012
4 - A48_A4106	1 - A48 East	0.40	2.41	0.7	A	836	1254
	2 - A4106 South	0.42	4.67	0.7	A	463	695
	3 - A48 West	0.35	2.67	0.5	A	603	904
5 - A4229_B4283	1 - A4229 East	0.15	1.73	0.2	A	317	476
	2 - Porthcawl Road South	0.57	5.48	1.3	A	717	1075
	3 - A4229 West	0.12	2.59	0.1	A	150	226
	4 - B4283 North	0.65	6.97	1.8	A	788	1182

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	0.72	27.67	2.4	D	268	402
	B-AD	0.60	90.86	1.2	F	44	66
	A-BCD	0.01	4.95	0.0	A	6	9
	A-B					120	180
	A-C					405	608
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	1.14	276.46	63.5	F	649	973
	C-D					0	0
	C-A					57	85

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	456	114	572	2424	0.188	455	556	0.0	0.2	1.828
	2 - A4229 South	-	729	182	449	2896	0.252	727	578	0.0	0.3	1.660
	3 - M4 West slips	-	413	103	694	2078	0.199	412	482	0.0	0.2	2.159
	4 - A4229 North	-	645	161	484	2677	0.241	644	621	0.0	0.3	1.771
2 - A48_A4229	1 - A48 East	-	410	102	468	2849	0.144	409	528	0.0	0.2	1.475
	2 - A4229 South	-	624	156	246	2782	0.224	623	631	0.0	0.3	1.667
	3 - School Terrace	-	240	60	733	2338	0.103	240	135	0.0	0.1	1.715
	4 - A48 North	-	553	138	444	2320	0.239	552	529	0.0	0.3	2.035
4 - A48_A4106	1 - A48 East	-	686	171	3	2496	0.275	684	867	0.0	0.4	1.985
	2 - A4106 South	-	380	95	397	1419	0.268	379	291	0.0	0.4	3.455
	3 - A48 West	-	495	124	376	2176	0.227	493	399	0.0	0.3	2.139
5 - A4229_B4283	1 - A4229 East	-	260	65	621	2756	0.095	260	202	0.0	0.1	1.442
	2 - Porthcawl Road South	-	588	147	195	1570	0.375	586	686	0.0	0.6	3.648
	3 - A4229 West	-	123	31	705	1813	0.068	123	76	0.0	0.1	2.129
	4 - B4283 North	-	647	162	179	1510	0.428	644	649	0.0	0.7	4.140
7 - Heol Mostyn_A48	-	B-CD	220	55		570	0.386	217		0.0	0.6	10.148
	-	B-AD	36	9		238	0.152	35		0.0	0.2	17.698
	-	A-BCD	3	0.86		770	0.004	3		0.0	0.0	4.696
	-	A-B	99	25				99				
	-	A-C	334	83				334				
	-	D-ABC	0	0		306	0.000	0		0.0	0.0	0.000
	-	C-ABD	469	117		667	0.703	458		0.0	2.8	16.759
-	C-D	0	0				0					
-	C-A	110	27				110					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	545	136	684	2294	0.237	544	665	0.2	0.3	2.057
	2 - A4229 South	-	870	218	536	2788	0.312	870	692	0.3	0.5	1.876
	3 - M4 West slips	-	493	123	829	1931	0.255	492	577	0.2	0.3	2.502
	4 - A4229 North	-	770	193	579	2558	0.301	770	743	0.3	0.4	2.013
2 - A48_A4229	1 - A48 East	-	489	122	560	2734	0.179	489	632	0.2	0.2	1.602
	2 - A4229 South	-	745	186	294	2728	0.273	745	755	0.3	0.4	1.814
	3 - School Terrace	-	287	72	877	2162	0.133	287	162	0.1	0.2	1.918
	4 - A48 North	-	661	165	531	2228	0.297	660	633	0.3	0.4	2.296
4 - A48_A4106	1 - A48 East	-	819	205	4	2495	0.328	819	1037	0.4	0.5	2.147
	2 - A4106 South	-	454	113	474	1380	0.329	453	348	0.4	0.5	3.883
	3 - A48 West	-	591	148	451	2131	0.277	590	477	0.3	0.4	2.336
5 - A4229_B4283	1 - A4229 East	-	311	78	743	2632	0.118	311	241	0.1	0.1	1.550
	2 - Porthcawl Road South	-	702	176	233	1547	0.454	701	821	0.6	0.8	4.250
	3 - A4229 West	-	147	37	843	1711	0.086	147	91	0.1	0.1	2.302
	4 - B4283 North	-	772	193	214	1490	0.518	771	777	0.7	1.1	4.998
7 - Heol Mostyn_A48	-	B-CD	263	66		540	0.487	261		0.6	0.9	12.878
	-	B-AD	43	11		189	0.228	43		0.2	0.3	24.499
	-	A-BCD	5	1		805	0.006	5		0.0	0.0	4.498
	-	A-B	118	29				118				
	-	A-C	398	99				398				
	-	D-ABC	0	0		262	0.000	0		0.0	0.0	0.000
	-	C-ABD	631	158		721	0.875	612		2.8	7.4	32.304
-	C-D	0	0				0					
-	C-A	61	15				61					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	667	167	837	2115	0.315	667	814	0.3	0.5	2.483
	2 - A4229 South	-	1066	266	657	2639	0.404	1065	847	0.5	0.7	2.286
	3 - M4 West slips	-	603	151	1015	1730	0.349	603	706	0.3	0.5	3.191
	4 - A4229 North	-	944	236	708	2395	0.394	943	910	0.4	0.6	2.478
2 - A48_A4229	1 - A48 East	-	599	150	685	2577	0.232	599	773	0.2	0.3	1.818
	2 - A4229 South	-	913	228	360	2654	0.344	912	924	0.4	0.5	2.066
	3 - School Terrace	-	351	88	1074	1921	0.183	351	198	0.2	0.2	2.293
	4 - A48 North	-	809	202	650	2101	0.385	808	775	0.4	0.6	2.783
4 - A48_A4106	1 - A48 East	-	1003	251	4	2495	0.402	1002	1270	0.5	0.7	2.410
	2 - A4106 South	-	556	139	581	1327	0.419	555	426	0.5	0.7	4.660
	3 - A48 West	-	723	181	552	2070	0.349	723	584	0.4	0.5	2.670
5 - A4229_B4283	1 - A4229 East	-	381	95	909	2464	0.155	381	295	0.1	0.2	1.727
	2 - Porthcawl Road South	-	860	215	285	1517	0.567	858	1005	0.8	1.3	5.450
	3 - A4229 West	-	181	45	1032	1571	0.115	180	111	0.1	0.1	2.589
	4 - B4283 North	-	946	236	262	1462	0.647	943	951	1.1	1.8	6.896
7 - Heol Mostyn_A48	-	B-CD	321	80		481	0.668	318		0.9	1.9	21.505
	-	B-AD	53	13		118	0.449	51		0.3	0.7	52.696
	-	A-BCD	8	2		859	0.010	8		0.0	0.0	4.230
	-	A-B	144	36				144				
	-	A-C	485	121				485				
	-	D-ABC	0	0		196	0.000	0		0.0	0.0	0.000
	-	C-ABD	847	212		745	1.136	728		7.4	37.1	120.033
	-	C-D	0	0				0				
-	C-A	0	0				0					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	667	167	838	2114	0.316	667	815	0.5	0.5	2.487
	2 - A4229 South	-	1066	266	657	2638	0.404	1066	848	0.7	0.7	2.288
	3 - M4 West slips	-	603	151	1016	1729	0.349	603	707	0.5	0.5	3.196
	4 - A4229 North	-	944	236	709	2394	0.394	944	911	0.6	0.6	2.481
2 - A48_A4229	1 - A48 East	-	599	150	686	2577	0.232	599	774	0.3	0.3	1.819
	2 - A4229 South	-	913	228	360	2654	0.344	913	925	0.5	0.5	2.067
	3 - School Terrace	-	351	88	1075	1920	0.183	351	198	0.2	0.2	2.294
	4 - A48 North	-	809	202	651	2101	0.385	809	775	0.6	0.6	2.786
4 - A48_A4106	1 - A48 East	-	1003	251	4	2495	0.402	1003	1272	0.7	0.7	2.412
	2 - A4106 South	-	556	139	581	1326	0.419	556	426	0.7	0.7	4.672
	3 - A48 West	-	723	181	553	2069	0.350	723	585	0.5	0.5	2.673
5 - A4229_B4283	1 - A4229 East	-	381	95	912	2462	0.155	381	296	0.2	0.2	1.729
	2 - Porthcawl Road South	-	860	215	285	1517	0.567	860	1007	1.3	1.3	5.481
	3 - A4229 West	-	181	45	1034	1569	0.115	181	111	0.1	0.1	2.591
	4 - B4283 North	-	946	236	262	1462	0.647	946	952	1.8	1.8	6.972
7 - Heol Mostyn_A48	-	B-CD	321	80		447	0.719	320		1.9	2.4	27.668
	-	B-AD	53	13		89	0.597	51		0.7	1.2	90.859
	-	A-BCD	9	2		834	0.011	9		0.0	0.0	4.360
	-	A-B	144	36				144				
	-	A-C	485	121				485				
	-	D-ABC	0	0		163	0.000	0		0.0	0.0	0.000
	-	C-ABD	847	212		745	1.136	741		37.1	63.5	255.454
	-	C-D	0	0				0				
-	C-A	0	0				0					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	545	136	685	2292	0.238	545	666	0.5	0.3	2.060
	2 - A4229 South	-	870	218	537	2787	0.312	871	693	0.7	0.5	1.879
	3 - M4 West slips	-	493	123	831	1930	0.255	493	578	0.5	0.3	2.509
	4 - A4229 North	-	770	193	580	2556	0.301	771	744	0.6	0.4	2.017
2 - A48_A4229	1 - A48 East	-	489	122	561	2733	0.179	489	633	0.3	0.2	1.606
	2 - A4229 South	-	745	186	294	2728	0.273	746	756	0.5	0.4	1.815
	3 - School Terrace	-	287	72	878	2161	0.133	287	162	0.2	0.2	1.921
	4 - A48 North	-	661	165	532	2227	0.297	662	633	0.6	0.4	2.300
4 - A48_A4106	1 - A48 East	-	819	205	4	2495	0.328	820	1040	0.7	0.5	2.150
	2 - A4106 South	-	454	113	475	1380	0.329	455	348	0.7	0.5	3.897
	3 - A48 West	-	591	148	452	2130	0.277	591	478	0.5	0.4	2.339
5 - A4229_B4283	1 - A4229 East	-	311	78	747	2628	0.118	311	243	0.2	0.1	1.553
	2 - Porthcawl Road South	-	702	176	233	1547	0.454	704	825	1.3	0.8	4.279
	3 - A4229 West	-	147	37	846	1709	0.086	148	91	0.1	0.1	2.307
	4 - B4283 North	-	772	193	214	1490	0.518	775	779	1.8	1.1	5.058
7 - Heol Mostyn_A48	-	B-CD	263	66		517	0.507	268		2.4	1.1	14.698
	-	B-AD	43	11		130	0.333	46		1.2	0.5	44.149
	-	A-BCD	6	1		750	0.008	6		0.0	0.0	4.845
	-	A-B	118	29				118				
	-	A-C	397	99				397				
	-	D-ABC	0	0		201	0.000	0		0.0	0.0	0.000
	-	C-ABD	631	158		721	0.875	730		63.5	38.8	276.463
	-	C-D	0	0				0				
-	C-A	61	15				61					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	456	114	573	2422	0.188	457	557	0.3	0.2	1.830
	2 - A4229 South	-	729	182	450	2895	0.252	729	580	0.5	0.3	1.661
	3 - M4 West slips	-	413	103	695	2076	0.199	413	484	0.3	0.2	2.165
	4 - A4229 North	-	645	161	485	2675	0.241	646	623	0.4	0.3	1.773
2 - A48_A4229	1 - A48 East	-	410	102	469	2847	0.144	410	530	0.2	0.2	1.478
	2 - A4229 South	-	624	156	246	2782	0.224	624	633	0.4	0.3	1.668
	3 - School Terrace	-	240	60	735	2336	0.103	240	136	0.2	0.1	1.717
	4 - A48 North	-	553	138	445	2319	0.239	554	530	0.4	0.3	2.039
4 - A48_A4106	1 - A48 East	-	686	171	3	2496	0.275	686	870	0.5	0.4	1.989
	2 - A4106 South	-	380	95	398	1419	0.268	381	292	0.5	0.4	3.469
	3 - A48 West	-	495	124	378	2175	0.227	495	400	0.4	0.3	2.144
5 - A4229_B4283	1 - A4229 East	-	260	65	625	2752	0.095	261	203	0.1	0.1	1.446
	2 - Porthcawl Road South	-	588	147	195	1569	0.375	589	690	0.8	0.6	3.677
	3 - A4229 West	-	123	31	708	1811	0.068	124	76	0.1	0.1	2.133
	4 - B4283 North	-	647	162	179	1510	0.428	648	652	1.1	0.8	4.184
7 - Heol Mostyn_A48	-	B-CD	220	55		563	0.390	221		1.1	0.7	10.581
	-	B-AD	36	9		198	0.182	37		0.5	0.2	22.528
	-	A-BCD	4	0.93		732	0.005	4		0.0	0.0	4.955
	-	A-B	99	25				99				
	-	A-C	333	83				333				
	-	D-ABC	0	0		270	0.000	0		0.0	0.0	0.000
	-	C-ABD	469	117		667	0.703	610		38.8	3.6	104.329
	-	C-D	0	0				0				
-	C-A	110	27				110					

Existing Layout - 2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	2.72	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.42	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.48	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	3.53	A
7	Heol Mostyn_A48	Crossroads	Two-way			27.73	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2021 Base	PM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	817	100.000
	2 - A4229 South		ONE HOUR	✓	901	100.000
	3 - M4 West slips		ONE HOUR	✓	604	100.000
	4 - A4229 North		ONE HOUR	✓	865	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	695	100.000
	2 - A4229 South		ONE HOUR	✓	861	100.000
	3 - School Terrace		ONE HOUR	✓	279	100.000
	4 - A48 North		ONE HOUR	✓	876	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1240	100.000
	2 - A4106 South		ONE HOUR	✓	537	100.000
	3 - A48 West		ONE HOUR	✓	686	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	989	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	137	100.000
	3 - A4229 West		ONE HOUR	✓	998	100.000
	4 - B4283 North		ONE HOUR	✓	216	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	534	100.000
	B - Heol Mostyn		ONE HOUR	✓	487	100.000
	C - A48 South		ONE HOUR	✓	798	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	2	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	561	4	252
		2 - A4229 South	449	0	230	222
		3 - M4 West slips	2	267	0	335
	4 - A4229 North	215	242	408	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	332	111	252
	2 - A4229 South	372	0	86	403
	3 - School Terrace	63	77	0	139
	4 - A48 North	261	458	157	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	565	675
	2 - A4106 South	521	0	16
	3 - A48 West	675	11	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	74	804	111
	2 - Porthcawl Road South	89	0	7	41
	3 - A4229 West	781	2	0	215
	4 - B4283 North	76	9	131	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	102	430	2
	B - Heol Mostyn	68	0	419	0
	C - A48 South	425	373	0	0
	D - Minor access (unclassified)	2	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	2	0	11
	2 - A4229 South	1	0	4	6
	3 - M4 West slips	0	4	0	6
	4 - A4229 North	3	2	1	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	1	7	3
	2 - A4229 South	4	0	0	8
	3 - School Terrace	4	1	0	1
	4 - A48 North	2	4	1	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	0	3
	2 - A4106 South	1	0	0
	3 - A48 West	3	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	3	38	3
	2 - Porthcawl Road South	0	0	6	6
	3 - A4229 West	11	3	0	0
	4 - B4283 North	1	4	50	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	3	1	0
	B - Heol Mostyn	2	0	2	0
	C - A48 South	1	3	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.45	3.30	0.8	A	750	1125
	2 - A4229 South	0.38	2.20	0.6	A	827	1240
	3 - M4 West slips	0.37	3.12	0.6	A	554	831
	4 - A4229 North	0.39	2.44	0.6	A	794	1191
2 - A48_A4229	1 - A48 East	0.30	2.02	0.4	A	638	957
	2 - A4229 South	0.39	2.38	0.6	A	790	1185
	3 - School Terrace	0.17	2.34	0.2	A	256	384
	4 - A48 North	0.43	2.81	0.8	A	804	1206
4 - A48_A4106	1 - A48 East	0.54	3.10	1.2	A	1138	1707
	2 - A4106 South	0.47	5.37	0.9	A	493	739
	3 - A48 West	0.36	2.72	0.6	A	629	944
5 - A4229_B4283	1 - A4229 East	0.45	2.71	0.8	A	908	1361
	2 - Porthcawl Road South	0.19	5.48	0.2	A	126	189
	3 - A4229 West	0.52	3.59	1.1	A	916	1374
	4 - B4283 North	0.29	6.12	0.4	A	198	297

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	0.91	61.96	7.4	F	384	577
	B-AD	0.74	112.62	2.1	F	62	94
	A-BCD	0.01	4.82	0.0	A	5	8
	A-B					93	139
	A-C					392	588
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	0.84	28.36	8.3	D	539	808
	C-D					0	0
	C-A					194	291

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	615	154	689	2355	0.261	614	500	0.0	0.4	2.065
	2 - A4229 South	-	678	170	499	2928	0.232	677	804	0.0	0.3	1.599
	3 - M4 West slips	-	455	114	694	2175	0.209	454	482	0.0	0.3	2.090
	4 - A4229 North	-	651	163	539	2732	0.238	650	608	0.0	0.3	1.729
2 - A48_A4229	1 - A48 East	-	523	131	520	2856	0.183	522	523	0.0	0.2	1.542
	2 - A4229 South	-	648	162	391	2662	0.243	647	651	0.0	0.3	1.786
	3 - School Terrace	-	210	53	772	2283	0.092	210	266	0.0	0.1	1.736
	4 - A48 North	-	660	165	385	2436	0.271	658	597	0.0	0.4	2.022
4 - A48_A4106	1 - A48 East	-	934	233	8	2530	0.369	931	898	0.0	0.6	2.249
	2 - A4106 South	-	404	101	507	1380	0.293	403	433	0.0	0.4	3.677
	3 - A48 West	-	516	129	391	2191	0.236	515	519	0.0	0.3	2.147
5 - A4229_B4283	1 - A4229 East	-	745	186	106	2467	0.302	743	710	0.0	0.4	2.085
	2 - Porthcawl Road South	-	103	26	785	1115	0.093	103	64	0.0	0.1	3.554
	3 - A4229 West	-	751	188	181	2161	0.348	749	707	0.0	0.5	2.547
	4 - B4283 North	-	163	41	655	977	0.167	162	276	0.0	0.2	4.415
7 - Heol Mostyn_A48	-	B-CD	315	79		597	0.528	311		0.0	1.1	12.410
	-	B-AD	51	13		298	0.172	50		0.0	0.2	14.470
	-	A-BCD	3	0.80		753	0.004	3		0.0	0.0	4.799
	-	A-B	76	19				76				
	-	A-C	322	81				322				
	-	D-ABC	0	0		301	0.000	0		0.0	0.0	0.000
	-	C-ABD	371	93		705	0.527	366		0.0	1.4	10.534
	-	C-D	0	0				0				
-	C-A	229	57				229					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	734	184	824	2202	0.334	734	598	0.4	0.5	2.451
	2 - A4229 South	-	810	202	597	2803	0.289	810	961	0.3	0.4	1.805
	3 - M4 West slips	-	543	136	829	2025	0.268	543	577	0.3	0.4	2.428
	4 - A4229 North	-	778	194	645	2604	0.299	777	727	0.3	0.4	1.971
2 - A48_A4229	1 - A48 East	-	625	156	622	2727	0.229	625	625	0.2	0.3	1.711
	2 - A4229 South	-	774	194	467	2577	0.300	774	779	0.3	0.4	1.996
	3 - School Terrace	-	251	63	923	2100	0.119	251	318	0.1	0.1	1.946
	4 - A48 North	-	788	197	460	2355	0.334	787	713	0.4	0.5	2.296
4 - A48_A4106	1 - A48 East	-	1115	279	10	2529	0.441	1114	1074	0.6	0.8	2.543
	2 - A4106 South	-	483	121	606	1330	0.363	482	517	0.4	0.6	4.243
	3 - A48 West	-	617	154	468	2145	0.288	616	621	0.3	0.4	2.355
5 - A4229_B4283	1 - A4229 East	-	889	222	127	2445	0.364	889	850	0.4	0.6	2.313
	2 - Porthcawl Road South	-	123	31	940	986	0.125	123	76	0.1	0.1	4.173
	3 - A4229 West	-	897	224	216	2136	0.420	896	846	0.5	0.7	2.904
	4 - B4283 North	-	194	49	783	913	0.213	194	330	0.2	0.3	5.000
7 - Heol Mostyn_A48	-	B-CD	377	94		567	0.664	374		1.1	1.9	18.292
	-	B-AD	61	15		234	0.261	61		0.2	0.3	20.632
	-	A-BCD	5	1		785	0.006	5		0.0	0.0	4.612
	-	A-B	91	23				91				
	-	A-C	384	96				384				
	-	D-ABC	0	0		255	0.000	0		0.0	0.0	0.000
	-	C-ABD	500	125		767	0.652	495		1.4	2.6	13.347
	-	C-D	0	0				0				
-	C-A	217	54				217					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	900	225	1009	1992	0.452	898	733	0.5	0.8	3.289
	2 - A4229 South	-	992	248	730	2631	0.377	991	1177	0.4	0.6	2.193
	3 - M4 West slips	-	665	166	1015	1821	0.365	664	706	0.4	0.6	3.112
	4 - A4229 North	-	952	238	790	2428	0.392	952	890	0.4	0.6	2.437
2 - A48_A4229	1 - A48 East	-	765	191	761	2551	0.300	765	766	0.3	0.4	2.016
	2 - A4229 South	-	948	237	572	2459	0.385	947	954	0.4	0.6	2.379
	3 - School Terrace	-	307	77	1130	1849	0.166	307	389	0.1	0.2	2.334
	4 - A48 North	-	964	241	563	2244	0.430	964	874	0.5	0.7	2.808
4 - A48_A4106	1 - A48 East	-	1365	341	12	2527	0.540	1364	1315	0.8	1.2	3.089
	2 - A4106 South	-	591	148	742	1262	0.469	590	633	0.6	0.9	5.351
	3 - A48 West	-	755	189	572	2081	0.363	755	760	0.4	0.6	2.711
5 - A4229_B4283	1 - A4229 East	-	1089	272	156	2415	0.451	1088	1040	0.6	0.8	2.712
	2 - Porthcawl Road South	-	151	38	1150	809	0.187	150	93	0.1	0.2	5.466
	3 - A4229 West	-	1099	275	265	2101	0.523	1097	1036	0.7	1.1	3.582
	4 - B4283 North	-	238	59	959	827	0.288	237	404	0.3	0.4	6.100
7 - Heol Mostyn_A48	-	B-CD	461	115		513	0.899	445		1.9	5.9	44.956
	-	B-AD	75	19		120	0.625	71		0.3	1.4	68.661
	-	A-BCD	7	2		834	0.009	7		0.0	0.0	4.352
	-	A-B	111	28				111				
	-	A-C	469	117				469				
	-	D-ABC	0	0		186	0.000	0		0.0	0.0	0.000
	-	C-ABD	744	186		885	0.841	724		2.6	7.5	23.083
	-	C-D	0	0				0				
-	C-A	134	34				134					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	900	225	1010	1991	0.452	900	733	0.8	0.8	3.297
	2 - A4229 South	-	992	248	731	2630	0.377	992	1178	0.6	0.6	2.196
	3 - M4 West slips	-	665	166	1016	1820	0.365	665	707	0.6	0.6	3.117
	4 - A4229 North	-	952	238	791	2427	0.392	952	891	0.6	0.6	2.441
2 - A48_A4229	1 - A48 East	-	765	191	762	2550	0.300	765	766	0.4	0.4	2.017
	2 - A4229 South	-	948	237	573	2459	0.386	948	955	0.6	0.6	2.382
	3 - School Terrace	-	307	77	1131	1848	0.166	307	390	0.2	0.2	2.336
	4 - A48 North	-	964	241	564	2243	0.430	964	874	0.7	0.8	2.814
4 - A48_A4106	1 - A48 East	-	1365	341	12	2527	0.540	1365	1317	1.2	1.2	3.097
	2 - A4106 South	-	591	148	743	1261	0.469	591	634	0.9	0.9	5.373
	3 - A48 West	-	755	189	574	2081	0.363	755	761	0.6	0.6	2.715
5 - A4229_B4283	1 - A4229 East	-	1089	272	156	2415	0.451	1089	1042	0.8	0.8	2.715
	2 - Porthcawl Road South	-	151	38	1152	808	0.187	151	94	0.2	0.2	5.479
	3 - A4229 West	-	1099	275	265	2101	0.523	1099	1037	1.1	1.1	3.591
	4 - B4283 North	-	238	59	960	826	0.288	238	404	0.4	0.4	6.117
7 - Heol Mostyn_A48	-	B-CD	461	115		505	0.913	455		5.9	7.4	61.964
	-	B-AD	75	19		101	0.744	72		1.4	2.1	112.624
	-	A-BCD	8	2		830	0.009	8		0.0	0.0	4.377
	-	A-B	111	28				111				
	-	A-C	469	117				469				
	-	D-ABC	0	0		177	0.000	0		0.0	0.0	0.000
	-	C-ABD	744	186		884	0.842	741		7.5	8.4	28.355
	-	C-D	0	0				0				
	C-A	134	34				134					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	734	184	825	2200	0.334	736	599	0.8	0.5	2.460
	2 - A4229 South	-	810	202	598	2801	0.289	811	963	0.6	0.4	1.808
	3 - M4 West slips	-	543	136	831	2024	0.268	544	578	0.6	0.4	2.435
	4 - A4229 North	-	778	194	646	2602	0.299	778	728	0.6	0.4	1.976
2 - A48_A4229	1 - A48 East	-	625	156	623	2725	0.229	625	626	0.4	0.3	1.713
	2 - A4229 South	-	774	194	468	2576	0.300	775	780	0.6	0.4	2.000
	3 - School Terrace	-	251	63	924	2098	0.120	251	319	0.2	0.1	1.949
	4 - A48 North	-	788	197	461	2354	0.335	788	714	0.8	0.5	2.300
4 - A48_A4106	1 - A48 East	-	1115	279	10	2529	0.441	1116	1077	1.2	0.8	2.552
	2 - A4106 South	-	483	121	608	1329	0.363	484	519	0.9	0.6	4.264
	3 - A48 West	-	617	154	470	2144	0.288	617	622	0.6	0.4	2.359
5 - A4229_B4283	1 - A4229 East	-	889	222	128	2445	0.364	890	852	0.8	0.6	2.318
	2 - Porthcawl Road South	-	123	31	942	984	0.125	123	77	0.2	0.1	4.184
	3 - A4229 West	-	897	224	217	2135	0.420	899	848	1.1	0.7	2.916
	4 - B4283 North	-	194	49	785	912	0.213	195	330	0.4	0.3	5.022
7 - Heol Mostyn_A48	-	B-CD	377	94		560	0.672	397		7.4	2.2	24.479
	-	B-AD	61	15		218	0.280	68		2.1	0.4	24.973
	-	A-BCD	5	1		779	0.006	5		0.0	0.0	4.654
	-	A-B	91	23				91				
	-	A-C	384	96				384				
	-	D-ABC	0	0		245	0.000	0		0.0	0.0	0.000
	-	C-ABD	500	125		765	0.653	521		8.4	3.0	16.413
	-	C-D	0	0				0				
	C-A	217	54				217					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	615	154	691	2353	0.261	616	502	0.5	0.4	2.074
	2 - A4229 South	-	678	170	500	2926	0.232	679	806	0.4	0.3	1.604
	3 - M4 West slips	-	455	114	695	2173	0.209	455	484	0.4	0.3	2.096
	4 - A4229 North	-	651	163	541	2730	0.239	652	610	0.4	0.3	1.731
2 - A48_A4229	1 - A48 East	-	523	131	521	2854	0.183	524	524	0.3	0.2	1.544
	2 - A4229 South	-	648	162	392	2661	0.244	649	653	0.4	0.3	1.790
	3 - School Terrace	-	210	53	774	2280	0.092	210	267	0.1	0.1	1.738
	4 - A48 North	-	660	165	386	2435	0.271	660	598	0.5	0.4	2.030
4 - A48_A4106	1 - A48 East	-	934	233	8	2530	0.369	934	901	0.8	0.6	2.258
	2 - A4106 South	-	404	101	509	1379	0.293	405	434	0.6	0.4	3.699
	3 - A48 West	-	516	129	393	2190	0.236	517	521	0.4	0.3	2.153
5 - A4229_B4283	1 - A4229 East	-	745	186	107	2467	0.302	745	713	0.6	0.4	2.091
	2 - Porthcawl Road South	-	103	26	788	1113	0.093	103	64	0.1	0.1	3.566
	3 - A4229 West	-	751	188	182	2160	0.348	752	710	0.7	0.5	2.559
	4 - B4283 North	-	163	41	657	975	0.167	163	277	0.3	0.2	4.432
7 - Heol Mostyn_A48	-	B-CD	315	79		596	0.529	320		2.2	1.2	13.213
	-	B-AD	51	13		294	0.174	52		0.4	0.2	14.945
	-	A-BCD	3	0.81		750	0.004	3		0.0	0.0	4.823
	-	A-B	76	19				76				
	-	A-C	322	81				322				
	-	D-ABC	0	0		297	0.000	0		0.0	0.0	0.000
	-	C-ABD	371	93		704	0.528	377		3.0	1.5	11.289
	-	C-D	0	0				0				
-	C-A	229	57				229					

Existing Layout - 2021 Total Traffic, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	2.86	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.35	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.09	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	5.36	A
7	Heol Mostyn_A48	Crossroads	Two-way			206.31	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2021 Total Traffic	AM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	606	100.000
	2 - A4229 South		ONE HOUR	✓	1052	100.000
	3 - M4 West slips		ONE HOUR	✓	549	100.000
	4 - A4229 North		ONE HOUR	✓	1102	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	564	100.000
	2 - A4229 South		ONE HOUR	✓	851	100.000
	3 - School Terrace		ONE HOUR	✓	319	100.000
	4 - A48 North		ONE HOUR	✓	817	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	911	100.000
	2 - A4106 South		ONE HOUR	✓	506	100.000
	3 - A48 West		ONE HOUR	✓	748	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	503	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	781	100.000
	3 - A4229 West		ONE HOUR	✓	164	100.000
	4 - B4283 North		ONE HOUR	✓	859	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	644	100.000
	B - Heol Mostyn		ONE HOUR	✓	340	100.000
	C - A48 South		ONE HOUR	✓	854	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	322	5	279
		2 - A4229 South	424	0	258	370
		3 - M4 West slips	3	153	0	393
	4 - A4229 North	314	409	379	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	266	55	243
	2 - A4229 South	358	0	55	438
	3 - School Terrace	81	125	0	113
	4 - A48 North	251	495	71	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	345	566
	2 - A4106 South	452	0	54
	3 - A48 West	705	43	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	178	22	303
	2 - Porthcawl Road South	146	0	73	562
	3 - A4229 West	56	106	0	2
	4 - B4283 North	220	633	6	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	119	523	2
	B - Heol Mostyn	43	0	297	0
	C - A48 South	364	490	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	5	20	6
	2 - A4229 South	6	0	6	4
	3 - M4 West slips	33	16	0	5
	4 - A4229 North	6	3	2	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	4	13	3
	2 - A4229 South	6	0	11	6
	3 - School Terrace	1	0	0	2
	4 - A48 North	4	4	0	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	2	3
	2 - A4106 South	2	0	0
	3 - A48 West	3	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	0	0
	2 - Porthcawl Road South	0	0	19	7
	3 - A4229 West	0	9	0	0
	4 - B4283 North	1	6	0	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	5	2	0
	B - Heol Mostyn	21	0	6	0
	C - A48 South	4	5	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.35	2.88	0.5	A	556	834
	2 - A4229 South	0.45	2.53	0.8	A	965	1448
	3 - M4 West slips	0.38	3.67	0.6	A	504	756
	4 - A4229 North	0.48	2.76	0.9	A	1011	1517
2 - A48_A4229	1 - A48 East	0.25	1.91	0.3	A	518	776
	2 - A4229 South	0.36	2.14	0.6	A	781	1171
	3 - School Terrace	0.19	2.41	0.2	A	293	439
	4 - A48 North	0.42	2.85	0.7	A	750	1125
4 - A48_A4106	1 - A48 East	0.40	2.43	0.7	A	836	1254
	2 - A4106 South	0.42	4.77	0.7	A	464	696
	3 - A48 West	0.39	2.76	0.6	A	686	1030
5 - A4229_B4283	1 - A4229 East	0.22	1.80	0.3	A	462	692
	2 - Porthcawl Road South	0.58	5.80	1.4	A	717	1075
	3 - A4229 West	0.12	2.67	0.1	A	150	226
	4 - B4283 North	0.66	7.47	1.9	A	788	1182

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	1.09	122.60	13.4	F	273	409
	B-AD	1.03	274.90	3.5	F	39	59
	A-BCD	0.01	5.01	0.0	A	7	11
	A-B					108	162
	A-C					475	713
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	1.21	414.69	93.8	F	726	1089
	C-D					0	0
	C-A					58	87

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	456	114	707	2296	0.199	455	557	0.0	0.2	1.954
	2 - A4229 South	-	792	198	498	2870	0.276	790	664	0.0	0.4	1.731
	3 - M4 West slips	-	413	103	806	1988	0.208	412	482	0.0	0.3	2.283
	4 - A4229 North	-	830	207	436	2776	0.299	828	783	0.0	0.4	1.845
2 - A48_A4229	1 - A48 East	-	425	106	519	2809	0.151	424	518	0.0	0.2	1.508
	2 - A4229 South	-	641	160	277	2765	0.232	639	666	0.0	0.3	1.693
	3 - School Terrace	-	240	60	781	2288	0.105	240	136	0.0	0.1	1.757
	4 - A48 North	-	615	154	424	2374	0.259	614	597	0.0	0.3	2.042
4 - A48_A4106	1 - A48 East	-	686	171	32	2491	0.275	684	868	0.0	0.4	1.991
	2 - A4106 South	-	381	95	425	1410	0.270	379	291	0.0	0.4	3.490
	3 - A48 West	-	563	141	339	2223	0.253	562	466	0.0	0.3	2.164
5 - A4229_B4283	1 - A4229 East	-	379	95	558	2816	0.134	378	316	0.0	0.2	1.476
	2 - Porthcawl Road South	-	588	147	249	1549	0.380	586	688	0.0	0.6	3.728
	3 - A4229 West	-	123	31	759	1789	0.069	123	76	0.0	0.1	2.161
	4 - B4283 North	-	647	162	231	1490	0.434	644	651	0.0	0.8	4.239
7 - Heol Mostyn_A48	-	B-CD	224	56		557	0.402	221		0.0	0.7	10.638
	-	B-AD	32	8		217	0.149	32		0.0	0.2	19.393
	-	A-BCD	4	0.96		796	0.005	4		0.0	0.0	4.545
	-	A-B	89	22				89				
	-	A-C	392	98				392				
	-	D-ABC	0	0		286	0.000	0		0.0	0.0	0.000
	-	C-ABD	519	130		706	0.735	505		0.0	3.5	17.453
	-	C-D	0	0				0				
-	C-A	124	31				124					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	545	136	845	2137	0.255	544	666	0.2	0.3	2.261
	2 - A4229 South	-	946	236	596	2749	0.344	945	794	0.4	0.5	1.995
	3 - M4 West slips	-	494	123	964	1819	0.271	493	577	0.3	0.4	2.715
	4 - A4229 North	-	991	248	521	2667	0.371	990	936	0.4	0.6	2.144
2 - A48_A4229	1 - A48 East	-	507	127	621	2683	0.189	507	620	0.2	0.2	1.653
	2 - A4229 South	-	765	191	332	2705	0.283	765	796	0.3	0.4	1.855
	3 - School Terrace	-	287	72	934	2102	0.136	287	163	0.1	0.2	1.983
	4 - A48 North	-	734	184	507	2285	0.321	734	713	0.3	0.5	2.321
4 - A48_A4106	1 - A48 East	-	819	205	39	2487	0.329	819	1039	0.4	0.5	2.158
	2 - A4106 South	-	455	114	509	1368	0.332	454	349	0.4	0.5	3.938
	3 - A48 West	-	672	168	406	2182	0.308	672	557	0.3	0.4	2.383
5 - A4229_B4283	1 - A4229 East	-	452	113	669	2705	0.167	452	379	0.2	0.2	1.597
	2 - Porthcawl Road South	-	702	176	297	1520	0.462	701	823	0.6	0.9	4.390
	3 - A4229 West	-	147	37	908	1678	0.088	147	91	0.1	0.1	2.351
	4 - B4283 North	-	772	193	277	1464	0.528	771	779	0.8	1.1	5.186
7 - Heol Mostyn_A48	-	B-CD	267	67		523	0.511	266		0.7	1.0	13.928
	-	B-AD	39	10		163	0.237	38		0.2	0.3	28.704
	-	A-BCD	6	1		837	0.007	6		0.0	0.0	4.325
	-	A-B	106	27				106				
	-	A-C	467	117				467				
	-	D-ABC	0	0		236	0.000	0		0.0	0.0	0.000
	-	C-ABD	718	180		781	0.919	690		3.5	10.5	38.471
-	C-D	0	0				0					
-	C-A	49	12				49					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	667	167	1035	1918	0.348	666	815	0.3	0.5	2.875
	2 - A4229 South	-	1158	290	729	2584	0.448	1157	972	0.5	0.8	2.520
	3 - M4 West slips	-	604	151	1180	1587	0.381	603	706	0.4	0.6	3.656
	4 - A4229 North	-	1213	303	638	2519	0.482	1212	1146	0.6	0.9	2.752
2 - A48_A4229	1 - A48 East	-	621	155	760	2510	0.247	621	759	0.2	0.3	1.904
	2 - A4229 South	-	937	234	406	2621	0.357	936	975	0.4	0.6	2.137
	3 - School Terrace	-	351	88	1143	1846	0.190	351	199	0.2	0.2	2.407
	4 - A48 North	-	900	225	621	2163	0.416	899	874	0.5	0.7	2.846
4 - A48_A4106	1 - A48 East	-	1003	251	47	2481	0.404	1002	1272	0.5	0.7	2.433
	2 - A4106 South	-	557	139	623	1311	0.425	556	427	0.5	0.7	4.762
	3 - A48 West	-	824	206	497	2127	0.387	823	682	0.4	0.6	2.759
5 - A4229_B4283	1 - A4229 East	-	554	138	818	2554	0.217	554	463	0.2	0.3	1.798
	2 - Porthcawl Road South	-	860	215	364	1481	0.581	858	1007	0.9	1.4	5.760
	3 - A4229 West	-	181	45	1111	1528	0.118	180	111	0.1	0.1	2.671
	4 - B4283 North	-	946	236	339	1428	0.662	943	953	1.1	1.9	7.369
7 - Heol Mostyn_A48	-	B-CD	327	82		443	0.738	321		1.0	2.5	28.181
	-	B-AD	47	12		83	0.568	44		0.3	1.1	86.342
	-	A-BCD	10	3		901	0.011	10		0.0	0.0	4.038
	-	A-B	130	32				130				
	-	A-C	569	142				569				
	-	D-ABC	0	0		158	0.000	0		0.0	0.0	0.000
	-	C-ABD	940	235		780	1.205	769		10.5	53.3	158.614
-	C-D	0	0				0					
-	C-A	0	0				0					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	667	167	1036	1916	0.348	667	816	0.5	0.5	2.881
	2 - A4229 South	-	1158	290	730	2583	0.448	1158	973	0.8	0.8	2.526
	3 - M4 West slips	-	604	151	1181	1586	0.381	604	707	0.6	0.6	3.667
	4 - A4229 North	-	1213	303	639	2518	0.482	1213	1147	0.9	0.9	2.758
2 - A48_A4229	1 - A48 East	-	621	155	761	2509	0.247	621	760	0.3	0.3	1.905
	2 - A4229 South	-	937	234	406	2621	0.357	937	975	0.6	0.6	2.137
	3 - School Terrace	-	351	88	1144	1845	0.190	351	199	0.2	0.2	2.409
	4 - A48 North	-	900	225	621	2162	0.416	900	874	0.7	0.7	2.849
4 - A48_A4106	1 - A48 East	-	1003	251	47	2481	0.404	1003	1274	0.7	0.7	2.435
	2 - A4106 South	-	557	139	623	1311	0.425	557	427	0.7	0.7	4.775
	3 - A48 West	-	824	206	498	2126	0.387	824	683	0.6	0.6	2.763
5 - A4229_B4283	1 - A4229 East	-	554	138	820	2552	0.217	554	465	0.3	0.3	1.800
	2 - Porthcawl Road South	-	860	215	364	1480	0.581	860	1010	1.4	1.4	5.800
	3 - A4229 West	-	181	45	1113	1526	0.118	181	111	0.1	0.1	2.674
	4 - B4283 North	-	946	236	339	1427	0.663	946	955	1.9	1.9	7.470
7 - Heol Mostyn_A48	-	B-CD	327	82		299	1.095	284		2.5	13.4	122.599
	-	B-AD	47	12		46	1.034	38		1.1	3.5	274.896
	-	A-BCD	12	3		869	0.014	12		0.0	0.0	4.197
	-	A-B	129	32				129				
	-	A-C	568	142				568				
	-	D-ABC	0	0		107	0.000	0		0.0	0.0	0.000
	-	C-ABD	940	235		780	1.205	778		53.3	93.8	348.487
-	C-D	0	0				0					
-	C-A	0	0				0					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	545	136	847	2134	0.255	546	667	0.5	0.3	2.268
	2 - A4229 South	-	946	236	597	2748	0.344	947	796	0.8	0.5	1.999
	3 - M4 West slips	-	494	123	966	1817	0.272	494	578	0.6	0.4	2.723
	4 - A4229 North	-	991	248	522	2666	0.372	992	938	0.9	0.6	2.153
2 - A48_A4229	1 - A48 East	-	507	127	622	2681	0.189	507	621	0.3	0.2	1.655
	2 - A4229 South	-	765	191	332	2704	0.283	766	797	0.6	0.4	1.856
	3 - School Terrace	-	287	72	935	2100	0.137	287	163	0.2	0.2	1.985
	4 - A48 North	-	734	184	507	2284	0.322	735	714	0.7	0.5	2.327
4 - A48_A4106	1 - A48 East	-	819	205	39	2487	0.329	820	1042	0.7	0.5	2.162
	2 - A4106 South	-	455	114	509	1368	0.333	456	349	0.7	0.5	3.952
	3 - A48 West	-	672	168	407	2181	0.308	673	558	0.6	0.4	2.387
5 - A4229_B4283	1 - A4229 East	-	452	113	672	2701	0.167	452	381	0.3	0.2	1.602
	2 - Porthcawl Road South	-	702	176	298	1520	0.462	704	827	1.4	0.9	4.424
	3 - A4229 West	-	147	37	911	1676	0.088	148	91	0.1	0.1	2.357
	4 - B4283 North	-	772	193	277	1463	0.528	775	781	1.9	1.1	5.259
7 - Heol Mostyn_A48	-	B-CD	267	67		430	0.621	313		13.4	1.8	41.098
	-	B-AD	39	10		74	0.524	47		3.5	1.4	150.606
	-	A-BCD	7	2		762	0.010	7		0.0	0.0	4.778
	-	A-B	106	26				106				
	-	A-C	466	116				466				
	-	D-ABC	0	0		134	0.000	0		0.0	0.0	0.000
	-	C-ABD	718	180		781	0.920	785		93.8	77.0	414.691
-	C-D	0	0				0					
-	C-A	49	12				49					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	456	114	709	2294	0.199	457	558	0.3	0.2	1.959
	2 - A4229 South	-	792	198	500	2869	0.276	793	666	0.5	0.4	1.733
	3 - M4 West slips	-	413	103	808	1986	0.208	414	484	0.4	0.3	2.291
	4 - A4229 North	-	830	207	437	2774	0.299	830	785	0.6	0.4	1.854
2 - A48_A4229	1 - A48 East	-	425	106	521	2807	0.151	425	520	0.2	0.2	1.510
	2 - A4229 South	-	641	160	278	2765	0.232	641	667	0.4	0.3	1.694
	3 - School Terrace	-	240	60	783	2286	0.105	240	136	0.2	0.1	1.762
	4 - A48 North	-	615	154	425	2373	0.259	616	598	0.5	0.4	2.050
4 - A48_A4106	1 - A48 East	-	686	171	32	2490	0.275	686	872	0.5	0.4	1.997
	2 - A4106 South	-	381	95	426	1409	0.270	381	292	0.5	0.4	3.506
	3 - A48 West	-	563	141	341	2222	0.253	564	467	0.4	0.3	2.170
5 - A4229_B4283	1 - A4229 East	-	379	95	562	2813	0.135	379	318	0.2	0.2	1.480
	2 - Porthcawl Road South	-	588	147	249	1548	0.380	589	692	0.9	0.6	3.755
	3 - A4229 West	-	123	31	762	1786	0.069	124	76	0.1	0.1	2.167
	4 - B4283 North	-	647	162	232	1489	0.434	648	654	1.1	0.8	4.287
7 - Heol Mostyn_A48	-	B-CD	224	56		539	0.415	228		1.8	0.7	11.725
	-	B-AD	32	8		142	0.228	37		1.4	0.3	35.297
	-	A-BCD	5	1		725	0.006	5		0.0	0.0	5.005
	-	A-B	89	22				89				
	-	A-C	391	98				391				
	-	D-ABC	0	0		211	0.000	0		0.0	0.0	0.000
	-	C-ABD	519	130		706	0.736	751		77.0	19.2	286.771
	-	C-D	0	0				0				
-	C-A	124	31				124					

Existing Layout - 2021 Total Traffic, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	3.04	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.47	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.52	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	3.74	A
7	Heol Mostyn_A48	Crossroads	Two-way			36.18	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2021 Total Traffic	PM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	805	100.000
	2 - A4229 South		ONE HOUR	✓	991	100.000
	3 - M4 West slips		ONE HOUR	✓	595	100.000
	4 - A4229 North		ONE HOUR	✓	1075	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	685	100.000
	2 - A4229 South		ONE HOUR	✓	899	100.000
	3 - School Terrace		ONE HOUR	✓	275	100.000
	4 - A48 North		ONE HOUR	✓	931	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1222	100.000
	2 - A4106 South		ONE HOUR	✓	529	100.000
	3 - A48 West		ONE HOUR	✓	778	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	975	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	135	100.000
	3 - A4229 West		ONE HOUR	✓	984	100.000
	4 - B4283 North		ONE HOUR	✓	372	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	583	100.000
	B - Heol Mostyn		ONE HOUR	✓	479	100.000
	C - A48 South		ONE HOUR	✓	870	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	505	4	296
		2 - A4229 South	404	0	207	380
		3 - M4 West slips	2	240	0	353
	4 - A4229 North	254	396	425	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	299	110	276
	2 - A4229 South	335	0	99	465
	3 - School Terrace	67	83	0	125
	4 - A48 North	295	495	141	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	509	713
	2 - A4106 South	469	0	60
	3 - A48 West	716	62	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	67	724	184
	2 - Porthcawl Road South	80	0	6	49
	3 - A4229 West	703	2	0	279
	4 - B4283 North	153	16	203	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	92	489	2
	B - Heol Mostyn	61	0	418	0
	C - A48 South	491	379	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	2	0	8
	2 - A4229 South	1	0	4	3
	3 - M4 West slips	0	4	0	5
	4 - A4229 North	2	1	1	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	1	6	3
	2 - A4229 South	4	0	0	6
	3 - School Terrace	3	1	0	1
	4 - A48 North	1	3	1	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	0	3
	2 - A4106 South	1	0	0
	3 - A48 West	2	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	19	1
	2 - Porthcawl Road South	0	0	6	6
	3 - A4229 West	8	3	0	0
	4 - B4283 North	1	4	50	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	3	1	0
	B - Heol Mostyn	2	0	2	0
	C - A48 South	1	3	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.49	3.83	0.9	A	739	1108
	2 - A4229 South	0.42	2.44	0.7	A	909	1364
	3 - M4 West slips	0.40	3.60	0.7	A	546	819
	4 - A4229 North	0.47	2.66	0.9	A	986	1480
2 - A48_A4229	1 - A48 East	0.30	2.04	0.4	A	629	943
	2 - A4229 South	0.40	2.43	0.7	A	825	1237
	3 - School Terrace	0.17	2.41	0.2	A	252	379
	4 - A48 North	0.45	2.84	0.8	A	854	1281
4 - A48_A4106	1 - A48 East	0.54	3.15	1.2	A	1121	1682
	2 - A4106 South	0.47	5.46	0.9	A	485	728
	3 - A48 West	0.40	2.81	0.7	A	714	1071
5 - A4229_B4283	1 - A4229 East	0.40	2.25	0.7	A	895	1342
	2 - Porthcawl Road South	0.17	5.12	0.2	A	124	186
	3 - A4229 West	0.52	3.53	1.1	A	903	1354
	4 - B4283 North	0.45	7.27	0.8	A	341	512

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	0.96	83.44	10.2	F	384	575
	B-AD	0.92	194.06	3.5	F	56	84
	A-BCD	0.01	4.72	0.0	A	6	9
	A-B					84	126
	A-C					445	668
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	0.88	35.48	11.6	E	593	889
	C-D					0	0
	C-A					205	308

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	606	152	797	2248	0.270	605	496	0.0	0.4	2.188
	2 - A4229 South	-	746	187	545	2892	0.258	745	857	0.0	0.3	1.676
	3 - M4 West slips	-	448	112	811	2066	0.217	447	478	0.0	0.3	2.222
	4 - A4229 North	-	809	202	485	2813	0.288	808	773	0.0	0.4	1.793
2 - A48_A4229	1 - A48 East	-	516	129	540	2836	0.182	515	524	0.0	0.2	1.550
	2 - A4229 South	-	677	169	396	2679	0.253	675	659	0.0	0.3	1.796
	3 - School Terrace	-	207	52	809	2249	0.092	207	263	0.0	0.1	1.762
	4 - A48 North	-	701	175	364	2478	0.283	699	651	0.0	0.4	2.022
4 - A48_A4106	1 - A48 East	-	920	230	47	2503	0.368	918	889	0.0	0.6	2.268
	2 - A4106 South	-	398	100	535	1367	0.291	397	429	0.0	0.4	3.704
	3 - A48 West	-	586	146	352	2239	0.262	584	580	0.0	0.4	2.173
5 - A4229_B4283	1 - A4229 East	-	734	184	166	2764	0.266	733	702	0.0	0.4	1.772
	2 - Porthcawl Road South	-	102	25	834	1143	0.089	101	64	0.0	0.1	3.456
	3 - A4229 West	-	741	185	235	2182	0.340	739	701	0.0	0.5	2.491
	4 - B4283 North	-	280	70	589	1039	0.269	279	384	0.0	0.4	4.724
7 - Heol Mostyn_A48	-	B-CD	315	79		588	0.535	310		0.0	1.1	12.778
	-	B-AD	46	11		278	0.165	45		0.0	0.2	15.416
	-	A-BCD	3	0.87		771	0.005	3		0.0	0.0	4.692
	-	A-B	69	17				69				
	-	A-C	366	92				366				
	-	D-ABC	0	0		283	0.000	0		0.0	0.0	0.000
	-	C-ABD	397	99		729	0.545	391		0.0	1.6	10.557
	-	C-D	0	0				0				
-	C-A	258	65				258					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	724	181	953	2071	0.349	723	593	0.4	0.5	2.669
	2 - A4229 South	-	891	223	651	2756	0.323	890	1025	0.3	0.5	1.929
	3 - M4 West slips	-	535	134	970	1893	0.283	534	571	0.3	0.4	2.650
	4 - A4229 North	-	966	242	580	2697	0.358	966	924	0.4	0.6	2.080
2 - A48_A4229	1 - A48 East	-	616	154	646	2703	0.228	616	626	0.2	0.3	1.723
	2 - A4229 South	-	808	202	474	2592	0.312	808	788	0.3	0.5	2.017
	3 - School Terrace	-	247	62	967	2058	0.120	247	314	0.1	0.1	1.987
	4 - A48 North	-	837	209	436	2401	0.349	836	778	0.4	0.5	2.301
4 - A48_A4106	1 - A48 East	-	1099	275	56	2497	0.440	1098	1064	0.6	0.8	2.571
	2 - A4106 South	-	476	119	640	1314	0.362	475	513	0.4	0.6	4.288
	3 - A48 West	-	699	175	421	2197	0.318	699	694	0.4	0.5	2.404
5 - A4229_B4283	1 - A4229 East	-	877	219	198	2724	0.322	876	841	0.4	0.5	1.947
	2 - Porthcawl Road South	-	121	30	998	1020	0.119	121	76	0.1	0.1	4.004
	3 - A4229 West	-	885	221	281	2149	0.412	884	838	0.5	0.7	2.845
	4 - B4283 North	-	334	84	705	983	0.340	334	460	0.4	0.5	5.545
7 - Heol Mostyn_A48	-	B-CD	376	94		555	0.677	372		1.1	2.0	19.318
	-	B-AD	55	14		210	0.261	54		0.2	0.3	23.010
	-	A-BCD	5	1		807	0.006	5		0.0	0.0	4.488
	-	A-B	82	21				82				
	-	A-C	437	109				437				
	-	D-ABC	0	0		233	0.000	0		0.0	0.0	0.000
	-	C-ABD	545	136		806	0.676	539		1.6	3.1	13.639
	-	C-D	0	0				0				
-	C-A	237	59				237					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	886	222	1167	1828	0.485	885	726	0.5	0.9	3.808
	2 - A4229 South	-	1091	273	797	2570	0.425	1090	1254	0.5	0.7	2.431
	3 - M4 West slips	-	655	164	1188	1655	0.396	654	700	0.4	0.7	3.593
	4 - A4229 North	-	1184	296	710	2538	0.466	1182	1131	0.6	0.9	2.653
2 - A48_A4229	1 - A48 East	-	754	189	791	2521	0.299	754	767	0.3	0.4	2.037
	2 - A4229 South	-	990	247	580	2472	0.400	989	965	0.5	0.7	2.426
	3 - School Terrace	-	303	76	1184	1797	0.169	303	385	0.1	0.2	2.409
	4 - A48 North	-	1025	256	534	2295	0.447	1024	953	0.5	0.8	2.830
4 - A48_A4106	1 - A48 East	-	1345	336	68	2489	0.540	1344	1303	0.8	1.2	3.138
	2 - A4106 South	-	582	146	784	1242	0.469	581	628	0.6	0.9	5.442
	3 - A48 West	-	857	214	515	2139	0.400	856	850	0.5	0.7	2.804
5 - A4229_B4283	1 - A4229 East	-	1073	268	243	2670	0.402	1073	1029	0.5	0.7	2.252
	2 - Porthcawl Road South	-	149	37	1222	853	0.174	148	93	0.1	0.2	5.109
	3 - A4229 West	-	1083	271	344	2103	0.515	1082	1026	0.7	1.1	3.521
	4 - B4283 North	-	410	102	863	905	0.453	408	563	0.5	0.8	7.232
7 - Heol Mostyn_A48	-	B-CD	460	115		493	0.933	439		2.0	7.2	53.288
	-	B-AD	67	17		91	0.740	61		0.3	1.9	105.437
	-	A-BCD	9	2		864	0.010	8		0.0	0.0	4.206
	-	A-B	100	25				100				
	-	A-C	533	133				533				
	-	D-ABC	0	0		154	0.000	0		0.0	0.0	0.000
	-	C-ABD	837	209		953	0.878	809		3.1	10.1	26.148
	-	C-D	0	0				0				
-	C-A	121	30				121					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	886	222	1168	1827	0.485	886	727	0.9	0.9	3.826
	2 - A4229 South	-	1091	273	798	2569	0.425	1091	1256	0.7	0.7	2.435
	3 - M4 West slips	-	655	164	1189	1654	0.396	655	700	0.7	0.7	3.604
	4 - A4229 North	-	1184	296	711	2537	0.467	1184	1133	0.9	0.9	2.660
2 - A48_A4229	1 - A48 East	-	754	189	792	2520	0.299	754	767	0.4	0.4	2.038
	2 - A4229 South	-	990	247	580	2472	0.400	990	966	0.7	0.7	2.429
	3 - School Terrace	-	303	76	1185	1796	0.169	303	385	0.2	0.2	2.411
	4 - A48 North	-	1025	256	534	2294	0.447	1025	953	0.8	0.8	2.835
4 - A48_A4106	1 - A48 East	-	1345	336	68	2489	0.540	1345	1305	1.2	1.2	3.146
	2 - A4106 South	-	582	146	785	1241	0.469	582	629	0.9	0.9	5.465
	3 - A48 West	-	857	214	516	2138	0.401	857	851	0.7	0.7	2.807
5 - A4229_B4283	1 - A4229 East	-	1073	268	243	2670	0.402	1073	1031	0.7	0.7	2.255
	2 - Porthcawl Road South	-	149	37	1223	851	0.175	149	94	0.2	0.2	5.121
	3 - A4229 West	-	1083	271	345	2103	0.515	1083	1027	1.1	1.1	3.531
	4 - B4283 North	-	410	102	864	904	0.453	410	564	0.8	0.8	7.275
7 - Heol Mostyn_A48	-	B-CD	460	115		479	0.960	448		7.2	10.2	83.438
	-	B-AD	67	17		73	0.915	61		1.9	3.5	194.057
	-	A-BCD	9	2		859	0.010	9		0.0	0.0	4.235
	-	A-B	100	25				100				
	-	A-C	533	133				533				
	-	D-ABC	0	0		140	0.000	0		0.0	0.0	0.000
	-	C-ABD	837	209		952	0.879	830		10.1	11.6	35.480
	-	C-D	0	0				0				
-	C-A	121	30				121					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	724	181	955	2069	0.350	725	594	0.9	0.5	2.684
	2 - A4229 South	-	891	223	653	2754	0.323	892	1028	0.7	0.5	1.933
	3 - M4 West slips	-	535	134	972	1891	0.283	536	572	0.7	0.4	2.659
	4 - A4229 North	-	966	242	582	2695	0.359	968	927	0.9	0.6	2.085
2 - A48_A4229	1 - A48 East	-	616	154	647	2702	0.228	616	627	0.4	0.3	1.728
	2 - A4229 South	-	808	202	474	2591	0.312	809	789	0.7	0.5	2.020
	3 - School Terrace	-	247	62	968	2056	0.120	247	315	0.2	0.1	1.990
	4 - A48 North	-	837	209	436	2400	0.349	838	779	0.8	0.5	2.307
4 - A48_A4106	1 - A48 East	-	1099	275	56	2497	0.440	1100	1067	1.2	0.8	2.579
	2 - A4106 South	-	476	119	642	1313	0.362	477	514	0.9	0.6	4.310
	3 - A48 West	-	699	175	423	2196	0.319	700	696	0.7	0.5	2.410
5 - A4229_B4283	1 - A4229 East	-	877	219	199	2723	0.322	877	843	0.7	0.5	1.952
	2 - Porthcawl Road South	-	121	30	1000	1019	0.119	122	77	0.2	0.1	4.015
	3 - A4229 West	-	885	221	282	2148	0.412	886	840	1.1	0.7	2.855
	4 - B4283 North	-	334	84	707	982	0.341	336	461	0.8	0.5	5.584
7 - Heol Mostyn_A48	-	B-CD	376	94		543	0.692	407		10.2	2.4	31.332
	-	B-AD	55	14		186	0.295	67		3.5	0.4	33.132
	-	A-BCD	5	1		799	0.007	5		0.0	0.0	4.542
	-	A-B	82	21				82				
	-	A-C	437	109				437				
	-	D-ABC	0	0		217	0.000	0		0.0	0.0	0.000
	-	C-ABD	545	136		804	0.678	577		11.6	3.6	18.691
	-	C-D	0	0				0				
-	C-A	237	59				237					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	606	152	799	2246	0.270	607	497	0.5	0.4	2.198
	2 - A4229 South	-	746	187	546	2890	0.258	747	860	0.5	0.3	1.681
	3 - M4 West slips	-	448	112	814	2064	0.217	448	479	0.4	0.3	2.228
	4 - A4229 North	-	809	202	487	2811	0.288	810	775	0.6	0.4	1.798
2 - A48_A4229	1 - A48 East	-	516	129	542	2834	0.182	516	525	0.3	0.2	1.554
	2 - A4229 South	-	677	169	397	2678	0.253	677	661	0.5	0.3	1.801
	3 - School Terrace	-	207	52	811	2246	0.092	207	264	0.1	0.1	1.767
	4 - A48 North	-	701	175	365	2477	0.283	701	652	0.5	0.4	2.029
4 - A48_A4106	1 - A48 East	-	920	230	47	2503	0.368	921	893	0.8	0.6	2.276
	2 - A4106 South	-	398	100	537	1366	0.292	399	430	0.6	0.4	3.724
	3 - A48 West	-	586	146	354	2238	0.262	586	583	0.5	0.4	2.179
5 - A4229_B4283	1 - A4229 East	-	734	184	167	2763	0.266	734	706	0.5	0.4	1.777
	2 - Porthcawl Road South	-	102	25	837	1141	0.089	102	64	0.1	0.1	3.464
	3 - A4229 West	-	741	185	236	2181	0.340	742	703	0.7	0.5	2.501
	4 - B4283 North	-	280	70	592	1038	0.270	281	386	0.5	0.4	4.757
7 - Heol Mostyn_A48	-	B-CD	315	79		586	0.537	320		2.4	1.2	13.738
	-	B-AD	46	11		272	0.169	47		0.4	0.2	16.027
	-	A-BCD	4	0.88		767	0.005	4		0.0	0.0	4.717
	-	A-B	69	17				69				
	-	A-C	366	92				366				
	-	D-ABC	0	0		279	0.000	0		0.0	0.0	0.000
	-	C-ABD	397	99		728	0.545	405		3.6	1.7	11.488
	-	C-D	0	0				0				
-	C-A	258	65				258					

Existing Layout - 2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	2.94	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.50	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.34	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	6.45	A
7	Heol Mostyn_A48	Crossroads	Two-way			428.56	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2033 Base	AM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	667	100.000
	2 - A4229 South		ONE HOUR	✓	1066	100.000
	3 - M4 West slips		ONE HOUR	✓	605	100.000
	4 - A4229 North		ONE HOUR	✓	944	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	599	100.000
	2 - A4229 South		ONE HOUR	✓	913	100.000
	3 - School Terrace		ONE HOUR	✓	351	100.000
	4 - A48 North		ONE HOUR	✓	810	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1004	100.000
	2 - A4106 South		ONE HOUR	✓	557	100.000
	3 - A48 West		ONE HOUR	✓	725	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	382	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	860	100.000
	3 - A4229 West		ONE HOUR	✓	181	100.000
	4 - B4283 North		ONE HOUR	✓	946	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	639	100.000
	B - Heol Mostyn		ONE HOUR	✓	375	100.000
	C - A48 South		ONE HOUR	✓	848	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	394	6	267
		2 - A4229 South	519	0	316	231
		3 - M4 West slips	4	187	0	414
	4 - A4229 North	293	267	384	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	326	58	215
	2 - A4229 South	438	0	54	421
	3 - School Terrace	87	126	0	138
	4 - A48 North	249	474	87	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	422	582
	2 - A4106 South	553	0	4
	3 - A48 West	720	5	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	104	15	263
	2 - Porthcawl Road South	83	0	89	688
	3 - A4229 West	49	130	0	2
	4 - B4283 North	164	775	7	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	146	491	2
	B - Heol Mostyn	53	0	322	0
	C - A48 South	324	524	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	5	20	8
	2 - A4229 South	6	0	6	8
	3 - M4 West slips	33	16	0	6
	4 - A4229 North	8	6	2	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	4	15	4
	2 - A4229 South	6	0	14	7
	3 - School Terrace	1	0	0	2
	4 - A48 North	5	6	0	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	2	4
	2 - A4106 South	2	0	0
	3 - A48 West	4	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	0	0
	2 - Porthcawl Road South	0	0	19	7
	3 - A4229 West	0	9	0	0
	4 - B4283 North	2	6	0	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	5	2	0
	B - Heol Mostyn	21	0	6	0
	C - A48 South	6	6	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.36	2.81	0.6	A	612	918
	2 - A4229 South	0.46	2.60	0.8	A	978	1467
	3 - M4 West slips	0.41	3.78	0.7	A	555	833
	4 - A4229 North	0.45	2.85	0.8	A	866	1299
2 - A48_A4229	1 - A48 East	0.27	1.97	0.4	A	550	824
	2 - A4229 South	0.38	2.24	0.6	A	838	1257
	3 - School Terrace	0.22	2.57	0.3	A	322	483
	4 - A48 North	0.44	3.16	0.8	A	743	1115
4 - A48_A4106	1 - A48 East	0.44	2.59	0.8	A	921	1382
	2 - A4106 South	0.47	5.27	0.9	A	511	767
	3 - A48 West	0.39	2.91	0.6	A	665	998
5 - A4229_B4283	1 - A4229 East	0.18	1.85	0.2	A	351	526
	2 - Porthcawl Road South	0.63	6.51	1.7	A	789	1184
	3 - A4229 West	0.13	2.78	0.2	A	166	249
	4 - B4283 North	0.72	8.88	2.5	A	868	1302

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	2.08	732.76	64.9	F	295	443
	B-AD	1.88	985.72	11.6	F	49	73
	A-BCD	0.02	5.40	0.0	A	8	12
	A-B					133	199
	A-C					446	669
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	1.30	610.58	124.7	F	747	1120
	C-D					0	0
C-A					31	47	

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	502	126	629	2357	0.213	501	613	0.0	0.3	1.938
	2 - A4229 South	-	803	201	494	2841	0.283	801	637	0.0	0.4	1.765
	3 - M4 West slips	-	455	114	764	2001	0.228	454	530	0.0	0.3	2.326
	4 - A4229 North	-	711	178	533	2614	0.272	709	685	0.0	0.4	1.890
2 - A48_A4229	1 - A48 East	-	451	113	516	2789	0.162	450	581	0.0	0.2	1.539
	2 - A4229 South	-	687	172	271	2754	0.250	686	696	0.0	0.3	1.740
	3 - School Terrace	-	264	66	807	2248	0.118	264	150	0.0	0.1	1.813
	4 - A48 North	-	610	152	489	2272	0.268	608	582	0.0	0.4	2.161
4 - A48_A4106	1 - A48 East	-	756	189	4	2495	0.303	754	955	0.0	0.4	2.066
	2 - A4106 South	-	419	105	437	1399	0.300	418	321	0.0	0.4	3.662
	3 - A48 West	-	546	136	415	2153	0.254	544	440	0.0	0.3	2.236
5 - A4229_B4283	1 - A4229 East	-	288	72	683	2692	0.107	287	222	0.0	0.1	1.496
	2 - Porthcawl Road South	-	647	162	214	1558	0.416	645	756	0.0	0.7	3.929
	3 - A4229 West	-	136	34	776	1761	0.077	136	83	0.0	0.1	2.215
	4 - B4283 North	-	712	178	197	1500	0.475	709	715	0.0	0.9	4.531
7 - Heol Mostyn_A48	-	B-CD	242	61		555	0.437	239		0.0	0.8	11.311
	-	B-AD	40	10		214	0.186	39		0.0	0.2	20.463
	-	A-BCD	4	0.96		790	0.005	4		0.0	0.0	4.580
	-	A-B	109	27				109				
	-	A-C	368	92				368				
	-	D-ABC	0	0		285	0.000	0		0.0	0.0	0.000
	-	C-ABD	550	137		694	0.793	532		0.0	4.5	21.340
	-	C-D	0	0				0				
-	C-A	89	22				89					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	600	150	753	2214	0.271	599	733	0.3	0.4	2.230
	2 - A4229 South	-	958	240	590	2721	0.352	958	762	0.4	0.5	2.041
	3 - M4 West slips	-	544	136	914	1840	0.296	543	634	0.3	0.4	2.777
	4 - A4229 North	-	849	212	638	2483	0.342	848	819	0.4	0.5	2.202
2 - A48_A4229	1 - A48 East	-	538	135	617	2662	0.202	538	695	0.2	0.3	1.694
	2 - A4229 South	-	821	205	323	2695	0.305	820	832	0.3	0.4	1.920
	3 - School Terrace	-	316	79	965	2054	0.154	315	179	0.1	0.2	2.070
	4 - A48 North	-	728	182	585	2171	0.335	728	695	0.4	0.5	2.495
4 - A48_A4106	1 - A48 East	-	903	226	4	2495	0.362	902	1143	0.4	0.6	2.260
	2 - A4106 South	-	501	125	523	1356	0.369	500	384	0.4	0.6	4.205
	3 - A48 West	-	652	163	497	2104	0.310	651	526	0.3	0.4	2.479
5 - A4229_B4283	1 - A4229 East	-	343	86	818	2556	0.134	343	266	0.1	0.2	1.626
	2 - Porthcawl Road South	-	773	193	256	1534	0.504	772	906	0.7	1.0	4.718
	3 - A4229 West	-	163	41	928	1648	0.099	163	100	0.1	0.1	2.423
	4 - B4283 North	-	850	213	235	1477	0.576	849	856	0.9	1.3	5.710
7 - Heol Mostyn_A48	-	B-CD	289	72		517	0.560	288		0.8	1.2	15.562
	-	B-AD	48	12		158	0.302	47		0.2	0.4	32.316
	-	A-BCD	6	1		829	0.007	6		0.0	0.0	4.367
	-	A-B	130	33				130				
	-	A-C	438	110				438				
	-	D-ABC	0	0		233	0.000	0		0.0	0.0	0.000
	-	C-ABD	757	189		764	0.991	711		4.5	16.1	58.443
	-	C-D	0	0				0				
-	C-A	5	1				5					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	734	184	921	2017	0.364	734	897	0.4	0.6	2.803
	2 - A4229 South	-	1174	293	723	2558	0.459	1172	933	0.5	0.8	2.596
	3 - M4 West slips	-	666	167	1119	1619	0.412	665	776	0.4	0.7	3.772
	4 - A4229 North	-	1039	260	781	2304	0.451	1038	1003	0.5	0.8	2.841
2 - A48_A4229	1 - A48 East	-	660	165	756	2489	0.265	659	851	0.3	0.4	1.967
	2 - A4229 South	-	1005	251	396	2614	0.385	1004	1019	0.4	0.6	2.236
	3 - School Terrace	-	386	97	1182	1788	0.216	386	219	0.2	0.3	2.567
	4 - A48 North	-	892	223	716	2031	0.439	891	852	0.5	0.8	3.153
4 - A48_A4106	1 - A48 East	-	1105	276	5	2494	0.443	1105	1400	0.6	0.8	2.589
	2 - A4106 South	-	613	153	640	1297	0.473	612	470	0.6	0.9	5.248
	3 - A48 West	-	798	200	608	2036	0.392	797	645	0.4	0.6	2.904
5 - A4229_B4283	1 - A4229 East	-	421	105	1000	2372	0.177	420	325	0.2	0.2	1.843
	2 - Porthcawl Road South	-	947	237	314	1500	0.631	944	1107	1.0	1.7	6.447
	3 - A4229 West	-	199	50	1136	1494	0.133	199	122	0.1	0.2	2.780
	4 - B4283 North	-	1042	260	288	1447	0.720	1037	1047	1.3	2.5	8.689
7 - Heol Mostyn_A48	-	B-CD	355	89		384	0.923	335		1.2	6.2	58.358
	-	B-AD	58	15		66	0.880	49		0.4	2.7	168.014
	-	A-BCD	11	3		888	0.012	10		0.0	0.0	4.097
	-	A-B	159	40				159				
	-	A-C	534	134				534				
	-	D-ABC	0	0		148	0.000	0		0.0	0.0	0.000
	-	C-ABD	934	233		719	1.298	715		16.1	70.8	229.159
	-	C-D	0	0				0				
-	C-A	0	0				0					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	734	184	923	2016	0.364	734	898	0.6	0.6	2.808
	2 - A4229 South	-	1174	293	723	2557	0.459	1174	934	0.8	0.8	2.602
	3 - M4 West slips	-	666	167	1120	1617	0.412	666	777	0.7	0.7	3.783
	4 - A4229 North	-	1039	260	782	2303	0.451	1039	1004	0.8	0.8	2.848
2 - A48_A4229	1 - A48 East	-	660	165	756	2488	0.265	660	852	0.4	0.4	1.968
	2 - A4229 South	-	1005	251	396	2613	0.385	1005	1020	0.6	0.6	2.238
	3 - School Terrace	-	386	97	1182	1787	0.216	386	219	0.3	0.3	2.569
	4 - A48 North	-	892	223	717	2031	0.439	892	852	0.8	0.8	3.160
4 - A48_A4106	1 - A48 East	-	1105	276	6	2494	0.443	1105	1402	0.8	0.8	2.591
	2 - A4106 South	-	613	153	641	1296	0.473	613	470	0.9	0.9	5.268
	3 - A48 West	-	798	200	609	2036	0.392	798	645	0.6	0.6	2.908
5 - A4229_B4283	1 - A4229 East	-	421	105	1004	2368	0.178	421	326	0.2	0.2	1.847
	2 - Porthcawl Road South	-	947	237	314	1500	0.631	947	1111	1.7	1.7	6.507
	3 - A4229 West	-	199	50	1138	1492	0.134	199	122	0.2	0.2	2.784
	4 - B4283 North	-	1042	260	288	1446	0.720	1041	1049	2.5	2.5	8.878
7 - Heol Mostyn_A48	-	B-CD	355	89		170	2.083	169		6.2	52.4	553.697
	-	B-AD	58	15		31	1.885	30		2.7	9.8	760.324
	-	A-BCD	13	3		846	0.015	13		0.0	0.0	4.318
	-	A-B	158	40				158				
	-	A-C	532	133				532				
	-	D-ABC	0	0		72	0.000	0		0.0	0.0	0.000
	-	C-ABD	934	233		719	1.298	719		70.8	124.5	487.714
	-	C-D	0	0				0				
-	C-A	0	0				0					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	600	150	755	2212	0.271	600	735	0.6	0.4	2.236
	2 - A4229 South	-	958	240	591	2720	0.352	960	763	0.8	0.5	2.047
	3 - M4 West slips	-	544	136	915	1838	0.296	545	636	0.7	0.4	2.786
	4 - A4229 North	-	849	212	639	2481	0.342	850	821	0.8	0.5	2.207
2 - A48_A4229	1 - A48 East	-	538	135	618	2661	0.202	539	697	0.4	0.3	1.699
	2 - A4229 South	-	821	205	324	2694	0.305	822	833	0.6	0.4	1.924
	3 - School Terrace	-	316	79	966	2052	0.154	316	179	0.3	0.2	2.073
	4 - A48 North	-	728	182	586	2170	0.336	729	696	0.8	0.5	2.502
4 - A48_A4106	1 - A48 East	-	903	226	5	2495	0.362	903	1146	0.8	0.6	2.265
	2 - A4106 South	-	501	125	524	1355	0.369	502	384	0.9	0.6	4.225
	3 - A48 West	-	652	163	498	2102	0.310	653	527	0.6	0.5	2.485
5 - A4229_B4283	1 - A4229 East	-	343	86	824	2550	0.135	344	267	0.2	0.2	1.630
	2 - Porthcawl Road South	-	773	193	256	1533	0.504	776	911	1.7	1.0	4.769
	3 - A4229 West	-	163	41	932	1645	0.099	163	100	0.2	0.1	2.430
	4 - B4283 North	-	850	213	236	1477	0.576	855	859	2.5	1.4	5.832
7 - Heol Mostyn_A48	-	B-CD	289	72		240	1.207	240		52.4	64.9	732.759
	-	B-AD	48	12		42	1.142	41		9.8	11.6	985.720
	-	A-BCD	9	2		726	0.012	9		0.0	0.0	5.023
	-	A-B	130	32				130				
	-	A-C	436	109				436				
	-	D-ABC	0	0		13	0.000	0		0.0	0.0	0.000
	-	C-ABD	757	189		764	0.991	757		124.5	124.7	610.579
	-	C-D	0	0				0				
-	C-A	5	1				5					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	502	126	631	2355	0.213	503	615	0.4	0.3	1.945
	2 - A4229 South	-	803	201	495	2839	0.283	803	639	0.5	0.4	1.770
	3 - M4 West slips	-	455	114	766	1999	0.228	456	532	0.4	0.3	2.335
	4 - A4229 North	-	711	178	535	2612	0.272	711	687	0.5	0.4	1.896
2 - A48_A4229	1 - A48 East	-	451	113	518	2787	0.162	451	583	0.3	0.2	1.541
	2 - A4229 South	-	687	172	271	2754	0.250	688	698	0.4	0.3	1.742
	3 - School Terrace	-	264	66	809	2245	0.118	264	150	0.2	0.1	1.816
	4 - A48 North	-	610	152	490	2271	0.269	610	583	0.5	0.4	2.170
4 - A48_A4106	1 - A48 East	-	756	189	4	2495	0.303	756	959	0.6	0.4	2.070
	2 - A4106 South	-	419	105	438	1398	0.300	420	322	0.6	0.4	3.684
	3 - A48 West	-	546	136	417	2152	0.254	546	441	0.5	0.3	2.244
5 - A4229_B4283	1 - A4229 East	-	288	72	688	2687	0.107	288	223	0.2	0.1	1.499
	2 - Porthcawl Road South	-	647	162	215	1558	0.416	649	761	1.0	0.7	3.964
	3 - A4229 West	-	136	34	780	1758	0.078	136	84	0.1	0.1	2.219
	4 - B4283 North	-	712	178	197	1499	0.475	714	719	1.4	0.9	4.596
7 - Heol Mostyn_A48	-	B-CD	242	61		383	0.633	377		64.9	31.2	463.187
	-	B-AD	40	10		66	0.607	61		11.6	6.4	555.411
	-	A-BCD	5	1		673	0.008	5		0.0	0.0	5.398
	-	A-B	109	27				109				
	-	A-C	367	92				367				
	-	D-ABC	0	0		101	0.000	0		0.0	0.0	0.000
	-	C-ABD	550	137		694	0.793	717		124.7	83.0	563.324
	-	C-D	0	0				0				
-	C-A	89	22				89					

Existing Layout - 2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	3.23	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.73	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.97	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	4.03	A
7	Heol Mostyn_A48	Crossroads	Two-way			92.08	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2033 Base	PM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	902	100.000
	2 - A4229 South		ONE HOUR	✓	994	100.000
	3 - M4 West slips		ONE HOUR	✓	666	100.000
	4 - A4229 North		ONE HOUR	✓	955	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	766	100.000
	2 - A4229 South		ONE HOUR	✓	949	100.000
	3 - School Terrace		ONE HOUR	✓	308	100.000
	4 - A48 North		ONE HOUR	✓	966	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1368	100.000
	2 - A4106 South		ONE HOUR	✓	591	100.000
	3 - A48 West		ONE HOUR	✓	757	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	1091	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	150	100.000
	3 - A4229 West		ONE HOUR	✓	1101	100.000
	4 - B4283 North		ONE HOUR	✓	238	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	589	100.000
	B - Heol Mostyn		ONE HOUR	✓	537	100.000
	C - A48 South		ONE HOUR	✓	881	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	619	5	278
		2 - A4229 South	495	0	254	245
		3 - M4 West slips	2	294	0	370
	4 - A4229 North	238	267	450	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	366	122	278
	2 - A4229 South	410	0	94	445
	3 - School Terrace	70	85	0	153
	4 - A48 North	288	505	173	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	623	745
	2 - A4106 South	574	0	17
	3 - A48 West	745	12	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	82	887	122
	2 - Porthcawl Road South	98	0	7	45
	3 - A4229 West	861	2	0	238
	4 - B4283 North	83	10	145	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	113	474	2
	B - Heol Mostyn	75	0	462	0
	C - A48 South	469	412	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	2	0	11
	2 - A4229 South	1	0	4	6
	3 - M4 West slips	0	4	0	6
	4 - A4229 North	3	2	1	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	1	7	3
	2 - A4229 South	4	0	0	8
	3 - School Terrace	4	1	0	1
	4 - A48 North	2	4	1	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	0	3
	2 - A4106 South	1	0	0
	3 - A48 West	3	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	3	38	3
	2 - Porthcawl Road South	0	0	6	6
	3 - A4229 West	11	3	0	0
	4 - B4283 North	1	4	50	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	3	1	0
	B - Heol Mostyn	2	0	2	0
	C - A48 South	1	3	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.53	4.09	1.1	A	828	1242
	2 - A4229 South	0.43	2.50	0.8	A	912	1368
	3 - M4 West slips	0.43	3.71	0.8	A	611	917
	4 - A4229 North	0.45	2.82	0.8	A	876	1314
2 - A48_A4229	1 - A48 East	0.34	2.24	0.5	A	703	1054
	2 - A4229 South	0.44	2.67	0.8	A	871	1306
	3 - School Terrace	0.20	2.63	0.2	A	283	424
	4 - A48 North	0.49	3.22	0.9	A	886	1330
4 - A48_A4106	1 - A48 East	0.60	3.53	1.5	A	1255	1883
	2 - A4106 South	0.53	6.30	1.1	A	542	813
	3 - A48 West	0.41	2.97	0.7	A	695	1042
5 - A4229_B4283	1 - A4229 East	0.50	3.01	1.0	A	1001	1502
	2 - Porthcawl Road South	0.23	6.63	0.3	A	138	206
	3 - A4229 West	0.58	4.14	1.4	A	1010	1515
	4 - B4283 North	0.34	6.99	0.5	A	218	328

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	1.16	232.78	35.8	F	424	636
	B-AD	1.08	352.30	7.4	F	69	103
	A-BCD	0.01	4.73	0.0	A	6	9
	A-B					103	154
	A-C					432	647
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	0.96	70.44	21.4	F	656	984
	C-D					0	0
C-A					153	229	

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	679	170	759	2275	0.299	677	552	0.0	0.4	2.251
	2 - A4229 South	-	748	187	551	2861	0.262	747	886	0.0	0.4	1.702
	3 - M4 West slips	-	501	125	765	2096	0.239	500	533	0.0	0.3	2.252
	4 - A4229 North	-	719	180	594	2665	0.270	718	671	0.0	0.4	1.848
2 - A48_A4229	1 - A48 East	-	577	144	573	2788	0.207	576	577	0.0	0.3	1.626
	2 - A4229 South	-	714	179	431	2618	0.273	713	718	0.0	0.4	1.887
	3 - School Terrace	-	232	58	851	2186	0.106	231	292	0.0	0.1	1.841
	4 - A48 North	-	727	182	424	2393	0.304	726	658	0.0	0.4	2.157
4 - A48_A4106	1 - A48 East	-	1030	257	9	2529	0.407	1027	990	0.0	0.7	2.392
	2 - A4106 South	-	445	111	559	1354	0.329	443	477	0.0	0.5	3.946
	3 - A48 West	-	570	142	430	2167	0.263	568	572	0.0	0.4	2.249
5 - A4229_B4283	1 - A4229 East	-	821	205	118	2456	0.335	819	782	0.0	0.5	2.197
	2 - Porthcawl Road South	-	113	28	866	1047	0.108	112	71	0.0	0.1	3.849
	3 - A4229 West	-	829	207	199	2148	0.386	826	780	0.0	0.6	2.719
	4 - B4283 North	-	179	45	721	943	0.190	178	304	0.0	0.2	4.703
7 - Heol Mostyn_A48	-	B-CD	348	87		582	0.598	342		0.0	1.4	14.680
	-	B-AD	56	14		267	0.211	55		0.0	0.3	16.911
	-	A-BCD	4	0.88		770	0.005	4		0.0	0.0	4.694
	-	A-B	85	21				85				
	-	A-C	355	89				355				
	-	D-ABC	0	0		278	0.000	0		0.0	0.0	0.000
	-	C-ABD	436	109		735	0.593	429		0.0	1.9	11.609
	-	C-D	0	0				0				
-	C-A	227	57				227					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	811	203	908	2106	0.385	810	660	0.4	0.6	2.776
	2 - A4229 South	-	894	223	658	2723	0.328	893	1060	0.4	0.5	1.967
	3 - M4 West slips	-	599	150	915	1931	0.310	598	637	0.3	0.4	2.698
	4 - A4229 North	-	859	215	711	2524	0.340	858	802	0.4	0.5	2.161
2 - A48_A4229	1 - A48 East	-	689	172	685	2646	0.260	688	690	0.3	0.4	1.837
	2 - A4229 South	-	853	213	515	2523	0.338	853	859	0.4	0.5	2.155
	3 - School Terrace	-	277	69	1018	1984	0.140	277	349	0.1	0.2	2.108
	4 - A48 North	-	868	217	508	2304	0.377	868	787	0.4	0.6	2.505
4 - A48_A4106	1 - A48 East	-	1230	307	11	2528	0.486	1229	1185	0.7	0.9	2.767
	2 - A4106 South	-	531	133	669	1298	0.409	530	570	0.5	0.7	4.683
	3 - A48 West	-	681	170	515	2116	0.322	680	684	0.4	0.5	2.507
5 - A4229_B4283	1 - A4229 East	-	981	245	141	2431	0.403	980	936	0.5	0.7	2.480
	2 - Porthcawl Road South	-	135	34	1037	904	0.149	135	84	0.1	0.2	4.675
	3 - A4229 West	-	990	247	238	2120	0.467	989	933	0.6	0.9	3.178
	4 - B4283 North	-	214	53	863	873	0.245	214	364	0.2	0.3	5.456
7 - Heol Mostyn_A48	-	B-CD	415	104		545	0.762	410		1.4	2.9	25.441
	-	B-AD	67	17		187	0.360	66		0.3	0.5	29.490
	-	A-BCD	5	1		807	0.006	5		0.0	0.0	4.489
	-	A-B	101	25				101				
	-	A-C	423	106				423				
	-	D-ABC	0	0		225	0.000	0		0.0	0.0	0.000
	-	C-ABD	602	151		816	0.737	593		1.9	4.1	16.368
	-	C-D	0	0				0				
-	C-A	190	47				190					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	993	248	1112	1875	0.530	991	808	0.6	1.1	4.063
	2 - A4229 South	-	1094	274	806	2535	0.432	1093	1297	0.5	0.8	2.496
	3 - M4 West slips	-	733	183	1119	1706	0.430	732	780	0.4	0.7	3.691
	4 - A4229 North	-	1051	263	870	2331	0.451	1050	982	0.5	0.8	2.809
2 - A48_A4229	1 - A48 East	-	843	211	839	2452	0.344	843	845	0.4	0.5	2.235
	2 - A4229 South	-	1045	261	630	2394	0.436	1044	1051	0.5	0.8	2.667
	3 - School Terrace	-	339	85	1246	1708	0.199	339	428	0.2	0.2	2.629
	4 - A48 North	-	1064	266	621	2181	0.488	1062	964	0.6	0.9	3.213
4 - A48_A4106	1 - A48 East	-	1506	377	13	2527	0.596	1504	1450	0.9	1.5	3.512
	2 - A4106 South	-	651	163	819	1223	0.532	649	698	0.7	1.1	6.254
	3 - A48 West	-	833	208	630	2047	0.407	833	838	0.5	0.7	2.964
5 - A4229_B4283	1 - A4229 East	-	1201	300	172	2397	0.501	1200	1145	0.7	1.0	3.004
	2 - Porthcawl Road South	-	165	41	1269	709	0.233	165	103	0.2	0.3	6.603
	3 - A4229 West	-	1212	303	291	2083	0.582	1210	1142	0.9	1.4	4.120
	4 - B4283 North	-	262	66	1056	778	0.337	261	445	0.3	0.5	6.955
7 - Heol Mostyn_A48	-	B-CD	509	127		469	1.086	450		2.9	17.5	102.838
	-	B-AD	83	21		76	1.082	65		0.5	5.0	209.707
	-	A-BCD	9	2		864	0.010	9		0.0	0.0	4.207
	-	A-B	123	31				123				
	-	A-C	517	129				517				
	-	D-ABC	0	0		138	0.000	0		0.0	0.0	0.000
	-	C-ABD	929	232		970	0.958	880		4.1	16.4	41.135
	-	C-D	0	0				0				
-	C-A	41	10				41					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	993	248	1113	1873	0.530	993	809	1.1	1.1	4.088
	2 - A4229 South	-	1094	274	807	2533	0.432	1094	1299	0.8	0.8	2.501
	3 - M4 West slips	-	733	183	1121	1704	0.430	733	781	0.7	0.8	3.706
	4 - A4229 North	-	1051	263	871	2329	0.451	1051	983	0.8	0.8	2.816
2 - A48_A4229	1 - A48 East	-	843	211	840	2451	0.344	843	846	0.5	0.5	2.239
	2 - A4229 South	-	1045	261	631	2393	0.437	1045	1053	0.8	0.8	2.669
	3 - School Terrace	-	339	85	1247	1706	0.199	339	428	0.2	0.2	2.632
	4 - A48 North	-	1064	266	622	2180	0.488	1064	964	0.9	0.9	3.222
4 - A48_A4106	1 - A48 East	-	1506	377	13	2527	0.596	1506	1452	1.5	1.5	3.526
	2 - A4106 South	-	651	163	820	1222	0.532	651	699	1.1	1.1	6.297
	3 - A48 West	-	833	208	632	2046	0.407	833	839	0.7	0.7	2.969
5 - A4229_B4283	1 - A4229 East	-	1201	300	173	2397	0.501	1201	1147	1.0	1.0	3.010
	2 - Porthcawl Road South	-	165	41	1271	708	0.233	165	103	0.3	0.3	6.630
	3 - A4229 West	-	1212	303	292	2082	0.582	1212	1144	1.4	1.4	4.137
	4 - B4283 North	-	262	66	1058	777	0.337	262	446	0.5	0.5	6.986
7 - Heol Mostyn_A48	-	B-CD	509	127		438	1.160	435		17.5	35.8	232.777
	-	B-AD	83	21		78	1.065	73		5.0	7.4	352.297
	-	A-BCD	9	2		855	0.011	9		0.0	0.0	4.258
	-	A-B	123	31				123				
	-	A-C	516	129				516				
	-	D-ABC	0	0		101	0.000	0		0.0	0.0	0.000
	-	C-ABD	929	232		969	0.959	909		16.4	21.4	70.438
-	C-D	0	0				0					
-	C-A	41	10				41					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	811	203	910	2104	0.385	813	662	1.1	0.6	2.792
	2 - A4229 South	-	894	223	660	2721	0.328	895	1063	0.8	0.5	1.971
	3 - M4 West slips	-	599	150	917	1929	0.310	600	638	0.8	0.5	2.710
	4 - A4229 North	-	859	215	712	2522	0.340	860	804	0.8	0.5	2.166
2 - A48_A4229	1 - A48 East	-	689	172	687	2644	0.260	689	691	0.5	0.4	1.843
	2 - A4229 South	-	853	213	516	2522	0.338	854	861	0.8	0.5	2.159
	3 - School Terrace	-	277	69	1020	1982	0.140	277	350	0.2	0.2	2.113
	4 - A48 North	-	868	217	509	2303	0.377	870	788	0.9	0.6	2.516
4 - A48_A4106	1 - A48 East	-	1230	307	11	2528	0.486	1232	1188	1.5	1.0	2.780
	2 - A4106 South	-	531	133	671	1297	0.409	533	572	1.1	0.7	4.721
	3 - A48 West	-	681	170	518	2115	0.322	681	686	0.7	0.5	2.514
5 - A4229_B4283	1 - A4229 East	-	981	245	142	2430	0.404	982	939	1.0	0.7	2.487
	2 - Porthcawl Road South	-	135	34	1039	902	0.149	135	85	0.3	0.2	4.698
	3 - A4229 West	-	990	247	239	2120	0.467	992	936	1.4	0.9	3.198
	4 - B4283 North	-	214	53	866	872	0.245	215	365	0.5	0.3	5.486
7 - Heol Mostyn_A48	-	B-CD	415	104		512	0.812	498		35.8	15.2	190.125
	-	B-AD	67	17		89	0.757	79		7.4	4.6	273.414
	-	A-BCD	5	1		791	0.007	5		0.0	0.0	4.588
	-	A-B	101	25				101				
	-	A-C	423	106				423				
	-	D-ABC	0	0		179	0.000	0		0.0	0.0	0.000
	-	C-ABD	602	151		815	0.739	667		21.4	5.2	36.083
-	C-D	0	0				0					
-	C-A	190	47				190					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	679	170	762	2272	0.299	680	554	0.6	0.4	2.261
	2 - A4229 South	-	748	187	552	2859	0.262	749	889	0.5	0.4	1.708
	3 - M4 West slips	-	501	125	767	2094	0.239	502	534	0.5	0.3	2.263
	4 - A4229 North	-	719	180	596	2663	0.270	720	673	0.5	0.4	1.854
2 - A48_A4229	1 - A48 East	-	577	144	575	2786	0.207	577	579	0.4	0.3	1.629
	2 - A4229 South	-	714	179	432	2616	0.273	715	720	0.5	0.4	1.895
	3 - School Terrace	-	232	58	854	2183	0.106	232	293	0.2	0.1	1.844
	4 - A48 North	-	727	182	426	2392	0.304	728	660	0.6	0.4	2.163
4 - A48_A4106	1 - A48 East	-	1030	257	9	2529	0.407	1031	994	1.0	0.7	2.405
	2 - A4106 South	-	445	111	561	1353	0.329	446	479	0.7	0.5	3.973
	3 - A48 West	-	570	142	433	2166	0.263	570	574	0.5	0.4	2.258
5 - A4229_B4283	1 - A4229 East	-	821	205	118	2455	0.335	822	786	0.7	0.5	2.207
	2 - Porthcawl Road South	-	113	28	870	1044	0.108	113	71	0.2	0.1	3.867
	3 - A4229 West	-	829	207	200	2148	0.386	830	783	0.9	0.6	2.733
	4 - B4283 North	-	179	45	724	941	0.190	180	305	0.3	0.2	4.730
7 - Heol Mostyn_A48	-	B-CD	348	87		570	0.611	402		15.2	1.7	28.220
	-	B-AD	56	14		242	0.234	74		4.6	0.3	23.479
	-	A-BCD	4	0.89		765	0.005	4		0.0	0.0	4.730
	-	A-B	85	21				85				
	-	A-C	355	89				355				
	-	D-ABC	0	0		265	0.000	0		0.0	0.0	0.000
	-	C-ABD	436	109		735	0.594	448		5.2	2.2	13.263
	-	C-D	0	0				0				
-	C-A	227	57				227					

Existing Layout - 2033 Total Traffic, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	4.09	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	2.95	A
4	A48_A4106	Standard Roundabout			1, 2, 3	3.79	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	8.90	A
7	Heol Mostyn_A48	Crossroads	Two-way			11632639.55	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2033 Total Traffic	AM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	728	100.000
	2 - A4229 South		ONE HOUR	✓	1247	100.000
	3 - M4 West slips		ONE HOUR	✓	660	100.000
	4 - A4229 North		ONE HOUR	✓	1274	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	673	100.000
	2 - A4229 South		ONE HOUR	✓	1018	100.000
	3 - School Terrace		ONE HOUR	✓	383	100.000
	4 - A48 North		ONE HOUR	✓	966	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1095	100.000
	2 - A4106 South		ONE HOUR	✓	607	100.000
	3 - A48 West		ONE HOUR	✓	881	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	573	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	939	100.000
	3 - A4229 West		ONE HOUR	✓	197	100.000
	4 - B4283 North		ONE HOUR	✓	1032	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	761	100.000
	B - Heol Mostyn		ONE HOUR	✓	409	100.000
	C - A48 South		ONE HOUR	✓	1009	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	394	6	328
		2 - A4229 South	519	0	316	412
		3 - M4 West slips	4	187	0	469
	4 - A4229 North	368	457	449	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	326	65	282
	2 - A4229 South	438	0	65	515
	3 - School Terrace	97	148	0	138
	4 - A48 North	297	582	87	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	422	673
	2 - A4106 South	553	0	54
	3 - A48 West	837	44	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	197	25	351
	2 - Porthcawl Road South	162	0	89	688
	3 - A4229 West	65	130	0	2
	4 - B4283 North	250	775	7	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	146	613	2
	B - Heol Mostyn	53	0	356	0
	C - A48 South	423	586	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	5	20	7
	2 - A4229 South	6	0	6	5
	3 - M4 West slips	33	16	0	5
	4 - A4229 North	6	4	2	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	4	13	3
	2 - A4229 South	6	0	11	6
	3 - School Terrace	1	0	0	2
	4 - A48 North	4	5	0	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	2	3
	2 - A4106 South	2	0	0
	3 - A48 West	4	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	0	0
	2 - Porthcawl Road South	0	0	19	7
	3 - A4229 West	0	9	0	0
	4 - B4283 North	1	6	0	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	5	2	0
	B - Heol Mostyn	21	0	6	0
	C - A48 South	4	5	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.47	3.97	0.9	A	668	1002
	2 - A4229 South	0.57	3.48	1.3	A	1144	1716
	3 - M4 West slips	0.54	5.71	1.1	A	606	908
	4 - A4229 North	0.60	3.89	1.5	A	1169	1754
2 - A48_A4229	1 - A48 East	0.32	2.27	0.5	A	618	926
	2 - A4229 South	0.44	2.53	0.8	A	934	1401
	3 - School Terrace	0.27	3.10	0.4	A	351	527
	4 - A48 North	0.53	3.80	1.1	A	886	1330
4 - A48_A4106	1 - A48 East	0.49	2.82	0.9	A	1005	1507
	2 - A4106 South	0.53	6.17	1.1	A	557	835
	3 - A48 West	0.48	3.37	0.9	A	808	1213
5 - A4229_B4283	1 - A4229 East	0.27	2.07	0.4	A	526	789
	2 - Porthcawl Road South	0.72	8.74	2.5	A	862	1292
	3 - A4229 West	0.16	3.12	0.2	A	181	271
	4 - B4283 North	0.81	13.80	4.2	B	947	1420

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	999999999.00	59999940.00	345.1	F	327	490
	B-AD	999999999.00	59999940.00	51.9	F	49	73
	A-BCD	0.07	6.21	0.1	A	23	35
	A-B					130	195
	A-C					545	818
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	1.55	1241.73	273.5	F	910	1364
	C-D					0	0
C-A					16	24	

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	548	137	821	2151	0.255	547	669	0.0	0.3	2.241
	2 - A4229 South	-	939	235	588	2746	0.342	937	779	0.0	0.5	1.988
	3 - M4 West slips	-	497	124	946	1832	0.271	495	579	0.0	0.4	2.692
	4 - A4229 North	-	959	240	533	2643	0.363	957	908	0.0	0.6	2.133
2 - A48_A4229	1 - A48 East	-	507	127	614	2687	0.189	506	625	0.0	0.2	1.650
	2 - A4229 South	-	766	192	326	2711	0.283	765	793	0.0	0.4	1.847
	3 - School Terrace	-	288	72	928	2108	0.137	288	163	0.0	0.2	1.977
	4 - A48 North	-	727	182	513	2265	0.321	725	703	0.0	0.5	2.335
4 - A48_A4106	1 - A48 East	-	824	206	33	2490	0.331	822	1043	0.0	0.5	2.155
	2 - A4106 South	-	457	114	505	1369	0.334	455	350	0.0	0.5	3.929
	3 - A48 West	-	663	166	415	2157	0.308	661	546	0.0	0.4	2.404
5 - A4229_B4283	1 - A4229 East	-	431	108	683	2691	0.160	431	357	0.0	0.2	1.592
	2 - Porthcawl Road South	-	707	177	288	1524	0.464	703	826	0.0	0.9	4.369
	3 - A4229 West	-	148	37	901	1681	0.088	148	91	0.0	0.1	2.348
	4 - B4283 North	-	777	194	268	1467	0.529	772	781	0.0	1.1	5.148
7 - Heol Mostyn_A48	-	B-CD	268	67		525	0.510	264		0.0	1.0	59999940
	-	B-AD	40	10		169	0.235	39		0.0	0.3	59999940
	-	A-BCD	5	1		837	0.006	5		0.0	0.0	4.324
	-	A-B	109	27				109				
	-	A-C	459	115				459				
	-	D-ABC	0	0		242	0.000	0		0.0	0.0	0.000
	-	C-ABD	711	178		774	0.918	671		0.0	10.0	32.41
	-	C-D	0	0				0				
-	C-A	49	12				49					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	654	164	982	1965	0.333	654	800	0.3	0.5	2.743
	2 - A4229 South	-	1121	280	703	2603	0.431	1120	932	0.5	0.8	2.426
	3 - M4 West slips	-	593	148	1131	1632	0.364	593	692	0.4	0.6	3.462
	4 - A4229 North	-	1145	286	638	2510	0.456	1144	1086	0.6	0.8	2.631
2 - A48_A4229	1 - A48 East	-	605	151	734	2536	0.239	605	747	0.2	0.3	1.863
	2 - A4229 South	-	915	229	390	2639	0.347	915	949	0.4	0.5	2.087
	3 - School Terrace	-	344	86	1110	1887	0.183	344	195	0.2	0.2	2.333
	4 - A48 North	-	868	217	614	2158	0.402	868	840	0.5	0.7	2.789
4 - A48_A4106	1 - A48 East	-	984	246	40	2486	0.396	984	1248	0.5	0.7	2.394
	2 - A4106 South	-	546	136	605	1320	0.413	545	419	0.5	0.7	4.641
	3 - A48 West	-	792	198	496	2107	0.376	791	653	0.4	0.6	2.734
5 - A4229_B4283	1 - A4229 East	-	515	129	818	2555	0.202	515	428	0.2	0.3	1.764
	2 - Porthcawl Road South	-	844	211	344	1491	0.566	842	988	0.9	1.3	5.538
	3 - A4229 West	-	177	44	1078	1549	0.114	177	109	0.1	0.1	2.622
	4 - B4283 North	-	928	232	321	1437	0.646	925	934	1.1	1.8	6.995
7 - Heol Mostyn_A48	-	B-CD	320	80		462	0.693	316		1.0	2.1	59999940
	-	B-AD	48	12		97	0.490	45		0.3	0.8	59999940
	-	A-BCD	8	2		887	0.009	8		0.0	0.0	4.090
	-	A-B	130	33				130				
	-	A-C	546	137				546				
	-	D-ABC	0	0		172	0.000	0		0.0	0.0	0.000
	-	C-ABD	907	227		781	1.161	767		10.0	45.0	140.21
	-	C-D	0	0				0				
-	C-A	0	0				0					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	802	200	1201	1712	0.468	800	979	0.5	0.9	
	2 - A4229 South	-	1373	343	860	2408	0.570	1371	1140	0.8	1.3	
	3 - M4 West slips	-	727	182	1384	1359	0.535	724	847	0.6	1.1	
	4 - A4229 North	-	1403	351	780	2330	0.602	1400	1328	0.8	1.5	
2 - A48_A4229	1 - A48 East	-	741	185	898	2331	0.318	740	915	0.3	0.5	
	2 - A4229 South	-	1121	280	477	2542	0.441	1120	1161	0.5	0.8	
	3 - School Terrace	-	422	105	1359	1583	0.266	421	239	0.2	0.4	
	4 - A48 North	-	1064	266	751	2011	0.529	1062	1028	0.7	1.1	
4 - A48_A4106	1 - A48 East	-	1206	301	48	2481	0.486	1204	1528	0.7	0.9	
	2 - A4106 South	-	668	167	740	1252	0.534	667	513	0.7	1.1	
	3 - A48 West	-	970	243	607	2040	0.476	969	800	0.6	0.9	
5 - A4229_B4283	1 - A4229 East	-	631	158	997	2374	0.266	630	522	0.3	0.4	
	2 - Porthcawl Road South	-	1034	258	421	1445	0.715	1029	1206	1.3	2.4	
	3 - A4229 West	-	217	54	1318	1372	0.158	217	133	0.1	0.2	
	4 - B4283 North	-	1136	284	392	1396	0.814	1127	1143	1.8	4.1	
7 - Heol Mostyn_A48	-	B-CD	392	98		0	999999999.000	0		2.1	100.1	
	-	B-AD	58	15		0	999999999.000	0		0.8	15.4	
	-	A-BCD	18	4		955	0.019	18		0.0	0.0	
	-	A-B	158	39				158				
	-	A-C	662	166				662				
	-	D-ABC	0	0		0	0.000	0		0.0	0.0	
	-	C-ABD	1111	278		717	1.548	717		45.0	143.5	
	-	C-D	0	0				0				
-	C-A	0	0				0					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)
1 - M4 J37	1 - M4 East Slips	-	802	200	1203	1709	0.469	802	981	0.9	0.9
	2 - A4229 South	-	1373	343	862	2406	0.571	1373	1143	1.3	1.3
	3 - M4 West slips	-	727	182	1386	1357	0.536	727	849	1.1	1.1
	4 - A4229 North	-	1403	351	782	2328	0.603	1403	1331	1.5	1.5
2 - A48_A4229	1 - A48 East	-	741	185	900	2329	0.318	741	916	0.5	0.5
	2 - A4229 South	-	1121	280	478	2541	0.441	1121	1163	0.8	0.8
	3 - School Terrace	-	422	105	1360	1582	0.267	422	239	0.4	0.4
	4 - A48 North	-	1064	266	752	2010	0.529	1064	1029	1.1	1.1
4 - A48_A4106	1 - A48 East	-	1206	301	48	2481	0.486	1206	1530	0.9	0.9
	2 - A4106 South	-	668	167	741	1252	0.534	668	513	1.1	1.1
	3 - A48 West	-	970	243	609	2039	0.476	970	800	0.9	0.9
5 - A4229_B4283	1 - A4229 East	-	631	158	1004	2367	0.267	631	525	0.4	0.4
	2 - Porthcawl Road South	-	1034	258	422	1445	0.715	1034	1213	2.4	2.5
	3 - A4229 West	-	217	54	1322	1369	0.158	217	133	0.2	0.2
	4 - B4283 North	-	1136	284	393	1395	0.815	1136	1146	4.1	4.2
7 - Heol Mostyn_A48	-	B-CD	392	98		0	999999999.000	0		100.1	198.1
	-	B-AD	58	15		0	999999999.000	0		15.4	30.0
	-	A-BCD	36	9		890	0.040	36		0.0	0.1
	-	A-B	154	39				154			
	-	A-C	648	162				648			
	-	D-ABC	0	0		0	0.000	0		0.0	0.0
	-	C-ABD	1111	278		717	1.548	717		143.5	242.0
	-	C-D	0	0				0			
-	C-A	0	0				0				

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)
1 - M4 J37	1 - M4 East Slips	-	654	164	985	1961	0.334	656	803	0.9	0.5
	2 - A4229 South	-	1121	280	706	2600	0.431	1123	936	1.3	0.8
	3 - M4 West slips	-	593	148	1134	1628	0.364	596	695	1.1	0.6
	4 - A4229 North	-	1145	286	640	2507	0.457	1148	1090	1.5	0.8
2 - A48_A4229	1 - A48 East	-	605	151	736	2534	0.239	606	749	0.5	0.3
	2 - A4229 South	-	915	229	391	2639	0.347	916	951	0.8	0.5
	3 - School Terrace	-	344	86	1111	1884	0.183	345	195	0.4	0.2
	4 - A48 North	-	868	217	615	2157	0.403	870	842	1.1	0.7
4 - A48_A4106	1 - A48 East	-	984	246	40	2486	0.396	986	1252	0.9	0.7
	2 - A4106 South	-	546	136	606	1319	0.414	547	419	1.1	0.7
	3 - A48 West	-	792	198	499	2106	0.376	793	654	0.9	0.6
5 - A4229_B4283	1 - A4229 East	-	515	129	827	2545	0.202	516	432	0.4	0.3
	2 - Porthcawl Road South	-	844	211	345	1490	0.566	849	998	2.5	1.3
	3 - A4229 West	-	177	44	1084	1545	0.115	177	109	0.2	0.1
	4 - B4283 North	-	928	232	322	1436	0.646	937	939	4.2	1.9
7 - Heol Mostyn_A48	-	B-CD	320	80		0	999999999.000	0		198.1	278.1
	-	B-AD	48	12		0	999999999.000	0		30.0	41.9
	-	A-BCD	47	12		710	0.066	47		0.1	0.1
	-	A-B	123	31				123			
	-	A-C	515	129				515			
	-	D-ABC	0	0		0	0.000	0		0.0	0.0
	-	C-ABD	907	227		781	1.161	781		242.0	273.5
	-	C-D	0	0				0			
-	C-A	0	0				0				

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)
1 - M4 J37	1 - M4 East Slips	-	548	137	824	2148	0.255	549	672	0.5	0.3
	2 - A4229 South	-	939	235	590	2744	0.342	940	782	0.8	0.5
	3 - M4 West slips	-	497	124	949	1828	0.272	498	581	0.6	0.4
	4 - A4229 North	-	959	240	535	2640	0.363	960	911	0.8	0.6
2 - A48_A4229	1 - A48 East	-	507	127	616	2684	0.189	507	627	0.3	0.2
	2 - A4229 South	-	766	192	327	2710	0.283	767	796	0.5	0.4
	3 - School Terrace	-	288	72	930	2105	0.137	289	164	0.2	0.2
	4 - A48 North	-	727	182	515	2264	0.321	728	704	0.7	0.5
4 - A48_A4106	1 - A48 East	-	824	206	33	2490	0.331	825	1048	0.7	0.5
	2 - A4106 South	-	457	114	507	1368	0.334	458	351	0.7	0.5
	3 - A48 West	-	663	166	417	2155	0.308	664	548	0.6	0.4
5 - A4229_B4283	1 - A4229 East	-	431	108	689	2685	0.161	432	360	0.3	0.2
	2 - Porthcawl Road South	-	707	177	289	1524	0.464	709	832	1.3	0.9
	3 - A4229 West	-	148	37	906	1677	0.088	148	91	0.1	0.1
	4 - B4283 North	-	777	194	269	1467	0.530	780	785	1.9	1.1
7 - Heol Mostyn_A48	-	B-CD	268	67		0	999999999.000	0		278.1	345.1
	-	B-AD	40	10		0	999999999.000	0		41.9	51.9
	-	A-BCD	27	7		607	0.044	27		0.1	0.1
	-	A-B	105	26				105			
	-	A-C	441	110				441			
	-	D-ABC	0	0		0	0.000	0		0.0	0.0
	-	C-ABD	711	178		774	0.919	778		273.5	256.6
	-	C-D	0	0				0			
-	C-A	49	12				49				

Existing Layout - 2033 Total Traffic, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - A48_A4229 - 3 - School Terrace - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Large Roundabout	1 - M4 J37 - 1 - M4 East Slips - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.
Warning	Large Roundabout	2 - A48_A4229 - 1 - A48 East - Large roundabout data	Large Roundabout Circulating Flow is zero for one or more arms.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M4 J37	Large Roundabout			1, 2, 3, 4	4.72	A
2	A48_A4229	Large Roundabout			1, 2, 3, 4	3.20	A
4	A48_A4106	Standard Roundabout			1, 2, 3	4.68	A
5	A4229_B4283	Standard Roundabout			1, 2, 3, 4	5.03	A
7	Heol Mostyn_A48	Crossroads	Two-way			391.13	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Junction	Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - M4 J37	1 - M4 East Slips	0	0.00
	2 - A4229 South	0	0.00
	3 - M4 West slips	0	0.00
	4 - A4229 North	0	0.00
2 - A48_A4229	1 - A48 East	0	0.00
	2 - A4229 South	0	0.00
	3 - School Terrace	0	0.00
	4 - A48 North	0	0.00

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2033 Total Traffic	PM	ONE HOUR	00:00	01:30	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - M4 J37	1 - M4 East Slips		ONE HOUR	✓	971	100.000
	2 - A4229 South		ONE HOUR	✓	1174	100.000
	3 - M4 West slips		ONE HOUR	✓	717	100.000
	4 - A4229 North		ONE HOUR	✓	1251	100.000
2 - A48_A4229	1 - A48 East		ONE HOUR	✓	826	100.000
	2 - A4229 South		ONE HOUR	✓	1072	100.000
	3 - School Terrace		ONE HOUR	✓	331	100.000
	4 - A48 North		ONE HOUR	✓	1109	100.000
4 - A48_A4106	1 - A48 East		ONE HOUR	✓	1473	100.000
	2 - A4106 South		ONE HOUR	✓	637	100.000
	3 - A48 West		ONE HOUR	✓	917	100.000
5 - A4229_B4283	1 - A4229 East		ONE HOUR	✓	1175	100.000
	2 - Porthcawl Road South		ONE HOUR	✓	162	100.000
	3 - A4229 West		ONE HOUR	✓	1185	100.000
	4 - B4283 North		ONE HOUR	✓	417	100.000
7 - Heol Mostyn_A48	A - A48 North		ONE HOUR	✓	691	100.000
	B - Heol Mostyn		ONE HOUR	✓	578	100.000
	C - A48 South		ONE HOUR	✓	1032	100.000
	D - Minor access (unclassified)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To				
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North	
1 - M4 J37	From					
		1 - M4 East Slips	0	619	5	347
		2 - A4229 South	495	0	254	425
		3 - M4 West slips	2	294	0	421
	4 - A4229 North	298	445	508	0	

Demand (Veh/hr)

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	366	133	327
	2 - A4229 South	410	0	116	546
	3 - School Terrace	80	98	0	153
	4 - A48 North	348	588	173	0

Demand (Veh/hr)

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	623	850
	2 - A4106 South	574	0	63
	3 - A48 West	853	64	0

Demand (Veh/hr)

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	82	887	206
	2 - Porthcawl Road South	98	0	7	57
	3 - A4229 West	861	2	0	322
	4 - B4283 North	169	18	230	0

Demand (Veh/hr)

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	113	576	2
	B - Heol Mostyn	75	0	503	0
	C - A48 South	577	455	0	0
	D - Minor access (unclassified)	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

1 - M4 J37

		To			
		1 - M4 East Slips	2 - A4229 South	3 - M4 West slips	4 - A4229 North
From	1 - M4 East Slips	0	2	0	9
	2 - A4229 South	1	0	4	3
	3 - M4 West slips	0	4	0	5
	4 - A4229 North	2	1	1	0

Heavy Vehicle Percentages

2 - A48_A4229

		To			
		1 - A48 East	2 - A4229 South	3 - School Terrace	4 - A48 North
From	1 - A48 East	0	1	6	3
	2 - A4229 South	4	0	0	7
	3 - School Terrace	3	1	0	1
	4 - A48 North	1	3	1	0

Heavy Vehicle Percentages

4 - A48_A4106

		To		
		1 - A48 East	2 - A4106 South	3 - A48 West
From	1 - A48 East	0	0	3
	2 - A4106 South	1	0	0
	3 - A48 West	2	0	0

Heavy Vehicle Percentages

5 - A4229_B4283

		To			
		1 - A4229 East	2 - Porthcawl Road South	3 - A4229 West	4 - B4283 North
From	1 - A4229 East	0	1	21	2
	2 - Porthcawl Road South	0	0	6	6
	3 - A4229 West	9	3	0	0
	4 - B4283 North	1	4	50	0

Heavy Vehicle Percentages

7 - Heol Mostyn_A48

		To			
		A - A48 North	B - Heol Mostyn	C - A48 South	D - Minor access (unclassified)
From	A - A48 North	0	3	1	0
	B - Heol Mostyn	2	0	2	0
	C - A48 South	1	3	0	0
	D - Minor access (unclassified)	0	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - M4 J37	1 - M4 East Slips	0.67	6.91	2.0	A	891	1337
	2 - A4229 South	0.54	3.32	1.2	A	1077	1616
	3 - M4 West slips	0.55	5.66	1.2	A	658	987
	4 - A4229 North	0.59	3.73	1.4	A	1148	1722
2 - A48_A4229	1 - A48 East	0.39	2.54	0.6	A	758	1137
	2 - A4229 South	0.51	3.13	1.0	A	984	1476
	3 - School Terrace	0.24	3.13	0.3	A	304	456
	4 - A48 North	0.56	3.79	1.3	A	1018	1526
4 - A48_A4106	1 - A48 East	0.65	4.15	1.9	A	1352	2027
	2 - A4106 South	0.60	7.76	1.5	A	585	877
	3 - A48 West	0.49	3.40	1.0	A	841	1262
5 - A4229_B4283	1 - A4229 East	0.50	2.78	1.0	A	1078	1617
	2 - Porthcawl Road South	0.27	7.40	0.4	A	149	223
	3 - A4229 West	0.64	4.85	1.7	A	1087	1631
	4 - B4283 North	0.57	10.46	1.3	B	383	574

Results Summary for whole modelled period

Junction	Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
7 - Heol Mostyn_A48	B-CD	1.98	1143.84	137.0	F	462	692
	B-AD	1.91	1210.62	21.0	F	69	103
	A-BCD	0.02	4.69	0.0	A	8	12
	A-B					103	154
	A-C					523	785
	D-ABC	0.00	0.00	0.0	A	0	0
	C-ABD	1.12	258.10	79.5	F	823	1235
	C-D					0	0
	C-A					124	186

Main Results for each time segment

00:00 - 00:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	731	183	937	2084	0.351	729	597	0.0	0.5	2.652
	2 - A4229 South	-	884	221	646	2761	0.320	882	1020	0.0	0.5	1.913
	3 - M4 West slips	-	540	135	952	1911	0.282	538	576	0.0	0.4	2.621
	4 - A4229 North	-	942	235	594	2680	0.351	940	896	0.0	0.5	2.066
2 - A48_A4229	1 - A48 East	-	622	155	645	2705	0.230	621	629	0.0	0.3	1.727
	2 - A4229 South	-	807	202	476	2577	0.313	805	790	0.0	0.5	2.030
	3 - School Terrace	-	249	62	964	2057	0.121	249	317	0.0	0.1	1.990
	4 - A48 North	-	835	209	442	2394	0.349	833	771	0.0	0.5	2.302
4 - A48_A4106	1 - A48 East	-	1109	277	48	2502	0.443	1106	1071	0.0	0.8	2.572
	2 - A4106 South	-	480	120	638	1315	0.365	477	516	0.0	0.6	4.287
	3 - A48 West	-	690	173	430	2191	0.315	689	685	0.0	0.5	2.393
5 - A4229_B4283	1 - A4229 East	-	885	221	187	2693	0.328	883	846	0.0	0.5	1.987
	2 - Porthcawl Road South	-	122	30	993	1016	0.120	121	77	0.0	0.1	4.021
	3 - A4229 West	-	892	223	271	2138	0.417	889	844	0.0	0.7	2.877
	4 - B4283 North	-	314	78	721	970	0.324	312	439	0.0	0.5	5.460
7 - Heol Mostyn_A48	-	B-CD	379	95		556	0.681	371		0.0	2.0	18.665
	-	B-AD	56	14		214	0.264	55		0.0	0.3	22.430
	-	A-BCD	4	1		806	0.005	4		0.0	0.0	4.488
	-	A-B	85	21				85				
	-	A-C	431	108				431				
	-	D-ABC	0	0		236	0.000	0		0.0	0.0	0.000
	-	C-ABD	545	136		803	0.679	533		0.0	3.1	13.190
	-	C-D	0	0				0				
-	C-A	232	58				232					

00:15 - 00:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	873	218	1120	1876	0.465	872	714	0.5	0.9	3.579
	2 - A4229 South	-	1055	264	772	2599	0.406	1055	1219	0.5	0.7	2.330
	3 - M4 West slips	-	645	161	1138	1707	0.378	644	689	0.4	0.6	3.382
	4 - A4229 North	-	1125	281	710	2538	0.443	1124	1071	0.5	0.8	2.545
2 - A48_A4229	1 - A48 East	-	743	186	772	2545	0.292	742	753	0.3	0.4	1.996
	2 - A4229 South	-	964	241	569	2473	0.390	963	945	0.5	0.6	2.383
	3 - School Terrace	-	298	74	1153	1829	0.163	297	379	0.1	0.2	2.350
	4 - A48 North	-	997	249	528	2301	0.433	996	922	0.5	0.8	2.758
4 - A48_A4106	1 - A48 East	-	1324	331	57	2497	0.530	1323	1281	0.8	1.1	3.065
	2 - A4106 South	-	573	143	763	1252	0.457	572	617	0.6	0.8	5.283
	3 - A48 West	-	824	206	515	2139	0.385	824	820	0.5	0.6	2.736
5 - A4229_B4283	1 - A4229 East	-	1056	264	224	2649	0.399	1056	1013	0.5	0.7	2.258
	2 - Porthcawl Road South	-	146	36	1188	868	0.168	145	92	0.1	0.2	4.980
	3 - A4229 West	-	1065	266	324	2100	0.507	1064	1009	0.7	1.0	3.471
	4 - B4283 North	-	375	94	863	899	0.417	374	525	0.5	0.7	6.837
7 - Heol Mostyn_A48	-	B-CD	452	113		504	0.897	437		2.0	5.8	45.571
	-	B-AD	67	17		109	0.620	63		0.3	1.3	74.284
	-	A-BCD	7	2		853	0.008	7		0.0	0.0	4.251
	-	A-B	101	25				101				
	-	A-C	514	128				514				
	-	D-ABC	0	0		167	0.000	0		0.0	0.0	0.000
	-	C-ABD	788	197		925	0.852	766		3.1	8.4	23.672
-	C-D	0	0				0					
-	C-A	140	35				140					

00:30 - 00:45

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	1069	267	1370	1592	0.671	1065	874	0.9	2.0	6.762
	2 - A4229 South	-	1293	323	944	2379	0.543	1291	1490	0.7	1.2	3.303
	3 - M4 West slips	-	789	197	1392	1429	0.553	787	843	0.6	1.2	5.588
	4 - A4229 North	-	1377	344	869	2344	0.588	1375	1310	0.8	1.4	3.706
2 - A48_A4229	1 - A48 East	-	909	227	944	2328	0.391	909	921	0.4	0.6	2.535
	2 - A4229 South	-	1180	295	696	2330	0.507	1179	1157	0.6	1.0	3.123
	3 - School Terrace	-	364	91	1411	1516	0.240	364	464	0.2	0.3	3.121
	4 - A48 North	-	1221	305	647	2172	0.562	1219	1128	0.8	1.3	3.768
4 - A48_A4106	1 - A48 East	-	1622	405	70	2488	0.652	1619	1568	1.1	1.8	4.125
	2 - A4106 South	-	701	175	934	1166	0.602	699	755	0.8	1.5	7.666
	3 - A48 West	-	1010	252	630	2069	0.488	1008	1003	0.6	0.9	3.390
5 - A4229_B4283	1 - A4229 East	-	1294	323	274	2589	0.500	1292	1239	0.7	1.0	2.774
	2 - Porthcawl Road South	-	178	45	1454	667	0.268	178	112	0.2	0.4	7.355
	3 - A4229 West	-	1305	326	397	2047	0.637	1302	1235	1.0	1.7	4.810
	4 - B4283 North	-	459	115	1056	804	0.571	457	643	0.7	1.3	10.290
7 - Heol Mostyn_A48	-	B-CD	554	138		363	1.524	361		5.8	54.0	350.322
	-	B-AD	83	21		55	1.491	52		1.3	9.0	483.279
	-	A-BCD	12	3		926	0.013	12		0.0	0.0	3.939
	-	A-B	123	31				123				
	-	A-C	626	156				626				
	-	D-ABC	0	0		0	0.000	0		0.0	0.0	0.000
	-	C-ABD	1136	284		1012	1.123	984		8.4	46.5	104.490
-	C-D	0	0				0					
-	C-A	0	0				0					

00:45 - 01:00

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	1069	267	1373	1589	0.673	1069	875	2.0	2.0	6.915
	2 - A4229 South	-	1293	323	947	2375	0.544	1293	1495	1.2	1.2	3.324
	3 - M4 West slips	-	789	197	1395	1425	0.554	789	844	1.2	1.2	5.660
	4 - A4229 North	-	1377	344	871	2342	0.588	1377	1313	1.4	1.4	3.732
2 - A48_A4229	1 - A48 East	-	909	227	946	2326	0.391	909	923	0.6	0.6	2.540
	2 - A4229 South	-	1180	295	697	2329	0.507	1180	1158	1.0	1.0	3.133
	3 - School Terrace	-	364	91	1413	1514	0.241	364	465	0.3	0.3	3.130
	4 - A48 North	-	1221	305	647	2171	0.562	1221	1130	1.3	1.3	3.787
4 - A48_A4106	1 - A48 East	-	1622	405	70	2488	0.652	1622	1571	1.8	1.9	4.153
	2 - A4106 South	-	701	175	936	1165	0.602	701	756	1.5	1.5	7.761
	3 - A48 West	-	1010	252	632	2067	0.488	1010	1005	0.9	1.0	3.402
5 - A4229_B4283	1 - A4229 East	-	1294	323	275	2587	0.500	1294	1242	1.0	1.0	2.782
	2 - Porthcawl Road South	-	178	45	1457	665	0.268	178	112	0.4	0.4	7.404
	3 - A4229 West	-	1305	326	397	2047	0.637	1305	1237	1.7	1.7	4.850
	4 - B4283 North	-	459	115	1058	803	0.572	459	644	1.3	1.3	10.459
7 - Heol Mostyn_A48	-	B-CD	554	138		280	1.980	280		54.0	122.5	942.861
	-	B-AD	83	21		43	1.914	43		9.0	19.0	1041.840
	-	A-BCD	14	4		900	0.016	14		0.0	0.0	4.060
	-	A-B	122	31				122				
	-	A-C	624	156				624				
	-	D-ABC	0	0		0	0.000	0		0.0	0.0	0.000
	-	C-ABD	1136	284		1011	1.123	1004		46.5	79.6	235.527
-	C-D	0	0				0					
-	C-A	0	0				0					

01:00 - 01:15

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	873	218	1124	1871	0.466	878	716	2.0	0.9	3.637
	2 - A4229 South	-	1055	264	776	2594	0.407	1057	1226	1.2	0.7	2.346
	3 - M4 West slips	-	645	161	1142	1702	0.379	647	691	1.2	0.6	3.419
	4 - A4229 North	-	1125	281	713	2534	0.444	1127	1076	1.4	0.8	2.563
2 - A48_A4229	1 - A48 East	-	743	186	774	2543	0.292	743	755	0.6	0.4	2.003
	2 - A4229 South	-	964	241	570	2472	0.390	965	947	1.0	0.6	2.391
	3 - School Terrace	-	298	74	1155	1826	0.163	298	380	0.3	0.2	2.356
	4 - A48 North	-	997	249	529	2299	0.434	999	924	1.3	0.8	2.774
4 - A48_A4106	1 - A48 East	-	1324	331	58	2496	0.530	1327	1286	1.9	1.1	3.085
	2 - A4106 South	-	573	143	766	1251	0.458	575	619	1.5	0.9	5.349
	3 - A48 West	-	824	206	518	2137	0.386	826	823	1.0	0.6	2.747
5 - A4229_B4283	1 - A4229 East	-	1056	264	226	2646	0.399	1058	1017	1.0	0.7	2.267
	2 - Porthcawl Road South	-	146	36	1192	865	0.168	146	92	0.4	0.2	5.012
	3 - A4229 West	-	1065	266	325	2099	0.508	1068	1013	1.7	1.0	3.501
	4 - B4283 North	-	375	94	866	898	0.418	377	527	1.3	0.7	6.946
7 - Heol Mostyn_A48	-	B-CD	452	113		394	1.146	394		122.5	137.0	1143.837
	-	B-AD	67	17		60	1.123	59		19.0	21.0	1210.620
	-	A-BCD	8	2		795	0.010	8		0.0	0.0	4.577
	-	A-B	101	25				101				
	-	A-C	512	128				512				
	-	D-ABC	0	0		0	0.000	0		0.0	0.0	0.000
	-	C-ABD	788	197		924	0.853	948		79.6	39.5	258.098
-	C-D	0	0				0					
-	C-A	140	35				140					

01:15 - 01:30

Junction	Arm	Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)
1 - M4 J37	1 - M4 East Slips	-	731	183	940	2080	0.351	732	599	0.9	0.5	2.675
	2 - A4229 South	-	884	221	648	2758	0.321	885	1024	0.7	0.5	1.924
	3 - M4 West slips	-	540	135	955	1907	0.283	541	578	0.6	0.4	2.637
	4 - A4229 North	-	942	235	596	2677	0.352	943	899	0.8	0.5	2.078
2 - A48_A4229	1 - A48 East	-	622	155	647	2702	0.230	622	632	0.4	0.3	1.733
	2 - A4229 South	-	807	202	477	2576	0.313	808	793	0.6	0.5	2.038
	3 - School Terrace	-	249	62	967	2054	0.121	249	318	0.2	0.1	1.995
	4 - A48 North	-	835	209	443	2393	0.349	836	773	0.8	0.5	2.314
4 - A48_A4106	1 - A48 East	-	1109	277	48	2502	0.443	1110	1076	1.1	0.8	2.588
	2 - A4106 South	-	480	120	641	1314	0.365	481	518	0.9	0.6	4.327
	3 - A48 West	-	690	173	433	2189	0.315	691	688	0.6	0.5	2.404
5 - A4229_B4283	1 - A4229 East	-	885	221	189	2691	0.329	885	851	0.7	0.5	1.995
	2 - Porthcawl Road South	-	122	30	997	1013	0.120	122	77	0.2	0.1	4.044
	3 - A4229 West	-	892	223	272	2137	0.417	893	847	1.0	0.7	2.898
	4 - B4283 North	-	314	78	725	968	0.324	315	441	0.7	0.5	5.521
7 - Heol Mostyn_A48	-	B-CD	379	95		480	0.789	477		137.0	112.5	942.937
	-	B-AD	56	14		73	0.775	70		21.0	17.8	1009.319
	-	A-BCD	5	1		773	0.006	5		0.0	0.0	4.692
	-	A-B	85	21				85				
	-	A-C	431	108				431				
	-	D-ABC	0	0		0	0.000	0		0.0	0.0	0.000
	-	C-ABD	545	136		802	0.680	688		39.5	3.8	67.284
	-	C-D	0	0				0				
-	C-A	232	58				232					

