APPENDIX 10.1

Welsh Government

Proposed residential development and 2-form entry Primary School at Upper Cosmeston Farm, Penarth

Transport Assessment for Planning Submission

August 2020

Applicant:	Welsh Government
Project no:	T18.164
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Project name:	Upper Cosmeston Farm

Offices at:

Unit 9, Oak Tree Court
Mulberry Drive,
Cardiff Gate Business Park,
Cardiff, CF23 8RS
Tel: 029 2073 2652

Suite D, 1st Floor,
220 High Street,
Swansea,
SA1 1NW
Tel: 01792 480535

P O'Connor / D Cooke / K Watkins

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1.0 INTRODUCTION

1.1 Background

1.1.1 Asbri Transport Limited have been appointed by Welsh Government to produce a Transport Assessment to accompany an outline planning application for the construction of a new residential development of up to 576 dwellings and provision for an accompanying 2-form entry Primary School.

1.1.2 This report accounts for comments received from the Highway Authority (dated 23 January 2020) on the Transport Assessment that accompanied the pre-application consultation process. A summary of scoping dialogue with the Highway Authority is detailed below.

1.1.3 The planning application site is located on 25.2 ha of Welsh Government owned land located along the southern fringes of Penarth, referred to as Upper Cosmeston Farm. The application site is allocated in the Vale of Glamorgan Local Development Plan as a Greenfield site for development.

1.1.4 The proposed development site is located approximately 2.5km south of Penarth town centre on greenfield land. It is anticipated that the residential dwellings associated with the site will be of a mixed tenure with 50% privately owned and 50% affordable.

1.1.5 The Local Development Plan also references the provision of a new primary and nursery school at the site. This Transport Assessment has accounted for the movement implications of a 2-form entry Primary school located on the southern sector of the application site.

1.1.6 The masterplan for the development proposals has been designed to ensure the redeveloped area will be permeable to sustainable movement on foot and by bicycle and that connectivity to the bus network is enhanced. The access strategy allows for safe and efficient movement to and from the development by active travel modes.

1.1.7 There have been two public consultation events which have been attended by Asbri Transport Limited. The proposed access strategy for the development and its wider transport and movement implications were discussed with members of the public.

1.1.8 In addition to this Transport Assessment, which includes a documented Transportation Implementation Strategy, the planning application submission is also accompanied by a comprehensive Travel Plan. It is considered that the implementation of a Travel Plan will be incumbent (by way of a planning condition) on the housing developers who implement any detailed planning permissions in due course. An interim Travel Plan has also been prepared for the proposed Primary School.

1.1.9 The planning application is accompanied by an Environmental Statement which includes a Traffic and Transport chapter. This Transport Assessment is a Technical Appendix to the Environmental Statement.

1.2 Purpose of the report

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

1.2.2 As detailed this report also addresses comments issued by the Highway Authority on the Transport Assessment that accompanied PAC process.

1.3 Scoping of the Transport Assessment Report

1.3.1 A scoping report detailing the proposed methodology for the TA was submitted to the Local Highway Authority in November 2018, this is attached in full at **Appendix A**.

1.3.2 Officers of the Highway Authority and their appointed highways consultant attended a pre-application meeting with the LPA, the development's project team and client on 22nd January 2019.

1.3.3 A response from the Highway Authority was subsequently received on 6th March 2019 which was included in the pre-application response letter from the Local Planning Authority. In the letter dated 6th March the Highway Authority stated the following:

'In general, based on the scoping note and discussions held during the meeting, I do not consider there to be any contentious items or proposals (from a transport perspective). The proposed methodology and approach is robust and commensurate for a development of this size.'

1.3.4 The pre-application response also stated that the possible future-proofing of the development's access strategy should be considered in terms of possible provision of spare operational capacity. The response also requested that the proposed active travel route through residential area of the site provides direct access to the school site.

1.3.5 In addition to the highways and transport content of the pre-application response letter, several specific comments were made on aspects of the TA scoping report. These comments have been considered and addressed within the TA.

1.3.6 The pre-application response letter also stated the following:

> '*Having regard to the cost of providing and upgrading sustainable transport facilities, the Council's Planning Obligations SPG provides a basis to consider the type of contribution that may be likely to mitigate the impacts of a development of this size. This is a key aim embodied in national and local planning and transport policies, which the Council is keen to deliver. In this case, a sustainable transport contribution will be required to ensure that the site is sufficiently accessible by a range of modes of transport other than the private car, such that it may be considered a sustainable site. This is likely to equate to £1,324,800'.*

1.3.7 The pre-application response received from the Local Planning Authority is included in full at **Appendix B.**

1.3.8 Asbri Transport have also engaged informally with officers of the Highway Authority on various transport matters during the period leading to the planning submission.

1.3.9 There were discussions with officers of the Highway Authority in April 2019 regarding the impact of the proposals on the local highway network as well as signal timing data for the signalised junctions along the highway network which have been modelled as part of this assessment.

1.3.10 There has also been pre-application liaison with Passenger Transport officers regarding the provision of new bus stops on the development's frontage and public transport matters generally. This has also included specific discussion about bus movement into the development site.

1.3.11 Similarly, there has been discussion on the nature of the Active Travel infrastructure and improvements that are proposed in the planning application.

1.4 Highway Authority PAC submission response

1.4.1 The TA was submitted to the local highway authority in September 2019 as part of the pre-application consultation process. A comprehensive review was undertaken by Mott MacDonald on behalf of the Highway Authority and Asbri Transport received detailed comments from the highway authority in January 2020. These can be viewed in **Appendix C**.

1.4.2 Asbri Transport have revised and amplified this TA to address the comments received from the highway authority. This document noted

'the general methodology and approach to the assessment has been agreed with the Highway Authority.'

1.4.3 Asbri Transport have had dialogue with officers of the Highway Authority and their consultant, Mott MacDonald on the aspects of the PAC Transport Assessment where revisions or amplification has been sought.

1.4.4 This revised TA addresses the following matters:

- Provides an update on South Wales Metro matters relevant to Penarth

- Comments on lighting levels along NCN 88 and the attractiveness of this Active Travel route.

- Provides amplified highway safety analysis based on a full Welsh Government data-set and considers collisions involving vulnerable road users.

- Provides an update on discussions with the Authority on new bus stop provision and the possible provision of a Toucan crossing (or other crossing type) on Lavernock Road in the vicinity of the site frontage.

- Commits to the provision of a parking management strategy at a future date when the internal design of the development is known and parking matters are more evolved.

- Reviews the trip generation methodology for the proposed Primary school with particular focus on the level of internalisation of trips.

- Further examines the implications of the development for the Merrie Harrier signal-controlled junction and references other technical studies into its operational performance.

- Further examines the impact of the development on the Lavernock Road and Westbourne Road priority junction.

1.5 Structure of the report

1.5.1 Following this introductory section, the report is structured as follows:

- **Section 2** details a land use planning and transport planning policy review;

- **Section 3** details the existing situation and outlines existing highway safety within the vicinity of the site;

- **Section 4** of the report describes the development proposals and the access strategy for all modes of travel;

- **Section 5** sets out a Transport Implementation Strategy for the development proposals;

- **Section 6** considers the likely travel demand generated by the proposed development on the surrounding highway network;

- **Section 7** assesses the impact of the development on the performance of the local road network and public transport services; and,

- **Section 8** provides the conclusions of the report.

2.0 POLICY REVIEW

2.1 Introduction

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

2.2 Wales Spatial Plan 2008 – People, Places, Futures

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

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

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

2.3 Achieving sustainable development

2.3.1 The WSP states that:

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

2.4 National Development Framework 2020-2040 (Consultation draft: August - November 2019)

2.4.1 The National Development Framework (NDF) is a new 20-year development plan for Wales, which sets out development policies for Wales as a whole. The draft NDF sets out strategies for addressing key national priorities through using the planning system.

2.4.2 The aim of the NDF is to ensure that growth is shaped around sustainable forms of transport to deliver healthy environments.

2.4.3 The draft NDF identifies the need for well-connected development with better public transport networks and safer, more attractive active travel routes. The NDF has a strong focus on sustainable travel with policies on the South Wales Metro and incorporating more infrastructure for low emission vehicles.

2.4.4 Policy 31 – Growth in sustainable transit orientated settlements states that, *'Development and growth in the region should be focussed in places with good active travel and public transport connectivity. Land in close proximity to existing and committed new mainline railway and Metro stations should be the focus for development. Strategic and Local Development Plans should plan growth to maximise the potential opportunities arising from better regional connectivity. The Welsh Government supports the development of the South Wales Metro and will work with agencies to enable its delivery.'*

2.4.5 The NDF also states that:

'The National Cycle Network is an important part of our national infrastructure and its planned improvements are supported.'

2.5 Planning Policy Wales (edition 10, December 2018)

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

2.5.2 PPW states that:

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

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

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

2.5.4 The Assembly Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by: enabling more sustainable travel choices, manage both the current and future transport network effectively and minimising the need to travel via single-occupancy private vehicles. This will be achieved through the integration:

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

2.5.5 PPW states that:

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

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

2.5.6 In addition, PPW outlines:

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

Promoting cycling and walking

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

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

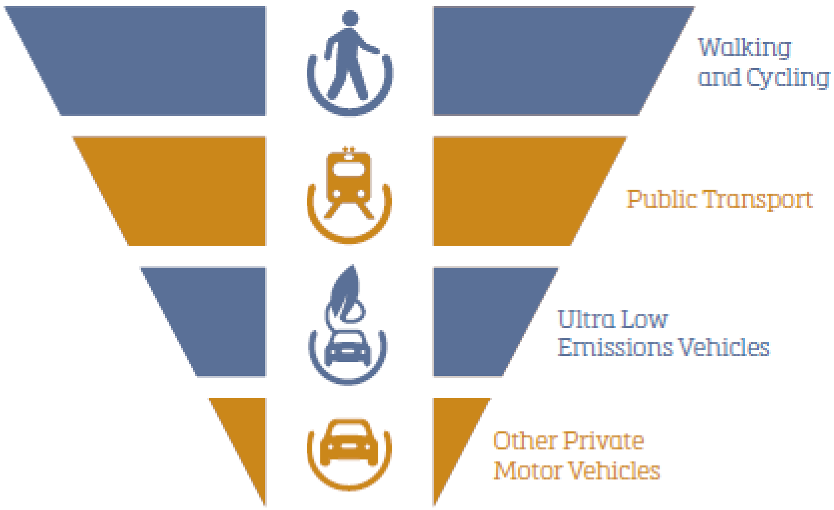
2.5.8 PPW also states that:

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

And,

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

2.5.9 PPW includes the following Hierarchy for Planning:



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

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

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

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

Parking

2.5.12 In relation to parking, PPW details:

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

2.5.13 Additionally, PPW states:

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

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

2.5.15 Technical Advice Note 18 also details national planning policy on parking matters and this is described in sub-section 2.8.

2.6 One Wales: Connecting the Nation

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

2.6.2 The goal of One Wales: Connecting the Nation is to:

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

2.7 Technical Advice Note 18: Transport (TAN18)

2.7.1 *TAN 18 states at paragraph 3.3 that 'The location of new residential development has a significant influence on travel patterns as the majority of trips start or finish at the home.'*

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

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

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

2.7.4 TAN 18 notes that where larger housing development applications require a Transport Assessment information on measures to encourage sustainable travel, (as detailed in TAN 18) shall be incorporated in the TA.

2.7.5 The Local Authority detailed in their pre-application response that they would seek a significant, development-related financial contribution towards sustainable transport stating:

"Having regard to the cost of providing and upgrading sustainable transport facilities, the Council's Planning Obligations SPG provides a basis to consider the type of contribution that may be likely to mitigate the impacts of a development of this size. This is a key aim embodied in national and local planning and transport policies, which the Council is keen to deliver. In this case, a sustainable transport contribution will be required to ensure that the site is sufficiently accessible by a range of modes of transport other than the private car, such that it may be considered a sustainable site. This is likely to equate to £1,324,800." **(VoG pre-application response 6th March 2019).**

2.8 Active Travel Act 2013 (Wales)

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

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

- Approved maps of existing active travel routes and related facilities in a local authority's area;

- Approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area;

- Requiring local authorities to have regard to integrated network maps in preparing transport policies and to make continuous improvements in the range and quality of active travel routes and related facilities; and,

- Requiring the Welsh Ministers and local authorities, in constructing and improving highways, to have regard to the desirability of enhancing the provision made for walking and cycling.

2.8.3 As is noted in Section 3 there is an existing active travel route on the eastern side of Lavernock Road in the vicinity of the application site.

2.9 Vale of Glamorgan Local Development Plan

2.9.1 The development site is allocated for residential development and a Primary School in the Local Development Plan.

2.9.2 The following is an extract from the LDP, which details what land uses have been allocated for the site.

'POLICY MG6 - PROVISION OF EDUCATIONAL FACILITIES

A new primary and nursery school at land at Upper Cosmeston Farm, Lavernock (1.0 ha)

POLICY MG7 - PROVISION OF COMMUNITY FACILITIES

In accordance with the recommendations of the assessment, Policy MG7 allocates land for the provision of new community infrastructure, to be provided in association with housing allocations at Barry Waterfront, St Cyres, Ogmore Residential Centre and Cosmeston Farm, Penarth.

POLICY MG2 (24) Land at Upper Cosmeston Farm, Lavernock 576

This 22.2 hectare greenfield site is located to the south of Penarth adjacent to Lavernock Road. Development of the site will be informed by a masterplan/development brief which will identify and safeguard provisions for major infrastructure comprising a 1.0 hectare site to provide a new primary and nursery school; 1 hectare of designated public open space and an additional 0.1 – 0.2 hectares for the provision of a new community facility, in accordance with Policies MG6 (5), MG28 (10) and MG7 (4). Affordable housing will be delivered in accordance with Policy MG4.

The Council's Engineers have advised that future development proposals should be supported by a robust Transport Assessment which evaluates and determines mitigation measures that alleviate any detrimental impact the development will have on the local highway network and associated road junctions.

A suitable and safe access will be required that conforms to current design criteria. In this regard, it is anticipated that the development will be served via a new junction onto Lavernock Road, which incorporates safe pedestrian/cycle friendly facilities. The new development will be expected to contribute to the Council's aspirations for improved walking; cycling and public transport facilities and ensure good permeability both within and surrounding the site including improvements to the NCN88 between Penarth, Sully and Barry.'

2.10 Well-Being of Future Generations (Wales) Act 2015

2.10.1 The Well-Being of Future Generations (Wales) Act 2015 is about improving the social, economic, environmental and cultural well-being of Wales.

2.10.2 It aims to encourage public bodies to take in to consideration long-term aspirations, and reflect on the manner in which they work with people and communities to prevent problems.

2.10.3 The act identifies 7 well-being goals:

- A globally responsible Wales
- A prosperous Wales

- A resilient Wales
- A Healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language

2.10.4 Large emphasis within the act is placed on *"The Sustainable Development Principle"*, which ensures that public bodies act in a manner which meet the needs of the present without compromising the ability of future generations to meet their own needs.

2.11 Vale of Glamorgan: Supplementary Planning Guidance: Parking Standards March 2019

2.11.1 The Vale of Glamorgan published a new version of their Car Parking Standards in March 2019. The SPG seeks to ensure a transparent and consistent approach to the provision of parking. It helps inform developers, designers and builders what is expected from them.

2.11.2 The guidance aims to standardise the approach to parking across new development within the Vale of Glamorgan. The guidance provides information on how to apply the parking guidance to development and change within the authority.

2.11.3 The SPG states that:

"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."

2.11.4 The Vale is aware of its environmental responsibilities and the contributions that can be made to help mitigate climate change and recognises that Ultra Low Emission Vehicles (ULEVs) can aid in improving local air quality and reducing emissions.

2.11.5 Therefore, to encourage the take up of ULEVs, developers are encouraged to provide electrical vehicle charging points (EVCPs) wherever possible at a ratio of 10% of all parking spaces provided for residential developments.

2.11.6 The SPG also requires all residential developments to be accessible by bicycle and cycle storage must be considered in dwelling design. Where appropriate, communal cycle facilities may be provided

2.12 Vale of Glamorgan Local Development Plan 2011 – 2026: Supplementary Planning Guidance Travel Plans

2.12.1 The purpose of the Travel Plan is to provide guidance to applicants on the production and implementation of travel plans associated with new major development proposals.

2.12.2 The guidance specifically provides information on:

- The council's requirements for Travel Plans and when they will be required;
- The role of travel plans in encouraging shifts towards sustainable transport;
- Different types of travel plans;
- Travel plan content;
- Their benefits; and
- Travel plan monitoring.

2.12.3 A Travel Plan for the proposed residential development accompanies the planning submission.

2.12.4 Residential travel plans are designed to reduce the number and length of trips generated by the proposed development and support more sustainable forms of travel.

2.12.5 The Highway Authority have acknowledged that the residential Travel Plan is '*considered comprehensive*.'

2.13 Vale of Glamorgan Local Development Plan 2011 – 2026: Supplementary Planning Guidance Sustainable Development

2.13.1 The guidance sets out to raise awareness of how development land can contribute towards sustainability. The guidance advises a holistic approach to construction and to develop in a manner which protects the environment.

2.14 Penarth to Cardiff Barrage Sustainable Transport Corridor

2.14.1 The Vale of Glamorgan have commissioned consultant's Capita to undertake 'a WelTAG (Welsh Transport Planning and Appraisal Guidance) Stage One and Stage Two study to develop and appraise potential options for improving sustainable transport within and between Penarth and Cardiff barrage.

2.14.2 The study is focusing on the potential to:

- Increase the use of public transport;
- Encourage modal shift away from use of the private cars;
- Reduce road traffic congestion and support increased economic activity;
- Increase both accessibility and connectivity;
- Increase levels of active travel in support of associated health benefits; and,
- Create infrastructure which supports tourism investment.

WelTAG (Welsh Transport Appraisal Guidance)

"WelTAG is a framework for thinking about proposed changes to the transport system. It contains best practice for the development, appraisal and evaluation of proposed transport interventions in Wales. It has been developed by the Welsh Government to ensure that public funds are invested in a way that ensures they maximise contribution to the well-being of Wales, as set out in the Well-being of Future Generations (Wales) Act 2015 and to deliver the Act's vision of the Wales we want: a more prosperous Wales, a resilient Wales, which supports healthy, functioning ecosystems and recognises the limits of the global environment, a healthier Wales, a more equal Wales, a Wales of more cohesive communities, a Wales of vibrant culture and a globally responsible Wales."

2.14.3 There are five stages of the WelTAG process:

- Stage One – Strategic outline case
- Stage Two – Outline business case
- Stage Three – Full business case
- Stage Four – Implementation
- Stage Five – Post Implementation

2.14.4 ARCADIS Consulting (UK) Ltd has produced a WelTAG Stage One and Two report for the Dinas Powys Transport Network. The Stage One report was undertaken in 2017 and considers the problems, opportunities and constraints along with an appraisal of options to be considered.

2.14.5 The Stage One study was presented to Cabinet whereby the following options were confirmed to be taken forward for further consideration, following recommendation by the Council's Environment and Regeneration Scrutiny Committee on 14th September 2017:

- Do-minimum
- Bypass
- Multi-Modal Option
- Bypass and Multi-Modal Option

2.14.6 Following this, a Stage Two study was commissioned for the options recommended to be taken forward against a Do Minimum Option.

2.14.7 The purpose of Stage Two is to examine the list of options for tackling the problem under consideration in greater detail.

2.14.8 The Stage two report looks closely at several options to improve the strategic transport network, one of which is to improve multi-modal travel options and the other to provide a relief road in the Vale of Glamorgan.

Multi-Modal Option

2.14.9 The provision of a multi-modal option was identified as part of the Stage One study. The multi-modal option would provide the residents of Dinas Powys, as well as people who travel through Dinas Powys to access Barry, Penarth and Cardiff with alternative modes of transport to the private car. For the Stage Two study a more detailed multi-modal option has been developed. The multi-modal option covers all sustainable modes of transport namely bus, rail and walking and cycling.

2.14.10 The multi-modal option provides a programme of individual projects across all sustainable travel modes, which range from projects that are currently being developed in order to apply for Welsh Government funding in the short-term to projects that are programmed regionally in the medium to long-term. The following multi-modal plans have been considered:

Bus	• Bryn Y Don Park & Ride • Bus Service & Bus Stop Enhancements - Increased frequency. • Merrie Harrier Junction modification • Merrie Harrier to Barons Court Junction Bus Lane
Rail	• Eastbrook Station Upgrade • Dinas Powys Station Upgrade • Vale of Glamorgan Line Service/Capacity Enhancement
Walking & Cycling	• Merrie Harrier to Barons Court shared walking and cycling facility • Dinas Powys to Penarth Connections via Cosmeston • Dinas Powys Network • Barry to Dinas Powys Cycle Route

Relief Road

2.14.11 The potential alignments of the proposed relief road are set out below:

Green Alignment

2.14.12 The Green alignment seeks to avoid existing environmental constraints to form a 60mph single carriageway bypass to the east of Dinas Powys interconnecting with the A4055 approximately 0.9km south of the A4055 Cardiff Road/Cross Common Road priority junction, extending northwards to the east of Dinas Powys through primarily green wedge, and interconnecting with the A4055 at its junction with the B4267 at Merrie Harrier.

2.14.13 The WelTAG Stage Two design has been developed with the potential to provide integral public transport infrastructure and suitable crossings to retain east/ west connectivity for walking and cycling.

2.14.14 The green alignment has the potential to alleviate congestion and capacity issues at junctions within Dinas Powys and reduce issues associated with air quality and noise pollution.

Pink Alignment

2.14.15 The Pink alignment follows the same principles as the Green alignment but allows for a roundabout to be developed that could link to Murch Road, to the east of Dinas Powys.

2.14.16 It would be anticipated that provision of a roundabout would lead to changes in traffic patterns on Murch Road, as a new connection is formed between the centre of Dinas Powys and the bypass.

Blue Alignment

2.14.17 The Blue alignment is extensively similar to the Green and Pink alignments whereby the carriageway extends south from the Merrie Harrier junction to the east of Dinas Powys. The Blue alignment bypasses the village of Sully to the west.

2.14.18 If a bypass is delivered, the existing adverse impact of road traffic specifically through Dinas Powys could be reduced. However, the increased length of route compared to the Green alignment and potentially marginal journey time benefits compared to the existing corridor, means that reductions in traffic are anticipated to be low.

Summary

2.14.19 Of the bypass options, the Green alignment offers the highest potential benefits, with the Blue alignment not likely to establish a high level of displacement of traffic from the corridor through Dinas Powys.

2.14.20 It is understood that the WelTAG Stage 2 report for Dinas Powys was issued in draft to the Council at the end of March 2019 and presented to the Cabinet of the Vale of Glamorgan on 15th April 2019.

2.14.21 The findings of the Cabinet report are referenced below:

"The Head of Neighbourhood Services and Transport advised that the report provided to Cabinet was an update on progress of the transport assessment being undertaken in Dinas Powys and identified, following a meeting of the Review Group for the study, the further work needed to be undertaken in respect of:

- *Engaging with Network Rail to understand the constraints and potential costs associated with the construction of a by-pass and junction in the vicinity of the railway tunnel;*
- *Undertaking concept design, modelling and costing of suggested improvements to the Merrie Harrier junction to improve capacity. To consider costs in context of the by-pass scheme costs (blue and green options);*
- *Commissioning strategic modelling using the South-East Wales Transport Model of the by-pass proposals (via Transport for Wales who managed the model);*

- *Updating the economic appraisal for the green alignment and providing an appraisal for the blue alignment and update the transport case and the Stage 2 report;*

- *Undertaking public consultation on the findings of the Stage 2 report and finalising the Stage 2 report and making recommendations for option(s) to be taken forward to the WelTAG Stage 3 Full Business Case."*

2.15 Penarth to Cardiff Barrage Sustainable Transport Corridor WelTAG Stage Two

2.15.1 Following completion of WelTAG Stage One (May 2019) report into sustainable transport options for the Penarth to Cardiff Barrage Sustainable Transport Corridor, three options were approved for further consideration as part of a WelTAG Stage Two appraisal, encompassing:

- OPTION 1: Active Travel proposals for the Penarth to Cardiff Barrage Corridor

- OPTION 2: Cosmeston Bus Park and Ride and bus priority link across Cardiff Barrage

- OPTION 3: Cogan Multi-Modal Sustainable Transport Interchange

OPTION 1

2.15.2 Option 1 comprises a network of Active Travel links within the study area. The links included within the option are those routes within the Vale of Glamorgan Council's Active Travel Integrated Network Map (INM) that are considered to have most benefit to the Penarth to Cardiff Barrage Corridor.

2.15.3 The network of Active Travel routes within Option 1 includes the Penarth Headland Link (PHL) proposal, which is a proposed 1km rock-fill causeway between Penarth Esplanade and Cardiff Barrage to provide a shared-use pedestrian and cycle route. The option also includes complementary, area-wide active travel measures i.e. introduction of a 20mph zone/ limit and a bike hire scheme.

OPTION 2

2.15.4 This option consists of a bus park and ride and bus priority scheme providing a link along the Penarth to Cardiff Barrage Corridor. This option is no longer being pursued.

OPTION 3

2.15.5 Option 3 comprises a range of improvements to Cogan Station to create a multi-modal interchange facility and improve integration between rail and other transport modes. This includes the development of vacant land to provide an expanded park and ride facility with approximately 150 spaces, on-station improvements including an Access for All bridge over the rail line and improvements to Active Travel links and facilities.

2.15.6 Following completion of the WelTAG Stage Two appraisal and the project's Review Group meeting held on Tuesday 24th September 2019, the output of the WelTAG Stage Two study recommends the following:

- That OPTION 1 is progressed for further appraisal at WelTAG Stage Three
- That OPTION 3 is progressed for further appraisal at WelTAG Stage Three

2.16 Conclusion to policy review

2.16.1 The key objectives of the land use planning and transport policies are to deliver sustainable, safe transport to support the development.The policy context detailed has fully informed the development proposal. In transport terms the access strategy proposed for the development and the associated provision for Active travel has been discussed with the Highway Authority from a very early stage.

2.16.2 Provision for active travel movement is to be made by way of physical infrastructure and the implementation of the Transportation Implementation Strategy which includes the implementation of a Travel Plan. The development's Transportation Implementation Strategy is detailed in Section 5. This includes a package of physical, management and promotional measures related to the physical infrastructure, the design and location of the scheme, parking management and dedicated travel plan co-ordinators. Provision is also to be made for both passive and active ULEV charging infrastructure through-out the development. It is considered that the development meets the requirements of accessible housing development as defined in TAN 18: Transport.

3.0 EXISTING SITUATION

3.1 Introduction

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

3.2 Site location

3.2.1 The proposed development site is located to the south of Penarth and to the immediate east of Lavernock Road. The site is bounded by residential housing estates to the north, the Bristol Channel to the east, farm land to the south and Lavernock Road to the west.

3.2.2 Penarth Town Centre is located approximately 2.5km to the north of the proposed site and the settlement of Sully is located approximately 2km to the south-west of the application site.

3.2.3 The location of the site and the local highway network is shown in **Figure 3.1**.

Figure 3.1: Site location and local highway network

3.3 Pedestrians and Cyclists

Pedestrians

3.3.2 Footway provision within the vicinity of the development site is of a reasonable standard with provision on the eastern side of Lavernock Road only adjacent to the application site's frontage.

3.3.3 The majority of roads to the north of the proposed development have footway provision on one or both sides of the carriageway with a number of formal and informal crossing facilities across Lavernock Road and its side roads. A controlled Toucan crossing for pedestrians and cyclists is located approximately 300m to the north of the proposed site access providing a safe crossing point to the north-bound bus stop and Cosmeston Lakes.

3.3.4 A dedicated pedestrian/cycleway runs along the western boundary of the site and this is signed accordingly. There is a shared active travel pedestrian/cycle way present along the eastern carriageway off Lavernock Road, providing access into central Penarth to the north.

3.3.5 It is noted that there is currently no footway provision present along the western side of the carriageway of Lavernock Road in proximity to the site. New footway provision is proposed and this is described in Section 4.

3.3.6 In addition to the above, a shared pedestrian/cycle National Cycle Network (NCN) Route 88 path runs directly to the north of the application site and follows the old railway line into Penarth Town Centre.

3.3.7 The route is in excellent condition and the path itself varies in width from 2.1m – 3m along its length with the total width of the old cutting being circa 6m. There is a pinch point is its northern end, where the link narrows to circa 1.8m as it passes behind the gardens of houses fronting Plymouth Drive and ultimately joins the footway along the western side of Plymouth Drive.

3.3.8 The Chartered Institution of Highways and Transportation (CIHT) guidelines 'Providing for Journeys on Foot' suggest that the desirable walking distance for 'commuting/school' walking trips is 500 metres, the acceptable distance is 1km, and 2km is the preferred maximum. The desirable walking distance for 'Elsewhere' (this includes access to local amenities) is 400m, the acceptable distance is 800m and 1.2km is the preferred maximum.

3.3.9 **Figure 3.2** details the local amenities within the local area.

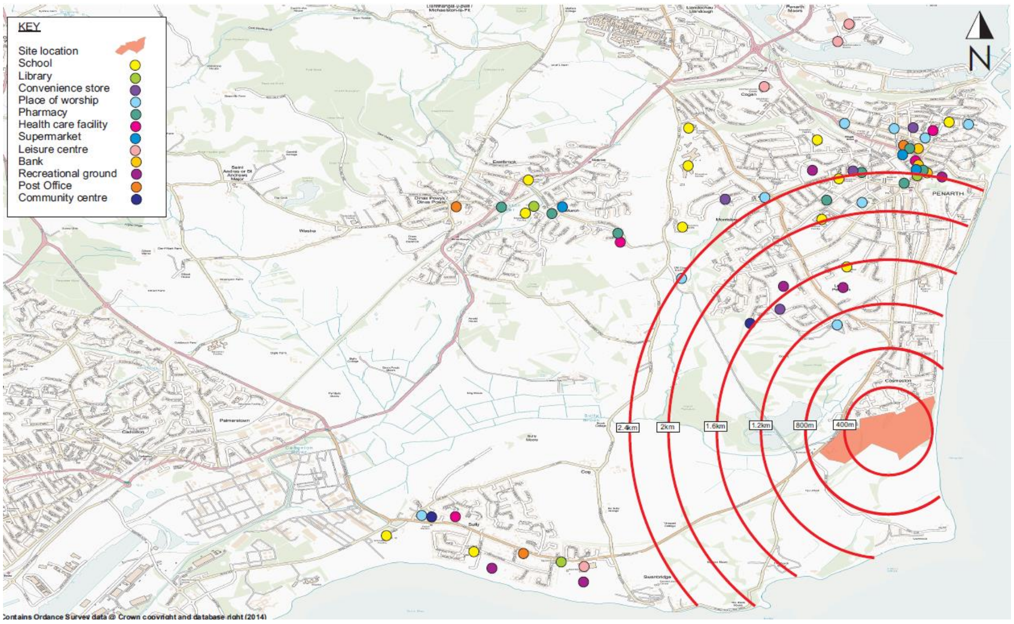


Figure 3.2: Local amenities within the area

3.3.10 Figure 3.2 shows actual walk distance isochrones from the centre of the site and any local amenities/facilities that are within the walking distances detailed. These are set out in **Table 3.1** below.

Amenity/Facility	Distance
Harvester Restaurant	650 m
Glamorganshire Golf Club	800 m
Sully sports & social club	2 km
St Aubin Nurseries	2.1km
Evenlode Primary School	2.1 km
Sully library	2.25 km
Sully Post Office	2.5 km
Stanwell School	2.5 km
Penarth town centre	2.5 km
Penarth Railway Station	2.5 km
Westbourne School	2.6 km
Tesco Express	2.7 km
Penarth Library	2.7 km
Sully Surgery	3 km

Table 3.1: Distance to local amenities from the site

3.3.11 Figure 3.2 and Table 3.1 indicate site's location in terms of proximity and accessibility by foot or bicycle to a number of local facilities and public transport opportunities. The distances referenced in Table 3.1 are measured from the site frontage to Lavernock Road.

3.3.12 Additionally, the Welsh Coastal path (part of which forms a public right of way footpath) runs along the coast to the east of the site, providing pedestrians with a segregated walking route from road traffic.

3.3.13 Those who wish for a more tranquil and scenic route to Penarth and beyond to the north may opt to take this route.

3.3.14 The footpath can be seen in **Figure 3.3** along with the cycle routes within the vicinity of the site.

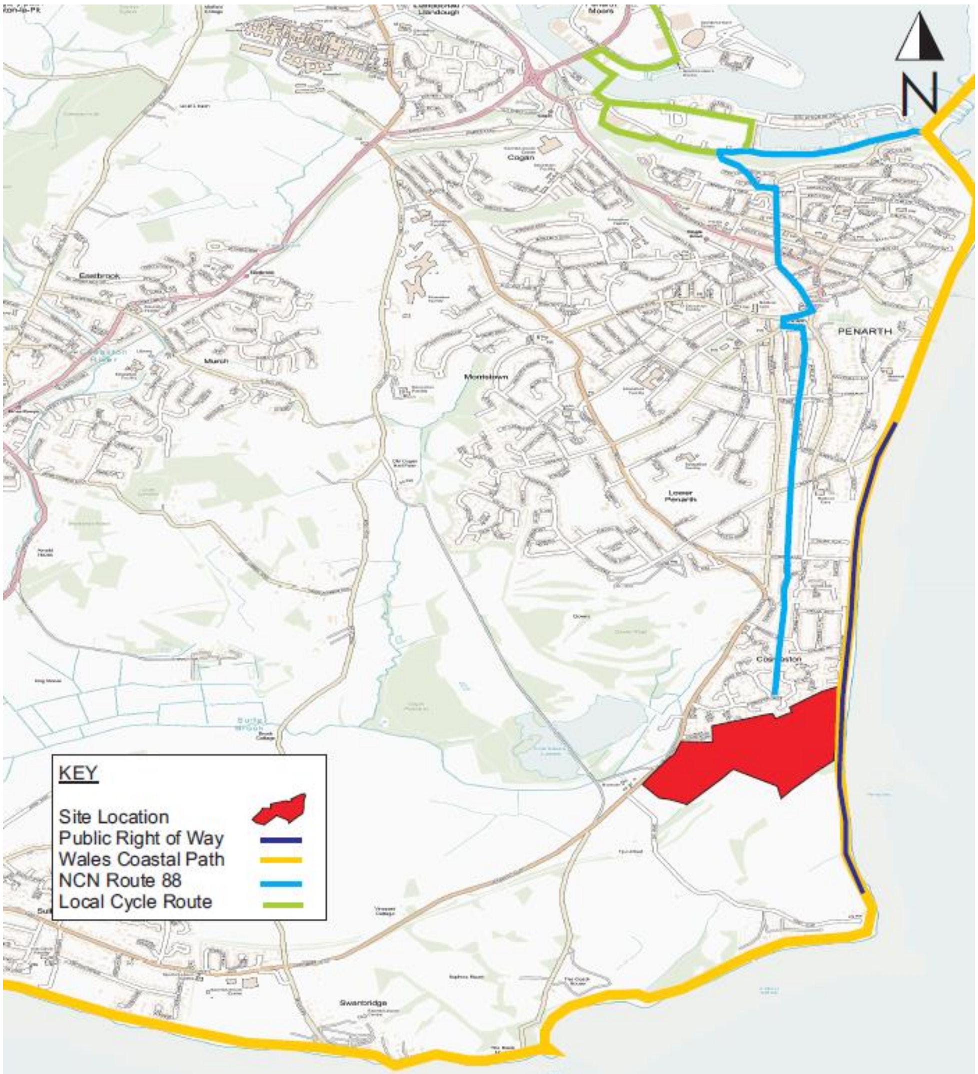


Figure 3.3: Public rights of way and local cycle network

Cyclists

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

3.3.16 As set out previously, National Cycle Network (NCN) Route 88 runs directly to the north of the application site and follows the old railway line into Penarth Town Centre, from there it links to NCN Route 8 which provides access into Cardiff City Centre.

3.3.17 NCN Route 88 is a proposed coastal route between Newport, Cardiff, Bridgend and Margam Country Park. At the moment, only short sections of the route are open.

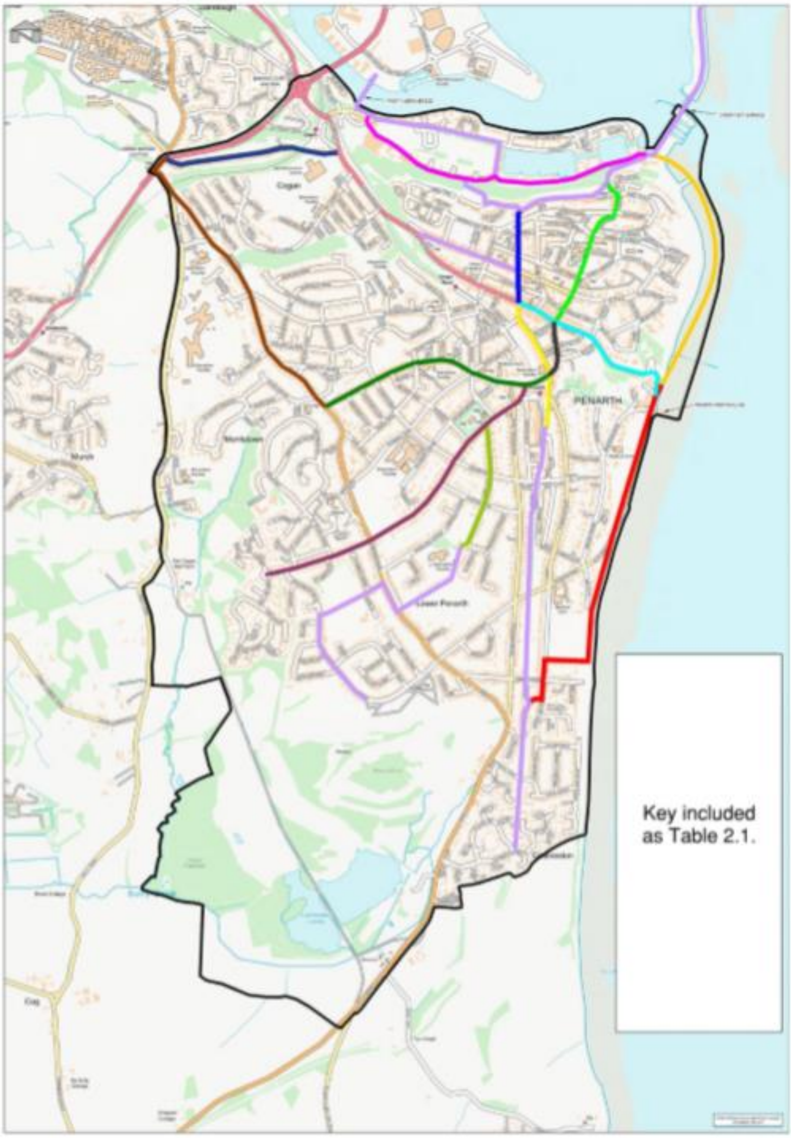
3.3.18 Active Travel routes are proposed within the Vale of Glamorgan's LDP and part of these proposals include the extension of NCN Route 88 to trail south through the middle of the proposed development. This would provide an excellent level of off-road cycle and pedestrian connectivity from the development site into the centre of Penarth.

3.3.19 NCN Route 88 is currently unlit between the site and the centre of Penarth, however, overspill lighting from the residential areas along the route provide some intermittent lighting along the way.

3.3.20 The route is primarily bounded by vegetation and therefore is a ecological environment. It should be noted that any lighting provision is likely to have an impact on this ecological environment during the hours of darkness and therefore this would have to be considered as part of any lighting improvements going forwards.

3.3.21 Since the production of the TA that accompanied the PAC the ***Penarth to Cardiff Barrage Sustainable Transport Corridor Study*** has been published. The study includes the following as Figure 2.1

Figure 2.1 – Plan of Option 1 – Active Travel proposals for the Penarth to Cardiff Barrage Corridor



3.3.22 The alignment and design for the proposed Active Travel Routes will be discussed and agreed with officers of the Highway Authority. It is noted that the study states the following:

> The majority of INM routes included in Option 1 follow the alignment of the highway network. The extent of improvements proposed have been limited by the constrained nature of the road network within Penarth and the limited space available to implement segregated, off-road Active Travel improvements. As a result, the majority of measures proposed are on-road improvements, with some larger-scale improvements proposed at key junctions.

3.3.23 The proposed active travel routes and cycle routes within the site's vicinity are shown in **Appendix D**.

3.4 Public Transport

3.5 Bus

3.5.1 Bus services within the vicinity of the site are of a good standard in terms of route destinations and service frequencies, providing access throughout Penarth and destinations across the wider bus network such as Barry and Cardiff.

3.5.2 Currently, the closest bus stops to the site are located along Lavernock Road approximately 220m to the north of the proposed development site's northern boundary. The walk distance to the stops increases progressively the further south and east into the Masterplan area.

3.5.3 There are scheduled bus services calling at stops to the north and south of the proposed site access along Lavernock Road. The bus services calling at stops within the vicinity of the proposed development are shown in **Table 3.2**. A map of the local bus routes is shown in **Figure 3.4**.

Route No.	Route	Frequency
88	Penarth – Barry	Mon-Fri, hourly services between 07:33-14:33
	Barry – Penarth	Mon-Fri, hourly services between 07:19-15:19
94	Cardiff – Penarth – Sully - Barry	Mon-Fri, services half hourly to hourly from 06:45-22:24. Sat, 07:52-22:24, half hourly – hourly Sun, 07:52, then hourly from 09:24-21:24
	Barry – Sully - Penarth - Cardiff	Mon-Fri, services half hourly to hourly from 06:23-21:30. Sat & Sun, 06:59-21:30 half hourly – hourly
S51	Llandough – St Richard Gwyn High School	Mon-Fri, service at 08:31 (school days only)
	St Richard Gwyn High School – Llandough	Mon-Fri, service at 15:37 (school days only)
SC1	Barry – Penarth	Mon-Fri, service at 07:57 (school days only)
	Penarth – Barry	Mon- Fri, service at 14:50

Table 3.2: Summary of bus services operating in the vicinity of the site

3.5.4 As indicated in Table 3.2, the bus services operating within the vicinity of the site provide a good level of service and frequency with a number of bus services operating per hour within close walking distance of the proposed development site, enabling future occupants of the site to access 0900-1700 employment within Penarth, Cardiff or Barry.

3.5.5 This is accentuated by the fact that service 94 provides direct access to Penarth Railway station and opportunities to travel further afield than those identified above.

3.6 Rail

3.6.1 Penarth Railway Station is the nearest rail station to the site and is located roughly 2.5km to the north of the proposed site access.

3.6.2 The location of the railway station is shown in **Figure 3.4**.

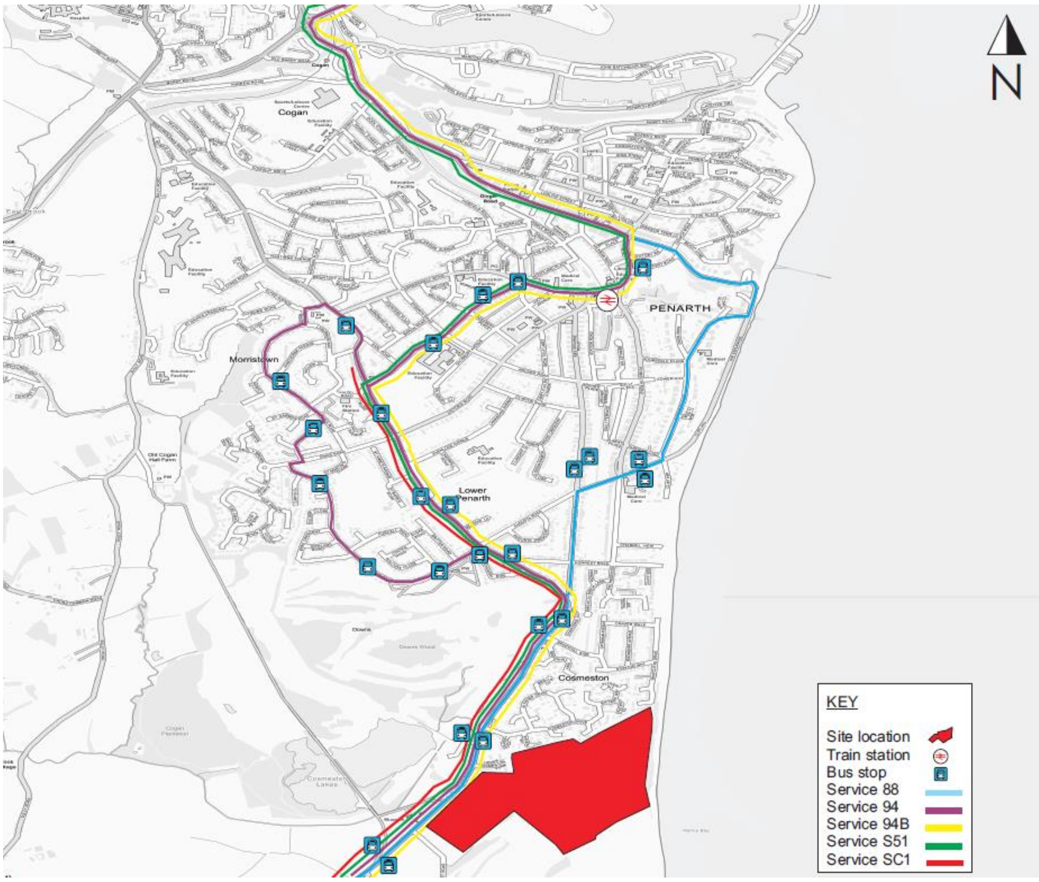


Figure 3.4: Public Transport Infrastructure

3.6.3 The station is served by Transport for Wales, operating local services along the Vale of Glamorgan Line to destinations such as Cardiff Central, Bargoed and Rhymney. Approximately four trains per hour run to Cardiff Central on weekdays and Saturdays. Evening services run twice hourly and Sundays see one train every two hours (a total of 6 a day). The journey time to Cardiff Central averages 13 minutes.

3.6.4 As set out above, the station is served by bus service 94, providing direct access from Cosmeston to Penarth Railway station.

3.6.5 In addition, a direct pedestrian and cycling link is provided from the heart of the housing stock within Cosmeston, running directly from the north of the application site along the old railway line to the rear of Penarth train station.

3.7 South Wales Metro

3.7.1 It is proposed that by 2023, the South Wales Metro (SWM) will provide an improved and innovative rail network throughout the core valley lines from Cardiff City Centre to Penarth.

3.7.2 It is proposed that 4 trains per hour will be in operation between Penarth and Cardiff with possible tram-trains enabling a further extension of the metro into Lower Penarth. In addition, further integration with the bus service network is proposed as part of the Metro proposals with major benefits expected key regional settlements including Penarth.

3.7.3 These proposals would increase the attractiveness and accessibility of public transport in the vicinity of the proposed development. A metro stop located in Lower Penarth would reduce the distance needed to travel to the existing railway station in Central Penarth.

3.8 Highway network

3.8.1 The following section of the report describes the highway network in the vicinity of the site.

3.8.2 The local highway network and site location can be seen in **Figure 3.1.**

3.8.3 The highway network in the vicinity of the site is dominated by Lavernock Road which abuts the site’s western boundary.

3.9 Lavernock Road

3.9.1 Lavernock Road, classified as the B4267, is a single two-way carriageway distributor road that links Cosmeston to Lower Penarth and Sully.

3.9.2 Adjacent to the site, Lavernock Road is approximately 8.5m wide, with footway and adjacent highway verge of varying widths in the range of 2.5m to 3.5m along the eastern side of the carriageway only. There is highway verge on the western side of the road but there is no footway provision.

3.9.3 In the vicinity of the site's southern frontage to Lavernock Road, the road is unlit and is subject to a 40mph speed limit. To the north of the site's frontage the speed limit reduces to 30mph and street lighting is present. To the north of the application site the road is fronted predominantly by residential dwellings and some commercial premises such as public houses.

3.9.4 To the north of the site's northern boundary an active travel route for pedestrians and cyclists can be found. The route is hard surfaced and signed facilitating movements to Penarth.

3.9.5 As set out previously, there is a signal-controlled pedestrian crossing facility present in the vicinity of the access junction to Cosmeston Lakes where there are bus stops providing access to services operating in both directions.

3.10 Baseline Traffic Flows

3.10.1 In order to obtain traffic flows on the local highway network, classified junction turning counts were undertaken on Thursday 29th November 2018 during school term-time at the following junctions:

1. A4231/A4055/Sully Moors Road roundabout junction
2. Sully Moors Road/B4267/Hayes Road roundabout junction
3. Lavernock Road/Cosmeston Lake Country Park priority junction
4. Lavernock Road/Cosmeston Drive priority junction
5. Lavernock Road/Westbourne Road priority junction
6. B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads
7. Lavernock Road/Dinas Road/Victoria Road crossroads
8. Cardiff Road/B4267/A4055 signalised junction

9. A4055/B4267/Andre Road signalised crossroads

10. A4055/A4160 signalised intersection

3.10.2 The results of these turning counts are shown in **Appendix E** and the 2018 AM and PM baseline traffic flows are shown in **Figure 3.5.**

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

3.10.4 From the survey, the weekday peak periods have been determined as 0745-0845 and 1630-1730.

3.11 Highway Safety

3.11.1 This section of the report reviews collision data within the study area. This section of the TA has been amplified to address the comments of the Highway Authority on the TA that accompanied the PAC submission.

3.11.2 For the purposes of the PAC TA personal injury collision (PIC) data was obtained from www.Crashmap.co.uk for the most recent five-year period available for the study area. Analysis of this data informed the TA that accompanied the PAC. The Highway Authority recommended that further road safety analysis be undertaken which has been done for this report.

3.11.3 A full data-set of collisions recorded in the same study cordon has been secured in 2020 from Welsh Government and as such the highway safety analysis that follows has been based on the 2020 data-set. This confidential data-set has included details of all factors and variables associated with the collisions.

3.11.4 The 2020 data-set includes collisions recorded during the period 2015 – 2019 and is understood to be the most current period for which data is attainable. It is considered that the data obtained for the year 2019 only includes the months of January – July, inclusively.

3.11.5 The study area for the collision data obtained from Welsh Government spans the length of the B4267 between the A4231/A4055/Sully Moors Road roundabout junction to the north west of the application site, to Llandough Hospital to the north of the application site.

3.11.6 The plot of the collision locations and the study area investigated is shown in **Figure 3.6** – **3.9** and summarised in **Table 3.3**.

Year	Collision Severity			Casualties
	Fatal	Serious	Slight	
2015	0	5	4	10
2016	0	1	9	14
2017	0	1	9	18
2018	0	0	9	12
2019	0	0	2	3
Total	0	7	33	57

Table 3.3: Summary of personal injury collision data

3.11.7 It is evident from Table 3.3 and Figure 3.6 and Figure 3.7 that there has been a total of 40 collisions within the five-year period studied of which, 7 collisions were classified as serious and 33 as slight. There has been a total of 57 casualties as a result of the 40 collisions.

3.11.8 It is noted that no fatal collisions were recorded in the data-set provided by Welsh Government.

Figure 3.6: Serious Collisions recorded on the local road network

Figure 3.7: Slight Collisions recorded on the local road network

3.12 Collisions involving Vulnerable Road Users

3.12.1 Of collision data set analysed, 6 resulted in injuries to cyclists and 6 collisions involved injuries to pedestrians. As is evident from the collision plot included at Figure 3.6, these collisions are dispersed within the study area.

3.12.1 **Table 3.4** summarises the serious and slight collisions which involved NMUs reported within the study area.

Date & Time	Severity	Accident Reference	Description
06/03/2015 10:16AM	Serious	1500415	Elderly driver of V1 collided with pedestrian on zebra crossing.
24/05/2015 17:38PM	Serious	1500878	V1 has overtaken V2 on offside and turned left. V1 has struck V2 knocking rider off bicycle and onto floor causing injury.
13/07/2015 08:03AM	Serious	1501169	V1 collided with pedestrian who ran out into the road.
25/09/2015 17:13PM	Slight	1501679	V1 is a pedal cycle ridden by the injured person, (C1), 3/12/98. Whilst cycling downhill on Penlan Road, Llandough, intending to go to football training he lost control by travelling too fast and failed to negotiate the right hand bend.
11/04/2016 16:16PM	Serious	1600620	C1 has intentionally jumped in front of moving V1 (bus).
25/10/2016 08:27AM	Slight	1601750	C1 has crossed the road without looking and been struck by unknown V1. Driver stopped but C1 stated she was okay.
28/01/2017 19:52PM	Serious	1700179	V1 moved off when the lights changed at the crossroads when an intoxicated pedestrian jumped out in front of the vehicle and a collision occurred.
08/04/2017 15:07PM	Slight	1700582	V1 pedal cycle contravened red traffic light and travelled through the junction causing V2 to collide with it which was turning right.
19/09/2017 18:41PM	Slight	1701379	V1 turned right out of the golf club and collided with V2 pedal cycle.
14/07/2018 08:50AM	Slight	1801224	V2 a pedal cyclist has entered roundabout from Sully Moors Rd with intention of cycling around and back onto Sully Moors Rd when V1 approaching from south road and collided with cycle and has failed to stop.
23/08/2018 14:07PM	Slight	1801076	V1 pedal cycle was travelling along the pavement towards a t-junction. Whilst entering the road at the junction the rider was distracted by something on the opposite side of the road, could not brake in time and collided with the nearside of V2
06/12/2018 10:02PM	Slight	1900010	The driver of V1 stopped on the pavement. V1 then pulled forward and collided with two child pedestrians causing one to travel over the bonnet of the vehicle and the other making contact with the vehicle.

Table 3.4: NMU Collision details

3.12.2 **Figure 3.8 and 3.9** indicate the location of the serious and slight NUM collisions recorded on the highway network study area respectively.

Figure 3.8: Serious NMU Collisions

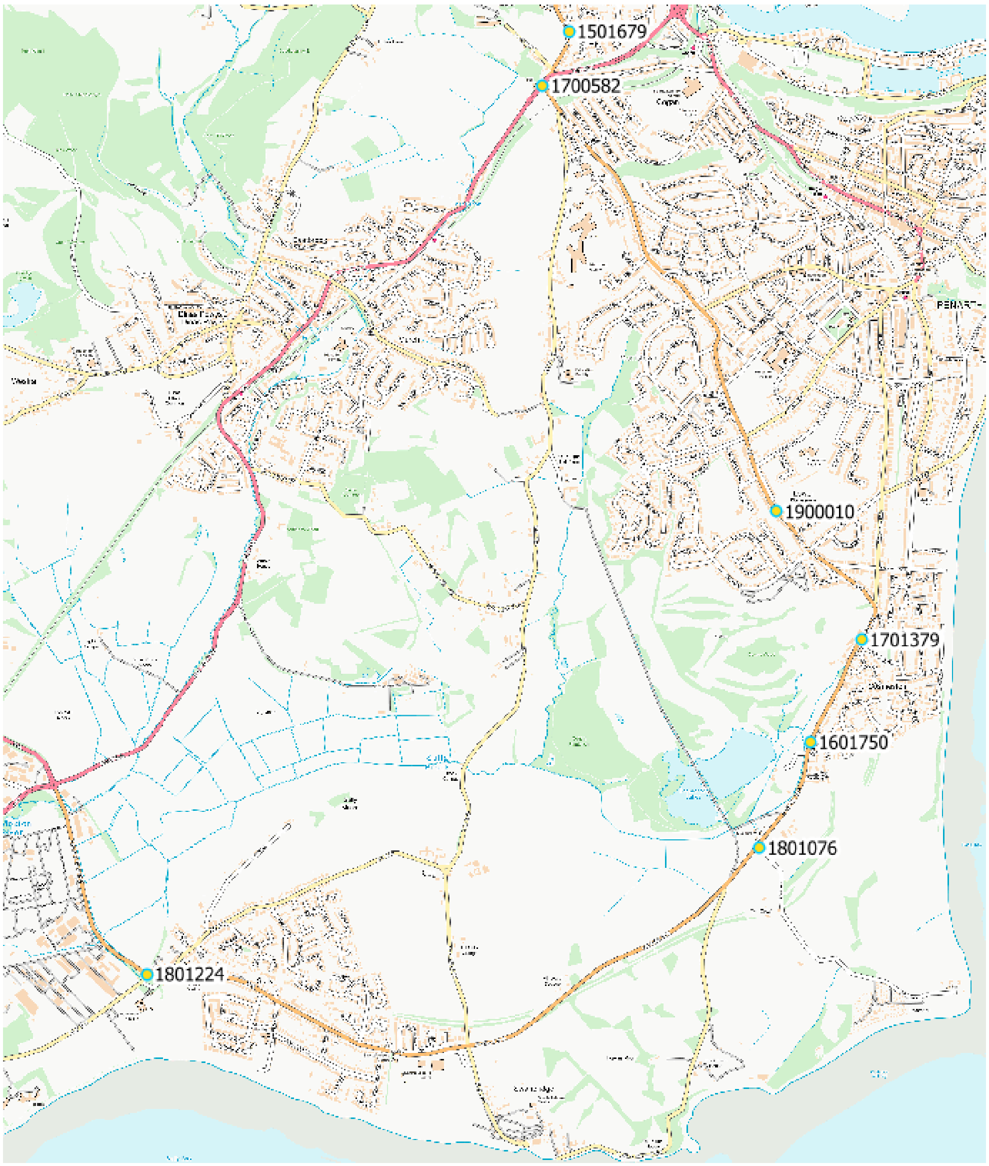


Figure 3.9: Slight NMU Collisions

3.12.3 Having reviewed the description provided in the data-set, 3 of the 5 serious collisions appeared to result from pedestrians entering the carriageway without due care, although one of the collisions, 1600620 details that the pedestrian entered the path of a bus deliberately.

3.12.4 Collision 190010 involved a vehicle striking two child pedestrians resulting in the children sustaining slight injuries.

3.12.5 Of the 6 collisions involving cyclists 5 occurred at junctions, the sixth cyclist collision on Penlan Road resulted from the cyclist losing the control of the bicycle.

3.12.6 A review of the collision data for the five year study period demonstrates that the surrounding area close to the proposed development does not experience any unusual accident patterns.

3.12.7 The majority of accidents were caused due to a driver's failure to pay proper attention. Most of the accidents were also concentrated on or around junctions which is to be expected due to the number of conflict points which occur as compared to link sections. As such, the analysis of accident records does not identify any significant patterns and does not give any cause of concern.

3.12.8 Based on the results of the collision data analysis it is considered that the development would not have a significant impact on the rate of collisions within the study area, over and above that which would be caused by an increase in traffic flows.

4.0 DEVELOPMENT PROPOSALS

4.1 Land use

4.1.1 It is proposed to construct up to 576 residential dwellings as well as a 2-form entry primary school on greenfield land located on the southern fringe of Penarth. The application also proposes community facilities of between 0.1-0.2 ha.

4.1.2 The planning application proposes a split of 50% privately owned dwellings (up to 288 dwellings) and 50% affordable dwellings.

4.1.3 Notwithstanding the fact the development proposals are outline at this stage, the proposed schedule of accommodation as detailed in the masterplan is set out in **Table 4.1**.

Accommodation Type	Area				Total
	1	2	3	4	
1 bed walk up flat	14	0	0	0	14
1 bed apartment	0	6	11	0	17
2 bed apartments	0	20	60	0	80
2 bed houses (semi/terrace/courtyard)	38	43	44	19	144
2 bed houses (detached)	0	0	7	2	9
3 bed houses (semi)	35	0	13	0	48
3 bed houses (terrace)	13	19	24	37	93
3 bed houses (detached)	0	28	28	2	58
4 bed houses (semi)	13	14	14	20	61
4 bed house (detached)	0	0	0	20	20
4/5 bed houses (detached)	0	0	0	32	38
Total	**113**	**130**	**201**	**132**	**576**

Table 4.1: Schedule of accommodation

4.1.4 As detailed in Table 4.1, the development proposes a varied mix of housing types across the site.

4.1.5 For the purposes of the Transport Assessment it has been assumed that the proposed primary school will accommodate 480 pupils. For the purposes of this assessment, the catchment area has been assumed to be the Plymouth and Sully Wards of the Vale of Glamorgan, located to the north-east/north-west and south-west of the site respectively.

4.1.6 At this stage, it is not known how occupation of the Primary School will be phased. However, for the purpose of this assessment it has been assumed that the school will be fully operational in 2025 with 480 pupils on roll.

4.1.7 Owing to the fact the application is outline, the development proposals are indicative at this stage and are subject to change during the reserved matters stage. However, it is envisaged that the general principles set out within the masterplan associated with this development will be retained within the final masterplan.

4.1.8 An indicative masterplan layout for the proposed development is shown in **Appendix F**. The indicative masterplan shows how the internal layout of the site works in terms of access for pedestrians, cyclists and vehicles.

4.1.9 The site is ideally located with regard to existing pedestrian/cycle links along Lavernock Road, Railway Walk and the coastal footpath, providing excellent active travel links to the wider area.

4.1.10 This is particularly the case with Railway Walk which, as set out previously, currently runs along the old railway cutting from the Penarth Town centre in a southerly direction and terminates to the north of the developments site boundary. This existing link is very well used by existing residents of the wider area and will play a key role in a providing direct, traffic free link from the proposed development site to Penarth rail station, Penarth Town Centre as well as convenient links towards secondary schools in the area.

4.1.11 Further details on the nature/surfacing of the roads, footways and appropriate traffic calming features will be shown within the detailed design engineering drawings.

4.1.12 The development will provide the necessary pedestrian and cyclist infrastructure within the site to encourage residents to walk and cycle, with 2m wide footways included on one or both sides of the carriageway across the site. Where appropriate, shared use private drives will also be included, prioritising the needs of pedestrians and cyclists over that of vehicles.

4.1.13 In order to maximise the sustainability credentials of the site, consideration of any provision/contribution via a Section 106 Agreement that could be made in order to promote and facilitate more sustainable journeys to/from the site will be considered during the planning determination process.

4.1.14 It is envisaged that possible Section 106 obligations could include facilities such as:

Nextbike facility

4.1.15 Nextbike has recently been implemented in the city of Cardiff, which is a bike hire scheme providing access to 500 bikes from 50 docking stations across Cardiff allowing users to hire bicycles at a rate of £1 per 30 minutes, with a maximum daily charge of £10 per 24 hours.

4.1.16 The closest docking stations to the proposed development site is at the south-western end of Cardiff Bay Barrage.

4.1.17 It is understood that the provision of nextbike facilities is being considered for the wider area of Penarth and implementation of next bike will be investigated for this site. Given the proposed extension of NCN88, provision of a nextbike station would provide a sustainable and convenient mode of transport to travel directly from the site to Penarth Rail Station, which is some 2.5 km north of the site.

4.1.18 Provision of a nextbike station within the proposed development would be the first in this area of Penarth and would be of benefit to both residents of the proposals as well as the general public. However, in order for this to work, a nextbike station would need to be implemented at Penarth Rail Station.

Improved cycle parking facilities at Penarth train station

4.1.19 In order to encourage cycling as a sustainable mode of travel it is proposed to enhance the current level of cycle parking at Penarth Train Station.

Electric Car Club/Enterprise Car Club

4.1.20 Enterprise Car Club is a simplified car hire scheme allowing members to hire a range of cars and vans spread across an ever-increasing number of UK cities. Enterprise Car Club cars and vans are parked in their own designated bays and can be reserved for as little as half an hour, a day, or as long as needed.

4.1.21 The cars and vans are reserved via the Enterprise Car Club app, online or by phone in advance or at the last minute. You can access the vehicles using the app or an Enterprise Car Club access card.

4.1.22 Enterprise Car Club allows you to only pay for the time and distance you actually need a vehicle for, providing the convenience of using a vehicle, without the cost of owning and maintaining one. Enterprise Car Club can be hired from an hourly rate of £4, with a maximum daily charge starting at £32.35.

4.1.23 At the end of reservation, the vehicle is returned to the same designated bay it was picked up from.

4.1.24 Provision of Enterprise Car Club within the proposed development would be the first in this area of Penarth and would be of benefit to both residents of the proposals as well as the general public.

Car-share club

4.1.25 Car sharing schemes such as Share Cymru www.sharecymru.carbonheroes.com allows users to register their regular journeys online to search for potential car sharers, cyclist and walkers. Sharing journeys saves money and reduces carbon footprint and congestion on the local highway network.

Additional bus services

4.1.26 In addition to the above, Section 106 obligations may be used to enhance the current level of bus service provision along Lavernock Road in order to increase frequency. In doing so, it is envisaged that an improved frequency of service will attract both new and existing residents onto busses, thereby potentially reducing the number of cars on the local road network and reducing the level of congestion witnessed along this corridor.

4.1.27 New bus stop provision is being investigated on the site's frontage to Lavernock Road and Section 106 funding may be allocated to improve current service provision.

4.1.28 The implementation of the Travel Plan will improve the sustainability of the site through promotion and raising awareness of more sustainable modes of travel. The Travel Plan includes modal share targets focused on increasing travel by sustainable and active travel modes. The implementation of the Travel Plan will be complemented by the infrastructure referred to above. The TP is mentioned in more detail in sub-section 4.8.

Pedestrian and cycle access

4.1.29 The proposed development will provide the necessary pedestrian and cycling infrastructure within the site to promote and encourage residents to walk and cycle as well as linking with the existing pedestrian/cycle links along Lavernock Road, Railway Walk and the coastal footpath.

4.1.30 Within the site itself, a sustainable community will be created that promotes active travel and positively connects with its immediate context giving priority to pedestrian movement. A pedestrian route linking the National Coastal Path and Cosmeston Lakes will also be established.

4.1.31 Walking and cycling will be promoted by effective implementation of the Travel Plan as a primary mode of transport for the residents of the new development. This will be facilitated by providing the necessary pedestrian and cycling infrastructure within the site to promote and encourage residents to walk and cycle by creating a network of interconnecting public open spaces throughout the site.

4.1.32 The key pedestrian access routes proposed as part of the development proposals are indicated in **Appendix G**.

4.1.33 As detailed in Appendix G, a number of access points to the existing coastal path that runs along the eastern boundary of the site will provided.

4.1.34 As mentioned previously, further enhancements include the extension of the existing NCN88 route through the site providing a direct active travel corridor from the site to Penarth Town Centre. As part of this consideration of the impact of lighting provision on the ecological environment will be investigated to allow for an increased perception of safety and security along the path during hours of darkness.

4.1.35 As part of the access proposals dropped kerbs and tactile paving are to be provided across both access junctions to allow pedestrians to utilise the footways along either side of the carriageway as indicated in **Figure 4.1**.

4.1.36 It is also proposed to provide a new signal-controlled Toucan or Pegasus crossing which will deliver a safe crossing location for pedestrians, cyclists and possibly equestrian users wishing to access Cosmeston Lakes and the proposed new stop for north-bound bus services.

4.1.37 As such, it is proposed to provide footway on the western side of Lavernock Road, measuring approximately 2m in width, which will allow for those travelling on foot safe passage to and from the site and to allow greater ease of access to the northbound bus services and local amenities outlined in Figure 3.3 with greater ease.

4.1.38 It is estimated that the pedestrian provision outlined above will increase the ease at which pedestrians access the proposed bus stops.

4.1.39 Walking and cycling will be promoted as a primary mode of transport for the residents of the new development. Secure covered cycle storage facilities will be provided within the site for the exclusive use of the residents.

4.1.40 It is reasonable to assume that typical able-bodied people are capable of walking at least 2km for day to day activities. The thrust of current sustainability policy is that there will be an increasing propensity for people to use non-single car occupancy modes, of which walking is one. People will choose their mode based on their journey purpose, and it is reasonable to conclude that a proportion of journeys undertaken by residents will be on foot.

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

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

4.1.43 In practice, the distance that any individual is likely to choose to walk depends on that individual and the circumstances, but it is fair to assume that over time, given current policies to encourage sustainable modes, the propensity for individuals to walk, and to walk further, will increase.

4.1.44 Sub-section 3.3 of this TA outlines The Chartered Institute of Highways and Transportation (CIHT) guidelines for walking.

4.1.45 The pedestrian links to Lavernock Road, the coastal footpath and the proposed extension of the cycle route along the old railway line offer direct pedestrian connection to the established network of routes towards local schools and public transport provision, as well as the retail offerings in Penarth Town Centre.

4.1.46 **Figure 4.2** shows the 15 and 30-minute walking isochrones from the centre of the proposed site which demonstrates that a proportion of Penarth is within an acceptable walking distance along with numerous facilities/amenities.

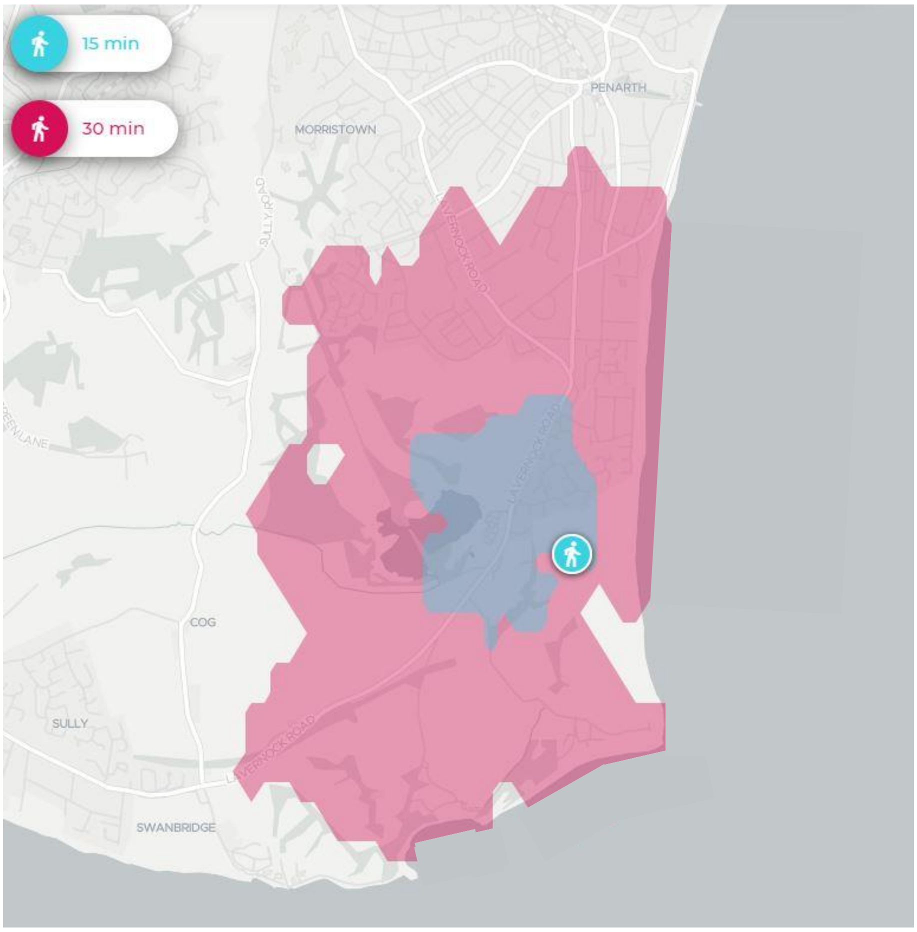


Figure 4.2: Walkable area within 15-30 minutes of the site (Source: TravelTime Maps)

4.1.47 **Figure 4.3** shows the area accessible by bicycle within 5km (30 minutes) of the site in accordance with the findings of both Sustrans and the now superseded PPG 13 policy which suggest that somewhere between 20-30 minutes is an appropriate time/distance for cycle commuting.

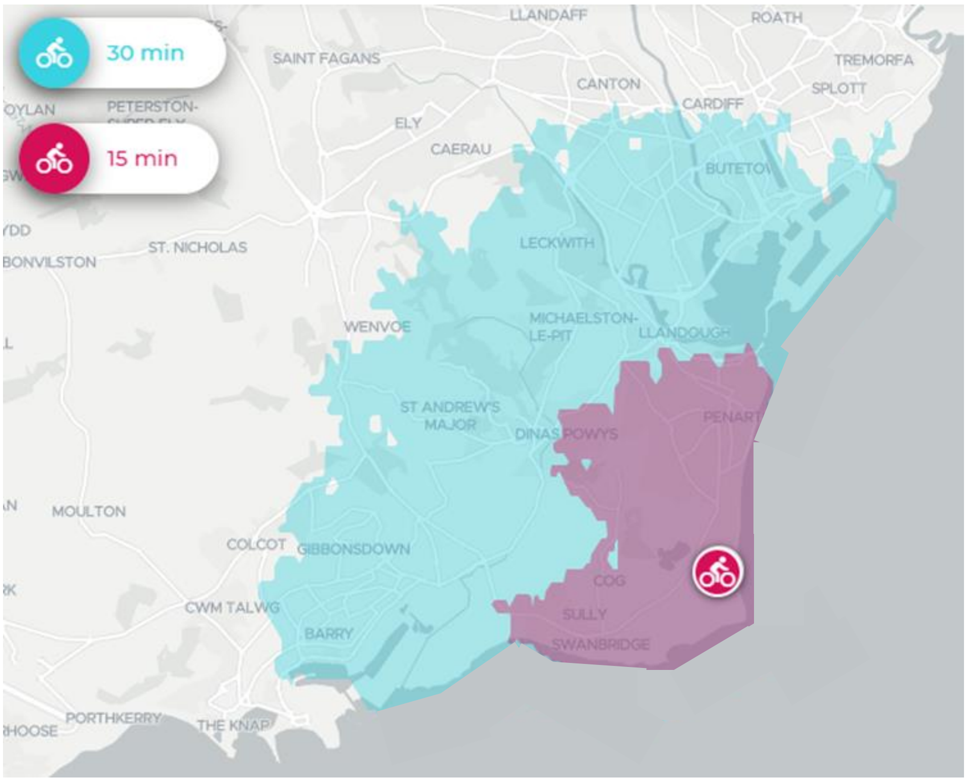


Figure 4.3: Cyclable area within 15-30 minutes of the site **(Source: TravelTime Maps)**

4.1.48 Figure 4.3 demonstrates that Penarth, Sully, Barry and a proportion of Cardiff are within acceptable cycling distance and time from the site.

4.1.49 The proximity of the site to proposed and existing bus stops enhances the sustainability of the site and conforms to local and national policy locating new developments close to public transport links and within walking distance of local facilities.

4.2 Travel Plan

4.2.1 A Travel Plan is a management tool designed to enable the users of a site to make more informed decisions about their travel. It aims to increase the attractiveness of travelling by more sustainable modes thus minimising adverse impacts of travel on the surroundings.

4.2.2 The implementation of a development-wide Travel Plan will improve the sustainability of the site through promotion and raising awareness of more sustainable modes of travel.

4.2.3 This is achieved by setting out a strategy for eliminating the barriers that prevent users of the site from using sustainable modes, within local policy aims. The Travel Plan will apply to both residents and visitors to the site.

4.2.4 The implementation of a well-designed, and properly managed Travel Plan can lead to an increase in the proportion of residents travelling by more sustainable modes.

4.2.5 An Interim Travel Plan for the proposed Primary School and a full Travel Plan for the residential element of the proposed development accompany the planning application. It is understood that their implementation will be incumbent on the school and on housing developers that may ultimately implement any planning permission granted.

4.3 Vehicle access

4.3.1 As set out previously, the proposed development site is to be accessed via two ghost-island priority junctions along the western boundary of the site with Lavernock Road. Both will be constructed with dedicated right-turn lanes to relevant technical standards.

4.3.2 The Highway Authority noted in their response to the TA submitted with the PAC that *'The proposed access arrangement is considered acceptable in principal, subject to detailed design.'*

4.3.3 Details of the proposed access design are indicated in **Figure 4.1.**

4.3.4 Both proposed access junctions have been spaced 135m apart, with the northernmost junction situated 75m south of the existing Cosmeston Drive junction.

4.3.5 The two main points of vehicular access to the site will also incorporate facilities for pedestrians and cyclist. A signal-controlled toucan crossing for both pedestrians and cyclists is proposed at the site's frontage to provide direct and safe access to Cosmeston Lakes. The crossing will also allow access to the north-bound bus services.

4.3.6 New bus stops are also proposed for services operating in both directions. These are also detailed on Figure 4.1.

4.4 Site access visibility

4.4.1 The required visibility splays to DMRB standards can be achieved for the existing 40mph speed limit of Lavernock Road. Notwithstanding, in order to maximise the sustainability credentials of the site, consideration of extending the 30mph in the village to beyond the site access will be considered at the reserved matters stage.

4.4.2 The required visibility splays at the proposed site access points are based on the sight stopping distance (SSD) of vehicles along the site frontage on Lavernock Road.

4.4.3 In accordance with the proposed speed limit of 30mph, the required SSD is 90m when applying technical guidance that is detailed in the Design Manual for Roads and Bridges.

4.4.4 Speed surveys in the vicinity of the proposed site access indicate that the 85th percentile speeds north and south-bound along Lavernock Road are 44.6 mph and 39.7 mph respectively.

4.4.5 Notwithstanding, it is proposed to extend the 30mph zone beyond the site access as part of the development proposals. This, in combination with the development proposals will change the nature of this section of Lavernock Road from its current rural form to that of a more urban nature which will inevitably encourage slower vehicle speeds and active travel.

4.4.6 As such, visibility splays have been based on Manual for Streets (MfS) standards for 30mph roads. **Figure 4.4** details a visibility splay of 2.4m ‘x’ distance by 43m ‘y’ distance to the north and south at both site accesses. It should be noted however, that sight-line dimensions in accordance with technical guidance contained within the Design Manual for Roads and Bridges can be achieved.

4.4.7 It can be seen from the diagram that the required visibility splays are accommodated within land owned by the applicant/highway authority.

4.4.8 Extending the 30mph zone beyond the site access could help promote and support improved sustainability links to local amenities, public transport infrastructure and help improve connectivity to the Active Travel routes in the area.

4.5 The need for Traffic Regulation Orders

4.5.1 The need for new traffic regulation orders for parking or other restrictions on Lavernock Road as a consequence of the development of the school will be assessed at reserved matters stage.

4.6 Service vehicle access

4.6.1 The proposed access points have been designed to accommodate a range of vehicles that are likely to service the site, including a 11.2m refuse collection vehicle (RCV) and a 11.3m bus.

4.6.2 As presented in **Appendix H,** swept-path analysis has been undertaken at each of the site accesses demonstrating that a refuse vehicle and bus can access and depart the site satisfactorily.

4.7 Road Safety Audit

4.7.1 The proposed access arrangement has been subject to a Stage 1 Road Safety Audit (RSA) which was undertaken on 12th June 2019.

4.7.2 The findings of the audit can be seen in **Appendix I**.

4.7.3 The recommendations included in the RSA have been taken into account and the access arrangement has been adjusted accordingly. This has included re-positioning the bus stops and a minor relocation of the proposed Toucan crossing as shown on Figure 4.1.

4.8 Construction impact

4.8.1 Owing to the fact this is an outline planning application, the impact of construction traffic will be set out within a separate Construction Management Plan (CMP) which is anticipated to form part of a positive Planning Condition.

4.8.2 The CMP will set out how the effect of construction traffic will be managed on the local highway network during the anticipated constriction period. The purpose of a CMP is to ensure that the effect of construction traffic is mitigated against, particularly in relation to local residents and any air quality issues. The CMP seeks to control, the timings, routing and volume of traffic entering/leaving the site during the construction period.

Mitigation

4.8.3 As set out previously, in order to maximise the sustainability credentials of the site, consideration of any provision / contribution that could be made in order to promote and facilitate more sustainable journeys to/from the site.

4.8.4 In order to improve access from the site to the wider areas of Penarth, proposals for sustainable public transport links include the provision of new bus stops on Lavernock Road in the vicinity of the site's frontage.

4.8.5 The Masterplan has also been designed to allow for bus movement through the site.

4.8.6 In addition, the extension of the 30mph zone in the village to beyond the site access will be considered at the reserved matters stage in order to support improved sustainability links to public transport infrastructure and Active Travel routes.

4.9 Parking provision

Car parking

4.9.2 As stated previously, approval is sought for outline planning permission for both the residential element of the development and the proposed primary school. As such, details such as the exact parking numbers have not been finalised and will be detailed at the reserved matters stage.

4.9.3 Notwithstanding, parking at the development will be provided in accordance with the Vale of Glamorgan County Council's Supplementary Planning Guidance (March 2019).

4.9.4 At this stage, it is anticipated that an average of 1.7 spaces per dwelling will be provided across the Masterplan site. The Vale of Glamorgan's SPG details that the Authority will take into account a number of factors when assessing development's parking requirements. These include:

- Public Transport Accessibility
- Availability of private buses, taxi services and car pooling
- Accessibility to local goods and services
- Highway safety implications
- The production of a Travel Plan.

4.9.5 In compliance with the Vale's SPG, it is also anticipated to include Electrical Vehicle Charging Points (EVCPs) on all household driveways and to provide 5% of car parking spaces for flats and multiple occupancy dwellings with EVCPs.

4.9.6 **Table 4.2** below outlines the maximum number of car parking spaces that could be provided based on the adopted standards.

Dwelling Type	Parking Standard	No. of units	Guidance Parking Provision
Primary School			
1 commercial vehicle space		N/A	1
1 space per member of teaching staff		TBC	30
3 visitor spaces		N/A	3
Residential – Houses			
1 bed	1 space per bedroom	31	31
2 bed	1 space per bedroom	233	466
3 bed	1 space per bedroom	199	398
4 + 5 bed	Maximum of 3 spaces	113	495
Visitor	1 space per 5 units		115
Total		576	1505
Total overall provision			**1539**

Table 4.2: Car parking provision

4.9.7 As identified in Table 4.2, a maximum of 1,539 car parking spaces could be provided in accordance with the Vale of Glamorgan's adopted parking standards. It is anticipated that the majority of spaces will be located on-plot or within dedicated parking courts.

4.9.8 Owing to the fact the planning application is outline, it is envisaged that the precise level of car parking provision will be detailed at the reserved matters stage. The Masterplan however proposes a lower level of parking than that permissible by way of full application of the Authority's maximum parking standards.

4.9.9 As part of any detailed application for either the primary school or the residential element associated with the site a car parking management strategy will be produced.

4.9.10 For the primary school this will include arrangements for pick up / drop off during the morning and afternoon peaks.

4.9.11 For the residential element, it is considered that the level of car ownership across the development and the package of active and sustainable travel infrastructure will influence parking demand at the application site.

Car ownership rates – location – 2011 Census data

4.9.12 The most recent evidence of car ownership rates can be obtained from the 2011 Census and is consistent with the findings of the Government's *2007 Residential Car Parking Research.*

4.9.13 Dwelling size and type are major factors in determining car ownership levels. Census and survey data show that car ownership among occupiers of flats is normally lower than that for houses.

4.9.14 **Table 4.3** provides data obtained from the 2011 census, setting out car ownership based on the size of households within the middle layer census ward that includes Cosmeston.

Cars - 2011	Households (no.)	Households (%)
No cars or vans in household	594	14
1 car or van in household	1837	43
2 cars or vans in household	1446	33
3 cars or vans in household	332	8
4 or more cars or vans in household	109	3
All categories: Car or van availability	**4318**	**100**

Table 4.3: 2011 Census car ownership – Cosmeston

4.9.15 As such, within the middle layer census ward identified above, 57% of households have access to 1 car or fewer, 33% have access to 2 cars and only 8% with access to 3 cars or more.

Cycle parking

4.9.16 Cycle parking at the proposed development will be provided in accordance with the Vale of Glamorgan's adopted parking standards. Note 6 of Appendix 4 of the cycle parking standards states:

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

4.9.17 As such, cycle Parking is to be provided for all houses and will be incorporated in dwelling design.

4.10 Phasing of development

4.10.1 As set out previously, it is envisaged that the proposed development will be developed as four separate areas, as detailed below:

- Area 00: Community Sports Pitch & 2 Form Entry Primary School
- Area 01: Lakeside Crescents – 113 dwellings;
- Area 02: Limestone Terraces – 127 dwellings;
- Area 03: Garden by the Sea – 200 dwellings; and,
- Area 04: Marconi's Vistas - 132 dwellings.

4.10.2 Owing to the fact this planning application is outline, the end developer is not known at this stage, the level of build rate is unknown. However, for the purpose of this assessment a number of assumptions have been made on the number of houses built per year as detailed in section 6 of this TA.

5.0 TRANSPORTATION IMPLEMENTATION STRATEGY

5.1 Overview

5.1.1 This chapter will comprise a Transport Implementation Strategy (TIS) for the proposed development in line with the guidance specified in TAN 18.

5.1.2 To address and manage the impacts associated with the proposed development, this section presents mitigation measures that will be implemented at the new development to encourage sustainable travel and to address issues associated with private car use.

5.1.3 The TIS should set a framework for monitoring the objectives and targets, including the future modal split of transport to development sites.

5.1.4 TAN 18: Transport (2007) details that a TIS is intended to achieve three things:

- Identify what policy objectives and requirements are set by the development plan in terms of access to the development and movements in and around the site;
- Identify what access arrangements are required for a successful development (meeting the needs of the developer, end user, addressing impacts on neighbours and existing movements surrounding the site); and
- Specify the package of physical, management and promotional measures needed to accommodate the requirements identified above, such as physical infrastructure, the design and location of buildings, parking management, financial incentives and dedicated travel plan co-ordinators.

5.1.5 It is considered that the proposed access strategy and wider integration with local transport networks is consistent with the objectives and requirements of the local development plan.

5.1.6 The transport planning of the proposed development has integrated the objectives of the Travel Plan with the physical design of the masterplan. The views offered by the public during the public consultation event on 1 April 2019 have been accounted for in the Masterplan evolution. There was a desire for improved bus and cycling infrastructure articulated by some members of the public.

5.1.7 The aim of a TIS is to simultaneously promote sustainable modes of transport such as walking, cycling and public transport, while minimising the number of single occupancy car trips to and from the site. The Travel Plan is a specified component of the TIS.

5.2 Objectives and targets

5.2.1 As part of the Travel Plan, the development will need to develop a set of objectives that the implementation of the plan will be trying to achieve.

5.2.2 These could include objectives around trying to reduce private car use and encouraging more residents, pupils and staff to walk or cycle to employment and education. Targets can then be identified to act as indicators of how successful the development is being in achieving the objectives.

5.2.3 The existing mode splits for journeys to work for Cosmeston, the Vale of Glamorgan and Wales as a whole have been presented in **Table 5.1** below. The data has been taken from the 2011 Census data using the QS701EW table. It should be noted that 'not in employment' figures have been excluded from **Table 5.1**.

Method of Travel to work	Cosmeston (Ward)	Vale of Glamorgan (Unitary Authority)	Wales (Country)
Work mainly at or from home	5.7%	5.2%	5.4%
Underground, metro, light rail, tram	0.1%	0.1%	0.1%
Train	4.6%	5.5%	2%
Bus, minibus, coach	3.9%	2.7%	4.6%
Taxi	0.3%	0.5%	0.5%
Motorcycle, scooter or moped	0.5%	0.6%	0.6%
Driving a car or van	71.9%	68.9%	67.4%
Passenger in a car or van	5.0%	5.8%	6.8%
Bicycle	2.2%	1.4%	1.4%
On foot	4.9%	8.6%	10.6%
Other method of travel to work	0.8%	0.7%	0.6%

Table 5.1: 2011 Census Data: Travel to work

5.2.4 Table 5.1 provides an estimate of the baseline mode split for all journey to work in the area. Consequently, aims and objectives of the TIS can be derived from this baseline.

5.2.5 The baseline demonstrates that the majority of residents within Cosmeston (71.9%) currently drive to work. This figure is higher than the current amount who drive to work in the Vale of Glamorgan and Wales as a whole (68.9% and 67.4% respectively).

5.2.6 The proportion of active travel work journeys in Cosmeston are lower than those in the Vale of Glamorgan and Wales as a whole. Table 5.1 outlines that 7.1% of commuters in Cosmeston travel to work on foot or by bicycle, whereas the same journeys account for 10% and 12% in the Vale of Glamorgan and Wales respectively.

5.2.7 Public transport journeys (those undertaken by train, bus, mini bus or coach) in both Cosmeston and the Vale of Glamorgan account for 8.5% and 8.2% respectively.

5.2.8 Suggested targets are provided in **Table 5.2** which are based on achieving a reduction in car use, offset by an increase in walking and cycling.

Objective	Target	Base	Mode share target		
			Year 1	Year 2	Year 5
Reduce the proportion of SOV trips to and from the site	To reduce the mode share for car drivers	72%	69%	67%	62%
	To increase the mode share for car passengers	5%	6%	7%	8%
Increase the proportion of walking and cycling trips to and from the site	To increase the mode share for walkers	5%	5.5%	6%	7%
	To increase the mode share for cyclists	2%	2.5%	3%	4%
Increase the proportion of public transport trips to and from the site	To increase the mode share for rail	5%	5.5%	6%	7%
	To increase the mode share for bus	4%	4.4%	5%	6%
Enable occupiers to make informed decisions about how and when they travel for all trips to and from the site	Every new occupier to receive travel Information within one month of occupation	100%	100%	100%	100%

Table 5.2: Modal split targets

5.2.9 The measures responsible for achieving the targets presented above are outlined within the following strategies:

- Walking Strategy (Section 5.2)
- Cycling Strategy (Section 5.3)
- Public Transport strategy (Section 5.4)

5.2.10 Not only does the TIS seek to encourage shifts towards sustainable transport within the proposed development, but within neighbouring communities to ensure sustainable connectivity between residential clusters in the area.

5.2.11 There are four key stages to creating a socially inclusive community, which in turn encourages non-motorised and sustainable travel. These are:

- Design
- Choice
- Behaviour
- Network management

5.3 Design

5.3.1 Through designing, communities that are conducive to pedestrian movement, the use of the private vehicle can be minimised.

5.3.2 Walkable communities are ones which prioritise pedestrian safety though sufficient street lighting, lower traffic speeds, improved footway provision and mixed-use developments. These communities prioritise the needs of pedestrians over those of private vehicles.

5.3.3 In the process of designing these communities, residents have the opportunity to enhance their social capital through engaging with neighbours. As a result, the natural instinct may not be to drive longer distances to recreational activities.

5.3.4 Rather, the natural instinct may be to travel shorter distances (ones which may be bridged via active and healthy modes) to interact with friends or partake in recreational activities.

5.4 Choice

5.4.1 Providing residents with a range of travel options minimises reliance on private vehicles. Through expanding the range of travel options to residents the risk of social exclusion induced by private travel is curtailed.

5.4.2 Providing residents with a choice of travel options ensures that contributing to road congestion is a personal decision as opposed to a necessity. Additionally, 'choice' increases the propensity to shift towards a cleaner mode of transport.

5.5 Behaviour

5.5.1 Educating residents on their travel behaviour may also minimise car dependency. As awareness increases regarding the consequences to certain travel options, the likelihood of shifts to more sustainable modes of transport increases.

5.6 Network Management

5.6.1 In order to promote more sustainable communities, it is important to consider network capacity. Car travel, for example, per person occupies the greatest proportion of the carriageway. Consequently, private vehicles are the least efficient use of the carriageway.

5.6.2 Promoting public and/or active travel, however, can be used to maximise the capacity of the highway network. Each strategy for the development will now be detailed in turn.

5.7 Walking strategy

5.7.1 Walking is a core component of active travel, therefore playing a vital role in the success of sustainable transport strategies.

5.7.2 As mentioned previously, the likelihood of walking depends on a range of personal factors. Such factors may include the purpose of that journey, the weather, physical capability or the costs of alternative modes of transport to name but a few.

5.7.3 Within modern land-use and transport policy, walking and cycling (in areas where transport needs to occur) are placed at the core of concerns. As part of a new development such as this one, it is reasonable to assume that the same principles may apply.

5.7.4 According to the 2014 Travel to School Survey, around 75% of primary school children walk under 1 mile to school (1.6km) and around 25% walk between 1 and 2 miles to school (approximately 1.6 – 3.2km). Similarly, the 2014 Travel to School Survey states that over 75% of secondary school children walk under 1 mile to school, and over 50% walk between 1 and 2 miles. The nearest primary school to the development is located approximately 2.1km walking distance from the site, whereas the closest secondary school is located approximately 2.5km from the site. Consequently, it may be assumed that a reasonable number of trips to school will be made by active modes.

5.7.5 It is also noted that a school is proposed as part of the development, further supporting the notion that a reasonable amount of school trips may be made via sustainable modes on completion of the scheme.

5.7.6 It can be anticipated that emphasis on sustainable travel within transport policy may encourage an increase in the amount who travel on foot.

5.7.7 Sustrans state that only two in five short journeys (under 5 miles) are made on foot, bike or public transport. The remainder of these journeys are made by car. While it is acknowledged that it is necessary to make some short journeys by car (those that involve carrying heavy shopping), a large proportion of journeys can be made on foot and therefore contribute towards a sustainable transport strategy.

5.7.8 The benefits of walking include:

- A boost to the economy through a cheaper infrastructure;
- Positive health outcomes via a cheap and convenient form of exercise;
- Relieving congestion on the road network; and
- An improvement in air quality.

5.8 The Proposed development

5.8.1 In order to encourage travelling on foot to, from and within the development, scheme proposals include:

- A Toucan crossing (or a type to be agreed with the Highway Authorty) to be located centrally between the two proposed access points and footway provision on the western side of Lavernock Road to allow access to Cosmeston Lakes and the north-bound bus stop;
- The continuation of an existing active travel route (NCN88) on a north-south axis through the development site;
- The provision of new bus stop infrastructure to current accessibility standards;
- New links to Whitcliffe Drive.

5.9 Travel Plan

5.9.1 Accompanying this Transport Assessment as part of the outline planning application is a Travel Plan, detailing the opportunities to walk to-from and within the development.

5.10 Summary

5.10.1 The walking strategy above has outlined the potential of walking as a mode of transport in spearheading a sustainable transport strategy, providing walking is presented as the most efficient mode of transport over short distances.

5.10.2 The design and layout of the proposed development, supported by this walking strategy and the travel plan referenced above, will facilitate and promote the option of walking as a mode of transport. Prioritising walking as a mode of transport will foster healthier and more socially inclusive communities in which people can live, work and play.

5.10.3 In addition, the proposed toucan crossing provides the development with better connectivity with Cosmeston Lakes.

5.11 Cycling strategy

5.11.1 A range of factors influence the distances that people are prepared to cycle – such as journey purpose, cycling conditions and physical ability to name but a few. Statistics published in 2017 reveal that in cities such as Copenhagen, 41% of all trips to work and study are made via bicycle. In the UK, cities such as London and Bristol are examples of where the amount cycling to work or education is gradually increasing.

5.11.2 There is no specific guidance on comfortable cycling distances, however Sustrans imply that up to 5 miles is an appropriate distance.

5.11.3 The DfT LTN 1/04 – Policy, Planning and Design for Walking and Cycling state that the average length for cycling journeys is 4km (2.4 miles) however people will cycle up to three times this distance for other purposes.

5.11.4 At a speed of 15km/h (approximately 9mph), a distance of between 7.5km and 11.25km may be reached.

5.12 Proposed development

5.12.1 To encourage cycling to, from and within the site, as previously outlined, proposals include an extension of the existing NCN route 88 which ends abruptly to the north of the site to date.

5.12.2 Active Travel routes are proposed within the LDP and are to be located through the middle of the proposed development and along the east of Penarth to follow the coast and link the proposed development to Cardiff Bay.

5.12.3 Additionally, each dwelling will have convenient cycle storage, which will further encourage the use of bicycle in the development.

5.13 Travel Plan

Accompanying this Transport Assessment as part of the outline planning application is a comprehensive Travel Plan, detailing the opportunities to cycle to-from and within the development.

5.14 Summary

5.14.1 The existing cycle network in the vicinity of the site, as previously outlined, is reasonable to the north of the site. The existing network provides passage along the coast to Penarth. Proposals to extend this network will provide residents with increased sustainable travel options, that is, to travel sustainably to the south.

5.15 Public Transport strategy

5.15.1 The site will be designed to provide residents with improved access to bus services along Lavernock Road.

5.15.2 The planning application proposes to provided new bus stops in the vicinity of the site frontage and the masterplan has safeguarded land within the site to allow for future bus service penetration.

5.16 Travel Plan

5.16.1 Accompanying this Transport Assessment as part of the outline planning application are 2 Travel Plans, one for the school use and another for the residential development These detail the opportunities to use active travel and public transport services to travel to and from the development.

5.16.2 The implementation of the Travel Plans is seen as key to the successful delivery of the Transportation Implementation Strategy.

5.17 Summary

5.17.1 The principal of the TIS is to detail the core values of the development behind encouraging shifts towards more sustainable modes of transport. The TIS proposes a package of physical infrastructure measures such as active travel routes on identified desire lines, improved public transport accessibility, and demand management in the form of restrained parking provision for elements of the development.

6.0 TRANSPORT CHARACTERISTICS

6.1 Introduction

6.1.1 This section of the report outlines the likely volumes of traffic generated by the proposed development and identifies the likely impact of the proposals on the surrounding network.

6.1.2 As has been detailed in the preceding section of the report, the planning application seeks permission for the development of up to 576 residential dwellings as well as a 2-form entry primary school.

6.2 Trip generation

6.2.1 The trip generation for the proposed residential development and primary school have been obtained from the TRICS 7.5.4 trip generation database.

6.2.2 It should be noted that average trip rates have been utilised to predict trip generation for the proposed residential and primary school associated with the development. Justification of this approach is detailed below.

6.2.3 The current land use and transport policy context in Wales is not to predict and provide for movement by the private car. On the contrary, the transport hierarchy detailed in Planning Policy Wales places all other travel modes above that of the private car, which the development proposals for this site advocate.

6.2.4 The filtering applied during the interrogation of TRICS resulted in 12 comparable sites. The TRICS Good Practice guidance states that 20 sites should be selected if trying to achieve an 85%ile trip rate.

6.2.5 As such, there are insufficient sites within TRICS to generate an 85th percentile trip rate.

6.2.6 In addition, a comparison of local trip rates has been undertaken to gain an understanding of the level of trips generated by existing housing within the vicinity of the site indicates that the average trip rates generated from TRICS are actually a worst-case compared with the local trip rates identified. Details of the local trip rates are analysed later on within this section of the TA.

6.2.7 Therefore, the use of average trip rates is considered both robust and appropriate for the scale/nature of the development proposals.

6.3 Consideration of active travel/public transport provision

6.3.1 In addition to the above, the trip generation flows associated with the development proposals have been supressed to take into account the following active travel provision/bus enhancements/Travel Plan and Metro proposals.

6.3.2 Based on the active travel provision/bus enhancements and Travel Plan proposed as part of the development proposals as well as the future Metro proposals in the area, trip generation rates associated with the residential development have been reduced by 10%.

6.3.3 This reduction is deemed as both robust and appropriate given the level of enhancements proposed as part of the development proposals.

6.4 Phasing of the development

6.4.1 As set out previously, it is envisaged the development will be built in a number of phases. In order to relate this to the assessment years, the following occupation has been assumed:

- 2019 Baseline – no development;
- 2022 – 50 residential dwellings occupied;
- 2025 – 260 residential dwellings occupied plus operational 2 form entry Primary school;
- 2029 – 576 residential dwellings occupied plus school.

6.4.2 It should be noted that the trip rates for the 2025 and 2029 assessment years have been calculated based on a 10% reduction in order to take into account the proposed active travel/bus enhancements/travel plan/metro improvements.

6.5 Residential – 576 dwellings

6.5.1 Sites from the database have been selected on the basis of the following criteria:

- Land use: Residential – Mixed private/affordable housing;
- Survey days: Monday-Friday;
- Number of units: 93 to 500 units; and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

6.5.2 The multi-modal trip generation for the proposed residential element of the development is outlined in **Table 6.1, Table 6.2 and Table 6.3** below and the full TRICS output is included in **Appendix J.**

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
2022 – 50 dwellings						
0800-0900	0.139	0.372	0.511	6	17	24
1700-1800	0.314	0.153	0.467	15	7	23
2025 – 260 dwellings (including 10% reduction for active travel)						
0800-0900	0.139	0.372	0.511	30	81	111
1700-1800	0.314	0.153	0.467	71	35	106
2029 – 576 dwellings (including 10% reduction for active travel)						
0800-0900	0.139	0.372	0.511	67	179	246
1700-1800	0.314	0.153	0.467	158	77	236

Table 6.1: Vehicle trip generation – Mixed private/affordable dwellings

6.5.3 It is evident from Table 6.1 that, in 2022, the residential element of the development could generate 24 vehicle movements (two-way) in the AM peak period and 23 vehicle movements (two-way) in the PM peak period.

6.5.4 In 2025, it is predicted that 260 residential dwellings could generate 111 vehicle movements (two-way) in the AM peak period and 106 vehicle movements (two-way) in the PM peak period (minus 10% for active travel/public transport improvements).

6.5.5 By 2029, the proposals would be fully built out and 576 residential dwellings could generate 246 vehicle movements (two-way) in the AM peak period and 236 vehicle movements (two-way) in the PM peak period (minus 10% for active travel/public transport improvements).

Peak period	Trip rates			Pedestrians		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.030	0.151	0.181	17	87	104
1700-1800	0.051	0.027	0.078	29	16	45

Table 6.2: Pedestrian trip generation – 576 mixed private/affordable dwellings

6.5.6 It is evident from **Table 6.2** that, based on a development of 576 dwellings, the development could generate up to 104 pedestrian movements (two-way) in the AM peak period and up to 45 pedestrian movements (two-way) in the PM peak period.

Peak period	Trip rates			Cyclists		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.002	0.010	0.012	1	6	7
1700-1800	0.010	0.006	0.016	6	3	9

Table 6.3: Cyclist trip generation – 576 mixed private/affordable dwellings

6.5.7 It can be seen from **Table 6.3** that, in total, the proposed development could generate up to 7 cyclist trips (two-way) in the AM peak period and up to 9 cyclist trips (two-way) in the PM peak period.

6.5.8 Notwithstanding the above, it is envisaged that the level of cycling trips generated by the development proposals would in reality by higher for this development given the level of new cycle infrastructure provided, linking in with NCN 88 providing a direct link with Penarth train station and Penarth Town Centre. In addition, it is envisaged that the provision of a Nextbike station within the site will further encourage cycle trips to and from the development.

6.6 Local trip rates

6.6.1 In addition to the trip rates derived from TRICS, local trip rates have been assessed to gain an understanding of the level of trips generated by existing housing within the vicinity of the site.

6.6.2 The housing provision accessed off Cosmeston Drive totals 364 residential dwellings and is served off one access junction, located approximately 220m from the northern boundary of the proposed development.

6.6.3 The trips rates for Cosmeston Drive have been calculated by factoring the number of vehicles arriving and departing Cosmeston Drive during the AM and PM peak periods by the number of dwellings (364).

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.100	0.379	0.479	58	218	276
1700-1800	0.329	0.120	0.449	189	69	258

Table 6.4: Vehicle trip generation for 576 dwellings using locally calculated trip rates

6.6.4 It is evident from Table 6.4 that, based on 576 residential dwellings, using the local trip rates the development could generate 276 vehicle movements (two-way) in the AM peak period and 258 vehicle movements (two-way) in the PM peak period.

6.6.5 It is noted that the adjusted trip rates as derived from the TRICS database are very similar to those of the locally derived trip rates detailed in Table 6.4 above.

6.6.6 The trip rates derived from the TRICS database have been validated against local (vehicular) surveys undertaken, which show 30 and 22 greater vehicle movements in the AM and PM peaks respectively compared with those derived from TRICS.

6.7 Primary School – 480 Pupils

6.7.1 The development proposes to provide a 2-form entry Primary School with a capacity of up to 480 pupils.

6.7.2 Sites from the database TRICS have been selected on the basis of the following criteria:

- Land use: Education – Primary;
- Survey days: Monday-Friday;
- Number of pupils: 92 to 531 and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

6.7.3 It should be noted that only 2 of the sites identified within the TRCIS analysis have Travel Plans, whereas the proposed primary school will have a Travel Plan established from its outset. As such, the trip rates used are considered to be worst-case.

6.8 Internalisation of primary school trips

6.8.1 There is no provision for a secondary school on the proposed development site, as such, all secondary education trips will be external to the site. However, owing to the fact a primary school is proposed within the development site, which is envisaged to be built by 2025, a number of education trips will be internalised from within the residential development with primary school aged children.

6.8.2 It is envisaged that a number of internal trips will be made by residents with Primary school aged children within the development itself, as well as from dwellings within Cosmeston Drive, Upper Cosmeston Farm and the 24 residential dwellings at the southern end of Whitcliffe Drive.

6.8.3 As a result of a primary school being located within the proposed development site it is considered that the residential trip rates would include for a proportion of trips undertaken for primary school education purposes.

6.8.4 As such, the NTM / NTEM datasets for the geographic area MSOA Vale of Glamorgan 008 have been reviewed through the TemPro V7.2 software package to identify the level of car driver trips from homebased environment are undertaken for educational purposes.

6.8.5 This identified that during the AM peak 13% of all trips were carried out for educational purposes and that during the PM peak this reduced to 5% of all trips.

6.8.6 To further break this down to trips associated with primary schools the age structure of the MSOA VoG 008 has been reviewed based on Table KS102EW of the 2011 Census. This identified that of school aged children 54% were of primary school age (4 – 11).

6.8.7 As such, a reduction factor of 7% and 2.7% has been applied to all residential trips associated with the development during the AM and PM peak periods respectively.

6.8.8 In addition, the trips which could be associated with primary school journeys emanating from residential properties along Cosmeston Drive have also been reduced by the same factors. This is due to trips which would previously have been undertaken by car likely to use alternative modes as a result of the proposed proximity of the primary school as well as the directness of the connections via the extension of the shared use walking and Cycling route NCN88.

6.8.9 This reduction in trips on the surrounding local highway network has been calculated based on the in and outbound flows to / from Cosmeston Drive and applied directly as a proportion of the trip generation associated with the primary school (6% and 18% of primary school trips in the AM and PM respectively).

6.8.10 The vehicular trip generation for the proposed primary school is therefore outlined in **Table 6.5** below and the full TRICS output is included in **Appendix K**.

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.238	0.161	0.399	107	72	179
1700-1800	0.018	0.033	0.051	7	15	22

Table 6.5: Vehicle trip generation – primary school – 480 pupils

6.8.11 It can be seen from Table 6.5 that the proposed 2-form entry primary school could generate up to 179 two-way vehicle movements in the AM peak period and up to 19 two-way vehicle movements in the PM peak period.

6.9 Total trip generation

6.9.1 The total vehicle trips generated by the proposed residential element of the development and 2-form entry primary school are detailed in **Table 6.6** below.

Peak period	Vehicles		
	Arrive	Depart	Total
2022 – Residential only			
0800-0900	6	17	24
1700-1800	15	7	23
2025 – Residential + school			
0800-0900	137	154	310
1700-1800	78	47	125
2029 – Residential + school			
0800-0900	174	252	425
1700-1800	165	89	254

6.10 Table 6.6: Total vehicle trips generated

6.10.1 It can be seen from the table above that the proposed development is predicted to generate a maximum of 456 vehicles two-way in the AM peak period and 267 vehicles two-way in the PM peak period in 2029.

6.11 Distribution of development flows

Residential

6.11.1 The development traffic has been assigned to the local highway network from the origin/destination information contained within the 2011 census data for The Vale of Glamorgan 008F lower layer super output area.

6.11.2 Travel to work data has been obtained from table *QS701EW – Method of travel to work* contained within the Office for National Statistics Census 2011.

6.11.3 The percentage distribution to the Vale of Glamorgan's highway network is shown in **Table 6.7.** The corresponding development trips assigned to the study network for 2022, 2025 and 2029 are shown in **Figure 6.1**, **Figure 6.2** and **Figure 6.3** respectively.

Network entry/exit point	Percentage distribution
W02000239: The Vale of Glamorgan 003	3%
W02000240: The Vale of Glamorgan 004	8%
W02000241: The Vale of Glamorgan 005	19%
W02000242: The Vale of Glamorgan 006	2%
W02000244: The Vale of Glamorgan 008	6%
W02000245: The Vale of Glamorgan 009	3%
W02000248: The Vale of Glamorgan 012	5%
W02000250: The Vale of Glamorgan 014	2%
W02000251: The Vale of Glamorgan 015	3%
W02000384: Cardiff 018	3%
W02000392: Cardiff 026	2%
W02000398: Cardiff 032	14%
W02000400: Cardiff 034	2%
W02000402: Cardiff 036	3%
W02000404: Cardiff 038	3%
W02000406: Cardiff 040	3%
W02000412: Cardiff 046	4%
W02000422: Cardiff 048	9%
W02000423: Cardiff 049	6%
Total	100%

Table 6.7: Percentage distribution to wider road network

6.11.4 It should be noted that traffic has been assigned using the fastest/most convenient route using Google Maps to assign traffic flows.

6.11.5 The majority of residents living in the Vale of Glamorgan 008 lower layer super output area work within the Vale or the county of Cardiff.

6.12 Future base traffic flows

6.12.1 To take account background traffic growth on the local highway network within the vicinity of the site between 2017 and 2027, growth factors have been applied to the 2018 surveyed flows. These growth factors have been calculated using the TemPro (v7.2) computer programme which consider growth in population, employment, and car ownership based on information derived from the National Trip Ends Model (NTEM) and the 2011 National Travel Survey.

6.12.2 The study area assessed within this TA falls within the geographical area of MSOA The Vale of Glamorgan 008.

6.12.3 TemPro guidance specifies that the growth factors for individual areas are derived from forecasts at a local authority level which are informed by allocated housing and employment sites within the associated local development plans. The following developments, which are included as part of the current Vale of Glamorgan LDP proposals, have therefore been removed from the future year data:

1) Land at Upper Cosmeston Farm – 576 Dwellings (this application)

2) Land West of Swanbridge Road, Sully – 325 dwellings (2013/01279/OUT)

6.12.4 This reduces the potential for double counting of traffic flows associated with considering specific committed development sites which are also included in the TemPro growth factors.

6.12.5 This level of household reduction has been applied to The Vale of Glamorgan as an overall district and then split proportionally over all MSOA areas, based on the housing numbers within TemPro for each MSOA area in the entire of The Vale of Glamorgan.

6.12.6 The alternative assumption calculations have been set out in **Appendix L**.

6.12.7 The factors which have been applied to the 2018 baseline surveyed flows are identified in **Table 6.8** below.

Period	Level	Name	AM	PM
2018-2019	W02000244	The Vale of Glamorgan 008	1.0141	1.0139
2018-2022	W02000244	The Vale of Glamorgan 008	1.0272	1.0253
2018-2025	W02000244	The Vale of Glamorgan 008	1.0517	1.0512
2018-2029	W02000244	The Vale of Glamorgan 008	1.0785	1.0790

Table 6.8: NTM growth factors

6.12.8 The 2022, 2025 and 2029 base traffic flows are set out in **Figure 6.4**, **Figure 6.5** and **Figure 6.6** respectively.

6.13 Committed development

6.13.1 As set out previously, the following schemes have been considered as committed development within this TA.

6.14 Land south of Cog Road, Sully – Planning Ref 2013/01279/OUT

6.14.1 Outline planning permission was granted for up to 325 residential dwellings on land to the south of Cog Road, Sully in May 2016. This forms part of a larger project which could accommodate up to 450 dwellings. The site has been allocated in the Vale of Glamorgan Local Development Plan for a residential development of up to 500 homes. The development is to be accessed via two priority junctions, one along Cog Road and the other via Swanbridge Road.

6.14.2 The Transport Assessment dated and prepared by Vectos on behalf of Taylor Wimpey has been reviewed and the committed development traffic attraction has been extracted. A flow diagram outlining the traffic flows assigned to the local highway network for this committed development is set out in **Figure 6.7**.

6.14.3 The forecast growth contained within the NTM growth factors in addition to the traffic generation associated with the committed development set out in this report provides a robust assessment for future year traffic growth.

6.14.4 A reserved matters application for the development is currently being processed by the Vale of Glamorgan during the time of writing this TA – planning ref 2019/00111/RES.

6.15 Final and future traffic flows

6.15.1 The final future traffic flows have been obtained by combining the development flows (Figure 6.1-6.3) with the 2022, 2025 and 2029 base traffic flows (Figure 6.4-6.6).

6.15.2 The 2022, 2025 and 2029 ‘with development’ traffic flows are set out in **Figure 6.8**, **Figure 6.9** and **Figure 6.10** respectively.

7.0 IMPACT OF THE DEVELOPMENT PROPOSALS

7.1 Introduction

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

7.1.2 The following 10 junctions have been assessed:

1. A4231/A4055/Sully Moors Road roundabout junction
2. Sully Moors Road/B4267/Hayes Road roundabout junction
3. Lavernock Road/Cosmeston Lake Country Park priority junction
4. Lavernock Road/Cosmeston Drive priority junction
5. Lavernock Road/Westbourne Road priority junction
6. B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads
7. Lavernock Road/Dinas Road/Victoria Road crossroads
8. Cardiff Road/B4267/A4055 signalised junction
9. A4055/B4267/Andre Road signalised crossroads
10. A4055/A4160 signalised intersection

7.2 Impact assessment

7.2.1 A vehicular impact assessment has been undertaken that calculates the primary trip generation of the proposed development on the wider road network at the junctions identified above.

7.2.2 In addition, a percentage impact assessment for 2022, 2025 and 2029 has been undertaken that calculates the impact of the primary trip generation of the proposed development on the wider road network at the junctions identified above.

7.2.3 The vehicular and percentage impact assessment is shown in **Table 7.1**.

Junction	Total junction flow				% impact	
	Base		Development			
	AM	PM	AM	PM	AM	PM
2022						
A4231/A4055/Sully Moors Road	3561	3240	4	5	0%	0%
Sully Moors Road/B4267/Hayes Road	2083	1687	4	5	0%	0%
Lavernock Road/Cosmeston Lake Country	1471	1256	19	19	1%	2%
Lavernock Road/Cosmeston Drive	1571	1374	19	19	1%	1%
Lavernock Road/Westbourne Road	1615	1373	20	19	1%	1%
B4267/Augusta Road/Lavernock Rd/Castle Av	967	928	15	14	2%	2%
Lavernock Road/Dinas Road/Victoria Road	1225	1184	16	14	1%	1%
Cardiff Road/B4267/A4055	2641	2710	14	13	1%	0%
A4055/B4267/Andrew Road	2629	2763	13	14	1%	0%
A4055/A4160	4070	4187	12	11	0%	0%
2025						
A4231/A4055/Sully Moors Road	3643	3319	20	19	1%	1%
Sully Moors Road/B4267/Hayes Road	2130	1726	20	19	1%	1%
Lavernock Road/Cosmeston Lake Country	1506	1287	238	106	16%	8%
Lavernock Road/Cosmeston Drive	1608	1408	238	106	15%	7%
Lavernock Road/Westbourne Road	1653	1406	238	105	14%	7%
B4267/Augusta Road/Lavernock Rd/Castle Av	990	952	188	81	20%	9%
Lavernock Road/Dinas Road/Victoria Road	1254	1214	129	74	10%	6%
Cardiff Road/B4267/A4055	2701	2775	63	60	2%	2%
A4055/B4267/Andrew Road	2689	2830	57	60	2%	2%
A4055/A4160	4166	4291	55	53	1%	1%
2029						
A4231/A4055/Sully Moors Road	3733	3405	44	42	1%	1%
Sully Moors Road/B4267/Hayes Road	2180	1767	44	42	2%	2%
Lavernock Road/Cosmeston Lake Country	1543	1320	349	212	23%	16%
Lavernock Road/Cosmeston Drive	1648	1444	349	212	21%	15%
Lavernock Road/Westbourne Road	1694	1443	349	212	21%	15%
B4267/Augusta Road/Lavernock Rd/Castle Av	1015	977	255	163	25%	17%
Lavernock Road/Dinas Road/Victoria Road	1286	1246	214	156	17%	13%
Cardiff Road/B4267/A4055	2767	2845	140	134	5%	5%
A4055/B4267/Andrew Road	2755	2902	140	134	5%	5%
A4055/A4160	4270	4402	122	117	3%	3%

Table 7.1: Percentage Impact Analysis

7.2.4 As seen in Table 7.1, the proportionate effect of the development traffic the junctions closest to the site are generally the highest, with an impact of 23% at Lavernock Road/Cosmeston Lake Country junction during the 2029 AM peak period.

7.2.5 This trend continues, with the impact of development traffic gradually decreasing as distance from the site increases as vehicles leave the network. However, the maximum impact of development traffic is witnessed at B4267/Augusta Road/Lavernock Rd/Castle Av with an impact of 25% during the 2029 AM peak period.

7.2.6 This is due to the fact a large proportion of vehicles currently turn right onto Westbourne Road and therefore the impact on the adjacent junction is skewed.

7.2.7 A threshold for assessment of +5% has been used. Where the effect of the development proposals is greater than 5%, detailed junction modelling work is undertaken to quantify the effect in terms of queue lengths and junction capacity.

7.2.8 The impact of the development at the following junctions is 5% or less during both the 2025 and 2029 AM and PM peak periods for the assessed periods.

- A4231/A4055/Sully Moors Road roundabout junction
- Sully Moors Road/B4267/Hayes Road roundabout junction
- Cardiff Road/B4267/A4055 signalised junction
- A4055/B4267/Andre Road signalised crossroads
- A4055/A4160 signalised intersection

7.2.9 Therefore, it is considered that the overall impact of the development proposals is negligible at the junctions identified above and do not require capacity assessment.

7.2.10 The Highway Authority noted in their observations on the PAC Transport Assessment that the 'Merrie Harrier' signal-controlled junction of Cardiff Road/B4267/A4055 should be 'subject to detailed modelling to quantify the effect of the development traffic.'

7.2.11 Asbri Transport are aware that this junction forms part of the Dinas Powys Transport Network Study which includes

"Undertaking concept design, modelling and costing of suggested improvements to the Merrie Harrier junction to improve capacity. These will be considered in the context of costs associated with the pink and green route options".

7.2.12 The junction has been included in VISSIM microsimulation modelling undertaken to inform the Dinas Powys Transport Network Study.

7.2.13 Asbri Transport understand that this further work was reported to the VoG Cabinet in February 2019. As such it is considered that the operational performance of the Merrie Harrier junction is known to the Highway Authority and that there should be no requirement for further detailed traffic modelling of its peak hour performance.

7.2.14 As such, capacity assessments have been undertaken at the following junctions:

- Lavernock Road/Northern site access junction;
- Lavernock Road / Southern site access junction;
- Lavernock Road/Cosmeston Lake Country Park priority junction;
- Lavernock Road/Cosmeston Drive priority junction;
- Lavernock Road/Westbourne Road priority junction;
- B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads; and,
- Lavernock Road/Dinas Road/Victoria Road signals.

7.2.15 It should also be noted that the future year assessed of 2029 is 10 years after the base year and therefore it is almost impossible to predict the capacity of the local junctions in 2029.

7.3 Junction capacity

7.3.1 In order to understand the resultant effect from the change in traffic flows, capacity analysis has been carried out at the key junctions using the computer modelling software Junctions 9 for priority junctions and roundabout junctions and LINSIG to assess the signalised junctions.

7.4 Definition of modelling terms

LOS – Level of Service

7.4.1 In this instance, model outputs show the un-signalised level of service values for each peak hour, based on the average delay per arriving vehicle.

7.4.2 The LOS system uses the following alphabetised categories:

- A = Free flow
- B = Reasonably free flow
- C = Stable flow
- D = Approaching unstable flow
- E = Unstable flow
- F = Forced or breakdown flow

Queue length

7.4.3 The queue lengths stated in the capacity assessment results represent the average maximum queue lengths in Passenger Car Units (PCUs) on each approach arm across the peak hour.

7.4.4 They are therefore indicative of queuing extents at the busiest point of the peak hour and are not representative of average conditions.

RFC – Ratio Flow to Capacity

7.4.5 The ratio of flow to capacity provides a measure of the utilised capacity of a junction approach arm. Arms exceeding a ratio of 0.85 (i.e. 85% capacity utilised) are considered to be approaching capacity and characteristically have light-to-moderate levels of queued traffic flow. Arms exceeding a ratio of 1.00 (i.e. 100% capacity utilised) are considered to be over capacity and are characterised as having heavy volumes of queued traffic.

7.4.6 Results that exceed RFCs of 1.00 generate queue lengths that are subject to exponential growth. However, the instability of flows through over-capacity approach arms, results in an inherent difficulty in calibrating modelled outputs to observed conditions. For this reason, queue lengths attributed to overcapacity approach arms should be seen as indicative rather than representative

7.4.7 The capacity assessment tables in this TA use a colour-coding system to assist in appraisal:

- Arms with an RFC of less than 0.85 are coloured green
- Arms with an RFC between 0.85 and 0.99 are coloured amber
- Arms with an RFC of 1.00 or more are coloured red

7.5 Junction capacity modelling

Northern Site Access

7.5.1 As stated previously, it is anticipated that the residential dwellings to be served off the southern site access will be built out first, therefore, it is proposed that residential dwellings served by the northern access will not be occupied by the year 2022.

7.5.2 Therefore, the operation of the northern site access priority junction has been assessed for future year assessment periods of 2025 and 2029 using Junctions 9. The results of the analysis are presented in **Appendix M** and shown in **Table 7.2** below.

7.5.3 Each arm of the junction is represented as follows:

- Arm A – Lavernock Road (N)
- Arm B – Northern site access
- Arm C – Lavernock Road (S)

Approach Arm	With Development					
	0800-0900			1700-1800		
	Max Q	RFC	LOS	Max Q	RFC	LOS
2025 Future year assessment (180 units)						
Stream B-C	0.0	0.02	A	0.0	0.01	A
Stream B-A	0.2	0.18	C	0.1	0.07	B
Stream C-B	0.0	0.01	A	0.0	0.02	A
2029 Future year assessment (496 units)						
Stream B-C	0.1	0.07	A	0.0	0.02	A
Stream B-A	1.1	0.52	D	0.3	0.21	C
Stream C-B	0.0	0.02	A	0.1	0.06	A

Table 7.2: Northern Site Access

7.5.4 From Table 7.2, it can be seen that the proposed northern access junction of the development is likely to operate within capacity for both future year assessment periods.

7.6 Southern Site Access

7.6.1 The proposed southern site access has been assessed for future year assessment periods of 2022, 2025 and 2029 using Junctions 9.

7.6.2 It is anticipated that up to 50 residential units to be served off the southern site access will be built out by the opening year of 2022, with the full 80 dwellings to be built and occupied by 2025. The future year of 2025 will also see the proposed Primary School in operation.

7.6.3 The results of the analysis are presented in **Appendix N** and shown in **Table 7.3**.

7.6.4 Each arm of the junction is represented as follows:

- Arm A – Lavernock Road (N)
- Arm B – Southern site access
- Arm C – Lavernock Road (S)

Approach Arm	With Development					
	0800-0900			1700-1800		
	Max Q	RFC	LOS	Max Q	RFC	LOS
2022 year of opening (50 units)						
Stream B-C	0.0	0.01	A	0.0	0.01	A
Stream B-A	0.1	0.05	B	0.0	0.02	A
Stream C-B	0.0	0.00	A	0.0	0.01	A
Stream A-BC	0.4	0.30	A	0.4	0.30	A
2025 Future year assessment (80 units + Primary School)						
Stream B-C	0.1	0.05	A	0.0	0.01	A
Stream B-A	0.3	0.22	C	0.1	0.06	B
Stream C-B	0.1	0.08	A	0.0	0.01	A
Stream A-BC	0.5	0.34	A	0.7	0.42	A
2029 Future year assessment (80 units + Primary School)						
Stream B-C	0.1	0.05	A	0.0	0.01	A
Stream B-A	0.3	0.24	C	0.1	0.06	B
Stream C-B	0.1	0.08	A	0.0	0.02	A
Stream A-BC	0.6	0.36	A	0.9	0.47	A

Table 7.3: Southern Site Access

7.6.5 The above table demonstrates that the southern site access is likely to operate well within capacity in all assessment scenarios with a maximum RFC of 0.47 achieved along Lavernock Road (S) in the 2029 PM peak period.

7.7 Lavernock Road/Cosmeston Drive priority junction

7.7.1 The operation of the Lavernock Road/Cosmeston Drive priority junction has been assessed for each of the assessment periods using Junctions 9. The results of the analysis are presented in **Appendix O** and summarised in **Table 7.4** below.

7.7.2 Each arm of the junction is represented as the following:

- Arm A – Lavernock Road (N)
- Arm B – Cosmeston Drive
- Arm C – Lavernock Road (S)

Junction	No Development						With Development					
	0800-0900			1700-1800			0800-0900			1700-1800		
	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS
2019 Baseline Scenario												
Stream B-AC	1.2	0.56	D	0.2	0.17	B						
Stream C-A	2.1	0.51	A	0.8	0.30	A						
Stream C-B	0.0	0.51	A	0.1	0.32	A						
2022 Baseline Scenario												
Stream B-AC	1.4	0.59	D	0.2	0.17	C	1.5	0.61	E	0.2	0.18	C
Stream C-A	1.8	0.48	A	0.8	0.29	A	2.0	0.50	A	0.8	0.30	A
Stream C-B	0.0	0.48	A	0.0	0.31	A	0.0	0.50	A	0.0	0.32	A
2025 Baseline Scenario												
Stream B-AC	1.5	0.62	E	0.2	0.18	C	3.0	0.78	E	0.3	0.20	C
Stream C-A	1.9	0.49	A	0.8	0.30	A	2.7	0.58	A	1.0	0.35	A
Stream C-B	0.0	0.49	A	0.1	0.31	A	0.0	0.57	A	0.1	0.36	A
2029 Baseline Scenario												
Stream B-AC	1.8	0.65	E	0.2	0.18	C	5.9	0.92	F	0.3	0.24	C
Stream C-A	2.0	0.50	A	0.8	0.30	A	3.4	0.63	B	1.2	0.39	A
Stream C-B	0.0	0.50	A	0.1	0.31	A	0.0	0.63	B	0.1	0.39	A

Table 7.4: Lavernock Road/Cosmeston Drive priority junction

7.7.3 It can be seen from Table 7.4 that the Lavernock Road/ Cosmeston Drive priority junction operates within capacity during all baseline scenarios, however, the Cosmeston Drive arm achieves an RFC of 0.92 during the 2029 'with development' AM peak period. A maximum queue length of 6 PCUs occurs along Cosmeston Drive in the 2029 AM 'with development' scenario.

7.8 Lavernock Road/Westbourne Road priority junction

7.8.1 The operation of the Lavernock Road/Westbourne Road priority junction has been assessed for each of the assessment periods using Junctions 9. The results of the analysis are presented in **Appendix P** and shown in **Table 7.5** below.

7.8.2 The Lane Simulation tool has been used to model the Lavernock Road/Westbourne Road priority junction after discussion with TRL which is included at **Appendix Q**. Lane Simulation allows junctions to be modelled using a simple simulation method. This can model effects that may be difficult to model otherwise such as unequal lane usage. In this case, lane simulation models movement of turning vehicles from A-B and B-C explicitly, hence representing the situation more realistically.

7.8.3 For PICADY junctions, capacities and RFCs are not shown when using Lane Simulation because although base capacities are taken from the core PICADY model, they are combined and adjusted in various ways which mean that the throughput and queue and delay are the most useful measure of performance.

7.8.4 Each arm of the junction is represented as the following:

- Arm A – Lavernock Road (N)
- Arm B – Westbourne Road
- Arm C – Lavernock Road (S)

Junction	No Development						With Development					
	0800-0900			1700-1800			0800-0900			1700-1800		
	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS
2019 Baseline Scenario												
Arm B-C	0.9	0.46	B	6.3	0.88	E						
Arm B-A	0.0	0.04	D	0.0	0.05	F						
Arm C-AB	83.3	1.15	F	0.5	0.31	A						
2022 Baseline Scenario												
Arm B-C	0.9	0.48	B	7.6	0.91	F	1.0	0.51	B	12.7	0.97	F
Arm B-A	0.0	0.05	E	0.1	0.08	F	0.1	0.07	F	0.6	0.83	F
Arm C-AB	100.3	1.18	F	0.6	0.32	A	131.5	1.25	F	0.6	0.35	A
2025 Baseline Scenario												
Arm B-C	1.0	0.49	B	9.6	0.94	F	155.0	999R	F	24.0	1.04	F
Arm B-A	0.1	0.06	E	0.2	0.25	F	2.2	999R	F	0.8	1.04	F
Arm C-AB	116.6	1.22	F	0.6	0.33	A	235.5	1.38	F	0.8	0.38	A
2029 Baseline Scenario												
Arm B-C	1.0	0.51	B	12.4	0.97	F	222.9	999R	F	45.9	1.13	F
Arm B-A	0.1	0.07	F	0.6	0.84	F	3.3	999R	F	0.9	1.12	F
Arm C-AB	135.7	1.25	F	0.6	0.34	A	320.9	1.48	F	1.0	0.42	A

Table 7.5: Lavernock Road/Westbourne Road priority junction

7.8.5 Table 7.5 demonstrates that the Lavernock Road (S) arm of the junction currently experiences a poor level of service (F) with queues forming during the 2019 AM scenario. This is considered to occur as a result of the high level of right turning movements into Lavernock Road to access Penarth.

7.8.6 Westbourne Road also experiences capacity constraints in the PM peak period with a large number of movements travelling to south on Lavernock Road. The capacity constraints further deteriorate with the inclusion of additional movements as a result of the committed and proposed developments.

7.8.7 However, it should be noted that this is an existing constraint with the junction already experiencing queueing during the AM and PM peak periods with the proposed development not being the cause of the capacity problems.

7.8.8 Potential mitigation measures to alleviate congestion impacts on the junction have however been investigated. This has included:

1) Provision of a ghost island right turn lane

2) Provision of a mini / compact roundabout

3) Provision of a signalised junction

7.8.9 The results of the mitigation analysis have demonstrated that a localised traffic management scheme may offer the greatest benefit to network performance in this location. This will be investigated further with the Highway Authority.

7.9 Lavernock Road (N)/Augusta Road/Lavernock Road (S)/Castle Avenue Priority Cross Road Junction

7.9.1 The operation of the Lavernock Road (N)/Augusta Road/Lavernock Road (S)/Castle Avenue priority cross road junction has been assessed for each of the assessment periods using Junctions 9. The results of the analysis are presented in **Appendix R** and shown in **Table 7.6** below.

7.9.2 Each arm of the junction is represented as the following:

- Arm A – Lavernock Road (N)
- Arm B – Augusta Road
- Arm C – Lavernock Road (S)
- Arm D – Castle Avenue

Junction	No Development						With Development					
	0800-0900			1700-1800			0800-0900			1700-1800		
	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS	Max Q	RFC	LOS
2019 Baseline Scenario												
Stream B-ACD	0.2	0.19	B	0.3	0.22	B						
Stream A-BCD	0.0	0.03	A	0.1	0.07	A						
Stream D-ABC	0.5	0.31	B	0.2	0.16	B						
Stream C-ABD	0.0	0.02	A	0.0	0.02	A						
2022 Baseline Scenario												
Stream B-ACD	0.3	0.20	B	0.3	0.22	B	0.3	0.20	B	0.3	0.23	B
Stream A-BCD	0.0	0.04	A	0.1	0.08	A	0.0	0.04	A	0.1	0.08	A
Stream D-ABC	0.5	0.32	B	0.2	0.17	B	0.5	0.32	B	0.2	0.17	B
Stream C-ABD	0.0	0.02	A	0.0	0.02	A	0.0	0.02	A	0.0	0.02	A
2025 Baseline Scenario												
Stream B-ACD	0.3	0.21	B	0.3	0.23	B	0.4	0.26	B	0.3	0.25	B
Stream A-BCD	0.0	0.04	A	0.1	0.08	A	0.0	0.04	A	0.1	0.08	A
Stream D-ABC	0.5	0.33	B	0.2	0.17	B	0.8	0.43	C	0.2	0.19	B
Stream C-ABD	0.0	0.02	A	0.0	0.02	A	0.0	0.04	A	0.0	0.03	A
2029 Baseline Scenario												
Stream B-ACD	0.3	0.22	B	0.3	0.24	B	0.4	0.29	C	0.4	0.27	C
Stream A-BCD	0.0	0.04	A	0.1	0.08	A	0.0	0.04	A	0.1	0.08	A
Stream D-ABC	0.5	0.35	C	0.2	0.18	B	0.9	0.48	C	0.2	0.20	B
Stream C-ABD	0.0	0.02	A	0.0	0.02	A	0.0	0.04	A	0.0	0.03	A

Table 7.6: Lavernock Rd/Augusta Rd/Castle Avenue Cross Road Junction

7.9.3 Table 7.6 indicates that the Lavernock Road/Augusta Road/Castel Avenue cross road junction operates within capacity in all development scenarios. All RFC values fall well below 0.85.

7.10 Lavernock Road/Dinas Road/Victoria Road signals.

7.10.1 The operation of the above signalised junction has been assessed for each of the assessment periods, using the JCT program LinSig version 3. The results of the analysis are presented in full in **Appendix S** and summarised in **Table 7.7** below.

7.10.2 LinSig calculates a Degree of Saturation (DoS)as a percentage. A 90% or less DoS value is generally considered to result in satisfactory operation of any arm of a signalised junction. Values between 90% and 100% suggest that the arm is approaching its theoretical capacity, while values in excess of 100% indicate that the arm of the signalised junction is over capacity.

7.10.3 LinSig also provides a Practical Reserve capacity (PRC) percentage figure, which is an overall assessment of the amount of spare capacity available at a signalised junction. In most cases, a DoS value of between 90% and 100% results in a negative PRC figure, indicating there is no spare capacity available. Theoretical capacity of each individual arm is however only reached when the DoS passes 100%.

7.10.4 The junction has been modelled based on the extant four stage method of control, with each arm running separately. The pedestrian crossing facility has been modelled every other cycle as on-site observations have indicated that pedestrian demand is very low. It should also be noted that the junction operates under the control of optimisation software (MOVA). This ensures that cycle and stage timings are optimised dependent on the throughput over detector loops within the road surface of the individual approach arms.

7.10.5 A limitation of LinSig V3 is that the software only allows capacity calculations based on fixed cycle times. Stage timings can be optimised for every scenario however throughout the peak period modelled these cannot be amended to reflect varying degrees of demand.

7.10.6 As such, it is industry practice that any junction that operates under MOVA control and is modelled through LinSig V3 will likely with 10 – 15% more capacity than is predicted in the model.

Approach arm		No Development				With Development			
		0800-0900		1700-1800		0800-0900		1700-1800	
Lane	Description	DoS	Max Q	DoS	Max Q	DoS	Max Q	DoS	Max Q
2019									
1/1	Lavenock Road North	78.8%	11.0	77.2%	15.4				
2/1	Victoria Rd	79.1%	9.5	75.7%	9.0				
3/1	Lavenock Road South	79.7%	13.7	76.5%	11.6				
4/1	Dinas Road	80.3%	11.3	77.4%	6.7				
2022									
1/1	Lavenock Road North	82.8%	11.8	79.2	16.3	82.1%	11.7	79.5	16.5
2/1	Victoria Rd	81.1%	9.9	77.9	9.3	83.2%	10.2	79.9	9.6
3/1	Lavenock Road South	82.0%	14.6	78.6	12.2	82.9%	15.1	79.5	12.4
4/1	Dinas Road	81.2%	11.8	79.0	6.9	82.9%	12.1	79.5	7.0
2025									
1/1	Lavenock Road North	84.5%	12.1	81.1%	16.8	93.4%	15.7	86.7%	19.3
2/1	Victoria Rd	83.4%	10.5	79.9%	9.9	91.4%	13.1	84.4%	10.4
3/1	Lavenock Road South	83.9%	15.1	80.5%	12.6	92.2%	20.6	85.2%	14.4
4/1	Dinas Road	82.8%	12.5	81.0%	7.3	92.3%	15.6	84.3%	8.1
2029									
1/1	Lavenock Road North	84.9%	12.7	83.3%	17.7	99.5%	20.6	93.2%	24.4
2/1	Victoria Rd	85.4%	10.9	82.2%	10.4	98.5%	16.7	91.7%	12.4
3/1	Lavenock Road South	86.2%	16.0	82.5%	13.1	101.2 %	33.3	93.8%	18.9
4/1	Dinas Road	86.6%	13.2	83.0%	7.8	99.6%	20.7	92.6%	10.2

Table 7.7: LINSIG analysis – Lavernock Road/Dinas Road/Victoria Road – Existing staging

7.10.7 It can be seen from Table 7.7 that the Lavernock Road/Dinas Road/Victoria Road signalised junction operates above its theoretical capacity on the Lavernock Road South arm in the 2029 with development scenario.

7.10.8 However, as this analysis is based on both fixed cycle and stage timings it is considered that the optimisation software in operation at the junction will allow it to operate more efficiently.

7.10.9 As such, it is considered that in reality the junction will generally operate close to but within theoretical capacity.

7.11 Mitigation

7.11.1 Despite the fact that the junction is likely to operate within theoretical capacity given the optimisation software mitigation measures have been identified for this junction which would free up additional capacity.

7.11.2 Owing to the fact the Lavernock Road/Dinas Road/Victoria Road signalised junction operates as four separate stages, it is possible to improve the operation of the junction as a whole.

7.11.3 The existing four-stage traffic sequence could be replaced with a more efficient two-stage sequence that would incorporate right-turning traffic operating under priority control in the middle of the junction.

7.11.4 The results for this revised stage arrangement are summarised in **Table 7.8** and included in full at **Appendix T**.

Approach arm		With Development			
		0800-0900		1700-1800	
Lane	Description	DoS	Max Q	DoS	Max Q
2029					
1/1	Lavenock Road North	44.7%	6.4	60.9%	11.0
2/1	Victoria Rd	45.6%	5.8	58.9%	6.3
3/1	Lavenock Road South	72.0%	12.7	42.7%	6.4
4/1	Dinas Road	71.7%	8.8	61.7%	4.5

Table 7.8: LINSIG analysis – Lavernock Road/Dinas Road/Victoria Road Modified staging

7.11.5 Table 7.8 indicates that the proposed changes to the signal staging would result in a more efficient operation of the junction compared to the base scenario, allowing the proposed development to be accommodated while remaining within theoretical capacity.

7.12 Summary

7.12.1 The results of the junction modelling show that, with the exception of the Westbourne Road junction, that there are no major issues on capacity identified on the majority of the junctions and that the local highway network can generally accommodate a residential development comprising 576 dwellings and a primary school.

7.12.2 As part of the planning application process discussions will be held with highway officers at the Vale of Glamorgan Council to determine the most appropriate mitigation scheme for the Westbourne Road / Lavernock Rd priority junction.

7.12.3 The analysis also indicates that the operation of the Lavernock Road/Dinas Road/Victoria Road signalised junction could be improved to the benefit of existing road users.

7.12.4 However, as discussed above, it is considered that predicting the level of traffic associated with a future year of 2029 is impossible to accurately predict given the possible proposals for this area of the VoG, including the Metro, possible bus frequency improvements and the Dinas Powys relief road.

8.0 CONCLUSION

8.1 Summary

8.1.1 Asbri Transport has been appointed by Welsh Government to produce a Transport Assessment in support of a planning application for the proposed development of up to 576 residential dwellings, a 2-form entry Primary School and associated community facilities on land to the east of Lavernock Road, Cosmeston.

8.1.2 The site is situated within close proximity to public transport infrastructure, including bus stops along Lavernock Road, with frequent services providing access around Penarth and in to Cardiff and the wider highway network. In addition, the site is ideally located with regard to existing pedestrian/cycle links along Lavernock Road, Railway Walk and the coastal footpath, providing excellent active travel links to the wider area.

8.1.3 It is proposed to provide vehicular access along the western boundary of the site onto Lavernock Road in the form of two ghosted right turn priority junctions.

8.1.4 Improved pedestrian provision is to be provided in the form of a signalised Toucan crossing located between the northern and southern access points along Lavernock Road. It is also proposed to extend Railway Walk (NCN88) into the development site, providing opportunity for active travel.

8.1.5 Existing bus stops are located to the north of the proposed development along Lavernock Road and it is proposed to provide two new bus stops with north bound and south bound services in the immediate vicinity of the development.

8.1.6 The planning application proposes to re-locate the start of the 30-mph speed limit to a location west of the proposed development site.

8.1.7 Trip generation for the proposed development has been derived for the TRICS 7.5.6 trip generation database. It is predicted that the proposed development as a whole is likely to generate 456 vehicles two-way in the AM peak period and 257 vehicles two-way in the PM peak period.

8.1.8 The proposed development traffic has been assigned to the local highway network from the origin/destination information contained within the 2011 census data for The Vale of Glamorgan 008F lower layer super output area.

8.1.9 Capacity analysis indicates that no major issues are identified at the majority of the junctions analysed within this TA as a result of the development proposals comprising 576 dwellings and a primary school.

8.1.10 The analysis also indicates that the operation of the Lavernock Road/Dinas Road/Victoria Road signalised junction could be improved to the benefit of existing road users.

8.1.11 However, it is considered that predicting the level of traffic associated with a future year of 2029 is impossible to accurately predict given the possible proposals for this area of the VoG, including the Metro, possible bus frequency improvements and the Dinas Powys relief road.

8.1.12 It should also be noted that the 2022, 2025 and 2029 future years include both committed development flows and a Tempro growth factor and it is considered that this may result in overestimating the traffic growth in these assessment years.

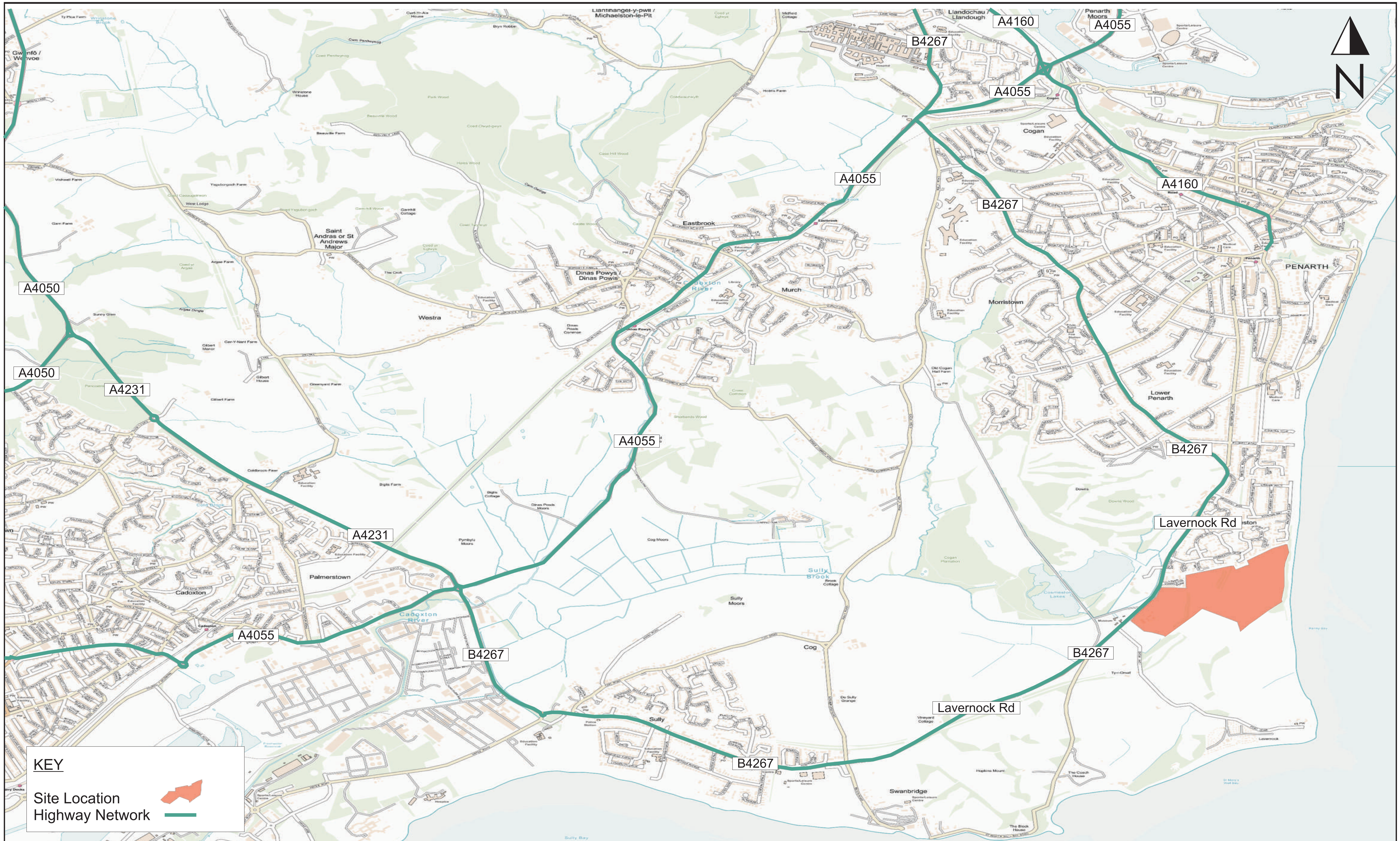
8.2 Conclusion

8.2.1 It is considered that the development is appropriate and acceptable in traffic and transport terms and that the traffic movements associated with the development proposals could be accommodated on the highway network.

8.2.2 The proposed development site is located with good access to public transport services operating on Lavernock Road, with frequent services running from bus stops within the site's vicinity. The site is also situated within walking distance of a number of amenities/facilities, reducing the need for private car-borne trips.

8.2.3 Consideration has been given to mitigation by way of the provision of Active Travel and Passenger Travel infrastructure with a good level of active travel improvements proposed.

Figures



Drawing Title

Site Location & Local Highway Network

Client

Welsh Government

Job Title

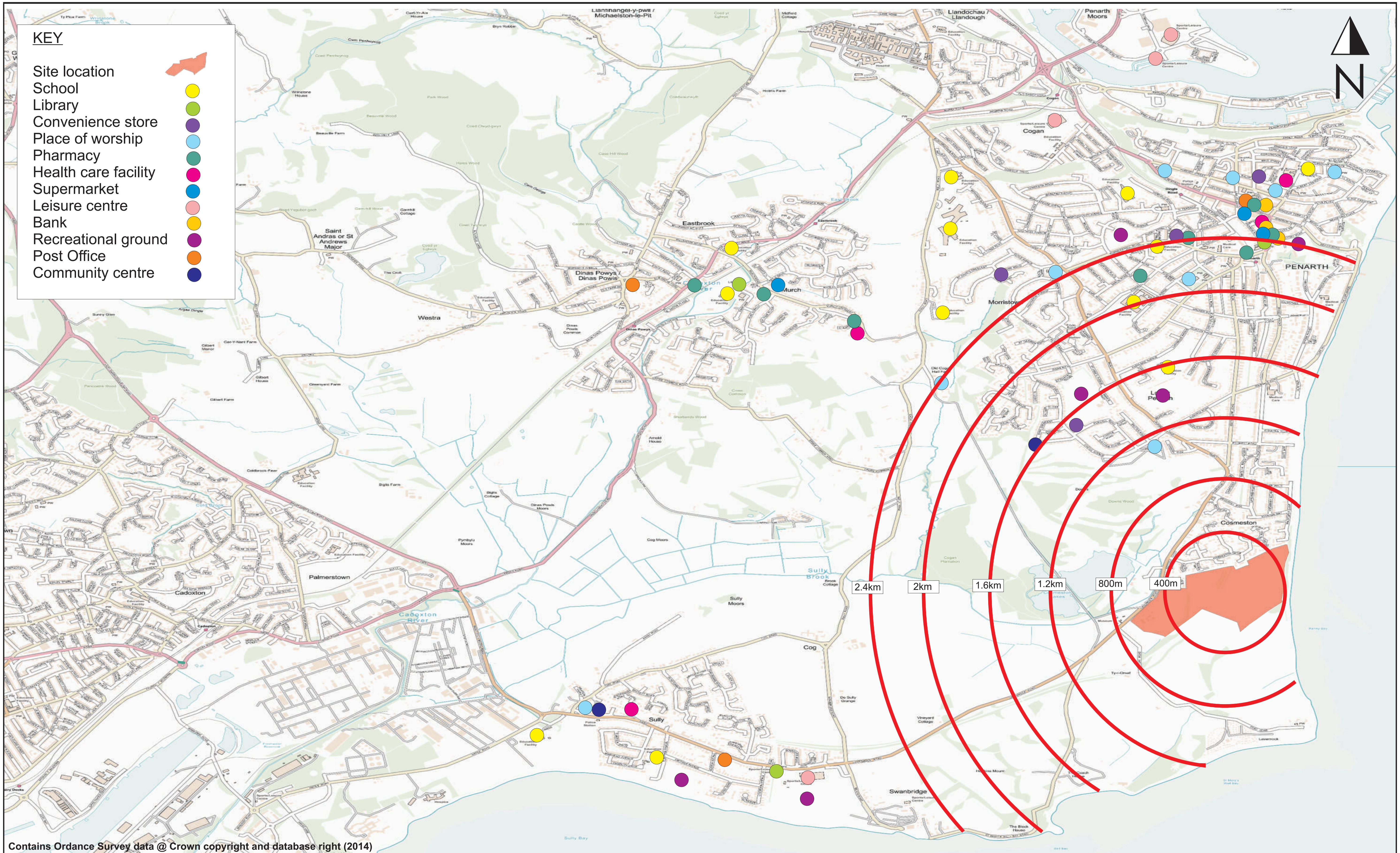
Cosmeston

asbritransport
Suite D
1st Floor
220 High Street
Swansea
SA1 1NW
T 01792 480535

Scale:	NTS
Designed by:	KW
Drawn by:	KW
Ckd/Appd:	PO'C
Issued:	July 2019
Job No:	T18.164

File Extension:

Drg No: Figure 3.1



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		Drawn by: KW	
		Ckd/Appd: PO'C	
		Issued: July 2019	Drg No: Figure 3.2
		Job No: T18.164	

asbritransport
Suite D
1st Floor
220 High Street
Swansea
SA1 1NW
T 01792 480535

Drawing Title: Local Cycle Network	Client: Welsh Government	asbritransport	Scale: NTS	File Extension:
			Designed by: KW	
			Drawn by: KW	
	Job Title: Cosmeston	Suite D, 1st Floor, 220 High Street, Swansea, SA1 1NW	Ckd/Appd: PO'C	
			Issued: July 2019	Drg No: Figure 3.3
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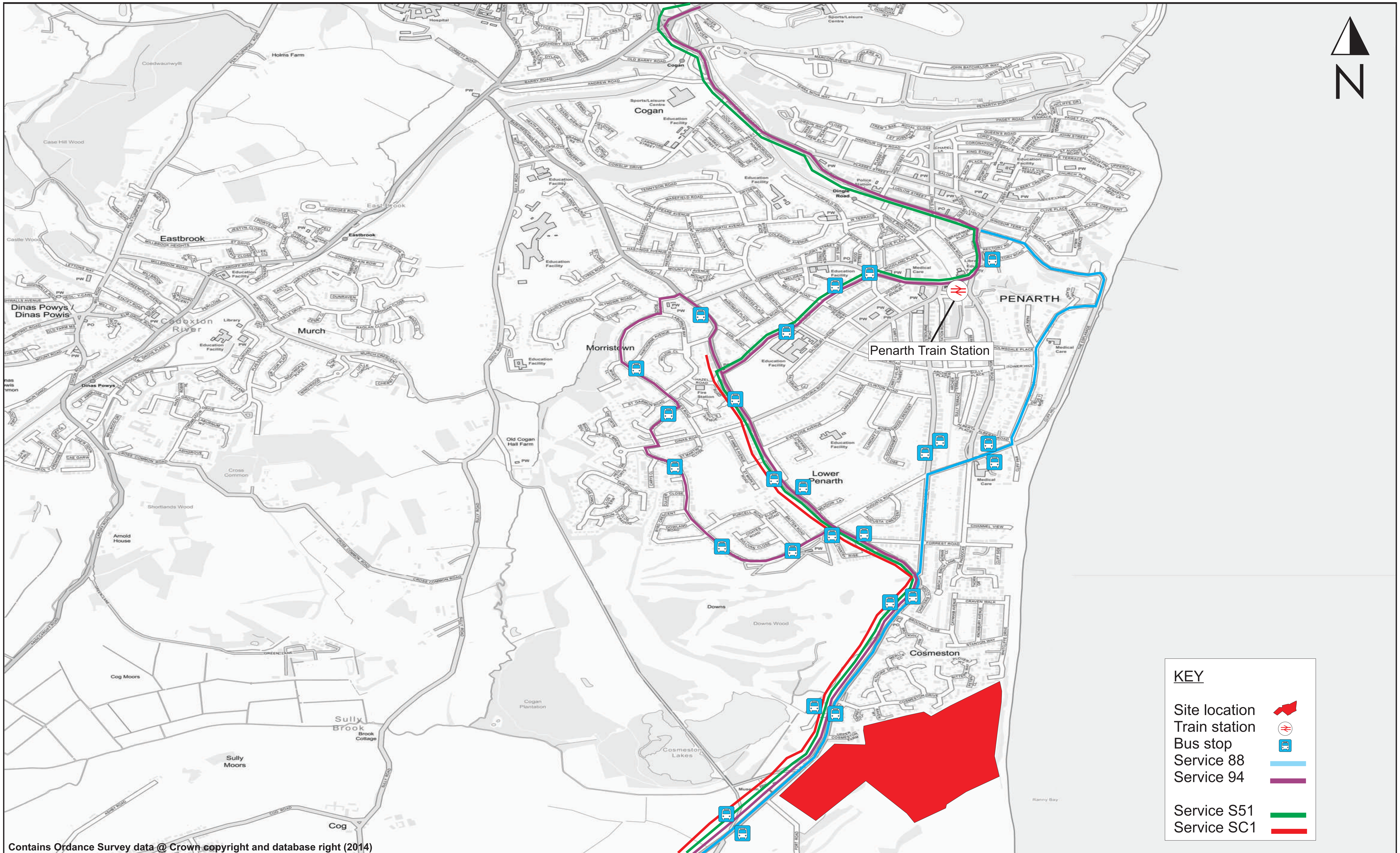

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Public Transport Infrastructure	Welsh Government	asbritransport	Designed by:	KW	
	Job Title		Drawn by:	KW	
	Upper Farm, Cosmeston	Suite D, 1st Floor, 220 High Street, Swansea, SA1 1NW	Ckd/Appd:	PO'C	
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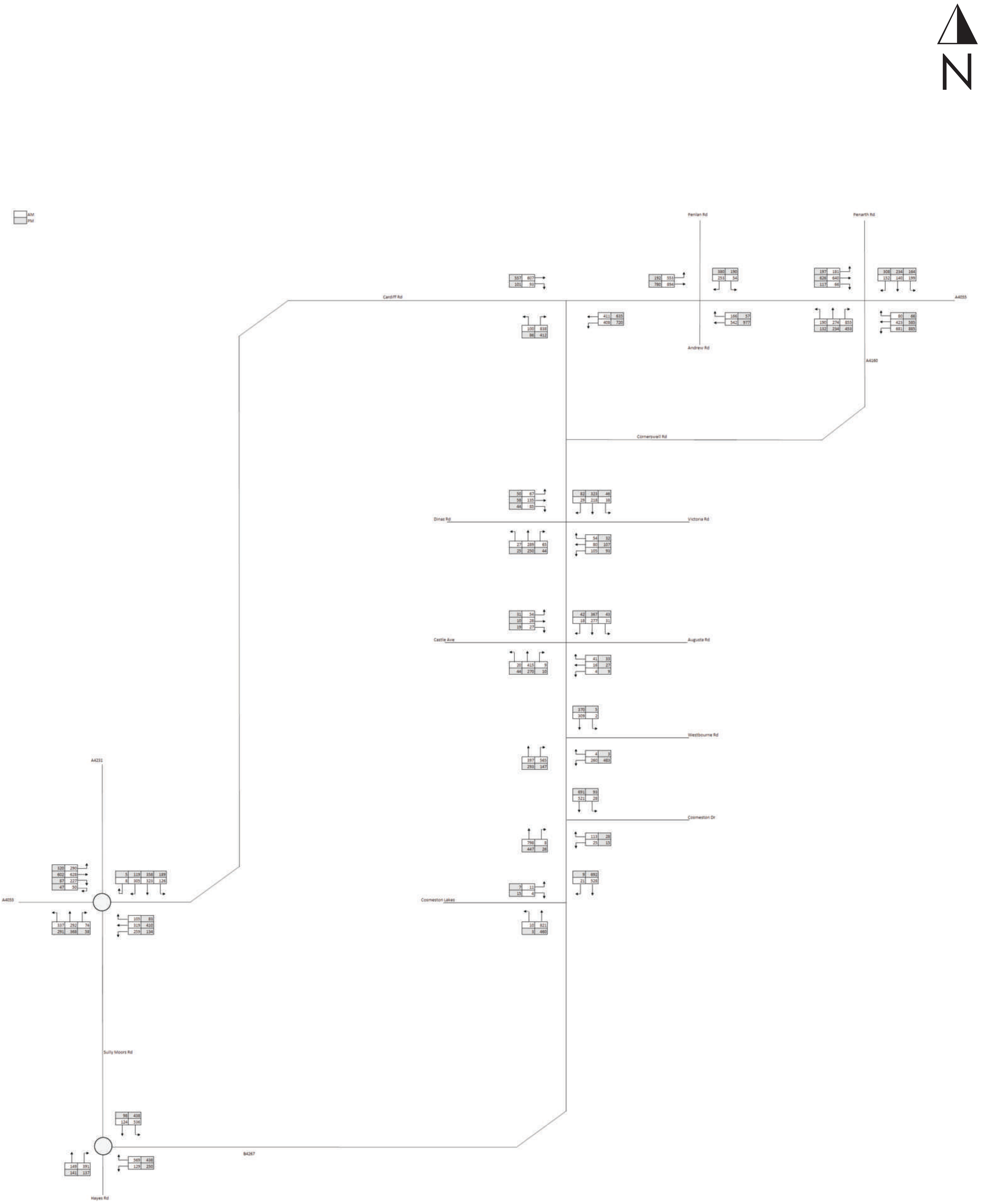

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			Ckd/Appd: POC
			Issued: July 2019
			Job No: T18.165
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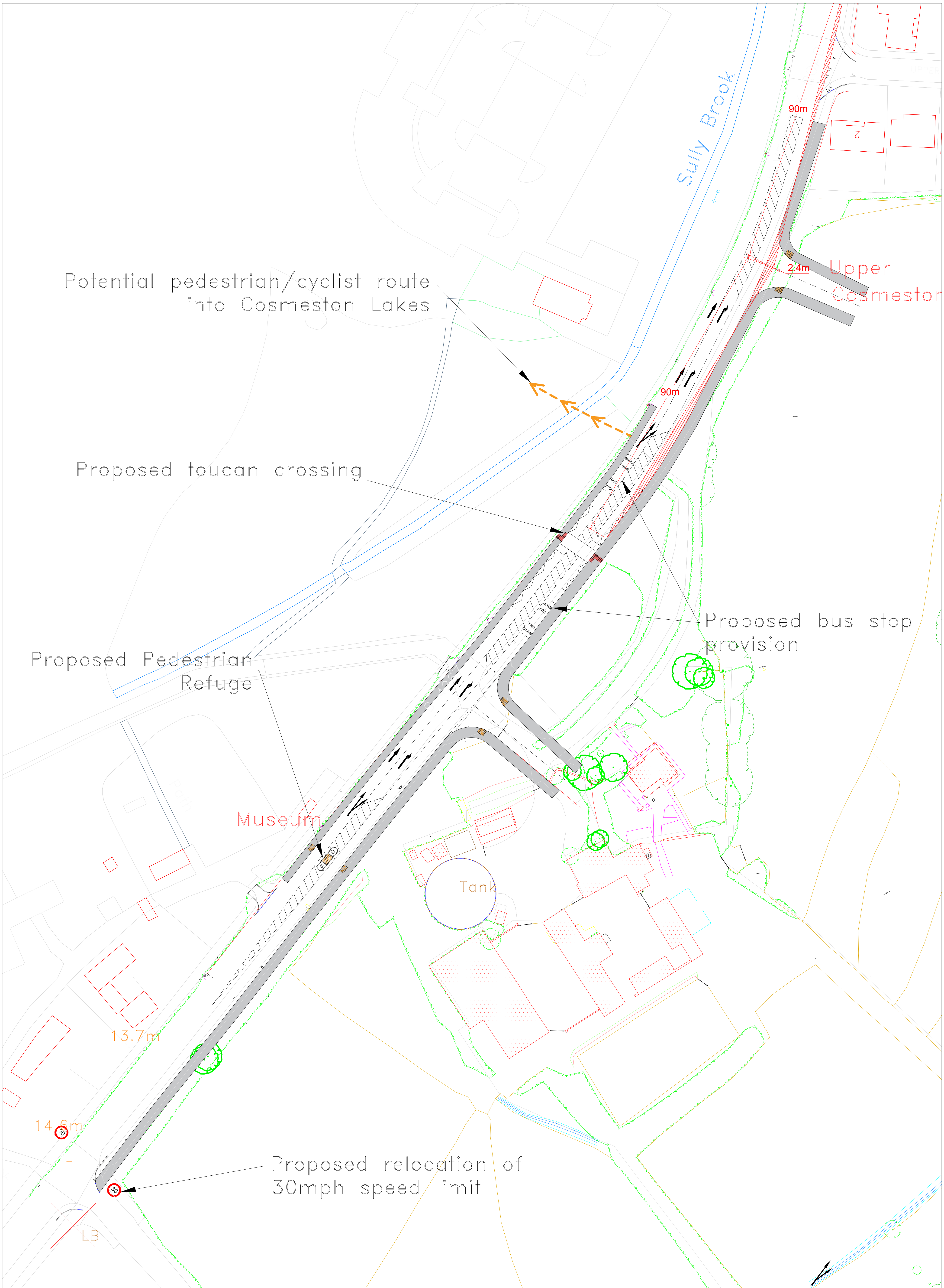
Drg No: Figure 3.5			



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			Ckd/Appd:	PO'C	Rev.	Date.	Amendment.	Des.	Drn.
	Cosmeston		1st Issued:	July 2019	Drg No.			Rev	
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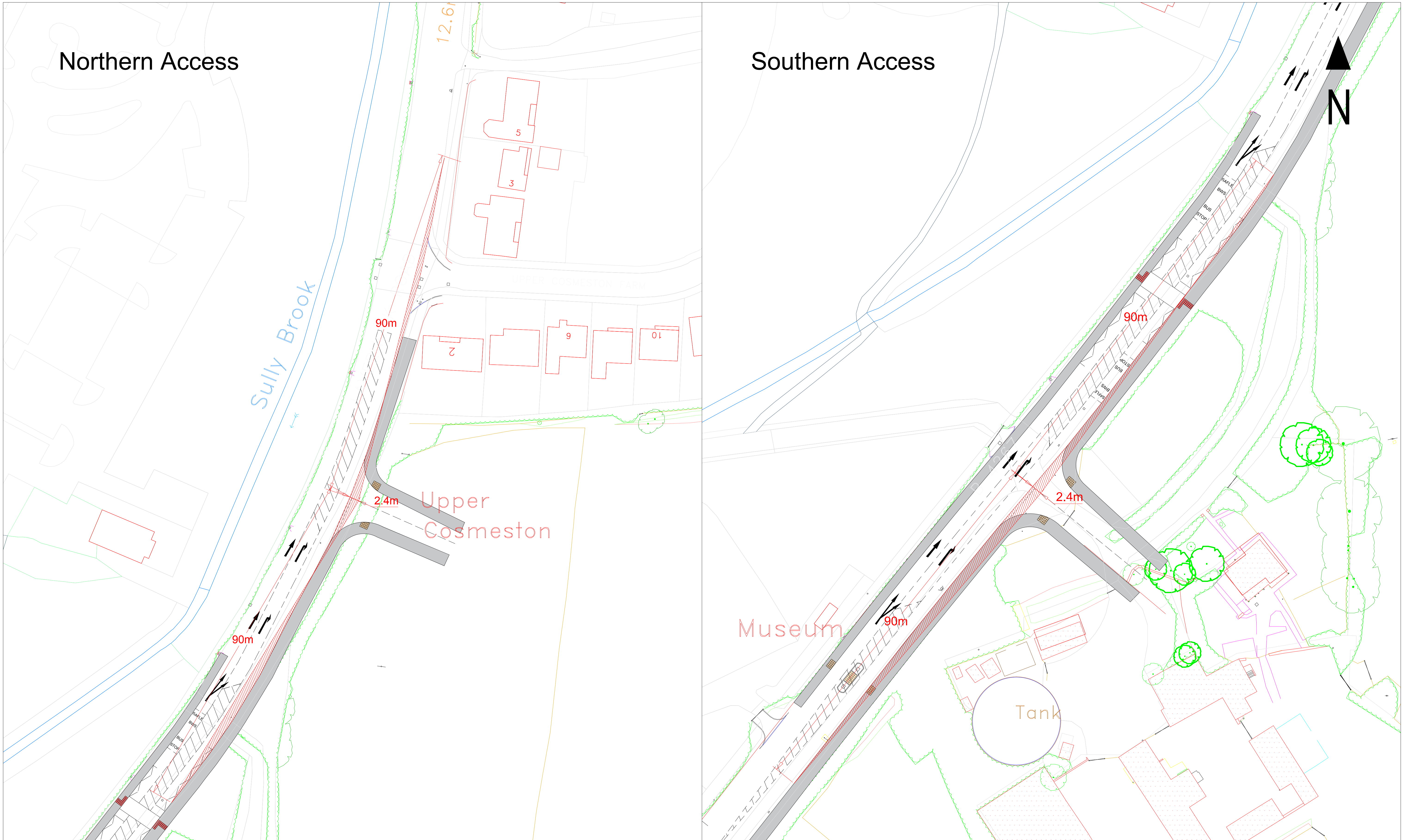

Drawing Title

2.4m x 90m Visibility Splays

Client

Welsh Government

Job Title

Cosmeston

asbritransport
Unit 9
Oak Tree Court
Mulberry Drive
Cardiff Gate Business Park
Cardiff
CF23 8RS
T 029 2073 2652

Scale:	NTS
Designed by:	KW
Drawn by:	KW
Ckd/Appd:	PO'C
1st Issued:	July 2019
Job No:	T18.164

Rev.	Date.	Amendment.	Des.	Drn.

Drg No: Figure 4.4 Rev

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Figure 6.1 - 2020 Development Trips

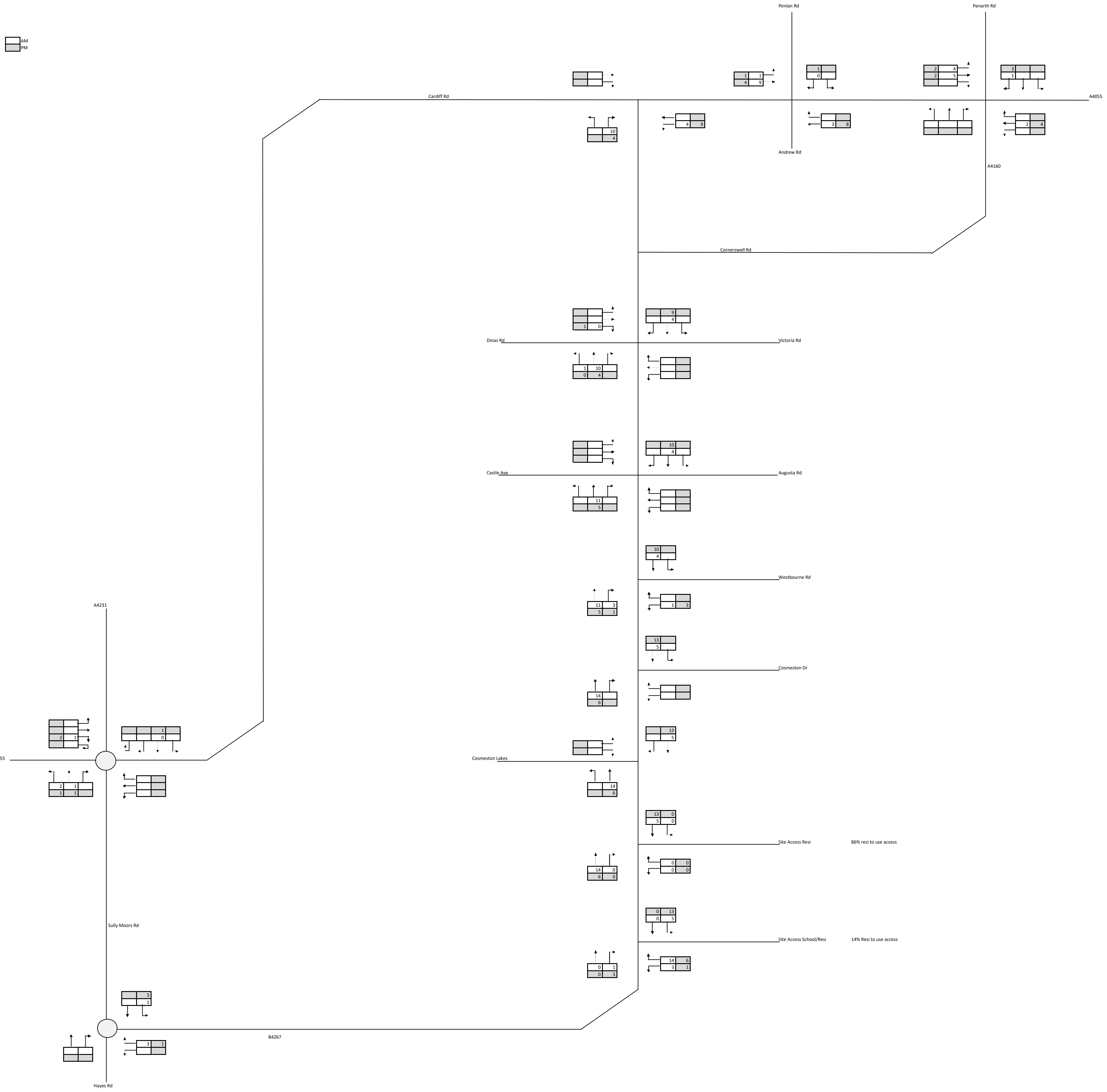


Figure 6.2 - 2025 Development Trips

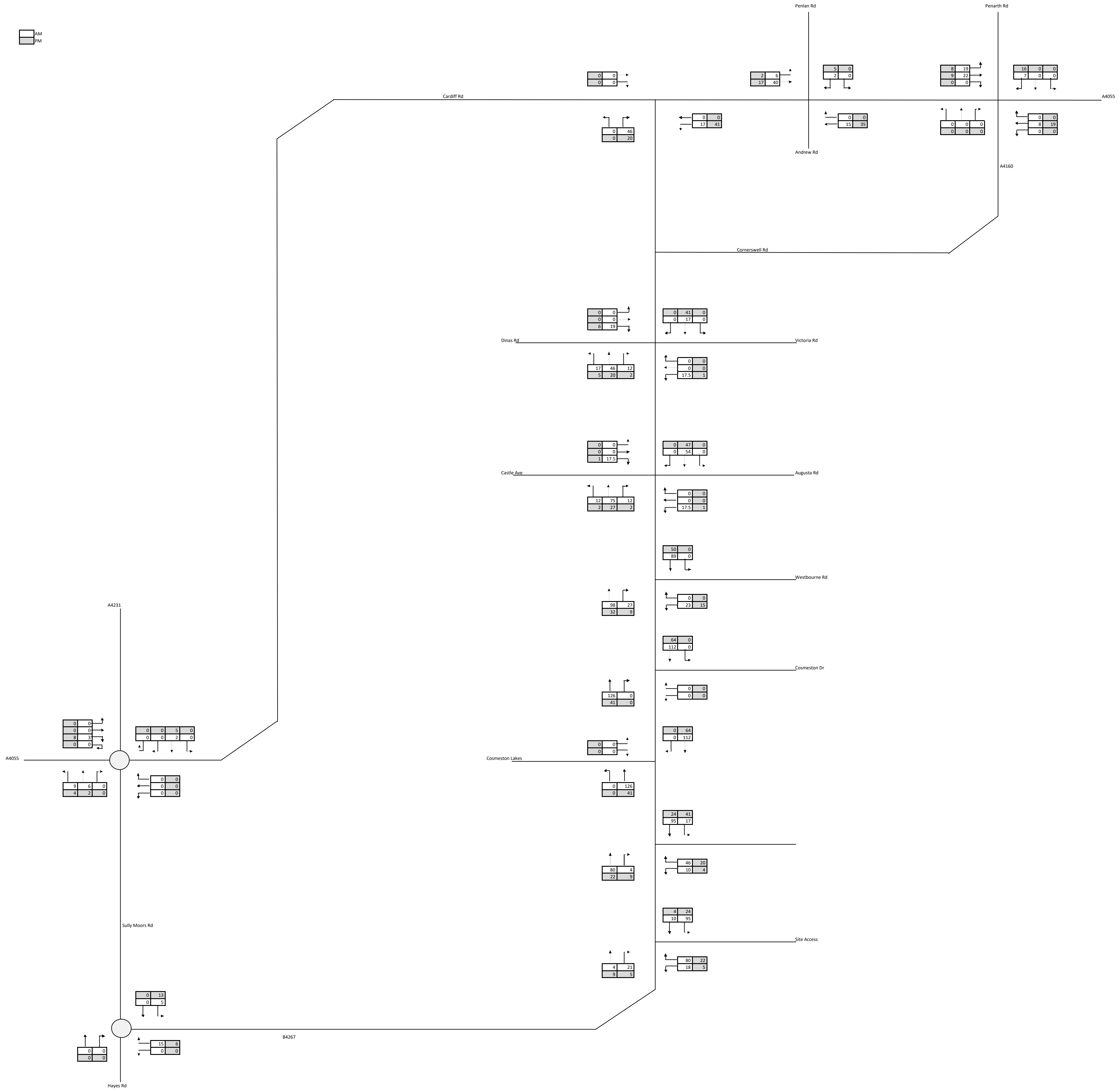


Figure 6.3 - 2029 Development Trips

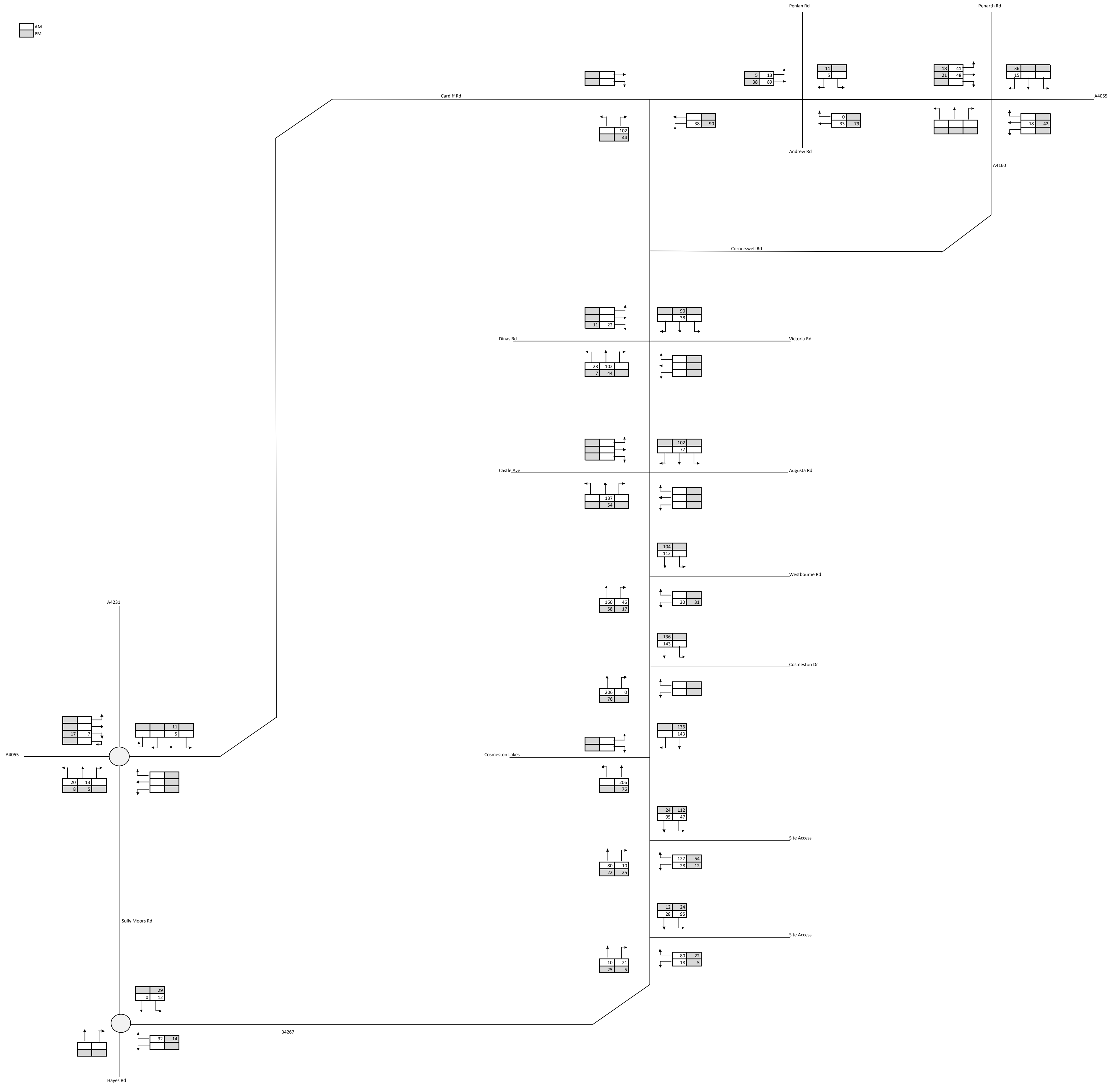


Figure 6.4 - 2022 Baseline Flows

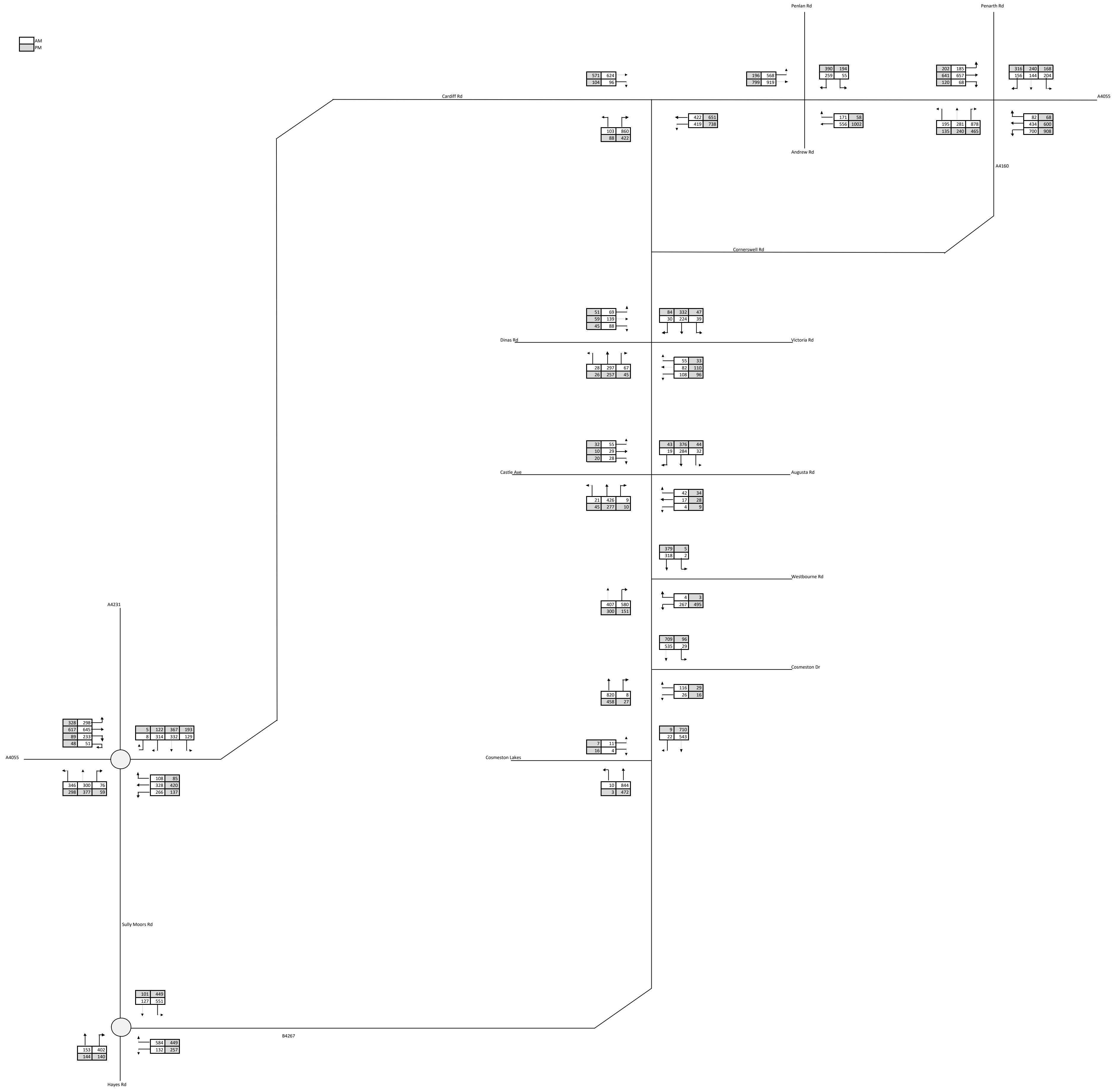


Figure 6.5 - 2025 Baseline Flows

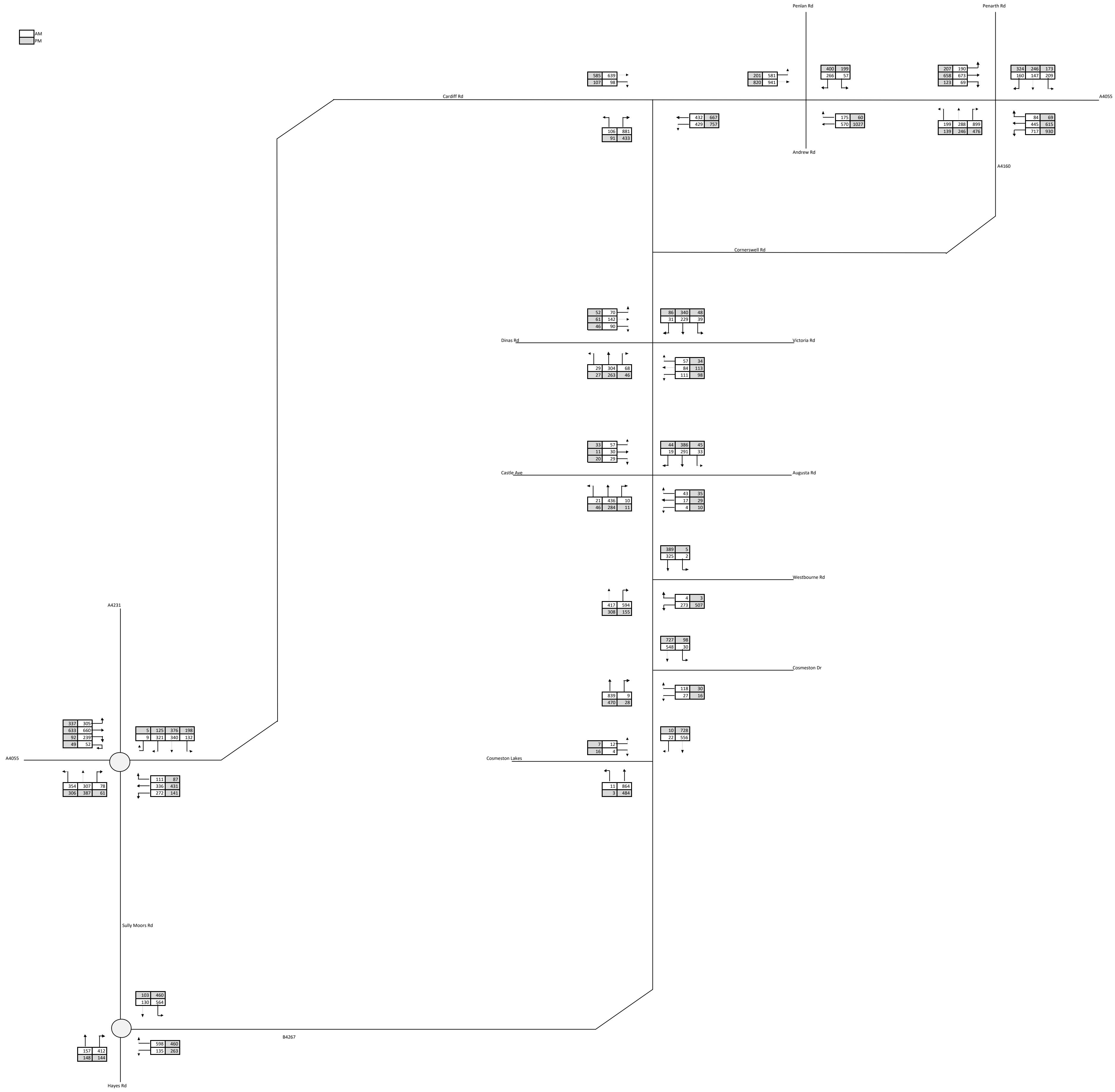


Figure 6.6 - 2029 Baseline Flows

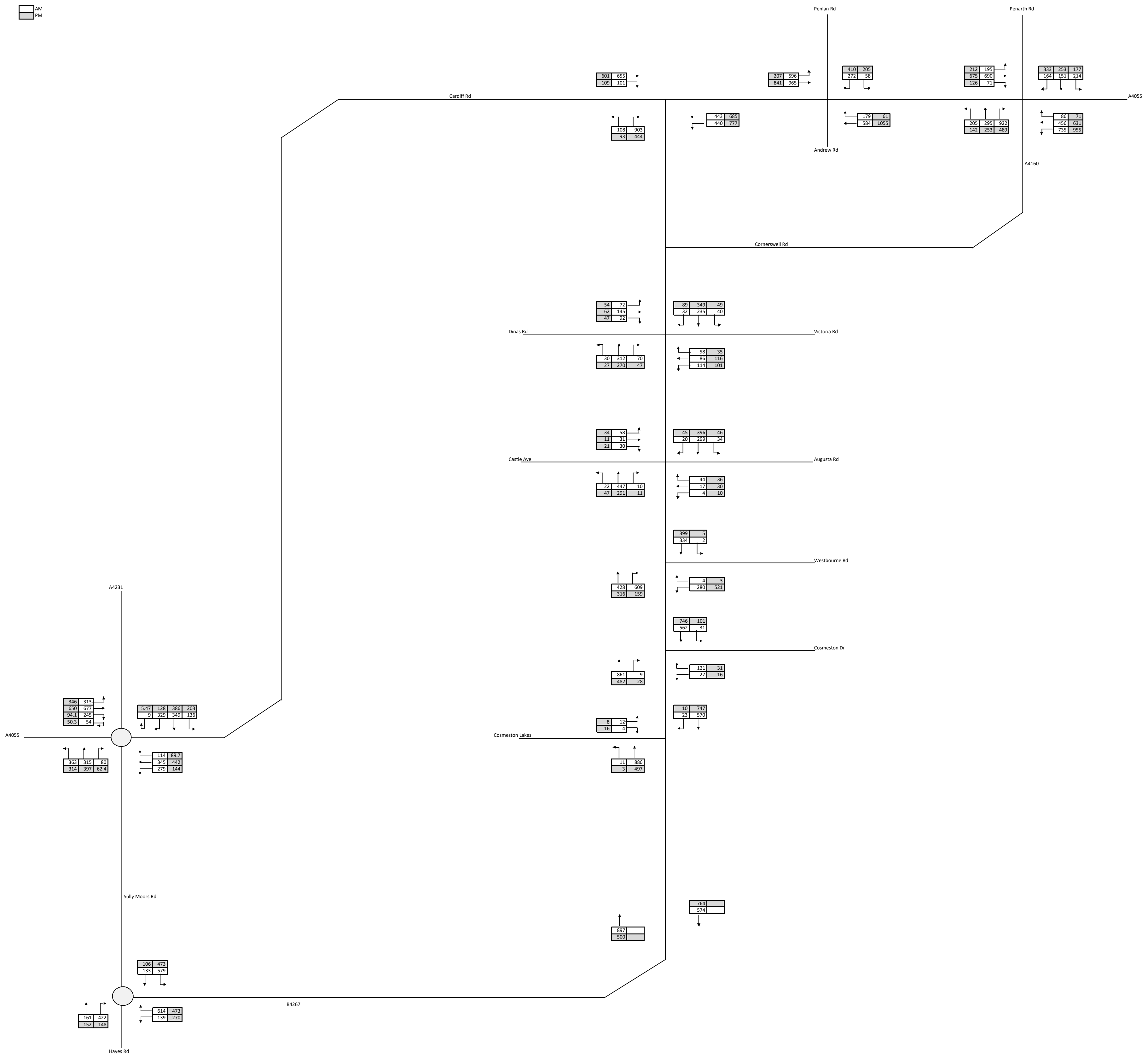


Figure 6.7 - Committed Development Flows

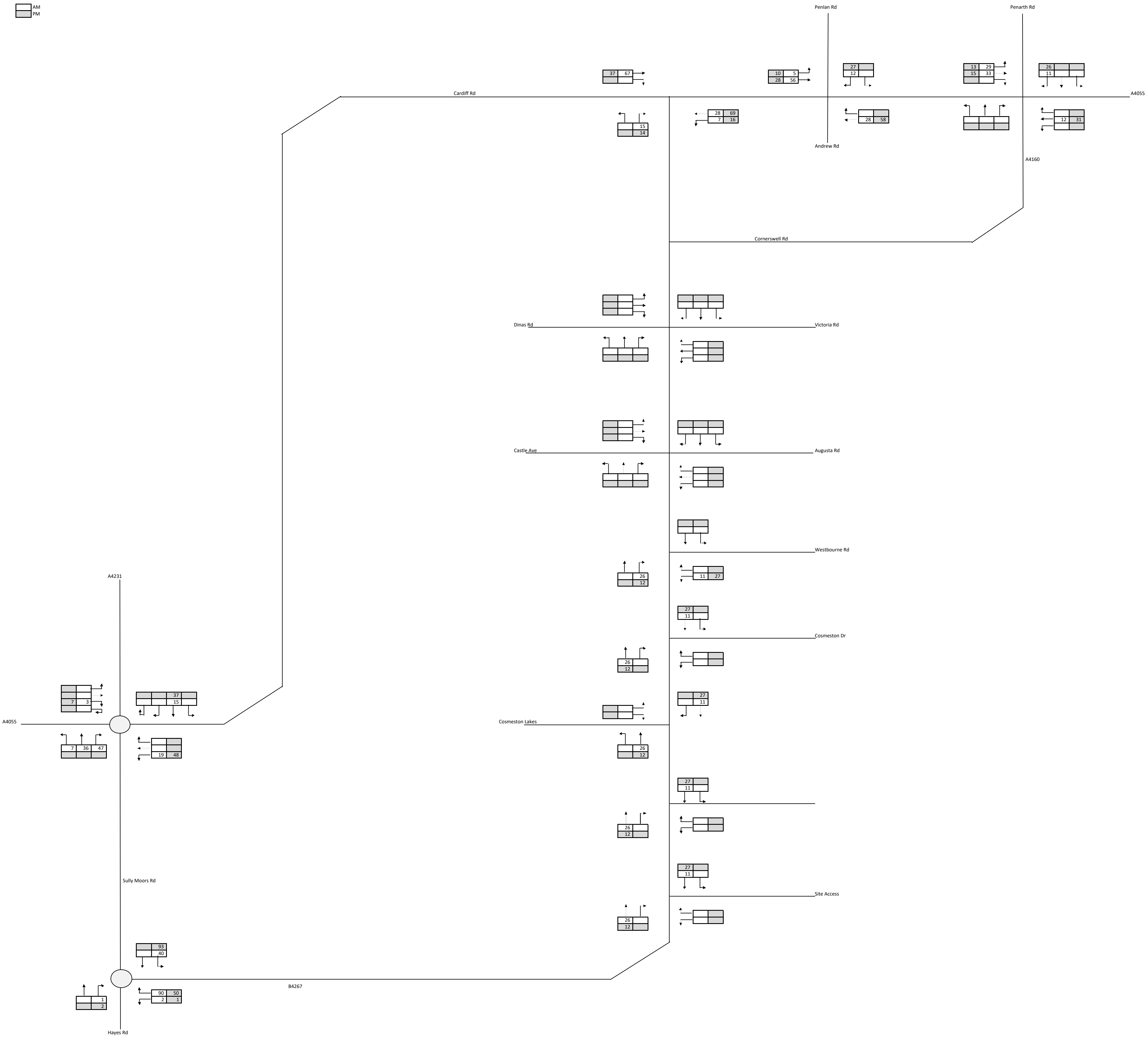


Figure 6.8 - 2022 + Committed Development + Development

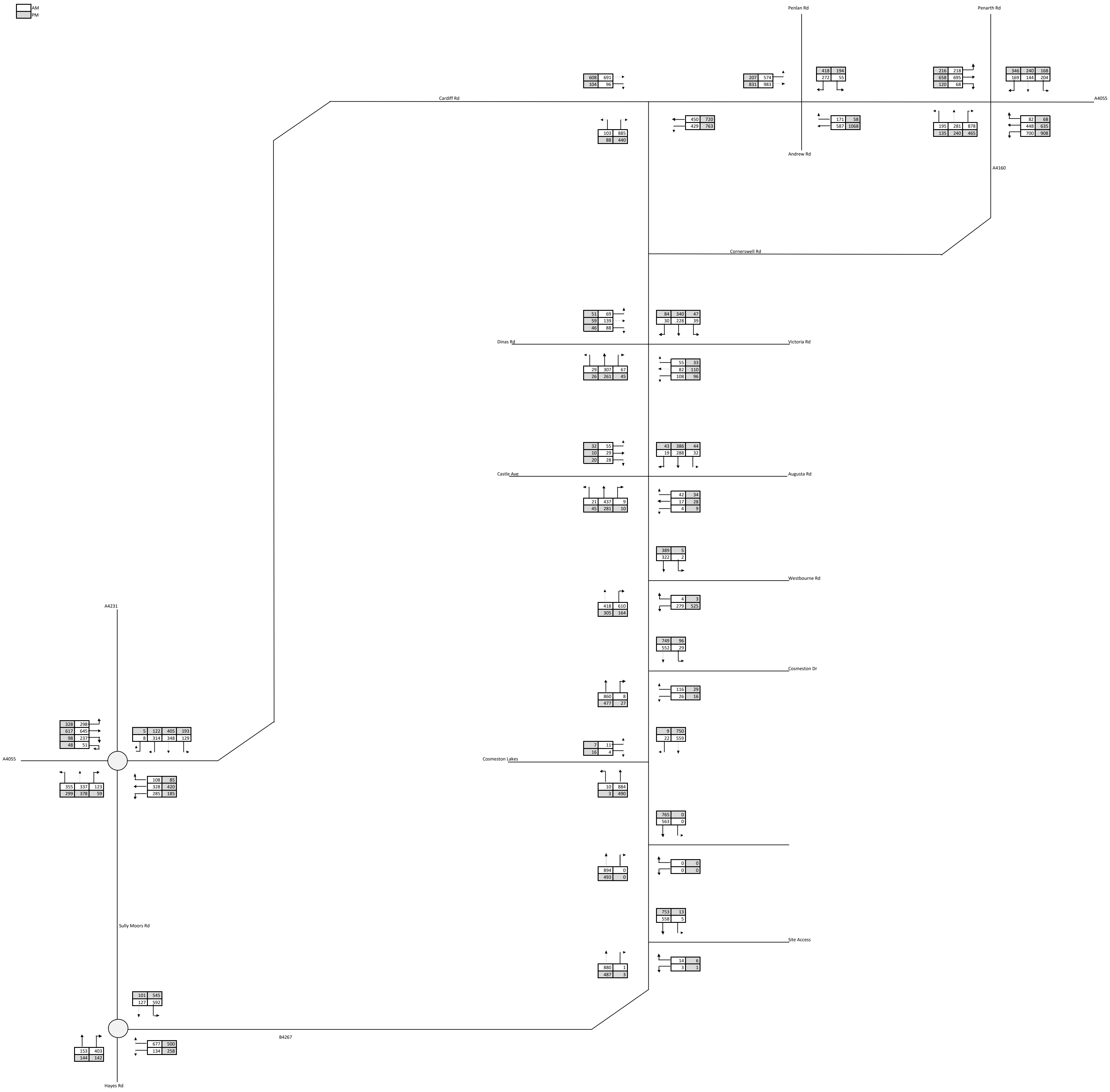


Figure 6.9 - 2025 + Committed Development + Development

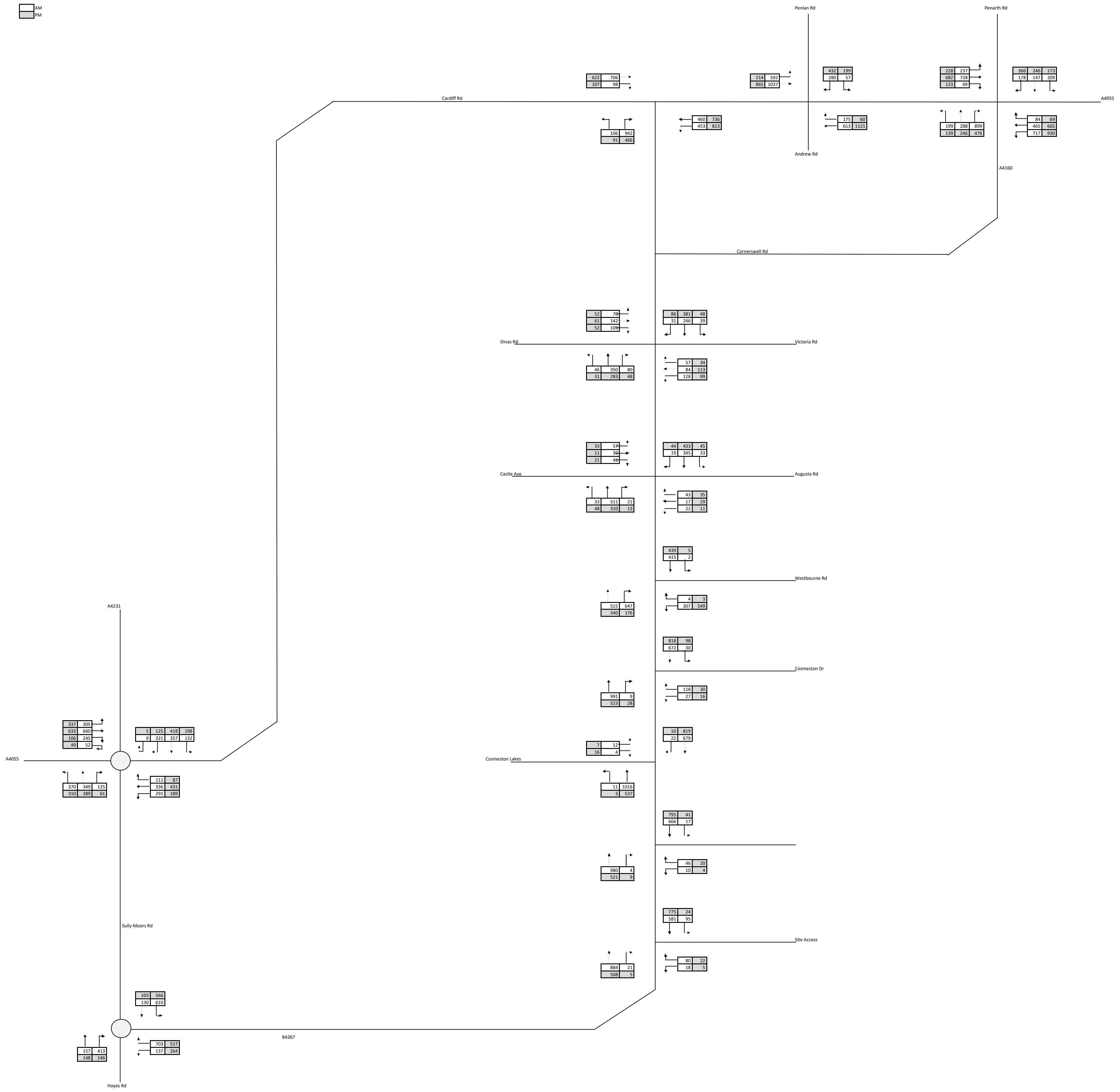
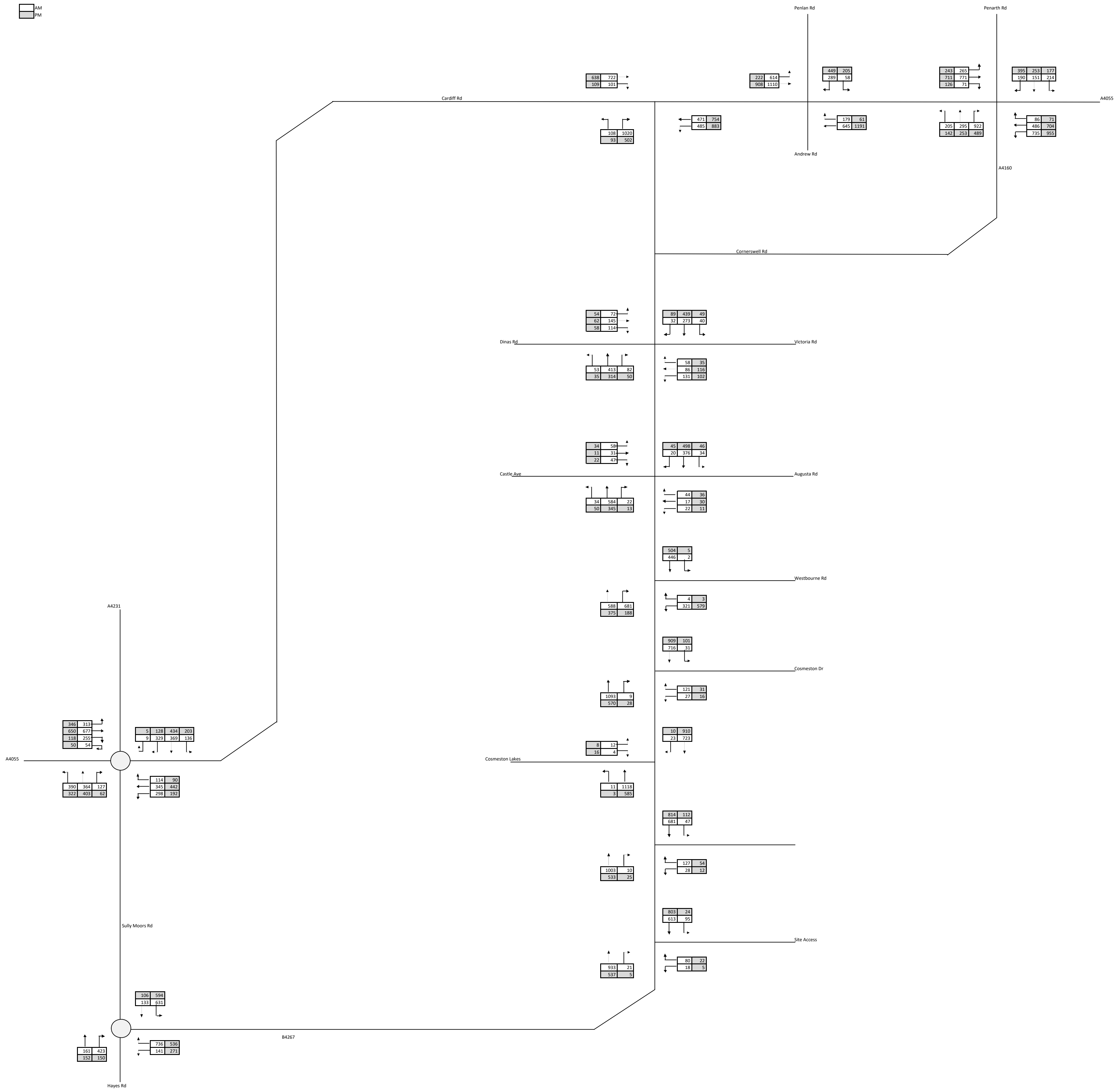


Figure 6.10 - 2029 + Committed Development + Development



Appendices

Appendix A

Austin-Smith: Lord

Proposed residential development of up to 577 dwellings and provision for a new Primary School at Upper Cosmeston Farm, Penarth

TRANSPORT ASSESSMENT SCOPING NOTE

November 2018

Applicant:	Austin-Smith: Lord
Project no:	T18.??
Document ref no:	T18.?? D1
Document issue date:	**November 2018**
Project name:	Cosmeston, Penarth

Offices at:

Unit 9, Oak Tree Court
Mulberry Drive,
Cardiff Gate Business Park,
Cardiff, CF23 8RS
Tel: 029 2073 2652

Suite D, 1st Floor,
220 High Street,
Swansea,
SA1 1NW
Tel: 01792 480535

KW/PO'C

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1. Introduction

1.1 Asbri Transport Limited have been appointed by Austin-Smith: Lord to produce a Transport Assessment (TA) to accompany an outline planning application proposing the construction of a new residential development on greenfield land on the southern fringes of Penarth, referred to as Upper Cosmeston Farm.

1.2 Welsh Government owns 54ha of greenfield land at Upper Cosmeston Farm located to the south of Penarth. This land was originally acquired by the former Land Authority for Wales and had strategic significance as a potential landfall for the proposed Severn Barrage.

1.3 The application site is allocated in the Vale of Glamorgan Local Development Plan as a Greenfield site for development.

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

Purpose of the Scoping Note

1.5 This Scoping Note sets out the proposed method and scope of work to be undertaken in the Transport Assessment report that will form part of the supporting documentation for the outline planning application.

1.6 It is intended that the Scoping Note will be agreed by the Vale of Glamorgan (VoG) Council to assist in the completion of a robust Transport Assessment. It is noted that the Vale of Glamorgan's Local Development Plan 2012-26 states:

> This 22.2 hectare greenfield site is located to the south of Penarth adjacent to Lavernock Road. Development of the site will be informed by a masterplan/development brief which will identify and safeguard provisions for major infrastructure comprising a 1.0 hectare site to provide a new primary and nursery school; 1 hectare of designated public open space and an additional 0.1 – 0.2 hectares for the provision of a new community facility, in accordance with Policies MG6 (5), MG28 (10) and MG7 (4). Affordable housing will be delivered in accordance with Policy MG4.
>
> The Council's Engineers have advised that future development proposals should be supported by a robust Transport Assessment which evaluates and

determines mitigation measures that alleviate any detrimental impact the development will have on the local highway network and associated road junctions. A suitable and safe access will be required that conforms to current design criteria. In this regard it is anticipated that the development will be served via a new junction onto Lavernock Road, which incorporates safe pedestrian/cycle friendly facilities. The new development will be expected to contribute to the Council's aspirations for improved walking; cycling and public transport facilities and ensure good permeability both within and surrounding the site including improvements to the NCN88 between Penarth, Sully and Barry.

1.7 The Vale of Glamorgan Local Development Plan also includes references to a new Bus **Park and Ride** facility at Cosmeston in Policy MG16 – Transport Proposals. We would welcome further information on this proposal.

1.8 The TA scoping note includes proposed trip generation rates derived from the TRICS database and requests the views of the Highways Authority on the trip rates proposed.

1.9 There have been brief, informal scoping discussions with highways officers of the Vale of Glamorgan during the drafting of this scoping report. It is expected that scoping discussions will continue during November – January 2019.

2. Development proposal

2.1 The development proposals include a residential development of 577 dwellings with associated community facilities as well as the safe-guarding of land within the site for a primary school.

2.2 It is considered that one primary point of vehicular access will be provided from the B4267 with an appropriate junction design that encompasses appropriate bus priority measures and provision for pedestrians and cyclists.

2.3 The geometric design of the internal road network within the site will be such to permit bus permeability into the site should this be proposed.

2.4 A comprehensive Travel Plan will also accompany the outline planning submission which details measures, objectives and targets to ensure that that sustainable travel to and from the development is both facilitated and maximised.

3. Scope of assessment

3.1 The Transport Assessment will be undertaken in accordance with guidance set out in TAN18. The following subsections outline the content that will be included within the Transport Assessment.

Policy review

3.2 A review of local and national policy guidance related to the development proposals will be included. The policy review will include the following:

- Wales Spatial Plan – People, Places, Futures (adopted in 2004, and updated in 2008);
- Planning Policy Wales (Edition 8, January 2016);
- TAN18 'Transport' – forms part of the Supplementary Guidance contained within Planning Policy Wales;
- One Wales: Connecting the Nation;
- The Active Travel (Wales) Act 2013; and,
- Vale of Glamorgan Local Development Plan (2011-2026) – adopted in June 2017.

Background and existing conditions

3.3 A description of the area, and its relationship with:

- The existing highway network;
- Pedestrian/cycle infrastructure;
- Public Transpor infrastructure, location of bus stops and frequency of services;

- Existing rail services;
- Local traffic conditions and traffic data review; and
- A review of highway safety records for the most recent five-year period.

4. Site layout, vehicular access and parking provision

4.1 This section of the TA will consider the following matters:

- Car parking standards (in-line with the VoG consultation draft of the supplementary planning guidance);
- Cycle parking standards;
- Site layout and vehicular access

4.2 The site access strategy includes access from one primary all-movement junction:

- In the form of a new priority/signalised junction along Lavernock Road; and,
- A secondary point of vehicular access that will provide provision for emergency vehicle access.

4.3 The principal access junction will be subject to capacity modelling to determine what form of junction will be proposed in the planning application.

5. Highway Safety

5.1 The Transport Assessment will review Personal Injury Collision (PIC) data within the study area of the site. PIC data will be analysed for the most recent five-year period and these collisions will be plotted within the study area.

5.2 The analysis will include:

- The severity of each collision;
- The number of vehicle involved;
- The number of casualties;
- Causation factors of each collision;

- Types of casualties (e.g. vehicle/pedestrian, vehicle/pedal cycles); and

- A plot of the location of each collision.

5.3 The proposed study area for highway safety review is detailed in **Figure 2**.

6. Public Transport

6.1 Bus stops and services within the vicinity of the site will be analysed studying their destinations and frequencies. There are existing services currently operating along Lavernock Road. Future public transport proposals within the vicinity of the site will also be taken into consideration within the TA.

6.2 Rail services within the vicinity of the site will be studied analysing the nearest railway station and number of frequent services that are scheduled.

7. Pedestrians and Cyclist Provision

7.1 Pedestrian and cyclist provision in the vicinity of the site will be assessed following guidance from The Chartered Institute of Highways and Transportation (CIHT) guidelines for desirable and maximum walking distances.

7.2 The Transport Assessment will discuss local amenities/facilities within the vicinity of the site and the most suitable means of travelling there by sustainable modes of transport.

7.3 Information on cycle routes will be analysed, including route locations, nearest access point and if the route is on or off-road.

8. Committed Development and committed highway improvements

8.1 The Highway Authority is requested to advise of any committed developments (that benefit from planning permission but are yet to be constructed or that are but not yet operational) that may affect traffic flows in the study area so that these may be accounted for in the TA process.

8.2 The Highway Authority is also requested to advise if there are any programmed improvements to the highway network that is detailed on Figure 1.

9. Trip generation

9.1 The following trip multi-modal trip generation rates have been derived for the proposed 577 residential dwellings form the current version of the TRICS trip generation database.

9.2 The Highway Authority are requested to comment on the proposed trip rates that are derived below. These are considered representative of a mixed tenure development.

9.3 The vehicle trip generation rates have been obtained from the TRICS 7.5.3 trip generation database. The TRICS output is shown in **Appendix A**.

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

Residential – 577 dwellings

- Land use: Residential – Mixed private/affordable housing;
- Survey days: Monday-Friday;
- Number of units: 93 to 500 units; and,
- Location of development: UK, excluding Greater London, Northern Ireland and Republic of Ireland.

Peak period	Trip rates			Vehicles		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.139	0.372	0.511	80	215	295
1700-1800	0.314	0.153	0.467	181	88	269
Daily	2.102	2.179	4.281	1213	1257	2470

Table 9.1 Vehicle trip generation – 577 mixed private/affordable dwellings

9.5 It is evident from Table 9.1 that, based on 577 mixed tenure residential dwellings, the development could generate 295 vehicle movements (two-way) in the AM peak period and 269 vehicle movements (two-way) in the PM peak period.

Peak period	Trip rates			Pedestrians		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.030	0.151	0.181	17	87	104
1700-1800	0.051	0.027	0.078	29	16	45

Table 9.3 Pedestrian trip generation – 577 mixed private/affordable dwellings

9.6 It is evident from Table 9.2 that, based on a development of 577 dwellings, the development could generate up to 104 pedestrian movements (two-way) in the AM peak period and up to 45 pedestrian movements (two-way) in the PM peak period.

Peak period	Trip rates			Cyclists		
	Arrive	Depart	Total	Arrive	Depart	Total
0800-0900	0.002	0.010	0.012	1	6	7
1700-1800	0.010	0.006	0.016	6	3	9

Table 9.3 Cyclist trip generation – 577 mixed private/affordable dwellings

9.7 It can be seen from Table 9.3 that, in total, the proposed development could generate up to 7 cyclist trips (two-way) in the AM peak period and up to 9 cyclist trips (two-way) in the PM peak period.

10. Study Area for TA

10.1 Classified Turning Counts are proposed to be undertaken at the following 10 junctions:

1. A4231/A4055/Sully Moors Road roundabout junction
2. Sully Moors Road/B4267/Hayes Road roundabout junction
3. Lavernock Road/Cosmeston Lake Country Park priority junction
4. Lavernock Road/Cosmeston Drive priority junction
5. Lavernock Road/Westbourne Road priority junction
6. B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads
7. Lavernock Road/Dinas Road/Victoria Road crossroads

8. Cardif Road/B4267/A4055 signalised junction

9. A4055/B4267/Andre Road signalised crossroads

10. A4055/A4160 signalised intersection

10.2 The junctions are detailed in **Figure 3 and 4** respectively.

11. Distribution and assignment of development traffic

11.1 The development traffic will be assigned and distributed to the local highway network on the basis of existing traffic flow turning movements.

Assessment years

- 2018/19 baseline assessment;
- 2025 interim year of assessment;
- 2029 future year assessment.

Future base traffic flows

11.2 The impact of the development is proposed to be assessed for an opening year of 2020, an interim year of 2025 and a future year of 2029. Comment from the VoG Local Highway Authority on the proposed assessment years would be welcome.

11.3 In order to obtain the base traffic flows (i.e. with no development traffic) in 2020, 2024 and 2029 the baseline traffic flows (2018) will be factored using NTM growth factors.

11.4 The factors to be applied to the 2018 baseline surveyed flows are identified in **Table 11.1** below.

Period	NTM growth factors		
	Ward	AM	PM
2018 – 2020	W02000244: The Vale of Glamorgan 008	1.0282	1.0279
2018 - 2024	W02000244: The Vale of Glamorgan 008	1.0644	1.0655
2018 – 2029	W02000244: The Vale of Glamorgan 008	1.1018	1.1044

Table 11.1 NTM growth factors

Final future traffic flows

11.5 The interim and final future traffic flows will be obtained by combining the development flows with the 2018, 2024 and 2029 base traffic flows.

12. Traffic and junction impact analysis

12.1 Appropriate industry accepted software packages will be used to model the operational performance each of the junctions to determine if mitigation is required.

12.2 Google Earth Satellite imagery to be used to determine junction geometrics (scale checked via measurements taken on-site).

13. Other technical work to be submitted

13.1 The following will also be submitted to the highway authority in support of the planning application:

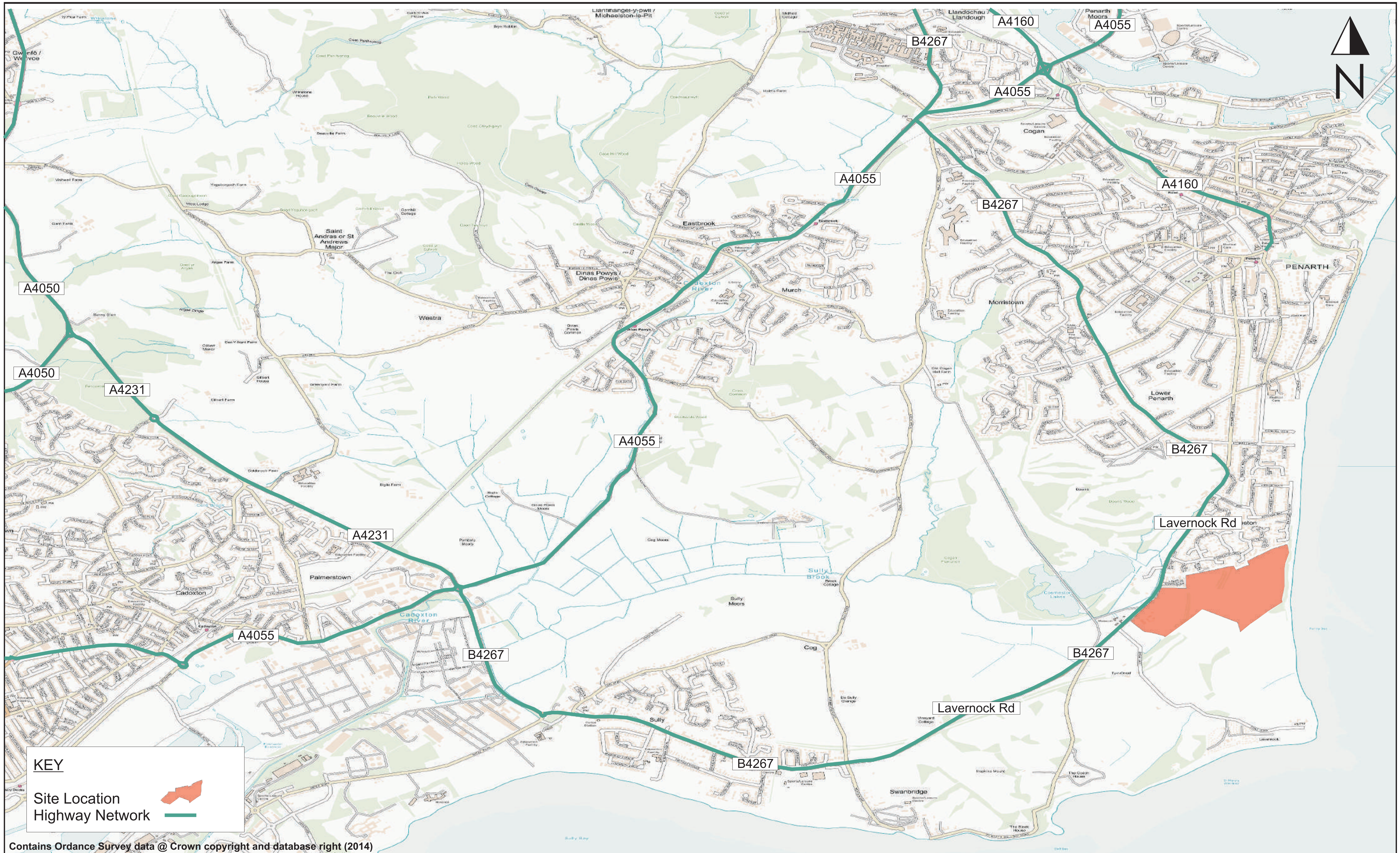
1. Travel Plan

2. The TA will include a Transport Implementation Strategy (TIS) as per guidance detailed in TAN 18. This will set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them. The TIS will set a framework for monitoring the objectives and targets, including the future modal split of transport to development sites.

14. Conclusion.

14.1 We would welcome the views of the Highway Authority on this proposed scope of Transport Assessment and in particular the geographic scope of study area proposed.

Figures



Drawing Title Site Location & Local Highwa Network	Client Austin-Smith: Lord Job Title Cosmeston	asbritransport Suite D 1st Floor 220 High Street Swansea SA1 1NW T 01792 480535	Scale: NTS Designed by: KW Drawn by: KW Ckd/Appd: PO'C 1st Issued: Nov 2018 Job No: T18.	File Extension: Drg No: Figure 1

Drawing Title

Personal Injury Collision Study Area

Client

Austin-Smith: Lord

Job Title

Cosmeston

asbritransport

Suite D
1st Floor
220 High Street
Swansea
SA1 1NW
T 01792 480535

Scale:	NTS
Designed by:	KW
Drawn by:	KW
Ckd/Appd:	PO'C
1st Issued:	Nov 2018
Job No:	T18.

File Extension:

Drg No: Figure 2

Contains Ordance Survey data @ Crown co

Drawing Title	Client		Scale: NTS	File Extension:
Overview of Survey Locations	Austin-Smith: Lord	asbritransport	Designed by: KW	
	Job Title		Drawn by: KW	
	Cosmeston	Suite D 1st Floor 220 High Street Swansea SA1 1NW T 01792 480535	Ckd/Appd: PO'C	Drg No: Figure 3
			1st Issued: Nov 2018	
			Job No: T18.	

A4231/A4055/Sully Moors Rd Roundabout

Sully Moors Rd/B4267/Hayes Rd Roundabout

Lavernock Rd/Cosmeston lake Country park Priority Jct

Lavernock Rd/Cosmeston Drive Priority Jct

Lavernock Rd/Westbourne Rd Priority Jct

B4267/Augusta Rd/ Laverncok Rd/ Castle Ave Crossroads

Lavernock Rd/Dinas Rd/Victoria Rd Cross Roads

Cardiff Rd/B4267/A4055 Signalised Junction

A4055/B4267/Andrew Rd Cross Roads

A4055/A4160 Signalised intersection

Drawing Title

Detailed Survey Locations

Client

Austin-Smith: Lord

Job Title

Cosmeston

asbritransport

Suite D
1st Floor
220 High Street
Swansea
SA1 1NW
T 01792 480535

Scale:	NTS
Designed by:	KW
Drawn by:	KW
Ckd/Appd:	PO'C
1st Issued:	Nov 2018
Job No:	T18

File Extension:

Drg No: Figure 4

Appendices

Appendix A

Calculation Reference: AUDIT-317901-181024-1044

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING

MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	4 days
	HC	HAMPSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	1 days
	OX	OXFORDSHIRE	1 days
	SC	SURREY	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 93 to 500 (units:)
Range Selected by User: 93 to 500 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 28/06/18

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	2 days
Wednesday	4 days
Thursday	4 days

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

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	12

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:

Industrial Zone	1
Residential Zone	9
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C3	12 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	5 days
10,001 to 15,000	3 days
20,001 to 25,000	3 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:

25,001 to 50,000	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	5 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	9 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	8 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	12 days

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

LIST OF SITES relevant to selection parameters

1 ES-03-M-07 MIXED HOUSING EAST SUSSEX
SOUTH COAST ROAD
PEACEHAVEN

Edge of Town
Residential Zone
Total Number of dwellings: 188
Survey date: THURSDAY 12/11/15 Survey Type: MANUAL

2 ES-03-M-10 MIXED HOUSES & FLATS EAST SUSSEX
DITTONS ROAD
POLEGATE

Edge of Town
Residential Zone
Total Number of dwellings: 108
Survey date: MONDAY 11/07/16 Survey Type: MANUAL

3 ES-03-M-11 MIXED HOUSES & FLATS EAST SUSSEX
HEMPSTEAD LANE
HAILSHAM
UPPER HORSEBRIDGE
Edge of Town
Residential Zone
Total Number of dwellings: 354
Survey date: WEDNESDAY 13/07/16 Survey Type: MANUAL

4 ES-03-M-12 MIXED HOUSES & FLATS EAST SUSSEX
PARK ROAD
HAILSHAM

Edge of Town
Residential Zone
Total Number of dwellings: 93
Survey date: THURSDAY 21/06/18 Survey Type: MANUAL

5 FA-03-M-01 SEMI D./TERRACED FALKIRK
FAIRLIE STREET
FALKIRK

Edge of Town
Residential Zone
Total Number of dwellings: 138
Survey date: WEDNESDAY 29/06/05 Survey Type: MANUAL

6 HC-03-M-06 HOUSES & FLATS HAMPSHIRE
HUNTS POND ROAD
NEAR FAREHAM
TITCHFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 328
Survey date: WEDNESDAY 04/11/15 Survey Type: MANUAL

7 HC-03-M-07 MIXED HOUSES & FLATS HAMPSHIRE
ALDERMASTON ROAD
BASINGSTOKE

Edge of Town
No Sub Category
Total Number of dwellings: 236
Survey date: TUESDAY 21/03/17 Survey Type: MANUAL

8 HC-03-M-09 MIXED HOUSES & FLATS HAMPSHIRE
ROMSEY ROAD
WINCHESTER
STANMORE
Edge of Town
Residential Zone
Total Number of dwellings: 157
Survey date: THURSDAY 07/06/18 Survey Type: MANUAL

9 HF-03-M-02 TERRACED & FLATS HERTFORDSHIRE
SYLVAN WAY
WELWYN GARDEN CITY
PANSHANGER
Edge of Town
Residential Zone
Total Number of dwellings: 158
Survey date: MONDAY 06/10/03 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	KC-03-M-02	MIXED HOUSES AND FLATS		KENT
	HERMITAGE LANE			
	MAIDSTONE			
	BARMING			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		119	
	Survey date: TUESDAY		*05/06/18*	*Survey Type: MANUAL*
11	OX-03-M-01	MIXED HOUSES		OXFORDSHIRE
	WENMAN ROAD			
	THAME			
	Edge of Town			
	Industrial Zone			
	Total Number of dwellings:		100	
	Survey date: THURSDAY		*28/06/18*	*Survey Type: MANUAL*
12	SC-03-M-06	HOUSES & FLATS		SURREY
	ST ANNE'S DRIVE			
	REDHILL			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:		500	
	Survey date: WEDNESDAY		*11/12/13*	*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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.076	12	207	0.287	12	207	0.363
08:00 - 09:00	12	207	0.139	**12**	**207**	**0.372**	**12**	**207**	**0.511**
09:00 - 10:00	12	207	0.133	12	207	0.164	12	207	0.297
10:00 - 11:00	12	207	0.123	12	207	0.151	12	207	0.274
11:00 - 12:00	12	207	0.130	12	207	0.142	12	207	0.272
12:00 - 13:00	12	207	0.140	12	207	0.137	12	207	0.277
13:00 - 14:00	12	207	0.134	12	207	0.136	12	207	0.270
14:00 - 15:00	12	207	0.132	12	207	0.164	12	207	0.296
15:00 - 16:00	12	207	0.263	12	207	0.181	12	207	0.444
16:00 - 17:00	12	207	0.240	12	207	0.133	12	207	0.373
17:00 - 18:00	**12**	**207**	**0.314**	12	207	0.153	12	207	0.467
18:00 - 19:00	12	207	0.278	12	207	0.159	12	207	0.437
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.102			2.179			4.281

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

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

Parameter summary

Trip rate parameter range selected:	93 - 500 (units:)
Survey date date range:	01/01/03 - 28/06/18
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	4
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.000	12	207	0.001
08:00 - 09:00	12	207	0.001	12	207	0.001	12	207	0.002
09:00 - 10:00	12	207	0.001	12	207	0.001	12	207	0.002
10:00 - 11:00	12	207	0.002	12	207	0.002	12	207	0.004
11:00 - 12:00	12	207	0.002	12	207	0.002	12	207	0.004
12:00 - 13:00	**12**	**207**	**0.003**	12	207	0.002	**12**	**207**	**0.005**
13:00 - 14:00	12	207	0.002	**12**	**207**	**0.003**	12	207	0.005
14:00 - 15:00	12	207	0.002	12	207	0.002	12	207	0.004
15:00 - 16:00	12	207	0.001	12	207	0.001	12	207	0.002
16:00 - 17:00	12	207	0.001	12	207	0.001	12	207	0.002
17:00 - 18:00	12	207	0.001	12	207	0.001	12	207	0.002
18:00 - 19:00	12	207	0.000	12	207	0.000	12	207	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.017			0.016			0.033

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.001	12	207	0.002
08:00 - 09:00	12	207	0.002	12	207	0.002	12	207	0.004
09:00 - 10:00	12	207	0.001	12	207	0.002	12	207	0.003
10:00 - 11:00	12	207	0.002	12	207	0.002	12	207	0.004
11:00 - 12:00	12	207	0.002	12	207	0.002	12	207	0.004
12:00 - 13:00	12	207	0.002	12	207	0.001	12	207	0.003
13:00 - 14:00	12	207	0.002	12	207	0.002	12	207	0.004
14:00 - 15:00	12	207	0.002	12	207	0.002	12	207	0.004
15:00 - 16:00	**12**	**207**	**0.003**	**12**	**207**	**0.003**	**12**	**207**	**0.006**
16:00 - 17:00	12	207	0.002	12	207	0.002	12	207	0.004
17:00 - 18:00	12	207	0.002	12	207	0.001	12	207	0.003
18:00 - 19:00	12	207	0.001	12	207	0.001	12	207	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.021			0.043

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.009	12	207	0.010
08:00 - 09:00	12	207	0.002	**12**	**207**	**0.010**	12	207	0.012
09:00 - 10:00	12	207	0.003	12	207	0.005	12	207	0.008
10:00 - 11:00	12	207	0.002	12	207	0.001	12	207	0.003
11:00 - 12:00	12	207	0.001	12	207	0.003	12	207	0.004
12:00 - 13:00	12	207	0.002	12	207	0.003	12	207	0.005
13:00 - 14:00	12	207	0.003	12	207	0.003	12	207	0.006
14:00 - 15:00	12	207	0.002	12	207	0.003	12	207	0.005
15:00 - 16:00	12	207	0.006	12	207	0.005	12	207	0.011
16:00 - 17:00	12	207	0.008	12	207	0.004	12	207	0.012
17:00 - 18:00	**12**	**207**	**0.010**	12	207	0.006	**12**	**207**	**0.016**
18:00 - 19:00	12	207	0.006	12	207	0.004	12	207	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.046			0.056			0.102

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.090	12	207	0.381	12	207	0.471
08:00 - 09:00	12	207	0.163	**12**	**207**	**0.618**	**12**	**207**	**0.781**
09:00 - 10:00	12	207	0.161	12	207	0.209	12	207	0.370
10:00 - 11:00	12	207	0.148	12	207	0.193	12	207	0.341
11:00 - 12:00	12	207	0.163	12	207	0.189	12	207	0.352
12:00 - 13:00	12	207	0.184	12	207	0.173	12	207	0.357
13:00 - 14:00	12	207	0.174	12	207	0.171	12	207	0.345
14:00 - 15:00	12	207	0.173	12	207	0.202	12	207	0.375
15:00 - 16:00	**12**	**207**	**0.445**	12	207	0.235	12	207	0.680
16:00 - 17:00	12	207	0.346	12	207	0.190	12	207	0.536
17:00 - 18:00	12	207	0.414	12	207	0.207	12	207	0.621
18:00 - 19:00	12	207	0.364	12	207	0.222	12	207	0.586
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.825			2.990			5.815

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.015	12	207	0.043	12	207	0.058
08:00 - 09:00	12	207	0.030	**12**	**207**	**0.151**	**12**	**207**	**0.181**
09:00 - 10:00	12	207	0.039	12	207	0.026	12	207	0.065
10:00 - 11:00	12	207	0.018	12	207	0.023	12	207	0.041
11:00 - 12:00	12	207	0.029	12	207	0.044	12	207	0.073
12:00 - 13:00	12	207	0.035	12	207	0.028	12	207	0.063
13:00 - 14:00	12	207	0.026	12	207	0.027	12	207	0.053
14:00 - 15:00	12	207	0.025	12	207	0.031	12	207	0.056
15:00 - 16:00	**12**	**207**	**0.109**	12	207	0.050	12	207	0.159
16:00 - 17:00	12	207	0.063	12	207	0.034	12	207	0.097
17:00 - 18:00	12	207	0.051	12	207	0.027	12	207	0.078
18:00 - 19:00	12	207	0.035	12	207	0.023	12	207	0.058
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.475			0.507			0.982

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.003	12	207	0.043	12	207	0.046
08:00 - 09:00	12	207	0.002	**12**	**207**	**0.050**	**12**	**207**	**0.052**
09:00 - 10:00	12	207	0.002	12	207	0.011	12	207	0.013
10:00 - 11:00	12	207	0.001	12	207	0.010	12	207	0.011
11:00 - 12:00	12	207	0.004	12	207	0.008	12	207	0.012
12:00 - 13:00	12	207	0.005	12	207	0.010	12	207	0.015
13:00 - 14:00	12	207	0.010	12	207	0.006	12	207	0.016
14:00 - 15:00	12	207	0.007	12	207	0.005	12	207	0.012
15:00 - 16:00	12	207	0.028	12	207	0.007	12	207	0.035
16:00 - 17:00	12	207	0.023	12	207	0.004	12	207	0.027
17:00 - 18:00	**12**	**207**	**0.033**	12	207	0.003	12	207	0.036
18:00 - 19:00	12	207	0.019	12	207	0.004	12	207	0.023
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.137			0.161			0.298

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.108	12	207	0.475	12	207	0.583
08:00 - 09:00	12	207	0.198	**12**	**207**	**0.829**	**12**	**207**	**1.027**
09:00 - 10:00	12	207	0.205	12	207	0.251	12	207	0.456
10:00 - 11:00	12	207	0.169	12	207	0.228	12	207	0.397
11:00 - 12:00	12	207	0.197	12	207	0.243	12	207	0.440
12:00 - 13:00	12	207	0.226	12	207	0.214	12	207	0.440
13:00 - 14:00	12	207	0.212	12	207	0.207	12	207	0.419
14:00 - 15:00	12	207	0.207	12	207	0.241	12	207	0.448
15:00 - 16:00	**12**	**207**	**0.588**	12	207	0.297	12	207	0.885
16:00 - 17:00	12	207	0.440	12	207	0.233	12	207	0.673
17:00 - 18:00	12	207	0.509	12	207	0.243	12	207	0.752
18:00 - 19:00	12	207	0.424	12	207	0.253	12	207	0.677
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.483			3.714			7.197

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL Servicing Vehicles
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	1	236	0.021						
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	12	207	0.001	12	207	0.000	12	207	0.001
08:00 - 09:00	12	207	0.007	12	207	0.002	12	207	0.009
09:00 - 10:00	12	207	0.008	12	207	0.008	12	207	0.016
10:00 - 11:00	12	207	0.009	12	207	0.009	12	207	0.018
11:00 - 12:00	12	207	0.006	12	207	0.008	12	207	0.014
12:00 - 13:00	12	207	0.007	12	207	0.006	12	207	0.013
13:00 - 14:00	12	207	0.005	12	207	0.008	12	207	0.013
14:00 - 15:00	12	207	0.004	12	207	0.003	12	207	0.007
15:00 - 16:00	12	207	0.004	12	207	0.004	12	207	0.008
16:00 - 17:00	12	207	0.004	12	207	0.004	12	207	0.008
17:00 - 18:00	12	207	0.002	12	207	0.004	12	207	0.006
18:00 - 19:00	12	207	0.000	12	207	0.002	12	207	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.078			0.058			0.115

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 B

Date/Dyddiad: 6 March 2019
Ask for/Gofynwch am: Mr. I. Robinson
Telephone/Rhif ffon: (01446) 704777
Your Ref/Eich Cyf:
My Ref/Cyf: P/DC/2018/00158/PRE
e-mail/e-bost: Planning@valeofglamorgan.gov.uk

The Vale of Glamorgan Council
Dock Office, Barry Docks,Barry CF63 4RT
Tel: (01446) 700111

Cyngor Bro Morgannwg
Swyddfa'r Doc, Dociau'r Barri, Y Barri CF63 4RT
Ffôn: (01446) 700111

www.valeofglamorgan.gov.uk

Mr. B. Davies
Asbri Planning
Unit 9, Oak Tree Court
Mulberry Drive
Cardiff Gate Business Park
CF23 8RS

Dear Sir,

Town and Country Planning Act, 1990 (as amended)
Application No. 2018/00158/PRE
Proposal: Outline permission for approximately 576 dwellings
Location: Land at Upper Cosmeston Farm, Lavernock

I refer to your correspondence received on 17 December 2018, concerning the above and your request for statutory pre-application advice. Having considered the nature of submission in detail, I respond as follows.

Proposal

The proposal relates to an outline application for up to 576 dwellings, a primary school and community facilities.

Local Context and Constraints

The site is approximately 22 hectares in sizes and is sited at the southern edge of Cosmeston. The site is largely agricultural in nature and also includes a dis-used railway line, an equine business (in a complex of former agricultural buildings), part of a dormant quarry and a former landfill site.

Part of the site (that which contains the complex of former agricultural buildings) lies outside the settlement boundary of Penarth/Cosmeston and outside of the housing allocation defined by Policy MG2 of the Local Development Plan. This part of the site also lies within a Green Wedge. There is a SINC adjacent and just to the south of the site.

Relevant Planning Policies

Local Development Plan:

Section 38 of The Planning and Compulsory Purchase Act 2004 requires that in determining a planning application the determination must be in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan for the area comprises the Vale of Glamorgan Adopted Local Development Plan 2011-2026, which was formally adopted by the Council on 28 June 2017, and within which the following policies are of relevance:

Strategic Policies:
POLICY SP1 – Delivering the Strategy
POLICY SP3 – Residential Requirement
POLICY SP4 – Affordable Housing Provision
POLICY SP7 – Transportation
POLICY SP10 – Built and Natural Environment
POLICY SP11 – Tourism and Leisure

Managing Growth Policies:
POLICY MG1 – Housing Supply in the Vale of Glamorgan
POLICY MG2 – Housing Allocations
POLICY MG4 – Affordable Housing
POLICY MG6 – Provision of Educational Facilities
POLICY MG7 – Provision of Community Facilities
POLICY MG18 – Green Wedges
POLICY MG19 – Sites And Species Of European Importance
POLICY MG20 – Nationally Protected Sites and Species
POLICY MG21 – Sites of Importance for Nature Conservation, Regionally Important Geological and Geomorphological Sites and Priority Habitats and Species
POLICY MG28 – Public Open Space Allocations

Managing Development Policies:
POLICY MD1 - Location of New Development
POLICY MD2 - Design of New Development
POLICY MD3 - Provision for Open Space
POLICY MD4 - Community Infrastructure and Planning Obligations
POLICY MD5 - Development within Settlement Boundaries
POLICY MD6 - Housing Densities
POLICY MD7 - Environmental Protection
POLICY MD8 - Historic Environment
POLICY MD9 - Promoting Biodiversity

In addition to the Adopted LDP the following policy, guidance and documentation supports the relevant LDP policies.

Planning Policy Wales:

National planning policy in the form of Planning Policy Wales (Edition 10, 2018) (PPW) is of relevance to the determination of this application.

The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

The following chapters and sections are of particular relevance in the assessment of this planning application :

Chapter 2 - People and Places: Achieving Well-being Through Placemaking,

- Maximising well-being and sustainable places through placemaking (key Planning Principles, national sustainable placemaking outcomes, Planning Policy Wales and placemaking

Chapter 3 - Strategic and Spatial Choices

- Good Design Making Better Places
- Promoting Healthier Places
- Sustainable Management of Natural Resources
- Accessibility
- Previously Developed Land
- The Best and Most Versatile Agricultural Land
- Supporting Infrastructure
- Managing Settlement Form –Green Wedges

Chapter 4 - Active and Social Places

- Transport
- Living in a Place (housing, affordable housing and gypsies and travellers and rural enterprise dwellings)
- Activities in Places (retail and commercial development)
- Community Facilities
- Recreational Spaces

Chapter 5 - Productive and Enterprising Places

- Energy (reduce energy demand and use of energy efficiency, renewable and low carbon energy, energy minerals)
- Making Best Use of Material Resources and Promoting the Circular Economy (design choices to prevent waste, sustainable Waste Management Facilities and Minerals)

Chapter 6 - Distinctive and Natural Places

- Recognising the Special Characteristics of Places (The Historic Environment, Green Infrastructure, Landscape, Biodiversity and Ecological Networks, Coastal Areas)
- Recognising the Environmental Qualities of Places (water and flood risk, air quality and soundscape, lighting, unlocking potential by taking a de-risking approach)

Technical Advice Notes:

The Welsh Government has provided additional guidance in the form of Technical Advice Notes. The following are of relevance:

- Technical Advice Note 1 – Joint Housing Land Availability Study (2015)
- Technical Advice Note 2 – Planning and Affordable Housing (2006)
- Technical Advice Note 5 – Nature Conservation and Planning (2009)
- Technical Advice Note 12 – Design (2016)
- Technical Advice Note 16 - Sport, Recreation and Open Space (2009)
- Technical Advice Note 18 – Transport (2007)

Supplementary Planning Guidance:

In addition to the adopted Local Development Plan, the Council has approved Supplementary Planning Guidance (SPG). Some SPG documents refer to previous adopted UDP policies and to ensure conformity with LDP policies, a review will be carried out as soon as is practicable following adoption of the LDP. The Council considers that the content and guidance of the adopted SPGs remains relevant and has approved the continued use of these SPGs as material considerations in the determination of planning applications until they are replaced or otherwise withdrawn. The following SPG are of relevance:

- Affordable Housing (2018)
- Biodiversity and Development (2018)
- Design in the Landscape
- Parking Standards (Interactive Parking Standards Zones Map)
- Planning Obligations (2017)
- Public Art in New Development (2018)
- Residential and Householder Development (2018)
- Sustainable Development - A Developer's Guide
- Travel Plan (2018)
- Trees, Woodlands, Hedgerows and Development (2018)

Other relevant evidence or policy guidance:

- Manual for Streets (Welsh Assembly Government, DCLG and DfT - March 2007)
- Welsh Government Circular 016/2014: The Use of Planning Conditions for Development Management
- Welsh Office Circular 11/99 – Environmental Impact Assessment
- Welsh Office Circular 13/97 - Planning Obligations

Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations Act (Wales) 2015 places a duty on the Council to take reasonable steps in exercising its functions to meet its sustainable development (or wellbeing) objectives. This report has been prepared in consideration of the Council's duty and the "sustainable development principle", as set out in the 2015 Act. In reaching the recommendation set out below, the Council has sought to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

Analysis of Proposal

The principle of the development and school issues

The site is allocated for housing under policy MG2 (24) of the Vale of Glamorgan Adopted Local Development Plan 1996-2011 (LDP) for up to 576 dwellings, and consequently the development of this land (within the allocation) is acceptable in principle. Policy MD6 of the LDP requires a density of at least 30 dwellings per hectare to ensure the efficient use of land. A density of less than this would only be accepted where the applicant has demonstrated that there are site constraints that prevent it.

As noted above, the bulk of the prospective application site is within the allocation and the settlement boundary, however, the southern part of the site (which includes the complex of agricultural/equine buildings) lies outside both. The rationale for including this land is to enable a two hectare, potentially two-form entry, school to be provided, instead of the one form entry school that is referenced in the LDP.

Further to the meeting that I recently had with the applicant, members of your development team and the Council's Schools Programme Manager, I am awaiting confirmation (from the Council's Education Section) on the calculated pupil yield and the school requirements for this site (and the associated financial contributions). I will forward this information as soon as I am in receipt of it, however, for the purpose of the letter, I will proceed on the assumption that a two form school is required.

Should a two-form school be required, I accept that one hectare would be insufficient space to accommodate that. If two hectares is, therefore, required, this would affect the capacity of the allocated site to provide 576 dwellings and this would appear to be a reasonable basis upon which to justify the inclusion of additional land to make that provision. This is likely to support the location of the school in the southern part of the allocation, firstly because that part of the site would theoretically give more flexibility for expansion (more so than a location within the heart of the site) and secondly because there is more scope for green wedge impacts to be minimised by the school and its associated open spaces (compared to dislodged dwellings).

Thirdly there are potential benefits in terms of earlier delivery of the school, compared to an alternative location further north. There are arguably benefits to an alternative siting, principally in terms of how the school would be integrated into the residential areas (and the proximity to existing residential areas), however, it is my view at this stage that there is a sound rationale for siting it in the location indicated on your submissions, for the reasons above.

At the meeting we discussed the scope of options, including siting the building closer to the road- outside the allocation and in the green wedge (with the open spaces to the rear/east) or siting the building within the allocation and the open spaces closer to the road. Having now discussed this with the Council's Schools Programme Manager, she advises that a location centrally within what has been identified on your submissions as the school site is most likely to be appropriate. That would be likely to involve the school straddling the allocation boundary and lying partly within the green wedge.

Whichever option is pursued, the application will need to be accompanied by an assessment of this issue, to demonstrate that there would not be an unacceptable impact on the green wedge (having regard to the removal of existing buildings).

<u>Loss of the existing rural enterprise</u>

Policy SP11 of the LDP states as follows:

Proposals which promote the Vale of Glamorgan as a tourism and leisure destination will be favoured. Existing tourism and leisure facilities will be protected and enhanced, and favourable consideration will be given to proposals which:

Enhance the range and choice of the Vale of Glamorgan's tourism and leisure opportunities, particularly through the provision of all year round facilities and a range and choice of visitor accommodation in appropriate locations;

Favour rural diversification and the local economy; and

Protect existing tourism assets and promote the sustainable use of the countryside and the Glamorgan Heritage Coast.

I have been advised that the existing complex of buildings is occupied by an equine use and that there is a short lease remaining. These issues should be fully dealt with in the application and a justification provided for any conflict with policy SP11. On face value, this would result in the loss of a leisure use and the loss of this does appear to conflict with rural diversification aims.

<u>Design, layout and visual impact</u>

The submissions do not include details of house designs or a layout, while general zones have been identified. As a general principle, you seek to retain and where necessary supplement natural landscape features. These hedgerows (principally) should be used to frame the development and will add amenity value to the layout.
I note the change in levels through the site and the initial indicative proposal to site higher buildings at the eastern side, adjacent to the coast. I remain to be convinced about this rationale, which would be likely to result in a more visually prominent development from wider views. Inevitably the development of the allocation will fundamentally alter the appearance and character of the site, however, the size of the buildings and pattern of development should still be as sensitive as possible to the surroundings.

The development should involve an active frontage to the main road and I would encourage an internal layout which has a high degree of permeability and avoids repetitious cul-de-sacs. There is scope for a strong sense of place and distinct character areas, particularly adjacent to the coast, at the respective plateaus and adjacent to areas of open space and landscaping. Landscape features should be worked into the layout of open space and used to enhance these areas. The outline application should contain an indicative masterplan to demonstrate how the site can be appropriately developed.

The layout should have regard to the vulnerability of development in coastal zones and the likely recession of the shoreline during the life of the development. The boundary of the site currently falls within 10 m of the cliff edge in places and it is recommended that the developer consults the latest Severn estuary Shoreline Management Plan.

I am happy to look at ideas for materials and elevational treatment as early in the process as you wish.

<u>Highways issues</u>

At the meeting the principal concept discussed was a single roundabout junction, however, it appeared at my more recent meeting that two priority junctions are now being considered. One would serve the school and a relatively small parcel of dwellings, and the other would serve the remainder of the dwellings.

For ease of reference I have copied below the response from Steve Arthur, who has provided comments on the scoping note:

Further to the items discussed at the time, I have attached the Scoping Note submitted by Asbri, in which I have marked up some minor comments for your consideration and inclusion in any highway observations you make.

In general, based on the scoping note and discussions held during the meeting, I do not consider there to be any contentious items or proposals (from a transport perspective). The proposed methodology and approach is robust and commensurate for a development of this size. I have summarised relevant and key items below:

- *Further details will be required in relation to the school. i.e. size, type, catchment area, person and vehicle trips, etc;*

- *Consideration should be given to 'future proofing' the proposed access arrangements, in terms of safeguarding land or providing a junction that will have spare operational capacity. This will provide some assurance that additional land (under ownership of the applicant) can be developed and accessed via the junction in future if necessary. Difficult this one because from a planning point of view it is only this application site we should consider, but as a highway authority I would recommend that you at least ask for some sensitivity testing at the proposed access?*

- *In addition to modelling the proposed access, where there is a material impact on wider highway links and junctions, they should be subject to capacity assessment (modelling).*

- *Although an outline application, it would be beneficial to consider traffic management and the interaction between the school and residents within the site. i.e. peak arrival times, parking, TROs, pick-up/drop-off, etc, to limit disruption on the highway.*

I have also appended the marked up scoping note to this letter.

The scoping advice above and in the appended report pre-dates the apparent change of approach to the two priority junctions, albeit the bulk of the commentary will still be relevant. At the meeting it appeared the Council's Highways representatives and your transport consultant were satisfied with the roundabout option, albeit I queried whether a roundabout was necessary (given that priority to the existing strategic highway would normally be the preference in the interests of traffic flows). Steve Arthur concurred that this would usually be the case and residents within a new development should be subjected to the 'wait time' to enter the highway, however, in this case (as presented at the meeting), the school would also have been served by that junction.

My understanding is that discussions have been on-going between your consultant and the Council's Engineers and there may be no objection to the two priority junctions. This would have the benefit of protecting the priority on the main road and I would be unlikely to have an objection in principle to this arrangement.

Internally, the layout should be built upon a clear road hierarchy and this will assist with legibility and placemaking. As noted above, vehicular permeability (while not to be prioritised for ease of car use) would be likely to create a better form of layout which does not focus on cul-de-sacs and dead ends (which themselves typically involve engineered turning heads etc). I am supportive of shared surfaces in the appropriate locations and there are real opportunities to create interesting places with these. I would suggest contacting Lee Howells with regard to carriageway and footway widths (and the size of refuse vehicles that would need to be tracked).

I note the proposal to continue the cycle route through the site- this should give direct access to the school site and opportunities to be continued beyond. The retention of landscaping would potentially enhance this route but care should be taken to ensure that it does not feel excluded from the residential parcels on either side. I have not had any specific comments from the Council's Kyle Phillips, however, you may wish to liaise with him on this (kwphillips@valeofglamorgan.gov.uk) and on whether bus access to the site is desirable.

Open space

Policy MG28 requires that 1 ha of the site be developed as public open space, and this allocation of open space is in addition to the requirements set out in the SPG (see supporting text at page 177 of the LDP). In addition to that, and based upon 576 dwellings, there would be a need for 3,341 m2 of equipped children's play space and 7,350 m2 other children's play space. There would ordinarily be a requirement for 21,381 m2 of outdoor sports space, however, the site falls within the Sully ward (and is adjacent to the Plymouth ward) and both have a surplus of outdoor sports space currently.
If an application is in outline, we do not need to be prescriptive regarding the open space, rather it should just specify the type and amount. As a general indication, I would suggest that based upon 3,340.80 of equipped play space and the measurements for NEAPs, LEAPs and LAPs, we would require a NEAP, 3 x LEAP and 4 x LAPS. In terms of the strategic open space, I would suggest it should be located relatively centrally to best serve the development, and it should be easily accessible for existing residential areas.

While I note your concerns regarding the site's developable area, this has not in my opinion been substantiated/quantified and therefore it is difficult for me to give significant weight to that argument. Furthermore, the submissions suggest less dense development in the eastern part of the site- is that particularly necessary for the success of the design strategy and if so why? Developing that part of the site to a higher density would on face value work to address your concerns. The Council are likely to be willing to adopt these spaces subject to the appropriate commuted sums, which would depend on the nature of the spaces.

As noted above, open spaces and pedestrian routes should be designed, where possible, with a close relationship to mature landscape features. This will enhance the quality of those routes and spaces.

I have sought a view on the re-landscaping on the strip to the eastern side of the site and I will come back to you on this when I receive a response.

Ecology

Natural Resources Wales (NRW) has advised that the site is within close proximity to the Llynnoedd Cosmeston/Cosmeston Lake SSSI which lies approximately 110 m to the North and the Penarth Coast SSSI. NRW should be consulted to make sure the designated sites are protected and would not be affected by development of the proposed site. NRW is aware that a European protected species has been recorded in the vicinity of the site and an ecological assessment will be required in support of any future planning application in order to ensure that there is no detriment to the maintenance of the favourable conservation status of European Protected Species. Given the site's proximity to the Severn Estuary SAC, SPA & Ramsar, a project level Habitats Regulation Assessment may be required, and should be discussed with Natural Resources Wales.

NRW has further advised that the site has the potential to support habitats of local biodiversity importance and consultation with the Council's ecologist should be undertaken to ensure that suitable provision is made for the survival of any local biodiversity interest within and around the site. In addition, part of the site is located on an historic landfill, namely 'Cosmeston No.1 Old Tip' and as a minimum, a preliminary risk assessment of the historic landfill should be undertaken and in this regard, future applicants are referred to 'Guiding Principles for Land Contamination' (Environment Agency (2016).

Archaeology

Given the sites proximity to known archaeological features Glamorgan Gwent Archaeological Trust has previously advised that an archaeological evaluation of the site will be required and that some parts of the site may need to be retained as open space in order to protect archaeological features.

Drainage

This development will need Sustainable Drainage Approving Body (SAB) approval.

SuDS are intended to maximise the opportunities and benefits that can be provided by the effective management of surface water. This can only be achieved when the principles of SuDS are considered at the outset of the development process. The SuDS approach to surface water management will direct the development process and shape the layout of new developments around site drainage.

A Sustainable Drainage Approving Body (SAB) application must demonstrate compliance with the statutory standards, following a set of principles in the design of the system and satisfy the standards in relation to runoff destination, hydraulic control, water quality, amenity, biodiversity, construction, operation and maintenance.

The SAB approval process is separate from the planning application process. An application for approval for a surface water drainage scheme may be made to the SAB separately from, or combined with a planning application. The planning and SAB approvals are independent systems and there may be circumstances where separate applications are appropriate.

Prior to the submission of a planning application, if the development would trigger a SAB application, applicants are strongly advised to make a separate Pre-Application submission to the SAB. Please note that pre-application fees may apply. Further advice can be found at http://www.valeofglamorgan.gov.uk/en/living/Flooding/Flood-and-Coastal-Erosion/Sustainable-Drainage-Systems.aspx

A designated main river runs in the vicinity of the site and consultation with Natural Resources Wales will be required to determine the suitability of the main river to accept proposed surface water run-off. Any prospective developer should, in the first instance, investigate the suitability of the use of soakaways for the disposal of surface water run-off and ensure that an assessment is carried out into the potential of disposing of surface water by mean of a suitable drainage system. If infiltration drainage is not viable then the flows off-site will require attenuation to Greenfield Runoff Rates to avoid detriment off-site. Any connection of proposed surface water run-off to the public sewer should be discussed with Dŵr Cymru Welsh Water and is likely to require attenuation to Greenfield Runoff Rates to avoid detriment off-site.

Dŵr Cymru Welsh Water (DCWW) has advised that a water supply can be made available to service the proposed development site; however extensive off-site mains may be required. The LDP states that no problems are envisaged with the public sewerage system for domestic foul discharge from this proposed development, however, off-site sewers may be required. Part of the site is crossed by a strategic foul public sewer and a 3" trunk water main for which protection measures in the form of an easement width and/or diversion will be required.

Pre Application Consultation

For all applications for 'major' development, there is a statutory requirement for the applicant / developer to consult the community and relevant statutory consultees, and to submit a Pre-Application Consultation (PAC) Report with any application.

Detailed advice can be found here:-

http://gov.wales/docs/desh/publications/160129annex-1-pre-application-consultation-en.pdf

Section 106 Planning Obligations (if applicable)

The Council's Planning Obligations Supplementary Planning Guidance (SPG) provides the local policy basis for seeking planning obligations through Section 106 Agreements in the Vale of Glamorgan. It sets thresholds for when obligations will be sought, and indicates how they may be calculated.

The Council's SPG is available to view/ download at : -
http://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Policy/SPG/Planning-Obligations-SPG-2018.pdf

Following consideration of the proposed development and potential impacts and needs arising from the development, I would advise that the Council is likely to seek planning obligations covering the following: -

- Affordable Housing
- Education
- Public Open Space
- Sustainable Transport
- Community Facilities
- Public Art

In terms of affordable housing, your submissions comprise a mix of:

88 x 1 bed flats
38 x 2 bed flats
52 x 2 bed houses
51 x 3 bed houses
2 x 4 bed houses

I have queried with my housing colleagues whether that remains the required mix and I will advise you of their response as soon as I receive it.

As noted above, I await a response from my education colleagues and I will similarly forward that to you as soon as I receive it.

Public open space matters are discussed above.

The LDP favours proposals which are located to minimise the need to travel, especially by car and which help to reduce vehicle movements or which encourage cycling, walking and the use of public transport. These policies are supported by the Council's approved Supplementary Planning Guidance on Sustainable Development and the advice in Planning Policy Wales, TAN 18: Transport and Manual for Streets which emphasise the important relationship between land use planning and sustainability in terms of transport.

Having regard to the cost of providing and upgrading sustainable transport facilities, the Council's Planning Obligations SPG provides a basis to consider the type of contribution that may be likely to mitigate the impacts of a development of this size. This is a key aim embodied in national and local planning and transport policies, which the Council is keen to deliver. In this case, a sustainable transport contribution will be required to ensure that the site is sufficiently accessible by a range of modes of transport other than the private car, such that it may be considered a sustainable site. This is likely to equate to £1,324,800.

The supporting text to LDP Policy MG2 states that 0.1-0.2 hectares of land shall be allocated for a community facility. You have queried the scope for dual use of school facilities and this can be considered, however, the onus would be on the applicant to demonstrate how/if that would acceptably replace or supplement on site provision. Clearly a separate facility would have greater scope for community use throughout the day, while there are likely to be opportunities for use of school facilities outside of school hours.

The SPG will require a contribution towards public art of 1% of total build costs.

In addition, and separate to any obligation sought, the Council requires the developer to pay an administration fee, equivalent to 20% of the application fee or 2% of the total financial contribution being sought, whichever is the greater. This fee covers the Council's costs to negotiate, monitor and implement the terms of the necessary Section 106 agreement.

Further discussion on such matters can, of course, be entered into at the time of an application, or as part of any agreed further pre-application submissions.

Requests for Further Advice

In accordance with the Council's Guidance Note on 'charging for pre-application advice', any further requests for pre-application advice will attract payment of a further fee, and should be made in writing with appropriate supporting documentation.

Development Team Approach – Building Control

Please note if you decide to employ the Councils Building Control team in respect of the proposed development for which you have sought advice, any fees you have paid in respect of this guidance will be taken into account in assessing the relevant Building Regulations fee. All Building Regulations fees are now based on a standard hourly rate with the final fee payable worked out on a risk assessed basis. Accordingly as the Council's officers will have been involved in the project from the earliest stages this will be considered in the final risk assessment based fee for Building Regulations.

Should you have any further questions regarding the above, please contact Mr. I. Robinson on the above number.

Yours faithfully

IRobinson

Mr. I. Robinson
for Operational Manager Development Management

Please Note:

The advice offered in this response represents an informal opinion, provided in accordance with the Council's Guidance Note on 'charging for pre-application advice'. In particular, it is emphasised that while this pre application advice will be carefully considered in reaching a decision or recommendation on an application, the final decision on any application that you may make can only be taken after we have consulted local people, statutory consultees and any other interested parties. It does not, therefore prejudice any decision which the Local Planning Authority may make should the matter come before them in a formal context.

Appendix C

Upper Cosmeston Farm, Penarth

Transport Assessment Review

23 January 2020

Mott MacDonald
2 Callaghan Square
Cardiff CF10 5BT
United Kingdom

T +44 (0)29 2046 7800
mottmac.com

Vale of Glamorgan Council

Upper Cosmeston Farm, Penarth

Transport Assessment Review

23 January 2020

Mott MacDonald Limited. Registered in
England and Wales no. 1243967.
Registered office: Mott MacDonald House,
8-10 Sydenham Road, Croydon CR0 2EE,
United Kingdom

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Contents

1 Introduction

1.1.1 Mott MacDonald have been commissioned by the Vale of Glamorgan Council to undertake a review of a Transport Assessment and Travel Plan, submitted in support of a planning application for the proposed development of land at Upper Cosmeston Farm, Penarth.

1.1.2 The assessment was undertaken in September 2019 by Asbri Transport, on behalf of Welsh Government, and considers a residential development comprising up to 576 dwellings and a new two-form entry Primary School.

1.1.3 The reminder of this report will broadly follow the structure of the Transport Assessment, providing comment and recommendation where appropriate.

2 Introduction

2.1.1 Asbri Transport were appointed by Welsh Government (WG) to prepare a Transport Assessment (TA) and Travel Plan (TP) to support an outline planning application for a new residential development including a primary school.

2.1.2 The application site is allocated in the Vale of Glamorgan Local Development Plan (LDP). The site is greenfield land, approximately 2.5km south of Penarth town centre and expected to comprise:

- 60% privately owned homes
- 40% affordable homes
- A two-form entry Primary School

2.1.3 The site masterplan aims to ensure the development is permeable to walking and cycling, with good connectivity to the public transport network. The TA includes a Transportation Implementation Strategy (TIS) and Travel Plan (TP).

2.1.4 Asbri Transport has engaged with the Highway Authority regarding the impact of the development on the local highway network and signal timings for the signalised junctions that have been modelled. There has been liaison with Passenger Transport officers regarding the public transport provision including bus stops and bus movement into the development site and discussions on Active Travel infrastructure and improvements.

2.1.5 The TA addresses comments received in response to the scoping note produced by Asbri Transport submitted in March 2019. The general methodology and approach to the assessment has been agreed with the Highway Authority.

3 Policy Overview

3.1.1 This section of the TA provides an overview of the national and local transport related planning policy, strategy and legislation, as well as a relevant local transport study. It draws out the aspects relevant to sustainable transport provision at the development site.

3.1.2 The review identifies the relevant sections of the Vale of Glamorgan LDP, which allocates the site for residential development (policy MG2). The site including a new primary and nursey school, open space, a new community facility and affordable housing in-line with affordable housing policy.

3.1.3 The development is expected to have a suitable and safe access via a new junction onto Lavernock Road, which incorporates safe pedestrian/cycle friendly facilities. There is to be good permeability both within and surrounding the site including improvements to the NCN88 between Penarth, Sully and Barry.

3.1.4 Policy MG7 allocates land for new community infrastructure to be provided in association with housing allocations at Barry Waterfront, St Cyres, Ogmore Residential Centre and Cosmeston Farm, Penarth. There is also a potential bus park and ride site at Cosmeston.

3.1.5 The Wales Spatial Plan 2008 is due to be replaced by the National Development Framework (NDF) 2020-2040 and a Consultation Draft was published in August 2019. It recommended that the emerging NDF is reviewed and considered in the Transport Assessment.

3.1.6 The policy overview section provides a comprehensive review of relevant policy and guidance.

4 Existing Situation

4.1.1 Section 3 of the TA describes the site in relation to its surrounding land uses and considers the baseline conditions for walking, cycling and public transport, as well as the highway network.

4.1.2 The development site is in Lavernock, on a parcel of land between the B4267 (to the west) and the coastline (to the east). The site is located approximately 2.5km from Penarth town centre and 2km from Sully, which are directly connected by the B4267.

4.1.3 Although the site is in Lavernock, the proposed development is effectively urban sprawl from Lower Penarth into Cosmeston/Lavernock and a continuation of existing residential development immediately north of the site, which is accessed via Cosmeston Drive.

4.1.4 The local amenities have been mapped in Figure 3.2 of the TA, which provides an indication of the distance to a variety of local facilities. The majority of the distances reported in Table 3.1 of the TA are above the CIHT 'Providing for Journeys on Foot' preferred maximum distances for walking (1.2km). Given that the map uses a straight line measurement from the site frontage to Lavernock Road, the actual walking distance is also likely to be slightly greater than reported.

4.1.5 **Although the existing pedestrian infrastructure is considered suitable in terms of network coverage and connectivity, due to the distances alone, it is not envisaged that many people will chose to walk to local amenities from the proposed development site.**

4.1.6 The pedestrian and cycle facilities immediately surrounding the site have been identified and accurately described. These include a footway on the eastern side of Lavernock Road, the Welsh Coast Path and National Cycle Network (NCN) Route 88 (Railway Walk), which begins on Cosmeston Drive and travels north to Penarth.

4.1.7 The Vale of Glamorgan LDP proposes an extension of NCN Route 88 through the development site and will provide an appropriate, attractive and viable off-highway route between the proposed development and Penarth. Linking into wider and established local routes, leading to the Marina and Cardiff Bay.

4.1.8 **A review of lighting levels along the NCN 88 should be undertaken, between the site and Penarth, to ensure the route remains attractive to pedestrians and cyclists during the hours of darkness and winter months.**

4.1.9 A shared use cycle path runs along the B4267 from Sully and continues past the application site as far as the boundary of Lavernock and Penarth. The cycle route is sub-standard when considered against the active travel design guidance, primarily due to the path width. North of Lavernock, on entry into Penarth, the shared route ends and continues as a footway available to pedestrians only. Cyclists must re-join the carriageway.

4.1.10 Proposed active travel routes are provided in Appendix C of the TA. **It is agreed that the alignment and design of these routes should be discussed with the Highway Authority. The delivery and extension of these routes will further enhance the development sustainability and improve road safety, providing high quality off-carriageway cycle and walking routes to Penarth and Sully. The requirement for street lighting should be reviewed and included in any proposals.**

4.1.11 The TA identifies bus services that pass the site, serving the Cosmeston Lakes bus stop. The existing services provide good connectivity to Penarth Railway Station and the town centre, Barry and Cardiff.

4.1.12 Penarth is well served by rail, with approximately four services per hour to Cardiff and an average journey time of 13 minutes to Central Station. A direct service to Barry (via Dinas Powys) is provided from Cogan Station. However, due to the distance from the application site to Cogan Station, it is unlikely that many residents would choose this option.

4.1.13 The TA refers to the South Wales Metro and the proposals for 2023. **It is agreed that the provision of tram-trains extending the rail network into Lower Penarth would significantly improve the attractiveness and accessibility of public transport in the vicinity of the development. However, the extension of the service is one many potential future phases under consideration for the South Wales Metro, with no firm commitment or timescale for delivery.**

Highway Safety

4.1.14 Accident data has been obtained from www.crashmap.co.uk for the five-year period 2014-2018. Four clusters sites have been identified at the following junctions:

- A4160/A4055 (Barons Court) signalised crossroads
- A4055/B4267 (Merrie Harrier) staggered signalised junction
- A4231/A4055/ B4267 (McDonald's) roundabout
- B4267/Stanwell Road signalised crossroads

4.1.15 Figure 3.6 of the TA also highlights a smaller group of collisions at the Minehead Road/B4267 junction in Sully. There are no clusters in the immediate vicinity of the site.

4.1.16 The TA suggests that the collisions within the cluster sites identified are likely to be the result of driver error, rather than any fault with the junction. **Analysis has not been undertaken to evidence this statement. The TA does not satisfactorily address road safety and it is recommended that more detailed analysis is undertaken, which may identify patterns or common factors that can be addressed through the development proposals.**

4.1.17 **It is noted that the total number of accidents reported for 2018 is much lower than the previous years, suggesting that the data used may not be for the complete year. This should be clarified.**

Development Proposals

4.1.18 Although the development proposals are outline at this stage, appropriate and realistic assumptions have been made regarding the accommodation schedule, the pupil/staff numbers at the school and the likely catchment area. Proposals include:

- 576 residential dwellings (60% privately owned dwellings and 40% affordable dwellings)
- A two-form entry primary school (480 pupils)

4.1.19 The catchment area for the school has been assumed to cover the Plymouth and Sully Wards. These are considered appropriate to inform the Transport Assessment as an outline application.

4.1.20 **It is recognised that he development proposals are indicative at this stage and subject to change during reserved matters. If there are significant changes to the proposals, which will result in a material change to trip generation or distribution, the Transport Assessment should be revisited and revised accordingly**.

4.1.21 Section 4.1.8 to 4.1.12 of the TA refers to the indicative masterplan and internal layout. Particular reference is made to the Railway Walk and how it will play a key role in providing a direct, traffic free link from Penarth into the heart of the development. **It is agreed that the route and proposed improvements to walking and cycling connectivity across the site is an important aspect of the development that will offer good opportunity to travel by cycle, rather than making short and local journeys by car. Further details, including the extents and standard of the improvements, type of surfacing and traffic calming features will be a reserved matter, to be agreed and approved at detailed design.**

4.1.22 A range of potential measures have been listed in the TA to maximise the sites sustainability through potential Section 106 obligations. These include extending the Cardiff Nextbike scheme, improved cycle parking facilities at Penarth Station, a car club, car share scheme and additional bus services. A new bus stop along Lavernock Road is also considered, along the frontage of the development boundary, between the Medieval Village and the Cosmeston Lakes Country Park.

4.1.23 **The paragraph on station cycle parking (page 41 of the TA) refers to enhancing car parking at Penarth Train Station. This is assumed to be a typographical error that should be corrected to cycle parking.**

4.1.24 The proposed measures will help maximise site sustainability and reduce the reliance on travel by private car. **It is recommended that the relevant stakeholders are consulted, and where practical the proposed schemes are funded and delivered through a 106 agreement.**

4.1.25 **In relation to the proposed bus stops, it is recommended that current operators and the Vale of Glamorgan Council are consulted, to determine the demand and location for a new stop. The bus stop location currently proposed in the TA will result in four stops along an 800m section of the B4267 (from St Mary's Well Bay Road to the entrance to Cosmeston Lakes). There is opportunity to rationalise the number of bus stops and focus on improved quality, accessibility and safety.**

Pedestrians and cyclists

4.1.26 The proposed development is to be designed to promote walking and cycling internally and to connect with its surrounding active travel infrastructure. A new pedestrian route will link the National Coastal Path and Cosmeston Lakes. NCN 88 is to be extended through the site, providing a direct active travel corridor to Penarth Town Centre.

4.1.27 The TA assumes that "typical able-bodied people are capable of walking at least 2km for day to day activities" and suggests that an increasing proportion of journeys will be undertaken on foot.

4.1.28 **It is agreed that a proportion of journeys undertaken by residents will be on foot. However, due to the distance, the numbers choosing to walk direct to services and facilities it is not expected to be a high.**

4.1.29 In light of the above, it is accepted that in practice the distance that an individual is likely to walk depends on that individual and the circumstances. It is agreed that over time and with sustainable design, walking and cycling is a viable and growing means of travel that should be encouraged.

4.1.30 The TA plots the area accessible by cycle within 15 and 30 minutes of the application site. Penarth and Sully are within a 15 minutes cycle of the site. Further, the majority of the town and city centre of Barry and Cardiff respectively can be reached within 30 minutes. **The analysis demonstrates that local employment destinations (Barry, Penarth and Cardiff) are within appropriate and acceptable distances for commuting on bike.**

Travel Plan

4.1.31 An Interim Travel Plan for the proposed Primary School and a full Travel Plan for the residential element of the proposed development has been produced to accompany the planning application.

4.1.32 The Travel Plan (TP) has been produced in accordance with The Vale of Glamorgan Supplementary Planning Guidance and is considered comprehensive. Detailed measures, objectives and targets have been set that will help to encourage and promote sustainable travel.

4.1.33 **It is agreed that the implementation of the TP will be incumbent on the school and the housing developer(s) when full planning permission is granted. The TP is therefore considered to be a framework plan that should inform a more specific and tailored plan, to be submitted by the housing developer and primary school when detailed planning permissions are considered.**

4.1.34 Table 4.1 of the TP sets out the mode share targets that will be reviewed and agreed with the Vale of Glamorgan Council following the initial travel surveys, which should be conducted within three months of the development exceeding 20% occupation.

4.1.35 The headline target is to achieve a 10% reduction in single occupancy trips to and from the site, from a baseline share of 72% reducing to 62% in year five. In the same five-year period, the target for walking and cycling trips is an increase of 4%, public transport 4% and shared journeys 3%. It is agreed that the travel plan targets are realistic and achievable.

Vehicle access

4.1.36 It is proposed that the development is accessed directly from the B4267, via two ghost-island priority junctions. Preliminary designs have been provided that have been subject to a road safety audit and swept path analysis.

4.1.37 A number of minor road safety issues have been addressed following the audit. The vehicle track runs demonstrate that a refuse collection vehicle and a 11.3m bus can enter and exit the junction satisfactorily.

4.1.38 The proposed access arrangement is considered acceptable in principal, subject to detailed design. Both junctions have been assessed and are forecast to operate within capacity during peak hours. The proposed junctions are in keeping with the existing character of the road, which currently has a number of similar priority junctions accessing residential and holiday developments direct from the B4267.

4.1.39 Some queuing and delays forecast on the (minor) development arm at both junctions in future years, however this is limited and on average is no greater than one vehicle.

4.1.40 The provision of two points of access is beneficial in terms of separating residential and school trips. **A review of the internal road layout does not form part of this report and it is recognised that the masterplan included in the TA is indicative. However, it is recommended that further consideration be given to the interaction between school and residential traffic. The current arrangement will result in parents parking and possibly circulating through 'residential' areas, resulting in competition for space and conflict between residents and school users**.

4.1.41 An appropriate parking strategy will need to be developed to avoid congestion and erroneous parking during school start and finish times. Traffic Regulation Orders will need to be agreed with the Vale of Glamorgan and the statutory consultation process followed prior to implementation.

4.1.42 **In connection with the recommendation in section 4.1.26 of this report and given that a Toucan crossing has recently been provided across Lavernock Road (at the entrance to the lakes) the location of the proposed Toucan should be reviewed, to ensure there is sufficient demand and that it is positioned correctly to meet the desire line.**

4.1.43 **Further, it should be confirmed that the potential pedestrian and cycle links into Cosmeston Lakes (as indicated in Figure 4.1 of the TA) are feasible and if discussions have been held with relevant landowners and stakeholders**.

4.1.44 Visibility splays for both access junctions meet the recommended standards set out in the Design Manual for Roads & Bridges and the Manual for Streets.

4.1.45 Proposals include extending the existing 30mph speed limit on the B4267 beyond the site, in a southbound direction towards Sully. It is agreed that the development, with its direct residential frontage, combined with changes to the highway which include new junctions, cycleway/footway, bus stops, Toucan crossing and pedestrian refuse will change the character of the road, therefore 30mph limit is appropriate to this point. However, after the entrance to Cosmeston Lakes, the road is wide with good forward visibility therefore the existing two-way speeds are above 40mph. **To ensure a good level of compliance additional calming measures should be considered and agreed with the Vale of Glamorgan. Such as vehicle activated signage and/or a gateway feature on the approach into Lavernock. It is also recommended that early discussions are held with the Council, Police and GoSafe to ensure they support a reduction in speed (and the proposed Toucan crossing) prior to formal consultation.**

4.1.46 **Consideration will need to be given to providing street lighting along Lavernock Road, from the entrance to Cosmeston Lakes to the end of the proposed extension to the 30mph limit.**

4.1.47 Section 4.9.1 of the TA references the need for a Construction Management Plan. It is agreed that a suitable plan will need to be set out and submitted in support of the planning application.

Parking

4.1.48 Exact numbers and parking details are not confirmed in the TA and will be finalised at the reserved matters stage. At this stage it is anticipated somewhere between 1.8-2.0 spaces per dwelling will provided and approximately 30 spaces for the primary school.

4.1.49 The proposed parking provision based on the indicative masterplan falls below the maximum number permitted specified in the Vale of Glamorgan Council parking standards. In addition to vehicle parking, all residential properties will have electrical vehicle charging points and cycle parking incorporated into the dwelling design.

4.1.50 Car ownership figures have been accurately extracted from census data for The Vale of Glamorgan MSOA containing the development site and Cosmeston Lakes.

4.1.51 **It is agreed that ownership levels, active travel measures and parking availability will influence parking demand. These factors should be considered at the reserved matters stage, to develop and agree an appropriate road layout and level of parking that works for both the residents and the school. With the aim of reducing congestion and competition for space during peak periods, ensuring efficient and safe access for parents and children.**

5 Transport Implementation Strategy

5.1.1 The Transport Implementation Strategy (TIS) outlines the walking, cycling and public transport strategy. Which includes physical, management and promotional measures that promote sustainable modes of transport and reduce the reliance on travel by single occupancy car trips.

5.1.2 The Travel Plan is considered an important component of the TIS. Mode share targets have been set in the Travel Plan using the 2011 census as a baseline, gradually reducing the proportion of single occupancy drivers from 72% in the base year to 62% over five years, with an increase of between 1%-4% across other modes. These are considered appropriate and realistic targets given the proposed active travel and public transport measures.

5.1.3 The TIS sets out a framework for monitoring the objectives and targets, which are shown to be in-line with the requirements and objectives of the Local Development Plan, which will encourage a shift towards more sustainable modes of transport.

6 Transport Characteristics

6.1.1 This section of the TA estimates the traffic generation of the proposed development and its likely impact on the surrounding road network.

Trip generation

6.1.2 The software TRICS has been used to extract representative trip rates and estimate development trips, based on a mix of private and affordable dwellings. **Full details should be provided in relation to the filtering process, with justification for the removal of any sites. It should be clarified why only sites with up to 500 dwellings have been used when the proposed site is for 576 dwellings.**

6.1.3 To account for the positive effects of the Travel Plan, active travel and public transport proposals, the trip rate have been reduced by 10%. As multi-modal surveys, with eight of the 12 sites included in the TRICS selection recorded as having a travel plan in place, justification for the further 10% reduction should be provided, or the unadjusted rates should be used in the assessment.

6.1.4 Table 6.1 in the TA reduces the number of dwellings in 2025 and 2029 by 10% to reflect the above active travel measures. Although it does not alter the resulting vehicle trips, it is recommended that the rates are adjusted and not the dwelling numbers, to avoid confusion.

6.1.5 **The AM and PM peak hour periods considered in the TRICS assessment (and when assessing junction capacity) are reported as 0800-0900 and 1700-1800 respectively. Section 3.8.4 of the TA identifies the weekday peak periods as 0745-0845 and 1630-1730. The busiest weekday peak hour periods and corresponding TRICS rates for the proposed development should be used in the assessment. This should be checked and corrected for accuracy.**

6.1.6 Based on the TRICS assessment and the 10% reduction, it is predicted that by 2029 the development could generate 265 residential vehicle movements (two-way) in the AM and 242 movements in the PM peak.

6.1.7 **Sections 6.2.15 to 6.2.17 in the TA should be checked and corrected for accuracy, due to a number of typographical errors when cross-referencing Table 6.1.**

6.1.8 The total number of pedestrian trips is predicted to be 104 in the AM peak and 45 in the PM peak. The number of cyclists is predicted to be seven in the AM peak and nine in the PM. However, given the distances to local services and amenities discussed earlier in this report, the number of pedestrian trips is likely to be slightly less and the number of cyclists much higher.

6.1.9 In addition to the TRICS analysis, local trip rates have been assessed based on the existing neighbouring development (Cosmeston Drive). These are shown to be lower than those obtained from TRICS.

6.1.10 The Cosmeston Drive traffic flows are assumed to come from the November 2018 junction turning count at the Lavernock Road/Cosmeston Drive junction. **Cosmeston Drive is a comparable residential area to the proposed development and traffic surveys here are a good proxy for the residential aspect of the development. Therefore the 10% reduction in trips from those obtained from TRICS is considered appropriate.**

6.1.11 Vehicle trip rates for the primary school have been obtained using appropriate parameters in TRICS. All selected sites were surveyed between 2013 and 2015.

6.1.12 Section 6.4 of the TA considers internalisation of primary school trips. To take into account internal active travel trips (residents who will live in the new dwellings with primary school aged children) the trip generation has been reduced by 30%.

6.1.13 **Although it is agreed that this is a likely scenario, it is not agreed that there should be a 30% reduction applied to the trip generation. The primary school sites selected in the TRICS assessment are all from within residential areas and will therefore already account for internalisation. The unadjusted rates should be used for assessment unless justification can be provided to support the proposed 30% reduction.**

6.1.14 **Table 6.5 in the TA references primary school vehicle trips based on 384 pupils. It is recommended that the rates are adjusted and not the pupil numbers, to avoid confusion. Further a 30% reduction to the proposed 480 pupil school is 336 pupils. This should be checked and corrected for accuracy.**

6.1.15 **Section 6.4.4 should be checked and corrected for accuracy due to typographical errors when cross referencing Table 6.5.**

6.1.16 The total vehicle trips predicted for the development by 2029 is 399 in the AM peak and 259 in the PM peak.

6.1.17 Future background traffic growth for the future years 2022, 2025 and 2029 have been forecast appropriately using Tempro and committed development in the area has been accounted for.

6.1.18 Development trips have been appropriately distributed across the highway network according to the census origin/destination data and based on the most convenient/fastest route using Google Maps and local knowledge.

7 Impact of the Development Proposals

7.1.1 This section of the TA considers the impact of the forecast development vehicle trips on the surrounding highway network.

7.1.2 A total of ten junctions have been assessed, which were discussed and agreed with Vale of Glamorgan Council at the scoping stage. Classified turning counts were undertaken at all ten junctions on Thursday 29th November as listed below:

- 1. A4231/A4055/Sully Moors Road roundabout junction
- 2. Sully Moors Road/B4267/Hayes Road roundabout junction
- 3. Lavernock Road/Cosmeston Lake Country Park priority junction
- 4. Lavernock Road/Cosmeston Drive priority junction
- 5. Lavernock Road/Westbourne Road priority junction
- 6. B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads
- 7. Lavernock Road/Dinas Road/Victoria Road crossroads
- 8. Cardiff Road/B4267/A4055 signalised junction
- 9. A4055/B4267/Andre Road signalised crossroads
- 10. A4055/A4160 signalised intersection

7.1.3 An initial 'first pass' high-level assessment has been undertaken on all ten junctions, which considers the percentage impact of development trips on total junction flow, for 2022, 2025 and 2029. A threshold of 5% has been used as an indicator, above which the junction has then been subject to detailed modelling to quantify and forecast junction operation, in terms of queue length and capacity.

7.1.4 The TA considers an impact of 5% or less to be negligible and thus a detailed capacity assessment is not required.

7.1.5 **This approach is considered reasonable. However, the Merrie Harrier (the A4055/B4267/Andrew Road and Cardiff Road/B4267/A4055) is a strategic junction that currently experiences congestion and queuing during peak periods. At this junction a 5% increase in traffic is expected to have a material impact. It is recommended the junction is subject to detailed modelling to quantify the effect of the development traffic.**

7.1.6 **In Table 7.1 of the TA it is noted that the total flow reported for the A4055/B4267/Andrew Road junction (in the Base AM 2022 scenario) is 2,976. The same junction in 2025 and 2029 reports a total flow of 2,743 and 2,813 respectively. The reduction in traffic should be explained and the table checked for accuracy.**

7.1.7 Seven junctions (including both site access proposals) were subject to detailed capacity assessments using the traffic modelling software Junctions 9 (for priority controlled junctions and roundabouts) or LINSIG (for signal controlled junctions). The modelled junctions include:

- Lavernock Road/Northern site access junction
- Lavernock Road / Southern site access junction
- Lavernock Road/Cosmeston Lake Country Park priority junction
- Lavernock Road/Cosmeston Drive priority junction
- Lavernock Road/Westbourne Road priority junction

- B4267/Augusta Road/Lavernock Road/Castle Avenue crossroads

7.1.8 The TA modelling results and output files contained in Appendix K to R have been checked for accuracy in terms of junction geometry and the traffic flows used for assessment.

7.1.9 The proposed Northern and Southern Site Access junction arrangements are forecast to operate within capacity. The maximum RFC (ratio of flow to capacity) is shown to be 0.56 and average queues are no greater than one PCU (passenger car unit).

7.1.10 The existing Lavernock Road/Cosmeston Drive junction is forecast to operate within capacity until 2029, at which point it reaches practical capacity. The RFC on the residential arm is shown to be 0.91 in the morning peak. However, the maximum queue is only six PCUs.

7.1.11 **Section 7.8.12 of the TA should be checked and corrected for accuracy. An RFC of 0.88 is reported, however, Table 7.4 shows an RFC of 0.91.**

7.1.12 Lavernock Road/Westbourne Road priority junction has been assessed using the Lane Simulation tool, on advice from the software developers TRL. Table 7.5 indicates that for the existing baseline scenario (2019) the model is forecasting an average queue of 25 PCUs in the AM peak, exiting Westbourne Road, and a queue of 210 PCUs on Lavernock Road (south).

7.1.13 **The reported level of queuing is very high. The Vale of Glamorgan Council should confirm if this is known problem at this location and if the queuing levels reported are representative. If not, it is recommended that further surveys and/or site observations are undertaken to better understand operation. The information should be used to calibrate the model.**

7.1.14 **Based on the model results, Lavernock Road/Westbourne Road junction is forecast to be well over capacity by 2022 and will continue to deteriorate significantly by 2025 and 2029. By 2029 in the AM peak period a queue of 590 PCUs is forecast on Lavernock Road (south) and 114 PCUs on Westbourne Road. Suitable mitigation will need to provide to ensure the junction operation remains at an acceptable level.**

7.1.15 Lavernock Rd/Augusta Rd/Castle Avenue Cross Road Junction is forecast to operate within capacity for all future year scenarios tested.

7.1.16 Lavernock Road/Dinas Road/Victoria Road signals has been assessed based on a four stage method of control and a 90 second cycle time. The junction is forecast to operate within capacity (with development traffic) until 2025. By 2029, with development traffic, the junction is forecast to be at practical capacity and approaching theoretical capacity, with a 98.4% DoS (Degree of Saturation) on the Dinas Road approach arm in the AM peak. In the same time period, an average queue of 21 PCUs is forecast on Lavernock Road South.

7.1.17 To improve the junction performance and mitigate the effects of development traffic, it is proposed that the existing four-stage operation is replaced by a more efficient two-stage sequence. Right-turn traffic would be ‘gap seeking’ and expected to operate under priority control. Based on the revised stage arrangement the model forecasts that the junction will operate within capacity for all scenarios.

7.1.18 **Although the proposed two-stage sequence has been shown to operate satisfactorily in the modelling software LINSIG, it is recommended that an outline design and cost estimate is provided, the details of which will need to be agreed with the Vale of Glamorgan Council.**

7.1.19 The TA summaries the junction modelling in section 7.10. **Based on the model results, it is not agreed that the local highway network can accommodate the development proposals,**

without further mitigation. It is recommended that the Merrie Harrier junction is modelled in detail to determine the effect of development traffic, or that discussions are held with the Vale of Glamorgan Council, to agree a suitable way forward when considering the development impact and the strategic approach to reducing congestion at this location. In addition, suitable mitigation will need to be provided at Lavernock Road/Westbourne Road to ensure junction operation remains at an acceptable level.

8 Summary and Conclusions

8.1.1 Mott MacDonald were commissioned the Vale of Glamorgan Council to review a Transport Assessment and associated Travel Plan, submitted in support of an outline planning application for land at Upper Cosmeston Farm, comprising 576 dwellings and a new two-form Primary School.

8.1.2 Comments and recommendations have been provided in this report and amendments to the Transport Assessment should be made accordingly.

8.1.3 The baseline review has demonstrated that the development site supports the use of non-car modes of travel, with access to existing public transport links and the ability to reach a range of facilities by cycling. Although the distance from the site to many local amenities is beyond the preferred maximum walking distance, it does benefits from the NCN Route 88, which would extend into the heart of the development and provide a dedicated route to the centre of Penarth.

8.1.4 The existing bus network, combined with the proposed improvements, will provide opportunity to make linked trips to nearby railway stations in Penarth, Cogan and Barry. However, due to the distance of the stations from the site, it is not likely many will choose to walk to catch a train. To increase trips by rail the development will rely upon commitments made by Transport for Wales in relation to the South Wales Metro and a significantly improved rail network across South Wales.

8.1.5 A number of personal injury cluster sites have been identified in the study area. Further analysis will be necessary to establish the cause and identify suitable mitigation measures.

8.1.6 The principle objective of the development in terms of transport and access is to reduce reliance on the private car and improve accessibility via sustainable modes. The Transport Assessment is based on a 70/30 split mode of travel. i.e. it considers that 70% of all journeys will be made by private vehicle and 30% by sustainable modes and public transport. This is a 10% reduction in single occupancy trips compared to the current baseline modal share.

8.1.7 Based on the land use and 70/30 modal split, the two-way development trips by car (driver + passenger) is forecast to be approximately 399 vehicles in the AM peak and 259 in the PM peak.

8.1.8 Junction capacity analysis indicates that development trips will result in a 5% increase in traffic at the signalised Merrie Harrier junction. Lavernock Road/Westbourne Road priority has been modelled in detail and is forecast to operate over capacity in the assessed future years, with significant queuing and delay.

8.1.9 It is concluded that although the sustainable measures will help to reduce vehicle trips generated. However, the development should ensure that the impact on the local highway network is mitigated against with the provision of junction and road safety improvements where necessary.

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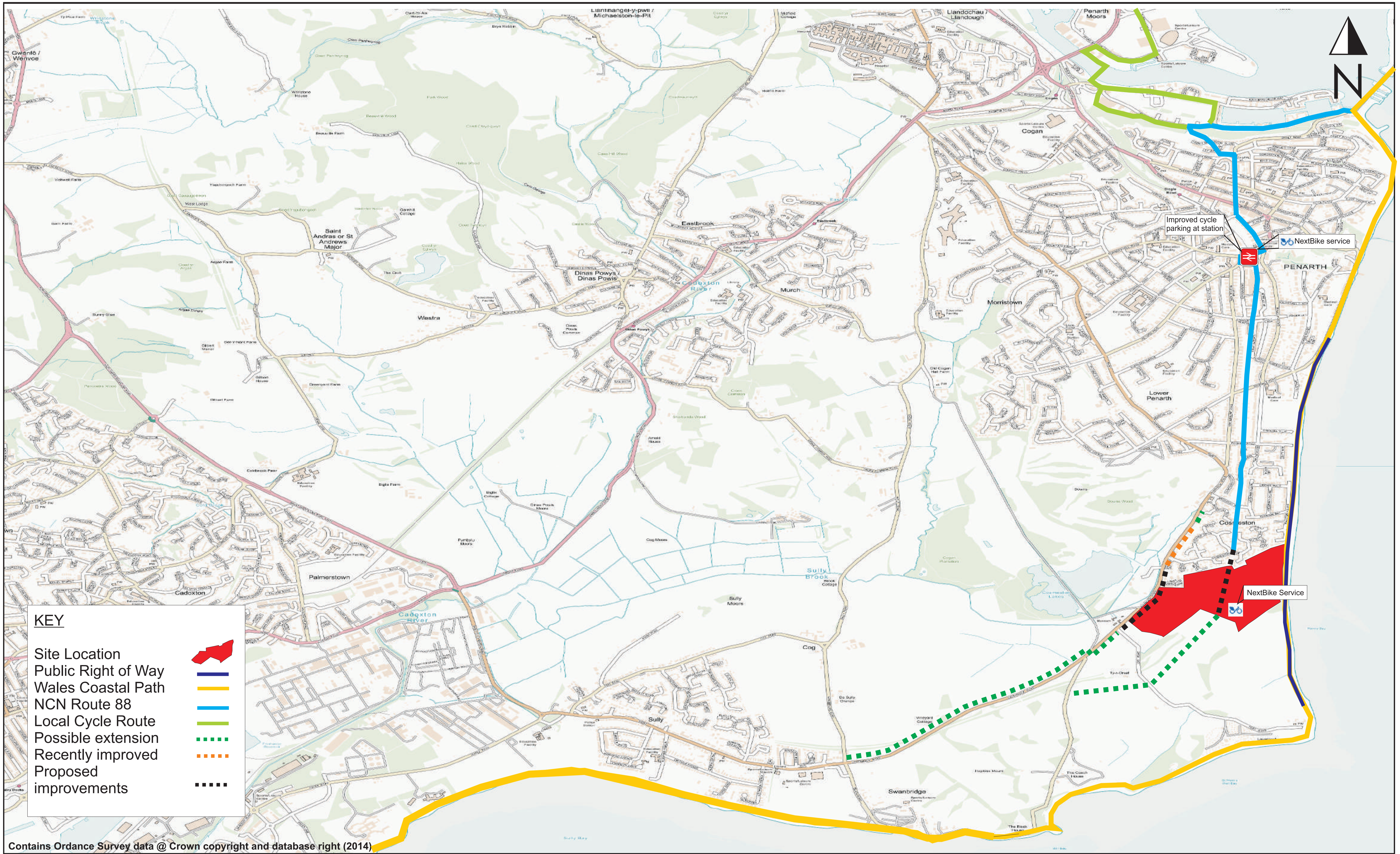
Appendix D



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			Designed by: KW
	Job Title: Cosmeston	Suite D, 1st Floor, 220 High Street, Swansea, SA1 1NW, T 01792 480535	Drawn by: KW
			Ckd/Appd: PO'C
			Issued: July 2019
			Job No: T18.164

File Extension:

Drg No: Appendix C

Appendix E

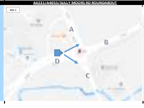
Severnside
Transportation Data Collection

Survey Header Sheet

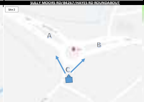
Job Number	SS21
Job Name	Penarth
Survey Date	Thursday 29th November 2018
Survey Type	Peak Hour JTC Survey
Survey Location	See plans on sheet 2
Weather Conditions	Heavy rain in the peak hours throughout
Video footage	Video Link to Be Supplied
Observations	Queue Length Observations were taken by Camera on Sites 10 Arm A and Site 9 Arm A as agreed and all footage will be supplied

Site Location Plans: Overview

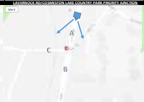
A4231/A4055/SULLY MOORS RD ROUNDABOUT



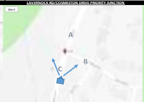
SULLY MOORS RD/B4267/HAYES RD ROUNDABOUT



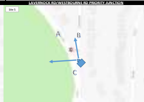
LAVERNOCK RD/COSMESTON LAKE COUNTRY PARK PRIORITY JUNCTION



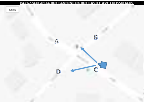
LAVERNOCK RD/COSMESTON DRIVE PRIORITY JUNCTION



LAVERNOCK RD/WESTBOURNE RD PRIORITY JUNCTION

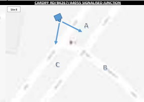


B4267/AUGUSTA RD/ LAVERNCOK RD/ CASTLE AVE CROSSROADS



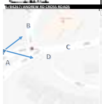
LAVERNOCK RD/DINAS RD/VICTORIA RD CROSS ROADS

CARDIFF RD/B4267/A4055 SIGNALISED JUNCTION

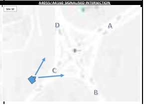


A405

5/B4267/ANDREW RD CROSS ROADS



A4055/A4160 SIGNALISED INTERSECTION



SS21 -- PENARTH
27 November 2018
Peak Hour JTC Survey (06:30-09:30 & 15:30-18:30)
Sully Moors Rd/B4267/Hayes Rd Roundabout

	Arm A - Arm A							Arm A - Arm B							Arm A - Arm C							Arm
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Total
0630 - 0645	0	0	0	0	0	0	**0**	16	2	1	0	0	0	**19**	8	2	2	0	0	0	**12**	**31**
0645 - 0700	0	0	0	0	0	0	**0**	20	4	1	0	0	1	**26**	17	0	2	0	0	0	**19**	**45**
1/2 Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**6**	**2**	**0**	**0**	**1**	**45**	**25**	**2**	**4**	**0**	**0**	**0**	**31**	**76**
0700 - 0715	0	0	0	0	0	0	**0**	41	4	1	0	0	0	**46**	16	4	1	1	0	0	**22**	**68**
0715 - 0730	0	0	0	0	0	0	**0**	48	5	3	0	0	0	**56**	15	7	1	1	0	0	**24**	**80**
0730 - 0745	0	0	0	0	0	0	**0**	68	14	2	0	0	0	**84**	19	5	1	0	0	0	**25**	**109**
0745 - 0800	0	0	0	0	0	0	**0**	117	8	0	2	0	0	**127**	24	2	2	0	0	0	**28**	**155**
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**274**	**31**	**6**	**2**	**0**	**0**	**313**	**74**	**18**	**5**	**2**	**0**	**0**	**99**	**412**
0800 - 0815	0	0	0	0	0	0	**0**	142	10	1	3	0	1	**157**	14	1	1	1	0	1	**18**	**175**
0815 - 0830	0	0	0	0	0	0	**0**	96	26	0	0	0	0	**122**	20	4	1	0	0	0	**25**	**147**
0830 - 0845	1	0	0	0	0	0	**1**	89	12	2	0	0	0	**103**	28	4	3	0	0	0	**35**	**139**
0845 - 0900	0	0	0	0	0	0	**0**	113	19	1	2	0	0	**135**	22	5	2	2	0	0	**31**	**166**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**440**	**67**	**4**	**5**	**0**	**1**	**517**	**84**	**14**	**7**	**3**	**0**	**1**	**109**	**627**
0900 - 0915	1	0	0	0	0	0	**1**	90	9	4	1	0	0	**104**	31	3	4	3	0	0	**41**	**146**
0915 - 0930	1	0	0	0	0	0	**1**	68	10	2	2	1	0	**83**	22	4	3	0	0	0	**29**	**113**
1/2 Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**158**	**19**	**6**	**3**	**1**	**0**	**187**	**53**	**7**	**7**	**3**	**0**	**0**	**70**	**259**
3 Hour Totals (am)	3	0	0	0	0	0	**3**	908	123	18	10	1	2	**1062**	236	41	23	8	0	1	**309**	**1374**
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	**0**	92	14	0	0	0	0	**106**	12	10	4	0	0	0	**26**	**132**
1545 - 1600	0	0	0	0	0	0	**0**	104	8	0	1	0	0	**113**	20	5	2	0	0	0	**27**	**140**
1/2 Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**196**	**22**	**0**	**1**	**0**	**0**	**219**	**32**	**15**	**6**	**0**	**0**	**0**	**53**	**272**
1600 - 1615	0	0	0	0	0	0	**0**	111	12	0	1	0	0	**124**	12	5	1	2	0	0	**20**	**144**
1615 - 1630	0	0	0	0	0	0	**0**	93	9	0	1	0	0	**103**	15	3	5	2	0	0	**25**	**128**
1630 - 1645	0	0	0	0	0	0	**0**	110	9	1	0	0	0	**120**	11	4	3	0	0	0	**18**	**138**
1645 - 1700	1	0	0	0	0	0	**1**	85	6	0	0	0	0	**91**	19	1	3	0	0	0	**23**	**115**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**399**	**36**	**1**	**2**	**0**	**0**	**438**	**57**	**13**	**12**	**4**	**0**	**0**	**86**	**525**
1700 - 1715	0	0	0	0	0	0	**0**	99	12	1	1	0	1	**114**	19	2	2	1	0	0	**24**	**138**
1715 - 1730	0	0	0	0	0	0	**0**	93	8	0	1	0	0	**102**	15	3	1	0	0	0	**19**	**121**
1730 - 1745	0	0	0	0	0	0	**0**	99	5	0	0	0	0	**104**	15	1	3	0	0	0	**19**	**123**
1745 - 1800	1	0	0	0	0	0	**1**	96	3	0	0	0	1	**100**	13	1	2	0	0	0	**16**	**117**
Hourly Total	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**387**	**28**	**1**	**2**	**0**	**2**	**420**	**62**	**7**	**8**	**1**	**0**	**0**	**78**	**499**
1800 - 1815	0	0	0	0	0	0	**0**	104	2	0	1	0	1	**108**	8	0	1	1	0	0	**10**	**118**
1815 - 1830	0	0	0	0	0	0	**0**	89	6	0	0	0	1	**96**	10	1	4	0	0	0	**15**	**111**
1/2 Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**193**	**8**	**0**	**1**	**0**	**2**	**204**	**18**	**1**	**5**	**1**	**0**	**0**	**25**	**229**
3 Hour Totals (am)	2	0	0	0	0	0	**2**	1175	94	2	6	0	4	**1281**	169	36	31	6	0	0	**242**	**1525**
Day Total	5	0	0	0	0	0	**5**	2083	217	20	16	1	6	**2343**	405	77	54	14	0	1	**551**	**2899**

	Arm B - Arm A							Arm B - Arm B							Arm B - Arm C							Arm
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Total
0630 - 0645	25	4	0	0	0	0	**29**	1	0	0	0	0	0	**1**	3	2	0	0	0	0	**5**	**35**
0645 - 0700	27	6	0	0	0	0	**33**	0	0	0	0	0	0	**0**	9	1	0	0	0	0	**10**	**43**
1/2 Hourly Total	**52**	**10**	**0**	**0**	**0**	**0**	**62**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**12**	**3**	**0**	**0**	**0**	**0**	**15**	**78**
0700 - 0715	38	4	1	0	0	0	**43**	0	0	0	0	0	0	**0**	8	3	0	0	0	0	**11**	**54**
0715 - 0730	43	8	1	0	0	0	**52**	0	0	0	0	0	0	**0**	8	2	0	0	0	1	**11**	**63**
0730 - 0745	74	8	0	1	0	1	**84**	0	0	0	0	0	0	**0**	12	5	0	1	0	0	**18**	**102**
0745 - 0800	86	6	2	1	0	0	**95**	1	0	0	0	0	0	**1**	24	3	0	0	0	0	**27**	**123**
Hourly Total	**241**	**26**	**4**	**2**	**0**	**1**	**274**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**52**	**13**	**0**	**1**	**0**	**1**	**67**	**342**
0800 - 0815	137	10	0	3	0	0	**150**	0	0	0	0	0	0	**0**	17	1	0	1	0	0	**19**	**169**
0815 - 0830	145	12	0	3	0	0	**160**	0	0	0	0	0	0	**0**	34	3	1	1	0	0	**39**	**199**
0830 - 0845	110	11	1	1	0	0	**123**	0	0	0	0	0	0	**0**	26	6	1	1	1	0	**35**	**158**
0845 - 0900	97	14	1	1	0	2	**115**	0	0	0	0	0	0	**0**	24	3	0	0	0	0	**27**	**142**
Hourly Total	**489**	**47**	**2**	**8**	**0**	**2**	**548**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**101**	**13**	**2**	**3**	**1**	**0**	**120**	**668**
0900 - 0915	133	10	1	0	0	1	**145**	0	0	0	0	0	0	**0**	38	3	1	0	0	1	**43**	**188**
0915 - 0930	88	6	3	1	1	0	**99**	0	0	0	0	0	0	**0**	19	3	0	1	0	0	**23**	**122**
1/2 Hourly Total	**221**	**16**	**4**	**1**	**1**	**1**	**244**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**6**	**1**	**1**	**0**	**1**	**66**	**310**
3 Hour Totals (am)	1003	99	10	11	1	4	**1128**	2	0	0	0	0	0	**2**	222	35	3	5	1	2	**268**	**1398**
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	155	9	1	1	0	1	**167**	1	1	0	0	0	0	**2**	39	7	1	1	1	0	**49**	**218**
1545 - 1600	138	12	0	1	0	0	**151**	0	0	0	0	0	0	**0**	37	6	0	2	0	1	**46**	**197**
1/2 Hourly Total	**293**	**21**	**1**	**2**	**0**	**1**	**318**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**76**	**13**	**1**	**3**	**1**	**1**	**95**	**415**
1600 - 1615	109	18	0	2	1	0	**130**	0	0	0	0	0	0	**0**	31	2	0	0	1	0	**34**	**164**
1615 - 1630	104	12	0	0	0	0	**116**	0	0	0	0	0	0	**0**	56	8	0	1	0	0	**65**	**181**
1630 - 1645	91	11	0	1	0	1	**104**	1	1	0	0	0	0	**2**	49	5	2	1	1	0	**58**	**164**
1645 - 1700	109	10	0	1	0	0	**120**	1	1	0	0	0	0	**2**	51	6	2	0	1	0	**60**	**182**
Hourly Total	**413**	**51**	**0**	**4**	**1**	**1**	**470**	**2**	**2**	**0**	**0**	**0**	**0**	**4**	**187**	**21**	**4**	**2**	**3**	**0**	**217**	**691**
1700 - 1715	78	7	1	2	0	0	**88**	0	0	0	0	0	0	**0**	47	3	0	0	0	0	**50**	**138**
1715 - 1730	102	11	0	0	1	0	**114**	0	0	0	0	0	0	**0**	67	4	0	1	0	0	**72**	**186**
1730 - 1745	117	2	0	1	0	0	**120**	0	0	0	0	0	0	**0**	32	2	0	0	0	0	**34**	**154**
1745 - 1800	90	4	0	0	0	0	**94**	0	0	0	0	0	0	**0**	25	3	0	0	0	0	**28**	**122**
Hourly Total	**387**	**24**	**1**	**3**	**1**	**0**	**416**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**171**	**12**	**0**	**1**	**0**	**0**	**184**	**600**
1800 - 1815	109	8	0	0	0	0	**117**	0	0	0	0	0	0	**0**	23	3	0	0	1	0	**27**	**144**
1815 - 1830	88	0	0	1	0	0	**89**	0	0	0	0	0	0	**0**	20	1	0	0	0	1	**22**	**111**
1/2 Hourly Total	**197**	**8**	**0**	**1**	**0**	**0**	**206**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**4**	**0**	**0**	**1**	**1**	**49**	**255**
3 Hour Totals (am)	1290	104	2	10	2	2	**1410**	3	3	0	0	0	0	**6**	477	50	5	6	5	2	**545**	**1961**
Day Total	2293	203	12	21	3	6	**2538**	5	3	0	0	0	0	**8**	699	85	8	11	6	4	**813**	**3359**

	Arm C - Arm A							Arm C - Arm B							Arm C - Arm C							Arm
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Total
0630 - 0645	8	0	0	0	0	0	**8**	8	1	0	0	0	0	**9**	0	0	0	0	0	0	**0**	**17**
0645 - 0700	10	2	2	0	0	0	**14**	8	0	0	0	0	0	**8**	0	0	0	0	0	0	**0**	**22**
1/2 Hourly Total	**18**	**2**	**2**	**0**	**0**	**0**	**22**	**16**	**1**	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**39**
0700 - 0715	7	2	2	2	0	0	**13**	21	2	0	1	0	0	**24**	0	0	0	0	0	0	**0**	**37**
0715 - 0730	13	3	5	2	0	1	**24**	28	3	1	1	1	0	**34**	0	0	0	0	0	0	**0**	**58**
0730 - 0745	11	10	3	2	0	0	**26**	72	13	0	0	1	0	**86**	0	0	0	0	0	0	**0**	**112**
0745 - 0800	25	8	1	0	0	0	**34**	115	11	0	2	1	0	**129**	0	0	0	0	0	0	**0**	**163**
Hourly Total	**56**	**23**	**11**	**6**	**0**	**1**	**97**	**236**	**29**	**1**	**4**	**3**	**0**	**273**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**370**
0800 - 0815	24	4	8	0	0	0	**36**	109	5	0	2	0	2	**118**	0	0	0	0	0	0	**0**	**154**
0815 - 0830	27	7	4	0	0	0	**38**	106	14	1	2	1	0	**124**	0	0	0	0	0	0	**0**	**162**
0830 - 0845	16	4	4	1	0	0	**25**	62	13	1	1	0	0	**77**	0	0	0	0	0	0	**0**	**102**
0845 - 0900	9	3	6	0	0	0	**18**	55	4	0	0	0	0	**59**	0	0	0	0	0	0	**0**	**77**
Hourly Total	**76**	**18**	**22**	**1**	**0**	**0**	**117**	**332**	**36**	**2**	**5**	**1**	**2**	**378**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**495**
0900 - 0915	18	2	1	1	0	0	**22**	25	7	2	1	0	0	**35**	0	0	0	0	0	0	**0**	**57**
0915 - 0930	11	1	4	0	0	0	**16**	27	4	1	0	1	0	**33**	0	0	0	0	0	0	**0**	**49**
1/2 Hourly Total	**29**	**3**	**5**	**1**	**0**	**0**	**38**	**52**	**11**	**3**	**1**	**1**	**0**	**68**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**106**
3 Hour Totals (am)	179	46	40	8	0	1	**274**	636	77	6	10	5	2	**736**	0	0	0	0	0	0	**0**	**1010**
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	27	2	3	1	0	0	**33**	24	3	0	0	0	0	**27**	0	0	0	0	0	0	**0**	**60**
1545 - 1600	19	3	2	0	0	1	**25**	17	4	1	0	0	0	**22**	0	0	0	0	0	0	**0**	**47**
1/2 Hourly Total	**46**	**5**	**5**	**1**	**0**	**1**	**58**	**41**	**7**	**1**	**0**	**0**	**0**	**49**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**107**
1600 - 1615	25	3	1	0	0	0	**29**	32	2	0	1	0	2	**37**	0	0	0	0	0	0	**0**	**66**
1615 - 1630	14	4	1	0	0	1	**20**	19	3	0	0	0	1	**23**	0	0	0	0	0	0	**0**	**43**
1630 - 1645	20	3	3	1	0	0	**27**	23	5	0	0	0	1	**29**	0	0	0	0	0	0	**0**	**56**
1645 - 1700	25	5	1	0	0	0	**31**	36	1	0	0	0	0	**37**	0	0	0	0	0	0	**0**	**68**
Hourly Total	**84**	**15**	**6**	**1**	**0**	**1**	**107**	**110**	**11**	**0**	**1**	**0**	**4**	**126**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**233**
1700 - 1715	48	2	1	0	0	0	**51**	35	4	0	0	0	0	**39**	0	0	0	0	0	0	**0**	**90**
1715 - 1730	18	4	0	0	0	0	**22**	26	2	0	1	0	0	**29**	0	0	0	0	0	0	**0**	**51**
1730 - 1745	11	2	2	0	0	0	**15**	21	3	0	0	0	0	**24**	0	0	0	0	0	0	**0**	**39**
1745 - 1800	16	0	1	1	1	0	**19**	19	1	0	0	0	0	**20**	0	0	0	0	0	0	**0**	**39**
Hourly Total	**93**	**8**	**4**	**1**	**1**	**0**	**107**	**101**	**10**	**0**	**1**	**0**	**0**	**112**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**219**
1800 - 1815	14	1	2	0	0	0	**17**	15	1	0	0	0	0	**16**	0	0	0	0	0	0	**0**	**33**
1815 - 1830	9	1	1	0	0	0	**11**	17	0	0	1	0	0	**18**	1	0	0	0	0	0	**1**	**30**
1/2 Hourly Total	**23**	**2**	**3**	**0**	**0**	**0**	**28**	**32**	**1**	**0**	**1**	**0**	**0**	**34**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**63**
3 Hour Totals (am)	246	30	18	3	1	2	**300**	284	29	1	3	0	4	**321**	1	0	0	0	0	0	**1**	**622**
Day Total	425	76	58	11	1	3	**574**	920	106	7	13	5	6	**1057**	1	0	0	0	0	0	**1**	**1632**

	Origin - Arm A							Origin - Arm B							Origin - Arm C							Arm
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Total
0630 - 0645	24	4	3	0	0	0	**31**	29	6	0	0	0	0	**35**	16	1	0	0	0	0	**17**	**83**
0645 - 0700	37	4	3	0	0	1	**45**	36	7	0	0	0	0	**43**	18	2	2	0	0	0	**22**	**110**
1/2 Hourly Total	**61**	**8**	**6**	**0**	**0**	**1**	**76**	**65**	**13**	**0**	**0**	**0**	**0**	**78**	**34**	**3**	**2**	**0**	**0**	**0**	**39**	**193**
0700 - 0715	57	8	2	1	0	0	**68**	46	7	1	0	0	0	**54**	28	4	2	3	0	0	**37**	**159**
0715 - 0730	63	12	4	1	0	0	**80**	51	10	1	0	0	1	**63**	41	6	6	3	1	1	**58**	**201**
0730 - 0745	87	19	3	0	0	0	**109**	86	13	0	2	0	1	**102**	83	23	3	2	1	0	**112**	**323**
0745 - 0800	141	10	2	2	0	0	**155**	111	9	2	1	0	0	**123**	140	19	1	2	1	0	**163**	**441**
Hourly Total	**348**	**49**	**11**	**4**	**0**	**0**	**412**	**294**	**39**	**4**	**3**	**0**	**2**	**342**	**292**	**52**	**12**	**10**	**3**	**1**	**370**	**1124**
0800 - 0815	156	11	2	4	0	2	**175**	154	11	0	4	0	0	**169**	133	9	8	2	0	2	**154**	**498**
0815 - 0830	116	30	1	0	0	0	**147**	179	15	1	4	0	0	**199**	133	21	5	2	1	0	**162**	**508**
0830 - 0845	118	16	5	0	0	0	**139**	136	17	2	2	1	0	**158**	78	17	5	2	0	0	**102**	**399**
0845 - 0900	135	24	3	4	0	0	**166**	121	17	1	1	0	2	**142**	64	7	6	0	0	0	**77**	**385**
Hourly Total	**525**	**81**	**11**	**8**	**0**	**2**	**627**	**590**	**60**	**4**	**11**	**1**	**2**	**668**	**408**	**54**	**24**	**6**	**1**	**2**	**495**	**1790**
0900 - 0915	122	12	8	4	0	0	**146**	171	13	2	0	0	2	**188**	43	9	3	2	0	0	**57**	**391**
0915 - 0930	91	14	5	2	1	0	**113**	107	9	3	2	1	0	**122**	38	5	5	0	1	0	**49**	**284**
1/2 Hourly Total	**213**	**26**	**13**	**6**	**1**	**0**	**259**	**278**	**22**	**5**	**2**	**1**	**2**	**310**	**81**	**14**	**8**	**2**	**1**	**0**	**106**	**675**
3 Hour Totals (am)	1147	164	41	18	1	3	**1374**	1227	134	13	16	2	6	**1398**	815	123	46	18	5	3	**1010**	**3782**
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	104	24	4	0	0	0	**132**	195	17	2	2	1	1	**218**	51	5	3	1	0	0	**60**	**410**
1545 - 1600	124	13	2	1	0	0	**140**	175	18	0	3	0	1	**197**	36	7	3	0	0	1	**47**	**384**
1/2 Hourly Total	**228**	**37**	**6**	**1**	**0**	**0**	**272**	**370**	**35**	**2**	**5**	**1**	**2**	**415**	**87**	**12**	**6**	**1**	**0**	**1**	**107**	**794**
1600 - 1615	123	17	1	3	0	0	**144**	140	20	0	2	2	0	**164**	57	5	1	1	0	2	**66**	**374**
1615 - 1630	108	12	5	3	0	0	**128**	160	20	0	1	0	0	**181**	33	7	1	0	0	2	**43**	**352**
1630 - 1645	121	13	4	0	0	0	**138**	141	17	2	2	1	1	**164**	43	8	3	1	0	1	**56**	**358**
1645 - 1700	105	7	3	0	0	0	**115**	161	17	2	1	1	0	**182**	61	6	1	0	0	0	**68**	**365**
Hourly Total	**457**	**49**	**13**	**6**	**0**	**0**	**525**	**602**	**74**	**4**	**6**	**4**	**1**	**691**	**194**	**26**	**6**	**2**	**0**	**5**	**233**	**1449**
1700 - 1715	118	14	3	2	0	1	**138**	125	10	1	2	0	0	**138**	83	6	1	0	0	0	**90**	**366**
1715 - 1730	108	11	1	1	0	0	**121**	169	15	0	1	1	0	**186**	44	6	0	1	0	0	**51**	**358**
1730 - 1745	114	6	3	0	0	0	**123**	149	4	0	1	0	0	**154**	32	5	2	0	0	0	**39**	**316**
1745 - 1800	110	4	2	0	0	1	**117**	115	7	0	0	0	0	**122**	35	1	1	1	1	0	**39**	**278**
Hourly Total	**450**	**35**	**9**	**3**	**0**	**2**	**499**	**558**	**36**	**1**	**4**	**1**	**0**	**600**	**194**	**18**	**4**	**2**	**1**	**0**	**219**	**1318**
1800 - 1815	112	2	1	2	0	1	**118**	132	11	0	0	1	0	**144**	29	2	2	0	0	0	**33**	**295**
1815 - 1830	99	7	4	0	0	1	**111**	108	1	0	1	0	1	**111**	27	1	1	1	0	0	**30**	**252**
1/2 Hourly Total	**211**	**9**	**5**	**2**	**0**	**2**	**229**	**240**	**12**	**0**	**1**	**1**	**1**	**255**	**56**	**3**	**3**	**1**	**0**	**0**	**63**	**547**
3 Hour Totals (am)	1346	130	33	12	0	4	**1525**	1770	157	7	16	7	4	**1961**	531	59	19	6	1	6	**622**	**4108**
Day Total	2493	294	74	30	1	7	**2899**	2997	291	20	32	9	10	**3359**	1346	182	65	24	6	9	**1632**	**7890**

	Destination - Arm A							Destination - Arm B							Destination - Arm C							Arm
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Total
0630 - 0645	33	4	0	0	0	0	**37**	25	3	1	0	0	0	**29**	11	4	2	0	0	0	**17**	**83**
0645 - 0700	37	8	2	0	0	0	**47**	28	4	1	0	0	1	**34**	26	1	2	0	0	0	**29**	**110**
1/2 Hourly Total	**70**	**12**	**2**	**0**	**0**	**0**	**84**	**53**	**7**	**2**	**0**	**0**	**1**	**63**	**37**	**5**	**4**	**0**	**0**	**0**	**46**	**193**
0700 - 0715	45	6	3	2	0	0	**56**	62	6	1	1	0	0	**70**	24	7	1	1	0	0	**33**	**159**
0715 - 0730	56	11	6	2	0	1	**76**	76	8	4	1	1	0	**90**	23	9	1	1	0	1	**35**	**201**
0730 - 0745	85	18	3	3	0	1	**110**	140	27	2	0	1	0	**170**	31	10	1	1	0	0	**43**	**323**
0745 - 0800	111	14	3	1	0	0	**129**	233	19	0	4	1	0	**257**	48	5	2	0	0	0	**55**	**441**
Hourly Total	**297**	**49**	**15**	**8**	**0**	**2**	**371**	**511**	**60**	**7**	**6**	**3**	**0**	**587**	**126**	**31**	**5**	**3**	**0**	**1**	**166**	**1124**
0800 - 0815	161	14	8	3	0	0	**186**	251	15	1	5	0	3	**275**	31	2	1	2	0	1	**37**	**498**
0815 - 0830	172	19	4	3	0	0	**198**	202	40	1	2	1	0	**246**	54	7	2	1	0	0	**64**	**508**
0830 - 0845	127	15	5	2	0	0	**149**	151	25	3	1	0	0	**180**	54	10	4	1	1	0	**70**	**399**
0845 - 0900	106	17	7	1	0	2	**133**	168	23	1	2	0	0	**194**	46	8	2	2	0	0	**58**	**385**
Hourly Total	**566**	**65**	**24**	**9**	**0**	**2**	**666**	**772**	**103**	**6**	**10**	**1**	**3**	**895**	**185**	**27**	**9**	**6**	**1**	**1**	**229**	**1790**
0900 - 0915	152	12	2	1	0	1	**168**	115	16	6	2	0	0	**139**	69	6	5	3	0	1	**84**	**391**
0915 - 0930	100	7	7	1	1	0	**116**	95	14	3	2	2	0	**116**	41	7	3	1	0	0	**52**	**284**
1/2 Hourly Total	**252**	**19**	**9**	**2**	**1**	**1**	**284**	**210**	**30**	**9**	**4**	**2**	**0**	**255**	**110**	**13**	**8**	**4**	**0**	**1**	**136**	**675**
3 Hour Totals (am)	1185	145	50	19	1	5	**1405**	1546	200	24	20	6	4	**1800**	458	76	26	13	1	3	**577**	**3782**
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	182	11	4	2	0	1	**200**	117	18	0	0	0	0	**135**	51	17	5	1	1	0	**75**	**410**
1545 - 1600	157	15	2	1	0	1	**176**	121	12	1	1	0	0	**135**	57	11	2	2	0	1	**73**	**384**
1/2 Hourly Total	**339**	**26**	**6**	**3**	**0**	**2**	**376**	**238**	**30**	**1**	**1**	**0**	**0**	**270**	**108**	**28**	**7**	**3**	**1**	**1**	**148**	**794**
1600 - 1615	134	21	1	2	1	0	**159**	143	14	0	2	0	2	**161**	43	7	1	2	1	0	**54**	**374**
1615 - 1630	118	16	1	0	0	1	**136**	112	12	0	1	0	1	**126**	71	11	5	3	0	0	**90**	**352**
1630 - 1645	111	14	3	2	0	1	**131**	134	15	1	0	0	1	**151**	60	9	5	1	1	0	**76**	**358**
1645 - 1700	135	15	1	1	0	0	**152**	122	8	0	0	0	0	**130**	70	7	5	0	1	0	**83**	**365**
Hourly Total	**498**	**66**	**6**	**5**	**1**	**2**	**578**	**511**	**49**	**1**	**3**	**0**	**4**	**568**	**244**	**34**	**16**	**6**	**3**	**0**	**303**	**1449**
1700 - 1715	126	9	2	2	0	0	**139**	134	16	1	1	0	1	**153**	66	5	2	1	0	0	**74**	**366**
1715 - 1730	120	15	0	0	1	0	**136**	119	10	0	2	0	0	**131**	82	7	1	1	0	0	**91**	**358**
1730 - 1745	128	4	2	1	0	0	**135**	120	8	0	0	0	0	**128**	47	3	3	0	0	0	**53**	**316**
1745 - 1800	107	4	1	1	1	0	**114**	115	4	0	0	0	1	**120**	38	4	2	0	0	0	**44**	**278**
Hourly Total	**481**	**32**	**5**	**4**	**2**	**0**	**524**	**488**	**38**	**1**	**3**	**0**	**2**	**532**	**233**	**19**	**8**	**2**	**0**	**0**	**262**	**1318**
1800 - 1815	123	9	2	0	0	0	**134**	119	3	0	1	0	1	**124**	31	3	1	1	1	0	**37**	**295**
1815 - 1830	97	1	1	1	0	0	**100**	106	6	0	1	0	1	**114**	31	2	4	0	0	1	**38**	**252**
1/2 Hourly Total	**220**	**10**	**3**	**1**	**0**	**0**	**234**	**225**	**9**	**0**	**2**	**0**	**2**	**238**	**62**	**5**	**5**	**1**	**1**	**1**	**75**	**547**
3 Hour Totals (am)	1538	134	20	13	3	4	**1712**	1462	126	3	9	0	8	**1608**	647	86	36	12	5	2	**788**	**4108**
Day Total	2723	279	70	32	4	9	**3117**	3008	326	27	29	6	12	**3408**	1105	162	62	25	6	5	**1365**	**7890**

SS21 -- PENARTH

27 November 2018

Peak Hour JTC Survey (06:30-09:30 & 15:30-18:30)

Lavernock Rd/Cosmeston Lake Country park Priority Junction

	Arm A - Arm A							Arm A - Arm B							Arm A - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	0	0	0	0	0	0	0	15	5	0	0	0	0	20	1	0	0	0	0	0	1	21
0645 - 0700	0	0	0	0	0	0	0	14	3	0	0	0	0	17	1	0	0	0	0	0	1	18
1/2 Hourly Total	0	0	0	0	0	0	0	29	8	0	0	0	0	37	2	0	0	0	0	0	2	39
0700 - 0715	0	0	0	0	0	0	0	20	3	0	0	0	1	24	2	1	0	0	0	0	3	27
0715 - 0730	0	0	0	0	0	0	0	23	2	0	0	0	1	26	3	0	0	0	0	0	3	29
0730 - 0745	0	0	0	0	0	0	0	66	4	2	2	0	0	74	0	0	0	0	0	0	0	74
0745 - 0800	0	0	0	0	0	0	0	95	11	1	3	0	0	110	1	0	0	0	0	0	1	111
Hourly Total	0	0	0	0	0	0	0	204	20	3	5	0	2	234	6	1	0	0	0	0	7	241
0800 - 0815	0	0	0	0	0	0	0	112	7	1	2	0	0	122	5	0	0	0	0	0	5	127
0815 - 0830	0	0	0	0	0	0	0	136	11	0	4	0	0	151	3	1	0	0	0	0	4	155
0830 - 0845	0	0	0	0	0	0	0	122	10	2	2	0	1	137	4	0	0	0	0	0	4	141
0845 - 0900	0	0	0	0	0	0	0	80	15	0	0	0	3	98	8	0	0	0	0	1	9	107
Hourly Total	0	0	0	0	0	0	0	450	43	3	8	0	4	508	20	1	0	0	0	1	22	530
0900 - 0915	0	0	0	0	0	0	0	82	9	0	1	0	0	92	9	0	0	0	0	0	9	101
0915 - 0930	0	0	0	0	0	0	0	43	3	2	1	0	0	49	6	1	0	0	0	0	7	56
1/2 Hourly Total	0	0	0	0	0	0	0	125	12	2	2	0	0	141	15	1	0	0	0	0	16	157
3 Hour Totals (am)	0	0	0	0	0	0	0	808	83	8	15	0	6	920	43	3	0	0	0	1	47	967
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	0	116	15	0	1	0	1	133	3	0	0	0	0	0	3	136
1545 - 1600	0	0	0	0	0	0	0	144	14	0	4	1	0	163	2	0	0	0	0	1	3	166
1/2 Hourly Total	0	0	0	0	0	0	0	260	29	0	5	1	1	296	5	0	0	0	0	1	6	302
1600 - 1615	0	0	0	0	0	0	0	142	14	1	1	1	0	159	5	0	0	0	0	0	5	164
1615 - 1630	0	0	0	0	0	0	0	123	9	0	0	1	0	133	2	0	0	0	0	0	2	135
1630 - 1645	0	0	0	0	0	0	0	160	13	4	0	1	1	179	3	0	1	0	0	0	4	183
1645 - 1700	0	0	0	0	0	0	0	151	9	0	1	0	0	161	2	0	0	0	0	0	2	163
Hourly Total	0	0	0	0	0	0	0	576	45	5	2	3	1	632	12	0	1	0	0	0	13	645
1700 - 1715	0	0	0	0	0	0	0	167	8	0	2	1	0	178	0	1	0	0	0	0	1	179
1715 - 1730	0	0	0	0	0	0	0	149	3	0	2	0	1	155	1	0	0	0	0	0	1	156
1730 - 1745	0	0	0	0	0	0	0	145	4	0	1	0	0	150	2	0	0	0	0	0	2	152
1745 - 1800	0	0	0	0	0	0	0	105	8	0	0	0	0	113	1	0	0	0	0	0	1	114
Hourly Total	0	0	0	0	0	0	0	566	23	0	5	1	1	596	4	1	0	0	0	0	5	601
1800 - 1815	0	0	0	0	0	0	0	141	0	0	1	0	1	143	3	1	0	0	0	0	4	147
1815 - 1830	0	0	0	0	0	0	0	96	4	0	0	0	2	102	0	0	0	0	0	0	0	102
1/2 Hourly Total	0	0	0	0	0	0	0	237	4	0	1	0	3	245	3	1	0	0	0	0	4	249
3 Hour Totals (am)	0	0	0	0	0	0	0	1639	101	5	13	5	6	1769	24	2	1	0	0	1	28	1797
Day Total	0	0	0	0	0	0	0	2447	184	13	28	5	12	2689	67	5	1	0	0	2	75	2764

	Arm B - Arm A							Arm B - Arm B							Arm B - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	35	4	0	1	0	1	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
0645 - 0700	33	4	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
1/2 Hourly Total	68	8	0	1	0	1	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78
0700 - 0715	65	0	0	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
0715 - 0730	101	8	1	1	0	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111
0730 - 0745	109	14	2	2	1	0	128	0	0	0	0	0	0	0	2	0	0	0	0	0	2	130
0745 - 0800	158	22	1	2	0	0	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183
Hourly Total	433	44	4	5	1	0	487	0	0	0	0	0	0	0	2	0	0	0	0	0	2	489
0800 - 0815	196	24	0	7	0	3	230	0	0	0	0	0	0	0	1	0	0	0	0	0	1	231
0815 - 0830	219	36	1	1	0	2	259	0	0	0	0	0	0	0	4	0	0	0	0	0	4	263
0830 - 0845	135	19	1	1	1	1	158	0	0	0	0	0	0	0	2	0	0	0	0	0	2	160
0845 - 0900	129	18	1	1	1	0	150	0	0	0	0	0	0	0	2	1	0	0	0	0	3	153
Hourly Total	679	97	3	10	2	6	797	0	0	0	0	0	0	0	9	1	0	0	0	0	10	807
0900 - 0915	123	18	2	1	0	0	144	0	0	0	0	0	0	0	9	0	0	0	0	0	9	153
0915 - 0930	112	11	1	2	1	0	127	0	0	0	0	0	0	0	3	0	1	0	0	0	4	131
1/2 Hourly Total	235	29	3	3	1	0	271	0	0	0	0	0	0	0	12	0	1	0	0	0	13	284
3 Hour Totals (am)	1415	178	10	19	4	7	1633	0	0	0	0	0	0	0	23	1	1	0	0	0	25	1658
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	90	14	0	3	0	0	107	0	0	0	0	0	0	0	1	0	0	0	0	0	1	108
1545 - 1600	88	7	0	1	0	0	96	0	0	0	0	0	0	0	3	0	0	0	0	0	3	99
1/2 Hourly Total	178	21	0	4	0	0	203	0	0	0	0	0	0	0	4	0	0	0	0	0	4	207
1600 - 1615	104	8	0	1	0	0	113	0	0	0	0	0	0	0	2	0	0	0	0	0	2	115
1615 - 1630	89	8	0	1	0	4	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102
1630 - 1645	94	11	0	1	0	0	106	0	0	0	0	0	0	0	1	0	0	0	0	0	1	107
1645 - 1700	121	3	0	0	0	0	124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
Hourly Total	408	30	0	3	0	4	445	0	0	0	0	0	0	0	3	0	0	0	0	0	3	448
1700 - 1715	100	9	1	1	0	0	111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111
1715 - 1730	98	8	0	1	1	0	108	0	0	0	0	0	0	0	1	1	0	0	0	0	2	110
1730 - 1745	97	6	0	1	0	0	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104
1745 - 1800	97	6	0	0	0	0	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
Hourly Total	392	29	1	3	1	0	426	0	0	0	0	0	0	0	1	1	0	0	0	0	2	428
1800 - 1815	75	2	0	0	0	0	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77
1815 - 1830	69	4	0	2	1	1	77	0	0	0	0	0	0	0	1	0	0	0	0	0	1	78
1/2 Hourly Total	144	6	0	2	1	1	154	0	0	0	0	0	0	0	1	0	0	0	0	0	1	155
3 Hour Totals (am)	1122	86	1	12	2	5	1228	0	0	0	0	0	0	0	9	1	0	0	0	0	10	1238
Day Total	2537	264	11	31	6	12	2861	0	0	0	0	0	0	0	32	2	1	0	0	0	35	2896

	Arm C - Arm A							Arm C - Arm B							Arm C - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0645 - 0700	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
1/2 Hourly Total	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0730 - 0745	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
0745 - 0800	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Hourly Total	1	0	0	0	0	0	1	3	0	0	0	0	0	3	0	0	0	0	0	0	0	4
0800 - 0815	1	0	0	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	3
0815 - 0830	1	0	0	0	0	0	1	3	0	0	0	0	0	3	0	0	0	0	0	0	0	4
0830 - 0845	1	1	0	0	0	0	2	3	0	0	0	0	0	3	0	0	0	0	0	0	0	5
0845 - 0900	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Hourly Total	3	1	0	0	0	0	4	10	1	0	0	0	0	11	0	0	0	0	0	0	0	15
0900 - 0915	2	0	0	0	0	0	2	8	0	0	0	0	0	8	0	0	0	0	0	0	0	10
0915 - 0930	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1/2 Hourly Total	3	1	0	0	0	0	4	8	0	0	0	0	0	8	0	0	0	0	0	0	0	12
3 Hour Totals (am)	8	2	0	0	0	0	10	21	2	0	0	0	0	23	0	0	0	0	0	0	0	33
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	5
1545 - 1600	2	0	0	0	0	0	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	4
1/2 Hourly Total	2	0	0	0	0	0	2	7	0	0	0	0	0	7	0	0	0	0	0	0	0	9
1600 - 1615	2	0	0	0	0	0	2	3	2	0	0	0	0	5	0	0	0	0	0	0	0	7
1615 - 1630	3	0	0	0	0	0	3	4	0	0	0	0	0	4	0	0	0	0	0	0	0	7
1630 - 1645	2	0	0	0	0	0	2	7	0	0	0	0	2	9	0	0	0	0	0	0	0	11
1645 - 1700	2	0	0	0	0	0	2	4	0	0	0	0	0	4	0	0	0	0	0	0	0	6
Hourly Total	9	0	0	0	0	0	9	18	2	0	0	0	2	22	0	0	0	0	0	0	0	31
1700 - 1715	1	1	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
1715 - 1730	1	0	0	0	0	0	1	2	1	0	0	0	0	3	0	0	0	0	0	0	0	4
1730 - 1745	0	1	0	0	0	0	1	1	1	0	0	0	0	2	0	0	0	0	0	0	0	3
1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	2	2	0	0	0	0	4	4	2	0	0	0	0	6	0	0	0	0	0	0	0	10
1800 - 1815	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1815 - 1830	1	0	0	0	0	0	1	2	0	0	0	0	0	2	0	0	0	0	0	0	0	3
1/2 Hourly Total	2	0	0	0	0	0	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	4
3 Hour Totals (am)	15	2	0	0	0	0	17	31	4	0	0	0	2	37	0	0	0	0	0	0	0	54
Day Total	23	4	0	0	0	0	27	52	6	0	0	0	2	60	0	0	0	0	0	0	0	87

	Origin - Arm A							Origin - Arm B							Origin - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	16	5	0	0	0	0	21	35	4	0	1	0	1	41	1	0	0	0	0	0	1	63
0645 - 0700	15	3	0	0	0	0	18	33	4	0	0	0	0	37	0	1	0	0	0	0	1	56
1/2 Hourly Total	31	8	0	0	0	0	39	68	8	0	1	0	1	78	1	1	0	0	0	0	2	119
0700 - 0715	22	4	0	0	0	1	27	65	0	0	0	0	0	65	0	0	0	0	0	0	0	92
0715 - 0730	26	2	0	0	0	1	29	101	8	1	1	0	0	111	1	0	0	0	0	0	1	141
0730 - 0745	66	4	2	2	0	0	74	111	14	2	2	1	0	130	2	0	0	0	0	0	2	206
0745 - 0800	96	11	1	3	0	0	111	158	22	1	2	0	0	183	1	0	0	0	0	0	1	295
Hourly Total	210	21	3	5	0	2	241	435	44	4	5	1	0	489	4	0	0	0	0	0	4	734
0800 - 0815	117	7	1	2	0	0	127	197	24	0	7	0	3	231	2	1	0	0	0	0	3	361
0815 - 0830	139	12	0	4	0	0	155	223	36	1	1	0	2	263	4	0	0	0	0	0	4	422
0830 - 0845	126	10	2	2	0	1	141	137	19	1	1	1	1	160	4	1	0	0	0	0	5	306
0845 - 0900	88	15	0	0	0	4	107	131	19	1	1	1	0	153	3	0	0	0	0	0	3	263
Hourly Total	470	44	3	8	0	5	530	688	98	3	10	2	6	807	13	2	0	0	0	0	15	1352
0900 - 0915	91	9	0	1	0	0	101	132	18	2	1	0	0	153	10	0	0	0	0	0	10	264
0915 - 0930	49	4	2	1	0	0	56	115	11	2	2	1	0	131	1	1	0	0	0	0	2	189
1/2 Hourly Total	140	13	2	2	0	0	157	247	29	4	3	1	0	284	11	1	0	0	0	0	12	453
3 Hour Totals (am)	851	86	8	15	0	7	967	1438	179	11	19	4	7	1658	29	4	0	0	0	0	33	2658
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	119	15	0	1	0	1	136	91	14	0	3	0	0	108	5	0	0	0	0	0	5	249
1545 - 1600	146	14	0	4	1	1	166	91	7	0	1	0	0	99	4	0	0	0	0	0	4	269
1/2 Hourly Total	265	29	0	5	1	2	302	182	21	0	4	0	0	207	9	0	0	0	0	0	9	518
1600 - 1615	147	14	1	1	1	0	164	106	8	0	1	0	0	115	5	2	0	0	0	0	7	286
1615 - 1630	125	9	0	0	1	0	135	89	8	0	1	0	4	102	7	0	0	0	0	0	7	244
1630 - 1645	163	13	5	0	1	1	183	95	11	0	1	0	0	107	9	0	0	0	0	2	11	301
1645 - 1700	153	9	0	1	0	0	163	121	3	0	0	0	0	124	6	0	0	0	0	0	6	293
Hourly Total	588	45	6	2	3	1	645	411	30	0	3	0	4	448	27	2	0	0	0	2	31	1124
1700 - 1715	167	9	0	2	1	0	179	100	9	1	1	0	0	111	2	1	0	0	0	0	3	293
1715 - 1730	150	3	0	2	0	1	156	99	9	0	1	1	0	110	3	1	0	0	0	0	4	270
1730 - 1745	147	4	0	1	0	0	152	97	6	0	1	0	0	104	1	2	0	0	0	0	3	259
1745 - 1800	106	8	0	0	0	0	114	97	6	0	0	0	0	103	0	0	0	0	0	0	0	217
Hourly Total	570	24	0	5	1	1	601	393	30	1	3	1	0	428	6	4	0	0	0	0	10	1039
1800 - 1815	144	1	0	1	0	1	147	75	2	0	0	0	0	77	1	0	0	0	0	0	1	225
1815 - 1830	96	4	0	0	0	2	102	70	4	0	2	1	1	78	3	0	0	0	0	0	3	183
1/2 Hourly Total	240	5	0	1	0	3	249	145	6	0	2	1	1	155	4	0	0	0	0	0	4	408
3 Hour Totals (am)	1663	103	6	13	5	7	1797	1131	87	1	12	2	5	1238	46	6	0	0	0	2	54	3089
Day Total	2514	189	14	28	5	14	2764	2569	266	12	31	6	12	2896	75	10	0	0	0	2	87	5747

	Destination - Arm A							Destination - Arm B							Destination - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	36	4	0	1	0	1	42	15	5	0	0	0	0	20	1	0	0	0	0	0	1	63
0645 - 0700	33	4	0	0	0	0	37	14	4	0	0	0	0	18	1	0	0	0	0	0	1	56
1/2 Hourly Total	69	8	0	1	0	1	79	29	9	0	0	0	0	38	2	0	0	0	0	0	2	119
0700 - 0715	65	0	0	0	0	0	65	20	3	0	0	0	1	24	2	1	0	0	0	0	3	92
0715 - 0730	101	8	1	1	0	0	111	24	2	0	0	0	1	27	3	0	0	0	0	0	3	141
0730 - 0745	110	14	2	2	1	0	129	67	4	2	2	0	0	75	2	0	0	0	0	0	2	206
0745 - 0800	158	22	1	2	0	0	183	96	11	1	3	0	0	111	1	0	0	0	0	0	1	295
Hourly Total	434	44	4	5	1	0	488	207	20	3	5	0	2	237	8	1	0	0	0	0	9	734
0800 - 0815	197	24	0	7	0	3	231	113	8	1	2	0	0	124	6	0	0	0	0	0	6	361
0815 - 0830	220	36	1	1	0	2	260	139	11	0	4	0	0	154	7	1	0	0	0	0	8	422
0830 - 0845	136	20	1	1	1	1	160	125	10	2	2	0	1	140	6	0	0	0	0	0	6	306
0845 - 0900	129	18	1	1	1	0	150	83	15	0	0	0	3	101	10	1	0	0	0	1	12	263
Hourly Total	682	98	3	10	2	6	801	460	44	3	8	0	4	519	29	2	0	0	0	1	32	1352
0900 - 0915	125	18	2	1	0	0	146	90	9	0	1	0	0	100	18	0	0	0	0	0	18	264
0915 - 0930	113	12	1	2	1	0	129	43	3	2	1	0	0	49	9	1	1	0	0	0	11	189
1/2 Hourly Total	238	30	3	3	1	0	275	133	12	2	2	0	0	149	27	1	1	0	0	0	29	453
3 Hour Totals (am)	1423	180	10	19	4	7	1643	829	85	8	15	0	6	943	66	4	1	0	0	1	72	2658
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	90	14	0	3	0	0	107	121	15	0	1	0	1	138	4	0	0	0	0	0	4	249
1545 - 1600	90	7	0	1	0	0	98	146	14	0	4	1	0	165	5	0	0	0	0	1	6	269
1/2 Hourly Total	180	21	0	4	0	0	205	267	29	0	5	1	1	303	9	0	0	0	0	1	10	518
1600 - 1615	106	8	0	1	0	0	115	145	16	1	1	1	0	164	7	0	0	0	0	0	7	286
1615 - 1630	92	8	0	1	0	4	105	127	9	0	0	1	0	137	2	0	0	0	0	0	2	244
1630 - 1645	96	11	0	1	0	0	108	167	13	4	0	1	3	188	4	0	1	0	0	0	5	301
1645 - 1700	123	3	0	0	0	0	126	155	9	0	1	0	0	165	2	0	0	0	0	0	2	293
Hourly Total	417	30	0	3	0	4	454	594	47	5	2	3	3	654	15	0	1	0	0	0	16	1124
1700 - 1715	101	10	1	1	0	0	113	168	8	0	2	1	0	179	0	1	0	0	0	0	1	293
1715 - 1730	99	8	0	1	1	0	109	151	4	0	2	0	1	158	2	1	0	0	0	0	3	270
1730 - 1745	97	7	0	1	0	0	105	146	5	0	1	0	0	152	2	0	0	0	0	0	2	259
1745 - 1800	97	6	0	0	0	0	103	105	8	0	0	0	0	113	1	0	0	0	0	0	1	217
Hourly Total	394	31	1	3	1	0	430	570	25	0	5	1	1	602	5	2	0	0	0	0	7	1039
1800 - 1815	76	2	0	0	0	0	78	141	0	0	1	0	1	143	3	1	0	0	0	0	4	225
1815 - 1830	70	4	0	2	1	1	78	98	4	0	0	0	2	104	1	0	0	0	0	0	1	183
1/2 Hourly Total	146	6	0	2	1	1	156	239	4	0	1	0	3	247	4	1	0	0	0	0	5	408
3 Hour Totals (am)	1137	88	1	12	2	5	1245	1670	105	5	13	5	8	1806	33	3	1	0	0	1	38	3089
Day Total	2560	268	11	31	6	12	2888	2499	190	13	28	5	14	2749	99	7	2	0	0	2	110	5747

SS21 -- PENARTH
27 November 2018
Peak Hour JTC Survey (06:30-09:30 & 15:30-18:30)
Lavernock Rd/Cosmeston Drive Priority Junction

	Arm A - Arm A							Arm A - Arm B							Arm A - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	0	0	0	0	0	0	0	1	0	0	0	0	0	1	17	4	0	0	0	0	21	22
0645 - 0700	0	0	0	0	0	0	0	2	0	0	0	0	0	2	14	2	1	0	0	1	18	20
1/2 Hourly Total	0	0	0	0	0	0	0	3	0	0	0	0	0	3	31	6	1	0	0	1	39	42
0700 - 0715	0	0	0	0	0	0	0	1	0	0	0	0	0	1	20	3	0	0	0	0	23	24
0715 - 0730	0	0	0	0	0	0	0	3	0	0	0	0	0	3	22	2	0	0	1	1	26	29
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	4	1	3	0	0	71	71
0745 - 0800	0	0	0	0	0	0	0	9	2	0	0	0	0	11	93	10	0	3	0	0	106	117
Hourly Total	0	0	0	0	0	0	0	13	2	0	0	0	0	15	198	19	1	6	1	1	226	241
0800 - 0815	0	0	0	0	0	0	0	6	0	0	0	0	0	6	109	6	1	2	0	0	118	124
0815 - 0830	0	0	0	0	0	0	0	7	0	0	0	0	0	7	139	4	0	2	0	0	145	152
0830 - 0845	0	0	0	0	0	0	0	5	1	0	0	0	0	6	127	6	2	2	0	1	138	144
0845 - 0900	0	0	0	0	0	0	0	8	1	0	0	0	0	9	86	14	0	0	0	2	102	111
Hourly Total	0	0	0	0	0	0	0	26	2	0	0	0	0	28	461	30	3	6	0	3	503	531
0900 - 0915	0	0	0	0	0	0	0	9	0	0	0	0	0	9	87	12	0	1	0	0	100	109
0915 - 0930	0	0	0	0	0	0	0	4	2	0	0	0	0	6	43	5	2	1	0	0	51	57
1/2 Hourly Total	0	0	0	0	0	0	0	13	2	0	0	0	0	15	130	17	2	2	0	0	151	166
3 Hour Totals (am)	0	0	0	0	0	0	0	55	6	0	0	0	0	61	820	72	7	14	1	5	919	980

	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	0	18	3	0	0	0	0	21	116	12	0	1	0	1	130	151
1545 - 1600	0	0	0	0	0	0	0	17	2	0	0	0	0	19	139	14	0	4	1	0	158	177
1/2 Hourly Total	0	0	0	0	0	0	0	35	5	0	0	0	0	40	255	26	0	5	1	1	288	328
1600 - 1615	0	0	0	0	0	0	0	20	1	0	0	0	0	21	143	14	0	1	1	0	159	180
1615 - 1630	0	0	0	0	0	0	0	17	2	0	0	0	0	19	126	13	0	1	0	1	141	160
1630 - 1645	0	0	0	0	0	0	0	20	2	0	0	0	0	22	160	10	1	3	1	1	176	198
1645 - 1700	0	0	0	0	0	0	0	17	0	0	0	0	0	17	146	16	1	0	0	0	163	180
Hourly Total	0	0	0	0	0	0	0	74	5	0	0	0	0	79	575	53	2	5	2	2	639	718
1700 - 1715	0	0	0	0	0	0	0	28	4	0	0	0	0	32	161	7	0	0	1	0	169	201
1715 - 1730	0	0	0	0	0	0	0	21	0	0	0	0	0	21	152	9	1	2	0	1	165	186
1730 - 1745	0	0	0	0	0	0	0	18	0	0	0	0	0	18	142	2	0	0	0	0	144	162
1745 - 1800	0	0	0	0	0	0	0	27	3	0	0	0	0	30	107	3	0	1	0	1	112	142
Hourly Total	0	0	0	0	0	0	0	94	7	0	0	0	0	101	562	21	1	3	1	2	590	691
1800 - 1815	0	0	0	0	0	0	0	21	1	0	0	0	0	22	140	5	0	1	0	0	146	168
1815 - 1830	0	0	0	0	0	0	0	13	1	0	0	0	0	14	95	2	0	0	1	1	99	113
1/2 Hourly Total	0	0	0	0	0	0	0	34	2	0	0	0	0	36	235	7	0	1	1	1	245	281
3 Hour Totals (am)	0	0	0	0	0	0	0	237	19	0	0	0	0	256	1627	107	3	14	5	6	1762	2018
Day Total	0	0	0	0	0	0	0	292	25	0	0	0	0	317	2447	179	10	28	6	11	2681	2998

	Arm B - Arm A							Arm B - Arm B							Arm B - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	9	0	0	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0	0	0	1	10
0645 - 0700	7	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	2	9
1/2 Hourly Total	16	0	0	0	0	0	16	0	0	0	0	0	0	0	3	0	0	0	0	0	3	19
0700 - 0715	7	1	0	0	0	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	2	10
0715 - 0730	16	4	0	0	0	0	20	0	0	0	0	0	0	0	3	0	0	0	0	0	3	23
0730 - 0745	20	2	0	0	1	0	23	0	0	0	0	0	0	0	4	0	0	0	0	0	4	27
0745 - 0800	15	0	0	0	0	0	15	0	0	0	0	0	0	0	7	2	0	0	0	0	9	24
Hourly Total	58	7	0	0	1	0	66	0	0	0	0	0	0	0	16	2	0	0	0	0	18	84
0800 - 0815	24	1	0	0	0	0	25	0	0	0	0	0	0	0	9	0	0	0	0	0	9	34
0815 - 0830	24	1	0	0	0	0	25	0	0	0	0	0	0	0	5	1	0	0	0	0	6	31
0830 - 0845	31	2	0	0	1	0	34	0	0	0	0	0	0	0	6	0	0	0	0	0	6	40
0845 - 0900	27	0	0	0	0	0	27	0	0	0	0	0	0	0	3	1	0	0	0	0	4	31
Hourly Total	106	4	0	0	1	0	111	0	0	0	0	0	0	0	23	2	0	0	0	0	25	136
0900 - 0915	12	3	0	0	0	0	15	0	0	0	0	0	0	0	4	0	0	0	0	0	4	19
0915 - 0930	16	1	0	0	0	0	17	0	0	0	0	0	0	0	5	0	0	0	0	0	5	22
1/2 Hourly Total	28	4	0	0	0	0	32	0	0	0	0	0	0	0	9	0	0	0	0	0	9	41
3 Hour Totals (am)	208	15	0	0	2	0	225	0	0	0	0	0	0	0	51	4	0	0	0	0	55	280

	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	5	3	0	0	0	0	8	0	0	0	0	0	0	0	4	0	0	0	0	0	4	12
1545 - 1600	13	3	0	0	0	1	17	0	0	0	0	0	0	0	7	1	0	0	0	0	8	25
1/2 Hourly Total	18	6	0	0	0	1	25	0	0	0	0	0	0	0	11	1	0	0	0	0	12	37
1600 - 1615	5	1	0	0	0	0	6	0	0	0	0	0	0	0	3	1	0	0	0	0	4	10
1615 - 1630	19	2	0	0	0	0	21	0	0	0	0	0	0	0	0	1	0	0	0	0	1	22
1630 - 1645	9	0	0	0	0	0	9	0	0	0	0	0	0	0	4	0	0	0	0	0	4	13
1645 - 1700	5	0	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	3	8
Hourly Total	38	3	0	0	0	0	41	0	0	0	0	0	0	0	10	2	0	0	0	0	12	53
1700 - 1715	6	0	0	0	0	0	6	0	0	0	0	0	0	0	6	2	0	0	0	0	8	14
1715 - 1730	8	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
1730 - 1745	12	0	0	0	0	0	12	0	0	0	0	0	0	0	4	0	0	0	0	0	4	16
1745 - 1800	9	2	0	0	0	0	11	0	0	0	0	0	0	0	4	0	0	0	0	0	4	15
Hourly Total	35	2	0	0	0	0	37	0	0	0	0	0	0	0	14	2	0	0	0	0	16	53
1800 - 1815	11	0	0	0	0	0	11	0	0	0	0	0	0	0	5	2	0	0	1	0	8	19
1815 - 1830	11	0	0	0	0	0	11	0	0	0	0	0	0	0	3	1	0	0	0	0	4	15
1/2 Hourly Total	22	0	0	0	0	0	22	0	0	0	0	0	0	0	8	3	0	0	1	0	12	34
3 Hour Totals (am)	113	11	0	0	0	1	125	0	0	0	0	0	0	0	43	8	0	0	1	0	52	177
Day Total	321	26	0	0	2	1	350	0	0	0	0	0	0	0	94	12	0	0	1	0	107	457

	Arm C - Arm A							Arm C - Arm B							Arm C - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	34	4	0	1	1	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
0645 - 0700	32	5	1	0	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
1/2 Hourly Total	66	9	1	1	1	0	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78
0700 - 0715	64	3	1	0	0	0	68	0	1	0	0	0	0	1	0	0	0	0	0	0	0	69
0715 - 0730	98	8	1	1	0	0	108	0	1	0	0	0	0	1	0	0	0	0	0	0	0	109
0730 - 0745	109	15	0	2	1	0	127	2	0	0	0	0	0	2	0	0	0	0	0	0	0	129
0745 - 0800	155	21	0	2	0	0	178	2	0	0	0	0	0	2	0	0	0	0	0	0	0	180
Hourly Total	426	47	2	5	1	0	481	4	2	0	0	0	0	6	0	0	0	0	0	0	0	487
0800 - 0815	197	19	0	6	2	2	226	2	1	0	0	0	0	3	0	0	0	0	0	0	0	229
0815 - 0830	208	25	1	2	0	2	238	3	1	0	0	0	0	4	0	0	0	0	0	0	0	242
0830 - 0845	137	16	1	1	1	0	156	0	1	0	0	0	1	2	0	0	0	0	0	0	0	158
0845 - 0900	132	18	1	1	1	0	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	153
Hourly Total	674	78	3	10	4	4	773	5	3	0	0	0	1	9	0	0	0	0	0	0	0	782
0900 - 0915	132	17	1	1	0	0	151	2	0	0	0	0	0	2	0	0	0	0	0	0	0	153
0915 - 0930	104	13	0	2	1	0	120	6	0	0	0	0	0	6	0	0	0	0	0	0	0	126
1/2 Hourly Total	236	30	1	3	1	0	271	8	0	0	0	0	0	8	0	0	0	0	0	0	0	279
3 Hour Totals (am)	1402	164	7	19	7	4	1603	17	5	0	0	0	1	23	0	0	0	0	0	0	0	1626

	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	99	8	0	3	0	0	110	2	1	0	0	0	0	3	0	0	0	0	0	0	0	113
1545 - 1600	87	5	1	1	0	0	94	5	0	0	0	0	0	5	0	0	0	0	0	0	0	99
1/2 Hourly Total	186	13	1	4	0	0	204	7	1	0	0	0	0	8	0	0	0	0	0	0	0	212
1600 - 1615	106	8	0	1	0	0	115	4	1	0	0	0	0	5	0	0	0	0	0	0	0	120
1615 - 1630	99	7	1	1	0	1	109	3	0	0	0	0	0	3	0	0	0	0	0	0	0	112
1630 - 1645	102	8	0	1	0	1	112	1	0	0	0	0	0	1	0	0	0	0	0	0	0	113
1645 - 1700	118	4	0	0	0	0	122	5	0	0	0	0	0	5	0	0	0	0	0	0	0	127
Hourly Total	425	27	1	3	0	2	458	13	1	0	0	0	0	14	0	0	0	0	0	0	0	472
1700 - 1715	94	8	1	1	0	0	104	6	1	0	0	0	0	7	0	0	0	0	0	0	0	111
1715 - 1730	90	5	1	1	0	0	97	12	0	0	0	1	0	13	0	0	0	0	0	0	0	110
1730 - 1745	78	2	0	1	0	0	81	5	0	0	0	0	0	5	0	0	0	0	0	0	0	86
1745 - 1800	97	4	0	0	0	0	101	2	0	0	0	0	0	2	0	0	0	0	0	0	0	103
Hourly Total	359	19	2	3	0	0	383	25	1	0	0	1	0	27	0	0	0	0	0	0	0	410
1800 - 1815	65	3	0	0	0	0	68	8	0	0	0	0	0	8	0	0	0	0	0	0	0	76
1815 - 1830	65	3	0	2	0	0	70	4	2	0	0	1	0	7	0	0	0	0	0	0	0	77
1/2 Hourly Total	130	6	0	2	0	0	138	12	2	0	0	1	0	15	0	0	0	0	0	0	0	153
3 Hour Totals (am)	1100	65	4	12	0	2	1183	57	5	0	0	2	0	64	0	0	0	0	0	0	0	1247
Day Total	2502	229	11	31	7	6	2786	74	10	0	0	2	1	87	0	0	0	0	0	0	0	2873

	Origin - Arm A							Origin - Arm B							Origin - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	18	4	0	0	0	0	22	10	0	0	0	0	0	10	34	4	0	1	1	0	40	72
0645 - 0700	16	2	1	0	0	1	20	9	0	0	0	0	0	9	32	5	1	0	0	0	38	67
1/2 Hourly Total	34	6	1	0	0	1	42	19	0	0	0	0	0	19	66	9	1	1	1	0	78	139
0700 - 0715	21	3	0	0	0	0	24	9	1	0	0	0	0	10	64	4	1	0	0	0	69	103
0715 - 0730	25	2	0	0	1	1	29	19	4	0	0	0	0	23	98	9	1	1	0	0	109	161
0730 - 0745	63	4	1	3	0	0	71	24	2	0	0	1	0	27	111	15	0	2	1	0	129	227
0745 - 0800	102	12	0	3	0	0	117	22	2	0	0	0	0	24	157	21	0	2	0	0	180	321
Hourly Total	211	21	1	6	1	1	241	74	9	0	0	1	0	84	430	49	2	5	1	0	487	812
0800 - 0815	115	6	1	2	0	0	124	33	1	0	0	0	0	34	199	20	0	6	2	2	229	387
0815 - 0830	146	4	0	2	0	0	152	29	2	0	0	0	0	31	211	26	1	2	0	2	242	425
0830 - 0845	132	7	2	2	0	1	144	37	2	0	0	1	0	40	137	17	1	1	1	1	158	342
0845 - 0900	94	15	0	0	0	2	111	30	1	0	0	0	0	31	132	18	1	1	1	0	153	295
Hourly Total	487	32	3	6	0	3	531	129	6	0	0	1	0	136	679	81	3	10	4	5	782	1449
0900 - 0915	96	12	0	1	0	0	109	16	3	0	0	0	0	19	134	17	1	1	0	0	153	281
0915 - 0930	47	7	2	1	0	0	57	21	1	0	0	0	0	22	110	13	0	2	1	0	126	205
1/2 Hourly Total	143	19	2	2	0	0	166	37	4	0	0	0	0	41	244	30	1	3	1	0	279	486
3 Hour Totals (am)	875	78	7	14	1	5	980	259	19	0	0	2	0	280	1419	169	7	19	7	5	1626	2886

	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	134	15	0	1	0	1	151	9	3	0	0	0	0	12	101	9	0	3	0	0	113	276
1545 - 1600	156	16	0	4	1	0	177	20	4	0	0	0	1	25	92	5	1	1	0	0	99	301
1/2 Hourly Total	290	31	0	5	1	1	328	29	7	0	0	0	1	37	193	14	1	4	0	0	212	577
1600 - 1615	163	15	0	1	1	0	180	8	2	0	0	0	0	10	110	9	0	1	0	0	120	310
1615 - 1630	143	15	0	1	0	1	160	19	3	0	0	0	0	22	102	7	1	1	0	1	112	294
1630 - 1645	180	12	1	3	1	1	198	13	0	0	0	0	0	13	103	8	0	1	0	1	113	324
1645 - 1700	163	16	1	0	0	0	180	8	0	0	0	0	0	8	123	4	0	0	0	0	127	315
Hourly Total	649	58	2	5	2	2	718	48	5	0	0	0	0	53	438	28	1	3	0	2	472	1243
1700 - 1715	189	11	0	0	1	0	201	12	2	0	0	0	0	14	100	9	1	1	0	0	111	326
1715 - 1730	173	9	1	2	0	1	186	8	0	0	0	0	0	8	102	5	1	1	1	0	110	304
1730 - 1745	160	2	0	0	0	0	162	16	0	0	0	0	0	16	83	2	0	1	0	0	86	264
1745 - 1800	134	6	0	1	0	1	142	13	2	0	0	0	0	15	99	4	0	0	0	0	103	260
Hourly Total	656	28	1	3	1	2	691	49	4	0	0	0	0	53	384	20	2	3	1	0	410	1154
1800 - 1815	161	6	0	1	0	0	168	16	2	0	0	1	0	19	73	3	0	0	0	0	76	263
1815 - 1830	108	3	0	0	1	1	113	14	1	0	0	0	0	15	69	5	0	2	1	0	77	205
1/2 Hourly Total	269	9	0	1	1	1	281	30	3	0	0	1	0	34	142	8	0	2	1	0	153	468
3 Hour Totals (am)	1864	126	3	14	5	6	2018	156	19	0	0	1	1	177	1157	70	4	12	2	2	1247	3442
Day Total	2739	204	10	28	6	11	2998	415	38	0	0	3	1	457	2576	239	11	31	9	7	2873	6328

	Destination - Arm A							Destination - Arm B							Destination - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	43	4	0	1	1	0	49	1	0	0	0	0	0	1	18	4	0	0	0	0	22	72
0645 - 0700	39	5	1	0	0	0	45	2	0	0	0	0	0	2	16	2	1	0	0	1	20	67
1/2 Hourly Total	82	9	1	1	1	0	94	3	0	0	0	0	0	3	34	6	1	0	0	1	42	139
0700 - 0715	71	4	1	0	0	0	76	1	1	0	0	0	0	2	22	3	0	0	0	0	25	103
0715 - 0730	114	12	1	1	0	0	128	3	1	0	0	0	0	4	25	2	0	0	1	1	29	161
0730 - 0745	129	17	0	2	2	0	150	2	0	0	0	0	0	2	67	4	1	3	0	0	75	227
0745 - 0800	170	21	0	2	0	0	193	11	2	0	0	0	0	13	100	12	0	3	0	0	115	321
Hourly Total	484	54	2	5	2	0	547	17	4	0	0	0	0	21	214	21	1	6	1	1	244	812
0800 - 0815	221	20	0	6	2	2	251	8	1	0	0	0	0	9	118	6	1	2	0	0	127	387
0815 - 0830	232	26	1	2	0	2	263	10	1	0	0	0	0	11	144	5	0	2	0	0	151	425
0830 - 0845	168	18	1	1	2	0	190	5	2	0	0	0	1	8	133	6	2	2	0	1	144	342
0845 - 0900	159	18	1	1	1	0	180	8	1	0	0	0	0	9	89	15	0	0	0	2	106	295
Hourly Total	780	82	3	10	5	4	884	31	5	0	0	0	1	37	484	32	3	6	0	3	528	1449
0900 - 0915	144	20	1	1	0	0	166	11	0	0	0	0	0	11	91	12	0	1	0	0	104	281
0915 - 0930	120	14	0	2	1	0	137	10	2	0	0	0	0	12	48	5	2	1	0	0	56	205
1/2 Hourly Total	264	34	1	3	1	0	303	21	2	0	0	0	0	23	139	17	2	2	0	0	160	486
3 Hour Totals (am)	1610	179	7	19	9	4	1828	72	11	0	0	0	1	84	871	76	7	14	1	5	974	2886

	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	104	11	0	3	0	0	118	20	4	0	0	0	0	24	120	12	0	1	0	1	134	276
1545 - 1600	100	8	1	1	0	1	111	22	2	0	0	0	0	24	146	15	0	4	1	0	166	301
1/2 Hourly Total	204	19	1	4	0	1	229	42	6	0	0	0	0	48	266	27	0	5	1	1	300	577
1600 - 1615	111	9	0	1	0	0	121	24	2	0	0	0	0	26	146	15	0	1	1	0	163	310
1615 - 1630	118	9	1	1	0	1	130	20	2	0	0	0	0	22	126	14	0	1	0	1	142	294
1630 - 1645	111	8	0	1	0	1	121	21	2	0	0	0	0	23	164	10	1	3	1	1	180	324
1645 - 1700	123	4	0	0	0	0	127	22	0	0	0	0	0	22	149	16	1	0	0	0	166	315
Hourly Total	463	30	1	3	0	2	499	87	6	0	0	0	0	93	585	55	2	5	2	2	651	1243
1700 - 1715	100	8	1	1	0	0	110	34	5	0	0	0	0	39	167	9	0	0	1	0	177	326
1715 - 1730	98	5	1	1	0	0	105	33	0	0	0	1	0	34	152	9	1	2	0	1	165	304
1730 - 1745	90	2	0	1	0	0	93	23	0	0	0	0	0	23	146	2	0	0	0	0	148	264
1745 - 1800	106	6	0	0	0	0	112	29	3	0	0	0	0	32	111	3	0	1	0	1	116	260
Hourly Total	394	21	2	3	0	0	420	119	8	0	0	1	0	128	576	23	1	3	1	2	606	1154
1800 - 1815	76	3	0	0	0	0	79	29	1	0	0	0	0	30	145	7	0	1	1	0	154	263
1815 - 1830	76	3	0	2	0	0	81	17	3	0	0	1	0	21	98	3	0	0	1	1	103	205
1/2 Hourly Total	152	6	0	2	0	0	160	46	4	0	0	1	0	51	243	10	0	1	2	1	257	468
3 Hour Totals (am)	1213	76	4	12	0	3	1308	294	24	0	0	2	0	320	1670	115	3	14	6	6	1814	3442
Day Total	2823	255	11	31	9	7	3136	366	35	0	0	2	1	404	2541	191	10	28	7	11	2788	6328

SS21 -- PENARTH
27 November 2018
Peak Hour JTC Survey (06:30-09:30 & 15:30-18:30)
Lavernock Rd/Westbourne Rd Priority Junction

	Arm A - Arm A							Arm A - Arm B							Arm A - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	1	0	0	0	13	13
0645 - 0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	0	0	9	9
1/2 Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	3	3	0	0	0	22	22
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	5	0	0	0	0	18	18
0715 - 0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	0	0	0	12	12
0730 - 0745	0	0	0	0	0	0	0	1	0	0	0	0	0	1	26	6	0	2	0	0	34	35
0745 - 0800	0	0	0	0	0	0	0	1	0	0	0	0	0	1	61	11	1	2	0	0	75	76
Hourly Total	0	0	0	0	0	0	0	2	0	0	0	0	0	2	109	25	1	4	0	0	139	141
0800 - 0815	0	0	0	0	0	0	0	0	1	0	0	0	0	1	74	5	0	1	0	0	80	81
0815 - 0830	0	0	0	0	0	0	0	1	0	0	0	0	0	1	82	10	0	1	0	0	93	94
0830 - 0845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	8	2	0	0	0	78	78
0845 - 0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	9	0	0	0	1	49	49
Hourly Total	0	0	0	0	0	0	0	1	1	0	0	0	0	2	263	32	2	2	0	1	300	302
0900 - 0915	0	0	0	0	0	0	0	2	0	0	0	0	0	2	55	7	1	1	0	0	64	66
0915 - 0930	0	0	0	0	0	0	0	1	0	0	0	0	0	1	29	6	1	1	0	0	37	38
1/2 Hourly Total	0	0	0	0	0	0	0	3	0	0	0	0	0	3	84	13	2	2	0	0	101	104
3 Hour Totals (am)	0	0	0	0	0	0	0	6	1	0	0	0	0	7	472	73	8	8	0	1	562	569
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	0	1	1	0	0	0	0	2	67	9	0	1	0	0	77	79
1545 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	8	0	3	0	0	85	85
1/2 Hourly Total	0	0	0	0	0	0	0	1	1	0	0	0	0	2	141	17	0	4	0	0	162	164
1600 - 1615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	6	1	1	0	0	69	69
1615 - 1630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	5	0	1	0	0	74	74
1630 - 1645	0	0	0	0	0	0	0	1	0	0	0	0	0	1	87	7	0	0	0	0	94	95
1645 - 1700	0	0	0	0	0	0	0	1	0	0	0	0	0	1	75	10	1	0	0	0	86	87
Hourly Total	0	0	0	0	0	0	0	2	0	0	0	0	0	2	291	28	2	2	0	0	323	325
1700 - 1715	0	0	0	0	0	0	0	3	0	0	0	0	0	3	78	6	0	2	1	0	87	90
1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	9	1	1	1	0	92	92
1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	3	0	0	0	0	82	82
1745 - 1800	0	0	0	0	0	0	0	1	0	0	0	0	0	1	60	7	0	0	0	0	67	68
Hourly Total	0	0	0	0	0	0	0	4	0	0	0	0	0	4	297	25	1	3	2	0	328	332
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	1	0	1	0	0	77	77
1815 - 1830	0	0	0	0	0	0	0	3	0	0	0	0	0	3	55	3	0	0	0	1	59	62
1/2 Hourly Total	0	0	0	0	0	0	0	3	0	0	0	0	0	3	130	4	0	1	0	1	136	139
3 Hour Totals (am)	0	0	0	0	0	0	0	10	1	0	0	0	0	11	859	74	3	10	2	1	949	960
Day Total	0	0	0	0	0	0	0	16	2	0	0	0	0	18	1331	147	11	18	2	2	1511	1529

	Arm B - Arm A							Arm B - Arm B							Arm B - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	0	8	8
0645 - 0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	0	0	10	10
1/2 Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3	0	0	0	0	18	18
0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	9	9
0715 - 0730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	1	0	1	0	1	22	22
0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	4	1	0	0	0	44	44
0745 - 0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	7	1	2	0	0	43	43
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	13	2	3	0	1	118	118
0800 - 0815	2	0	0	0	0	0	2	0	0	0	0	0	0	0	48	4	1	0	0	0	53	55
0815 - 0830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	6	0	3	0	0	65	65
0830 - 0845	2	0	0	0	0	0	2	0	0	0	0	0	0	0	56	6	1	2	0	1	66	68
0845 - 0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	9	0	0	0	1	63	63
Hourly Total	4	0	0	0	0	0	4	0	0	0	0	0	0	0	213	25	2	5	0	2	247	251
0900 - 0915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	6	0	0	0	0	57	57
0915 - 0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	7	1	3	0	0	77	77
1/2 Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	117	13	1	3	0	0	134	134
3 Hour Totals (am)	4	0	0	0	0	0	4	0	0	0	0	0	0	0	444	54	5	11	0	3	517	521
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	10	0	2	0	1	96	96
1545 - 1600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	15	0	0	1	0	102	102
1/2 Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169	25	0	2	1	1	198	198
1600 - 1615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	9	0	0	1	0	105	105
1615 - 1630	0	1	0	0	0	0	1	0	0	0	0	0	0	0	83	10	0	1	1	1	96	97
1630 - 1645	1	0	0	0	0	0	1	0	0	0	0	0	0	0	118	7	2	3	1	0	131	132
1645 - 1700	1	0	0	0	0	0	1	0	0	0	0	0	0	0	84	14	1	0	0	0	99	100
Hourly Total	2	1	0	0	0	0	3	0	0	0	0	0	0	0	380	40	3	4	3	1	431	434
1700 - 1715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	123	4	0	0	0	0	127	127
1715 - 1730	1	0	0	0	0	0	1	0	0	0	0	0	0	0	110	1	0	0	0	0	111	112
1730 - 1745	1	0	0	0	0	0	1	0	0	0	0	0	0	0	90	3	0	1	0	0	94	95
1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	3	0	0	0	1	81	81
Hourly Total	2	0	0	0	0	0	2	0	0	0	0	0	0	0	400	11	0	1	0	1	413	415
1800 - 1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	4	0	0	0	0	95	95
1815 - 1830	1	0	0	0	0	0	1	0	0	0	0	0	0	0	53	1	0	0	0	2	56	57
1/2 Hourly Total	1	0	0	0	0	0	1	0	0	0	0	0	0	0	144	5	0	0	0	2	151	152
3 Hour Totals (am)	5	1	0	0	0	0	6	0	0	0	0	0	0	0	1093	81	3	7	4	5	1193	1199
Day Total	9	1	0	0	0	0	10	0	0	0	0	0	0	0	1537	135	8	18	4	8	1710	1720

	Arm C - Arm A							Arm C - Arm B							Arm C - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	23	3	0	1	1	1	29	21	1	0	0	0	0	22	0	0	0	0	0	0	0	51
0645 - 0700	22	0	1	0	0	0	23	21	2	0	0	0	0	23	0	0	0	0	0	0	0	46
1/2 Hourly Total	45	3	1	1	1	1	52	42	3	0	0	0	0	45	0	0	0	0	0	0	0	97
0700 - 0715	36	4	0	2	1	0	43	30	2	0	0	0	0	32	0	0	0	0	0	0	0	75
0715 - 0730	52	7	0	0	0	1	60	79	14	1	1	0	0	95	0	0	0	0	0	0	0	155
0730 - 0745	69	9	0	2	2	0	82	79	10	1	0	0	0	90	0	0	0	0	0	0	0	172
0745 - 0800	74	14	0	1	1	0	90	98	6	0	1	1	0	106	0	0	0	0	0	0	0	196
Hourly Total	231	34	0	5	4	1	275	286	32	2	2	1	0	323	0	0	0	0	0	0	0	598
0800 - 0815	108	9	0	5	0	0	122	115	13	0	0	0	1	129	0	0	0	0	0	0	0	251
0815 - 0830	77	10	0	1	1	0	89	158	16	1	1	1	4	181	0	0	0	0	0	0	0	270
0830 - 0845	77	12	1	1	1	0	92	114	14	0	0	0	0	128	0	0	0	0	0	0	0	220
0845 - 0900	68	7	1	0	0	0	76	104	16	0	0	1	0	121	0	0	0	0	0	0	0	197
Hourly Total	330	38	2	7	2	0	379	491	59	1	1	2	5	559	0	0	0	0	0	0	0	938
0900 - 0915	66	13	1	2	0	0	82	81	10	0	0	0	0	91	0	0	0	0	0	0	0	173
0915 - 0930	57	6	1	1	1	0	66	75	5	2	1	0	0	83	0	0	0	0	0	0	0	149
1/2 Hourly Total	123	19	2	3	1	0	148	156	15	2	1	0	0	174	0	0	0	0	0	0	0	322
3 Hour Totals (am)	729	94	5	16	8	2	854	975	109	5	4	3	5	1101	0	0	0	0	0	0	0	1955
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	53	3	0	3	0	0	59	55	11	0	1	0	0	67	0	0	0	0	0	0	0	126
1545 - 1600	49	10	1	1	0	0	61	53	3	0	0	0	0	56	0	0	0	0	0	0	0	117
1/2 Hourly Total	102	13	1	4	0	0	120	108	14	0	1	0	0	123	0	0	0	0	0	0	0	243
1600 - 1615	76	6	0	0	0	0	82	40	2	0	0	0	0	42	0	0	0	0	0	0	0	124
1615 - 1630	66	10	0	1	0	0	77	54	2	1	1	0	1	59	0	0	0	0	0	0	0	136
1630 - 1645	58	10	0	1	0	0	69	49	1	0	0	0	1	51	0	0	0	0	0	0	0	120
1645 - 1700	88	5	0	0	0	0	93	40	4	0	0	0	0	44	0	0	0	0	0	0	0	137
Hourly Total	288	31	0	2	0	0	321	183	9	1	1	0	2	196	0	0	0	0	0	0	0	517
1700 - 1715	52	7	1	1	0	0	61	48	2	0	0	0	0	50	0	0	0	0	0	0	0	111
1715 - 1730	55	7	0	0	0	0	62	43	3	0	1	0	0	47	0	0	0	0	0	0	0	109
1730 - 1745	50	2	0	1	0	0	53	46	1	0	0	0	0	47	0	0	0	0	0	0	0	100
1745 - 1800	71	6	0	0	0	0	77	41	2	0	0	0	0	43	0	0	0	0	0	0	0	120
Hourly Total	228	22	1	2	0	0	253	178	8	0	1	0	0	187	0	0	0	0	0	0	0	440
1800 - 1815	50	3	0	0	0	0	53	32	2	0	0	0	1	35	0	0	0	0	0	0	0	88
1815 - 1830	42	3	0	1	0	0	46	38	3	0	1	0	0	42	0	0	0	0	0	0	0	88
1/2 Hourly Total	92	6	0	1	0	0	99	70	5	0	1	0	1	77	0	0	0	0	0	0	0	176
3 Hour Totals (am)	710	72	2	9	0	0	793	539	36	1	4	0	3	583	0	0	0	0	0	0	0	1376
Day Total	1439	166	7	25	8	2	1647	1514	145	6	8	3	8	1684	0	0	0	0	0	0	0	3331

	Origin - Arm A							Origin - Arm B							Origin - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	10	2	1	0	0	0	13	7	1	0	0	0	0	8	44	4	0	1	1	1	51	72
0645 - 0700	6	1	2	0	0	0	9	8	2	0	0	0	0	10	43	2	1	0	0	0	46	65
1/2 Hourly Total	16	3	3	0	0	0	22	15	3	0	0	0	0	18	87	6	1	1	1	1	97	137
0700 - 0715	13	5	0	0	0	0	18	8	1	0	0	0	0	9	66	6	0	2	1	0	75	102
0715 - 0730	9	3	0	0	0	0	12	19	1	0	1	0	1	22	131	21	1	1	0	1	155	189
0730 - 0745	27	6	0	2	0	0	35	39	4	1	0	0	0	44	148	19	1	2	2	0	172	251
0745 - 0800	62	11	1	2	0	0	76	33	7	1	2	0	0	43	172	20	0	2	2	0	196	315
Hourly Total	111	25	1	4	0	0	141	99	13	2	3	0	1	118	517	66	2	7	5	1	598	857
0800 - 0815	74	6	0	1	0	0	81	50	4	1	0	0	0	55	223	22	0	5	0	1	251	387
0815 - 0830	83	10	0	1	0	0	94	56	6	0	3	0	0	65	235	26	1	2	2	4	270	429
0830 - 0845	68	8	2	0	0	0	78	58	6	1	2	0	1	68	191	26	1	1	1	0	220	366
0845 - 0900	39	9	0	0	0	1	49	53	9	0	0	0	1	63	172	23	1	0	1	0	197	309
Hourly Total	264	33	2	2	0	1	302	217	25	2	5	0	2	251	821	97	3	8	4	5	938	1491
0900 - 0915	57	7	1	1	0	0	66	51	6	0	0	0	0	57	147	23	1	2	0	0	173	296
0915 - 0930	30	6	1	1	0	0	38	66	7	1	3	0	0	77	132	11	3	2	1	0	149	264
1/2 Hourly Total	87	13	2	2	0	0	104	117	13	1	3	0	0	134	279	34	4	4	1	0	322	560
3 Hour Totals (am)	478	74	8	8	0	1	569	448	54	5	11	0	3	521	1704	203	10	20	11	7	1955	3045
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	68	10	0	1	0	0	79	83	10	0	2	0	1	96	108	14	0	4	0	0	126	301
1545 - 1600	74	8	0	3	0	0	85	86	15	0	0	1	0	102	102	13	1	1	0	0	117	304
1/2 Hourly Total	142	18	0	4	0	0	164	169	25	0	2	1	1	198	210	27	1	5	0	0	243	605
1600 - 1615	61	6	1	1	0	0	69	95	9	0	0	1	0	105	116	8	0	0	0	0	124	298
1615 - 1630	68	5	0	1	0	0	74	83	11	0	1	1	1	97	120	12	1	2	0	1	136	307
1630 - 1645	88	7	0	0	0	0	95	119	7	2	3	1	0	132	107	11	0	1	0	1	120	347
1645 - 1700	76	10	1	0	0	0	87	85	14	1	0	0	0	100	128	9	0	0	0	0	137	324
Hourly Total	293	28	2	2	0	0	325	382	41	3	4	3	1	434	471	40	1	3	0	2	517	1276
1700 - 1715	81	6	0	2	1	0	90	123	4	0	0	0	0	127	100	9	1	1	0	0	111	328
1715 - 1730	80	9	1	1	1	0	92	111	1	0	0	0	0	112	98	10	0	1	0	0	109	313
1730 - 1745	79	3	0	0	0	0	82	91	3	0	1	0	0	95	96	3	0	1	0	0	100	277
1745 - 1800	61	7	0	0	0	0	68	77	3	0	0	0	1	81	112	8	0	0	0	0	120	269
Hourly Total	301	25	1	3	2	0	332	402	11	0	1	0	1	415	406	30	1	3	0	0	440	1187
1800 - 1815	75	1	0	1	0	0	77	91	4	0	0	0	0	95	82	5	0	0	0	1	88	260
1815 - 1830	58	3	0	0	0	1	62	54	1	0	0	0	2	57	80	6	0	2	0	0	88	207
1/2 Hourly Total	133	4	0	1	0	1	139	145	5	0	0	0	2	152	162	11	0	2	0	1	176	467
3 Hour Totals (am)	869	75	3	10	2	1	960	1098	82	3	7	4	5	1199	1249	108	3	13	0	3	1376	3535
Day Total	1347	149	11	18	2	2	1529	1546	136	8	18	4	8	1720	2953	311	13	33	11	10	3331	6580

	Destination - Arm A							Destination - Arm B							Destination - Arm C							Arm Total
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
0630 - 0645	23	3	0	1	1	1	29	21	1	0	0	0	0	22	17	3	1	0	0	0	21	72
0645 - 0700	22	0	1	0	0	0	23	21	2	0	0	0	0	23	14	3	2	0	0	0	19	65
1/2 Hourly Total	45	3	1	1	1	1	52	42	3	0	0	0	0	45	31	6	3	0	0	0	40	137
0700 - 0715	36	4	0	2	1	0	43	30	2	0	0	0	0	32	21	6	0	0	0	0	27	102
0715 - 0730	52	7	0	0	0	1	60	79	14	1	1	0	0	95	28	4	0	1	0	1	34	189
0730 - 0745	69	9	0	2	2	0	82	80	10	1	0	0	0	91	65	10	1	2	0	0	78	251
0745 - 0800	74	14	0	1	1	0	90	99	6	0	1	1	0	107	94	18	2	4	0	0	118	315
Hourly Total	231	34	0	5	4	1	275	288	32	2	2	1	0	325	208	38	3	7	0	1	257	857
0800 - 0815	110	9	0	5	0	0	124	115	14	0	0	0	1	130	122	9	1	1	0	0	133	387
0815 - 0830	77	10	0	1	1	0	89	159	16	1	1	1	4	182	138	16	0	4	0	0	158	429
0830 - 0845	79	12	1	1	1	0	94	114	14	0	0	0	0	128	124	14	3	2	0	1	144	366
0845 - 0900	68	7	1	0	0	0	76	104	16	0	0	1	0	121	92	18	0	0	0	2	112	309
Hourly Total	334	38	2	7	2	0	383	492	60	1	1	2	5	561	476	57	4	7	0	3	547	1491
0900 - 0915	66	13	1	2	0	0	82	83	10	0	0	0	0	93	106	13	1	1	0	0	121	296
0915 - 0930	57	6	1	1	1	0	66	76	5	2	1	0	0	84	95	13	2	4	0	0	114	264
1/2 Hourly Total	123	19	2	3	1	0	148	159	15	2	1	0	0	177	201	26	3	5	0	0	235	560
3 Hour Totals (am)	733	94	5	16	8	2	858	981	110	5	4	3	5	1108	916	127	13	19	0	4	1079	3045
	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	Car	LGV	HGV	PSV	MC	PC	Total	
1530 - 1545	53	3	0	3	0	0	59	56	12	0	1	0	0	69	150	19	0	3	0	1	173	301
1545 - 1600	49	10	1	1	0	0	61	53	3	0	0	0	0	56	160	23	0	3	1	0	187	304
1/2 Hourly Total	102	13	1	4	0	0	120	109	15	0	1	0	0	125	310	42	0	6	1	1	360	605
1600 - 1615	76	6	0	0	0	0	82	40	2	0	0	0	0	42	156	15	1	1	1	0	174	298
1615 - 1630	66	11	0	1	0	0	78	54	2	1	1	0	1	59	151	15	0	2	1	1	170	307
1630 - 1645	59	10	0	1	0	0	70	50	1	0	0	0	1	52	205	14	2	3	1	0	225	347
1645 - 1700	89	5	0	0	0	0	94	41	4	0	0	0	0	45	159	24	2	0	0	0	185	324
Hourly Total	290	32	0	2	0	0	324	185	9	1	1	0	2	198	671	68	5	6	3	1	754	1276
1700 - 1715	52	7	1	1	0	0	61	51	2	0	0	0	0	53	201	10	0	2	1	0	214	328
1715 - 1730	56	7	0	0	0	0	63	43	3	0	1	0	0	47	190	10	1	1	1	0	203	313
1730 - 1745	51	2	0	1	0	0	54	46	1	0	0	0	0	47	169	6	0	1	0	0	176	277
1745 - 1800	71	6	0	0	0	0	77	42	2	0	0	0	0	44	137	10	0	0	0	1	148	269
Hourly Total	230	22	1	2	0	0	255	182	8	0	1	0	0	191	697	36	1	4	2	1	741	1187
1800 - 1815	50	3	0	0	0	0	53	32	2	0	0	0	1	35	166	5	0	1	0	0	172	260
1815 - 1830	43	3	0	1	0	0	47	41	3	0	1	0	0	45	108	4	0	0	0	3	115	207
1/2 Hourly Total	93	6	0	1	0	0	100	73	5	0	1	0	1	80	274	9	0	1	0	3	287	467
3 Hour Totals (am)	715	73	2	9	0	0	799	549	37	1	4	0	3	594	1952	155	6	17	6	6	2142	3535
Day Total	1448	167	7	25	8	2	1657	1530	147	6	8	3	8	1702	2868	282	19	36	6	10	3221	6580

Appendix F

10 20 30 40 50
Metres

KEY

	NEAP	1000 m²
	LEAP	3x 400 m²
	LAP	4x 100 m²
	Retained hedgerow	29 600 m²
	New hedgerow	10 300 m²
	Grass/meadow, orchards or allotments	19 600 m²
	Private gardens soft landscape	25 000 m²
	SuDS swales and reed beds	24 100 m²
	Attenuation pond (surface area)	2000 m²

Rev	Description	Drawn	Checked	Date Issued
P1	Prefered Option Issue	TE	TS	24.06.19
P2	Workshop 28.06.19 Revisions	TE	TS	03.07.19
P3	Revised boundary line	TS	TS	28.08.19
P4	Community Football Pitch added	TS	TS	5.12.19
P5	Revised Layout Option 6	TS	TS	5.08.20
P6	Layout Option 6 comments response	TS	TS	19.08.20

2 Proposed Masterplan

1 : 1000

Drawn	Author
Date	02.05.19
Scale @ A0	1 : 1000
Status	

Austin-Smith:Lord LLP
Architects Designers Planners
Landscape Architects
one Dunleavy Drive
Cardiff
CF11 0SN
t +44 (0)2920 225 208
.
e cardiff@austinsmithlord.com

Drawings and models powered by Austin-Smith:Lord LLP BIM using AutoDesk Revit

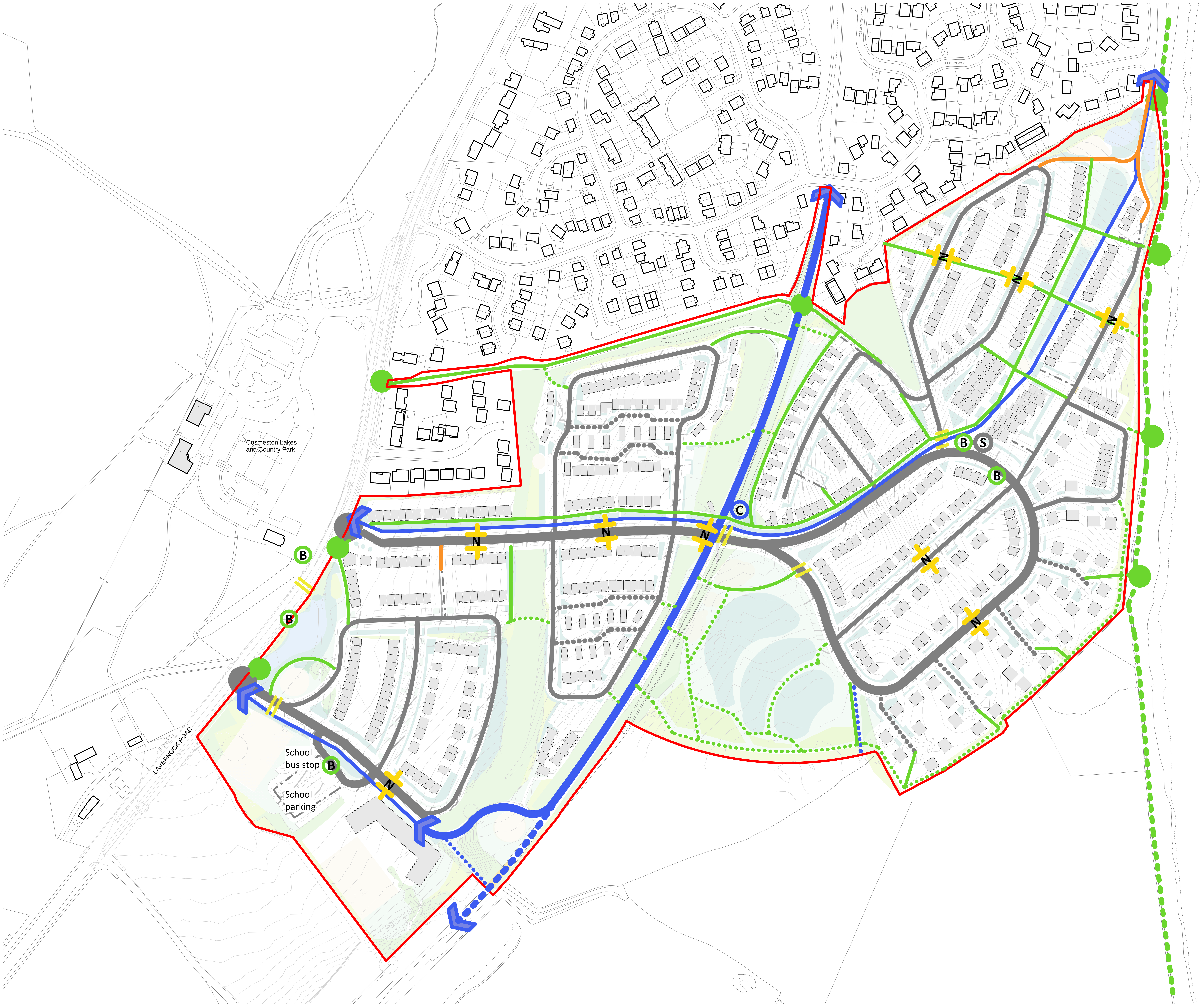
Austin-Smith:Lord

Project Upper Farm Cosmeston

Description Proposed Masterplan

Job No.	Drawing No.	Revision
318054	UFC- ASL- 00- 00- DR- A- 0930	

Appendix G



10 20 30 40 50
Metres

KEY

- Extension of NCN88 Cycle Route
- Future Extended Connection Cycle Routes
- Cycle Route
- 4m wide Emergency Vehicle Access Pedestrian Route
- Pedestrian Route
- Pedestrian passages desinged for unobstructed wildlife movement
- Cliff Top Coastal Path
- Pedestrian Gateway
- Pedestrian crossing
- Vehicular Site Access
- Primary Vehicular Route - Future proofed for potential Bus route
- Secondary Vehicular Route
- Home Zone Route - Pedestrian Priority
- Parking Access only
- N Traffic Calming Narrowing
- B BUS Stop
- C Bicycle Hire
- S Dedicated Street Car Rental Spaces

Notes:
Electric vehicle charging ready infrastructure throughout the development road network

Rev	Description	Drawn	Checked	Date Issued
P1	Revised boundary line	TS	TS	28.08.19
P2	Revised Layout Option 6	TS	TS	13.08.20
P3	Layout Option 6 comments response	TS	TS	19.08.20

1 Parameter Plan - Access & Movement

1 : 1000

Drawn	TE
Date	02.05.19
Scale @ A0	1 : 1000
Status	S0

Austin-Smith:Lord LLP
Architects Designers Planners
Landscape Architects
one Dunleavy Drive
Cardiff
CF11 0SN
t +44 (0)2920 225 208
e cardiff@austinsmithlord.com

Drawings and models powered by Austin-Smith:Lord LLP BIM using AutoDesk Revit

Austin-Smith:Lord

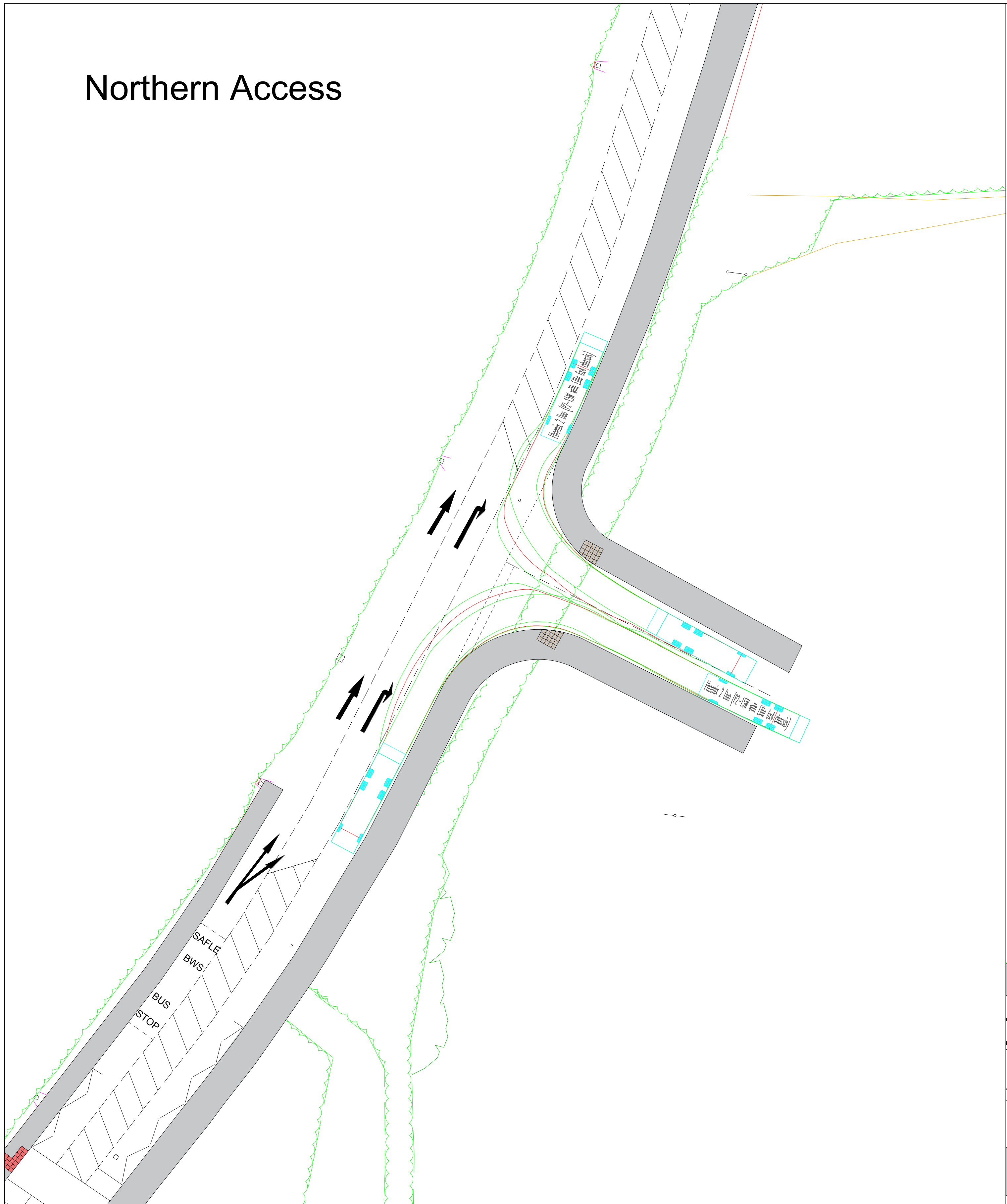
Project Upper Farm Cosmeston

Description Parameter Plan - Access & Movement

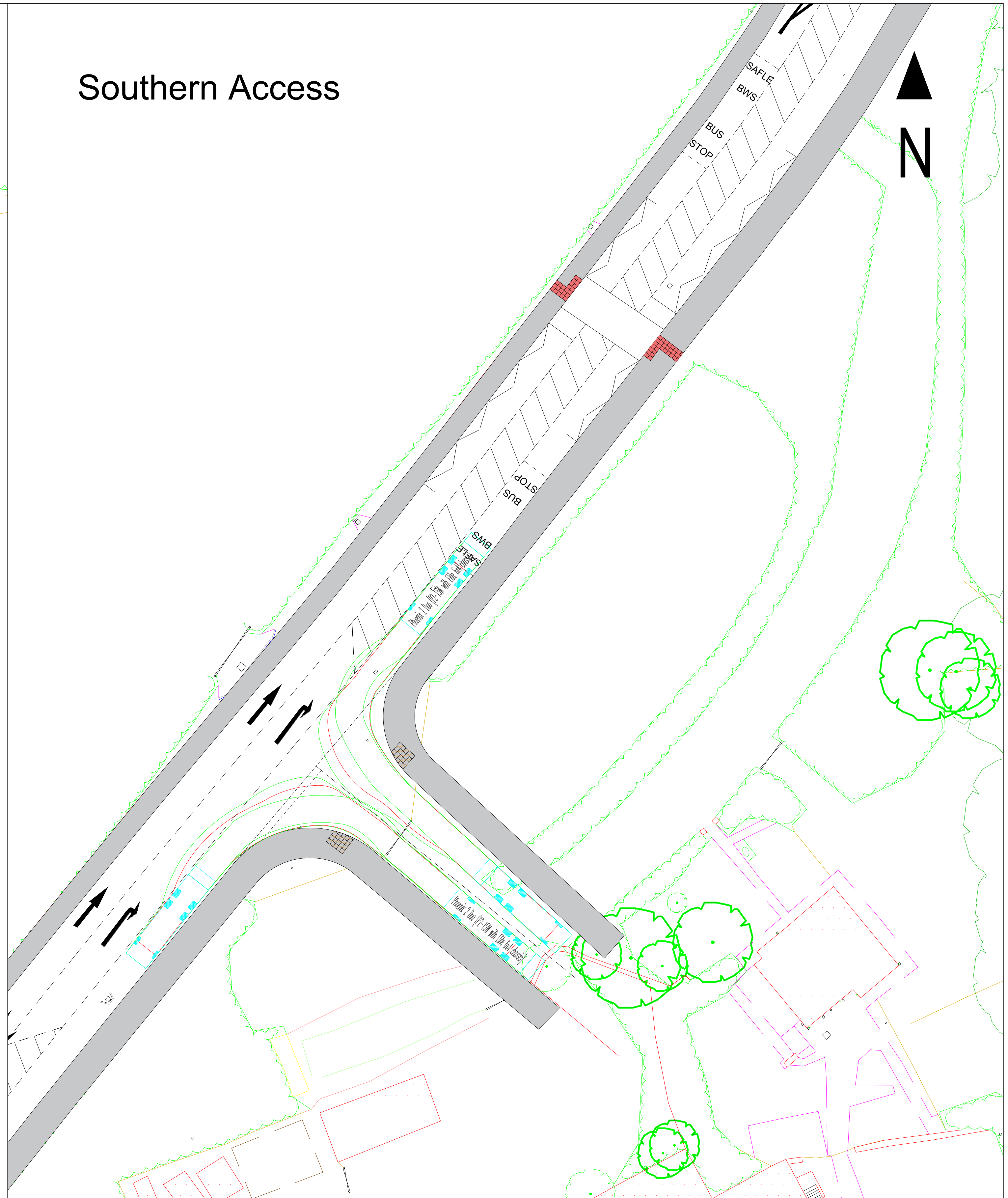
Job No.	Drawing No.	Revision
318054	UFC- ASL- 00- 00- DR- A- 0934	

Appendix H

Northern Access



Southern Access



Drawing Title

Proposed Site Access Arrangment
Swept Path analysis
- 11.2m RCV

Client

Welsh Government

Job Title

Cosmeston

asbritransport
Unit 9
Oak Tree Court
Mulberry Drive
Cardiff Gate Business Park
Cardiff
CF23 8RS
T 029 2073 2652

Scale:	1:500@A3
Designed by:	KW
Drawn by:	KW
Ckd/Appd:	PO'C
1st Issued:	July 2019
Job No:	T18.164

Rev.	Date.	Amendment.	Des.	Drn.

Drg No: Appendix G

Rev

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Appendix I

Asbri Transport Ltd

PROPOSED ACCESS ARRANGEMENTS
LAVERNOCK ROAD, VALE OF GLAMORGAN

STAGE 1 - ROAD SAFETY AUDIT
JUNE 2019

Transport Planning /Traffic Surveys/ Road Safety Audits

Tel: +44 (0)2920 667663 Email: admin@go-surveys.co.uk Web: www.go-surveys.co.uk
go-surveys Ltd Registered in England and Wales No:5841452
Registered office: go-surveys Ltd, 72 Plasturton Avenue, Cardiff, CF11 9HJ

Contents

Appendices

Appendix A – List of drawings and documents supplied for audit.

Appendix B – Location plan of identified problems.

1 INTRODUCTION

1.1 This report presents the findings from a Stage 1 Road Safety Audit undertaken on the proposed access arrangements associated with a development of approximately 575 residential dwellings and 2 form entry school on land to the east of Lavernock Road in the Vale of Glamorgan.

1.2 The audit was carried out by the following:

Tristan Brooks BSc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Competency	-	Road Safety Audit Team Leader
R Lister BSc (Hons), MSc, MRTPI, CMILT, MCIHT, MSoRSA	-	Road Safety Audit Team Member

1.3 The RSA was commissioned by Asbri Transport Ltd (the designers of the scheme) on behalf of the Welsh Government (the developers of the scheme). The overseeing organisation is the Vale of Glamorgan Council, who have approved the audit team to undertake RSA's on their highway network.

1.4 The site visit was undertaken on Friday 7th June 2019 between 09:25-10:05 and comprised a walk and drive through of the area in the vicinity of the scheme. During the site visit it was raining and the road surface was wet. Traffic in the vicinity of the proposals was moderate.

1.5 Lavernock Road in the vicinity of the proposed scheme at its northern extent is subject to a 30 mph speed limit and at its southern extent subject to a 40 mph speed limit and has no street lighting.

1.6 The drawings and documents supplied for audit are listed at **Appendix A.** An annotated drawing showing the locations of the problems identified is provided at **Appendix B.**

1.7 The terms of reference of the audit are as that described in DMRB GG/119 Guidelines on Road Safety Audits. This standard has been used for guidance only. The one exception to GG/119 is the inclusion (if applicable) of a notes/observation section at the end of the report. The audit team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

1.8 The scope of the RSA is limited to the proposed access arrangements that in summary will include:

- Two new priority controlled 'T' junctions with ghost island right turns lanes;
- The proposed northern junction will provide access to approximately 450 residential dwellings and the proposed southern access will provide access to approximately 125 dwellings and 2 form entry primary school;
- Both junctions will have 3.5 metre wide right turn lanes; 3 metre running lanes; 10 metre junction radii; 6.5 metre wide access roads serving the development; and uncontrolled crossings on the access arms of the junctions;
- Visibility splays at both site access junctions are shown as 2.4 metres by 90 metres;
- 3 metre wide shared use routes on the eastern side of Lavenock Road;
- 2 metre wide footways on the western side of Lavenock Road;
- 2 new bus stops to the north of the scheme that will be accompanied by bus cage carriageway markings; and
- Controlled signalised crossing on Lavennock Road, between the two proposed access junctions.

1.9 Junction capacity assessments provided as part of the audit brief indicate that both of the junctions will operate within capacity (in the 2029, with committed Development and development traffic scenario) in the AM (08:00-09:30), School PM (15:00-16:30) and highway PM (17:00-18:30) peak periods with minimal queuing i.e. 2-3 vehicles forecast.

1.10 A review of the Personal Injury Collision (PIC) data between the 01/10/2014 and 30/09/2018 (based on information held by the Welsh Government) has indicated that during this period there have been 3 PICs recorded in the vicinity of the proposed access arrangements, 2 of which resulted in injuries that were slight in severity and 1 that resulted in an injury that was serious in severity. A review of the PIC data has indicated:

- The PIC that resulted in serious injury involved a single vehicle during the hours of darkness when the road surface was wet and appears to have involved a driver losing control of their vehicle after hitting the kerb; and
- One of the PIC's involved a vulnerable road users i.e. pedestrian and resulted in a slight injury. The collision description indicates that pedestrian was struck by a vehicle whilst in the act of crossing the carriageway and occurred during the hours of darkness when the road surface was wet. The pedestrian was aged between 21-25.

1.11 The design team has indicated that the proposals do not have any departures or relaxations from standard within the design of the scheme. Although the audit team would note that the visibility splays associated with the southern access i.e. 2.4 by 90 metres which accords with a 30mph speed limit is currently within a 40mph speed limit.

1.12 The recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG/119. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

2 ROAD SAFETY AUDIT FINDINGS FROM RSA 1

PROBLEM 1

LOCATION: Lavernock Road, western side of proposed controlled pedestrian crossing.

SUMMARY: Extent of the stem of the tactile paving may make it difficult for pedestrians with visual impairments to locate the crossing point.

2.1 The plans provided for audit indicate that the stem of the tactile paving at the proposed controlled crossing point on the western side of Lavernock Road would not extend to the back of the footway. Typically at controlled crossings, the stem would extend to the back of the footway to provide sufficient guidance to pedestrians with visual impairments who often use the back of the footway to navigate.

2.2 This issue could lead to potential confusion at the crossing for pedestrians with visual impairments who may not be provided with sufficient guidance as to the location of the crossing and inadvertently walk into the carriageway and be struck by a vehicle.

RECOMMENDATION

2.3 It is recommended that the stem of the tactile paving at the controlled crossing point be extended to the back of the footway.

PROBLEM 2

LOCATION: Lavernock Road, proposed bus stops.

SUMMARY: Location and proximity of bus stops may result in an increased risk of vehicle/vehicle collisions and/or vehicle/pedestrian collisions.

2.4 The location of the proposed bus stops on Lavernock Road may result in pedestrians using this provision, crossing where no formal crossing facilities are provided potentially resulting in and increased risk of vehicle/pedestrian collisions.

2.5 The position of the crossings i.e. opposite each other may result in potentially injudicious overtaking manoeuvres if two buses are stopped at the bus stops at the same time, potentially resulting in head on type collisions.

RECOMMENDATION

2.6 It is recommended that the location/position of the bus stops be revised to address this problem and that suitable crossing provision be provided on the likely pedestrian desire line between the two bus stops.

PROBLEM 3

LOCATION: Lavernock Road – western footway.

SUMMARY: Lack of pedestrian connectivity at the northern and southern extents of the scheme on the western side of Lavernock Road could increase the risk of pedestrian/vehicle collisions.

2.7 The drawings provided for audit indicate that a footway will be provided throughout the proposed scheme on the western side of Lavernock Road. However, no details are provided with regard to how pedestrians will continue their journey where the footway terminates at its southern and northern extent. This could result in pedestrians walking within carriageway or crossing at inappropriate locations, which could result in an increased risk of pedestrian trip hazards or increased risk of pedestrian/vehicle collisions.

RECOMMENDATION

2.8 It is recommended that the design of the scheme is revised to address this problem and for example suitable crossing facilities be provided where the footway terminates.

PROBLEM 4

LOCATION: Lavernock Road – southern and northern site access.

SUMMARY: Vehicle encroachment/overhang into adjoining lanes may result in vehicle/vehicle collisions.

2.9 The vehicle swept path analysis provided for review as part of the RSA indicate that a bus and to a lesser extent refuse vehicles would have to encroach into the right turn lane whilst egressing both of the site accesses junctions. Encroachment into adjoining lanes could potentially result in head-on type or side impact type collisions.

RECOMMENDATION

2.10 It is recommended that the proposed junction arrangement/geometries are revised to remove this problem.

3 AUDIT STATEMENT

3.1 We certify that this audit has been carried out in accordance with GG/119 unless otherwise noted.

Signed:

Date: 12 June 2019

T Brooks – BSc (Hons), MBA, CMILT, MCIHT, MSoRSA, HE RSA Cert of Competency.
Audit Team Leader
go-surveys Ltd
72 Plasturton Avenue
Cardiff
CF11 9HJ

Signed:

Date: 12 June 2019

R Lister - BSc (Hons), MSc, MRTPI, MILT, MCIHT, MSoRSA
Audit Team Leader
go-surveys Ltd
72 Plasturton Avenue
Cardiff
CF11 9HJ

APPENDIX A

List of Drawings and Documents Provided for Audit

Figure 1
Northern Access – 2.4m x 90m visibility splays
Figure 2
Southern Access – 2.4m x 90m visibility splays

Figure 3
Northern Access – Dimensions
Figure 4
Southern Access – Dimensions

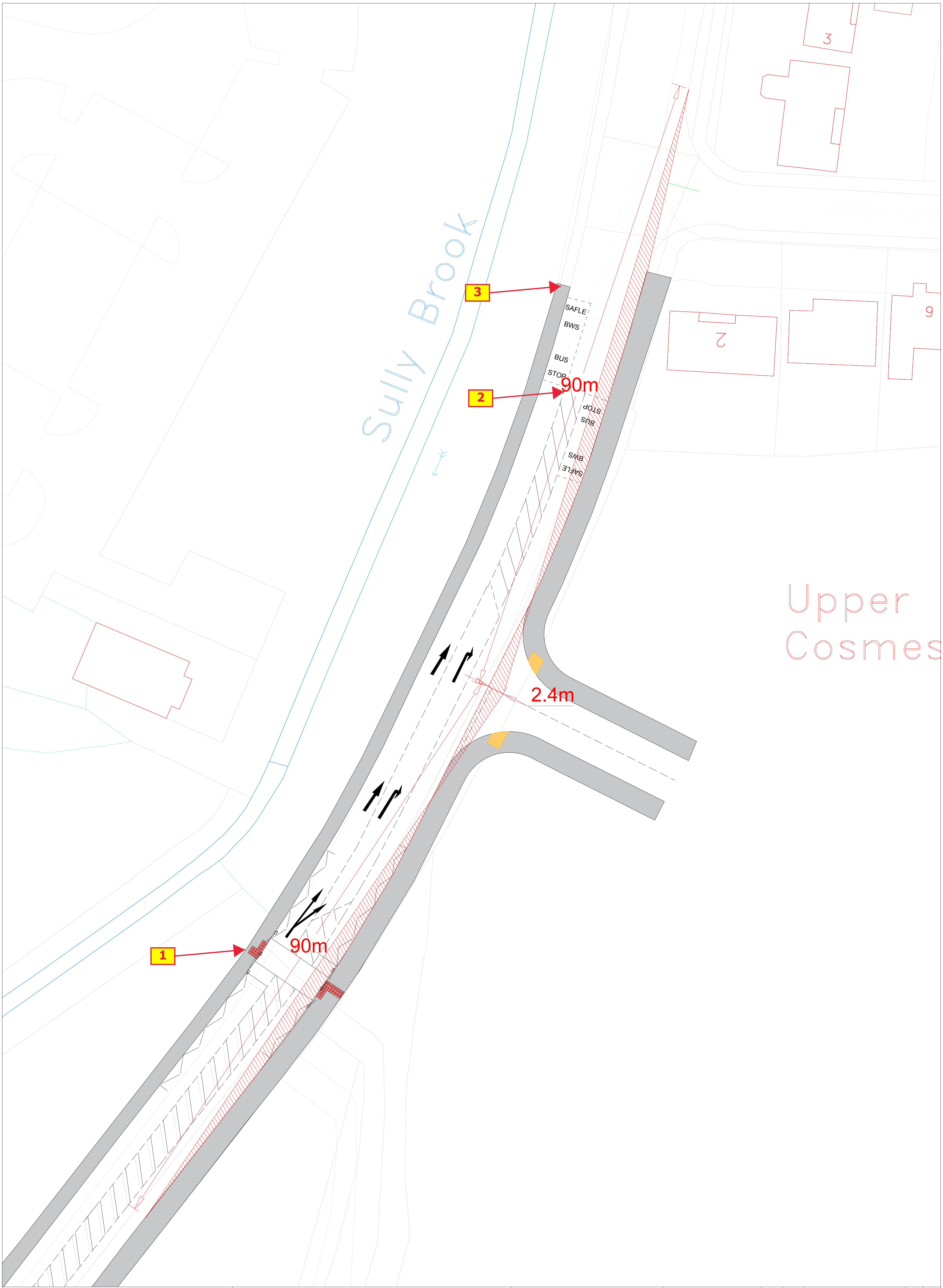
Figures 5-12
Northern/Southern Access – Vehicle Swept Path Analysis

PIC Data
01/10/2014 - 30/09/2018

PIC Assessment Outputs

APPENDIX B

Location of Identified Problems



Drawing Title	Client			
Northern Access 2.4m x 90m Vis Splay	Welsh Government	asbritransport Unit 9 Oak Tree Court Mulberry Drive Cardiff Gate Business Park Cardiff CF23 8RS T 029 2073 2652	Scale: 1:500 @A3 Designed by: KW Drawn by: KW Ckd/Appd: PO'C 1st Issued: Jne 2019 Job No: T18.164	Rev. | Date. | Amendment. | Des. | Drn.
	Job Title Upper Farm, Cosemston			Drg No. Figure 1 Rev

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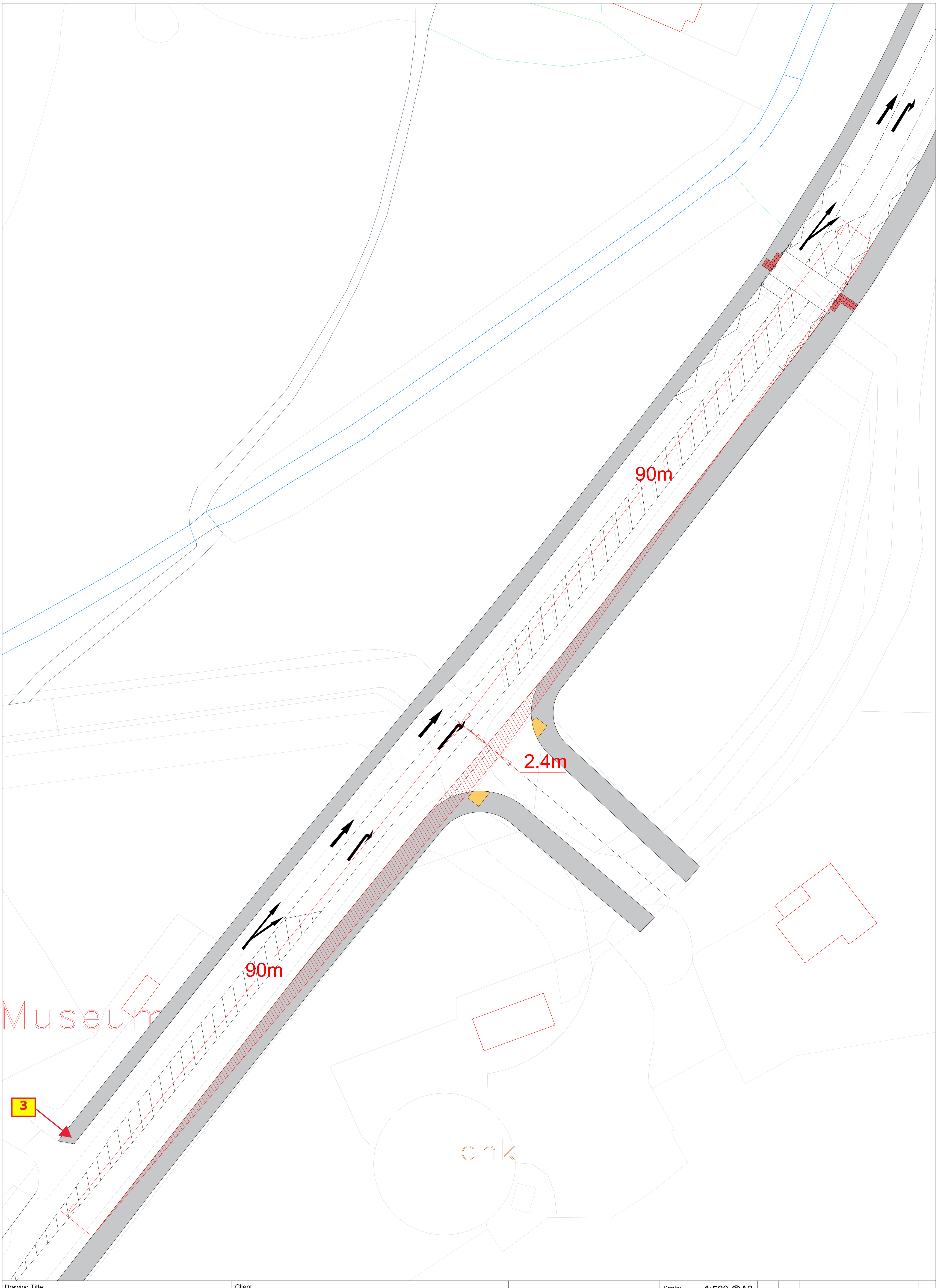

Drawing Title Southern Access 2.4m x 90m Vis Splay	Client Welsh Government	asbritransport	Scale: 1:500 @A3
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Rev.	Date.	Amendment.	Des.	Drn.
Drg No.		Figure 2	Rev	

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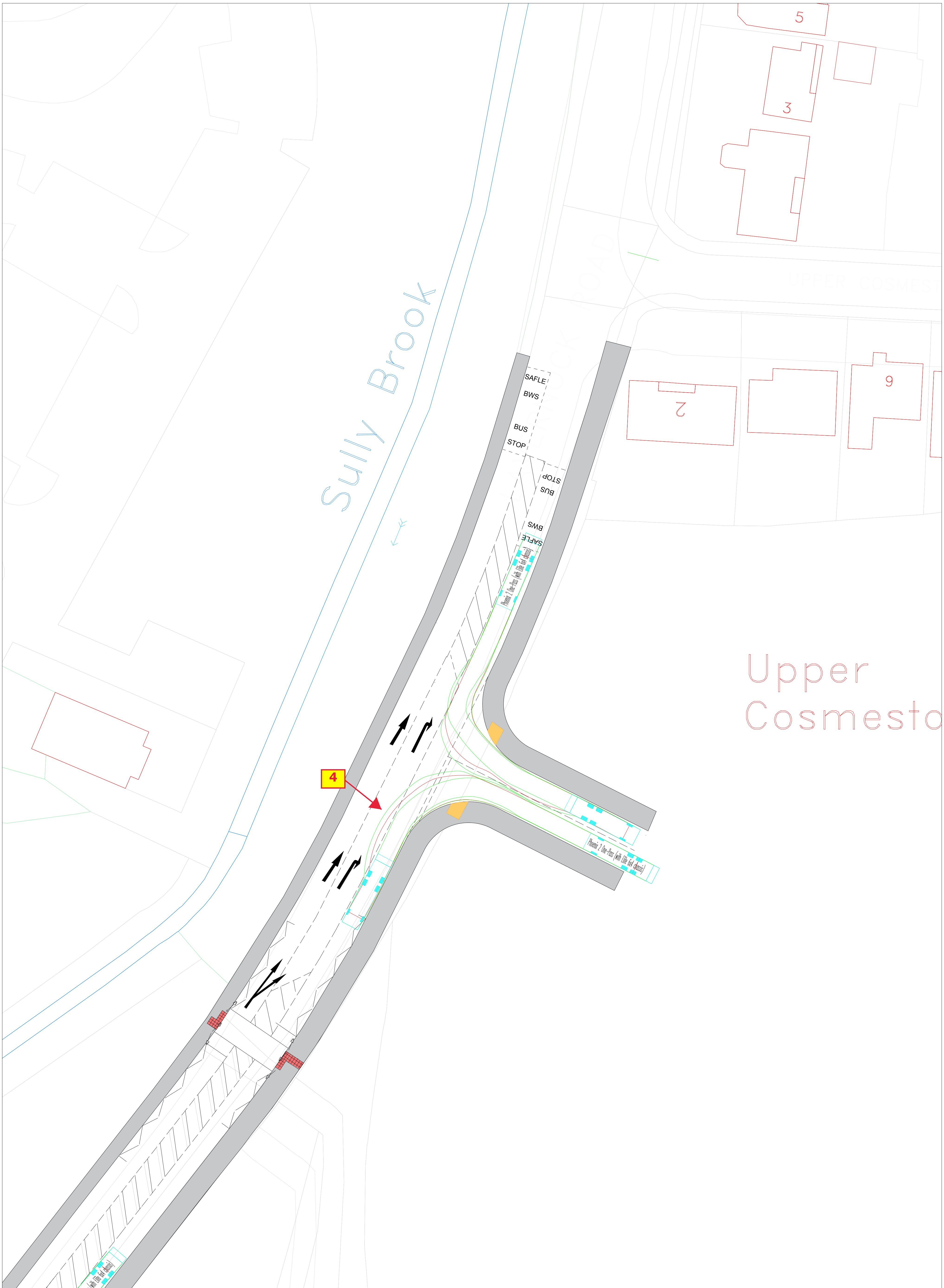

Drawing Title	Client				
Northern Access Swept Path Analysis of 10.9m RCV	Welsh Government	asbritransport	Scale: 1:500 @A3		
	Job Title	Unit 9 Oak Tree Court Mulberry Drive Cardiff Gate Business Park Cardiff CF23 8RS T 029 2073 2652	Designed by: KW		
	Upper Farm, Cosemston		Drawn by: KW		
			Ckd/Appd: PO'C	Rev. Date. Amendment. Des. Drn.	
			1st Issued: Jne 2019	Drg No. Figure 5	Rev
			Job No: T18.164		

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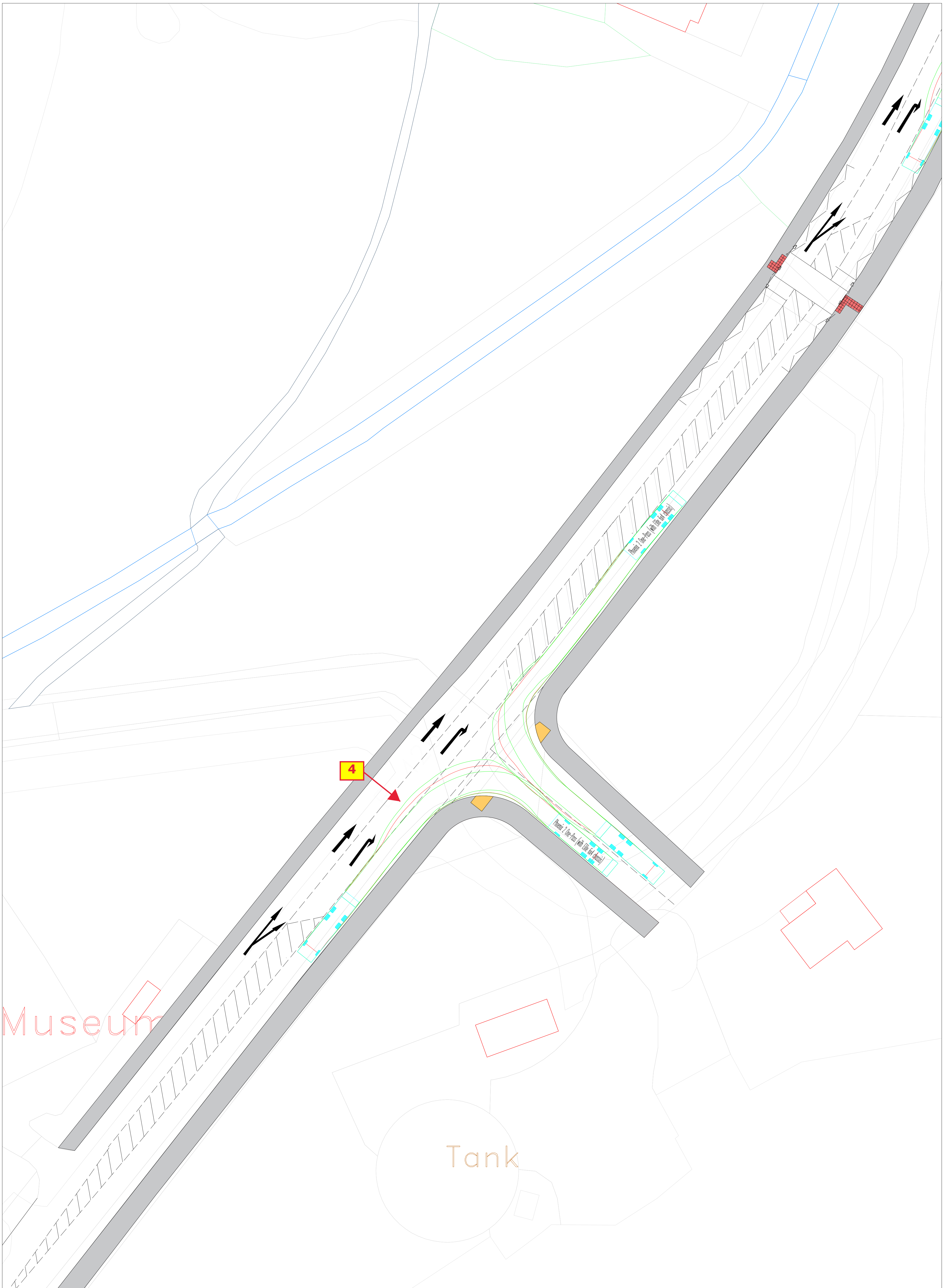

Drawing Title	Client							
Southern Access Swept path Analysis of 10.9m RCV	Welsh Government	asbritransport	Scale:	1:500 @A3				
			Designed by:	KW				
	Job Title		Drawn by:	KW				
		Unit 9, Oak Tree Court, Mulberry Drive, Cardiff Gate Business Park, Cardiff, CF23 8RS, T 029 2073 2652	Ckd/Appd:	PO'C	Rev.	Date.	Amendment.	Des. / Drn.
	Upper Farm, Cosemston		1st Issued:	Jne 2019	Drg No.			Rev
			Job No:	T18.164	Figure 7			

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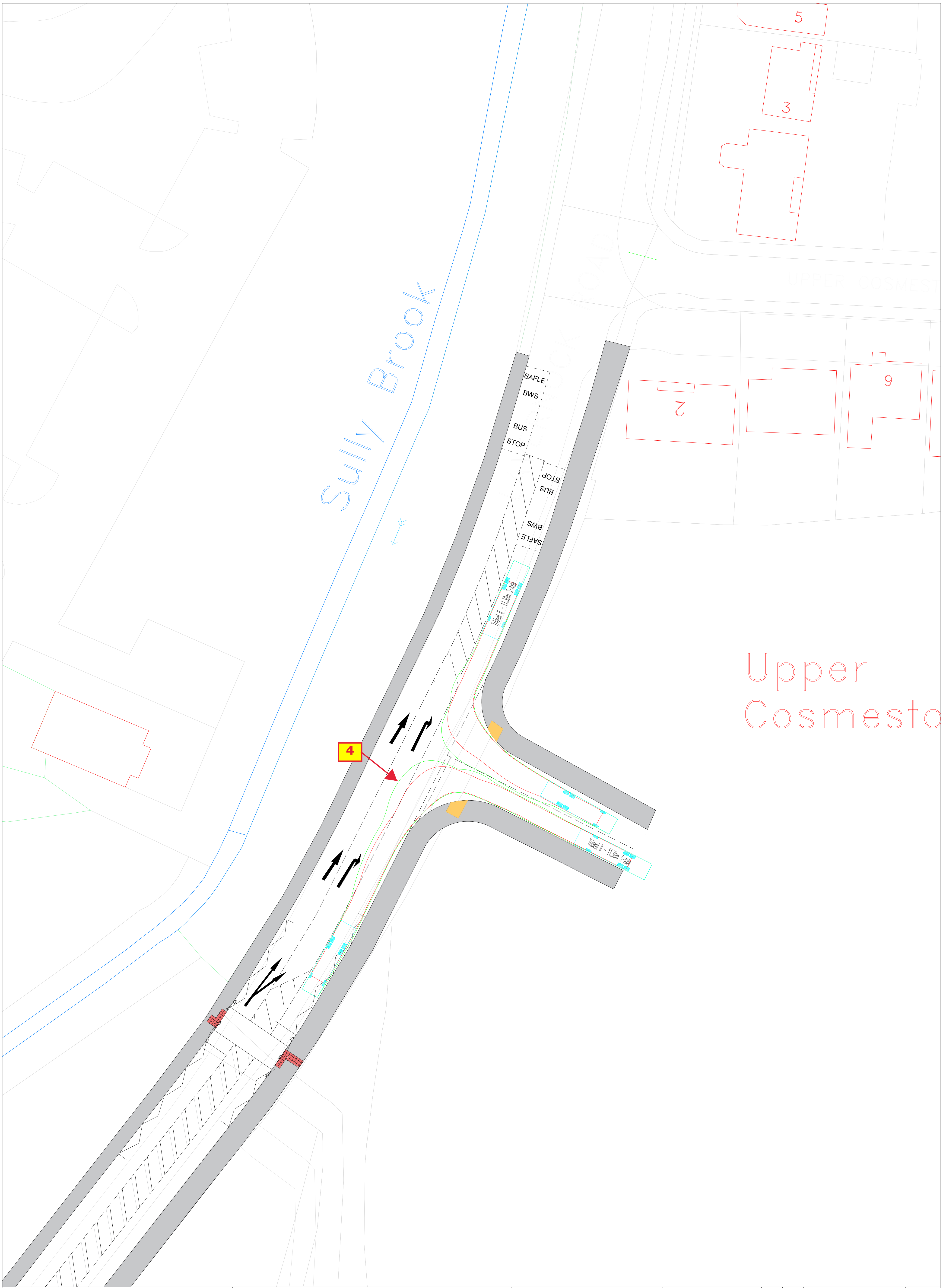

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Northern Access Swept Path Analysis of 11.2 m Bus	Welsh Government		Designed by: KW
	Job Title		Drawn by: KW
			Ckd/Appd: PO'C
	Upper Farm, Cosemston		1st Issued: Jne 2019
			Job No: T18.164

asbritransport
Unit 9
Oak Tree Court
Mulberry Drive
Cardiff Gate Business Park
Cardiff
CF23 8RS
T 029 2073 2652

Rev.	Date.	Amendment.	Des.	Drn.

Drg No. Figure 9 Rev

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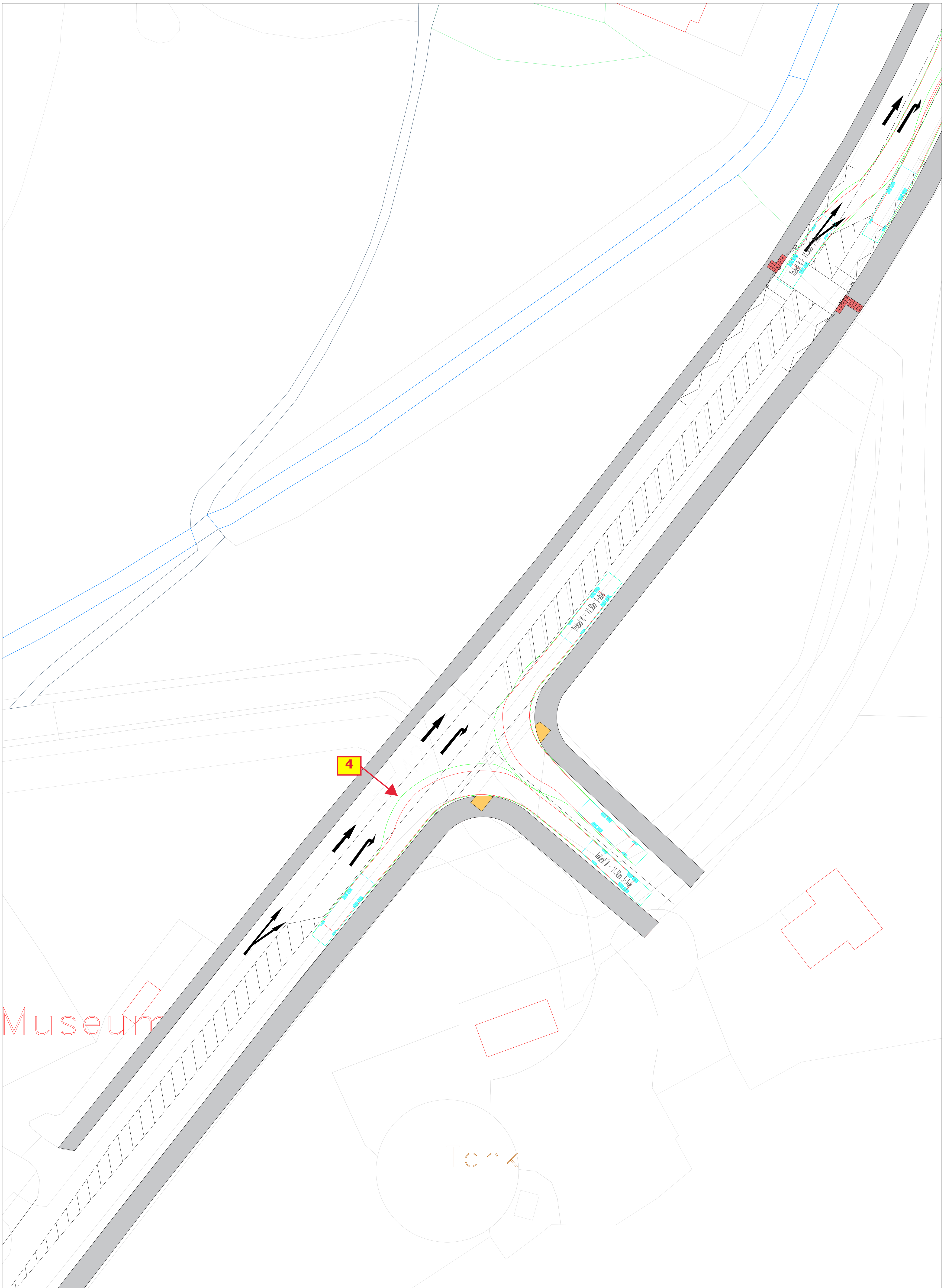

Drawing Title	Client							
Southern Access Swept path Analysis of 11.2 m Bus	Welsh Government	asbritransport Unit 9 Oak Tree Court Mulberry Drive Cardiff Gate Business Park Cardiff CF23 8RS T 029 2073 2652	Scale: 1:500 @A3					
	Job Title		Designed by: KW					
	Upper Farm, Cosemston		Drawn by: KW					
			Ckd/Appd: PO'C	Rev.	Date.	Amendment.	Des.	Drn.
			1st Issued: Jne 2019	Drg No.		Figure 11	Rev	
			Job No: T18.164					

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Appendix J

Calculation Reference: AUDIT-317901-181024-1044

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING

MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	4 days
	HC	HAMPSHIRE	3 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	1 days
	OX	OXFORDSHIRE	1 days
	SC	SURREY	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 93 to 500 (units:)
Range Selected by User: 93 to 500 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 28/06/18

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	2 days
Wednesday	4 days
Thursday	4 days

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

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	12

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:

Industrial Zone	1
Residential Zone	9
No Sub Category	2

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

Secondary Filtering selection:

Use Class:

C3	12 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	5 days
10,001 to 15,000	3 days
20,001 to 25,000	3 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:

25,001 to 50,000	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	5 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	9 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	8 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	12 days

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

LIST OF SITES relevant to selection parameters

1 ES-03-M-07 MIXED HOUSING EAST SUSSEX
SOUTH COAST ROAD
PEACEHAVEN

Edge of Town
Residential Zone
Total Number of dwellings: 188
Survey date: THURSDAY 12/11/15 Survey Type: MANUAL

2 ES-03-M-10 MIXED HOUSES & FLATS EAST SUSSEX
DITTONS ROAD
POLEGATE

Edge of Town
Residential Zone
Total Number of dwellings: 108
Survey date: MONDAY 11/07/16 Survey Type: MANUAL

3 ES-03-M-11 MIXED HOUSES & FLATS EAST SUSSEX
HEMPSTEAD LANE
HAILSHAM
UPPER HORSEBRIDGE
Edge of Town
Residential Zone
Total Number of dwellings: 354
Survey date: WEDNESDAY 13/07/16 Survey Type: MANUAL

4 ES-03-M-12 MIXED HOUSES & FLATS EAST SUSSEX
PARK ROAD
HAILSHAM

Edge of Town
Residential Zone
Total Number of dwellings: 93
Survey date: THURSDAY 21/06/18 Survey Type: MANUAL

5 FA-03-M-01 SEMI D./TERRACED FALKIRK
FAIRLIE STREET
FALKIRK

Edge of Town
Residential Zone
Total Number of dwellings: 138
Survey date: WEDNESDAY 29/06/05 Survey Type: MANUAL

6 HC-03-M-06 HOUSES & FLATS HAMPSHIRE
HUNTS POND ROAD
NEAR FAREHAM
TITCHFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 328
Survey date: WEDNESDAY 04/11/15 Survey Type: MANUAL

7 HC-03-M-07 MIXED HOUSES & FLATS HAMPSHIRE
ALDERMASTON ROAD
BASINGSTOKE

Edge of Town
No Sub Category
Total Number of dwellings: 236
Survey date: TUESDAY 21/03/17 Survey Type: MANUAL

8 HC-03-M-09 MIXED HOUSES & FLATS HAMPSHIRE
ROMSEY ROAD
WINCHESTER
STANMORE
Edge of Town
Residential Zone
Total Number of dwellings: 157
Survey date: THURSDAY 07/06/18 Survey Type: MANUAL

9 HF-03-M-02 TERRACED & FLATS HERTFORDSHIRE
SYLVAN WAY
WELWYN GARDEN CITY
PANSHANGER
Edge of Town
Residential Zone
Total Number of dwellings: 158
Survey date: MONDAY 06/10/03 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10 KC-03-M-02 MIXED HOUSES AND FLATS KENT
HERMITAGE LANE
MAIDSTONE
BARMING
Edge of Town
No Sub Category
Total Number of dwellings: 119
Survey date: TUESDAY 05/06/18 Survey Type: MANUAL

11 OX-03-M-01 MIXED HOUSES OXFORDSHIRE
WENMAN ROAD
THAME

Edge of Town
Industrial Zone
Total Number of dwellings: 100
Survey date: THURSDAY 28/06/18 Survey Type: MANUAL

12 SC-03-M-06 HOUSES & FLATS SURREY
ST ANNE'S DRIVE
REDHILL

Edge of Town
Residential Zone
Total Number of dwellings: 500
Survey date: WEDNESDAY 11/12/13 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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.076	12	207	0.287	12	207	0.363
08:00 - 09:00	12	207	0.139	**12**	**207**	**0.372**	**12**	**207**	**0.511**
09:00 - 10:00	12	207	0.133	12	207	0.164	12	207	0.297
10:00 - 11:00	12	207	0.123	12	207	0.151	12	207	0.274
11:00 - 12:00	12	207	0.130	12	207	0.142	12	207	0.272
12:00 - 13:00	12	207	0.140	12	207	0.137	12	207	0.277
13:00 - 14:00	12	207	0.134	12	207	0.136	12	207	0.270
14:00 - 15:00	12	207	0.132	12	207	0.164	12	207	0.296
15:00 - 16:00	12	207	0.263	12	207	0.181	12	207	0.444
16:00 - 17:00	12	207	0.240	12	207	0.133	12	207	0.373
17:00 - 18:00	**12**	**207**	**0.314**	12	207	0.153	12	207	0.467
18:00 - 19:00	12	207	0.278	12	207	0.159	12	207	0.437
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.102			2.179			4.281

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

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

Parameter summary

Trip rate parameter range selected:	93 - 500 (units:)
Survey date date range:	01/01/03 - 28/06/18
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	4
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.000	12	207	0.001
08:00 - 09:00	12	207	0.001	12	207	0.001	12	207	0.002
09:00 - 10:00	12	207	0.001	12	207	0.001	12	207	0.002
10:00 - 11:00	12	207	0.002	12	207	0.002	12	207	0.004
11:00 - 12:00	12	207	0.002	12	207	0.002	12	207	0.004
12:00 - 13:00	**12**	**207**	**0.003**	12	207	0.002	**12**	**207**	**0.005**
13:00 - 14:00	12	207	0.002	**12**	**207**	**0.003**	12	207	0.005
14:00 - 15:00	12	207	0.002	12	207	0.002	12	207	0.004
15:00 - 16:00	12	207	0.001	12	207	0.001	12	207	0.002
16:00 - 17:00	12	207	0.001	12	207	0.001	12	207	0.002
17:00 - 18:00	12	207	0.001	12	207	0.001	12	207	0.002
18:00 - 19:00	12	207	0.000	12	207	0.000	12	207	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.017			0.016			0.033

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.001	12	207	0.002
08:00 - 09:00	12	207	0.002	12	207	0.002	12	207	0.004
09:00 - 10:00	12	207	0.001	12	207	0.002	12	207	0.003
10:00 - 11:00	12	207	0.002	12	207	0.002	12	207	0.004
11:00 - 12:00	12	207	0.002	12	207	0.002	12	207	0.004
12:00 - 13:00	12	207	0.002	12	207	0.001	12	207	0.003
13:00 - 14:00	12	207	0.002	12	207	0.002	12	207	0.004
14:00 - 15:00	12	207	0.002	12	207	0.002	12	207	0.004
15:00 - 16:00	**12**	**207**	**0.003**	**12**	**207**	**0.003**	**12**	**207**	**0.006**
16:00 - 17:00	12	207	0.002	12	207	0.002	12	207	0.004
17:00 - 18:00	12	207	0.002	12	207	0.001	12	207	0.003
18:00 - 19:00	12	207	0.001	12	207	0.001	12	207	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.022			0.021			0.043

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.001	12	207	0.009	12	207	0.010
08:00 - 09:00	12	207	0.002	**12**	**207**	**0.010**	12	207	0.012
09:00 - 10:00	12	207	0.003	12	207	0.005	12	207	0.008
10:00 - 11:00	12	207	0.002	12	207	0.001	12	207	0.003
11:00 - 12:00	12	207	0.001	12	207	0.003	12	207	0.004
12:00 - 13:00	12	207	0.002	12	207	0.003	12	207	0.005
13:00 - 14:00	12	207	0.003	12	207	0.003	12	207	0.006
14:00 - 15:00	12	207	0.002	12	207	0.003	12	207	0.005
15:00 - 16:00	12	207	0.006	12	207	0.005	12	207	0.011
16:00 - 17:00	12	207	0.008	12	207	0.004	12	207	0.012
17:00 - 18:00	**12**	**207**	**0.010**	12	207	0.006	**12**	**207**	**0.016**
18:00 - 19:00	12	207	0.006	12	207	0.004	12	207	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.046			0.056			0.102

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS No. Days	ARRIVALS Ave. DWELLS	ARRIVALS Trip Rate	DEPARTURES No. Days	DEPARTURES Ave. DWELLS	DEPARTURES Trip Rate	TOTALS No. Days	TOTALS Ave. DWELLS	TOTALS 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	12	207	0.090	12	207	0.381	12	207	0.471
08:00 - 09:00	12	207	0.163	12	207	0.618	12	207	0.781
09:00 - 10:00	12	207	0.161	12	207	0.209	12	207	0.370
10:00 - 11:00	12	207	0.148	12	207	0.193	12	207	0.341
11:00 - 12:00	12	207	0.163	12	207	0.189	12	207	0.352
12:00 - 13:00	12	207	0.184	12	207	0.173	12	207	0.357
13:00 - 14:00	12	207	0.174	12	207	0.171	12	207	0.345
14:00 - 15:00	12	207	0.173	12	207	0.202	12	207	0.375
15:00 - 16:00	12	207	0.445	12	207	0.235	12	207	0.680
16:00 - 17:00	12	207	0.346	12	207	0.190	12	207	0.536
17:00 - 18:00	12	207	0.414	12	207	0.207	12	207	0.621
18:00 - 19:00	12	207	0.364	12	207	0.222	12	207	0.586
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.825			2.990			5.815

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.015	12	207	0.043	12	207	0.058
08:00 - 09:00	12	207	0.030	**12**	**207**	**0.151**	**12**	**207**	**0.181**
09:00 - 10:00	12	207	0.039	12	207	0.026	12	207	0.065
10:00 - 11:00	12	207	0.018	12	207	0.023	12	207	0.041
11:00 - 12:00	12	207	0.029	12	207	0.044	12	207	0.073
12:00 - 13:00	12	207	0.035	12	207	0.028	12	207	0.063
13:00 - 14:00	12	207	0.026	12	207	0.027	12	207	0.053
14:00 - 15:00	12	207	0.025	12	207	0.031	12	207	0.056
15:00 - 16:00	**12**	**207**	**0.109**	12	207	0.050	12	207	0.159
16:00 - 17:00	12	207	0.063	12	207	0.034	12	207	0.097
17:00 - 18:00	12	207	0.051	12	207	0.027	12	207	0.078
18:00 - 19:00	12	207	0.035	12	207	0.023	12	207	0.058
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.475			0.507			0.982

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.003	12	207	0.043	12	207	0.046
08:00 - 09:00	12	207	0.002	**12**	**207**	**0.050**	**12**	**207**	**0.052**
09:00 - 10:00	12	207	0.002	12	207	0.011	12	207	0.013
10:00 - 11:00	12	207	0.001	12	207	0.010	12	207	0.011
11:00 - 12:00	12	207	0.004	12	207	0.008	12	207	0.012
12:00 - 13:00	12	207	0.005	12	207	0.010	12	207	0.015
13:00 - 14:00	12	207	0.010	12	207	0.006	12	207	0.016
14:00 - 15:00	12	207	0.007	12	207	0.005	12	207	0.012
15:00 - 16:00	12	207	0.028	12	207	0.007	12	207	0.035
16:00 - 17:00	12	207	0.023	12	207	0.004	12	207	0.027
17:00 - 18:00	**12**	**207**	**0.033**	12	207	0.003	12	207	0.036
18:00 - 19:00	12	207	0.019	12	207	0.004	12	207	0.023
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.137			0.161			0.298

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	12	207	0.108	12	207	0.475	12	207	0.583
08:00 - 09:00	12	207	0.198	**12**	**207**	**0.829**	**12**	**207**	**1.027**
09:00 - 10:00	12	207	0.205	12	207	0.251	12	207	0.456
10:00 - 11:00	12	207	0.169	12	207	0.228	12	207	0.397
11:00 - 12:00	12	207	0.197	12	207	0.243	12	207	0.440
12:00 - 13:00	12	207	0.226	12	207	0.214	12	207	0.440
13:00 - 14:00	12	207	0.212	12	207	0.207	12	207	0.419
14:00 - 15:00	12	207	0.207	12	207	0.241	12	207	0.448
15:00 - 16:00	**12**	**207**	**0.588**	12	207	0.297	12	207	0.885
16:00 - 17:00	12	207	0.440	12	207	0.233	12	207	0.673
17:00 - 18:00	12	207	0.509	12	207	0.243	12	207	0.752
18:00 - 19:00	12	207	0.424	12	207	0.253	12	207	0.677
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.483			3.714			7.197

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/M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL Servicing Vehicles
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	1	236	0.021						
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	12	207	0.001	12	207	0.000	12	207	0.001
08:00 - 09:00	12	207	0.007	12	207	0.002	12	207	0.009
09:00 - 10:00	12	207	0.008	12	207	0.008	12	207	0.016
10:00 - 11:00	12	207	0.009	12	207	0.009	12	207	0.018
11:00 - 12:00	12	207	0.006	12	207	0.008	12	207	0.014
12:00 - 13:00	12	207	0.007	12	207	0.006	12	207	0.013
13:00 - 14:00	12	207	0.005	12	207	0.008	12	207	0.013
14:00 - 15:00	12	207	0.004	12	207	0.003	12	207	0.007
15:00 - 16:00	12	207	0.004	12	207	0.004	12	207	0.008
16:00 - 17:00	12	207	0.004	12	207	0.004	12	207	0.008
17:00 - 18:00	12	207	0.002	12	207	0.004	12	207	0.006
18:00 - 19:00	12	207	0.000	12	207	0.002	12	207	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.078			0.058			0.115

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 K

Calculation Reference: AUDIT-317901-190326-0349

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	SOUTH WEST		
	BR	BRISTOL CITY	1 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
	GM	GREATER MANCHESTER	1 days
11	SCOTLAND		
	FA	FALKIRK	1 days
	SR	STIRLING	1 days

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

Secondary Filtering selection:

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

Parameter: Number of pupils
Actual Range: 147 to 457 (units:)
Range Selected by User: 50 to 500 (units:)

Parking Spaces Range: Selected: 0 to 80 Actual: 0 to 80

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 12/07/18

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 3 days
Tuesday 4 days
Thursday 2 days

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

Selected survey types:
Manual count 9 days
Directional ATC Count 0 days

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

Selected Locations:
Edge of Town 9

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

Selected Location Sub Categories:
Residential Zone 9

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:

<u>*Use Class:*</u>

D1	9 days

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

<u>*Population within 1 mile:*</u>

1,001 to 5,000	2 days
10,001 to 15,000	1 days
15,001 to 20,000	4 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

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

<u>*Population within 5 miles:*</u>

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	4 days

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

<u>*Car ownership within 5 miles:*</u>

0.6 to 1.0	3 days
1.1 to 1.5	6 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.

<u>*Travel Plan:*</u>

Yes	1 days
No	8 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.

<u>*PTAL Rating:*</u>

No PTAL Present	9 days

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

LIST OF SITES relevant to selection parameters

1	BR-04-A-01	PRIMARY SCHOOL		BRISTOL CITY
	SCHOOL CLOSE BRISTOL WHITCHURCH Edge of Town Residential Zone			
	Total Number of pupils:		208	
	Survey date: TUESDAY		*22/09/15*	*Survey Type: MANUAL*
2	CH-04-A-01	PRIMARY SCHOOL		CHESHIRE
	WESTON GROVE CHESTER UPTON Edge of Town Residential Zone			
	Total Number of pupils:		219	
	Survey date: MONDAY		*17/11/14*	*Survey Type: MANUAL*
3	DS-04-A-01	PRIMARY SCHOOL		DERBYSHIRE
	VICARAGE ROAD DERBY MICKLEOVER Edge of Town Residential Zone			
	Total Number of pupils:		387	
	Survey date: THURSDAY		*25/06/15*	*Survey Type: MANUAL*
4	FA-04-A-03	PRIMARY SCHOOL		FALKIRK
	GLENDEVON DRIVE FALKIRK MADDISTON Edge of Town Residential Zone			
	Total Number of pupils:		452	
	Survey date: MONDAY		*03/06/13*	*Survey Type: MANUAL*
5	GM-04-A-01	PRIMARY SCHOOL		GREATER MANCHESTER
	ROCH MILLS CRESCENT ROCHDALE Edge of Town Residential Zone			
	Total Number of pupils:		457	
	Survey date: TUESDAY		*20/10/15*	*Survey Type: MANUAL*
6	LE-04-A-02	PRIMARY SCHOOL		LEICESTERSHIRE
	BEAUFORT WAY LEICESTER OADBY Edge of Town Residential Zone			
	Total Number of pupils:		380	
	Survey date: THURSDAY		*30/10/14*	*Survey Type: MANUAL*
7	NE-04-A-01	PRIMARY SCHOOL		NORTH EAST LINCOLNSHIRE
	SUNNINGDALE ROAD SCUNTHORPE Edge of Town Residential Zone			
	Total Number of pupils:		147	
	Survey date: TUESDAY		*20/05/14*	*Survey Type: MANUAL*
8	SR-04-A-01	PRIMARY SCHOOL		STIRLING
	PULLAR AVENUE STIRLING BRIDGE OF ALLAN Edge of Town Residential Zone			
	Total Number of pupils:		386	
	Survey date: MONDAY		*16/06/14*	*Survey Type: MANUAL*
9	WM-04-A-02	PRIMARY SCHOOL		WEST MIDLANDS
	HAZEL ROAD BIRMINGHAM RUBERY Edge of Town Residential Zone			
	Total Number of pupils:		234	
	Survey date: TUESDAY		*10/11/15*	*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 04 - EDUCATION/A - PRIMARY
VEHICLES
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.039	9	319	0.009	9	319	0.048
08:00 - 09:00	9	**319**	**0.238**	9	319	0.161	9	**319**	**0.399**
09:00 - 10:00	9	319	0.038	9	319	0.057	9	319	0.095
10:00 - 11:00	9	319	0.015	9	319	0.014	9	319	0.029
11:00 - 12:00	9	319	0.033	9	319	0.027	9	319	0.060
12:00 - 13:00	9	319	0.038	9	319	0.042	9	319	0.080
13:00 - 14:00	9	319	0.022	9	319	0.030	9	319	0.052
14:00 - 15:00	9	319	0.074	9	319	0.031	9	319	0.105
15:00 - 16:00	9	319	0.106	9	**319**	**0.176**	9	319	0.282
16:00 - 17:00	9	319	0.040	9	319	0.066	9	319	0.106
17:00 - 18:00	9	319	0.018	9	319	0.033	9	319	0.051
18:00 - 19:00	9	319	0.012	9	319	0.013	9	319	0.025
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.673			0.659			1.332

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

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

Parameter summary

Trip rate parameter range selected:	147 - 457 (units:)
Survey date date range:	01/01/10 - 12/07/18
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
TAXIS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.000	9	319	0.000	9	319	0.000
08:00 - 09:00	9	**319**	**0.006**	9	**319**	**0.005**	9	**319**	**0.011**
09:00 - 10:00	9	319	0.000	9	319	0.002	9	319	0.002
10:00 - 11:00	9	319	0.000	9	319	0.000	9	319	0.000
11:00 - 12:00	9	319	0.000	9	319	0.000	9	319	0.000
12:00 - 13:00	9	319	0.001	9	319	0.000	9	319	0.001
13:00 - 14:00	9	319	0.000	9	319	0.000	9	319	0.000
14:00 - 15:00	9	319	0.003	9	319	0.001	9	319	0.004
15:00 - 16:00	9	319	0.002	9	319	0.004	9	319	0.006
16:00 - 17:00	9	319	0.000	9	319	0.000	9	319	0.000
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.000	9	319	0.000	9	319	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.012			0.024

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.

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
OGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.001	9	319	0.001	9	319	0.002
08:00 - 09:00	9	319	0.000	9	319	0.000	9	319	0.000
09:00 - 10:00	9	319	0.000	9	319	0.000	9	319	0.000
10:00 - 11:00	9	319	0.001	9	319	0.001	9	319	0.002
11:00 - 12:00	9	319	0.000	9	319	0.001	9	319	0.001
12:00 - 13:00	9	319	0.001	9	319	0.001	9	319	0.002
13:00 - 14:00	9	319	0.000	9	319	0.000	9	319	0.000
14:00 - 15:00	9	319	0.000	9	319	0.000	9	319	0.000
15:00 - 16:00	9	319	0.000	9	319	0.000	9	319	0.000
16:00 - 17:00	9	319	0.000	9	319	0.000	9	319	0.000
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.000	9	319	0.000	9	319	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.004			0.007

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.

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TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY
PSVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.000	9	319	0.000	9	319	0.000
08:00 - 09:00	9	319	0.001	9	319	0.001	9	319	0.002
09:00 - 10:00	9	319	0.001	9	319	0.001	9	319	0.002
10:00 - 11:00	9	319	0.000	9	319	0.001	9	319	0.001
11:00 - 12:00	9	**319**	**0.002**	9	319	0.001	9	**319**	**0.003**
12:00 - 13:00	9	319	0.000	9	319	0.001	9	319	0.001
13:00 - 14:00	9	319	0.001	9	319	0.001	9	319	0.002
14:00 - 15:00	9	319	0.001	9	319	0.001	9	319	0.002
15:00 - 16:00	9	319	0.001	9	**319**	**0.002**	9	319	0.003
16:00 - 17:00	9	319	0.000	9	319	0.000	9	319	0.000
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.000	9	319	0.000	9	319	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.009			0.016

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.001	9	319	0.000	9	319	0.001
08:00 - 09:00	9	**319**	**0.025**	9	319	0.003	9	**319**	**0.028**
09:00 - 10:00	9	319	0.004	9	319	0.005	9	319	0.009
10:00 - 11:00	9	319	0.000	9	319	0.000	9	319	0.000
11:00 - 12:00	9	319	0.000	9	319	0.001	9	319	0.001
12:00 - 13:00	9	319	0.001	9	319	0.002	9	319	0.003
13:00 - 14:00	9	319	0.001	9	319	0.000	9	319	0.001
14:00 - 15:00	9	319	0.002	9	319	0.000	9	319	0.002
15:00 - 16:00	9	319	0.002	9	**319**	**0.024**	9	319	0.026
16:00 - 17:00	9	319	0.000	9	319	0.001	9	319	0.001
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.000	9	319	0.001	9	319	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.036			0.037			0.073

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
CARS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.032	9	319	0.007	9	319	0.039
08:00 - 09:00	9	**319**	**0.169**	9	319	0.118	9	**319**	**0.287**
09:00 - 10:00	9	319	0.020	9	319	0.031	9	319	0.051
10:00 - 11:00	9	319	0.006	9	319	0.006	9	319	0.012
11:00 - 12:00	9	319	0.015	9	319	0.008	9	319	0.023
12:00 - 13:00	9	319	0.023	9	319	0.025	9	319	0.048
13:00 - 14:00	9	319	0.014	9	319	0.020	9	319	0.034
14:00 - 15:00	9	319	0.046	9	319	0.017	9	319	0.063
15:00 - 16:00	9	319	0.079	9	**319**	**0.133**	9	319	0.212
16:00 - 17:00	9	319	0.029	9	319	0.047	9	319	0.076
17:00 - 18:00	9	319	0.016	9	319	0.026	9	319	0.042
18:00 - 19:00	9	319	0.010	9	319	0.009	9	319	0.019
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.459			0.447			0.906

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
LGVS
Calculation factor: 1 PUPILS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.001	9	319	0.001	9	319	0.002
08:00 - 09:00	9	319	0.003	9	319	0.003	9	319	0.006
09:00 - 10:00	9	319	0.003	9	319	0.002	9	319	0.005
10:00 - 11:00	9	319	0.002	9	319	0.002	9	319	0.004
11:00 - 12:00	9	**319**	**0.005**	9	**319**	**0.005**	9	**319**	**0.010**
12:00 - 13:00	9	319	0.003	9	319	0.003	9	319	0.006
13:00 - 14:00	9	319	0.003	9	319	0.003	9	319	0.006
14:00 - 15:00	9	319	0.003	9	319	0.004	9	319	0.007
15:00 - 16:00	9	319	0.002	9	319	0.002	9	319	0.004
16:00 - 17:00	9	319	0.002	9	319	0.002	9	319	0.004
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.001	9	319	0.001	9	319	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.028			0.028			0.056

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

MOTOR CYCLES

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	319	0.000	9	319	0.000	9	319	0.000
08:00 - 09:00	9	319	0.000	9	319	0.000	9	319	0.000
09:00 - 10:00	9	319	0.000	9	319	0.000	9	319	0.000
10:00 - 11:00	9	**319**	**0.000**	9	**319**	**0.000**	9	319	0.000
11:00 - 12:00	9	319	0.000	9	319	0.000	9	319	0.000
12:00 - 13:00	9	319	0.000	9	319	0.000	9	319	0.000
13:00 - 14:00	9	319	0.000	9	319	0.000	9	319	0.000
14:00 - 15:00	9	319	0.000	9	319	0.000	9	319	0.000
15:00 - 16:00	9	319	0.000	9	319	0.000	9	319	0.000
16:00 - 17:00	9	319	0.000	9	319	0.000	9	319	0.000
17:00 - 18:00	9	319	0.000	9	319	0.000	9	319	0.000
18:00 - 19:00	9	319	0.000	9	319	0.000	9	319	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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 L

2022

	Current Assumptions			Percentage Allocations	Future Assumptions			Proportional Reduction in HH
	Base HH	Future HH	HH Growth		Base HH	Future HH	HH Growth	
VoG (LA)	56402	57566	1164	100%	56402	56640	238	-926
VoG 001	2290	2344	54	5%	2290	2301	11	-43
VoG 002	2840	2890	50	4%	2840	2850	10	-40
VoG 003	2852	2919	67	6%	2852	2866	14	-53
VoG 004	3823	3902	79	7%	3823	3839	16	-63
VoG 005	4801	4900	99	9%	4801	4821	20	-79
VoG 006	3512	3584	72	6%	3512	3527	15	-57
VoG 007	3987	4069	82	7%	3987	4004	17	-65
VoG 008	4551	4644	93	8%	4551	4570	19	-74
VoG 009	3779	3857	78	7%	3779	3795	16	-62
VoG 010	2473	2523	50	4%	2473	2483	10	-40
VoG 011	3832	3911	79	7%	3832	3848	16	-63
VoG 012	4873	4973	100	9%	4873	4893	20	-80
VoG 013	4147	4232	85	7%	4147	4164	17	-68
VoG 014	4538	4631	93	8%	4538	4557	19	-74
VoG 015	4102	4187	85	7%	4102	4119	17	-68

2025

	Current Assumptions			Percentage Allocations	Future Assumptions			Proportional Reduction in HH
	Base HH	Future HH	HH Growth		Base HH	Future HH	HH Growth	
VoG (LA)	56402	58765	2363	100%	56402	57839	1437	-926
VoG 001	2290	2399	109	5%	2290	2356	66	-43
VoG 002	2840	2941	101	4%	2840	2901	61	-40
VoG 003	2852	2988	136	6%	2852	2935	83	-53
VoG 004	3823	3982	159	7%	3823	3920	97	-62
VoG 005	4801	5001	200	8%	4801	4923	122	-78
VoG 006	3512	3658	146	6%	3512	3601	89	-57
VoG 007	3987	4154	167	7%	3987	4089	102	-65
VoG 008	4551	4740	189	8%	4551	4666	115	-74
VoG 009	3779	3936	157	7%	3779	3874	95	-62
VoG 010	2473	2576	103	4%	2473	2536	63	-40
VoG 011	3832	3992	160	7%	3832	3929	97	-63
VoG 012	4873	5077	204	9%	4873	4997	124	-80
VoG 013	4147	4320	173	7%	4147	4252	105	-68
VoG 014	4538	4727	189	8%	4538	4653	115	-74
VoG 015	4102	4274	172	7%	4102	4207	105	-67

2029

	Current Assumptions			Percentage Allocations	Future Assumptions			Proportional Reduction in HH
	Base HH	Future HH	HH Growth		Base HH	Future HH	HH Growth	
VoG (LA)	56402	59901	3499	100%	56402	58975	2573	-926
VoG 001	2290	2452	162	5%	2290	2409	119	-43
VoG 002	2840	5989	3149	90%	2840	5156	2316	-833
VoG 003	2852	3054	202	6%	2852	3001	149	-53
VoG 004	3823	4059	236	7%	3823	3997	174	-62
VoG 005	4801	5097	296	8%	4801	5019	218	-78
VoG 006	3512	3729	217	6%	3512	3672	160	-57
VoG 007	3987	4234	247	7%	3987	4169	182	-65
VoG 008	4551	4831	280	8%	4551	4757	206	-74
VoG 009	3779	4012	233	7%	3779	3950	171	-62
VoG 010	2473	2525	52	1%	2473	2511	38	-14
VoG 011	3832	4069	237	7%	3832	4006	174	-63
VoG 012	4873	5174	301	9%	4873	5094	221	-80
VoG 013	4147	4403	256	7%	4147	4335	188	-68
VoG 014	4538	4818	280	8%	4538	4744	206	-74
VoG 015	4102	4356	254	7%	4102	4289	187	-67

Appendix M

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Northern Site Access.j9
Path: K:\T18\Jobs\T18.164 - Cosmeston\Analysis\Modelling\2020
Report generation date: 06/08/2020 16:47:34

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2025 + Com Dev + Dev									
Stream B-C	D3	0.0	6.12	0.02	A	D4	0.0	6.40	0.01	A
Stream B-A		0.2	15.50	0.18	C		0.1	12.33	0.07	B
Stream C-B		0.0	6.90	0.01	A		0.0	7.71	0.02	A
	2029 + Com Dev + Dev									
Stream B-C	D5	0.1	8.33	0.07	A	D6	0.0	7.00	0.02	A
Stream B-A		1.1	28.10	0.52	D		0.3	15.66	0.21	C
Stream C-B		0.0	7.16	0.02	A		0.1	8.47	0.06	A

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

File summary

File Description

Title	
Location	
Site number	
Date	04/01/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Katie
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D4	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D5	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D6	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2025 + Com Dev + Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

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

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lavernock Rd (N)		Major
B	Site Access		Minor
C	Lavernock Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.60		✓	3.00	125.0		-

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

Minor Arm Geometry

Arm	Minor arm type	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)
B	One lane plus flare	10.00	3.32	3.25	3.25	3.25		1.00	250	120

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	662	0.107	0.270	0.170	0.386
B-C	840	0.114	0.288	-	-
C-B	703	0.241	0.241	-	-

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
D3	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	664	100.000
B		ONE HOUR	✓	56	100.000
C		ONE HOUR	✓	982	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	647
	B	46	0	10
	C	978	4	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	6.12	0.0	A	9	14
B-A	0.18	15.50	0.2	C	42	63
C-A					897	1346
C-B	0.01	6.90	0.0	A	3	5
A-B					16	24
A-C					594	891

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	8	2	682	0.011	8	0.0	0.0	5.336	A
B-A	35	9	403	0.086	34	0.0	0.1	9.756	A
C-A	736	184			736				
C-B	3	0.71	582	0.005	3	0.0	0.0	6.216	A
A-B	13	3			13				
A-C	487	122			487				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	2	649	0.014	9	0.0	0.0	5.623	A
B-A	41	10	352	0.117	41	0.1	0.1	11.557	B
C-A	879	220			879				
C-B	3	0.85	558	0.006	3	0.0	0.0	6.485	A
A-B	15	4			15				
A-C	582	145			582				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	3	600	0.019	11	0.0	0.0	6.113	A
B-A	51	13	283	0.179	50	0.1	0.2	15.458	C
C-A	1077	269			1077				
C-B	4	1	526	0.008	4	0.0	0.0	6.897	A
A-B	19	5			19				
A-C	713	178			713				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	3	600	0.019	11	0.0	0.0	6.115	A
B-A	51	13	283	0.179	51	0.2	0.2	15.500	C
C-A	1077	269			1077				
C-B	4	1	526	0.008	4	0.0	0.0	6.897	A
A-B	19	5			19				
A-C	713	178			713				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	2	649	0.014	9	0.0	0.0	5.626	A
B-A	41	10	352	0.117	42	0.2	0.1	11.593	B
C-A	879	220			879				
C-B	3	0.85	558	0.006	3	0.0	0.0	6.488	A
A-B	15	4			15				
A-C	582	145			582				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	8	2	682	0.011	8	0.0	0.0	5.338	A
B-A	35	9	403	0.086	35	0.1	0.1	9.785	A
C-A	736	184			736				
C-B	3	0.71	582	0.005	3	0.0	0.0	6.219	A
A-B	13	3			13				
A-C	487	122			487				

2025 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.24	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	851	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	536	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	41	810
	B	20	0	4
	C	527	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.01	6.40	0.0	A	4	6
B-A	0.07	12.33	0.1	B	18	27
C-A					484	726
C-B	0.02	7.71	0.0	A	8	12
A-B					37	56
A-C					743	1115

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.82	654	0.005	3	0.0	0.0	5.529	A
B-A	15	4	424	0.035	15	0.0	0.0	8.793	A
C-A	397	99			397				
C-B	7	2	548	0.012	7	0.0	0.0	6.650	A
A-B	31	8			31				
A-C	610	152			610				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	4	0.98	618	0.006	4	0.0	0.0	5.863	A
B-A	18	4	378	0.047	18	0.0	0.0	9.998	A
C-A	474	118			474				
C-B	8	2	518	0.015	8	0.0	0.0	7.058	A
A-B	36	9			36				
A-C	728	182			728				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1	567	0.008	5	0.0	0.0	6.404	A
B-A	22	5	314	0.069	22	0.0	0.1	12.320	B
C-A	581	145			581				
C-B	10	2	476	0.021	10	0.0	0.0	7.713	A
A-B	45	11			45				
A-C	892	223			892				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1	567	0.008	5	0.0	0.0	6.404	A
B-A	22	5	314	0.069	22	0.1	0.1	12.328	B
C-A	581	145			581				
C-B	10	2	476	0.021	10	0.0	0.0	7.713	A
A-B	45	11			45				
A-C	892	223			892				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	4	0.98	618	0.006	4	0.0	0.0	5.866	A
B-A	18	4	378	0.047	18	0.1	0.0	10.006	B
C-A	474	118			474				
C-B	8	2	518	0.015	8	0.0	0.0	7.061	A
A-B	36	9			36				
A-C	728	182			728				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.82	654	0.005	3	0.0	0.0	5.530	A
B-A	15	4	424	0.035	15	0.0	0.0	8.801	A
C-A	397	99			397				
C-B	7	2	548	0.012	7	0.0	0.0	6.652	A
A-B	31	8			31				
A-C	610	152			610				

2029 + Com Dev + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	710	100.000
B		ONE HOUR	✓	154	100.000
C		ONE HOUR	✓	1012	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	47	662
	B	127	0	28
	C	1001	10	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.07	8.33	0.1	A	26	38
B-A	0.52	28.10	1.1	D	116	174
C-A					919	1378
C-B	0.02	7.16	0.0	A	10	14
A-B					43	65
A-C					608	912

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	641	0.033	21	0.0	0.0	5.801	A
B-A	95	24	392	0.243	94	0.0	0.3	12.021	B
C-A	754	188			754				
C-B	8	2	574	0.014	8	0.0	0.0	6.361	A
A-B	36	9			36				
A-C	499	125			499				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	585	0.043	25	0.0	0.0	6.424	A
B-A	114	28	340	0.335	113	0.3	0.5	15.830	C
C-A	900	225			900				
C-B	9	2	549	0.017	9	0.0	0.0	6.675	A
A-B	43	11			43				
A-C	595	149			595				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	467	0.066	31	0.0	0.1	8.240	A
B-A	139	35	267	0.522	137	0.5	1.0	27.280	D
C-A	1102	276			1102				
C-B	11	3	514	0.022	11	0.0	0.0	7.162	A
A-B	52	13			52				
A-C	729	182			729				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	31	8	463	0.066	31	0.1	0.1	8.330	A
B-A	139	35	267	0.522	139	1.0	1.1	28.097	D
C-A	1102	276			1102				
C-B	11	3	514	0.022	11	0.0	0.0	7.162	A
A-B	52	13			52				
A-C	729	182			729				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6	582	0.043	25	0.1	0.0	6.463	A
B-A	114	28	340	0.335	116	1.1	0.5	16.234	C
C-A	900	225			900				
C-B	9	2	549	0.017	9	0.0	0.0	6.675	A
A-B	43	11			43				
A-C	595	149			595				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5	640	0.033	21	0.0	0.0	5.818	A
B-A	95	24	392	0.243	96	0.5	0.3	12.184	B
C-A	754	188			754				
C-B	8	2	574	0.014	8	0.0	0.0	6.364	A
A-B	36	9			36				
A-C	499	125			499				

2029 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	943	100.000
B		ONE HOUR	✓	66	100.000
C		ONE HOUR	✓	565	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	112	831
	B	54	0	12
	C	541	25	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.02	7.00	0.0	A	11	16
B-A	0.21	15.66	0.3	C	50	75
C-A					496	744
C-B	0.06	8.47	0.1	A	23	34
A-B					103	154
A-C					762	1144

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	2	633	0.014	9	0.0	0.0	5.772	A
B-A	41	10	408	0.101	41	0.0	0.1	9.793	A
C-A	407	102			407				
C-B	18	5	531	0.035	18	0.0	0.0	7.016	A
A-B	84	21			84				
A-C	626	156			626				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	3	590	0.018	11	0.0	0.0	6.214	A
B-A	49	12	358	0.137	49	0.1	0.2	11.625	B
C-A	486	122			486				
C-B	22	6	498	0.044	22	0.0	0.0	7.563	A
A-B	101	25			101				
A-C	747	187			747				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	3	528	0.025	13	0.0	0.0	6.995	A
B-A	60	15	290	0.207	60	0.2	0.3	15.604	C
C-A	596	149			596				
C-B	27	7	452	0.060	27	0.0	0.1	8.469	A
A-B	123	31			123				
A-C	915	229			915				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	3	527	0.025	13	0.0	0.0	6.999	A
B-A	60	15	290	0.207	60	0.3	0.3	15.659	C
C-A	596	149			596				
C-B	27	7	452	0.060	27	0.1	0.1	8.470	A
A-B	123	31			123				
A-C	915	229			915				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	3	590	0.018	11	0.0	0.0	6.217	A
B-A	49	12	358	0.137	49	0.3	0.2	11.670	B
C-A	486	122			486				
C-B	22	6	498	0.044	22	0.1	0.0	7.565	A
A-B	101	25			101				
A-C	747	187			747				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	2	632	0.014	9	0.0	0.0	5.775	A
B-A	41	10	408	0.101	41	0.2	0.1	9.830	A
C-A	407	102			407				
C-B	18	5	531	0.035	19	0.0	0.0	7.020	A
A-B	84	21			84				
A-C	626	156			626				

Appendix N

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Southern Site Access- Revised.j9
Path: K:\T18\Jobs\T18.164 - Cosmeston\Analysis\Modelling\2020
Report generation date: 06/08/2020 16:57:34

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2022 + Com Dev + Dev									
Stream B-C	D1	0.0	5.57	0.01	A	D2	0.0	5.53	0.01	A
Stream B-A		0.1	11.68	0.05	B		0.0	9.23	0.02	A
Stream C-B		0.0	6.56	0.00	A		0.0	6.61	0.01	A
Stream A-BC		0.4	2.45	0.30	A		0.4	2.47	0.30	A
	2025 + Com Dev + Dev									
Stream B-C	D3	0.1	6.32	0.05	A	D4	0.0	6.33	0.01	A
Stream B-A		0.3	15.75	0.22	C		0.1	11.83	0.06	B
Stream C-B		0.1	7.38	0.08	A		0.0	7.53	0.01	A
Stream A-BC		0.5	2.61	0.34	A		0.7	2.99	0.42	A
	2029 + Com Dev + Dev									
Stream B-C	D5	0.1	6.47	0.05	A	D6	0.0	6.44	0.01	A
Stream B-A		0.3	17.23	0.24	C		0.1	12.41	0.06	B
Stream C-B		0.1	7.51	0.08	A		0.0	7.65	0.02	A
Stream A-BC		0.6	2.68	0.36	A		0.9	3.44	0.47	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	04/01/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Katie
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D2	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D3	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D4	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D5	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D6	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2022 + Com Dev + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lavernock Rd (N)		Major
B	Site Access		Minor
C	Lavernock Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.60		✓	3.00	125.0		-

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

Minor Arm Geometry

Arm	Minor arm type	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)
B	One lane plus flare	10.00	3.32	3.25	3.25	3.25		1.00	250	120

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
A	79.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	662	0.107	0.270	0.170	0.386
B-C	840	0.114	0.288	-	-
C-B	703	0.241	0.241	-	-

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	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	573	100.000
B		ONE HOUR	✓	17	100.000
C		ONE HOUR	✓	897	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	0.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	568
	B	14	0	3
	C	896	1	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.01	5.57	0.0	A	3	4
B-A	0.05	11.68	0.1	B	13	20
C-A					822	1233
C-B	0.00	6.56	0.0	A	1	2
A-BC	0.30	2.45	0.4	A	526	789

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	0.59		711	0.003	2	0.0	0.0	5.077	A
B-A	11	3		431	0.025	11	0.0	0.0	8.557	A
C-A	675	169				675				
C-B	0.88	0.22		598	0.001	0.87	0.0	0.0	6.024	A
A-BC	432	108	0.00	2112	0.204	431	0.0	0.3	2.160	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.70		686	0.004	3	0.0	0.0	5.271	A
B-A	13	3		386	0.033	13	0.0	0.0	9.644	A
C-A	806	201				806				
C-B	1	0.26		578	0.002	1	0.0	0.0	6.239	A
A-BC	515	129	0.00	2112	0.244	515	0.3	0.3	2.276	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.86		650	0.005	3	0.0	0.0	5.567	A
B-A	16	4		324	0.048	16	0.0	0.1	11.672	B
C-A	987	247				987				
C-B	1	0.32		550	0.002	1	0.0	0.0	6.561	A
A-BC	631	158	0.00	2112	0.299	631	0.3	0.4	2.454	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.86		650	0.005	3	0.0	0.0	5.568	A
B-A	16	4		324	0.048	16	0.1	0.1	11.681	B
C-A	987	247				987				
C-B	1	0.32		550	0.002	1	0.0	0.0	6.562	A
A-BC	631	158	0.00	2112	0.299	631	0.4	0.4	2.454	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.70		685	0.004	3	0.0	0.0	5.275	A
B-A	13	3		386	0.033	13	0.1	0.0	9.654	A
C-A	806	201				806				
C-B	1	0.26		578	0.002	1	0.0	0.0	6.241	A
A-BC	515	129	0.00	2112	0.244	516	0.4	0.3	2.277	A

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	0.59		711	0.003	2	0.0	0.0	5.082	A
B-A	11	3		431	0.025	11	0.0	0.0	8.569	A
C-A	675	169				675				
C-B	0.88	0.22		598	0.001	0.88	0.0	0.0	6.027	A
A-BC	432	108	0.00	2112	0.204	432	0.3	0.3	2.163	A

2022 + Com Dev + Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.40	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	581	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	500	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	0.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	13	568
	B	6	0	3
	C	497	3	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.01	5.53	0.0	A	3	4
B-A	0.02	9.23	0.0	A	6	9
C-A					456	684
C-B	0.01	6.61	0.0	A	3	4
A-BC	0.30	2.47	0.4	A	533	799

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	0.59		713	0.003	2	0.0	0.0	5.063	A
B-A	5	1		481	0.010	5	0.0	0.0	7.555	A
C-A	374	94				374				
C-B	2	0.52		597	0.003	2	0.0	0.0	6.049	A
A-BC	437	109	0.00	2112	0.207	436	0.0	0.3	2.167	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.70		688	0.004	3	0.0	0.0	5.250	A
B-A	6	1		446	0.013	6	0.0	0.0	8.180	A
C-A	447	112				447				
C-B	2	0.62		576	0.004	2	0.0	0.0	6.272	A
A-BC	522	130	0.00	2112	0.247	522	0.3	0.3	2.285	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.86		654	0.005	3	0.0	0.0	5.531	A
B-A	7	2		397	0.018	7	0.0	0.0	9.228	A
C-A	547	137				547				
C-B	3	0.76		548	0.006	3	0.0	0.0	6.605	A
A-BC	639	160	0.00	2112	0.303	639	0.3	0.4	2.467	A

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.86		654	0.005	3	0.0	0.0	5.532	A
B-A	7	2		397	0.018	7	0.0	0.0	9.230	A
C-A	547	137				547				
C-B	3	0.76		548	0.006	3	0.0	0.0	6.606	A
A-BC	639	160	0.00	2112	0.303	639	0.4	0.4	2.467	A

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	3	0.70		688	0.004	3	0.0	0.0	5.254	A
B-A	6	1		446	0.013	6	0.0	0.0	8.184	A
C-A	447	112				447				
C-B	2	0.62		576	0.004	2	0.0	0.0	6.276	A
A-BC	522	130	0.00	2112	0.247	522	0.4	0.3	2.288	A

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	0.59		713	0.003	2	0.0	0.0	5.067	A
B-A	5	1		481	0.010	5	0.0	0.0	7.561	A
C-A	374	94				374				
C-B	2	0.52		597	0.003	2	0.0	0.0	6.052	A
A-BC	437	109	0.00	2112	0.207	437	0.3	0.3	2.171	A

2025 + Com Dev + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.84	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	657	100.000
B		ONE HOUR	✓	87	100.000
C		ONE HOUR	✓	936	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	0.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	65	593
	B	59	0	28
	C	900	36	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	6.32	0.1	A	25	38
B-A	0.22	15.75	0.3	C	54	81
C-A					826	1239
C-B	0.08	7.38	0.1	A	33	49
A-BC	0.34	2.61	0.5	A	603	905

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5		685	0.030	21	0.0	0.0	5.416	A
B-A	44	11		411	0.108	44	0.0	0.1	9.804	A
C-A	678	169				678				
C-B	27	7		583	0.046	27	0.0	0.0	6.470	A
A-BC	495	124	0.00	2112	0.234	494	0.0	0.3	2.243	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6		652	0.038	25	0.0	0.0	5.741	A
B-A	53	13		361	0.147	53	0.1	0.2	11.660	B
C-A	809	202				809				
C-B	32	8		560	0.058	32	0.0	0.1	6.825	A
A-BC	591	148	0.00	2112	0.280	591	0.3	0.4	2.386	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	8		601	0.051	30	0.0	0.1	6.311	A
B-A	65	16		294	0.221	65	0.2	0.3	15.680	C
C-A	991	248				991				
C-B	40	10		528	0.075	40	0.1	0.1	7.377	A
A-BC	724	181	0.00	2112	0.343	723	0.4	0.5	2.615	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	8		600	0.051	30	0.1	0.1	6.316	A
B-A	65	16		294	0.222	65	0.3	0.3	15.748	C
C-A	991	248				991				
C-B	40	10		527	0.075	40	0.1	0.1	7.379	A
A-BC	724	181	0.00	2112	0.343	724	0.5	0.5	2.615	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6		651	0.038	25	0.1	0.0	5.750	A
B-A	53	13		361	0.147	54	0.3	0.2	11.717	B
C-A	809	202				809				
C-B	32	8		559	0.058	32	0.1	0.1	6.830	A
A-BC	591	148	0.00	2112	0.280	591	0.5	0.4	2.390	A

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5		685	0.030	21	0.0	0.0	5.425	A
B-A	44	11		410	0.108	45	0.2	0.1	9.855	A
C-A	678	169				678				
C-B	27	7		583	0.046	27	0.1	0.0	6.478	A
A-BC	495	124	0.00	2112	0.234	495	0.4	0.3	2.247	A

2025 + Com Dev + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	814	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	526	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	0.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	22	792
	B	17	0	7
	C	519	7	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.01	6.33	0.0	A	6	9
B-A	0.06	11.83	0.1	B	16	24
C-A					476	714
C-B	0.01	7.53	0.0	A	6	9
A-BC	0.42	2.99	0.7	A	747	1121

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1		661	0.008	5	0.0	0.0	5.490	A
B-A	13	3		431	0.030	13	0.0	0.0	8.608	A
C-A	391	98				391				
C-B	5	1		555	0.009	5	0.0	0.0	6.548	A
A-BC	613	153	0.00	2112	0.290	612	0.0	0.4	2.420	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	6	2		625	0.010	6	0.0	0.0	5.815	A
B-A	15	4		386	0.040	15	0.0	0.0	9.724	A
C-A	467	117				467				
C-B	6	1		525	0.011	6	0.0	0.0	6.928	A
A-BC	732	183	0.00	2112	0.347	732	0.4	0.5	2.633	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	2		576	0.013	7	0.0	0.0	6.332	A
B-A	19	5		323	0.058	19	0.0	0.1	11.821	B
C-A	571	143				571				
C-B	7	2		486	0.015	7	0.0	0.0	7.524	A
A-BC	897	224	0.00	2112	0.425	896	0.5	0.7	2.986	A

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	2		576	0.013	7	0.0	0.0	6.335	A
B-A	19	5		323	0.058	19	0.1	0.1	11.834	B
C-A	571	143				571				
C-B	7	2		485	0.015	7	0.0	0.0	7.527	A
A-BC	897	224	0.00	2112	0.425	897	0.7	0.7	2.989	A

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	6	2		625	0.010	6	0.0	0.0	5.822	A
B-A	15	4		385	0.040	15	0.1	0.0	9.739	A
C-A	467	117				467				
C-B	6	1		525	0.011	6	0.0	0.0	6.935	A
A-BC	732	183	0.00	2112	0.347	733	0.7	0.5	2.638	A

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1		660	0.008	5	0.0	0.0	5.496	A
B-A	13	3		430	0.030	13	0.0	0.0	8.627	A
C-A	391	98				391				
C-B	5	1		554	0.009	5	0.0	0.0	6.557	A
A-BC	613	153	0.00	2112	0.290	614	0.5	0.4	2.427	A

2029 + Com Dev + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm A - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.88	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	690	100.000
B		ONE HOUR	✓	87	100.000
C		ONE HOUR	✓	989	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	0.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	65	625
	B	59	0	28
	C	953	36	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.05	6.47	0.1	A	25	38
B-A	0.24	17.23	0.3	C	54	81
C-A					874	1311
C-B	0.08	7.51	0.1	A	33	49
A-BC	0.36	2.68	0.6	A	633	950

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5		678	0.031	21	0.0	0.0	5.479	A
B-A	44	11		397	0.112	44	0.0	0.1	10.174	B
C-A	717	179				717				
C-B	27	7		577	0.047	27	0.0	0.0	6.540	A
A-BC	520	130	0.00	2112	0.246	518	0.0	0.3	2.276	A

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6		642	0.039	25	0.0	0.0	5.830	A
B-A	53	13		345	0.154	53	0.1	0.2	12.297	B
C-A	856	214				856				
C-B	32	8		553	0.058	32	0.0	0.1	6.919	A
A-BC	620	155	0.00	2112	0.294	620	0.3	0.4	2.434	A

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	8		587	0.052	30	0.0	0.1	6.466	A
B-A	65	16		274	0.237	65	0.2	0.3	17.136	C
C-A	1049	262				1049				
C-B	40	10		519	0.076	39	0.1	0.1	7.511	A
A-BC	760	190	0.00	2112	0.360	759	0.4	0.6	2.682	A

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	8		587	0.052	30	0.1	0.1	6.473	A
B-A	65	16		274	0.237	65	0.3	0.3	17.230	C
C-A	1049	262				1049				
C-B	40	10		519	0.076	40	0.1	0.1	7.514	A
A-BC	760	190	0.00	2112	0.360	760	0.6	0.6	2.685	A

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	25	6		642	0.039	25	0.1	0.0	5.840	A
B-A	53	13		345	0.154	54	0.3	0.2	12.368	B
C-A	856	214				856				
C-B	32	8		552	0.059	32	0.1	0.1	6.924	A
A-BC	620	155	0.00	2112	0.294	621	0.6	0.4	2.437	A

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	21	5		677	0.031	21	0.0	0.0	5.486	A
B-A	44	11		397	0.112	45	0.2	0.1	10.230	B
C-A	717	179				717				
C-B	27	7		577	0.047	27	0.1	0.0	6.549	A
A-BC	520	130	0.00	2112	0.246	520	0.4	0.3	2.281	A

2029 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

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

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	843	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	555	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A	[ONEHOUR]	30.00
B		
C		

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	22	821
	B	17	0	7
	C	548	7	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.01	6.44	0.0	A	6	9
B-A	0.06	12.41	0.1	B	16	24
C-A					503	755
C-B	0.02	7.65	0.0	A	6	9
A-BC	0.47	3.44	0.9	A	773	1160

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1		654	0.008	5	0.0	0.0	5.543	A
B-A	13	3		421	0.031	13	0.0	0.0	8.807	A
C-A	413	103				413				
C-B	5	1		549	0.009	5	0.0	0.0	6.611	A
A-BC	635	159	22.59	2023	0.314	633	0.0	0.5	2.611	A

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	6	2		617	0.010	6	0.0	0.0	5.887	A
B-A	15	4		374	0.041	15	0.0	0.0	10.034	B
C-A	493	123				493				
C-B	6	1		519	0.011	6	0.0	0.0	7.012	A
A-BC	758	189	26.97	2006	0.378	757	0.5	0.6	2.908	A

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	2		566	0.013	7	0.0	0.0	6.438	A
B-A	19	5		309	0.061	19	0.0	0.1	12.389	B
C-A	604	151				604				
C-B	7	2		478	0.015	7	0.0	0.0	7.646	A
A-BC	928	232	33.03	1984	0.468	927	0.6	0.9	3.435	A

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	7	2		566	0.013	7	0.0	0.0	6.442	A
B-A	19	5		309	0.061	19	0.1	0.1	12.409	B
C-A	604	151				604				
C-B	7	2		478	0.015	7	0.0	0.0	7.650	A
A-BC	928	232	33.03	1984	0.468	928	0.9	0.9	3.440	A

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	6	2		617	0.010	6	0.0	0.0	5.892	A
B-A	15	4		374	0.041	15	0.1	0.0	10.055	B
C-A	493	123				493				
C-B	6	1		519	0.011	6	0.0	0.0	7.018	A
A-BC	758	189	26.97	2006	0.378	759	0.9	0.6	2.917	A

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	5	1		654	0.008	5	0.0	0.0	5.550	A
B-A	13	3		421	0.031	13	0.0	0.0	8.829	A
C-A	413	103				413				
C-B	5	1		549	0.009	5	0.0	0.0	6.618	A
A-BC	635	159	22.59	2023	0.314	635	0.6	0.5	2.622	A

Appendix O

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Cosmeston Drive - Revised.j9
Path: K:\T18\Jobs\T18.164 - Cosmeston\Analysis\Modelling\2020
Report generation date: 05/08/2020 15:23:18

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Base									
Stream B-AC	D1	1.2	30.14	0.56	D	D2	0.2	14.90	0.17	B
Stream C-A		2.1	8.52	0.51	A		0.8	6.12	0.30	A
Stream C-B		0.0	8.57	0.51	A		0.1	6.34	0.32	A
	2022 Base									
Stream B-AC	D3	1.4	33.06	0.59	D	D4	0.2	15.37	0.17	C
Stream C-A		1.8	7.19	0.48	A		0.8	5.69	0.29	A
Stream C-B		0.0	7.24	0.48	A		0.0	5.91	0.31	A
	2025 Base									
Stream B-AC	D5	1.5	36.27	0.62	E	D6	0.2	15.90	0.18	C
Stream C-A		1.9	7.35	0.49	A		0.8	5.76	0.30	A
Stream C-B		0.0	7.40	0.49	A		0.1	5.99	0.31	A
	2029 Base									
Stream B-AC	D7	1.8	40.55	0.65	E	D8	0.2	16.50	0.19	C
Stream C-A		2.0	7.53	0.50	A		0.8	5.83	0.31	A
Stream C-B		0.0	7.59	0.50	A		0.1	6.08	0.32	A
	2022 + Com Dev									
Stream B-AC	D9	1.5	35.12	0.61	E	D10	0.2	15.94	0.18	C
Stream C-A		1.9	7.40	0.49	A		0.8	5.75	0.30	A
Stream C-B		0.0	7.45	0.49	A		0.0	5.98	0.31	A
	2025 + Com Dev									
Stream B-AC	D11	1.6	38.76	0.64	E	D12	0.2	16.50	0.19	C
Stream C-A		2.0	7.57	0.50	A		0.8	5.82	0.30	A
Stream C-B		0.0	7.62	0.50	A		0.1	6.06	0.32	A
	2029 + Com Dev									
Stream B-AC	D13	1.9	43.66	0.67	E	D14	0.2	17.15	0.20	C
Stream C-A		2.1	7.76	0.52	A		0.9	5.89	0.31	A
Stream C-B		0.0	7.81	0.52	A		0.1	6.16	0.33	A
	2022 + Com Dev + Dev									
Stream B-AC	D15	1.5	36.30	0.61	E	D16	0.2	16.22	0.18	C
Stream C-A		2.0	7.52	0.50	A		0.8	5.78	0.30	A
Stream C-B		0.0	7.57	0.50	A		0.0	6.01	0.32	A
	2025 + Com Dev + Dev									
Stream B-AC	D17	3.0	73.32	0.78	F	D18	0.3	18.33	0.20	C
Stream C-A		2.7	8.83	0.58	A		1.0	6.57	0.35	A
Stream C-B		0.0	8.89	0.57	A		0.1	6.86	0.36	A
	2029 + Com Dev + Dev									
Stream B-AC	D19	5.9	138.87	0.92	F	D20	0.3	21.83	0.24	C
Stream C-A		3.4	10.22	0.63	B		1.2	6.90	0.38	A
Stream C-B		0.0	10.27	0.63	B		0.1	7.23	0.39	A

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

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

File summary

File Description

Title	
Location	
Site number	
Date	05/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Katie
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2019 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.38	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lavernock Rd (N)		Major
B	Cosmeston Drive		Minor
C	Lavernock Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.50		✓	3.00	200.0		-

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	2.40	110	21

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
C	6.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	492	0.084	0.212	0.133	0.302
B-C	599	0.086	0.217	-	-
C-B	750	0.272	0.272	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	550	100.000
B		ONE HOUR	✓	138	100.000
C		ONE HOUR	✓	806	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	50.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	28	521
	B	113	0	25
	C	798	8	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.56	30.14	1.2	D	127	190
C-A	0.51	8.52	2.1	A	732	1099
C-B	0.51	8.57	0.0	A	7	11
A-B					26	39
A-C					478	717

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	104	26		349	0.298	102	0.0	0.4	14.518	B
C-A	601	150	37.64	1768	0.340	597	0.0	1.0	6.092	A
C-B	6	2	37.64	18	0.342	6	0.0	0.0	6.115	A
A-B	21	5				21				
A-C	392	98				392				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31		316	0.392	123	0.4	0.6	18.573	C
C-A	717	179	44.95	1745	0.411	716	1.0	1.4	6.937	A
C-B	7	2	44.95	18	0.413	7	0.0	0.0	6.969	A
A-B	26	6				26				
A-C	469	117				469				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	152	38		271	0.560	150	0.6	1.2	29.097	D
C-A	879	220	55.05	1714	0.513	876	1.4	2.0	8.476	A
C-B	9	2	55.05	17	0.513	9	0.0	0.0	8.522	A
A-B	31	8				31				
A-C	574	143				574				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	152	38		271	0.561	152	1.2	1.2	30.142	D
C-A	879	220	55.05	1715	0.513	879	2.0	2.1	8.524	A
C-B	9	2	55.05	17	0.512	9	0.0	0.0	8.568	A
A-B	31	8				31				
A-C	574	143				574				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	124	31		316	0.393	126	1.2	0.7	19.233	C
C-A	717	179	44.95	1745	0.411	720	2.1	1.4	6.990	A
C-B	7	2	44.95	18	0.412	7	0.0	0.0	7.021	A
A-B	26	6				26				
A-C	469	117				469				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	104	26		348	0.298	105	0.7	0.4	14.867	B
C-A	601	150	37.64	1768	0.340	602	1.4	1.0	6.144	A
C-B	6	2	37.64	18	0.342	6	0.0	0.0	6.165	A
A-B	21	5				21				
A-C	392	98				392				

2019 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.73	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	785	100.000
B		ONE HOUR	✓	44	100.000
C		ONE HOUR	✓	473	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	30.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	93	691
	B	28	0	15
	C	447	26	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.17	14.90	0.2	B	40	60
C-A	0.30	6.12	0.8	A	410	615
C-B	0.32	6.34	0.1	A	24	36
A-B					86	128
A-C					635	952

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	8		366	0.090	32	0.0	0.1	10.772	B
C-A	337	84	22.59	1692	0.199	335	0.0	0.5	5.196	A
C-B	20	5	22.59	94	0.211	20	0.0	0.0	5.272	A
A-B	70	18				70				
A-C	521	130				521				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10		334	0.117	39	0.1	0.1	12.187	B
C-A	402	100	26.97	1671	0.241	401	0.5	0.6	5.552	A
C-B	24	6	26.97	93	0.254	24	0.0	0.0	5.679	A
A-B	84	21				84				
A-C	622	155				622				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12		290	0.166	48	0.1	0.2	14.864	B
C-A	492	123	33.03	1641	0.300	491	0.6	0.8	6.115	A
C-B	29	7	33.03	92	0.315	29	0.0	0.1	6.332	A
A-B	103	26				103				
A-C	761	190				761				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12		290	0.166	48	0.2	0.2	14.903	B
C-A	492	123	33.03	1642	0.300	492	0.8	0.8	6.118	A
C-B	29	7	33.03	92	0.315	29	0.1	0.1	6.335	A
A-B	103	26				103				
A-C	761	190				761				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	39	10		334	0.117	39	0.2	0.1	12.224	B
C-A	402	100	26.97	1671	0.240	403	0.8	0.6	5.560	A
C-B	24	6	26.97	93	0.254	24	0.1	0.0	5.685	A
A-B	84	21				84				
A-C	622	155				622				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	8		366	0.090	33	0.1	0.1	10.815	B
C-A	337	84	22.59	1692	0.199	337	0.6	0.5	5.209	A
C-B	20	5	22.59	94	0.211	20	0.0	0.0	5.283	A
A-B	70	18				70				
A-C	521	130				521				

2022 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	565	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	828	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	535
	B	116	0	26
	C	820	8	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.59	33.06	1.4	D	130	195
C-A	0.48	7.19	1.8	A	752	1128
C-B	0.48	7.24	0.0	A	8	11
A-B					27	40
A-C					491	737

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		344	0.310	105	0.0	0.4	14.946	B
C-A	617	154	0.00	1897	0.325	613	0.0	0.9	5.560	A
C-B	6	2	0.00	19	0.327	6	0.0	0.0	5.580	A
A-B	22	5				22				
A-C	403	101				403				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		311	0.410	126	0.4	0.7	19.430	C
C-A	737	184	0.00	1896	0.389	736	0.9	1.2	6.156	A
C-B	7	2	0.00	19	0.390	7	0.0	0.0	6.188	A
A-B	26	7				26				
A-C	481	120				481				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		264	0.590	153	0.7	1.3	31.675	D
C-A	903	226	0.00	1894	0.477	901	1.2	1.8	7.164	A
C-B	9	2	0.00	19	0.477	9	0.0	0.0	7.210	A
A-B	32	8				32				
A-C	590	147				590				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		264	0.591	156	1.3	1.4	33.061	D
C-A	903	226	0.00	1894	0.477	903	1.8	1.8	7.193	A
C-B	9	2	0.00	19	0.477	9	0.0	0.0	7.241	A
A-B	32	8				32				
A-C	590	147				590				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		310	0.410	130	1.4	0.7	20.242	C
C-A	737	184	0.00	1896	0.389	739	1.8	1.3	6.190	A
C-B	7	2	0.00	19	0.390	8	0.0	0.0	6.222	A
A-B	26	7				26				
A-C	481	120				481				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		343	0.311	108	0.7	0.5	15.337	C
C-A	617	154	0.00	1897	0.325	618	1.3	1.0	5.604	A
C-B	6	2	0.00	19	0.327	6	0.0	0.0	5.626	A
A-B	22	5				22				
A-C	403	101				403				

2022 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.59	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	805	100.000
B		ONE HOUR	✓	45	100.000
C		ONE HOUR	✓	485	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	96	709
	B	29	0	16
	C	458	27	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.17	15.37	0.2	C	41	62
C-A	0.29	5.69	0.8	A	421	631
C-B	0.31	5.91	0.0	A	25	37
A-B					88	132
A-C					651	976

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		362	0.093	33	0.0	0.1	10.932	B
C-A	345	86	0.00	1765	0.196	343	0.0	0.5	4.959	A
C-B	20	5	0.00	98	0.208	20	0.0	0.0	5.035	A
A-B	72	18				72				
A-C	534	133				534				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		329	0.122	40	0.1	0.1	12.436	B
C-A	412	103	0.00	1756	0.235	412	0.5	0.6	5.245	A
C-B	24	6	0.00	98	0.248	24	0.0	0.0	5.373	A
A-B	86	21				86				
A-C	637	159				637				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		283	0.174	49	0.1	0.2	15.333	C
C-A	505	126	0.00	1742	0.290	504	0.6	0.8	5.685	A
C-B	30	7	0.00	98	0.305	30	0.0	0.0	5.905	A
A-B	105	26				105				
A-C	781	195				781				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		283	0.174	49	0.2	0.2	15.375	C
C-A	505	126	0.00	1741	0.290	505	0.8	0.8	5.691	A
C-B	30	7	0.00	98	0.305	30	0.0	0.0	5.911	A
A-B	105	26				105				
A-C	781	195				781				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		329	0.122	40	0.2	0.1	12.480	B
C-A	412	103	0.00	1756	0.235	413	0.8	0.6	5.254	A
C-B	24	6	0.00	98	0.248	24	0.0	0.0	5.384	A
A-B	86	21				86				
A-C	637	159				637				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		362	0.093	34	0.1	0.1	10.980	B
C-A	345	86	0.00	1765	0.196	346	0.6	0.5	4.974	A
C-B	20	5	0.00	98	0.208	20	0.0	0.0	5.053	A
A-B	72	18				72				
A-C	534	133				534				

2025 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	578	100.000
B		ONE HOUR	✓	145	100.000
C		ONE HOUR	✓	848	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	548
	B	118	0	27
	C	839	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.62	36.27	1.5	E	133	200
C-A	0.49	7.35	1.9	A	770	1155
C-B	0.49	7.40	0.0	A	8	12
A-B					27	41
A-C					503	755

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		340	0.321	107	0.0	0.5	15.352	C
C-A	632	158	0.00	1897	0.333	628	0.0	1.0	5.623	A
C-B	6	2	0.00	19	0.335	6	0.0	0.0	5.646	A
A-B	22	6				22				
A-C	413	103				413				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		306	0.426	129	0.5	0.7	20.276	C
C-A	755	189	0.00	1896	0.398	753	1.0	1.3	6.250	A
C-B	8	2	0.00	19	0.399	8	0.0	0.0	6.284	A
A-B	27	7				27				
A-C	493	123				493				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		258	0.618	157	0.7	1.5	34.412	D
C-A	924	231	0.00	1894	0.488	922	1.3	1.9	7.319	A
C-B	9	2	0.00	19	0.488	9	0.0	0.0	7.368	A
A-B	33	8				33				
A-C	604	151				604				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		258	0.619	159	1.5	1.5	36.271	E
C-A	924	231	0.00	1894	0.488	924	1.9	1.9	7.352	A
C-B	9	2	0.00	19	0.488	9	0.0	0.0	7.402	A
A-B	33	8				33				
A-C	604	151				604				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		305	0.427	133	1.5	0.8	21.293	C
C-A	755	189	0.00	1896	0.398	757	1.9	1.3	6.288	A
C-B	8	2	0.00	19	0.399	8	0.0	0.0	6.323	A
A-B	27	7				27				
A-C	493	123				493				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		339	0.322	110	0.8	0.5	15.793	C
C-A	632	158	0.00	1897	0.333	633	1.3	1.0	5.668	A
C-B	6	2	0.00	19	0.335	6	0.0	0.0	5.691	A
A-B	22	6				22				
A-C	413	103				413				

2025 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	825	100.000
B		ONE HOUR	✓	46	100.000
C		ONE HOUR	✓	498	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	98	727
	B	30	0	16
	C	470	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	15.90	0.2	C	42	63
C-A	0.30	5.76	0.8	A	431	647
C-B	0.31	5.99	0.1	A	25	38
A-B					90	135
A-C					667	1001

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		358	0.096	34	0.0	0.1	11.101	B
C-A	354	88	0.00	1764	0.201	352	0.0	0.5	4.994	A
C-B	21	5	0.00	98	0.213	21	0.0	0.0	5.075	A
A-B	74	18				74				
A-C	547	137				547				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		324	0.127	41	0.1	0.1	12.705	B
C-A	423	106	0.00	1754	0.241	422	0.5	0.6	5.290	A
C-B	25	6	0.00	98	0.255	25	0.0	0.0	5.428	A
A-B	88	22				88				
A-C	653	163				653				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		277	0.182	50	0.1	0.2	15.847	C
C-A	518	129	0.00	1739	0.298	517	0.6	0.8	5.752	A
C-B	31	8	0.00	98	0.313	30	0.0	0.1	5.985	A
A-B	108	27				108				
A-C	800	200				800				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		277	0.182	50	0.2	0.2	15.895	C
C-A	518	129	0.00	1739	0.298	517	0.8	0.8	5.759	A
C-B	31	8	0.00	98	0.313	31	0.1	0.1	5.994	A
A-B	108	27				108				
A-C	800	200				800				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		324	0.127	41	0.2	0.1	12.751	B
C-A	423	106	0.00	1754	0.241	423	0.8	0.6	5.301	A
C-B	25	6	0.00	98	0.255	25	0.1	0.0	5.439	A
A-B	88	22				88				
A-C	653	163				653				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		358	0.096	35	0.1	0.1	11.153	B
C-A	354	88	0.00	1764	0.201	354	0.6	0.5	5.010	A
C-B	21	5	0.00	98	0.213	21	0.0	0.0	5.095	A
A-B	74	18				74				
A-C	547	137				547				

2029 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	593	100.000
B		ONE HOUR	✓	149	100.000
C		ONE HOUR	✓	869	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	562
	B	121	0	27
	C	861	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.65	40.55	1.8	E	136	205
C-A	0.50	7.53	2.0	A	790	1185
C-B	0.50	7.59	0.0	A	8	12
A-B					28	42
A-C					516	774

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		336	0.334	110	0.0	0.5	15.823	C
C-A	648	162	0.00	1897	0.342	644	0.0	1.0	5.693	A
C-B	7	2	0.00	19	0.343	7	0.0	0.0	5.717	A
A-B	23	6				23				
A-C	423	106				423				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		301	0.445	133	0.5	0.8	21.288	C
C-A	774	193	0.00	1895	0.408	772	1.0	1.4	6.355	A
C-B	8	2	0.00	19	0.409	8	0.0	0.0	6.390	A
A-B	28	7				28				
A-C	505	126				505				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		252	0.651	160	0.8	1.7	37.940	E
C-A	948	237	0.00	1894	0.500	945	1.4	2.0	7.497	A
C-B	10	2	0.00	19	0.501	10	0.0	0.0	7.548	A
A-B	34	8				34				
A-C	619	155				619				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		251	0.652	163	1.7	1.8	40.550	E
C-A	948	237	0.00	1894	0.500	948	2.0	2.0	7.534	A
C-B	10	2	0.00	19	0.501	10	0.0	0.0	7.586	A
A-B	34	8				34				
A-C	619	155				619				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		300	0.446	137	1.8	0.8	22.604	C
C-A	774	193	0.00	1895	0.408	776	2.0	1.4	6.399	A
C-B	8	2	0.00	19	0.409	8	0.0	0.0	6.434	A
A-B	28	7				28				
A-C	505	126				505				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		335	0.334	113	0.8	0.5	16.331	C
C-A	648	162	0.00	1897	0.342	649	1.4	1.0	5.744	A
C-B	7	2	0.00	19	0.343	7	0.0	0.0	5.768	A
A-B	23	6				23				
A-C	423	106				423				

2029 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	847	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	511	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	746
	B	31	0	16
	C	482	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.19	16.50	0.2	C	43	65
C-A	0.31	5.83	0.8	A	443	664
C-B	0.32	6.08	0.1	A	26	39
A-B					92	139
A-C					685	1027

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		353	0.100	35	0.0	0.1	11.292	B
C-A	363	91	0.00	1763	0.206	361	0.0	0.5	5.026	A
C-B	21	5	0.00	98	0.219	21	0.0	0.0	5.110	A
A-B	76	19				76				
A-C	562	140				562				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		319	0.133	42	0.1	0.2	13.005	B
C-A	434	108	0.00	1753	0.247	433	0.5	0.6	5.341	A
C-B	26	6	0.00	98	0.262	26	0.0	0.0	5.488	A
A-B	90	23				90				
A-C	671	168				671				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		270	0.192	51	0.2	0.2	16.440	C
C-A	531	133	0.00	1737	0.306	530	0.6	0.8	5.826	A
C-B	31	8	0.00	97	0.321	31	0.0	0.1	6.076	A
A-B	111	28				111				
A-C	821	205				821				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		270	0.192	52	0.2	0.2	16.498	C
C-A	531	133	0.00	1737	0.306	531	0.8	0.8	5.833	A
C-B	31	8	0.00	97	0.321	31	0.1	0.1	6.085	A
A-B	111	28				111				
A-C	821	205				821				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		319	0.133	43	0.2	0.2	13.061	B
C-A	434	108	0.00	1753	0.247	435	0.8	0.6	5.350	A
C-B	26	6	0.00	98	0.261	26	0.1	0.0	5.500	A
A-B	90	23				90				
A-C	671	168				671				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		353	0.100	36	0.2	0.1	11.346	B
C-A	363	91	0.00	1762	0.206	364	0.6	0.5	5.048	A
C-B	21	5	0.00	98	0.219	21	0.0	0.0	5.140	A
A-B	76	19				76				
A-C	562	140				562				

2022 + Com Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.19	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	576	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	854	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	546
	B	116	0	26
	C	846	8	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.61	35.12	1.5	E	130	195
C-A	0.49	7.40	1.9	A	776	1164
C-B	0.49	7.45	0.0	A	8	11
A-B					27	40
A-C					501	752

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		340	0.314	105	0.0	0.4	15.210	C
C-A	637	159	0.00	1898	0.336	633	0.0	1.0	5.641	A
C-B	6	2	0.00	19	0.337	6	0.0	0.0	5.662	A
A-B	22	5				22				
A-C	411	103				411				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		306	0.417	126	0.4	0.7	19.978	C
C-A	760	190	0.00	1897	0.401	759	1.0	1.3	6.278	A
C-B	7	2	0.00	19	0.402	7	0.0	0.0	6.311	A
A-B	26	7				26				
A-C	491	123				491				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		258	0.605	153	0.7	1.4	33.459	D
C-A	931	233	0.00	1895	0.491	929	1.3	1.9	7.365	A
C-B	9	2	0.00	19	0.492	9	0.0	0.0	7.414	A
A-B	32	8				32				
A-C	602	150				602				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		258	0.605	156	1.4	1.5	35.124	E
C-A	931	233	0.00	1895	0.491	931	1.9	1.9	7.399	A
C-B	9	2	0.00	19	0.492	9	0.0	0.0	7.448	A
A-B	32	8				32				
A-C	602	150				602				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		305	0.417	130	1.5	0.7	20.908	C
C-A	760	190	0.00	1897	0.401	763	1.9	1.3	6.316	A
C-B	7	2	0.00	19	0.402	8	0.0	0.0	6.348	A
A-B	26	7				26				
A-C	491	123				491				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		339	0.314	108	0.7	0.5	15.629	C
C-A	637	159	0.00	1898	0.336	638	1.3	1.0	5.686	A
C-B	6	2	0.00	19	0.337	6	0.0	0.0	5.709	A
A-B	22	5				22				
A-C	411	103				411				

2022 + Com Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	832	100.000
B		ONE HOUR	✓	45	100.000
C		ONE HOUR	✓	497	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	96	736
	B	29	0	16
	C	470	27	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	15.94	0.2	C	41	62
C-A	0.30	5.75	0.8	A	432	648
C-B	0.31	5.98	0.0	A	25	37
A-B					88	132
A-C					675	1013

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		357	0.094	33	0.0	0.1	11.117	B
C-A	354	89	0.00	1767	0.200	352	0.0	0.5	4.986	A
C-B	20	5	0.00	96	0.213	20	0.0	0.0	5.066	A
A-B	72	18				72				
A-C	554	139				554				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		323	0.125	40	0.1	0.1	12.727	B
C-A	423	106	0.00	1758	0.241	422	0.5	0.6	5.281	A
C-B	24	6	0.00	96	0.254	24	0.0	0.0	5.417	A
A-B	86	21				86				
A-C	662	165				662				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		275	0.179	49	0.1	0.2	15.893	C
C-A	518	129	0.00	1743	0.297	517	0.6	0.8	5.740	A
C-B	30	7	0.00	95	0.312	30	0.0	0.0	5.967	A
A-B	105	26				105				
A-C	810	203				810				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		275	0.179	49	0.2	0.2	15.939	C
C-A	518	129	0.00	1743	0.297	518	0.8	0.8	5.748	A
C-B	30	7	0.00	95	0.312	30	0.0	0.0	5.979	A
A-B	105	26				105				
A-C	810	203				810				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		323	0.125	40	0.2	0.1	12.775	B
C-A	423	106	0.00	1758	0.241	424	0.8	0.6	5.292	A
C-B	24	6	0.00	96	0.254	24	0.0	0.0	5.428	A
A-B	86	21				86				
A-C	662	165				662				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		356	0.094	34	0.1	0.1	11.165	B
C-A	354	89	0.00	1767	0.200	355	0.6	0.5	5.002	A
C-B	20	5	0.00	96	0.212	20	0.0	0.0	5.086	A
A-B	72	18				72				
A-C	554	139				554				

2025 + Com Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.61	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	589	100.000
B		ONE HOUR	✓	145	100.000
C		ONE HOUR	✓	874	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	559
	B	118	0	27
	C	865	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.64	38.76	1.6	E	133	200
C-A	0.50	7.57	2.0	A	794	1191
C-B	0.50	7.62	0.0	A	8	12
A-B					27	41
A-C					513	770

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		336	0.325	107	0.0	0.5	15.631	C
C-A	651	163	0.00	1898	0.343	647	0.0	1.0	5.706	A
C-B	6	2	0.00	19	0.345	6	0.0	0.0	5.729	A
A-B	22	6				22				
A-C	421	105				421				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		301	0.434	129	0.5	0.7	20.871	C
C-A	778	194	0.00	1896	0.410	777	1.0	1.4	6.374	A
C-B	8	2	0.00	19	0.411	8	0.0	0.0	6.408	A
A-B	27	7				27				
A-C	503	126				503				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		252	0.634	156	0.7	1.6	36.501	E
C-A	953	238	0.00	1895	0.503	950	1.4	2.0	7.530	A
C-B	9	2	0.00	19	0.503	9	0.0	0.0	7.580	A
A-B	33	8				33				
A-C	616	154				616				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		251	0.635	159	1.6	1.6	38.758	E
C-A	953	238	0.00	1895	0.503	953	2.0	2.0	7.568	A
C-B	9	2	0.00	19	0.503	9	0.0	0.0	7.619	A
A-B	33	8				33				
A-C	616	154				616				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		300	0.434	134	1.6	0.8	22.043	C
C-A	778	194	0.00	1896	0.410	780	2.0	1.4	6.417	A
C-B	8	2	0.00	19	0.411	8	0.0	0.0	6.451	A
A-B	27	7				27				
A-C	503	126				503				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		335	0.326	110	0.8	0.5	16.106	C
C-A	651	163	0.00	1898	0.343	653	1.4	1.0	5.755	A
C-B	6	2	0.00	19	0.345	6	0.0	0.0	5.780	A
A-B	22	6				22				
A-C	421	105				421				

2025 + Com Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	852	100.000
B		ONE HOUR	✓	46	100.000
C		ONE HOUR	✓	510	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	98	754
	B	30	0	16
	C	482	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.19	16.50	0.2	C	42	63
C-A	0.30	5.82	0.8	A	442	663
C-B	0.32	6.06	0.1	A	25	38
A-B					90	135
A-C					692	1038

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		352	0.098	34	0.0	0.1	11.292	B
C-A	363	91	0.00	1766	0.206	361	0.0	0.5	5.023	A
C-B	21	5	0.00	96	0.218	21	0.0	0.0	5.114	A
A-B	74	18				74				
A-C	568	142				568				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		318	0.130	41	0.1	0.1	13.005	B
C-A	433	108	0.00	1756	0.247	433	0.5	0.6	5.328	A
C-B	25	6	0.00	96	0.261	25	0.0	0.0	5.473	A
A-B	88	22				88				
A-C	678	169				678				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		269	0.188	50	0.1	0.2	16.446	C
C-A	531	133	0.00	1741	0.305	530	0.6	0.8	5.811	A
C-B	31	8	0.00	95	0.320	30	0.0	0.1	6.055	A
A-B	108	27				108				
A-C	830	208				830				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		269	0.188	50	0.2	0.2	16.502	C
C-A	531	133	0.00	1741	0.305	531	0.8	0.8	5.818	A
C-B	31	8	0.00	95	0.320	31	0.1	0.1	6.064	A
A-B	108	27				108				
A-C	830	208				830				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		317	0.130	42	0.2	0.2	13.062	B
C-A	433	108	0.00	1756	0.247	434	0.8	0.6	5.339	A
C-B	25	6	0.00	96	0.260	25	0.1	0.0	5.485	A
A-B	88	22				88				
A-C	678	169				678				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		352	0.098	35	0.2	0.1	11.346	B
C-A	363	91	0.00	1766	0.206	363	0.6	0.5	5.036	A
C-B	21	5	0.00	96	0.218	21	0.0	0.0	5.125	A
A-B	74	18				74				
A-C	568	142				568				

2029 + Com Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		8.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	604	100.000
B		ONE HOUR	✓	149	100.000
C		ONE HOUR	✓	895	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	573
	B	121	0	27
	C	887	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.67	43.66	1.9	E	136	205
C-A	0.52	7.76	2.1	A	814	1221
C-B	0.52	7.81	0.0	A	8	12
A-B					28	42
A-C					526	789

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		331	0.338	110	0.0	0.5	16.121	C
C-A	668	167	0.00	1897	0.352	663	0.0	1.1	5.778	A
C-B	7	2	0.00	19	0.353	7	0.0	0.0	5.803	A
A-B	23	6				23				
A-C	432	108				432				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		295	0.453	133	0.5	0.8	21.948	C
C-A	797	199	0.00	1896	0.420	796	1.1	1.4	6.485	A
C-B	8	2	0.00	19	0.422	8	0.0	0.0	6.521	A
A-B	28	7				28				
A-C	515	129				515				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		245	0.668	160	0.8	1.8	40.451	E
C-A	976	244	0.00	1894	0.515	974	1.4	2.1	7.719	A
C-B	10	2	0.00	19	0.515	10	0.0	0.0	7.771	A
A-B	34	8				34				
A-C	631	158				631				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		245	0.669	163	1.8	1.9	43.663	E
C-A	976	244	0.00	1894	0.515	976	2.1	2.1	7.761	A
C-B	10	2	0.00	19	0.515	10	0.0	0.0	7.813	A
A-B	34	8				34				
A-C	631	158				631				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		295	0.454	138	1.9	0.9	23.481	C
C-A	797	199	0.00	1896	0.420	800	2.1	1.5	6.530	A
C-B	8	2	0.00	19	0.421	8	0.0	0.0	6.567	A
A-B	28	7				28				
A-C	515	129				515				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		331	0.339	113	0.9	0.5	16.667	C
C-A	668	167	0.00	1897	0.352	669	1.5	1.1	5.833	A
C-B	7	2	0.00	19	0.353	7	0.0	0.0	5.858	A
A-B	23	6				23				
A-C	432	108				432				

2029 + Com Dev , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	874	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	523	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	773
	B	31	0	16
	C	494	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	17.15	0.2	C	43	65
C-A	0.31	5.89	0.9	A	454	681
C-B	0.33	6.16	0.1	A	26	39
A-B					92	139
A-C					709	1064

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		348	0.102	35	0.0	0.1	11.487	B
C-A	372	93	0.00	1764	0.211	370	0.0	0.5	5.057	A
C-B	21	5	0.00	96	0.224	21	0.0	0.0	5.150	A
A-B	76	19				76				
A-C	582	146				582				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		312	0.135	42	0.1	0.2	13.325	B
C-A	445	111	0.00	1754	0.253	444	0.5	0.6	5.380	A
C-B	26	6	0.00	96	0.267	26	0.0	0.0	5.534	A
A-B	90	23				90				
A-C	695	174				695				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		262	0.198	51	0.2	0.2	17.089	C
C-A	544	136	0.00	1738	0.313	544	0.6	0.9	5.887	A
C-B	31	8	0.00	95	0.328	31	0.0	0.1	6.148	A
A-B	111	28				111				
A-C	851	213				851				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		262	0.198	52	0.2	0.2	17.151	C
C-A	544	136	0.00	1738	0.313	544	0.9	0.9	5.894	A
C-B	31	8	0.00	95	0.328	31	0.1	0.1	6.157	A
A-B	111	28				111				
A-C	851	213				851				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		312	0.136	43	0.2	0.2	13.386	B
C-A	445	111	0.00	1754	0.253	445	0.9	0.6	5.391	A
C-B	26	6	0.00	96	0.267	26	0.1	0.0	5.547	A
A-B	90	23				90				
A-C	695	174				695				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		348	0.102	36	0.2	0.1	11.546	B
C-A	372	93	0.00	1764	0.211	373	0.6	0.5	5.076	A
C-B	21	5	0.00	96	0.223	21	0.0	0.0	5.172	A
A-B	76	19				76				
A-C	582	146				582				

2022 + Com Dev + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		7.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	581	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	868	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	552
	B	116	0	26
	C	860	8	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.61	36.30	1.5	E	130	195
C-A	0.50	7.52	2.0	A	789	1184
C-B	0.50	7.57	0.0	A	8	11
A-B					27	40
A-C					506	759

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		338	0.316	105	0.0	0.5	15.351	C
C-A	647	162	0.00	1898	0.341	643	0.0	1.0	5.686	A
C-B	6	2	0.00	18	0.343	6	0.0	0.0	5.708	A
A-B	22	5				22				
A-C	415	104				415				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		303	0.421	126	0.5	0.7	20.275	C
C-A	773	193	0.00	1897	0.408	772	1.0	1.3	6.344	A
C-B	7	2	0.00	18	0.409	7	0.0	0.0	6.377	A
A-B	26	7				26				
A-C	496	124				496				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		255	0.613	153	0.7	1.4	34.463	D
C-A	947	237	0.00	1895	0.500	944	1.3	1.9	7.481	A
C-B	9	2	0.00	18	0.500	9	0.0	0.0	7.528	A
A-B	32	8				32				
A-C	607	152				607				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39		254	0.614	156	1.4	1.5	36.297	E
C-A	947	237	0.00	1895	0.500	947	1.9	2.0	7.517	A
C-B	9	2	0.00	18	0.500	9	0.0	0.0	7.567	A
A-B	32	8				32				
A-C	607	152				607				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	127	32		302	0.421	130	1.5	0.8	21.274	C
C-A	773	193	0.00	1897	0.408	775	2.0	1.4	6.387	A
C-B	7	2	0.00	18	0.409	8	0.0	0.0	6.422	A
A-B	26	7				26				
A-C	496	124				496				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27		337	0.317	108	0.8	0.5	15.785	C
C-A	647	162	0.00	1898	0.341	649	1.4	1.0	5.734	A
C-B	6	2	0.00	18	0.343	6	0.0	0.0	5.757	A
A-B	22	5				22				
A-C	415	104				415				

2022 + Com Dev + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.62	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	844	100.000
B		ONE HOUR	✓	45	100.000
C		ONE HOUR	✓	504	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	96	749
	B	29	0	16
	C	477	27	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	16.22	0.2	C	41	62
C-A	0.30	5.78	0.8	A	438	656
C-B	0.32	6.01	0.0	A	25	37
A-B					88	132
A-C					687	1030

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		354	0.095	33	0.0	0.1	11.205	B
C-A	359	90	0.00	1768	0.203	357	0.0	0.5	4.999	A
C-B	20	5	0.00	95	0.215	20	0.0	0.0	5.082	A
A-B	72	18				72				
A-C	564	141				564				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		320	0.126	40	0.1	0.1	12.871	B
C-A	429	107	0.00	1759	0.244	428	0.5	0.6	5.301	A
C-B	24	6	0.00	94	0.257	24	0.0	0.0	5.439	A
A-B	86	21				86				
A-C	673	168				673				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		271	0.181	49	0.1	0.2	16.173	C
C-A	525	131	0.00	1744	0.301	524	0.6	0.8	5.771	A
C-B	30	7	0.00	94	0.316	30	0.0	0.0	6.005	A
A-B	105	26				105				
A-C	824	206				824				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	12		271	0.182	49	0.2	0.2	16.224	C
C-A	525	131	0.00	1744	0.301	525	0.8	0.8	5.778	A
C-B	30	7	0.00	94	0.316	30	0.0	0.0	6.014	A
A-B	105	26				105				
A-C	824	206				824				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	10		319	0.126	40	0.2	0.1	12.918	B
C-A	429	107	0.00	1759	0.244	429	0.8	0.6	5.313	A
C-B	24	6	0.00	95	0.257	24	0.0	0.0	5.453	A
A-B	86	21				86				
A-C	673	168				673				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	8		354	0.095	34	0.1	0.1	11.256	B
C-A	359	90	0.00	1768	0.203	360	0.6	0.5	5.015	A
C-B	20	5	0.00	95	0.215	20	0.0	0.0	5.100	A
A-B	72	18				72				
A-C	564	141				564				

2025 + Com Dev + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		10.54	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	702	100.000
B		ONE HOUR	✓	145	100.000
C		ONE HOUR	✓	1000	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	30	672
	B	118	0	27
	C	991	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.78	73.32	3.0	F	133	200
C-A	0.58	8.83	2.7	A	909	1364
C-B	0.57	8.89	0.0	A	8	12
A-B					27	41
A-C					616	925

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		305	0.358	107	0.0	0.5	17.967	C
C-A	746	187	0.00	1900	0.393	741	0.0	1.3	6.146	A
C-B	6	2	0.00	16	0.394	6	0.0	0.0	6.175	A
A-B	22	6				22				
A-C	506	126				506				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		264	0.495	129	0.5	0.9	26.391	D
C-A	891	223	0.00	1899	0.469	889	1.3	1.7	7.063	A
C-B	8	2	0.00	16	0.470	8	0.0	0.0	7.103	A
A-B	27	7				27				
A-C	604	151				604				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		205	0.778	153	0.9	2.7	61.658	F
C-A	1091	273	0.00	1897	0.575	1088	1.7	2.6	8.759	A
C-B	9	2	0.00	16	0.574	9	0.0	0.0	8.815	A
A-B	33	8				33				
A-C	740	185				740				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	160	40		205	0.780	158	2.7	3.0	73.323	F
C-A	1091	273	0.00	1897	0.575	1091	2.6	2.7	8.833	A
C-B	9	2	0.00	16	0.574	9	0.0	0.0	8.889	A
A-B	33	8				33				
A-C	740	185				740				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	130	33		263	0.496	138	3.0	1.0	30.447	D
C-A	891	223	0.00	1899	0.469	894	2.7	1.8	7.140	A
C-B	8	2	0.00	16	0.470	8	0.0	0.0	7.180	A
A-B	27	7				27				
A-C	604	151				604				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	109	27		304	0.359	111	1.0	0.6	18.788	C
C-A	746	187	0.00	1900	0.393	748	1.8	1.3	6.222	A
C-B	6	2	0.00	16	0.394	6	0.0	0.0	6.251	A
A-B	22	6				22				
A-C	506	126				506				

2025 + Com Dev + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.95	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	916	100.000
B		ONE HOUR	✓	46	100.000
C		ONE HOUR	✓	551	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	30.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	98	818
	B	30	0	16
	C	523	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.20	18.33	0.3	C	42	63
C-A	0.35	6.57	1.0	A	480	720
C-B	0.36	6.86	0.1	A	25	38
A-B					90	135
A-C					751	1126

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		338	0.102	34	0.0	0.1	11.816	B
C-A	394	98	22.59	1699	0.232	392	0.0	0.6	5.399	A
C-B	21	5	22.59	85	0.244	21	0.0	0.0	5.504	A
A-B	74	18				74				
A-C	616	154				616				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		300	0.137	41	0.1	0.2	13.869	B
C-A	470	118	26.97	1677	0.281	470	0.6	0.7	5.842	A
C-B	25	6	26.97	85	0.294	25	0.0	0.0	6.010	A
A-B	88	22				88				
A-C	736	184				736				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		247	0.204	50	0.2	0.3	18.253	C
C-A	576	144	33.03	1645	0.350	575	0.7	1.0	6.565	A
C-B	31	8	33.03	84	0.364	30	0.0	0.1	6.850	A
A-B	108	27				108				
A-C	901	225				901				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	13		247	0.204	50	0.3	0.3	18.334	C
C-A	576	144	33.03	1646	0.350	576	1.0	1.0	6.572	A
C-B	31	8	33.03	84	0.364	31	0.1	0.1	6.855	A
A-B	108	27				108				
A-C	901	225				901				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	10		300	0.137	42	0.3	0.2	13.943	B
C-A	470	118	26.97	1678	0.280	472	1.0	0.7	5.854	A
C-B	25	6	26.97	85	0.293	25	0.1	0.0	6.023	A
A-B	88	22				88				
A-C	736	184				736				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		338	0.102	35	0.2	0.1	11.878	B
C-A	394	98	22.59	1700	0.232	395	0.7	0.6	5.415	A
C-B	21	5	22.59	86	0.244	21	0.0	0.0	5.520	A
A-B	74	18				74				
A-C	616	154				616				

2029 + Com Dev + Dev , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm C - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		15.98	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	746	100.000
B		ONE HOUR	✓	149	100.000
C		ONE HOUR	✓	1102	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	31	716
	B	121	0	27
	C	1093	9	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.92	138.87	5.9	F	136	205
C-A	0.63	10.22	3.4	B	1003	1505
C-B	0.63	10.27	0.0	B	8	12
A-B					28	42
A-C					657	985

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		288	0.389	110	0.0	0.6	19.902	C
C-A	823	206	0.00	1902	0.433	817	0.0	1.5	6.564	A
C-B	7	2	0.00	15	0.434	7	0.0	0.0	6.597	A
A-B	23	6				23				
A-C	539	135				539				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		243	0.551	132	0.6	1.1	31.843	D
C-A	983	246	0.00	1900	0.517	980	1.5	2.1	7.741	A
C-B	8	2	0.00	15	0.517	8	0.0	0.0	7.783	A
A-B	28	7				28				
A-C	643	161				643				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		179	0.917	150	1.1	4.6	98.269	F
C-A	1204	301	0.00	1898	0.634	1199	2.1	3.3	10.090	B
C-B	10	2	0.00	15	0.632	10	0.0	0.0	10.138	B
A-B	34	8				34				
A-C	788	197				788				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	164	41		178	0.921	158	4.6	5.9	138.871	F
C-A	1204	301	0.00	1898	0.634	1203	3.3	3.4	10.221	B
C-B	10	2	0.00	15	0.632	10	0.0	0.0	10.272	B
A-B	34	8				34				
A-C	788	197				788				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	134	33		241	0.554	152	5.9	1.4	46.496	E
C-A	983	246	0.00	1900	0.517	988	3.4	2.2	7.865	A
C-B	8	2	0.00	15	0.517	8	0.0	0.0	7.909	A
A-B	28	7				28				
A-C	643	161				643				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	112	28		287	0.390	115	1.4	0.7	21.212	C
C-A	823	206	0.00	1902	0.433	825	2.2	1.5	6.664	A
C-B	7	2	0.00	15	0.434	7	0.0	0.0	6.697	A
A-B	23	6				23				
A-C	539	135				539				

2029 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1009	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	599	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A		
B		
C	[ONEHOUR]	30.00

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	909
	B	31	0	16
	C	570	28	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.24	21.83	0.3	C	43	65
C-A	0.38	6.90	1.2	A	523	785
C-B	0.39	7.23	0.1	A	26	39
A-B					92	139
A-C					834	1251

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		319	0.111	35	0.0	0.1	12.656	B
C-A	429	107	22.59	1702	0.252	427	0.0	0.6	5.537	A
C-B	21	5	22.59	81	0.265	21	0.0	0.0	5.662	A
A-B	76	19				76				
A-C	684	171				684				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		277	0.153	42	0.1	0.2	15.328	C
C-A	513	128	26.97	1679	0.305	512	0.6	0.8	6.047	A
C-B	26	6	26.97	80	0.318	26	0.0	0.0	6.248	A
A-B	90	23				90				
A-C	817	204				817				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		217	0.239	51	0.2	0.3	21.674	C
C-A	628	157	33.03	1645	0.382	627	0.8	1.2	6.891	A
C-B	31	8	33.03	79	0.394	31	0.0	0.1	7.229	A
A-B	111	28				111				
A-C	1001	250				1001				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	13		217	0.239	52	0.3	0.3	21.826	C
C-A	628	157	33.03	1646	0.382	628	1.2	1.2	6.899	A
C-B	31	8	33.03	80	0.394	31	0.1	0.1	7.234	A
A-B	111	28				111				
A-C	1001	250				1001				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	11		276	0.153	43	0.3	0.2	15.440	C
C-A	513	128	26.97	1680	0.305	514	1.2	0.8	6.059	A
C-B	26	6	26.97	80	0.318	26	0.1	0.0	6.258	A
A-B	90	23				90				
A-C	817	204				817				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9		318	0.111	36	0.2	0.1	12.741	B
C-A	429	107	22.59	1703	0.252	430	0.8	0.6	5.558	A
C-B	21	5	22.59	81	0.264	21	0.0	0.0	5.684	A
A-B	76	19				76				
A-C	684	171				684				

Appendix P

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Westbourne Rd - Base.j9
Path: K:\T18\Jobs\T18.164 - Cosmeston\Analysis\Modelling\2020
Report generation date: 06/08/2020 17:27:36

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2019 Base										
Stream B-C	D1	0.9	11.02	0.46	B	D2	6.3	45.54	0.88	E
Stream B-A		0.0	33.54	0.04	D		0.0	53.52	0.05	F
Stream C-AB		83.3	316.37	1.15	F		0.5	8.33	0.31	A
2022 Base										
Stream B-C	D3	0.9	11.41	0.48	B	D4	7.6	54.27	0.91	F
Stream B-A		0.0	39.47	0.05	E		0.1	88.08	0.08	F
Stream C-AB		100.3	393.19	1.18	F		0.6	8.40	0.32	A
2025 Base										
Stream B-C	D5	1.0	11.81	0.49	B	D6	9.6	65.92	0.94	F
Stream B-A		0.1	47.17	0.06	E		0.2	307.63	0.25	F
Stream C-AB		116.6	465.03	1.22	F		0.6	8.47	0.33	A
2029 Base										
Stream B-C	D7	1.0	12.32	0.51	B	D8	12.4	82.17	0.97	F
Stream B-A		0.1	60.32	0.07	F		0.6	1242.18	0.84	F
Stream C-AB		135.7	546.14	1.25	F		0.6	8.55	0.34	A
2022 + Com Dev										
Stream B-C	D9	1.0	11.94	0.50	B	D10	11.7	77.27	0.96	F
Stream B-A		0.1	50.96	0.06	F		0.6	1307.92	0.88	F
Stream C-AB		125.7	511.88	1.24	F		0.6	8.61	0.34	A
2025 + Com Dev										
Stream B-C	D11	1.1	12.43	0.52	B	D12	15.2	95.82	0.99	F
Stream B-A		0.1	65.14	0.08	F		0.7	1355.22	0.99	F
Stream C-AB		146.0	589.84	1.27	F		0.7	8.69	0.35	A
2029 + Com Dev										
Stream B-C	D13	1.1	13.15	0.54	B	D14	20.0	119.41	1.02	F
Stream B-A		0.1	94.22	0.11	F		0.8	1371.90	1.02	F
Stream C-AB		171.6	683.61	1.31	F		0.7	8.77	0.36	A
2022 + Com Dev + Dev										
Stream B-C	D15	1.0	12.07	0.51	B	D16	12.7	83.40	0.97	F
Stream B-A		0.1	55.37	0.07	F		0.6	1280.37	0.83	F
Stream C-AB		131.5	532.57	1.25	F		0.6	8.66	0.35	A
2025 + Com Dev + Dev										
Stream B-C	D17	155.0	1759.01	9999999999.00	F	D18	24.0	140.14	1.04	F
Stream B-A		2.2	2429.01	9999999999.00	F		0.8	1433.58	1.04	F
Stream C-AB		235.5	904.52	1.38	F		0.8	8.94	0.38	A
2029 + Com Dev + Dev										
Stream B-C	D19	222.9	59999940.00	9999999999.00	F	D20	45.9	245.62	1.13	F
Stream B-A		3.3	59999940.00	9999999999.00	F		0.9	1542.43	1.12	F
Stream C-AB		320.9	1181.73	1.48	F		1.0	9.35	0.42	A

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

File summary

File Description

Title	
Location	
Site number	
Date	05/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Katie
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2019 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		185.78	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lavernock Rd (N)		Major
B	Westbourne Rd		Minor
C	Lavernock Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.50			77.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	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)
B	One lane plus flare	8.80	4.90	3.30	3.00	3.00	✓	1.00	86	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	474	0.081	0.204	0.128	0.291
B-C	710	0.102	0.257	-	-
C-B	619	0.224	0.224	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	311	100.000
B		ONE HOUR	✓	264	100.000
C		ONE HOUR	✓	961	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	309
	B	4	0	260
	C	397	565	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.46	11.02	0.9	B	238	357
B-A	0.04	33.54	0.0	D	4	6
C-AB	1.15	316.37	83.3	F	819	1229
C-A					63	95
A-B					2	3
A-C					284	426

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	49	648	0.302	194	0.0	0.4	7.980	A
B-A	3	0.76	257	0.012	3	0.0	0.0	14.168	B
C-AB	594	148	790	0.751	579	0.0	3.8	16.585	C
C-A	130	33			130				
A-B	2	0.38			2				
A-C	233	58			233				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	233	58	635	0.367	233	0.4	0.6	9.023	A
B-A	4	0.91	209	0.017	4	0.0	0.0	17.533	C
C-AB	805	201	881	0.914	779	3.8	10.4	34.334	D
C-A	59	15			59				
A-B	2	0.46			2				
A-C	278	70			278				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	286	71	617	0.463	285	0.6	0.9	10.903	B
B-A	4	1	142	0.031	4	0.0	0.0	26.112	D
C-AB	1058	265	922	1.148	907	10.4	48.3	125.088	F
C-A	0	0			0				
A-B	2	0.56			2				
A-C	341	85			341				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	286	71	616	0.464	286	0.9	0.9	11.019	B
B-A	4	1	112	0.040	4	0.0	0.0	33.543	D
C-AB	1058	265	922	1.148	918	48.3	83.3	268.122	F
C-A	0	0			0				
A-B	2	0.56			2				
A-C	341	85			341				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	233	58	634	0.368	234	0.9	0.6	9.134	A
B-A	4	0.91	141	0.026	4	0.0	0.0	26.162	D
C-AB	805	201	882	0.913	887	83.3	62.8	316.372	F
C-A	59	15			59				
A-B	2	0.46			2				
A-C	278	70			278				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	195	49	647	0.302	196	0.6	0.4	8.074	A
B-A	3	0.76	200	0.015	3	0.0	0.0	18.250	C
C-AB	594	148	791	0.751	820	62.8	6.3	189.412	F
C-A	130	33			130				
A-B	2	0.38			2				
A-C	233	58			233				

2019 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		18.09	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	375	100.000
B		ONE HOUR	✓	486	100.000
C		ONE HOUR	✓	440	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	370
	B	3	0	483
	C	293	147	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.88	45.54	6.3	E	443	664
B-A	0.05	53.52	0.0	F	3	4
C-AB	0.31	8.33	0.5	A	153	230
C-A					251	376
A-B					5	7
A-C					340	509

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	363	91	637	0.570	358	0.0	1.3	12.813	B
B-A	2	0.57	290	0.008	2	0.0	0.0	12.516	B
C-AB	119	30	599	0.199	118	0.0	0.3	7.472	A
C-A	212	53			212				
A-B	4	0.95			4				
A-C	279	70			279				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	434	108	623	0.697	430	1.3	2.2	18.539	C
B-A	3	0.68	217	0.013	3	0.0	0.0	16.813	C
C-AB	148	37	607	0.243	147	0.3	0.4	7.830	A
C-A	248	62			248				
A-B	5	1			5				
A-C	333	83			333				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	531	133	603	0.881	518	2.2	5.6	37.659	E
B-A	3	0.84	87	0.038	3	0.0	0.0	42.885	E
C-AB	192	48	625	0.308	192	0.4	0.5	8.303	A
C-A	292	73			292				
A-B	6	1			6				
A-C	407	102			407				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	531	133	603	0.881	529	5.6	6.3	45.536	E
B-A	3	0.84	71	0.047	3	0.0	0.0	53.525	F
C-AB	192	48	625	0.308	192	0.5	0.5	8.328	A
C-A	292	73			292				
A-B	6	1			6				
A-C	407	102			407				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	434	108	623	0.697	449	6.3	2.5	22.483	C
B-A	3	0.68	200	0.014	3	0.0	0.0	18.246	C
C-AB	148	37	607	0.243	148	0.5	0.4	7.863	A
C-A	248	62			248				
A-B	5	1			5				
A-C	333	83			333				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	363	91	637	0.570	368	2.5	1.4	13.712	B
B-A	2	0.57	284	0.008	2	0.0	0.0	12.779	B
C-AB	119	30	599	0.199	120	0.4	0.3	7.516	A
C-A	212	53			212				
A-B	4	0.95			4				
A-C	279	70			279				

2022 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		233.15	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	320	100.000
B		ONE HOUR	✓	271	100.000
C		ONE HOUR	✓	988	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	318
	B	4	0	267
	C	407	580	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.48	11.41	0.9	B	245	367
B-A	0.05	39.47	0.0	E	4	6
C-AB	1.18	393.19	100.3	F	851	1277
C-A					55	82
A-B					2	3
A-C					292	437

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	201	50	646	0.311	199	0.0	0.4	8.103	A
B-A	3	0.78	251	0.013	3	0.0	0.0	14.523	B
C-AB	620	155	802	0.774	603	0.0	4.3	17.623	C
C-A	123	31			123				
A-B	2	0.39			2				
A-C	239	60			239				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	240	60	633	0.379	239	0.4	0.6	9.215	A
B-A	4	0.94	201	0.019	4	0.0	0.0	18.242	C
C-AB	846	212	898	0.942	812	4.3	12.6	39.958	E
C-A	42	10			42				
A-B	2	0.47			2				
A-C	286	71			286				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	294	73	614	0.478	292	0.6	0.9	11.256	B
B-A	5	1	132	0.035	5	0.0	0.0	28.334	D
C-AB	1087	272	918	1.184	908	12.6	57.6	148.137	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	350	87			350				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	294	73	612	0.480	294	0.9	0.9	11.412	B
B-A	5	1	96	0.048	5	0.0	0.0	39.472	E
C-AB	1087	272	919	1.184	916	57.6	100.3	319.471	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	350	87			350				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	240	60	631	0.380	241	0.9	0.6	9.353	A
B-A	4	0.94	120	0.031	4	0.0	0.0	31.056	D
C-AB	846	212	899	0.941	902	100.3	86.5	393.187	F
C-A	42	10			42				
A-B	2	0.47			2				
A-C	286	71			286				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	201	50	645	0.311	201	0.6	0.5	8.213	A
B-A	3	0.78	174	0.018	3	0.0	0.0	21.096	C
C-AB	620	155	802	0.773	838	86.5	32.1	297.356	F
C-A	123	31			123				
A-B	2	0.39			2				
A-C	239	60			239				

2022 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		21.43	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	385	100.000
B		ONE HOUR	✓	498	100.000
C		ONE HOUR	✓	451	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	379
	B	3	0	495
	C	300	151	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.91	54.27	7.6	F	454	681
B-A	0.08	88.08	0.1	F	3	4
C-AB	0.32	8.40	0.6	A	158	237
C-A					256	384
A-B					5	7
A-C					348	522

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	373	93	635	0.586	367	0.0	1.4	13.301	B
B-A	2	0.59	282	0.008	2	0.0	0.0	12.881	B
C-AB	123	31	600	0.205	122	0.0	0.3	7.515	A
C-A	217	54			217				
A-B	4	0.98			4				
A-C	286	71			286				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	445	111	621	0.717	441	1.4	2.4	19.777	C
B-A	3	0.70	204	0.014	3	0.0	0.0	17.873	C
C-AB	152	38	609	0.250	152	0.3	0.4	7.881	A
C-A	253	63			253				
A-B	5	1			5				
A-C	341	85			341				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	545	136	600	0.908	528	2.4	6.6	42.672	E
B-A	3	0.86	66	0.052	3	0.0	0.1	57.594	F
C-AB	199	50	629	0.317	198	0.4	0.5	8.371	A
C-A	298	74			298				
A-B	6	1			6				
A-C	418	104			418				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	545	136	600	0.908	541	6.6	7.6	54.268	F
B-A	3	0.86	44	0.078	3	0.1	0.1	88.081	F
C-AB	199	50	629	0.317	199	0.5	0.6	8.397	A
C-A	298	74			298				
A-B	6	1			6				
A-C	418	104			418				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	445	111	620	0.717	464	7.6	2.8	25.653	D
B-A	3	0.70	182	0.015	3	0.1	0.0	20.129	C
C-AB	152	38	609	0.250	153	0.6	0.4	7.920	A
C-A	253	63			253				
A-B	5	1			5				
A-C	341	85			341				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	373	93	635	0.587	378	2.8	1.5	14.386	B
B-A	2	0.59	275	0.009	2	0.0	0.0	13.207	B
C-AB	123	31	600	0.205	123	0.4	0.3	7.563	A
C-A	217	54			217				
A-B	4	0.98			4				
A-C	286	71			286				

2025 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		278.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	327	100.000
B		ONE HOUR	✓	277	100.000
C		ONE HOUR	✓	1011	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	325
	B	4	0	273
	C	417	594	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.49	11.81	1.0	B	251	376
B-A	0.06	47.17	0.1	E	4	6
C-AB	1.22	465.03	116.6	F	881	1321
C-A					47	70
A-B					2	3
A-C					298	448

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	206	51	644	0.319	204	0.0	0.5	8.217	A
B-A	3	0.80	245	0.013	3	0.0	0.0	14.864	B
C-AB	645	161	813	0.794	626	0.0	4.8	18.692	C
C-A	116	29			116				
A-B	2	0.40			2				
A-C	245	61			245				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	245	61	631	0.389	245	0.5	0.6	9.393	A
B-A	4	0.96	194	0.020	4	0.0	0.0	18.937	C
C-AB	884	221	915	0.967	842	4.8	15.2	46.149	E
C-A	25	6			25				
A-B	2	0.48			2				
A-C	292	73			292				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	301	75	612	0.492	299	0.6	1.0	11.597	B
B-A	5	1	122	0.039	5	0.0	0.0	30.758	D
C-AB	1113	278	915	1.216	907	15.2	66.7	171.384	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	358	90			358				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	301	75	608	0.494	301	1.0	1.0	11.809	B
B-A	5	1	81	0.058	5	0.0	0.1	47.167	E
C-AB	1113	278	915	1.216	914	66.7	116.6	368.390	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	358	90			358				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	245	61	628	0.391	247	1.0	0.7	9.573	A
B-A	4	0.96	100	0.038	4	0.1	0.0	37.578	E
C-AB	884	221	915	0.966	916	116.6	108.6	465.033	F
C-A	25	6			25				
A-B	2	0.48			2				
A-C	292	73			292				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	206	51	643	0.320	206	0.7	0.5	8.342	A
B-A	3	0.80	150	0.021	3	0.0	0.0	24.593	C
C-AB	645	161	813	0.794	843	108.6	59.2	397.655	F
C-A	116	29			116				
A-B	2	0.40			2				
A-C	245	61			245				

2025 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		26.28	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	394	100.000
B		ONE HOUR	✓	511	100.000
C		ONE HOUR	✓	463	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	389
	B	3	0	507
	C	308	155	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.94	65.92	9.6	F	466	698
B-A	0.25	307.63	0.2	F	3	4
C-AB	0.33	8.47	0.6	A	163	245
C-A					261	392
A-B					5	7
A-C					357	535

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	382	95	633	0.603	376	0.0	1.5	13.838	B
B-A	2	0.60	273	0.009	2	0.0	0.0	13.289	B
C-AB	127	32	601	0.211	126	0.0	0.3	7.557	A
C-A	222	55			222				
A-B	4	1			4				
A-C	293	73			293				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	456	114	618	0.738	452	1.5	2.6	21.208	C
B-A	3	0.72	191	0.015	3	0.0	0.0	19.163	C
C-AB	157	39	610	0.258	157	0.3	0.4	7.935	A
C-A	259	65			259				
A-B	5	1			5				
A-C	350	87			350				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	559	140	597	0.935	538	2.6	7.9	48.769	E
B-A	4	0.88	43	0.082	3	0.0	0.1	90.565	F
C-AB	206	52	632	0.326	206	0.4	0.6	8.441	A
C-A	303	76			303				
A-B	6	1			6				
A-C	428	107			428				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	559	140	597	0.935	552	7.9	9.6	65.916	F
B-A	4	0.88	14	0.248	3	0.1	0.2	307.625	F
C-AB	206	52	632	0.326	206	0.6	0.6	8.471	A
C-A	303	76			303				
A-B	6	1			6				
A-C	428	107			428				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	456	114	618	0.738	482	9.6	3.1	30.536	D
B-A	3	0.72	161	0.018	4	0.2	0.0	23.080	C
C-AB	157	39	610	0.258	158	0.6	0.4	7.975	A
C-A	259	65			259				
A-B	5	1			5				
A-C	350	87			350				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	382	95	633	0.603	388	3.1	1.6	15.172	C
B-A	2	0.60	265	0.009	2	0.0	0.0	13.702	B
C-AB	127	32	601	0.211	127	0.4	0.3	7.609	A
C-A	222	55			222				
A-B	4	1			4				
A-C	293	73			293				

2029 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		330.57	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	336	100.000
B		ONE HOUR	✓	284	100.000
C		ONE HOUR	✓	1037	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	334
	B	4	0	280
	C	428	609	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.51	12.32	1.0	B	257	385
B-A	0.07	60.32	0.1	F	4	6
C-AB	1.25	546.14	135.7	F	914	1371
C-A					37	56
A-B					2	3
A-C					306	459

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	211	53	643	0.328	209	0.0	0.5	8.344	A
B-A	3	0.82	239	0.014	3	0.0	0.0	15.255	C
C-AB	673	168	825	0.816	651	0.0	5.4	20.032	C
C-A	107	27			107				
A-B	2	0.41			2				
A-C	251	63			251				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	252	63	629	0.400	251	0.5	0.7	9.600	A
B-A	4	0.98	186	0.021	4	0.0	0.0	19.767	C
C-AB	928	232	933	0.994	875	5.4	18.6	54.334	F
C-A	5	1			5				
A-B	2	0.49			2				
A-C	300	75			300				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	308	77	608	0.507	307	0.7	1.0	11.979	B
B-A	5	1	110	0.044	5	0.0	0.0	34.038	D
C-AB	1142	285	912	1.252	906	18.6	77.5	199.792	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	367	92			367				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	308	77	603	0.511	308	1.0	1.0	12.319	B
B-A	5	1	64	0.075	5	0.0	0.1	60.320	F
C-AB	1142	285	912	1.252	911	77.5	135.2	424.555	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	367	92			367				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	252	63	623	0.404	253	1.0	0.7	9.853	A
B-A	4	0.98	77	0.051	4	0.1	0.1	49.175	E
C-AB	928	232	933	0.994	926	135.2	135.7	546.140	F
C-A	5	1			5				
A-B	2	0.49			2				
A-C	300	75			300				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	211	53	640	0.329	212	0.7	0.5	8.501	A
B-A	3	0.82	121	0.027	3	0.1	0.0	30.544	D
C-AB	673	168	825	0.816	849	135.7	91.7	517.414	F
C-A	107	27			107				
A-B	2	0.41			2				
A-C	251	63			251				

2029 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		34.51	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	405	100.000
B		ONE HOUR	✓	524	100.000
C		ONE HOUR	✓	475	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	399
	B	3	0	521
	C	316	159	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.97	82.17	12.4	F	478	717
B-A	0.84	1242.18	0.6	F	3	5
C-AB	0.34	8.55	0.6	A	169	254
C-A					267	400
A-B					5	8
A-C					366	550

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	392	98	631	0.621	386	0.0	1.6	14.463	B
B-A	2	0.62	264	0.009	2	0.0	0.0	13.774	B
C-AB	131	33	602	0.217	129	0.0	0.3	7.604	A
C-A	227	57			227				
A-B	4	1			4				
A-C	301	75			301				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	468	117	616	0.760	463	1.6	2.9	22.964	C
B-A	3	0.74	176	0.017	3	0.0	0.0	20.837	C
C-AB	163	41	613	0.266	162	0.3	0.4	7.994	A
C-A	264	66			264				
A-B	5	1			5				
A-C	359	90			359				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	573	143	594	0.965	547	2.9	9.6	56.502	F
B-A	4	0.90	17	0.213	3	0.0	0.2	247.288	F
C-AB	214	54	636	0.337	213	0.4	0.6	8.519	A
C-A	309	77			309				
A-B	6	2			6				
A-C	440	110			440				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	573	143	594	0.965	562	9.6	12.4	82.173	F
B-A	4	0.90	4	0.843	2	0.2	0.6	1242.176	F
C-AB	214	54	636	0.337	214	0.6	0.6	8.550	A
C-A	309	77			309				
A-B	6	2			6				
A-C	440	110			440				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	468	117	614	0.762	503	12.4	3.6	39.386	E
B-A	3	0.74	132	0.022	5	0.6	0.0	28.858	D
C-AB	163	41	613	0.266	163	0.6	0.4	8.038	A
C-A	264	66			264				
A-B	5	1			5				
A-C	359	90			359				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	392	98	631	0.621	400	3.6	1.7	16.179	C
B-A	2	0.62	254	0.010	3	0.0	0.0	14.323	B
C-AB	131	33	602	0.217	131	0.4	0.3	7.658	A
C-A	227	57			227				
A-B	4	1			4				
A-C	301	75			301				

2022 + Com Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		309.77	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	320	100.000
B		ONE HOUR	✓	282	100.000
C		ONE HOUR	✓	1014	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	318
	B	4	0	278
	C	407	606	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.50	11.94	1.0	B	255	382
B-A	0.06	50.96	0.1	F	4	6
C-AB	1.24	511.88	125.7	F	891	1336
C-A					39	59
A-B					2	3
A-C					292	437

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	209	52	646	0.324	207	0.0	0.5	8.252	A
B-A	3	0.78	244	0.013	3	0.0	0.0	14.918	B
C-AB	657	164	812	0.808	636	0.0	5.1	19.700	C
C-A	106	27			106				
A-B	2	0.39			2				
A-C	239	60			239				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	250	62	633	0.394	249	0.5	0.6	9.451	A
B-A	4	0.94	192	0.019	4	0.0	0.0	19.080	C
C-AB	899	225	914	0.984	852	5.1	17.0	51.364	F
C-A	12	3			12				
A-B	2	0.47			2				
A-C	286	71			286				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	614	0.498	304	0.6	1.0	11.702	B
B-A	5	1	119	0.039	5	0.0	0.0	31.498	D
C-AB	1116	279	902	1.237	896	17.0	72.0	187.933	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	350	87			350				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	306	76	610	0.501	306	1.0	1.0	11.942	B
B-A	5	1	75	0.061	4	0.0	0.1	50.961	F
C-AB	1116	279	902	1.237	901	72.0	125.7	400.848	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	350	87			350				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	250	62	629	0.397	251	1.0	0.7	9.651	A
B-A	4	0.94	90	0.041	4	0.1	0.0	41.644	E
C-AB	899	225	914	0.983	900	125.7	125.4	511.878	F
C-A	12	3			12				
A-B	2	0.47			2				
A-C	286	71			286				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	209	52	644	0.325	210	0.7	0.5	8.389	A
B-A	3	0.78	134	0.023	3	0.0	0.0	27.523	D
C-AB	657	164	813	0.808	838	125.4	80.1	477.594	F
C-A	106	27			106				
A-B	2	0.39			2				
A-C	239	60			239				

2022 + Com Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		33.52	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	385	100.000
B		ONE HOUR	✓	525	100.000
C		ONE HOUR	✓	463	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	379
	B	3	0	522
	C	300	163	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.96	77.27	11.7	F	479	718
B-A	0.88	1307.92	0.6	F	3	4
C-AB	0.34	8.61	0.6	A	173	259
C-A					253	379
A-B					5	7
A-C					348	522

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	393	98	635	0.618	387	0.0	1.6	14.290	B
B-A	2	0.59	268	0.009	2	0.0	0.0	13.572	B
C-AB	134	33	604	0.221	132	0.0	0.3	7.620	A
C-A	215	54			215				
A-B	4	0.98			4				
A-C	286	71			286				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	469	117	621	0.756	464	1.6	2.9	22.475	C
B-A	3	0.70	180	0.016	3	0.0	0.0	20.258	C
C-AB	166	42	614	0.270	166	0.3	0.4	8.026	A
C-A	250	63			250				
A-B	5	1			5				
A-C	341	85			341				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	575	144	600	0.957	549	2.9	9.2	54.207	F
B-A	3	0.86	24	0.145	3	0.0	0.1	171.026	F
C-AB	218	54	637	0.342	217	0.4	0.6	8.575	A
C-A	292	73			292				
A-B	6	1			6				
A-C	418	104			418				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	575	144	600	0.958	565	9.2	11.7	77.270	F
B-A	3	0.86	4	0.877	2	0.1	0.6	1307.917	F
C-AB	218	54	637	0.342	218	0.6	0.6	8.609	A
C-A	292	73			292				
A-B	6	1			6				
A-C	418	104			418				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	469	117	619	0.758	502	11.7	3.5	36.681	E
B-A	3	0.70	141	0.020	5	0.6	0.0	26.976	D
C-AB	166	42	614	0.270	167	0.6	0.4	8.069	A
C-A	250	63			250				
A-B	5	1			5				
A-C	341	85			341				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	393	98	635	0.619	400	3.5	1.7	15.910	C
B-A	2	0.59	258	0.009	2	0.0	0.0	14.084	B
C-AB	134	33	604	0.221	134	0.4	0.3	7.677	A
C-A	215	54			215				
A-B	4	0.98			4				
A-C	286	71			286				

2025 + Com Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		359.66	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	327	100.000
B		ONE HOUR	✓	288	100.000
C		ONE HOUR	✓	1037	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	325
	B	4	0	284
	C	417	620	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.52	12.43	1.1	B	261	391
B-A	0.08	65.14	0.1	F	4	6
C-AB	1.27	589.84	146.0	F	919	1378
C-A					33	49
A-B					2	3
A-C					298	448

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	214	53	644	0.332	212	0.0	0.5	8.368	A
B-A	3	0.80	239	0.013	3	0.0	0.0	15.277	C
C-AB	682	171	823	0.829	659	0.0	5.8	21.047	C
C-A	98	25			98				
A-B	2	0.40			2				
A-C	245	61			245				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	64	631	0.405	255	0.5	0.7	9.640	A
B-A	4	0.96	185	0.021	4	0.0	0.0	19.852	C
C-AB	932	233	924	1.009	874	5.8	20.4	59.856	F
C-A	0	0			0				
A-B	2	0.48			2				
A-C	292	73			292				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	313	78	611	0.512	311	0.7	1.0	12.076	B
B-A	5	1	108	0.043	5	0.0	0.0	34.698	D
C-AB	1142	285	899	1.269	895	20.4	82.2	215.421	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	358	90			358				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	313	78	605	0.517	313	1.0	1.1	12.431	B
B-A	5	1	60	0.079	5	0.0	0.1	65.141	F
C-AB	1142	285	899	1.269	899	82.2	143.0	454.297	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	358	90			358				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	255	64	625	0.409	257	1.1	0.7	9.922	A
B-A	4	0.96	70	0.055	4	0.1	0.1	54.879	F
C-AB	932	233	924	1.009	920	143.0	146.0	589.838	F
C-A	0	0			0				
A-B	2	0.48			2				
A-C	292	73			292				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	214	53	641	0.333	215	0.7	0.5	8.535	A
B-A	3	0.80	112	0.029	3	0.1	0.0	33.305	D
C-AB	682	171	824	0.828	844	146.0	105.5	568.459	F
C-A	98	25			98				
A-B	2	0.40			2				
A-C	245	61			245				

2025 + Com Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		40.68	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	394	100.000
B		ONE HOUR	✓	538	100.000
C		ONE HOUR	✓	475	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	389
	B	3	0	534
	C	308	167	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.99	95.82	15.2	F	490	735
B-A	0.99	1355.22	0.7	F	3	4
C-AB	0.35	8.69	0.7	A	178	267
C-A					258	386
A-B					5	7
A-C					357	535

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	402	101	633	0.635	396	0.0	1.7	14.906	B
B-A	2	0.60	258	0.009	2	0.0	0.0	14.057	B
C-AB	137	34	605	0.227	136	0.0	0.3	7.664	A
C-A	220	55			220				
A-B	4	1			4				
A-C	293	73			293				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	480	120	618	0.777	474	1.7	3.2	24.278	C
B-A	3	0.72	166	0.017	3	0.0	0.0	22.063	C
C-AB	171	43	616	0.278	171	0.3	0.4	8.080	A
C-A	256	64			256				
A-B	5	1			5				
A-C	350	87			350				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	588	147	597	0.985	557	3.2	11.1	62.259	F
B-A	4	0.88	4	0.987	1	0.0	0.6	1355.221	F
C-AB	225	56	641	0.352	224	0.4	0.6	8.652	A
C-A	297	74			297				
A-B	6	1			6				
A-C	428	107			428				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	588	147	596	0.987	572	11.1	15.2	95.816	F
B-A	4	0.88	5	0.645	3	0.6	0.7	1136.267	F
C-AB	225	56	641	0.352	225	0.6	0.7	8.688	A
C-A	297	74			297				
A-B	6	1			6				
A-C	428	107			428				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	480	120	616	0.779	525	15.2	4.1	49.170	E
B-A	3	0.72	108	0.027	6	0.7	0.0	35.904	E
C-AB	171	43	616	0.278	172	0.7	0.4	8.130	A
C-A	256	64			256				
A-B	5	1			5				
A-C	350	87			350				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	402	101	633	0.635	411	4.1	1.8	16.992	C
B-A	2	0.60	247	0.010	2	0.0	0.0	14.737	B
C-AB	137	34	605	0.227	138	0.4	0.3	7.722	A
C-A	220	55			220				
A-B	4	1			4				
A-C	293	73			293				

2029 + Com Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		418.40	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	336	100.000
B		ONE HOUR	✓	295	100.000
C		ONE HOUR	✓	1063	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	334
	B	4	0	291
	C	428	635	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.54	13.15	1.1	B	267	401
B-A	0.11	94.22	0.1	F	4	6
C-AB	1.31	683.61	171.6	F	946	1419
C-A					30	44
A-B					2	3
A-C					306	459

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	219	55	643	0.341	217	0.0	0.5	8.503	A
B-A	3	0.82	233	0.014	3	0.0	0.0	15.692	C
C-AB	711	178	836	0.851	685	0.0	6.6	22.749	C
C-A	89	22			89				
A-B	2	0.41			2				
A-C	251	63			251				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	262	65	629	0.416	261	0.5	0.7	9.858	A
B-A	4	0.98	177	0.022	4	0.0	0.0	20.788	C
C-AB	955	239	922	1.037	882	6.6	24.9	71.170	F
C-A	0	0			0				
A-B	2	0.49			2				
A-C	300	75			300				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	320	80	608	0.527	319	0.7	1.1	12.521	B
B-A	5	1	96	0.050	5	0.0	0.1	39.239	E
C-AB	1170	293	896	1.305	893	24.9	94.2	248.682	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	367	92			367				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	320	80	596	0.537	320	1.1	1.1	13.149	B
B-A	5	1	43	0.113	5	0.1	0.1	94.225	F
C-AB	1170	293	896	1.305	896	94.2	162.8	518.046	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	367	92			367				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	262	65	616	0.424	263	1.1	0.8	10.338	B
B-A	4	0.98	46	0.085	4	0.1	0.1	85.145	F
C-AB	955	239	922	1.036	920	162.8	171.6	683.610	F
C-A	0	0			0				
A-B	2	0.49			2				
A-C	300	75			300				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	219	55	638	0.344	220	0.8	0.5	8.725	A
B-A	3	0.82	84	0.039	4	0.1	0.0	45.054	E
C-AB	711	178	836	0.851	852	171.6	136.5	678.681	F
C-A	89	22			89				
A-B	2	0.41			2				
A-C	251	63			251				

2029 + Com Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		49.68	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	405	100.000
B		ONE HOUR	✓	551	100.000
C		ONE HOUR	✓	487	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	399
	B	3	0	548
	C	316	171	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.02	119.41	20.0	F	503	754
B-A	1.02	1371.90	0.8	F	3	5
C-AB	0.36	8.77	0.7	A	184	276
C-A					263	394
A-B					5	8
A-C					366	550

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	412	103	631	0.653	405	0.0	1.8	15.624	C
B-A	2	0.62	248	0.010	2	0.0	0.0	14.636	B
C-AB	141	35	606	0.233	140	0.0	0.3	7.711	A
C-A	225	56			225				
A-B	4	1			4				
A-C	301	75			301				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	492	123	616	0.800	485	1.8	3.5	26.513	D
B-A	3	0.74	150	0.020	3	0.0	0.0	24.508	C
C-AB	177	44	618	0.286	176	0.3	0.5	8.141	A
C-A	261	65			261				
A-B	5	1			5				
A-C	359	90			359				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	603	151	594	1.015	563	3.5	13.7	72.244	F
B-A	4	0.90	4	1.016	1	0.0	0.6	1371.901	F
C-AB	234	58	645	0.362	233	0.5	0.7	8.734	A
C-A	302	76			302				
A-B	6	2			6				
A-C	440	110			440				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	603	151	593	1.017	578	13.7	20.0	119.412	F
B-A	4	0.90	5	0.672	3	0.6	0.8	1172.585	F
C-AB	234	58	645	0.362	233	0.7	0.7	8.774	A
C-A	302	76			302				
A-B	6	2			6				
A-C	440	110			440				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	492	123	614	0.802	552	20.0	5.0	71.451	F
B-A	3	0.74	65	0.045	6	0.8	0.1	62.891	F
C-AB	177	44	618	0.286	177	0.7	0.5	8.195	A
C-A	261	65			261				
A-B	5	1			5				
A-C	359	90			359				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	412	103	631	0.653	424	5.0	2.0	18.490	C
B-A	2	0.62	234	0.011	3	0.1	0.0	15.599	C
C-AB	141	35	606	0.233	142	0.5	0.3	7.774	A
C-A	225	56			225				
A-B	4	1			4				
A-C	301	75			301				

2022 + Com Dev + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		323.57	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	324	100.000
B		ONE HOUR	✓	283	100.000
C		ONE HOUR	✓	1028	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	322
	B	4	0	279
	C	418	610	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.51	12.07	1.0	B	256	384
B-A	0.07	55.37	0.1	F	4	6
C-AB	1.25	532.57	131.5	F	905	1358
C-A					38	57
A-B					2	3
A-C					295	443

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	210	52	645	0.325	208	0.0	0.5	8.283	A
B-A	3	0.78	242	0.013	3	0.0	0.0	15.072	C
C-AB	667	167	820	0.814	646	0.0	5.3	19.940	C
C-A	106	27			106				
A-B	2	0.39			2				
A-C	242	61			242				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	251	63	632	0.397	250	0.5	0.7	9.503	A
B-A	4	0.94	189	0.020	4	0.0	0.0	19.393	C
C-AB	917	229	925	0.991	866	5.3	18.0	53.267	F
C-A	7	2			7				
A-B	2	0.47			2				
A-C	289	72			289				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	307	77	612	0.501	306	0.7	1.0	11.803	B
B-A	5	1	115	0.040	5	0.0	0.0	32.663	D
C-AB	1132	283	908	1.246	902	18.0	75.3	195.070	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	354	89			354				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	307	77	608	0.505	307	1.0	1.0	12.072	B
B-A	5	1	69	0.066	4	0.0	0.1	55.367	F
C-AB	1132	283	908	1.246	907	75.3	131.4	415.020	F
C-A	0	0			0				
A-B	2	0.57			2				
A-C	354	89			354				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	251	63	627	0.400	252	1.0	0.7	9.724	A
B-A	4	0.94	83	0.045	4	0.1	0.0	45.417	E
C-AB	917	229	926	0.990	916	131.4	131.5	532.571	F
C-A	7	2			7				
A-B	2	0.47			2				
A-C	289	72			289				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	210	52	643	0.327	211	0.7	0.5	8.427	A
B-A	3	0.78	127	0.025	3	0.0	0.0	29.097	D
C-AB	667	167	821	0.813	845	131.5	87.2	501.334	F
C-A	106	27			106				
A-B	2	0.39			2				
A-C	242	61			242				

2022 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		35.51	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	394	100.000
B		ONE HOUR	✓	528	100.000
C		ONE HOUR	✓	469	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	389
	B	3	0	525
	C	305	164	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.97	83.40	12.7	F	481	722
B-A	0.83	1280.37	0.6	F	3	4
C-AB	0.35	8.66	0.6	A	175	262
C-A					256	384
A-B					5	7
A-C					357	536

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	395	99	633	0.624	389	0.0	1.6	14.506	B
B-A	2	0.59	264	0.009	2	0.0	0.0	13.770	B
C-AB	135	34	603	0.224	134	0.0	0.3	7.649	A
C-A	218	55			218				
A-B	4	0.98			4				
A-C	293	73			293				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	472	118	618	0.763	466	1.6	3.0	23.096	C
B-A	3	0.70	175	0.016	3	0.0	0.0	20.913	C
C-AB	168	42	614	0.274	168	0.3	0.4	8.062	A
C-A	254	63			254				
A-B	5	1			5				
A-C	350	87			350				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	578	144	597	0.967	550	3.0	9.8	57.016	F
B-A	3	0.86	15	0.233	3	0.0	0.2	286.089	F
C-AB	221	55	638	0.347	220	0.4	0.6	8.622	A
C-A	296	74			296				
A-B	6	1			6				
A-C	428	107			428				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	578	144	597	0.968	566	9.8	12.7	83.401	F
B-A	3	0.86	4	0.828	2	0.2	0.6	1280.371	F
C-AB	221	55	638	0.347	221	0.6	0.6	8.656	A
C-A	296	74			296				
A-B	6	1			6				
A-C	428	107			428				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	472	118	617	0.765	508	12.7	3.7	40.281	E
B-A	3	0.70	130	0.022	5	0.6	0.0	29.373	D
C-AB	168	42	614	0.274	169	0.6	0.4	8.106	A
C-A	254	63			254				
A-B	5	1			5				
A-C	350	87			350				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	395	99	633	0.624	403	3.7	1.7	16.266	C
B-A	2	0.59	254	0.009	2	0.0	0.0	14.332	B
C-AB	135	34	603	0.224	136	0.4	0.3	7.706	A
C-A	218	55			218				
A-B	4	0.98			4				
A-C	293	73			293				

2025 + Com Dev + Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		833.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	417	100.000
B		ONE HOUR	✓	312	100.000
C		ONE HOUR	✓	1163	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	415
	B	4	0	307
	C	515	647	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	9999999999.00	1759.01	155.0	F	282	423
B-A	9999999999.00	2429.01	2.2	F	4	6
C-AB	1.38	904.52	235.5	F	1040	1560
C-A					27	41
A-B					2	3
A-C					380	571

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	627	0.369	229	0.0	0.6	9.087	A
B-A	3	0.80	208	0.015	3	0.0	0.0	17.599	C
C-AB	794	198	893	0.889	758	0.0	8.9	25.474	D
C-A	82	20			82				
A-B	2	0.40			2				
A-C	312	78			312				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	610	0.453	275	0.6	0.8	10.839	B
B-A	4	0.96	146	0.026	4	0.0	0.0	25.325	D
C-AB	1045	261	960	1.089	934	8.9	36.6	95.100	F
C-A	0	0			0				
A-B	2	0.48			2				
A-C	373	93			373				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	580	0.583	336	0.8	1.4	14.774	B
B-A	5	1	55	0.085	4	0.0	0.1	70.415	F
C-AB	1280	320	927	1.382	925	36.6	125.6	323.473	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	456	114			456				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	338	85	0	9999999999.000	0	1.4	86.0	1759.007	F
B-A	5	1	0	9999999999.000	0	0.1	1.3	2429.006	F
C-AB	1280	320	927	1.382	926	125.6	214.1	656.242	F
C-A	0	0			0				
A-B	2	0.59			2				
A-C	456	114			456				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	276	69	0	9999999999.000	0	86.0	155.0	1562.506	F
B-A	4	0.96	0	9999999999.000	0	1.3	2.2	2216.982	F
C-AB	1045	261	960	1.088	960	214.1	235.5	877.977	F
C-A	0	0			0				
A-B	2	0.48			2				
A-C	373	93			373				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	393	0.588	391	155.0	115.2	1246.876	F
B-A	3	0.80	6	0.575	4	2.2	2.1	2028.315	F
C-AB	794	198	894	0.888	904	235.5	208.0	904.516	F
C-A	82	20			82				
A-B	2	0.40			2				
A-C	312	78			312				

2025 + Com Dev + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		55.18	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	444	100.000
B		ONE HOUR	✓	552	100.000
C		ONE HOUR	✓	515	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	439
	B	3	0	549
	C	340	176	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.04	140.14	24.0	F	504	756
B-A	1.04	1433.58	0.8	F	3	4
C-AB	0.38	8.94	0.8	A	193	290
C-A					280	420
A-B					5	7
A-C					403	604

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	413	103	624	0.663	406	0.0	1.9	16.185	C
B-A	2	0.60	237	0.010	2	0.0	0.0	15.313	C
C-AB	147	37	606	0.243	146	0.0	0.4	7.809	A
C-A	241	60			241				
A-B	4	1			4				
A-C	330	83			330				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	494	123	607	0.814	486	1.9	3.8	28.352	D
B-A	3	0.72	136	0.021	3	0.0	0.0	27.113	D
C-AB	185	46	620	0.298	185	0.4	0.5	8.261	A
C-A	278	70			278				
A-B	5	1			5				
A-C	394	99			394				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	605	151	583	1.036	557	3.8	15.7	80.835	F
B-A	4	0.88	3	1.038	1	0.0	0.6	1433.579	F
C-AB	247	62	651	0.380	246	0.5	0.8	8.893	A
C-A	320	80			320				
A-B	6	1			6				
A-C	483	121			483				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	605	151	582	1.039	571	15.7	24.0	140.139	F
B-A	4	0.88	5	0.690	3	0.6	0.8	1234.618	F
C-AB	247	62	651	0.380	247	0.8	0.8	8.941	A
C-A	320	80			320				
A-B	6	1			6				
A-C	483	121			483				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	494	123	605	0.816	566	24.0	5.9	94.800	F
B-A	3	0.72	28	0.103	5	0.8	0.1	168.220	F
C-AB	185	46	620	0.298	186	0.8	0.5	8.324	A
C-A	278	70			278				
A-B	5	1			5				
A-C	394	99			394				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	413	103	623	0.663	429	5.9	2.1	19.963	C
B-A	2	0.60	220	0.011	3	0.1	0.0	16.648	C
C-AB	147	37	606	0.243	148	0.5	0.4	7.877	A
C-A	241	60			241				
A-B	4	1			4				
A-C	330	83			330				

2029 + Com Dev + Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		9563930.59	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	448	100.000
B		ONE HOUR	✓	326	100.000
C		ONE HOUR	✓	1269	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	446
	B	4	0	321
	C	588	681	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	9999999999.00	59999940.00	222.9	F	295	442
B-A	9999999999.00	59999940.00	3.3	F	4	6
C-AB	1.48	1181.73	320.9	F	1149	1723
C-A					16	24
A-B					2	3
A-C					409	614

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	242	60	621	0.390	239	0.0	0.6	59999940.000	F
B-A	3	0.82	188	0.018	3	0.0	0.0	59999940.000	F
C-AB	908	227	961	0.944	854	0.0	13.4	31.864	D
C-A	48	12			48				
A-B	2	0.41			2				
A-C	336	84			336				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	289	72	602	0.480	288	0.6	0.9	59999940.000	F
B-A	4	0.98	119	0.033	4	0.0	0.0	59999940.000	F
C-AB	1141	285	984	1.159	971	13.4	56.0	137.048	F
C-A	0	0			0				
A-B	2	0.49			2				
A-C	401	100			401				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	354	88	539	0.656	350	0.9	1.8	59999940.000	F
B-A	5	1	18	0.267	4	0.0	0.3	59999940.000	F
C-AB	1397	349	947	1.476	946	56.0	168.9	434.918	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	491	123			491				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	354	88	0	9999999999.000	0	1.8	90.2	59999940.000	F
B-A	5	1	0	9999999999.000	0	0.3	1.5	59999940.000	F
C-AB	1397	349	947	1.476	946	168.9	281.7	845.936	F
C-A	0	0			0				
A-B	2	0.60			2				
A-C	491	123			491				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	289	72	0	9999999999.000	0	90.2	162.4	59999940.000	F
B-A	4	0.98	0	9999999999.000	0	1.5	2.5	59999940.000	F
C-AB	1141	285	984	1.159	984	281.7	320.9	1111.712	F
C-A	0	0			0				
A-B	2	0.49			2				
A-C	401	100			401				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	242	60	0	9999999999.000	0	162.4	222.9	59999940.000	F
B-A	3	0.82	0	9999999999.000	0	2.5	3.3	59999940.000	F
C-AB	908	227	961	0.944	964	320.9	306.7	1181.729	F
C-A	48	12			48				
A-B	2	0.41			2				
A-C	336	84			336				

2029 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		90.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	509	100.000
B		ONE HOUR	✓	582	100.000
C		ONE HOUR	✓	562	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	5	504
	B	3	0	579
	C	375	188	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.13	245.62	45.9	F	531	797
B-A	1.12	1542.43	0.9	F	3	5
C-AB	0.42	9.35	1.0	A	215	323
C-A					301	451
A-B					5	8
A-C					462	693

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	436	109	611	0.713	427	0.0	2.3	18.874	C
B-A	2	0.62	203	0.012	2	0.0	0.0	17.906	C
C-AB	161	40	608	0.265	160	0.0	0.4	8.015	A
C-A	262	66			262				
A-B	4	1			4				
A-C	379	95			379				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	520	130	592	0.880	508	2.3	5.5	38.366	E
B-A	3	0.74	83	0.035	3	0.0	0.0	44.785	E
C-AB	205	51	626	0.327	204	0.4	0.6	8.531	A
C-A	301	75			301				
A-B	5	1			5				
A-C	453	113			453				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	637	159	565	1.129	553	5.5	26.6	123.268	F
B-A	4	0.90	3	1.125	1	0.0	0.6	1542.432	F
C-AB	279	70	666	0.419	278	0.6	0.9	9.284	A
C-A	340	85			340				
A-B	6	2			6				
A-C	555	139			555				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	637	159	563	1.132	560	26.6	45.9	245.617	F
B-A	4	0.90	5	0.784	3	0.6	0.9	1415.198	F
C-AB	279	70	666	0.419	279	0.9	1.0	9.349	A
C-A	340	85			340				
A-B	6	2			6				
A-C	555	139			555				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	520	130	589	0.883	577	45.9	31.8	244.126	F
B-A	3	0.74	5	0.550	3	0.9	0.9	935.308	F
C-AB	205	51	626	0.327	206	1.0	0.6	8.620	A
C-A	301	75			301				
A-B	5	1			5				
A-C	453	113			453				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	436	109	609	0.716	551	31.8	3.0	94.529	F
B-A	2	0.62	71	0.035	6	0.9	0.0	57.274	F
C-AB	161	40	608	0.265	162	0.6	0.4	8.101	A
C-A	262	66			262				
A-B	4	1			4				
A-C	379	95			379				

Appendix Q

Katie Watkins - Asbri Transport

From: Zhang, Xiaoyan <xzhang@trl.co.uk>
Sent: 13 June 2019 12:51
To: Katie Watkins - Asbri Transport
Subject: FW: PICADY analysis

Dear Katie Watkins

There is an explanation on why your PICADY model is displaying extremely high RFCs.

Consider the Demand Set "2025 Base" as an example, in which the extremely high RFCs occur on Stream B-AC. Other Demand Sets have similar symptoms.

Arm B is modelled as one-lane Arm and so Stream B-AC is made up of mixed turning traffic B-C and B-A, which give way to both directions of traffic on major road (Streams A-C and C-A). Although the A-C demand is moderate, the C-AB demand is very high. When Stream C-AB become oversaturated, the B-A capacity will be close to zero. This is why the B-AC capacity (as a whole of mixed B-A and B-C traffic) is low and become zero (after 09:00 in this Demand Set). Note that the B-AC capacity is independent of its share of B-A and B-C turning demand.

One way to improve the comparison of modelled results with observed ones is to model Arm B as two lanes instead of one lane, such that capacity is calculated separately for the two turning movements of Arm B. This may give more realistic results because most of Arm B demand is left turning.

Another alternative is to use the Lane Simulation model, which models B-A and B-C turning vehicles explicitly, and hence may represent this situation more realistically. For example, from the Lane Simulation animation (select "Individual Vehicles" for Queue visualisation type) you may observe how B-A vehicle in front may prevent and B-C turning vehicles from moving into the junction.

We hope the above helps. If you have further queries, please contact us.

Regards
Xiaoyan

Dr Xiaoyan Zhang PhD CMILT
Software Developer

DD: +44 (0)1344 379736 | E: xzhang@trl.co.uk
TRL | Crowthorne House | Nine Mile Ride | Wokingham | Berkshire | RG40 3GA | United Kingdom

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From: Katie Watkins - Asbri Transport [mailto:Katie@AsbriTransport.co.uk]
Sent: 12 June 2019 12:48
To: TRL Software
Subject: PICADY analysis

Hi,

I was wondering if I could have some help with a PICADY model which is displaying extremely high RFCs.

The ahead traffic flows from Arm C-A are considerably lower than the traffic flows from C-B.

In reality, the queueing that currently occurs at the junction is nowhere near that displayed by the PICADY analysis.

I was wondering whether anything could be done to improve the results shown in the model?

Kind regards
Katie

Katie Watkins
Graduate Transport Planner

asbri celebrating 10 years

Asbri Transport Ltd I Suite D I 1st Floor I 220 High Street I Swansea I SA1 1NW
T: 01792 480535 I Email: katie@asbritransport.co.uk I Website: www.asbritransport.co.uk

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Appendix R

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Augusta Rd Crossroads - Revised.j9
Path: K:\T18\Jobs\T18.164 - Cosmeston\Analysis\Modelling\2020
Report generation date: 05/08/2020 17:21:17

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2019 Base									
Stream B-ACD	D1	0.2	12.78	0.19	B	D2	0.3	12.99	0.22	B
Stream A-BCD		0.0	6.68	0.03	A		0.1	6.35	0.07	A
Stream D-ABC		0.5	13.81	0.31	B		0.2	10.50	0.16	B
Stream C-ABD		0.0	6.21	0.02	A		0.0	6.69	0.02	A
	2022 Base									
Stream B-ACD	D3	0.2	13.08	0.20	B	D4	0.3	13.29	0.22	B
Stream A-BCD		0.0	6.72	0.04	A		0.1	6.37	0.08	A
Stream D-ABC		0.5	14.20	0.32	B		0.2	10.67	0.17	B
Stream C-ABD		0.0	6.24	0.02	A		0.0	6.73	0.02	A
	2025 Base									
Stream B-ACD	D5	0.3	13.36	0.21	B	D6	0.3	13.60	0.23	B
Stream A-BCD		0.0	6.76	0.04	A		0.1	6.38	0.08	A
Stream D-ABC		0.5	14.58	0.33	B		0.2	10.84	0.17	B

Stream C-ABD		0.0	6.26	0.02	A		0.0	6.77	0.02	A
	2029 Base									
Stream B-ACD	D7	0.3	13.69	0.22	B	D8	0.3	13.95	0.24	B
Stream A-BCD		0.0	6.80	0.04	A		0.1	6.40	0.08	A
Stream D-ABC		0.5	15.02	0.35	C		0.2	11.03	0.18	B
Stream C-ABD		0.0	6.29	0.02	A		0.0	6.82	0.02	A
	2022 + Com Dev									
Stream B-ACD	D9	0.2	13.08	0.20	B	D10	0.3	13.29	0.22	B
Stream A-BCD		0.0	6.72	0.04	A		0.1	6.37	0.08	A
Stream D-ABC		0.5	14.20	0.32	B		0.2	10.67	0.17	B
Stream C-ABD		0.0	6.24	0.02	A		0.0	6.73	0.02	A
	2025 + Com Dev									
Stream B-ACD	D11	0.3	13.36	0.21	B	D12	0.3	13.60	0.23	B
Stream A-BCD		0.0	6.76	0.04	A		0.1	6.38	0.08	A
Stream D-ABC		0.5	14.58	0.33	B		0.2	10.84	0.17	B
Stream C-ABD		0.0	6.26	0.02	A		0.0	6.77	0.02	A
	2029 + Com Dev									
Stream B-ACD	D13	0.3	13.69	0.22	B	D14	0.3	13.95	0.24	B
Stream A-BCD		0.0	6.80	0.04	A		0.1	6.40	0.08	A
Stream D-ABC		0.5	15.02	0.35	C		0.2	11.03	0.18	B
Stream C-ABD		0.0	6.29	0.02	A		0.0	6.82	0.02	A
	2022 + Com Dev + Dev									
Stream B-ACD	D15	0.3	13.22	0.20	B	D16	0.3	13.45	0.23	B
Stream A-BCD		0.0	6.76	0.04	A		0.1	6.37	0.08	A
Stream D-ABC		0.5	14.39	0.32	B		0.2	10.74	0.17	B
Stream C-ABD		0.0	6.25	0.02	A		0.0	6.77	0.02	A
	2025 + Com Dev + Dev									
Stream B-ACD	D17	0.4	14.41	0.26	B	D18	0.3	14.52	0.25	B
Stream A-BCD		0.0	7.11	0.04	A		0.1	6.43	0.08	A
Stream D-ABC		0.8	19.35	0.43	C		0.2	11.43	0.19	B
Stream C-ABD		0.0	6.42	0.04	A		0.0	6.95	0.03	A
	2029 + Com Dev + Dev									
Stream B-ACD	D19	0.4	15.88	0.29	C	D20	0.4	16.17	0.27	C
Stream A-BCD		0.0	7.38	0.04	A		0.1	6.47	0.08	A
Stream D-ABC		0.9	22.50	0.48	C		0.2	12.20	0.20	B
Stream C-ABD		0.0	6.48	0.04	A		0.0	7.21	0.03	A

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

File summary

File Description

Title	
Location	
Site number	
Date	09/04/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ATRANS\Katie
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

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

2019 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Lavernock Road (N)		Major
B	Augusta Road		Minor
C	Lavernock Road (S)		Major
D	Castle Avenue		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.00			250.0	✓	1.00
C	6.00			180.0	✓	1.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	21	48
D	One lane	2.50	21	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/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
A-D	719	-	-	-	-	-	-	0.278	0.398	0.278	-	-	-
B-A	508	0.093	0.234	0.234	-	-	-	0.147	0.334	-	0.234	0.234	0.117
B-C	654	0.100	0.253	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	508	0.093	0.234	0.234	-	-	-	0.147	0.334	0.147	-	-	-
B-D, offside lane	508	0.093	0.234	0.234	-	-	-	0.147	0.334	0.147	-	-	-
C-B	678	0.263	0.263	0.375	-	-	-	-	-	-	-	-	-
D-A	617	-	-	-	-	-	-	0.239	-	0.095	-	-	-
D-B, nearside lane	479	0.139	0.139	0.315	-	-	-	0.220	0.220	0.087	-	-	-
D-B, offside lane	479	0.139	0.139	0.315	-	-	-	0.220	0.220	0.087	-	-	-
D-C	479	-	0.139	0.315	0.110	0.220	0.220	0.220	0.220	0.087	-	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	327	100.000
B		ONE HOUR	✓	61	100.000
C		ONE HOUR	✓	444	100.000
D		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	31	277	18
	B	41	0	4	16
	C	415	9	0	20
	D	54	28	27	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.19	12.78	0.2	B	56	84
A-BCD	0.03	6.68	0.0	A	17	26
A-B					29	43
A-C					254	381
D-ABC	0.31	13.81	0.5	B	101	151
C-ABD	0.02	6.21	0.0	A	8	13
C-D					19	28
C-A					381	571

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	46	11	402	0.114	45	0.0	0.1	10.079	B
A-BCD	14	3	631	0.022	14	0.0	0.0	6.233	A
A-B	24	6			24				
A-C	208	52			208				
D-ABC	82	21	437	0.189	82	0.0	0.2	10.390	B
C-ABD	7	2	616	0.011	7	0.0	0.0	5.912	A
C-D	15	4			15				
C-A	312	78			312				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	380	0.144	55	0.1	0.2	11.069	B
A-BCD	17	4	616	0.027	17	0.0	0.0	6.419	A
A-B	28	7			28				
A-C	249	62			249				
D-ABC	98	25	417	0.236	98	0.2	0.3	11.605	B
C-ABD	8	2	605	0.014	8	0.0	0.0	6.037	A
C-D	18	5			18				
C-A	373	93			373				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	67	17	349	0.192	67	0.2	0.2	12.754	B
A-BCD	21	5	596	0.035	21	0.0	0.0	6.682	A
A-B	35	9			35				
A-C	304	76			304				
D-ABC	121	30	389	0.310	120	0.3	0.5	13.752	B
C-ABD	10	3	590	0.017	10	0.0	0.0	6.212	A
C-D	22	6			22				
C-A	457	114			457				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	67	17	349	0.192	67	0.2	0.2	12.785	B
A-BCD	21	5	596	0.035	21	0.0	0.0	6.682	A
A-B	35	9			35				
A-C	304	76			304				
D-ABC	121	30	389	0.310	121	0.5	0.5	13.807	B
C-ABD	10	3	590	0.017	10	0.0	0.0	6.212	A
C-D	22	6			22				
C-A	457	114			457				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	379	0.144	55	0.2	0.2	11.103	B
A-BCD	17	4	616	0.027	17	0.0	0.0	6.419	A
A-B	28	7			28				
A-C	249	62			249				
D-ABC	98	25	417	0.236	99	0.5	0.3	11.671	B
C-ABD	8	2	605	0.014	8	0.0	0.0	6.040	A
C-D	18	5			18				
C-A	373	93			373				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	46	11	402	0.114	46	0.2	0.1	10.124	B
A-BCD	14	3	631	0.022	14	0.0	0.0	6.236	A
A-B	24	6			24				
A-C	208	52			208				
D-ABC	82	21	437	0.189	83	0.3	0.2	10.466	B
C-ABD	7	2	616	0.011	7	0.0	0.0	5.913	A
C-D	15	4			15				
C-A	312	78			312				

2019 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	451	100.000
B		ONE HOUR	✓	70	100.000
C		ONE HOUR	✓	323	100.000
D		ONE HOUR	✓	61	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	43	367	42
	B	33	0	9	27
	C	270	10	0	44
	D	31	10	19	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.22	12.99	0.3	B	64	96
A-BCD	0.07	6.35	0.1	A	40	60
A-B					39	58
A-C					335	503
D-ABC	0.16	10.50	0.2	B	56	84
C-ABD	0.02	6.69	0.0	A	9	14
C-D					40	60
C-A					247	371

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	53	13	411	0.128	52	0.0	0.1	10.162	B
A-BCD	32	8	669	0.048	32	0.0	0.1	6.094	A
A-B	32	8			32				
A-C	276	69			276				
D-ABC	46	11	453	0.101	45	0.0	0.1	8.818	A
C-ABD	8	2	588	0.013	8	0.0	0.0	6.197	A
C-D	33	8			33				
C-A	203	51			203				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	389	0.162	63	0.1	0.2	11.197	B
A-BCD	39	10	664	0.059	39	0.1	0.1	6.208	A
A-B	38	10			38				
A-C	329	82			329				
D-ABC	55	14	435	0.126	55	0.1	0.1	9.457	A
C-ABD	9	2	572	0.016	9	0.0	0.0	6.397	A
C-D	39	10			39				
C-A	242	61			242				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	77	19	358	0.215	77	0.2	0.3	12.967	B
A-BCD	49	12	659	0.074	49	0.1	0.1	6.346	A
A-B	47	12			47				
A-C	401	100			401				
D-ABC	67	17	410	0.163	67	0.1	0.2	10.489	B
C-ABD	11	3	549	0.021	11	0.0	0.0	6.689	A
C-D	48	12			48				
C-A	297	74			297				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	77	19	358	0.215	77	0.3	0.3	12.994	B
A-BCD	49	12	659	0.074	49	0.1	0.1	6.349	A
A-B	47	12			47				
A-C	401	100			401				
D-ABC	67	17	410	0.163	67	0.2	0.2	10.503	B
C-ABD	11	3	549	0.021	11	0.0	0.0	6.692	A
C-D	48	12			48				
C-A	297	74			297				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	389	0.162	63	0.3	0.2	11.231	B
A-BCD	39	10	663	0.059	39	0.1	0.1	6.213	A
A-B	38	10			38				
A-C	329	82			329				
D-ABC	55	14	435	0.126	55	0.2	0.1	9.476	A
C-ABD	9	2	572	0.016	9	0.0	0.0	6.401	A
C-D	39	10			39				
C-A	242	61			242				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	53	13	411	0.128	53	0.2	0.2	10.209	B
A-BCD	32	8	668	0.048	32	0.1	0.1	6.098	A
A-B	32	8			32				
A-C	276	69			276				
D-ABC	46	11	453	0.101	46	0.1	0.1	8.847	A
C-ABD	8	2	588	0.013	8	0.0	0.0	6.199	A
C-D	33	8			33				
C-A	203	51			203				

2022 Base , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2022 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	335	100.000
B		ONE HOUR	✓	63	100.000
C		ONE HOUR	✓	456	100.000
D		ONE HOUR	✓	113	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	32	284	19
	B	42	0	4	17
	C	426	9	0	21
	D	55	29	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.20	13.08	0.2	B	57	86
A-BCD	0.04	6.72	0.0	A	18	26
A-B					30	44
A-C					261	391
D-ABC	0.32	14.20	0.5	B	103	155
C-ABD	0.02	6.24	0.0	A	9	13
C-D					19	29
C-A					391	586

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	399	0.118	47	0.0	0.1	10.202	B
A-BCD	14	4	629	0.023	14	0.0	0.0	6.258	A
A-B	24	6			24				
A-C	214	53			214				
D-ABC	85	21	434	0.195	84	0.0	0.2	10.535	B
C-ABD	7	2	614	0.012	7	0.0	0.0	5.930	A
C-D	16	4			16				
C-A	321	80			321				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	376	0.150	56	0.1	0.2	11.250	B
A-BCD	17	4	614	0.028	17	0.0	0.0	6.450	A
A-B	29	7			29				
A-C	255	64			255				
D-ABC	101	25	413	0.245	101	0.2	0.3	11.828	B
C-ABD	9	2	603	0.014	8	0.0	0.0	6.058	A
C-D	19	5			19				
C-A	383	96			383				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	344	0.200	69	0.2	0.2	13.053	B
A-BCD	21	5	593	0.036	21	0.0	0.0	6.722	A
A-B	35	9			35				
A-C	313	78			313				
D-ABC	124	31	385	0.322	123	0.3	0.5	14.139	B
C-ABD	10	3	588	0.018	10	0.0	0.0	6.238	A
C-D	23	6			23				
C-A	469	117			469				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	344	0.200	69	0.2	0.2	13.084	B
A-BCD	21	5	593	0.036	21	0.0	0.0	6.722	A
A-B	35	9			35				
A-C	313	78			313				
D-ABC	124	31	384	0.322	124	0.5	0.5	14.204	B
C-ABD	10	3	588	0.018	10	0.0	0.0	6.241	A
C-D	23	6			23				
C-A	469	117			469				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	376	0.150	56	0.2	0.2	11.287	B
A-BCD	17	4	613	0.028	17	0.0	0.0	6.451	A
A-B	29	7			29				
A-C	255	64			255				
D-ABC	101	25	413	0.245	102	0.5	0.3	11.899	B
C-ABD	9	2	603	0.014	9	0.0	0.0	6.061	A
C-D	19	5			19				
C-A	383	96			383				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	399	0.118	47	0.2	0.1	10.251	B
A-BCD	14	4	629	0.023	14	0.0	0.0	6.259	A
A-B	24	6			24				
A-C	214	53			214				
D-ABC	85	21	434	0.195	85	0.3	0.3	10.617	B
C-ABD	7	2	614	0.012	7	0.0	0.0	5.933	A
C-D	16	4			16				
C-A	321	80			321				

2022 Base , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2022 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	463	100.000
B		ONE HOUR	✓	72	100.000
C		ONE HOUR	✓	332	100.000
D		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	44	376	43
	B	34	0	9	28
	C	277	10	0	45
	D	32	10	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.22	13.29	0.3	B	66	99
A-BCD	0.08	6.37	0.1	A	41	62
A-B					40	60
A-C					344	515
D-ABC	0.17	10.67	0.2	B	57	86
C-ABD	0.02	6.73	0.0	A	10	14
C-D					41	62
C-A					254	380

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	408	0.132	53	0.0	0.2	10.281	B
A-BCD	33	8	668	0.050	33	0.0	0.1	6.109	A
A-B	33	8			33				
A-C	282	71			282				
D-ABC	47	12	451	0.104	46	0.0	0.1	8.894	A
C-ABD	8	2	586	0.013	8	0.0	0.0	6.223	A
C-D	34	8			34				
C-A	208	52			208				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	385	0.167	64	0.2	0.2	11.369	B
A-BCD	40	10	663	0.060	40	0.1	0.1	6.225	A
A-B	39	10			39				
A-C	337	84			337				
D-ABC	56	14	432	0.130	56	0.1	0.1	9.562	A
C-ABD	9	2	569	0.017	9	0.0	0.0	6.429	A
C-D	40	10			40				
C-A	249	62			249				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	354	0.223	79	0.2	0.3	13.253	B
A-BCD	50	13	659	0.076	50	0.1	0.1	6.363	A
A-B	48	12			48				
A-C	411	103			411				
D-ABC	69	17	406	0.169	68	0.1	0.2	10.652	B
C-ABD	12	3	546	0.021	12	0.0	0.0	6.730	A
C-D	49	12			49				
C-A	304	76			304				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	354	0.223	79	0.3	0.3	13.286	B
A-BCD	50	13	658	0.076	50	0.1	0.1	6.366	A
A-B	48	12			48				
A-C	411	103			411				
D-ABC	69	17	406	0.169	69	0.2	0.2	10.666	B
C-ABD	12	3	546	0.021	12	0.0	0.0	6.731	A
C-D	49	12			49				
C-A	304	76			304				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	385	0.167	65	0.3	0.2	11.409	B
A-BCD	40	10	662	0.060	40	0.1	0.1	6.227	A
A-B	39	10			39				
A-C	337	84			337				
D-ABC	56	14	432	0.130	56	0.2	0.2	9.582	A
C-ABD	9	2	569	0.017	9	0.0	0.0	6.430	A
C-D	40	10			40				
C-A	249	62			249				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	408	0.132	54	0.2	0.2	10.334	B
A-BCD	33	8	667	0.050	33	0.1	0.1	6.113	A
A-B	33	8			33				
A-C	282	71			282				
D-ABC	47	12	451	0.104	47	0.2	0.1	8.924	A
C-ABD	8	2	586	0.013	8	0.0	0.0	6.227	A
C-D	34	8			34				
C-A	208	52			208				

2025 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	343	100.000
B		ONE HOUR	✓	64	100.000
C		ONE HOUR	✓	467	100.000
D		ONE HOUR	✓	115	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	33	291	19
	B	43	0	4	17
	C	436	10	0	21
	D	57	30	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.21	13.36	0.3	B	59	88
A-BCD	0.04	6.76	0.0	A	18	27
A-B					30	45
A-C					267	400
D-ABC	0.33	14.58	0.5	B	106	159
C-ABD	0.02	6.26	0.0	A	9	13
C-D					20	29
C-A					400	600

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	396	0.122	48	0.0	0.1	10.317	B
A-BCD	15	4	627	0.023	15	0.0	0.0	6.282	A
A-B	25	6			25				
A-C	219	55			219				
D-ABC	87	22	432	0.201	86	0.0	0.3	10.672	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.945	A
C-D	16	4			16				
C-A	328	82			328				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	372	0.154	57	0.1	0.2	11.418	B
A-BCD	18	4	611	0.029	18	0.0	0.0	6.479	A
A-B	30	7			30				
A-C	261	65			261				
D-ABC	104	26	410	0.252	103	0.3	0.3	12.039	B
C-ABD	9	2	601	0.015	9	0.0	0.0	6.077	A
C-D	19	5			19				
C-A	392	98			392				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	70	18	340	0.207	70	0.2	0.3	13.331	B
A-BCD	22	5	591	0.037	22	0.0	0.0	6.758	A
A-B	36	9			36				
A-C	320	80			320				
D-ABC	127	32	381	0.333	126	0.3	0.5	14.510	B
C-ABD	11	3	586	0.018	11	0.0	0.0	6.262	A
C-D	23	6			23				
C-A	480	120			480				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	70	18	340	0.207	70	0.3	0.3	13.365	B
A-BCD	22	5	591	0.037	22	0.0	0.0	6.761	A
A-B	36	9			36				
A-C	320	80			320				
D-ABC	127	32	381	0.333	127	0.5	0.5	14.582	B
C-ABD	11	3	586	0.018	11	0.0	0.0	6.264	A
C-D	23	6			23				
C-A	480	120			480				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	372	0.155	58	0.3	0.2	11.458	B
A-BCD	18	4	611	0.029	18	0.0	0.0	6.480	A
A-B	30	7			30				
A-C	261	65			261				
D-ABC	104	26	410	0.252	104	0.5	0.4	12.115	B
C-ABD	9	2	601	0.015	9	0.0	0.0	6.078	A
C-D	19	5			19				
C-A	392	98			392				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	396	0.122	48	0.2	0.1	10.368	B
A-BCD	15	4	627	0.023	15	0.0	0.0	6.285	A
A-B	25	6			25				
A-C	219	55			219				
D-ABC	87	22	432	0.201	87	0.4	0.3	10.760	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.946	A
C-D	16	4			16				
C-A	328	82			328				

2025 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	474	100.000
B		ONE HOUR	✓	74	100.000
C		ONE HOUR	✓	340	100.000
D		ONE HOUR	✓	64	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	45	386	44
	B	35	0	10	29
	C	284	11	0	46
	D	33	11	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.23	13.60	0.3	B	67	101
A-BCD	0.08	6.38	0.1	A	42	63
A-B					41	61
A-C					352	528
D-ABC	0.17	10.84	0.2	B	59	88
C-ABD	0.02	6.77	0.0	A	10	15
C-D					42	63
C-A					260	390

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	405	0.137	55	0.0	0.2	10.405	B
A-BCD	34	8	667	0.051	34	0.0	0.1	6.124	A
A-B	34	8			34				
A-C	290	72			290				
D-ABC	48	12	448	0.107	48	0.0	0.1	8.969	A
C-ABD	8	2	584	0.014	8	0.0	0.0	6.249	A
C-D	34	9			34				
C-A	213	53			213				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	382	0.173	66	0.2	0.2	11.555	B
A-BCD	41	10	662	0.062	41	0.1	0.1	6.241	A
A-B	40	10			40				
A-C	345	86			345				
D-ABC	57	14	429	0.134	57	0.1	0.2	9.673	A
C-ABD	10	2	567	0.017	10	0.0	0.0	6.462	A
C-D	41	10			41				
C-A	255	64			255				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	81	20	349	0.232	81	0.2	0.3	13.560	B
A-BCD	52	13	658	0.078	52	0.1	0.1	6.380	A
A-B	49	12			49				
A-C	422	105			422				
D-ABC	70	18	403	0.175	70	0.2	0.2	10.823	B
C-ABD	12	3	543	0.022	12	0.0	0.0	6.773	A
C-D	50	13			50				
C-A	312	78			312				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	81	20	349	0.232	81	0.3	0.3	13.600	B
A-BCD	52	13	658	0.078	52	0.1	0.1	6.383	A
A-B	49	12			49				
A-C	422	105			422				
D-ABC	70	18	402	0.175	70	0.2	0.2	10.839	B
C-ABD	12	3	543	0.022	12	0.0	0.0	6.774	A
C-D	50	13			50				
C-A	312	78			312				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	382	0.173	66	0.3	0.2	11.600	B
A-BCD	41	10	661	0.062	41	0.1	0.1	6.244	A
A-B	40	10			40				
A-C	345	86			345				
D-ABC	57	14	429	0.134	58	0.2	0.2	9.694	A
C-ABD	10	2	567	0.017	10	0.0	0.0	6.466	A
C-D	41	10			41				
C-A	255	64			255				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	405	0.137	56	0.2	0.2	10.462	B
A-BCD	34	8	667	0.051	34	0.1	0.1	6.130	A
A-B	34	8			34				
A-C	290	72			290				
D-ABC	48	12	448	0.107	48	0.2	0.1	9.002	A
C-ABD	8	2	584	0.014	8	0.0	0.0	6.253	A
C-D	34	9			34				
C-A	213	53			213				

2029 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2029 Base	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	352	100.000
B		ONE HOUR	✓	66	100.000
C		ONE HOUR	✓	479	100.000
D		ONE HOUR	✓	118	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	34	299	20
	B	44	0	4	17
	C	447	10	0	22
	D	58	31	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.22	13.69	0.3	B	60	90
A-BCD	0.04	6.80	0.0	A	18	28
A-B					31	47
A-C					274	410
D-ABC	0.35	15.02	0.5	C	108	163
C-ABD	0.02	6.29	0.0	A	9	14
C-D					20	30
C-A					410	616

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	393	0.126	49	0.0	0.1	10.444	B
A-BCD	15	4	625	0.024	15	0.0	0.0	6.307	A
A-B	26	6			26				
A-C	225	56			225				
D-ABC	89	22	429	0.207	88	0.0	0.3	10.824	B
C-ABD	7	2	611	0.012	7	0.0	0.0	5.962	A
C-D	16	4			16				
C-A	337	84			337				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	59	15	369	0.160	59	0.1	0.2	11.606	B
A-BCD	18	5	609	0.030	18	0.0	0.0	6.510	A
A-B	30	8			30				
A-C	268	67			268				
D-ABC	106	27	407	0.261	106	0.3	0.4	12.276	B
C-ABD	9	2	599	0.015	9	0.0	0.0	6.098	A
C-D	20	5			20				
C-A	402	101			402				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	72	18	335	0.215	72	0.2	0.3	13.649	B
A-BCD	22	6	588	0.038	22	0.0	0.0	6.797	A
A-B	37	9			37				
A-C	328	82			328				
D-ABC	130	33	377	0.345	129	0.4	0.5	14.937	B
C-ABD	11	3	584	0.019	11	0.0	0.0	6.287	A
C-D	24	6			24				
C-A	492	123			492				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	72	18	335	0.216	72	0.3	0.3	13.687	B
A-BCD	22	6	588	0.038	22	0.0	0.0	6.797	A
A-B	37	9			37				
A-C	328	82			328				
D-ABC	130	33	376	0.345	130	0.5	0.5	15.016	C
C-ABD	11	3	584	0.019	11	0.0	0.0	6.290	A
C-D	24	6			24				
C-A	492	123			492				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	59	15	369	0.160	59	0.3	0.2	11.650	B
A-BCD	18	5	609	0.030	18	0.0	0.0	6.513	A
A-B	30	8			30				
A-C	268	67			268				
D-ABC	106	27	407	0.261	107	0.5	0.4	12.364	B
C-ABD	9	2	599	0.015	9	0.0	0.0	6.101	A
C-D	20	5			20				
C-A	402	101			402				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	393	0.126	50	0.2	0.1	10.498	B
A-BCD	15	4	625	0.024	15	0.0	0.0	6.311	A
A-B	26	6			26				
A-C	225	56			225				
D-ABC	89	22	429	0.207	89	0.4	0.3	10.918	B
C-ABD	7	2	611	0.012	7	0.0	0.0	5.963	A
C-D	16	4			16				
C-A	337	84			337				

2029 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2029 Base	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	487	100.000
B		ONE HOUR	✓	75	100.000
C		ONE HOUR	✓	349	100.000
D		ONE HOUR	✓	66	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	46	396	45
	B	36	0	10	30
	C	291	11	0	47
	D	34	11	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.24	13.95	0.3	B	69	104
A-BCD	0.08	6.40	0.1	A	43	65
A-B					42	63
A-C					361	542
D-ABC	0.18	11.03	0.2	B	60	90
C-ABD	0.02	6.82	0.0	A	10	15
C-D					43	65
C-A					267	400

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	57	14	402	0.141	56	0.0	0.2	10.543	B
A-BCD	35	9	666	0.052	35	0.0	0.1	6.140	A
A-B	34	9			34				
A-C	297	74			297				
D-ABC	49	12	446	0.111	49	0.0	0.1	9.058	A
C-ABD	8	2	582	0.014	8	0.0	0.0	6.277	A
C-D	35	9			35				
C-A	219	55			219				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	68	17	378	0.180	68	0.2	0.2	11.759	B
A-BCD	42	11	662	0.064	42	0.1	0.1	6.259	A
A-B	41	10			41				
A-C	354	89			354				
D-ABC	59	15	426	0.138	59	0.1	0.2	9.791	A
C-ABD	10	2	564	0.018	10	0.0	0.0	6.498	A
C-D	42	11			42				
C-A	262	65			262				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	83	21	345	0.241	83	0.2	0.3	13.909	B
A-BCD	53	13	658	0.081	53	0.1	0.1	6.398	A
A-B	50	13			50				
A-C	433	108			433				
D-ABC	72	18	399	0.181	72	0.2	0.2	11.015	B
C-ABD	12	3	540	0.023	12	0.0	0.0	6.820	A
C-D	52	13			52				
C-A	320	80			320				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	83	21	345	0.241	83	0.3	0.3	13.953	B
A-BCD	53	13	658	0.081	53	0.1	0.1	6.401	A
A-B	50	13			50				
A-C	433	108			433				
D-ABC	72	18	399	0.181	72	0.2	0.2	11.032	B
C-ABD	12	3	540	0.023	12	0.0	0.0	6.823	A
C-D	52	13			52				
C-A	320	80			320				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	68	17	378	0.180	68	0.3	0.2	11.807	B
A-BCD	42	11	661	0.064	42	0.1	0.1	6.261	A
A-B	41	10			41				
A-C	354	89			354				
D-ABC	59	15	426	0.138	59	0.2	0.2	9.816	A
C-ABD	10	2	564	0.018	10	0.0	0.0	6.501	A
C-D	42	11			42				
C-A	262	65			262				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	57	14	402	0.141	57	0.2	0.2	10.603	B
A-BCD	35	9	666	0.052	35	0.1	0.1	6.147	A
A-B	34	9			34				
A-C	297	74			297				
D-ABC	49	12	446	0.111	50	0.2	0.1	9.090	A
C-ABD	8	2	582	0.014	8	0.0	0.0	6.279	A
C-D	35	9			35				
C-A	219	55			219				

2022 + Com Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2022 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	335	100.000
B		ONE HOUR	✓	63	100.000
C		ONE HOUR	✓	456	100.000
D		ONE HOUR	✓	113	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	32	284	19
	B	42	0	4	17
	C	426	9	0	21
	D	55	29	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.20	13.08	0.2	B	57	86
A-BCD	0.04	6.72	0.0	A	18	26
A-B					30	44
A-C					261	391
D-ABC	0.32	14.20	0.5	B	103	155
C-ABD	0.02	6.24	0.0	A	9	13
C-D					19	29
C-A					391	586

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	399	0.118	47	0.0	0.1	10.202	B
A-BCD	14	4	629	0.023	14	0.0	0.0	6.258	A
A-B	24	6			24				
A-C	214	53			214				
D-ABC	85	21	434	0.195	84	0.0	0.2	10.535	B
C-ABD	7	2	614	0.012	7	0.0	0.0	5.930	A
C-D	16	4			16				
C-A	321	80			321				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	376	0.150	56	0.1	0.2	11.250	B
A-BCD	17	4	614	0.028	17	0.0	0.0	6.450	A
A-B	29	7			29				
A-C	255	64			255				
D-ABC	101	25	413	0.245	101	0.2	0.3	11.828	B
C-ABD	9	2	603	0.014	8	0.0	0.0	6.058	A
C-D	19	5			19				
C-A	383	96			383				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	344	0.200	69	0.2	0.2	13.053	B
A-BCD	21	5	593	0.036	21	0.0	0.0	6.722	A
A-B	35	9			35				
A-C	313	78			313				
D-ABC	124	31	385	0.322	123	0.3	0.5	14.139	B
C-ABD	10	3	588	0.018	10	0.0	0.0	6.238	A
C-D	23	6			23				
C-A	469	117			469				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	344	0.200	69	0.2	0.2	13.084	B
A-BCD	21	5	593	0.036	21	0.0	0.0	6.722	A
A-B	35	9			35				
A-C	313	78			313				
D-ABC	124	31	384	0.322	124	0.5	0.5	14.204	B
C-ABD	10	3	588	0.018	10	0.0	0.0	6.241	A
C-D	23	6			23				
C-A	469	117			469				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	376	0.150	56	0.2	0.2	11.287	B
A-BCD	17	4	613	0.028	17	0.0	0.0	6.451	A
A-B	29	7			29				
A-C	255	64			255				
D-ABC	101	25	413	0.245	102	0.5	0.3	11.899	B
C-ABD	9	2	603	0.014	9	0.0	0.0	6.061	A
C-D	19	5			19				
C-A	383	96			383				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	399	0.118	47	0.2	0.1	10.251	B
A-BCD	14	4	629	0.023	14	0.0	0.0	6.259	A
A-B	24	6			24				
A-C	214	53			214				
D-ABC	85	21	434	0.195	85	0.3	0.3	10.617	B
C-ABD	7	2	614	0.012	7	0.0	0.0	5.933	A
C-D	16	4			16				
C-A	321	80			321				

2022 + Com Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2022 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	463	100.000
B		ONE HOUR	✓	72	100.000
C		ONE HOUR	✓	332	100.000
D		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	44	376	43
	B	34	0	9	28
	C	277	10	0	45
	D	32	10	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.22	13.29	0.3	B	66	99
A-BCD	0.08	6.37	0.1	A	41	62
A-B					40	60
A-C					344	515
D-ABC	0.17	10.67	0.2	B	57	86
C-ABD	0.02	6.73	0.0	A	10	14
C-D					41	62
C-A					254	380

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	408	0.132	53	0.0	0.2	10.281	B
A-BCD	33	8	668	0.050	33	0.0	0.1	6.109	A
A-B	33	8			33				
A-C	282	71			282				
D-ABC	47	12	451	0.104	46	0.0	0.1	8.894	A
C-ABD	8	2	586	0.013	8	0.0	0.0	6.223	A
C-D	34	8			34				
C-A	208	52			208				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	385	0.167	64	0.2	0.2	11.369	B
A-BCD	40	10	663	0.060	40	0.1	0.1	6.225	A
A-B	39	10			39				
A-C	337	84			337				
D-ABC	56	14	432	0.130	56	0.1	0.1	9.562	A
C-ABD	9	2	569	0.017	9	0.0	0.0	6.429	A
C-D	40	10			40				
C-A	249	62			249				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	354	0.223	79	0.2	0.3	13.253	B
A-BCD	50	13	659	0.076	50	0.1	0.1	6.363	A
A-B	48	12			48				
A-C	411	103			411				
D-ABC	69	17	406	0.169	68	0.1	0.2	10.652	B
C-ABD	12	3	546	0.021	12	0.0	0.0	6.730	A
C-D	49	12			49				
C-A	304	76			304				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	354	0.223	79	0.3	0.3	13.286	B
A-BCD	50	13	658	0.076	50	0.1	0.1	6.366	A
A-B	48	12			48				
A-C	411	103			411				
D-ABC	69	17	406	0.169	69	0.2	0.2	10.666	B
C-ABD	12	3	546	0.021	12	0.0	0.0	6.731	A
C-D	49	12			49				
C-A	304	76			304				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	385	0.167	65	0.3	0.2	11.409	B
A-BCD	40	10	662	0.060	40	0.1	0.1	6.227	A
A-B	39	10			39				
A-C	337	84			337				
D-ABC	56	14	432	0.130	56	0.2	0.2	9.582	A
C-ABD	9	2	569	0.017	9	0.0	0.0	6.430	A
C-D	40	10			40				
C-A	249	62			249				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	408	0.132	54	0.2	0.2	10.334	B
A-BCD	33	8	667	0.050	33	0.1	0.1	6.113	A
A-B	33	8			33				
A-C	282	71			282				
D-ABC	47	12	451	0.104	47	0.2	0.1	8.924	A
C-ABD	8	2	586	0.013	8	0.0	0.0	6.227	A
C-D	34	8			34				
C-A	208	52			208				

2025 + Com Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.76	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2025 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	343	100.000
B		ONE HOUR	✓	64	100.000
C		ONE HOUR	✓	467	100.000
D		ONE HOUR	✓	115	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	33	291	19
	B	43	0	4	17
	C	436	10	0	21
	D	57	30	29	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.21	13.36	0.3	B	59	88
A-BCD	0.04	6.76	0.0	A	18	27
A-B					30	45
A-C					267	400
D-ABC	0.33	14.58	0.5	B	106	159
C-ABD	0.02	6.26	0.0	A	9	13
C-D					20	29
C-A					400	600

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	396	0.122	48	0.0	0.1	10.317	B
A-BCD	15	4	627	0.023	15	0.0	0.0	6.282	A
A-B	25	6			25				
A-C	219	55			219				
D-ABC	87	22	432	0.201	86	0.0	0.3	10.672	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.945	A
C-D	16	4			16				
C-A	328	82			328				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	372	0.154	57	0.1	0.2	11.418	B
A-BCD	18	4	611	0.029	18	0.0	0.0	6.479	A
A-B	30	7			30				
A-C	261	65			261				
D-ABC	104	26	410	0.252	103	0.3	0.3	12.039	B
C-ABD	9	2	601	0.015	9	0.0	0.0	6.077	A
C-D	19	5			19				
C-A	392	98			392				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	70	18	340	0.207	70	0.2	0.3	13.331	B
A-BCD	22	5	591	0.037	22	0.0	0.0	6.758	A
A-B	36	9			36				
A-C	320	80			320				
D-ABC	127	32	381	0.333	126	0.3	0.5	14.510	B
C-ABD	11	3	586	0.018	11	0.0	0.0	6.262	A
C-D	23	6			23				
C-A	480	120			480				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	70	18	340	0.207	70	0.3	0.3	13.365	B
A-BCD	22	5	591	0.037	22	0.0	0.0	6.761	A
A-B	36	9			36				
A-C	320	80			320				
D-ABC	127	32	381	0.333	127	0.5	0.5	14.582	B
C-ABD	11	3	586	0.018	11	0.0	0.0	6.264	A
C-D	23	6			23				
C-A	480	120			480				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	372	0.155	58	0.3	0.2	11.458	B
A-BCD	18	4	611	0.029	18	0.0	0.0	6.480	A
A-B	30	7			30				
A-C	261	65			261				
D-ABC	104	26	410	0.252	104	0.5	0.4	12.115	B
C-ABD	9	2	601	0.015	9	0.0	0.0	6.078	A
C-D	19	5			19				
C-A	392	98			392				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	48	12	396	0.122	48	0.2	0.1	10.368	B
A-BCD	15	4	627	0.023	15	0.0	0.0	6.285	A
A-B	25	6			25				
A-C	219	55			219				
D-ABC	87	22	432	0.201	87	0.4	0.3	10.760	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.946	A
C-D	16	4			16				
C-A	328	82			328				

2025 + Com Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2025 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	474	100.000
B		ONE HOUR	✓	74	100.000
C		ONE HOUR	✓	340	100.000
D		ONE HOUR	✓	64	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	45	386	44
	B	35	0	10	29
	C	284	11	0	46
	D	33	11	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.23	13.60	0.3	B	67	101
A-BCD	0.08	6.38	0.1	A	42	63
A-B					41	61
A-C					352	528
D-ABC	0.17	10.84	0.2	B	59	88
C-ABD	0.02	6.77	0.0	A	10	15
C-D					42	63
C-A					260	390

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	405	0.137	55	0.0	0.2	10.405	B
A-BCD	34	8	667	0.051	34	0.0	0.1	6.124	A
A-B	34	8			34				
A-C	290	72			290				
D-ABC	48	12	448	0.107	48	0.0	0.1	8.969	A
C-ABD	8	2	584	0.014	8	0.0	0.0	6.249	A
C-D	34	9			34				
C-A	213	53			213				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	382	0.173	66	0.2	0.2	11.555	B
A-BCD	41	10	662	0.062	41	0.1	0.1	6.241	A
A-B	40	10			40				
A-C	345	86			345				
D-ABC	57	14	429	0.134	57	0.1	0.2	9.673	A
C-ABD	10	2	567	0.017	10	0.0	0.0	6.462	A
C-D	41	10			41				
C-A	255	64			255				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	81	20	349	0.232	81	0.2	0.3	13.560	B
A-BCD	52	13	658	0.078	52	0.1	0.1	6.380	A
A-B	49	12			49				
A-C	422	105			422				
D-ABC	70	18	403	0.175	70	0.2	0.2	10.823	B
C-ABD	12	3	543	0.022	12	0.0	0.0	6.773	A
C-D	50	13			50				
C-A	312	78			312				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	81	20	349	0.232	81	0.3	0.3	13.600	B
A-BCD	52	13	658	0.078	52	0.1	0.1	6.383	A
A-B	49	12			49				
A-C	422	105			422				
D-ABC	70	18	402	0.175	70	0.2	0.2	10.839	B
C-ABD	12	3	543	0.022	12	0.0	0.0	6.774	A
C-D	50	13			50				
C-A	312	78			312				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	66	17	382	0.173	66	0.3	0.2	11.600	B
A-BCD	41	10	661	0.062	41	0.1	0.1	6.244	A
A-B	40	10			40				
A-C	345	86			345				
D-ABC	57	14	429	0.134	58	0.2	0.2	9.694	A
C-ABD	10	2	567	0.017	10	0.0	0.0	6.466	A
C-D	41	10			41				
C-A	255	64			255				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	55	14	405	0.137	56	0.2	0.2	10.462	B
A-BCD	34	8	667	0.051	34	0.1	0.1	6.130	A
A-B	34	8			34				
A-C	290	72			290				
D-ABC	48	12	448	0.107	48	0.2	0.1	9.002	A
C-ABD	8	2	584	0.014	8	0.0	0.0	6.253	A
C-D	34	9			34				
C-A	213	53			213				

2029 + Com Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2029 + Com Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	352	100.000
B		ONE HOUR	✓	66	100.000
C		ONE HOUR	✓	479	100.000
D		ONE HOUR	✓	118	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	34	299	20
	B	44	0	4	17
	C	447	10	0	22
	D	58	31	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.22	13.69	0.3	B	60	90
A-BCD	0.04	6.80	0.0	A	18	28
A-B					31	47
A-C					274	410
D-ABC	0.35	15.02	0.5	C	108	163
C-ABD	0.02	6.29	0.0	A	9	14
C-D					20	30
C-A					410	616

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	393	0.126	49	0.0	0.1	10.444	B
A-BCD	15	4	625	0.024	15	0.0	0.0	6.307	A
A-B	26	6			26				
A-C	225	56			225				
D-ABC	89	22	429	0.207	88	0.0	0.3	10.824	B
C-ABD	7	2	611	0.012	7	0.0	0.0	5.962	A
C-D	16	4			16				
C-A	337	84			337				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	59	15	369	0.160	59	0.1	0.2	11.606	B
A-BCD	18	5	609	0.030	18	0.0	0.0	6.510	A
A-B	30	8			30				
A-C	268	67			268				
D-ABC	106	27	407	0.261	106	0.3	0.4	12.276	B
C-ABD	9	2	599	0.015	9	0.0	0.0	6.098	A
C-D	20	5			20				
C-A	402	101			402				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	72	18	335	0.215	72	0.2	0.3	13.649	B
A-BCD	22	6	588	0.038	22	0.0	0.0	6.797	A
A-B	37	9			37				
A-C	328	82			328				
D-ABC	130	33	377	0.345	129	0.4	0.5	14.937	B
C-ABD	11	3	584	0.019	11	0.0	0.0	6.287	A
C-D	24	6			24				
C-A	492	123			492				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	72	18	335	0.216	72	0.3	0.3	13.687	B
A-BCD	22	6	588	0.038	22	0.0	0.0	6.797	A
A-B	37	9			37				
A-C	328	82			328				
D-ABC	130	33	376	0.345	130	0.5	0.5	15.016	C
C-ABD	11	3	584	0.019	11	0.0	0.0	6.290	A
C-D	24	6			24				
C-A	492	123			492				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	59	15	369	0.160	59	0.3	0.2	11.650	B
A-BCD	18	5	609	0.030	18	0.0	0.0	6.513	A
A-B	30	8			30				
A-C	268	67			268				
D-ABC	106	27	407	0.261	107	0.5	0.4	12.364	B
C-ABD	9	2	599	0.015	9	0.0	0.0	6.101	A
C-D	20	5			20				
C-A	402	101			402				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	49	12	393	0.126	50	0.2	0.1	10.498	B
A-BCD	15	4	625	0.024	15	0.0	0.0	6.311	A
A-B	26	6			26				
A-C	225	56			225				
D-ABC	89	22	429	0.207	89	0.4	0.3	10.918	B
C-ABD	7	2	611	0.012	7	0.0	0.0	5.963	A
C-D	16	4			16				
C-A	337	84			337				

2029 + Com Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.21	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2029 + Com Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	487	100.000
B		ONE HOUR	✓	75	100.000
C		ONE HOUR	✓	349	100.000
D		ONE HOUR	✓	66	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	46	396	45
	B	36	0	10	30
	C	291	11	0	47
	D	34	11	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.24	13.95	0.3	B	69	104
A-BCD	0.08	6.40	0.1	A	43	65
A-B					42	63
A-C					361	542
D-ABC	0.18	11.03	0.2	B	60	90
C-ABD	0.02	6.82	0.0	A	10	15
C-D					43	65
C-A					267	400

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	57	14	402	0.141	56	0.0	0.2	10.543	B
A-BCD	35	9	666	0.052	35	0.0	0.1	6.140	A
A-B	34	9			34				
A-C	297	74			297				
D-ABC	49	12	446	0.111	49	0.0	0.1	9.058	A
C-ABD	8	2	582	0.014	8	0.0	0.0	6.277	A
C-D	35	9			35				
C-A	219	55			219				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	68	17	378	0.180	68	0.2	0.2	11.759	B
A-BCD	42	11	662	0.064	42	0.1	0.1	6.259	A
A-B	41	10			41				
A-C	354	89			354				
D-ABC	59	15	426	0.138	59	0.1	0.2	9.791	A
C-ABD	10	2	564	0.018	10	0.0	0.0	6.498	A
C-D	42	11			42				
C-A	262	65			262				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	83	21	345	0.241	83	0.2	0.3	13.909	B
A-BCD	53	13	658	0.081	53	0.1	0.1	6.398	A
A-B	50	13			50				
A-C	433	108			433				
D-ABC	72	18	399	0.181	72	0.2	0.2	11.015	B
C-ABD	12	3	540	0.023	12	0.0	0.0	6.820	A
C-D	52	13			52				
C-A	320	80			320				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	83	21	345	0.241	83	0.3	0.3	13.953	B
A-BCD	53	13	658	0.081	53	0.1	0.1	6.401	A
A-B	50	13			50				
A-C	433	108			433				
D-ABC	72	18	399	0.181	72	0.2	0.2	11.032	B
C-ABD	12	3	540	0.023	12	0.0	0.0	6.823	A
C-D	52	13			52				
C-A	320	80			320				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	68	17	378	0.180	68	0.3	0.2	11.807	B
A-BCD	42	11	661	0.064	42	0.1	0.1	6.261	A
A-B	41	10			41				
A-C	354	89			354				
D-ABC	59	15	426	0.138	59	0.2	0.2	9.816	A
C-ABD	10	2	564	0.018	10	0.0	0.0	6.501	A
C-D	42	11			42				
C-A	262	65			262				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	57	14	402	0.141	57	0.2	0.2	10.603	B
A-BCD	35	9	666	0.052	35	0.1	0.1	6.147	A
A-B	34	9			34				
A-C	297	74			297				
D-ABC	49	12	446	0.111	50	0.2	0.1	9.090	A
C-ABD	8	2	582	0.014	8	0.0	0.0	6.279	A
C-D	35	9			35				
C-A	219	55			219				

2022 + Com Dev + Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2022 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	339	100.000
B		ONE HOUR	✓	63	100.000
C		ONE HOUR	✓	467	100.000
D		ONE HOUR	✓	113	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	32	288	19
	B	42	0	4	17
	C	437	9	0	21
	D	55	29	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.20	13.22	0.3	B	57	86
A-BCD	0.04	6.76	0.0	A	18	26
A-B					30	44
A-C					264	397
D-ABC	0.32	14.39	0.5	B	103	155
C-ABD	0.02	6.25	0.0	A	9	13
C-D					19	29
C-A					401	601

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	397	0.119	47	0.0	0.1	10.257	B
A-BCD	14	4	627	0.023	14	0.0	0.0	6.281	A
A-B	24	6			24				
A-C	217	54			217				
D-ABC	85	21	432	0.196	84	0.0	0.2	10.603	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.936	A
C-D	16	4			16				
C-A	329	82			329				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	374	0.150	56	0.1	0.2	11.331	B
A-BCD	17	4	611	0.028	17	0.0	0.0	6.478	A
A-B	29	7			29				
A-C	259	65			259				
D-ABC	101	25	411	0.246	101	0.2	0.3	11.931	B
C-ABD	9	2	602	0.014	8	0.0	0.0	6.066	A
C-D	19	5			19				
C-A	393	98			393				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	341	0.202	69	0.2	0.2	13.185	B
A-BCD	21	5	590	0.036	21	0.0	0.0	6.758	A
A-B	35	9			35				
A-C	317	79			317				
D-ABC	124	31	381	0.325	123	0.3	0.5	14.322	B
C-ABD	10	3	587	0.018	10	0.0	0.0	6.248	A
C-D	23	6			23				
C-A	481	120			481				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	341	0.202	69	0.2	0.3	13.219	B
A-BCD	21	5	590	0.036	21	0.0	0.0	6.761	A
A-B	35	9			35				
A-C	317	79			317				
D-ABC	124	31	381	0.325	124	0.5	0.5	14.388	B
C-ABD	10	3	587	0.018	10	0.0	0.0	6.248	A
C-D	23	6			23				
C-A	481	120			481				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	373	0.150	56	0.3	0.2	11.369	B
A-BCD	17	4	611	0.028	17	0.0	0.0	6.481	A
A-B	29	7			29				
A-C	259	65			259				
D-ABC	101	25	411	0.246	102	0.5	0.3	12.006	B
C-ABD	9	2	602	0.014	9	0.0	0.0	6.069	A
C-D	19	5			19				
C-A	393	98			393				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	47	12	397	0.119	47	0.2	0.1	10.305	B
A-BCD	14	4	627	0.023	14	0.0	0.0	6.281	A
A-B	24	6			24				
A-C	217	54			217				
D-ABC	85	21	432	0.196	85	0.3	0.3	10.687	B
C-ABD	7	2	613	0.012	7	0.0	0.0	5.937	A
C-D	16	4			16				
C-A	329	82			329				

2022 + Com Dev + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2022 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	472	100.000
B		ONE HOUR	✓	72	100.000
C		ONE HOUR	✓	336	100.000
D		ONE HOUR	✓	62	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	44	386	43
	B	34	0	9	28
	C	281	10	0	45
	D	32	10	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.23	13.45	0.3	B	66	99
A-BCD	0.08	6.37	0.1	A	41	62
A-B					40	60
A-C					352	528
D-ABC	0.17	10.74	0.2	B	57	86
C-ABD	0.02	6.77	0.0	A	10	14
C-D					41	62
C-A					258	387

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	406	0.133	53	0.0	0.2	10.346	B
A-BCD	33	8	667	0.050	33	0.0	0.1	6.114	A
A-B	33	8			33				
A-C	290	72			290				
D-ABC	47	12	449	0.105	46	0.0	0.1	8.928	A
C-ABD	8	2	584	0.013	8	0.0	0.0	6.243	A
C-D	34	8			34				
C-A	212	53			212				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	383	0.169	64	0.2	0.2	11.464	B
A-BCD	40	10	662	0.060	40	0.1	0.1	6.229	A
A-B	39	10			39				
A-C	345	86			345				
D-ABC	56	14	430	0.130	56	0.1	0.1	9.611	A
C-ABD	9	2	567	0.017	9	0.0	0.0	6.455	A
C-D	40	10			40				
C-A	253	63			253				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	351	0.225	79	0.2	0.3	13.409	B
A-BCD	50	13	658	0.076	50	0.1	0.1	6.367	A
A-B	48	12			48				
A-C	422	105			422				
D-ABC	69	17	404	0.170	68	0.1	0.2	10.728	B
C-ABD	12	3	544	0.021	12	0.0	0.0	6.764	A
C-D	49	12			49				
C-A	309	77			309				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	79	20	350	0.225	79	0.3	0.3	13.446	B
A-BCD	50	13	658	0.076	50	0.1	0.1	6.368	A
A-B	48	12			48				
A-C	422	105			422				
D-ABC	69	17	404	0.170	69	0.2	0.2	10.742	B
C-ABD	12	3	544	0.021	12	0.0	0.0	6.767	A
C-D	49	12			49				
C-A	309	77			309				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	64	16	382	0.169	65	0.3	0.2	11.505	B
A-BCD	40	10	662	0.061	40	0.1	0.1	6.234	A
A-B	39	10			39				
A-C	345	86			345				
D-ABC	56	14	430	0.130	56	0.2	0.2	9.629	A
C-ABD	9	2	567	0.017	9	0.0	0.0	6.458	A
C-D	40	10			40				
C-A	253	63			253				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	54	14	406	0.133	54	0.2	0.2	10.397	B
A-BCD	33	8	667	0.050	33	0.1	0.1	6.120	A
A-B	33	8			33				
A-C	290	72			290				
D-ABC	47	12	449	0.105	47	0.2	0.1	8.958	A
C-ABD	8	2	584	0.013	8	0.0	0.0	6.247	A
C-D	34	8			34				
C-A	212	53			212				

2025 + Com Dev + Dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		3.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2025 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	398	100.000
B		ONE HOUR	✓	82	100.000
C		ONE HOUR	✓	566	100.000
D		ONE HOUR	✓	133	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	33	345	19
	B	43	0	22	17
	C	511	21	0	33
	D	57	30	46	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.26	14.41	0.4	B	75	112
A-BCD	0.04	7.11	0.0	A	18	27
A-B					30	45
A-C					316	475
D-ABC	0.43	19.35	0.8	C	122	183
C-ABD	0.04	6.42	0.0	A	20	30
C-D					30	46
C-A					468	702

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	61	15	405	0.151	61	0.0	0.2	10.420	B
A-BCD	15	4	607	0.024	15	0.0	0.0	6.495	A
A-B	25	6			25				
A-C	260	65			260				
D-ABC	100	25	400	0.250	99	0.0	0.3	12.205	B
C-ABD	16	4	609	0.027	16	0.0	0.0	6.075	A
C-D	25	6			25				
C-A	384	96			384				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	73	18	378	0.194	73	0.2	0.2	11.792	B
A-BCD	18	4	588	0.030	18	0.0	0.0	6.746	A
A-B	30	7			30				
A-C	310	78			310				
D-ABC	119	30	373	0.320	119	0.3	0.5	14.455	B
C-ABD	20	5	598	0.033	20	0.0	0.0	6.221	A
C-D	30	7			30				
C-A	459	115			459				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	90	22	340	0.264	89	0.2	0.4	14.347	B
A-BCD	22	5	563	0.039	22	0.0	0.0	7.106	A
A-B	36	9			36				
A-C	379	95			379				
D-ABC	146	37	337	0.434	145	0.5	0.8	19.126	C
C-ABD	25	6	586	0.042	25	0.0	0.0	6.415	A
C-D	36	9			36				
C-A	562	140			562				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	90	22	340	0.264	90	0.4	0.4	14.408	B
A-BCD	22	5	563	0.039	22	0.0	0.0	7.107	A
A-B	36	9			36				
A-C	379	95			379				
D-ABC	146	37	337	0.434	146	0.8	0.8	19.346	C
C-ABD	25	6	586	0.042	25	0.0	0.0	6.415	A
C-D	36	9			36				
C-A	562	140			562				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	73	18	378	0.194	74	0.4	0.2	11.858	B
A-BCD	18	4	587	0.030	18	0.0	0.0	6.748	A
A-B	30	7			30				
A-C	310	78			310				
D-ABC	119	30	373	0.320	120	0.8	0.5	14.653	B
C-ABD	20	5	599	0.033	20	0.0	0.0	6.225	A
C-D	30	7			30				
C-A	459	115			459				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	61	15	405	0.152	62	0.2	0.2	10.487	B
A-BCD	15	4	607	0.024	15	0.0	0.0	6.496	A
A-B	25	6			25				
A-C	260	65			260				
D-ABC	100	25	399	0.250	100	0.5	0.3	12.367	B
C-ABD	16	4	609	0.027	16	0.0	0.0	6.079	A
C-D	25	6			25				
C-A	384	96			384				

2025 + Com Dev + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

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

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2025 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	522	100.000
B		ONE HOUR	✓	75	100.000
C		ONE HOUR	✓	372	100.000
D		ONE HOUR	✓	65	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	45	433	44
	B	35	0	11	29
	C	310	13	0	48
	D	33	11	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.25	14.52	0.3	B	69	103
A-BCD	0.08	6.43	0.1	A	43	64
A-B					41	61
A-C					395	593
D-ABC	0.19	11.43	0.2	B	60	90
C-ABD	0.03	6.95	0.0	A	12	18
C-D					44	66
C-A					285	427

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	395	0.142	56	0.0	0.2	10.741	B
A-BCD	34	9	663	0.051	34	0.0	0.1	6.167	A
A-B	34	8			34				
A-C	325	81			325				
D-ABC	49	12	438	0.112	49	0.0	0.1	9.239	A
C-ABD	10	2	576	0.017	10	0.0	0.0	6.360	A
C-D	36	9			36				
C-A	234	58			234				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	67	17	369	0.182	67	0.2	0.2	12.071	B
A-BCD	41	10	658	0.063	41	0.1	0.1	6.288	A
A-B	40	10			40				
A-C	388	97			388				
D-ABC	59	15	417	0.140	58	0.1	0.2	10.044	B
C-ABD	12	3	557	0.021	12	0.0	0.0	6.600	A
C-D	43	11			43				
C-A	279	70			279				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	82	21	334	0.247	82	0.2	0.3	14.476	B
A-BCD	52	13	654	0.080	52	0.1	0.1	6.428	A
A-B	49	12			49				
A-C	473	118			473				
D-ABC	72	18	387	0.185	71	0.2	0.2	11.406	B
C-ABD	15	4	533	0.028	15	0.0	0.0	6.951	A
C-D	53	13			53				
C-A	341	85			341				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	82	21	333	0.247	82	0.3	0.3	14.524	B
A-BCD	52	13	654	0.080	52	0.1	0.1	6.429	A
A-B	49	12			49				
A-C	473	118			473				
D-ABC	72	18	387	0.185	72	0.2	0.2	11.426	B
C-ABD	15	4	533	0.028	15	0.0	0.0	6.954	A
C-D	53	13			53				
C-A	341	85			341				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	67	17	369	0.182	68	0.3	0.2	12.123	B
A-BCD	41	10	657	0.063	41	0.1	0.1	6.293	A
A-B	40	10			40				
A-C	388	97			388				
D-ABC	59	15	417	0.141	59	0.2	0.2	10.071	B
C-ABD	12	3	557	0.021	12	0.0	0.0	6.601	A
C-D	43	11			43				
C-A	279	70			279				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	56	14	395	0.143	56	0.2	0.2	10.804	B
A-BCD	34	9	662	0.051	34	0.1	0.1	6.173	A
A-B	34	8			34				
A-C	325	81			325				
D-ABC	49	12	438	0.112	49	0.2	0.1	9.274	A
C-ABD	10	2	576	0.017	10	0.0	0.0	6.364	A
C-D	36	9			36				
C-A	234	58			234				

2029 + Com Dev + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		3.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2029 + Com Dev + Dev	AM	ONE HOUR	08:00	09:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	429	100.000
B		ONE HOUR	✓	83	100.000
C		ONE HOUR	✓	640	100.000
D		ONE HOUR	✓	136	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	34	376	20
	B	44	0	22	17
	C	584	22	0	34
	D	58	31	47	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	7
	B	0	0	0	0
	C	1	0	0	0
	D	6	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.29	15.88	0.4	C	76	114
A-BCD	0.04	7.38	0.0	A	19	28
A-B					31	47
A-C					344	517
D-ABC	0.48	22.50	0.9	C	124	187
C-ABD	0.04	6.48	0.0	A	21	31
C-D					31	46
C-A					535	803

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	391	0.160	62	0.0	0.2	10.906	B
A-BCD	15	4	593	0.025	15	0.0	0.0	6.660	A
A-B	26	6			26				
A-C	283	71			283				
D-ABC	102	26	384	0.266	101	0.0	0.4	12.954	B
C-ABD	17	4	604	0.028	17	0.0	0.0	6.125	A
C-D	25	6			25				
C-A	439	110			439				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	75	19	361	0.207	74	0.2	0.3	12.554	B
A-BCD	18	5	571	0.032	18	0.0	0.0	6.954	A
A-B	30	8			30				
A-C	337	84			337				
D-ABC	122	30	355	0.344	121	0.4	0.5	15.767	C
C-ABD	20	5	594	0.034	20	0.0	0.0	6.279	A
C-D	30	8			30				
C-A	524	131			524				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	92	23	318	0.288	91	0.3	0.4	15.794	C
A-BCD	23	6	543	0.042	23	0.0	0.0	7.380	A
A-B	37	9			37				
A-C	413	103			413				
D-ABC	149	37	313	0.477	148	0.5	0.9	22.121	C
C-ABD	25	6	581	0.043	25	0.0	0.0	6.479	A
C-D	37	9			37				
C-A	642	160			642				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	92	23	318	0.288	92	0.4	0.4	15.883	C
A-BCD	23	6	543	0.042	23	0.0	0.0	7.384	A
A-B	37	9			37				
A-C	413	103			413				
D-ABC	149	37	313	0.477	149	0.9	0.9	22.496	C
C-ABD	25	6	581	0.043	25	0.0	0.0	6.482	A
C-D	37	9			37				
C-A	642	160			642				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	75	19	361	0.207	75	0.4	0.3	12.642	B
A-BCD	18	5	571	0.032	18	0.0	0.0	6.956	A
A-B	30	8			30				
A-C	337	84			337				
D-ABC	122	30	355	0.344	123	0.9	0.6	16.061	C
C-ABD	20	5	594	0.034	20	0.0	0.0	6.280	A
C-D	30	8			30				
C-A	524	131			524				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	63	16	391	0.160	63	0.3	0.2	10.987	B
A-BCD	15	4	592	0.025	15	0.0	0.0	6.664	A
A-B	26	6			26				
A-C	283	71			283				
D-ABC	102	26	384	0.266	103	0.6	0.4	13.156	B
C-ABD	17	4	604	0.028	17	0.0	0.0	6.129	A
C-D	25	6			25				
C-A	439	110			439				

2029 + Com Dev + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.16	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2029 + Com Dev + Dev	PM	ONE HOUR	17:00	18:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	589	100.000
B		ONE HOUR	✓	77	100.000
C		ONE HOUR	✓	407	100.000
D		ONE HOUR	✓	67	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	46	498	45
	B	36	0	11	30
	C	345	13	0	50
	D	34	11	22	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	1	8
	B	3	0	0	0
	C	1	0	0	2
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.27	16.17	0.4	C	70	105
A-BCD	0.08	6.47	0.1	A	44	66
A-B					42	63
A-C					454	682
D-ABC	0.20	12.20	0.2	B	61	92
C-ABD	0.03	7.21	0.0	A	13	19
C-D					45	68
C-A					316	474

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	379	0.152	57	0.0	0.2	11.314	B
A-BCD	35	9	659	0.053	35	0.0	0.1	6.210	A
A-B	34	9			34				
A-C	374	93			374				
D-ABC	50	13	426	0.118	50	0.0	0.1	9.551	A
C-ABD	10	3	563	0.018	10	0.0	0.0	6.509	A
C-D	37	9			37				
C-A	259	65			259				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	350	0.197	69	0.2	0.2	12.957	B
A-BCD	43	11	655	0.066	43	0.1	0.1	6.329	A
A-B	41	10			41				
A-C	445	111			445				
D-ABC	60	15	402	0.149	60	0.1	0.2	10.502	B
C-ABD	12	3	542	0.023	12	0.0	0.0	6.790	A
C-D	44	11			44				
C-A	310	77			310				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	84	21	310	0.272	84	0.2	0.4	16.097	C
A-BCD	54	14	653	0.083	54	0.1	0.1	6.462	A
A-B	50	13			50				
A-C	544	136			544				
D-ABC	74	18	369	0.199	73	0.2	0.2	12.168	B
C-ABD	15	4	515	0.029	15	0.0	0.0	7.204	A
C-D	54	14			54				
C-A	379	95			379				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	84	21	310	0.272	84	0.4	0.4	16.170	C
A-BCD	54	14	652	0.083	54	0.1	0.1	6.466	A
A-B	50	13			50				
A-C	544	136			544				
D-ABC	74	18	369	0.199	74	0.2	0.2	12.195	B
C-ABD	15	4	515	0.029	15	0.0	0.0	7.208	A
C-D	54	14			54				
C-A	379	95			379				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	69	17	350	0.197	69	0.4	0.3	13.030	B
A-BCD	43	11	654	0.066	43	0.1	0.1	6.332	A
A-B	41	10			41				
A-C	445	111			445				
D-ABC	60	15	402	0.149	60	0.2	0.2	10.535	B
C-ABD	12	3	542	0.023	12	0.0	0.0	6.794	A
C-D	44	11			44				
C-A	310	77			310				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	58	14	379	0.152	58	0.3	0.2	11.388	B
A-BCD	35	9	659	0.053	35	0.1	0.1	6.213	A
A-B	34	9			34				
A-C	374	93			374				
D-ABC	50	13	426	0.118	50	0.2	0.1	9.592	A
C-ABD	10	3	563	0.018	10	0.0	0.0	6.510	A
C-D	37	9			37				
C-A	259	65			259				

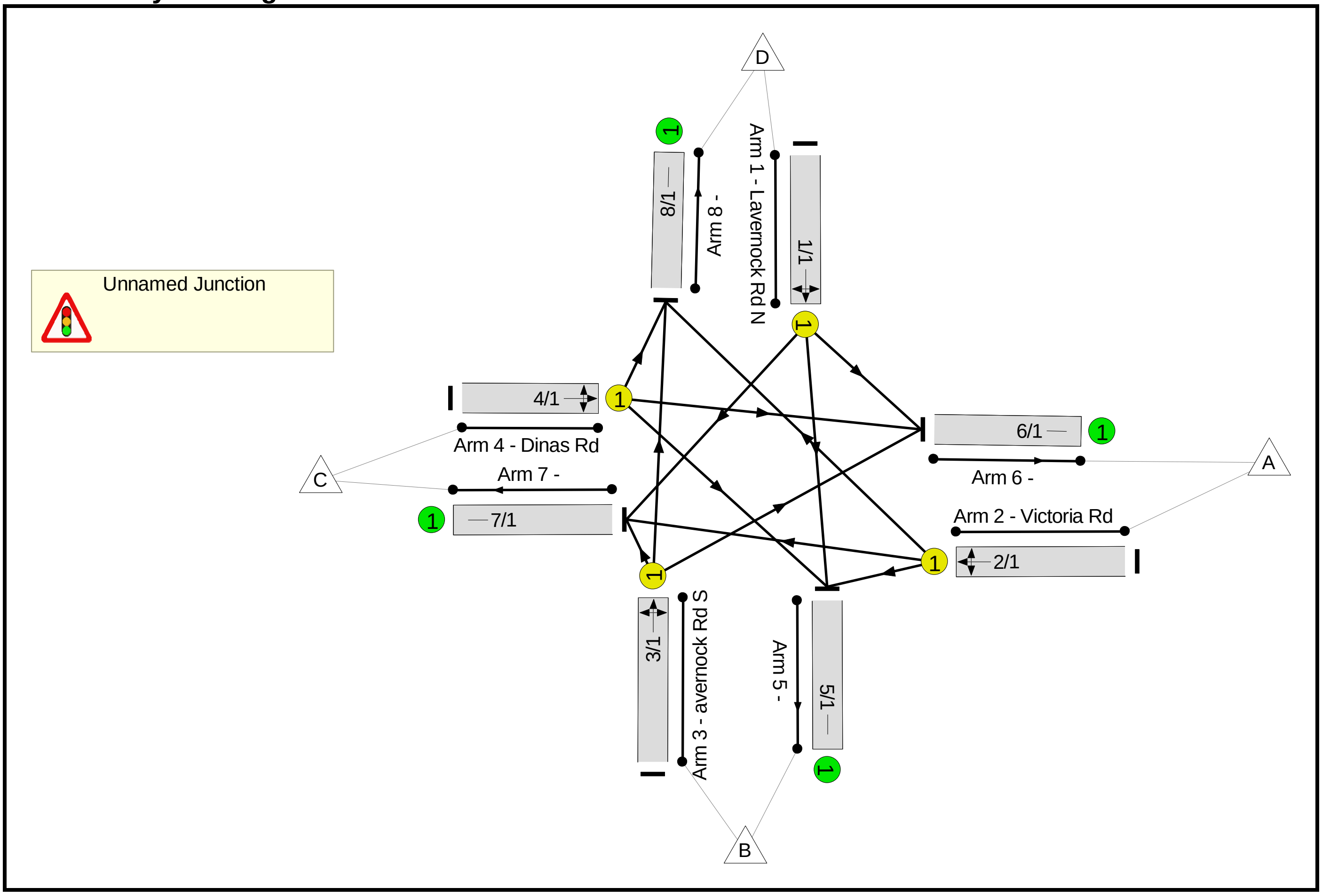
Appendix S

Full Input Data And Results

User and Project Details

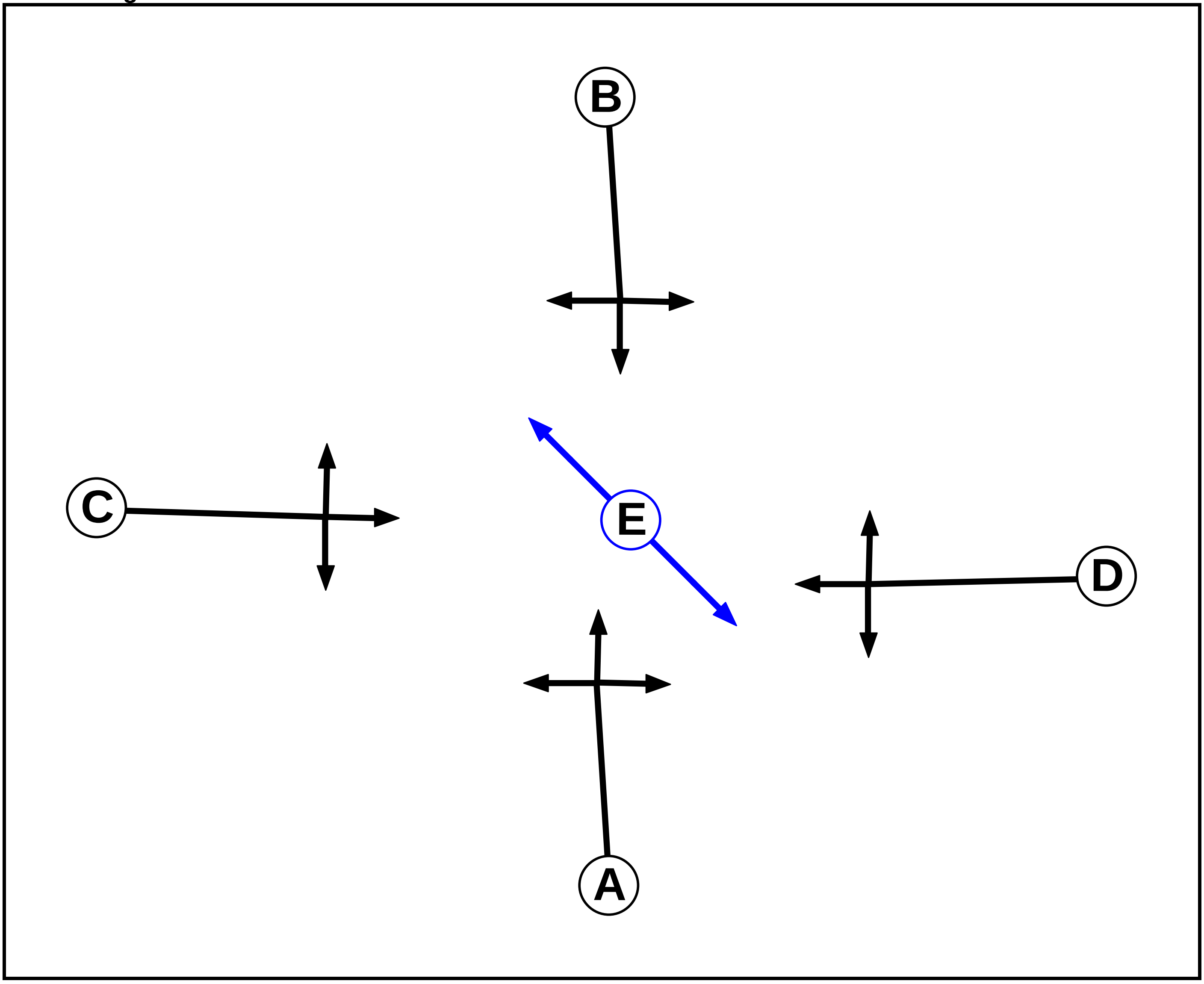
Project:	
Title:	
Location:	
Additional detail:	
File name:	2020 Victoria Rd Linsig DC - Existing.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

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	Traffic		7	7
E	Pedestrian		7	7

Full Input Data And Results

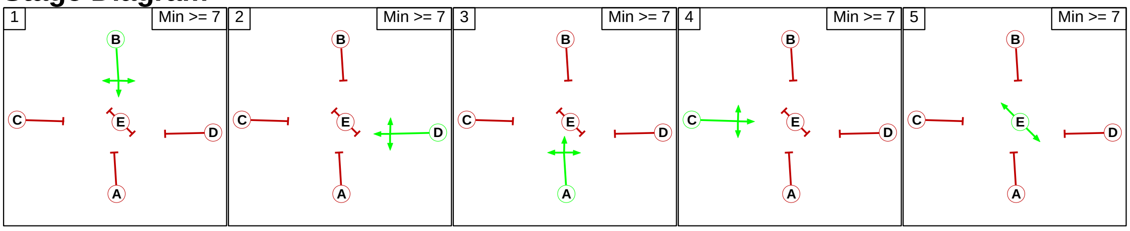
Phase Intergreens Matrix

	Starting Phase					
Terminating Phase		A	B	C	D	E
	A		5	5	5	6
	B	5		5	5	6
	C	5	5		5	6
	D	5	5	5		6
	E	6	6	6	6	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Change

	To Stage					
From Stage		1	2	3	4	5
	1		5	5	5	6
	2	5		5	5	6
	3	5	5		5	6
	4	5	5	5		6
	5	6	6	6	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
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 (Lavernock Rd N)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Left	15.40
											Arm 7 Right	10.00
2/1 (Victoria Rd)	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	18.00
											Arm 7 Ahead	Inf
											Arm 8 Right	10.00
3/1 (avernock Rd S)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Right	10.00
											Arm 7 Left	18.50
											Arm 8 Ahead	Inf
4/1 (Dinas Rd)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Right	10.00
											Arm 6 Ahead	Inf
											Arm 8 Left	18.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 Base'	08:00	09:00	01:00	
2: '2019 Base'	17:00	18:00	01:00	
3: '2022 B AM'	08:00	09:00	01:00	
4: '2022 B PM'	17:00	18:00	01:00	
5: '2025 B AM'	08:00	09:00	01:00	
6: '2025 B PM'	17:00	18:00	01:00	
7: '2029 B AM'	08:00	09:00	01:00	
8: '2029 B PM'	17:00	18:00	01:00	
9: '2022 B + C AM'	08:00	09:00	01:00	
10: '2022 B + C PM'	17:00	18:00	01:00	
11: '2025 B + C AM'	08:00	09:00	01:00	
12: '2025 B + C PM'	17:00	18:00	01:00	
13: '2029 B + C AM'	08:00	09:00	01:00	
14: '2029 B + C PM'	17:00	18:00	01:00	
15: '2022 B + C + D AM'	08:00	09:00	01:00	
16: '2022 B + C + D PM'	17:00	18:00	01:00	
17: '2025 B + C + D AM'	08:00	09:00	01:00	
18: '2025 B + C + D PM'	17:00	18:00	01:00	
19: '2029+C+D AM'	08:00	09:00	01:00	
20: '2029+C+D PM'	08:00	09:00	01:00	

Scenario 1: '2019 Base' (FG1: '2019 Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	105	80	54	239
	B	65	0	27	289	381
	C	135	85	0	67	287
	D	38	218	29	0	285
	Tot.	238	408	136	410	1192

Traffic Lane Flows

Lane	Scenario 1: 2019 Base
Junction: Unnamed Junction	
1/1	285
2/1	239
3/1	381
4/1	287
5/1	408
6/1	238
7/1	136
8/1	410

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.5 %	1887	1887
				Arm 6 Left	15.40	13.3 %		
				Arm 7 Right	10.00	10.2 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	43.9 %	1812	1812
				Arm 7 Ahead	Inf	33.5 %		
				Arm 8 Right	10.00	22.6 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.1 %	1881	1881
				Arm 7 Left	18.50	7.1 %		
				Arm 8 Ahead	Inf	75.9 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.6 %	1824	1824
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2019 Base' (FG2: '2019 Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	93	107	32	232
	B	44	0	25	250	319
	C	58	44	0	50	152
	D	46	323	82	0	451
	Tot.	148	460	214	332	1154

Traffic Lane Flows

Lane	Scenario 2: 2019 Base
Junction: Unnamed Junction	
1/1	451
2/1	232
3/1	319
4/1	152
5/1	460
6/1	148
7/1	214
8/1	332

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.6 %	1870	1870
				Arm 6 Left	15.40	10.2 %		
				Arm 7 Right	10.00	18.2 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.1 %	1840	1840
				Arm 7 Ahead	Inf	46.1 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.8 %	1889	1889
				Arm 7 Left	18.50	7.8 %		
				Arm 8 Ahead	Inf	78.4 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	28.9 %	1812	1812
				Arm 6 Ahead	Inf	38.2 %		
				Arm 8 Left	18.00	32.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2022 Base' (FG3: '2022 B AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	108	82	55	245
	B	67	0	28	297	392
	C	139	88	0	69	296
	D	39	224	30	0	293
	Tot.	245	420	140	421	1226

Traffic Lane Flows

Lane	Scenario 3: 2022 Base
Junction: Unnamed Junction	
1/1	293
2/1	245
3/1	392
4/1	296
5/1	420
6/1	245
7/1	140
8/1	421

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.5 %	1887	1887
				Arm 6 Left	15.40	13.3 %		
				Arm 7 Right	10.00	10.2 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.1 %	1812	1812
				Arm 7 Ahead	Inf	33.5 %		
				Arm 8 Right	10.00	22.4 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.1 %	1881	1881
				Arm 7 Left	18.50	7.1 %		
				Arm 8 Ahead	Inf	75.8 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.7 %	1823	1823
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2022 Base' (FG4: '2022 B PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	96	110	33	239
	B	45	0	26	257	328
	C	59	45	0	51	155
	D	47	332	84	0	463
	Tot.	151	473	220	341	1185

Traffic Lane Flows

Lane	Scenario 4: 2022 Base
Junction: Unnamed Junction	
1/1	463
2/1	239
3/1	328
4/1	155
5/1	473
6/1	151
7/1	220
8/1	341

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1871	1871
				Arm 6 Left	15.40	10.2 %		
				Arm 7 Right	10.00	18.1 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.2 %	1840	1840
				Arm 7 Ahead	Inf	46.0 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	7.9 %		
				Arm 8 Ahead	Inf	78.4 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.0 %	1811	1811
				Arm 6 Ahead	Inf	38.1 %		
				Arm 8 Left	18.00	32.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2025 Base' (FG5: '2025 B AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	111	84	57	252
	B	68	0	29	304	401
	C	142	90	0	70	302
	D	39	229	31	0	299
	Tot.	249	430	144	431	1254

Traffic Lane Flows

Lane	Scenario 5: 2025 Base
Junction: Unnamed Junction	
1/1	299
2/1	252
3/1	401
4/1	302
5/1	430
6/1	249
7/1	144
8/1	431

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.6 %	1887	1887
				Arm 6 Left	15.40	13.0 %		
				Arm 7 Right	10.00	10.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.0 %	1812	1812
				Arm 7 Ahead	Inf	33.3 %		
				Arm 8 Right	10.00	22.6 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.0 %	1881	1881
				Arm 7 Left	18.50	7.2 %		
				Arm 8 Ahead	Inf	75.8 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.8 %	1823	1823
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.2 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: '2025 Base' (FG6: '2025 B PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	98	113	34	245
	B	46	0	27	263	336
	C	61	46	0	52	159
	D	48	340	86	0	474
	Tot.	155	484	226	349	1214

Traffic Lane Flows

Lane	Scenario 6: 2025 Base
Junction: Unnamed Junction	
1/1	474
2/1	245
3/1	336
4/1	159
5/1	484
6/1	155
7/1	226
8/1	349

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1871	1871
				Arm 6 Left	15.40	10.1 %		
				Arm 7 Right	10.00	18.1 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.0 %	1840	1840
				Arm 7 Ahead	Inf	46.1 %		
				Arm 8 Right	10.00	13.9 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	8.0 %		
				Arm 8 Ahead	Inf	78.3 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	28.9 %	1812	1812
				Arm 6 Ahead	Inf	38.4 %		
				Arm 8 Left	18.00	32.7 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 7: '2029 Base' (FG7: '2029 B AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	114	86	58	258
	B	70	0	30	312	412
	C	145	92	0	72	309
	D	40	235	32	0	307
	Tot.	255	441	148	442	1286

Traffic Lane Flows

Lane	Scenario 7: 2029 Base
Junction: Unnamed Junction	
1/1	307
2/1	258
3/1	412
4/1	309
5/1	441
6/1	255
7/1	148
8/1	442

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.5 %	1887	1887
				Arm 6 Left	15.40	13.0 %		
				Arm 7 Right	10.00	10.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.2 %	1812	1812
				Arm 7 Ahead	Inf	33.3 %		
				Arm 8 Right	10.00	22.5 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.0 %	1881	1881
				Arm 7 Left	18.50	7.3 %		
				Arm 8 Ahead	Inf	75.7 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.8 %	1823	1823
				Arm 6 Ahead	Inf	46.9 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2029 Base' (FG8: '2029 B PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	101	116	35	252
	B	47	0	27	270	344
	C	62	47	0	54	163
	D	49	349	89	0	487
	Tot.	158	497	232	359	1246

Traffic Lane Flows

Lane	Scenario 8: 2029 Base
Junction: Unnamed Junction	
1/1	487
2/1	252
3/1	344
4/1	163
5/1	497
6/1	158
7/1	232
8/1	359

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1870	1870
				Arm 6 Left	15.40	10.1 %		
				Arm 7 Right	10.00	18.3 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.1 %	1840	1840
				Arm 7 Ahead	Inf	46.0 %		
				Arm 8 Right	10.00	13.9 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	7.8 %		
				Arm 8 Ahead	Inf	78.5 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	28.8 %	1812	1812
				Arm 6 Ahead	Inf	38.0 %		
				Arm 8 Left	18.00	33.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2022 B + C' (FG9: '2022 B + C AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	108	82	55	245
	B	67	0	28	297	392
	C	139	88	0	69	296
	D	39	224	30	0	293
	Tot.	245	420	140	421	1226

Traffic Lane Flows

Lane	Scenario 9: 2022 B + C
Junction: Unnamed Junction	
1/1	293
2/1	245
3/1	392
4/1	296
5/1	420
6/1	245
7/1	140
8/1	421

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.5 %	1887	1887
				Arm 6 Left	15.40	13.3 %		
				Arm 7 Right	10.00	10.2 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.1 %	1812	1812
				Arm 7 Ahead	Inf	33.5 %		
				Arm 8 Right	10.00	22.4 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.1 %	1881	1881
				Arm 7 Left	18.50	7.1 %		
				Arm 8 Ahead	Inf	75.8 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.7 %	1823	1823
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2022 B + C' (FG10: '2022 B + C PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	96	110	33	239
	B	45	0	26	257	328
	C	59	45	0	51	155
	D	47	332	84	0	463
	Tot.	151	473	220	341	1185

Traffic Lane Flows

Lane	Scenario 10: 2022 B + C
Junction: Unnamed Junction	
1/1	463
2/1	239
3/1	328
4/1	155
5/1	473
6/1	151
7/1	220
8/1	341

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1871	1871
				Arm 6 Left	15.40	10.2 %		
				Arm 7 Right	10.00	18.1 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.2 %	1840	1840
				Arm 7 Ahead	Inf	46.0 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	7.9 %		
				Arm 8 Ahead	Inf	78.4 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.0 %	1811	1811
				Arm 6 Ahead	Inf	38.1 %		
				Arm 8 Left	18.00	32.9 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2025 B + C' (FG11: '2025 B + C AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	111	84	57	252
	B	68	0	29	304	401
	C	142	90	0	70	302
	D	39	229	31	0	299
	Tot.	249	430	144	431	1254

Traffic Lane Flows

Lane	Scenario 11: 2025 B + C
Junction: Unnamed Junction	
1/1	299
2/1	252
3/1	401
4/1	302
5/1	430
6/1	249
7/1	144
8/1	431

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.6 %	1887	1887
				Arm 6 Left	15.40	13.0 %		
				Arm 7 Right	10.00	10.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.0 %	1812	1812
				Arm 7 Ahead	Inf	33.3 %		
				Arm 8 Right	10.00	22.6 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.0 %	1881	1881
				Arm 7 Left	18.50	7.2 %		
				Arm 8 Ahead	Inf	75.8 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.8 %	1823	1823
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.2 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 12: '2025 B + C' (FG12: '2025 B + C PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	98	113	34	245
	B	46	0	27	263	336
	C	61	46	0	52	159
	D	48	340	86	0	474
	Tot.	155	484	226	349	1214

Traffic Lane Flows

Lane	Scenario 12: 2025 B + C
Junction: Unnamed Junction	
1/1	474
2/1	245
3/1	336
4/1	159
5/1	484
6/1	155
7/1	226
8/1	349

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1871	1871
				Arm 6 Left	15.40	10.1 %		
				Arm 7 Right	10.00	18.1 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.0 %	1840	1840
				Arm 7 Ahead	Inf	46.1 %		
				Arm 8 Right	10.00	13.9 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	8.0 %		
				Arm 8 Ahead	Inf	78.3 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	28.9 %	1812	1812
				Arm 6 Ahead	Inf	38.4 %		
				Arm 8 Left	18.00	32.7 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 13: '2029 B + C' (FG13: '2029 B + C AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	114	86	58	258
	B	70	0	30	312	412
	C	145	92	0	72	309
	D	40	235	32	0	307
	Tot.	255	441	148	442	1286

Traffic Lane Flows

Lane	Scenario 13: 2029 B + C
Junction: Unnamed Junction	
1/1	307
2/1	258
3/1	412
4/1	309
5/1	441
6/1	255
7/1	148
8/1	442

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.5 %	1887	1887
				Arm 6 Left	15.40	13.0 %		
				Arm 7 Right	10.00	10.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.2 %	1812	1812
				Arm 7 Ahead	Inf	33.3 %		
				Arm 8 Right	10.00	22.5 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	17.0 %	1881	1881
				Arm 7 Left	18.50	7.3 %		
				Arm 8 Ahead	Inf	75.7 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.8 %	1823	1823
				Arm 6 Ahead	Inf	46.9 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 14: '2029 B + C' (FG14: '2029 B + C PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	101	116	35	252
	B	47	0	27	270	344
	C	62	47	0	54	163
	D	49	349	89	0	487
	Tot.	158	497	232	359	1246

Traffic Lane Flows

Lane	Scenario 14: 2029 B + C
Junction: Unnamed Junction	
1/1	487
2/1	252
3/1	344
4/1	163
5/1	497
6/1	158
7/1	232
8/1	359

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	71.7 %	1870	1870
				Arm 6 Left	15.40	10.1 %		
				Arm 7 Right	10.00	18.3 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.1 %	1840	1840
				Arm 7 Ahead	Inf	46.0 %		
				Arm 8 Right	10.00	13.9 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.7 %	1889	1889
				Arm 7 Left	18.50	7.8 %		
				Arm 8 Ahead	Inf	78.5 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	28.8 %	1812	1812
				Arm 6 Ahead	Inf	38.0 %		
				Arm 8 Left	18.00	33.1 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 15: '2022 B + C + D' (FG15: '2022 B + C + D AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	108	82	55	245
	B	67	0	29	307	403
	C	139	88	0	69	296
	D	39	228	30	0	297
	Tot.	245	424	141	431	1241

Traffic Lane Flows

Lane	Scenario 15: 2022 B + C + D
Junction: Unnamed Junction	
1/1	297
2/1	245
3/1	403
4/1	296
5/1	424
6/1	245
7/1	141
8/1	431

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.8 %	1887	1887
				Arm 6 Left	15.40	13.1 %		
				Arm 7 Right	10.00	10.1 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	44.1 %	1812	1812
				Arm 7 Ahead	Inf	33.5 %		
				Arm 8 Right	10.00	22.4 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	16.6 %	1882	1882
				Arm 7 Left	18.50	7.2 %		
				Arm 8 Ahead	Inf	76.2 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.7 %	1823	1823
				Arm 6 Ahead	Inf	47.0 %		
				Arm 8 Left	18.00	23.3 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 16: '2022 B + C + D' (FG16: '2022 B + C + D PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	96	110	33	239
	B	45	0	26	261	332
	C	59	46	0	51	156
	D	47	340	84	0	471
	Tot.	151	482	220	345	1198

Traffic Lane Flows

Lane	Scenario 16: 2022 B + C + D
Junction: Unnamed Junction	
1/1	471
2/1	239
3/1	332
4/1	156
5/1	482
6/1	151
7/1	220
8/1	345

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	72.2 %	1872	1872
				Arm 6 Left	15.40	10.0 %		
				Arm 7 Right	10.00	17.8 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.2 %	1840	1840
				Arm 7 Ahead	Inf	46.0 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.6 %	1890	1890
				Arm 7 Left	18.50	7.8 %		
				Arm 8 Ahead	Inf	78.6 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	29.5 %	1811	1811
				Arm 6 Ahead	Inf	37.8 %		
				Arm 8 Left	18.00	32.7 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 17: '2025 B + C + D' (FG17: '2025 B + C + D AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	128	84	57	269
	B	80	0	46	350	476
	C	142	109	0	70	321
	D	39	246	31	0	316
	Tot.	261	483	161	477	1382

Traffic Lane Flows

Lane	Scenario 17: 2025 B + C + D
Junction: Unnamed Junction	
1/1	316
2/1	269
3/1	476
4/1	321
5/1	483
6/1	261
7/1	161
8/1	477

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	77.8 %	1889	1889
				Arm 6 Left	15.40	12.3 %		
				Arm 7 Right	10.00	9.8 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	47.6 %	1811	1811
				Arm 7 Ahead	Inf	31.2 %		
				Arm 8 Right	10.00	21.2 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	16.8 %	1878	1878
				Arm 7 Left	18.50	9.7 %		
				Arm 8 Ahead	Inf	73.5 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	34.0 %	1815	1815
				Arm 6 Ahead	Inf	44.2 %		
				Arm 8 Left	18.00	21.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 18: '2025 B + C + D' (FG18: '2025 B + C + D PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	99	113	34	246
	B	48	0	31	283	362
	C	61	52	0	52	165
	D	48	381	86	0	515
	Tot.	157	532	230	369	1288

Traffic Lane Flows

Lane	Scenario 18: 2025 B + C + D
Junction: Unnamed Junction	
1/1	515
2/1	246
3/1	362
4/1	165
5/1	532
6/1	157
7/1	230
8/1	369

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	74.0 %	1876	1876
				Arm 6 Left	15.40	9.3 %		
				Arm 7 Right	10.00	16.7 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.2 %	1840	1840
				Arm 7 Ahead	Inf	45.9 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	13.3 %	1889	1889
				Arm 7 Left	18.50	8.6 %		
				Arm 8 Ahead	Inf	78.2 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	31.5 %	1807	1807
				Arm 6 Ahead	Inf	37.0 %		
				Arm 8 Left	18.00	31.5 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 19: '2029 B + C + D' (FG19: '2029+C+D AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	131	86	58	275
	B	82	0	53	413	548
	C	145	114	0	72	331
	D	40	273	32	0	345
	Tot.	267	518	171	543	1499

Traffic Lane Flows

Lane	Scenario 19: 2029 B + C + D
Junction: Unnamed Junction	
1/1	345
2/1	275
3/1	548
4/1	331
5/1	518
6/1	267
7/1	171
8/1	543

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	79.1 %	1892	1892
				Arm 6 Left	15.40	11.6 %		
				Arm 7 Right	10.00	9.3 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	47.6 %	1811	1811
				Arm 7 Ahead	Inf	31.3 %		
				Arm 8 Right	10.00	21.1 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	15.0 %	1883	1883
				Arm 7 Left	18.50	9.7 %		
				Arm 8 Ahead	Inf	75.4 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	34.4 %	1813	1813
				Arm 6 Ahead	Inf	43.8 %		
				Arm 8 Left	18.00	21.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 20: '2029 B + C + D' (FG20: '2029+C+D PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	102	116	35	253
	B	50	0	35	314	399
	C	62	58	0	54	174
	D	49	439	89	0	577
	Tot.	161	599	240	403	1403

Full Input Data And Results

Traffic Lane Flows

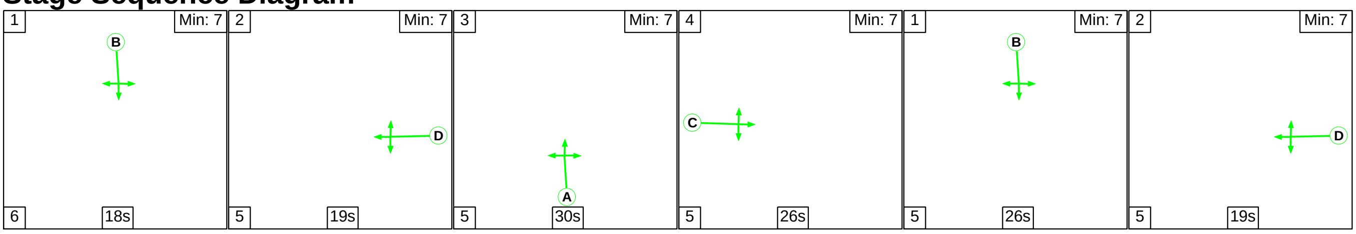
Lane	Scenario 20: 2029 B + C + D
Junction: Unnamed Junction	
1/1	577
2/1	253
3/1	399
4/1	174
5/1	599
6/1	161
7/1	240
8/1	403

Lane Saturation Flows

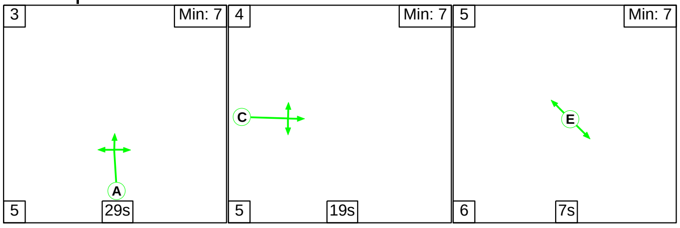
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd N)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.1 %	1881	1881
				Arm 6 Left	15.40	8.5 %		
				Arm 7 Right	10.00	15.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.3 %	1840	1840
				Arm 7 Ahead	Inf	45.8 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (avernock Rd S)	3.25	0.00	Y	Arm 6 Right	10.00	12.5 %	1891	1891
				Arm 7 Left	18.50	8.8 %		
				Arm 8 Ahead	Inf	78.7 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	33.3 %	1803	1803
				Arm 6 Ahead	Inf	35.6 %		
				Arm 8 Left	18.00	31.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2019 Base' (FG1: '2019 Base', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram



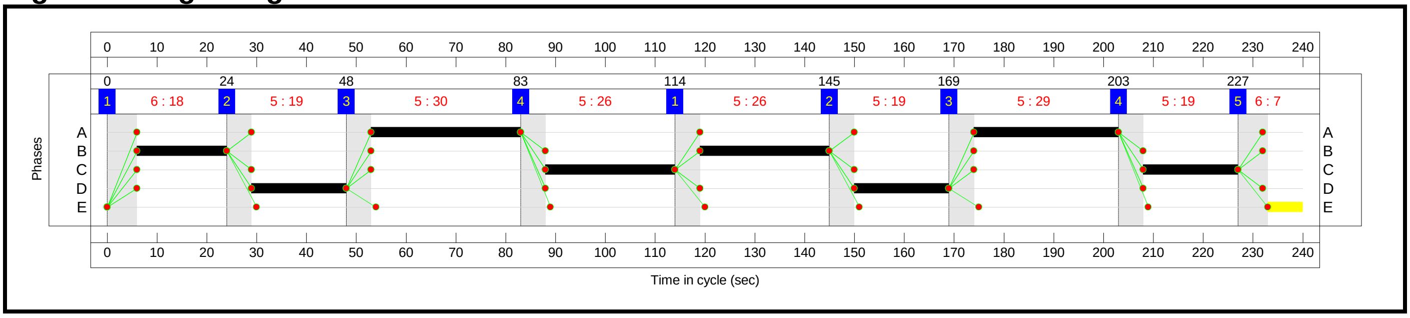
Full Input Data And Results



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	18	19	30	26	26	19	29	19	7
Change Point	0	24	48	83	114	145	169	203	227

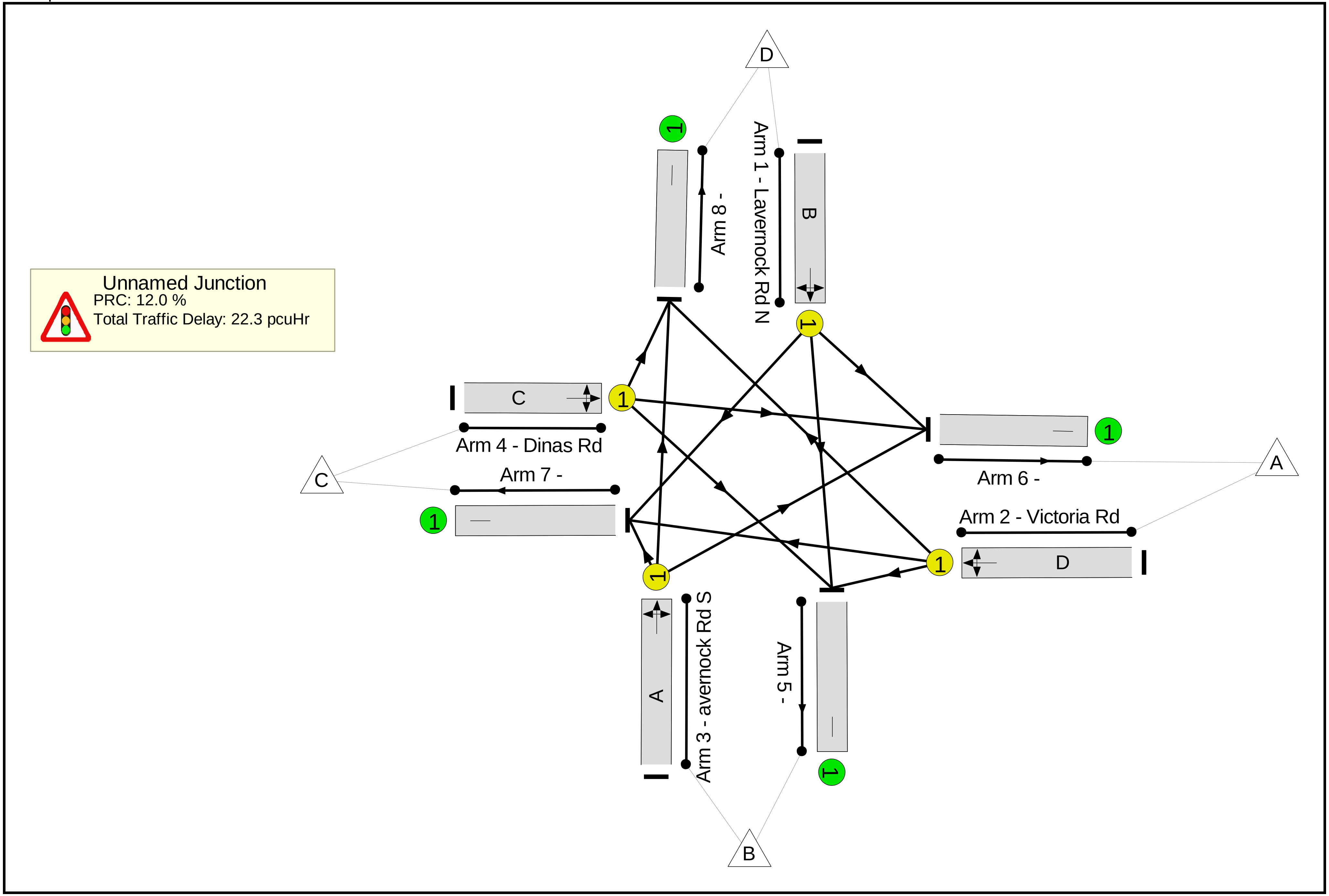
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**80.3%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	44	-	285	1887	362	78.8%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	239	1812	302	79.1%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	381	1881	478	79.7%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	45	-	287	1824	357	80.3%
5/1		U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	238	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	136	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	410	Inf	Inf	0.0%

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**	**15.0**	**7.4**	**0.0**	**22.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.0**	**7.4**	**0.0**	**22.3**	**-**	**-**	**-**	**-**
1/1	285	285	-	-	-	3.7	1.8	-	5.4	68.7	9.3	1.8	11.0
2/1	239	239	-	-	-	3.2	1.8	-	5.0	75.0	7.7	1.8	9.5
3/1	381	381	-	-	-	4.4	1.9	-	6.3	59.7	11.9	1.9	13.7
4/1	287	287	-	-	-	3.7	1.9	-	5.6	70.4	9.4	1.9	11.3
5/1	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	238	238	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	136	136	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	410	410	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

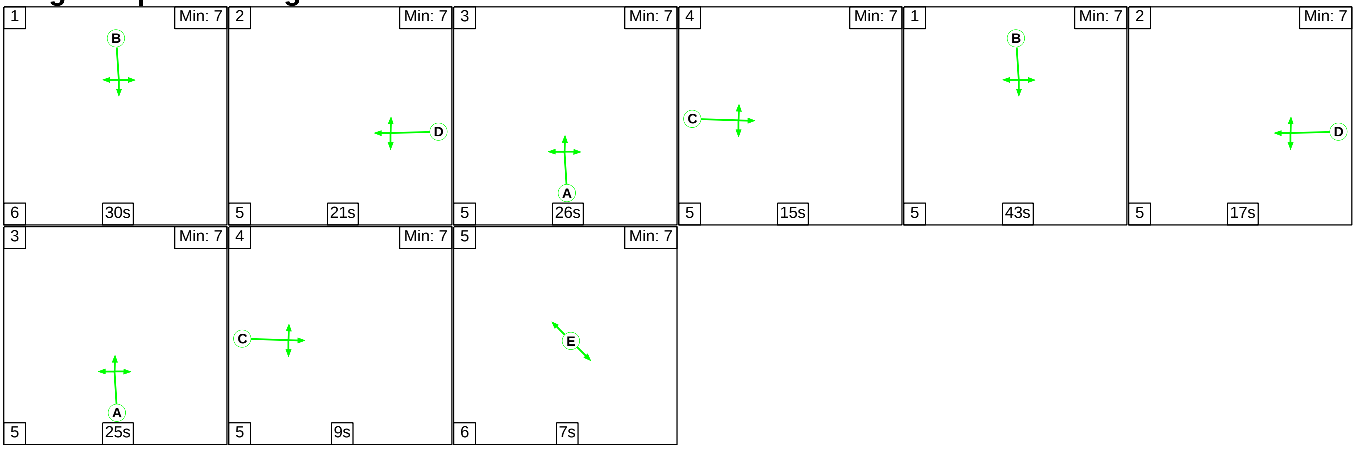
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	12.0	Total Delay for Signalled Lanes (pcuHr):	22.35	Cycle Time (s):	240
	PRC Over All Lanes (%):	12.0	Total Delay Over All Lanes(pcuHr):	22.35		

Full Input Data And Results

Scenario 2: '2019 Base' (FG2: '2019 Base', Plan 1: 'Network Control Plan 1')

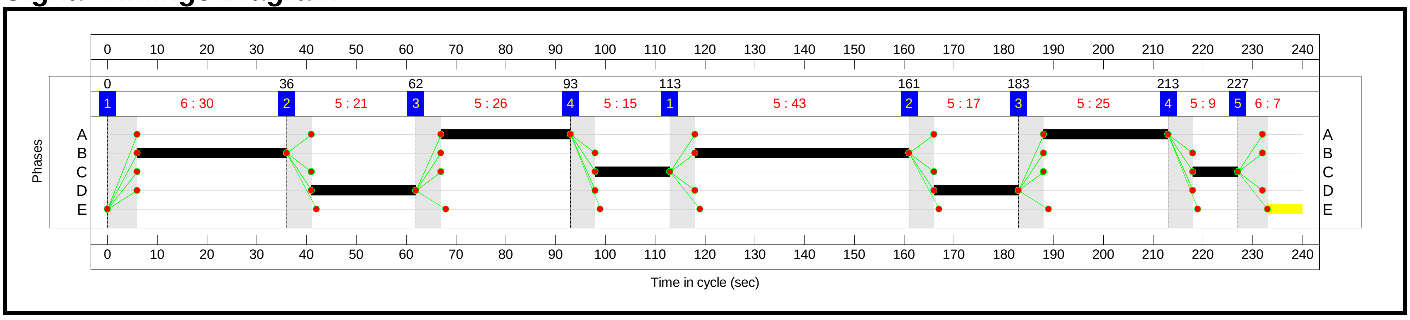
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	30	21	26	15	43	17	25	9	7
Change Point	0	36	62	93	113	161	183	213	227

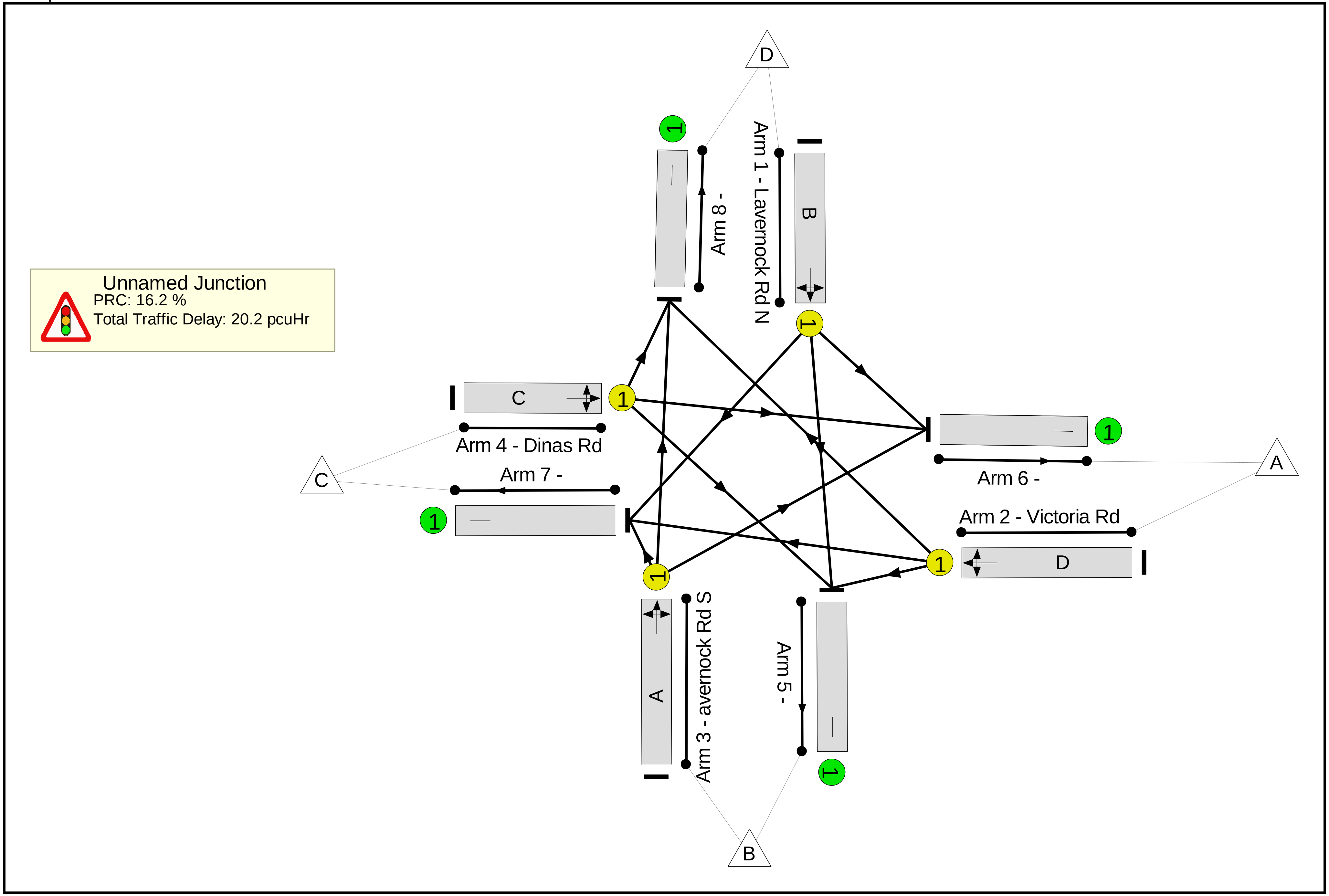
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	451	1870	584	77.2%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	232	1840	307	75.7%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	319	1889	417	76.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	152	1812	196	77.4%
5/1		U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	214	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	332	Inf	Inf	0.0%
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**	**13.8**	**6.3**	**0.0**	**20.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**13.8**	**6.3**	**0.0**	**20.2**	**-**	**-**	**-**	**-**
1/1	451	451	-	-	-	4.7	1.6	-	6.3	50.6	13.8	1.6	15.4
2/1	232	232	-	-	-	3.1	1.5	-	4.6	70.9	7.5	1.5	9.0
3/1	319	319	-	-	-	3.9	1.6	-	5.5	61.6	10.0	1.6	11.6
4/1	152	152	-	-	-	2.2	1.6	-	3.8	90.0	5.1	1.6	6.7
5/1	460	460	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	214	214	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	332	332	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

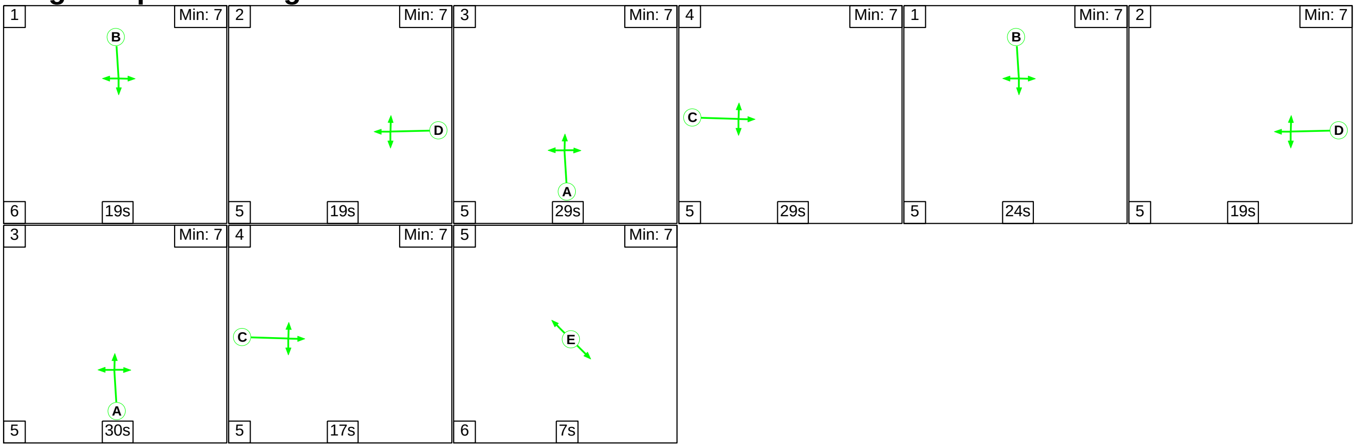
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	16.2	Total Delay for Signalled Lanes (pcuHr):	20.16	Cycle Time (s):	240
	PRC Over All Lanes (%):	16.2	Total Delay Over All Lanes(pcuHr):	20.16		

Full Input Data And Results

Scenario 3: '2022 Base' (FG3: '2022 B AM', Plan 1: 'Network Control Plan 1')

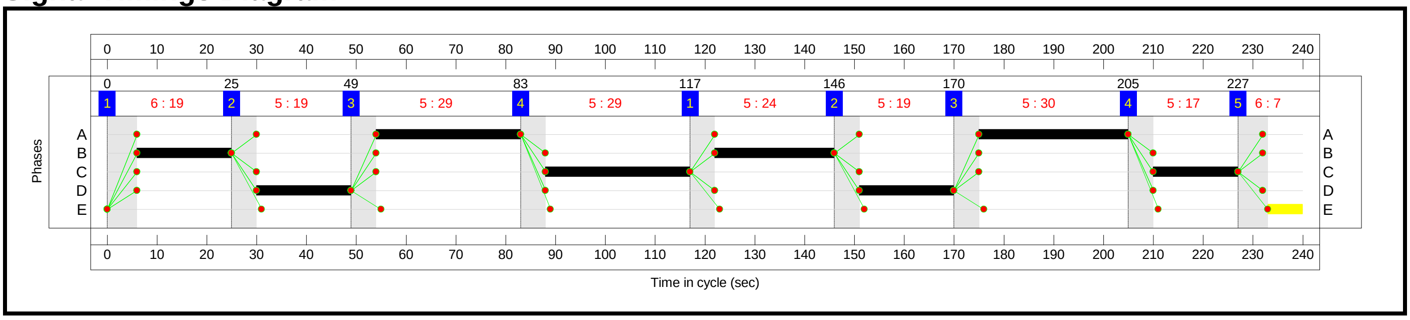
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	19	19	29	29	24	19	30	17	7
Change Point	0	25	49	83	117	146	170	205	227

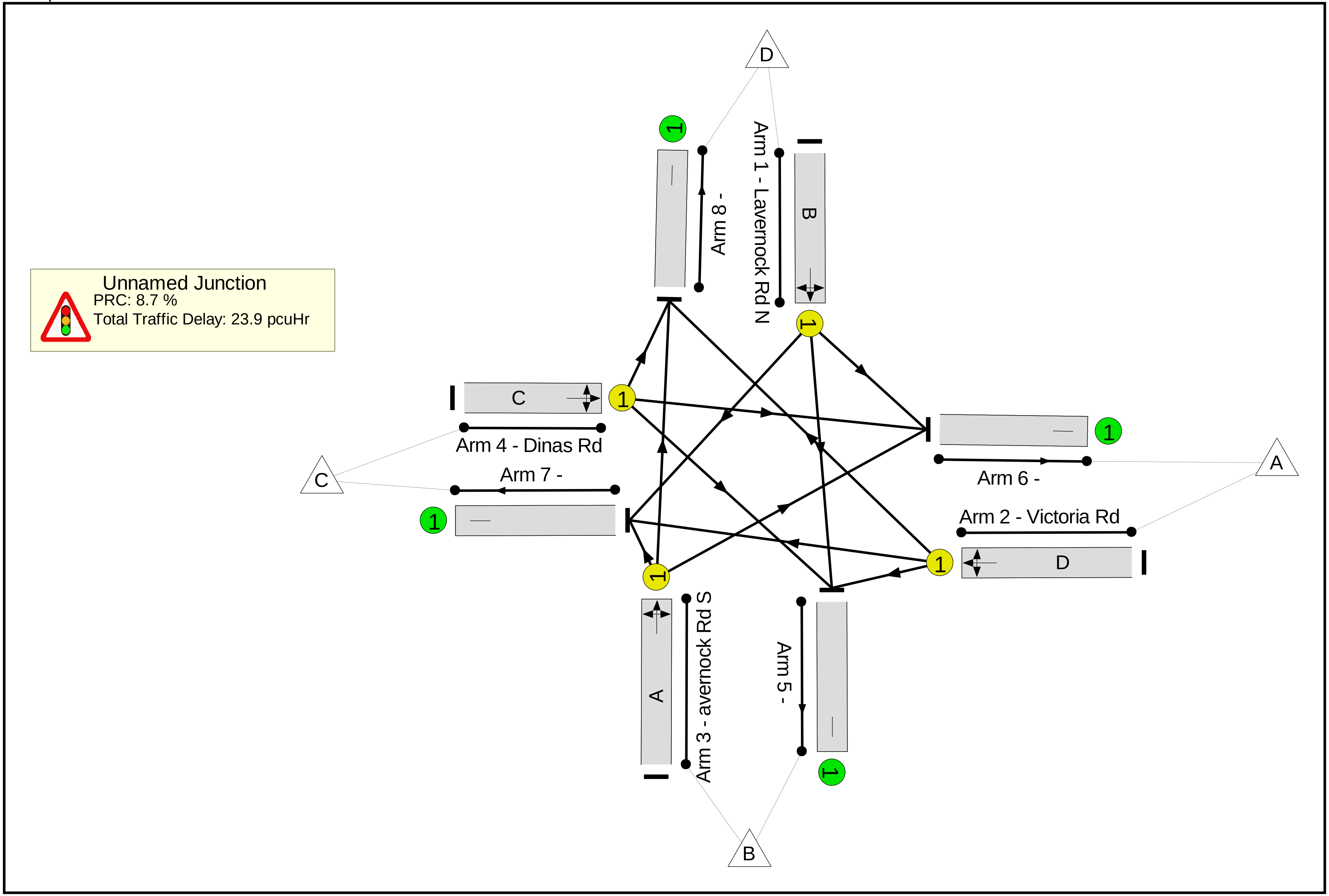
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.8%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	43	-	293	1887	354	82.8%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	245	1812	302	81.1%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	392	1881	478	82.0%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	46	-	296	1823	365	81.2%
5/1		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	140	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%

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**	**15.5**	**8.5**	**0.0**	**23.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.5**	**8.5**	**0.0**	**23.9**	**-**	**-**	**-**	**-**
1/1	293	293	-	-	-	3.8	2.2	-	6.1	74.5	9.5	2.2	11.8
2/1	245	245	-	-	-	3.3	2.0	-	5.3	77.7	7.9	2.0	9.9
3/1	392	392	-	-	-	4.6	2.2	-	6.8	62.1	12.4	2.2	14.6
4/1	296	296	-	-	-	3.8	2.0	-	5.8	70.7	9.8	2.0	11.8
5/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

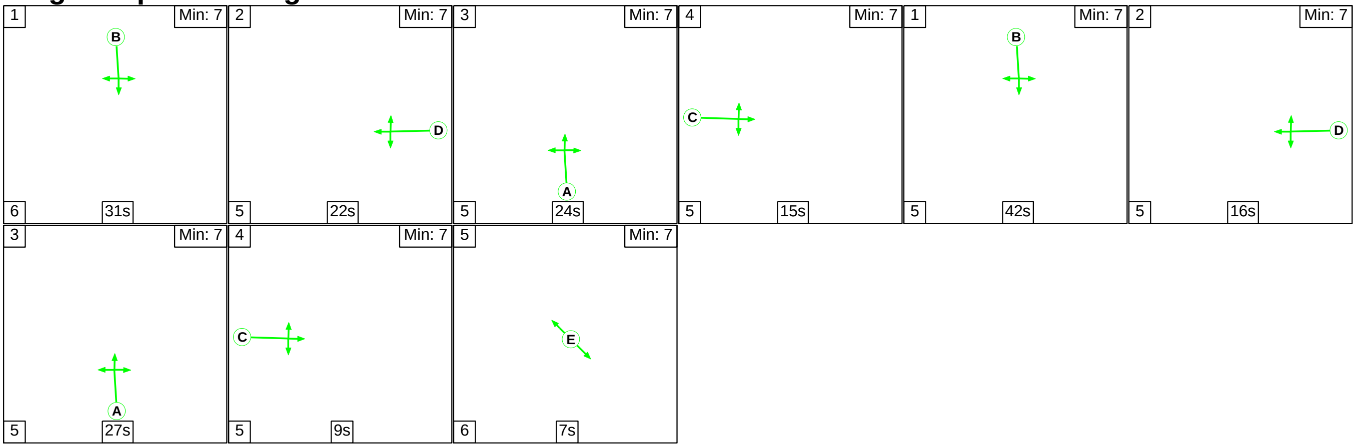
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	8.7	Total Delay for Signalled Lanes (pcuHr):	23.92	Cycle Time (s):	240
	PRC Over All Lanes (%):	8.7	Total Delay Over All Lanes(pcuHr):	23.92		

Full Input Data And Results

Scenario 4: '2022 Base' (FG4: '2022 B PM', Plan 1: 'Network Control Plan 1')

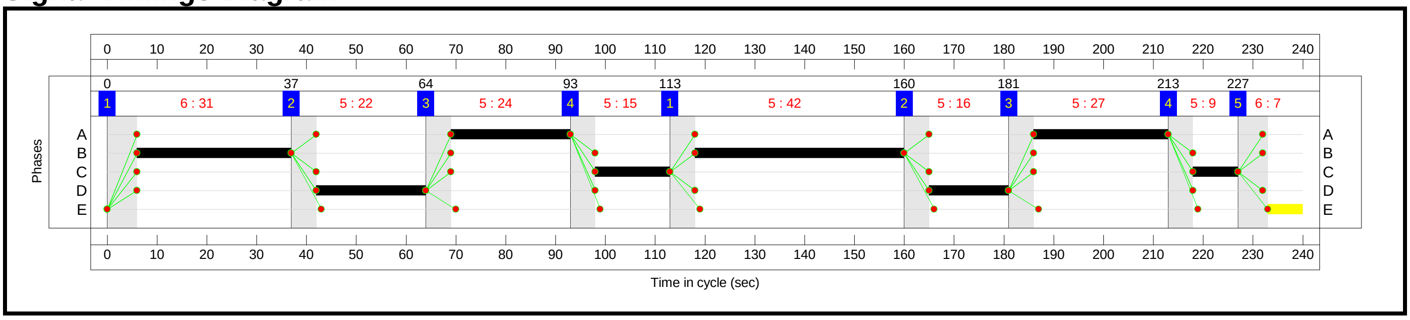
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	31	22	24	15	42	16	27	9	7
Change Point	0	37	64	93	113	160	181	213	227

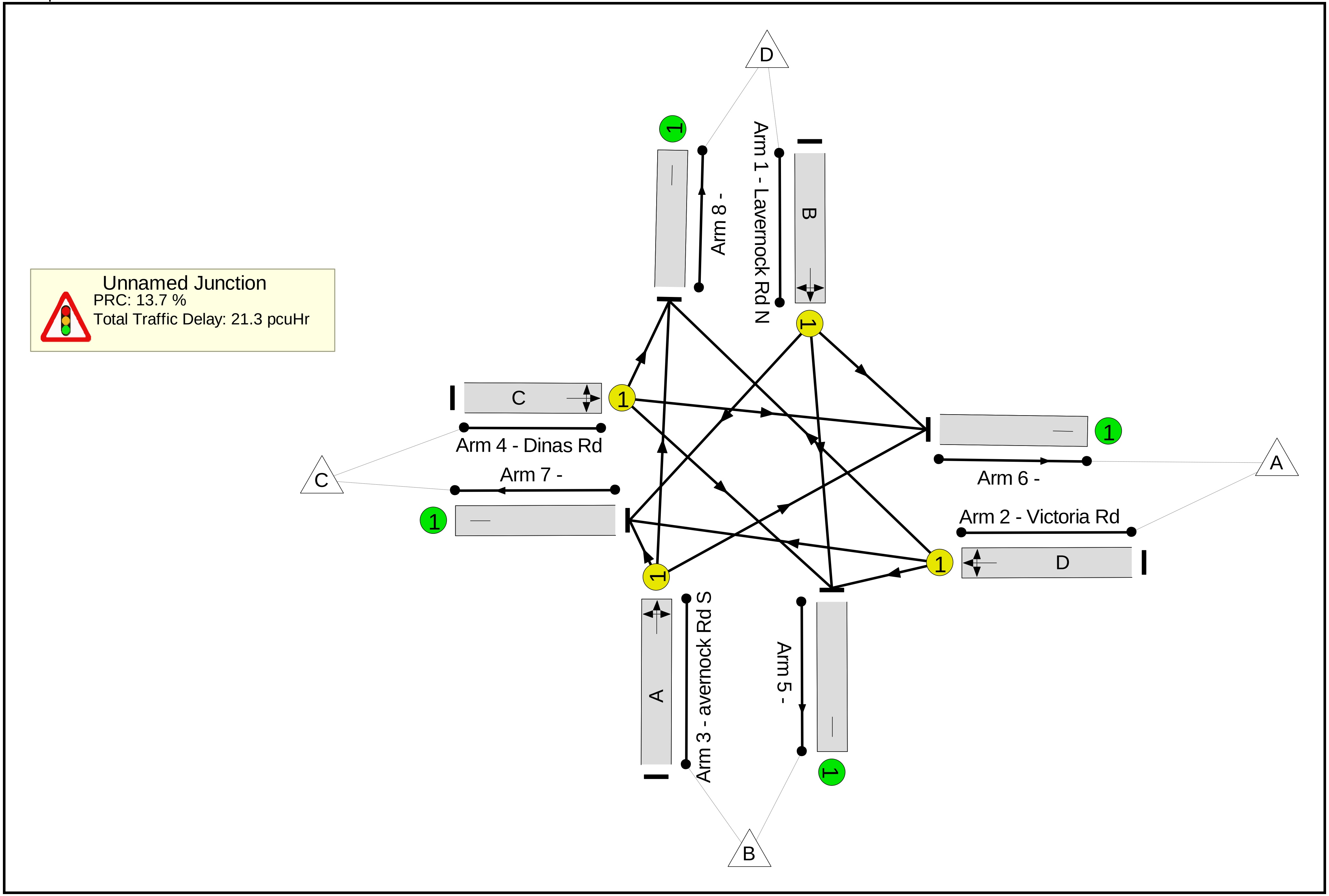
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.2%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	463	1871	585	79.2%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	239	1840	307	77.9%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	328	1889	417	78.6%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	155	1811	196	79.0%
5/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%

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**	**14.3**	**7.0**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.3**	**7.0**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
1/1	463	463	-	-	-	4.9	1.8	-	6.7	52.1	14.4	1.8	16.3
2/1	239	239	-	-	-	3.2	1.7	-	4.9	73.2	7.6	1.7	9.3
3/1	328	328	-	-	-	4.0	1.8	-	5.8	63.5	10.4	1.8	12.2
4/1	155	155	-	-	-	2.2	1.7	-	4.0	92.5	5.2	1.7	6.9
5/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

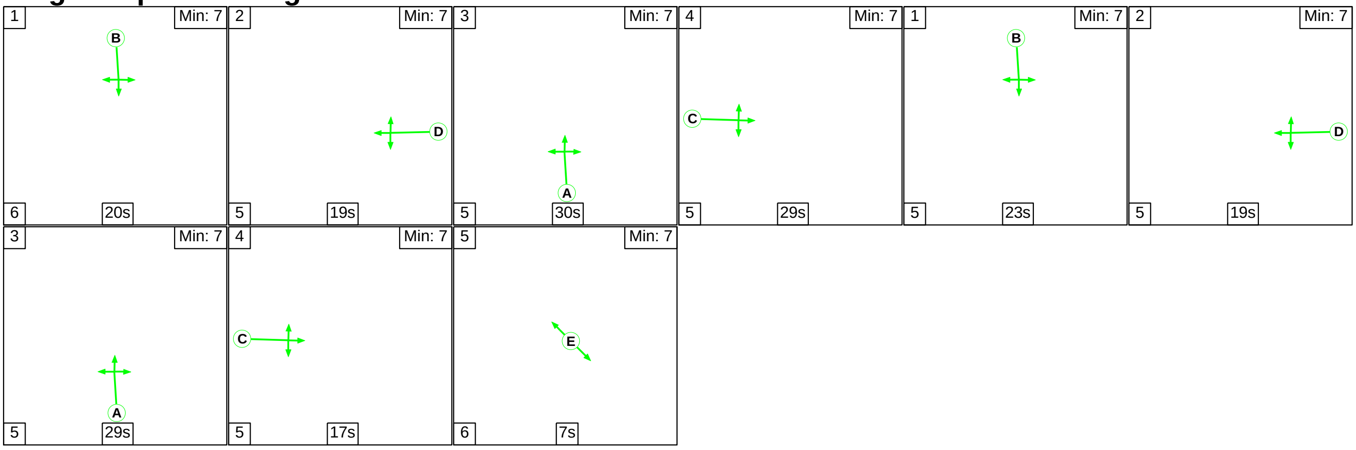
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	13.7	Total Delay for Signalled Lanes (pcuHr):	21.33	Cycle Time (s):	240
	PRC Over All Lanes (%):	13.7	Total Delay Over All Lanes(pcuHr):	21.33		

Full Input Data And Results

Scenario 5: '2025 Base' (FG5: '2025 B AM', Plan 1: 'Network Control Plan 1')

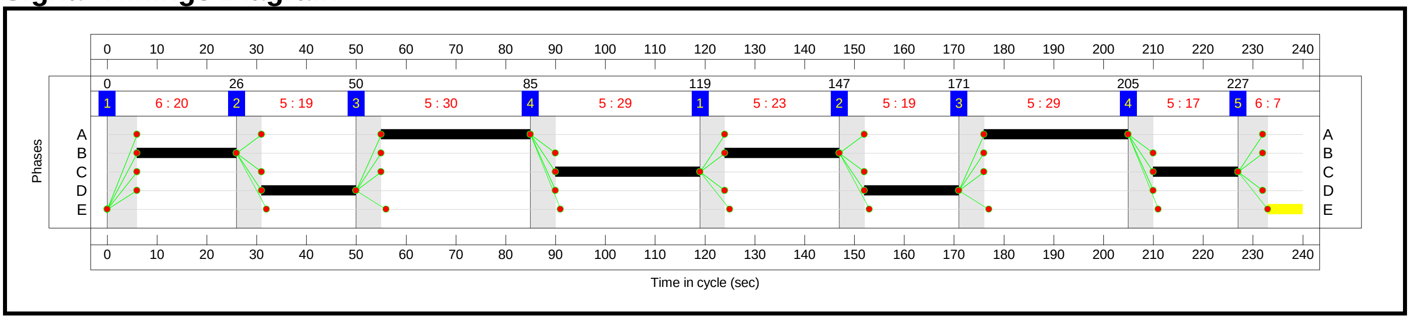
Stage Sequence Diagram



Stage Timings

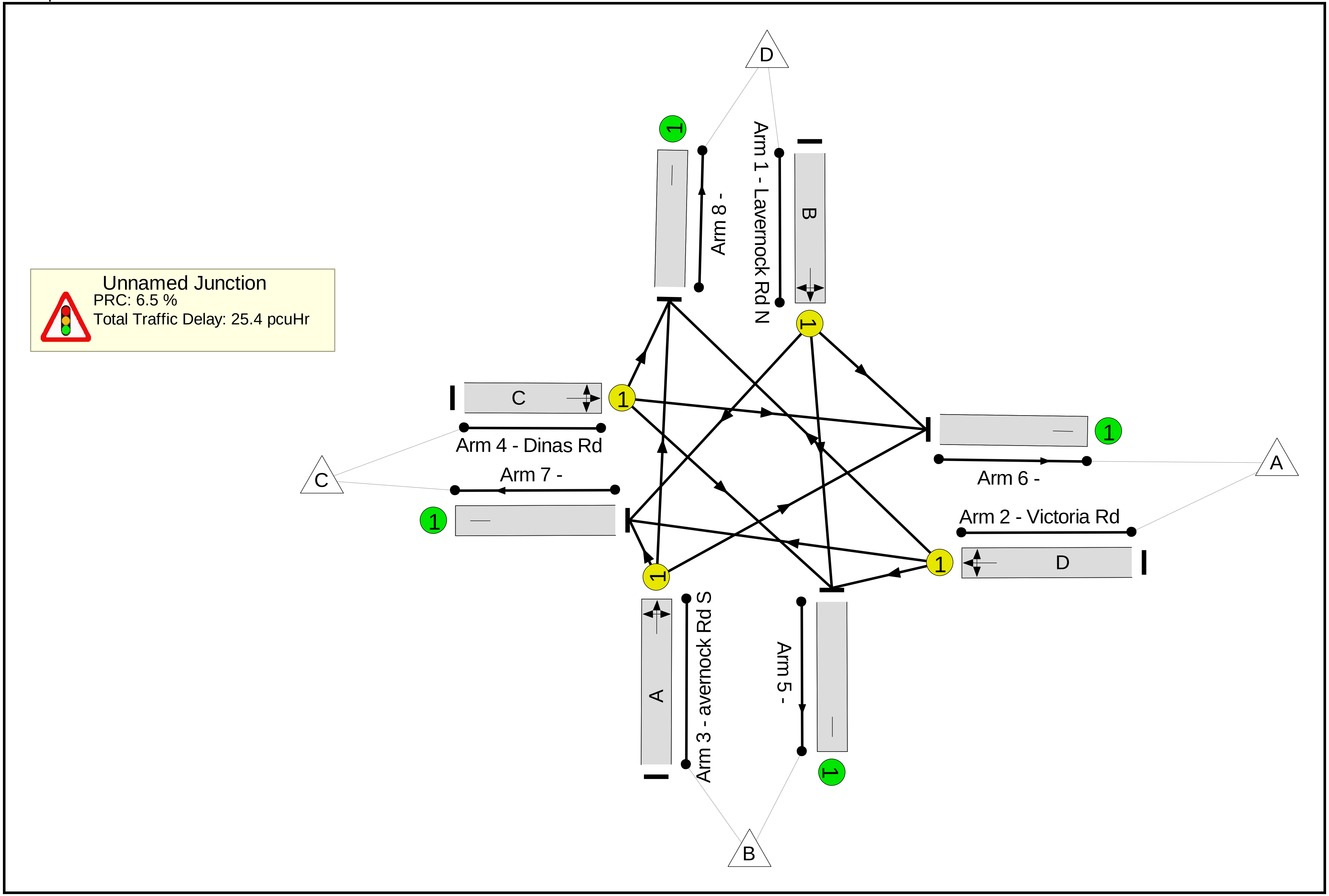
Stage	1	2	3	4	1	2	3	4	5
Duration	20	19	30	29	23	19	29	17	7
Change Point	0	26	50	85	119	147	171	205	227

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	43	-	299	1887	354	84.5%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	252	1812	302	83.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	401	1881	478	83.9%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	46	-	302	1823	365	82.8%
5/1		U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	249	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%

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**	**15.9**	**9.5**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.9**	**9.5**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
1/1	299	299	-	-	-	3.9	2.5	-	6.4	77.2	9.6	2.5	12.1
2/1	252	252	-	-	-	3.4	2.3	-	5.7	81.4	8.2	2.3	10.5
3/1	401	401	-	-	-	4.7	2.4	-	7.2	64.4	12.7	2.4	15.1
4/1	302	302	-	-	-	3.9	2.3	-	6.1	73.0	10.2	2.3	12.5
5/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

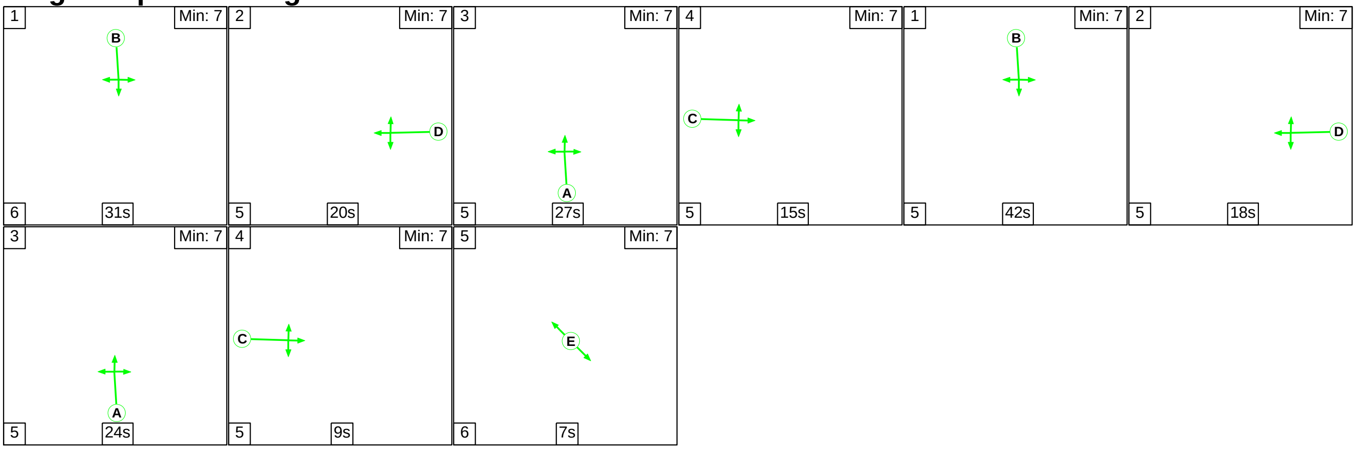
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	6.5	Total Delay for Signalled Lanes (pcuHr):	25.40	Cycle Time (s):	240
	PRC Over All Lanes (%):	6.5	Total Delay Over All Lanes(pcuHr):	25.40		

Full Input Data And Results

Scenario 6: '2025 Base' (FG6: '2025 B PM', Plan 1: 'Network Control Plan 1')

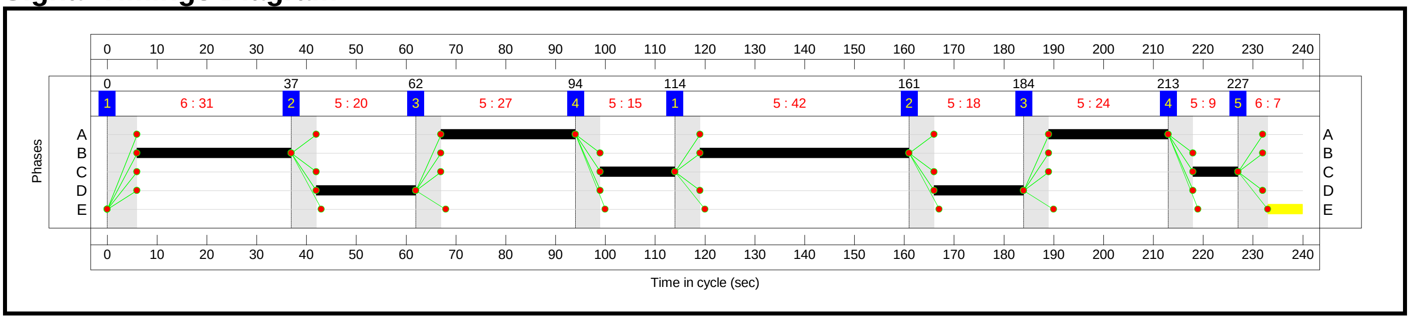
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	31	20	27	15	42	18	24	9	7
Change Point	0	37	62	94	114	161	184	213	227

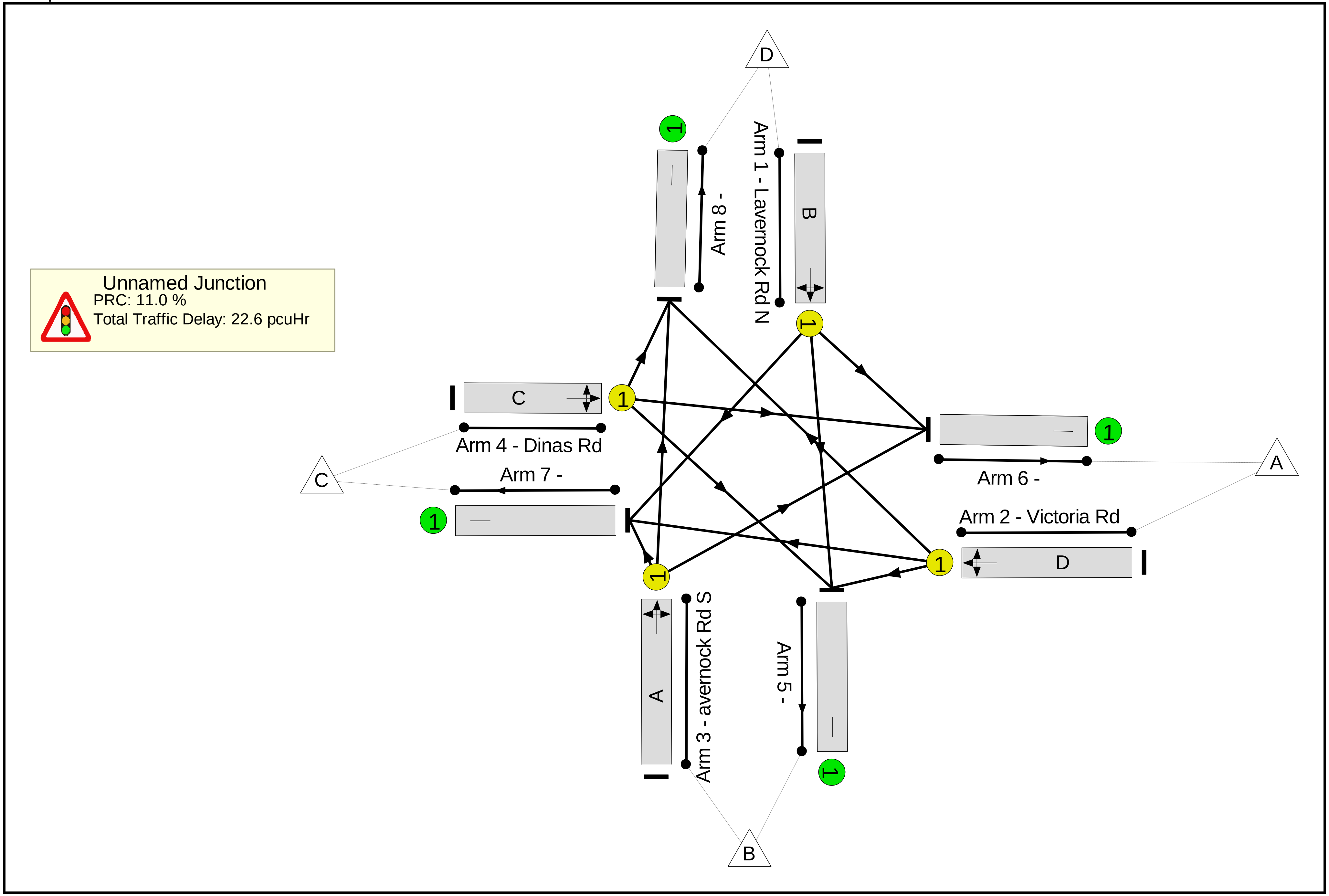
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	474	1871	585	81.1%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	245	1840	307	79.9%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	336	1889	417	80.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	159	1812	196	81.0%
5/1		U	N/A	N/A	-		-	-	-	484	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	155	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%

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**	**14.7**	**7.8**	**0.0**	**22.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.7**	**7.8**	**0.0**	**22.6**	**-**	**-**	**-**	**-**
1/1	474	474	-	-	-	5.0	2.1	-	7.1	53.7	14.7	2.1	16.8
2/1	245	245	-	-	-	3.3	1.9	-	5.1	75.6	8.0	1.9	9.9
3/1	336	336	-	-	-	4.1	2.0	-	6.1	65.5	10.6	2.0	12.6
4/1	159	159	-	-	-	2.3	1.9	-	4.2	96.1	5.3	1.9	7.3
5/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	155	155	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

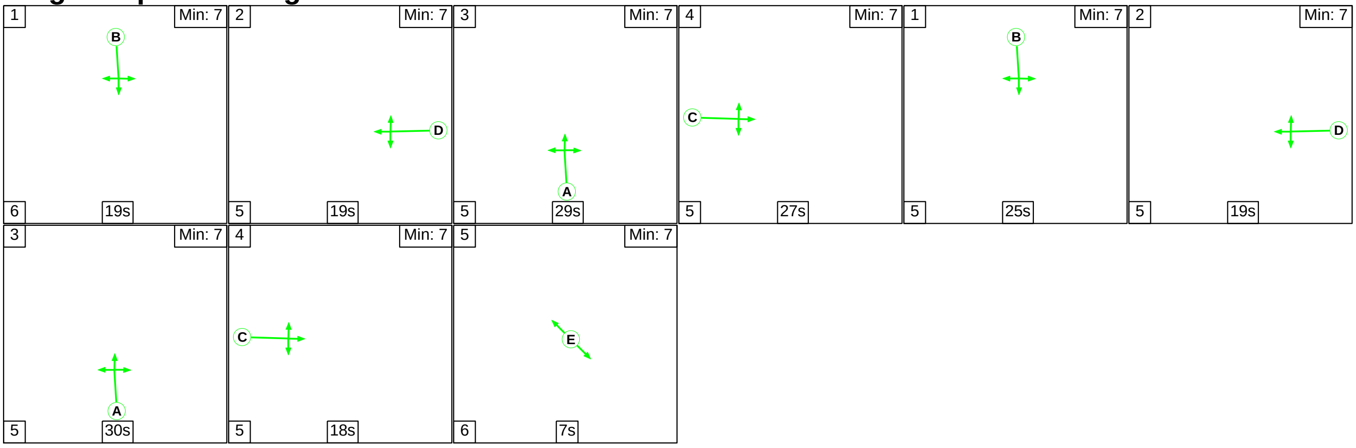
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	11.0	Total Delay for Signalled Lanes (pcuHr):	22.57	Cycle Time (s):	240
	PRC Over All Lanes (%):	11.0	Total Delay Over All Lanes(pcuHr):	22.57		

Full Input Data And Results

Scenario 7: '2029 Base' (FG7: '2029 B AM', Plan 1: 'Network Control Plan 1')

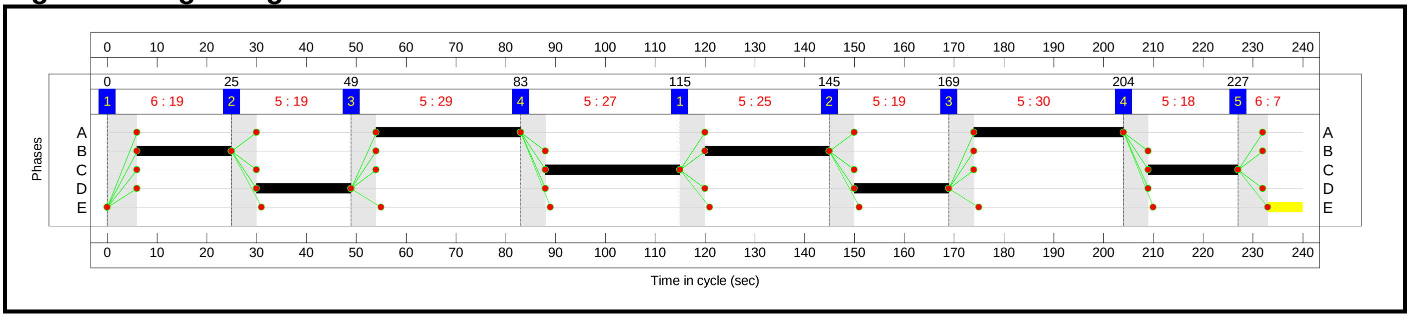
Stage Sequence Diagram



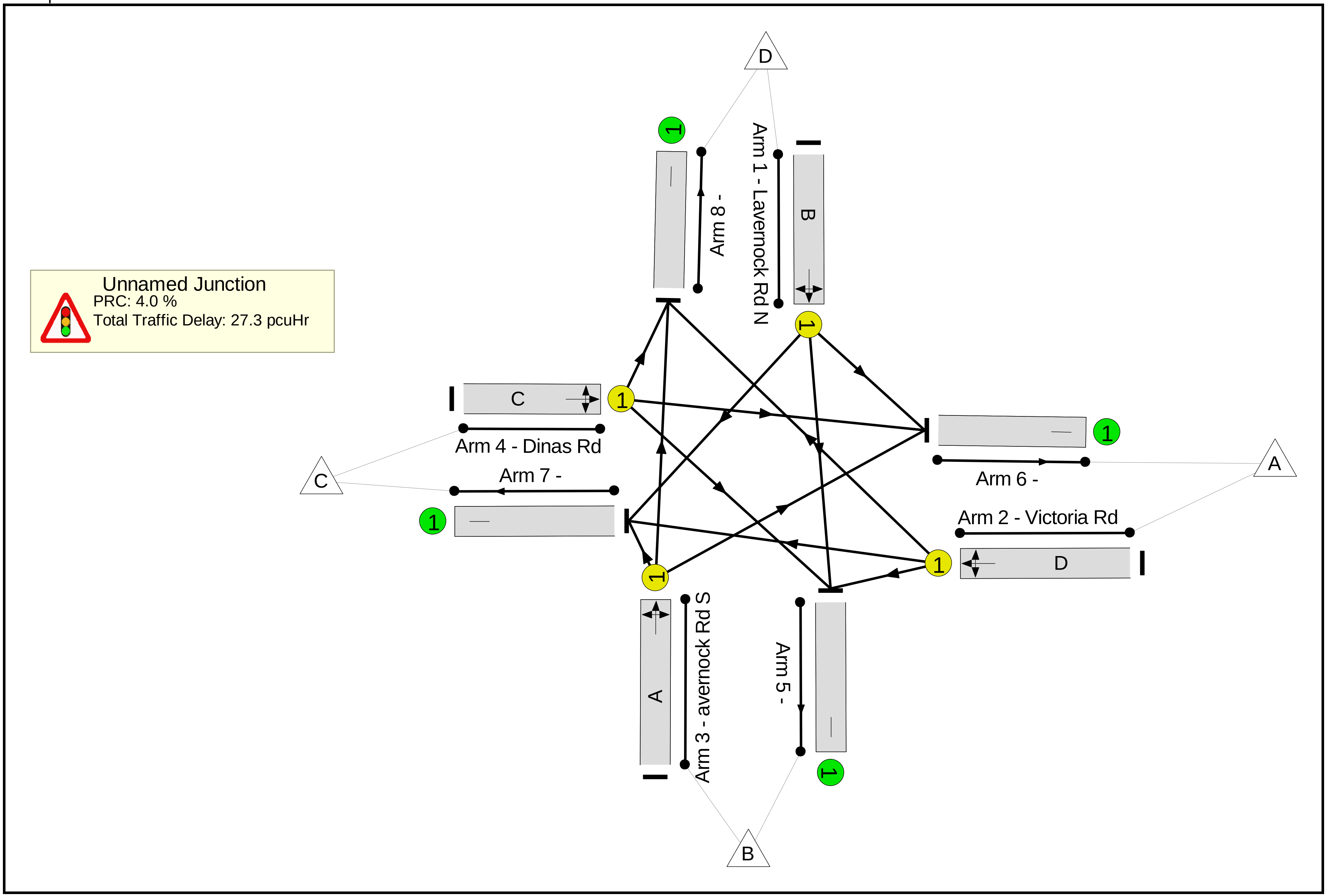
Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	19	19	29	27	25	19	30	18	7
Change Point	0	25	49	83	115	145	169	204	227

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Unnamed Junction
PRC: 4.0 %
Total Traffic Delay: 27.3 pcuHr
D
Arm 8 -
Arm 1 - Lavernock Rd N
B
C
Arm 4 - Dinas Rd
Arm 7 -
Arm 6 -
Arm 2 - Victoria Rd
D
A
A
Arm 3 - avernock Rd S
Arm 5 -
B
C
1

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	44	-	307	1887	362	84.9%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	258	1812	302	85.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	412	1881	478	86.2%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	45	-	309	1823	357	86.6%
5/1		U	N/A	N/A	-		-	-	-	441	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	442	Inf	Inf	0.0%

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**	**16.4**	**10.9**	**0.0**	**27.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**16.4**	**10.9**	**0.0**	**27.3**	**-**	**-**	**-**	**-**
1/1	307	307	-	-	-	4.0	2.6	-	6.6	77.0	10.1	2.6	12.7
2/1	258	258	-	-	-	3.5	2.6	-	6.1	85.1	8.3	2.6	10.9
3/1	412	412	-	-	-	4.9	2.9	-	7.8	67.8	13.2	2.9	16.0
4/1	309	309	-	-	-	4.0	2.9	-	6.9	80.3	10.3	2.9	13.2
5/1	441	441	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

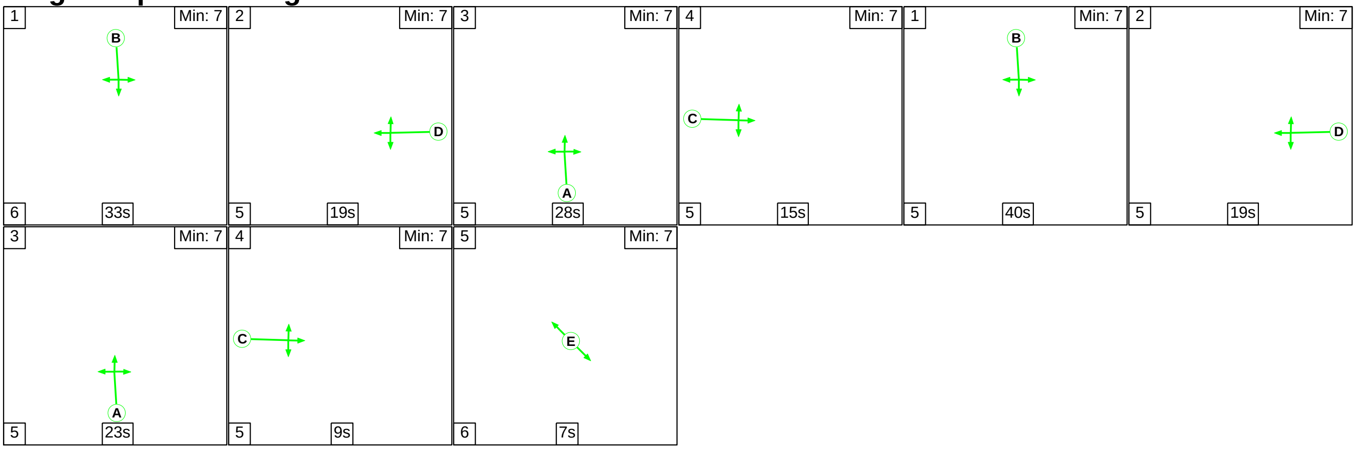
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	27.32	Cycle Time (s):	240
	PRC Over All Lanes (%):	4.0	Total Delay Over All Lanes(pcuHr):	27.32		

Full Input Data And Results

Scenario 8: '2029 Base' (FG8: '2029 B PM', Plan 1: 'Network Control Plan 1')

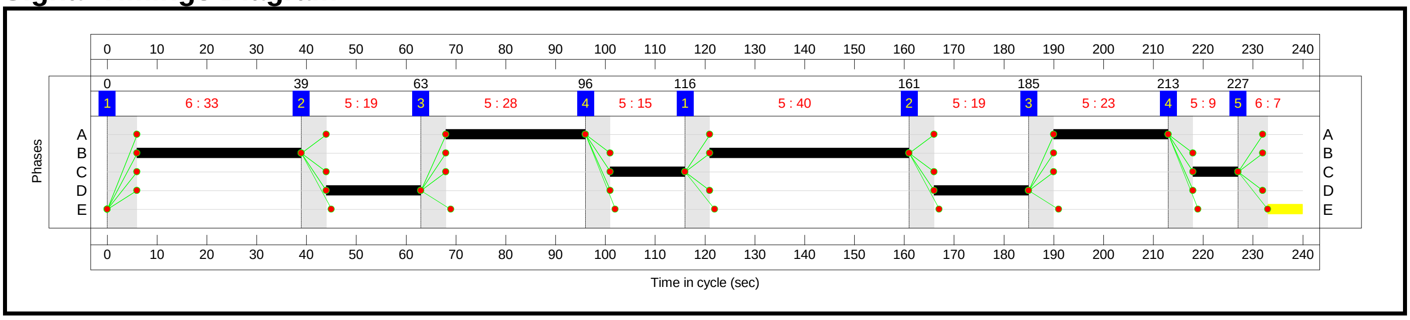
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	33	19	28	15	40	19	23	9	7
Change Point	0	39	63	96	116	161	185	213	227

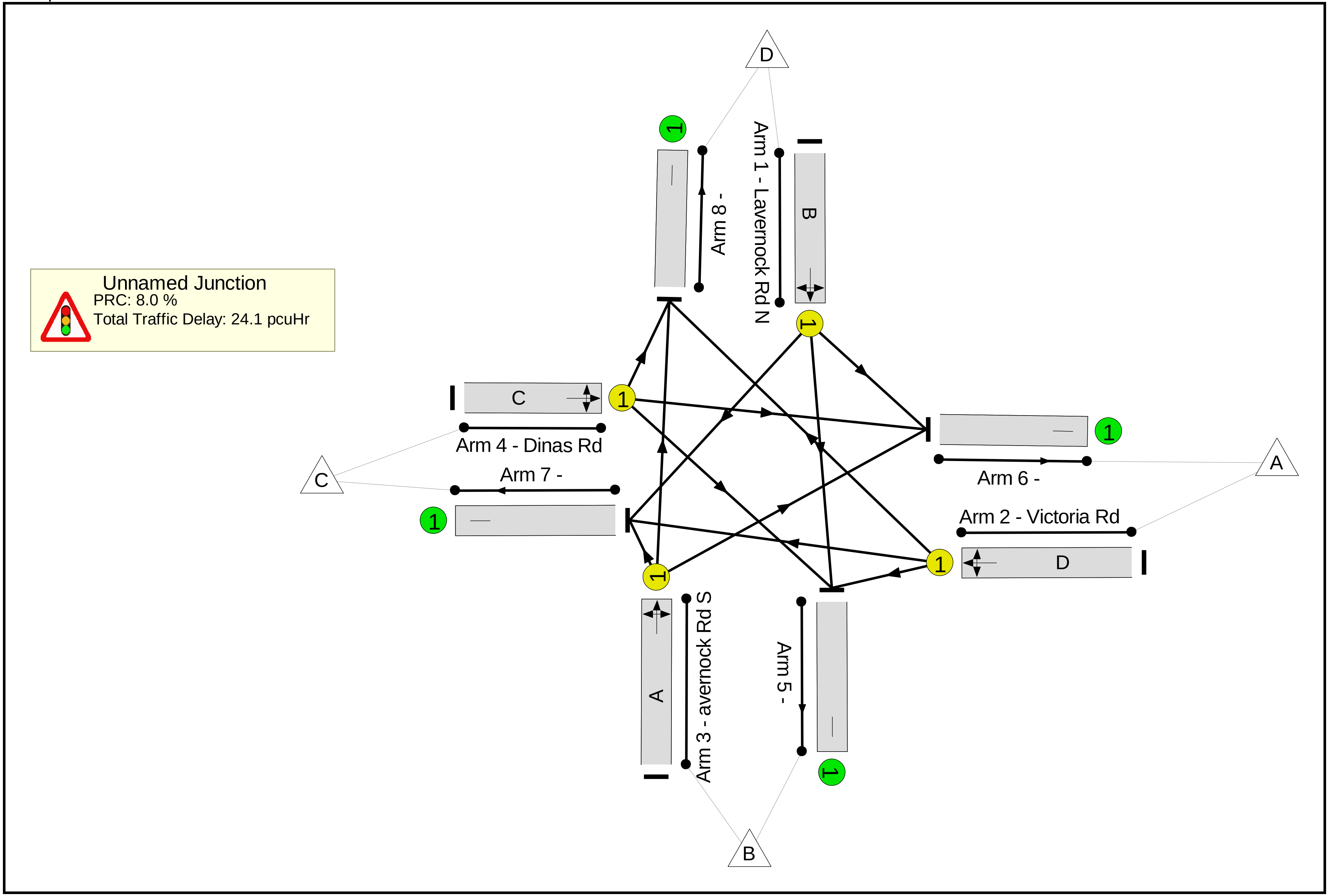
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.3%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	487	1870	584	83.3%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	252	1840	307	82.2%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	344	1889	417	82.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	163	1812	196	83.0%
5/1		U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	158	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	232	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%

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**	**15.2**	**8.9**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.2**	**8.9**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
1/1	487	487	-	-	-	5.2	2.4	-	7.6	56.0	15.3	2.4	17.7
2/1	252	252	-	-	-	3.4	2.1	-	5.5	78.8	8.3	2.1	10.4
3/1	344	344	-	-	-	4.3	2.2	-	6.5	67.7	10.9	2.2	13.1
4/1	163	163	-	-	-	2.4	2.2	-	4.5	100.4	5.6	2.2	7.8
5/1	497	497	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	158	158	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	232	232	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

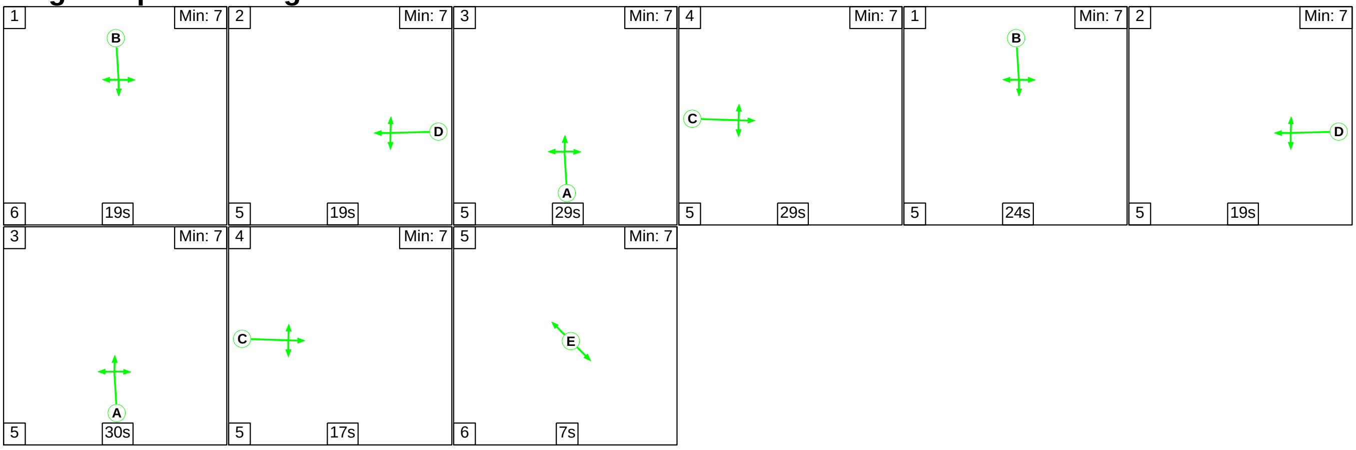
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	8.0	Total Delay for Signalled Lanes (pcuHr):	24.11	Cycle Time (s):	240
	PRC Over All Lanes (%):	8.0	Total Delay Over All Lanes(pcuHr):	24.11		

Full Input Data And Results

Scenario 9: '2022 B + C' (FG9: '2022 B + C AM', Plan 1: 'Network Control Plan 1')

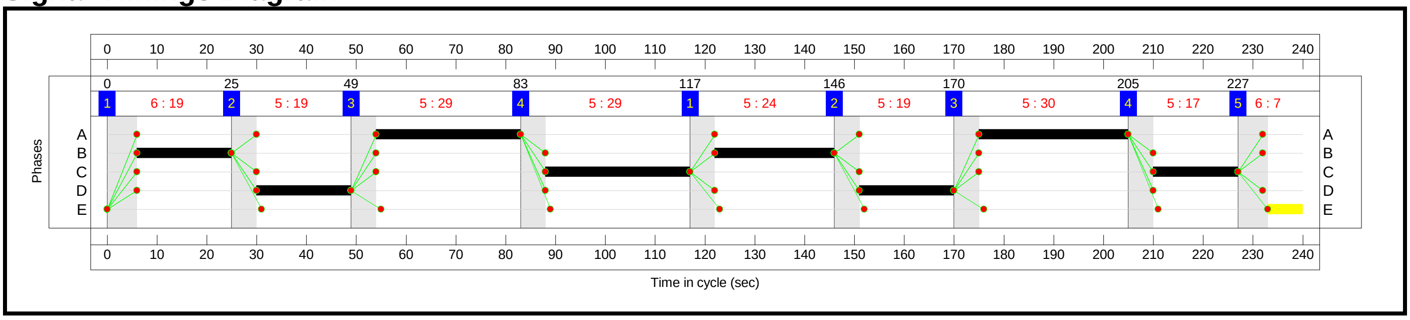
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	19	19	29	29	24	19	30	17	7
Change Point	0	25	49	83	117	146	170	205	227

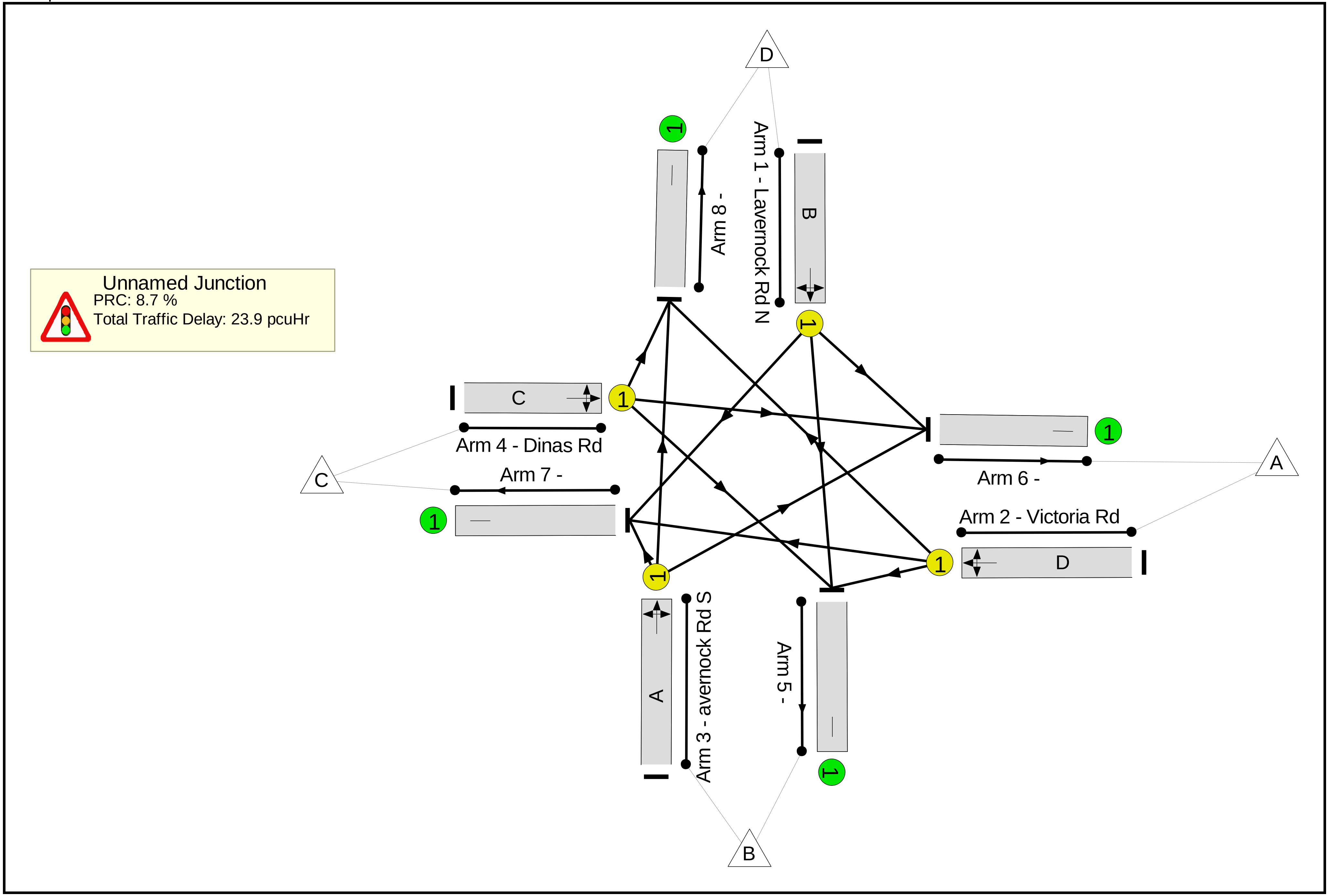
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.8%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	43	-	293	1887	354	82.8%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	245	1812	302	81.1%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	392	1881	478	82.0%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	46	-	296	1823	365	81.2%
5/1		U	N/A	N/A	-		-	-	-	420	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	140	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%

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**	**15.5**	**8.5**	**0.0**	**23.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.5**	**8.5**	**0.0**	**23.9**	**-**	**-**	**-**	**-**
1/1	293	293	-	-	-	3.8	2.2	-	6.1	74.5	9.5	2.2	11.8
2/1	245	245	-	-	-	3.3	2.0	-	5.3	77.7	7.9	2.0	9.9
3/1	392	392	-	-	-	4.6	2.2	-	6.8	62.1	12.4	2.2	14.6
4/1	296	296	-	-	-	3.8	2.0	-	5.8	70.7	9.8	2.0	11.8
5/1	420	420	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

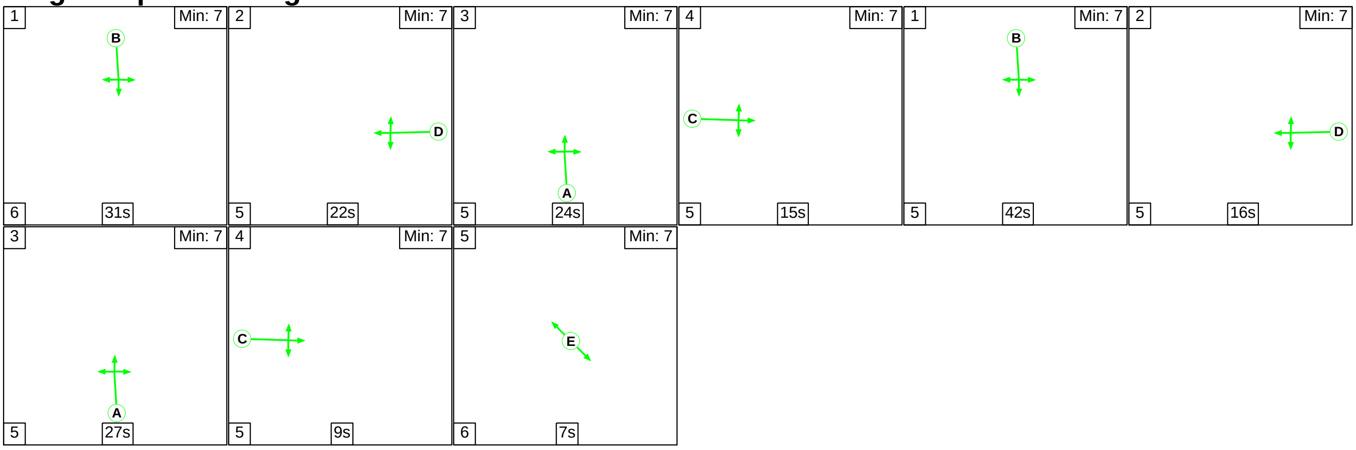
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	8.7	Total Delay for Signalled Lanes (pcuHr):	23.92	Cycle Time (s):	240
	PRC Over All Lanes (%):	8.7	Total Delay Over All Lanes(pcuHr):	23.92		

Full Input Data And Results

Scenario 10: '2022 B + C' (FG10: '2022 B + C PM', Plan 1: 'Network Control Plan 1')

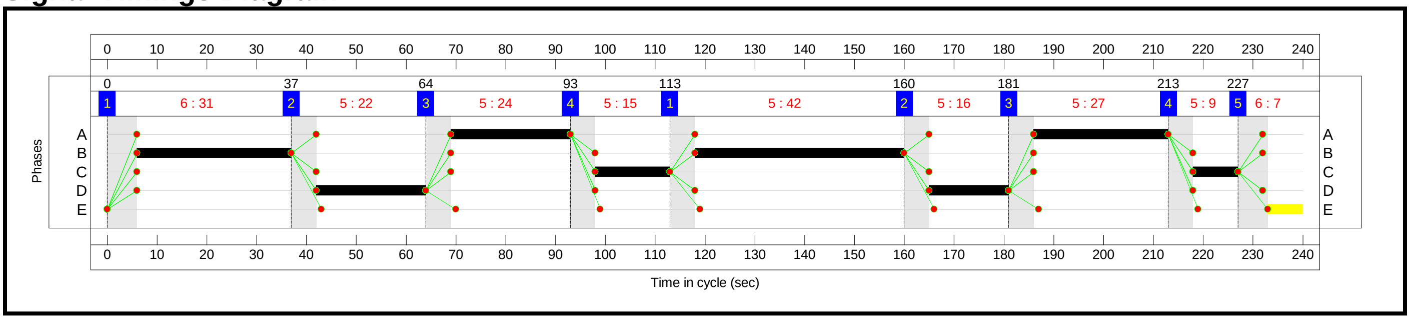
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	31	22	24	15	42	16	27	9	7
Change Point	0	37	64	93	113	160	181	213	227

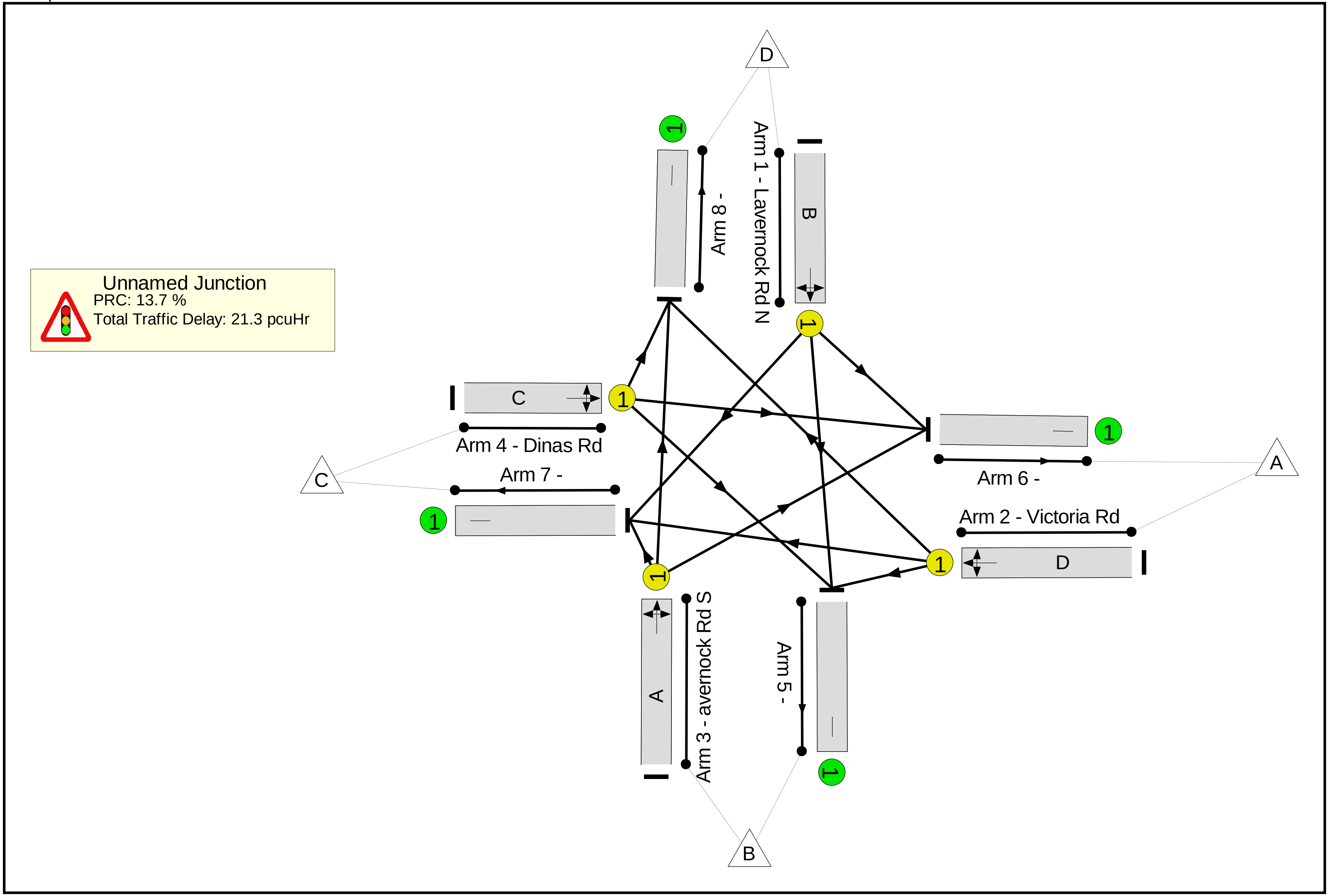
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.2%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	463	1871	585	79.2%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	239	1840	307	77.9%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	328	1889	417	78.6%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	155	1811	196	79.0%
5/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%

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**	**14.3**	**7.0**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.3**	**7.0**	**0.0**	**21.3**	**-**	**-**	**-**	**-**
1/1	463	463	-	-	-	4.9	1.8	-	6.7	52.1	14.4	1.8	16.3
2/1	239	239	-	-	-	3.2	1.7	-	4.9	73.2	7.6	1.7	9.3
3/1	328	328	-	-	-	4.0	1.8	-	5.8	63.5	10.4	1.8	12.2
4/1	155	155	-	-	-	2.2	1.7	-	4.0	92.5	5.2	1.7	6.9
5/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

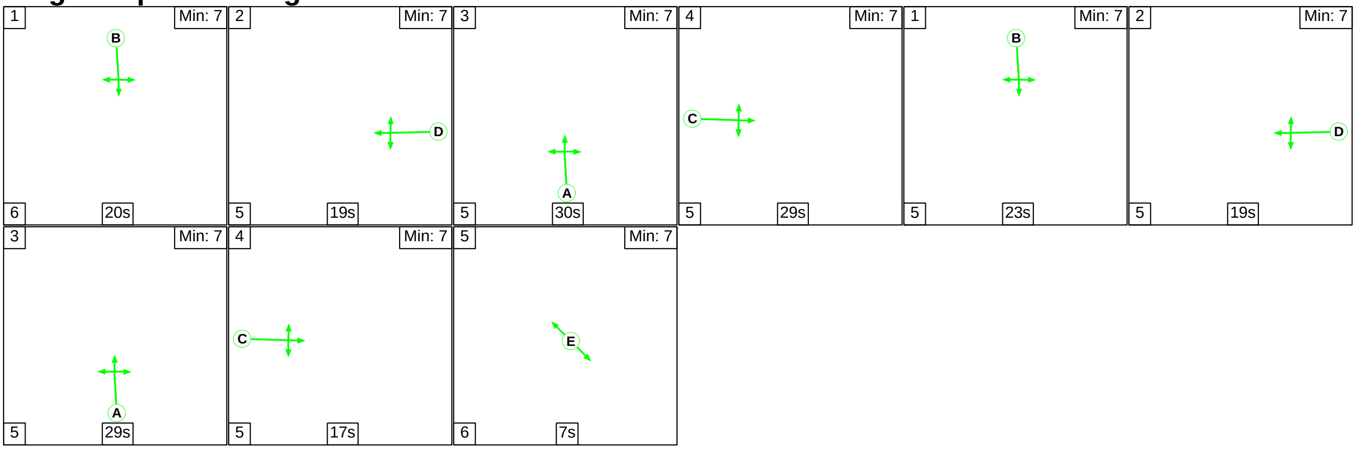
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	13.7	Total Delay for Signalled Lanes (pcuHr):	21.33	Cycle Time (s):	240
	PRC Over All Lanes (%):	13.7	Total Delay Over All Lanes(pcuHr):	21.33		

Full Input Data And Results

Scenario 11: '2025 B + C' (FG11: '2025 B + C AM', Plan 1: 'Network Control Plan 1')

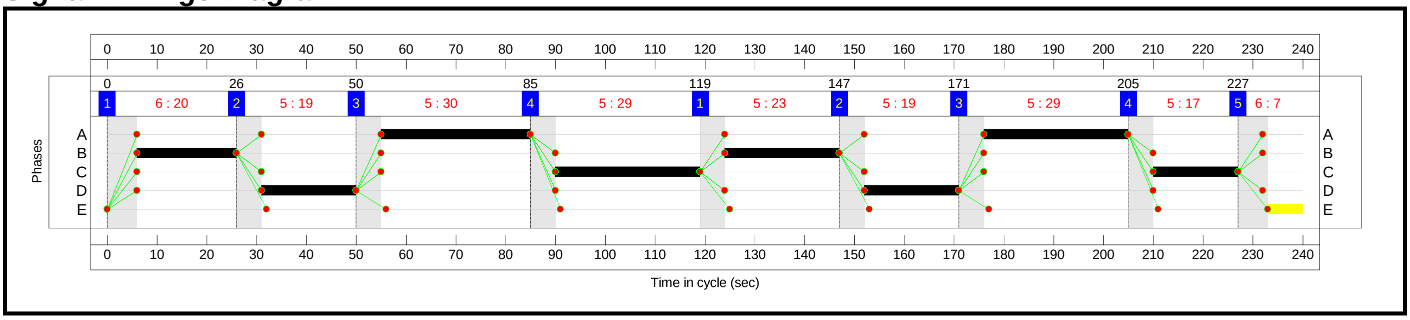
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	20	19	30	29	23	19	29	17	7
Change Point	0	26	50	85	119	147	171	205	227

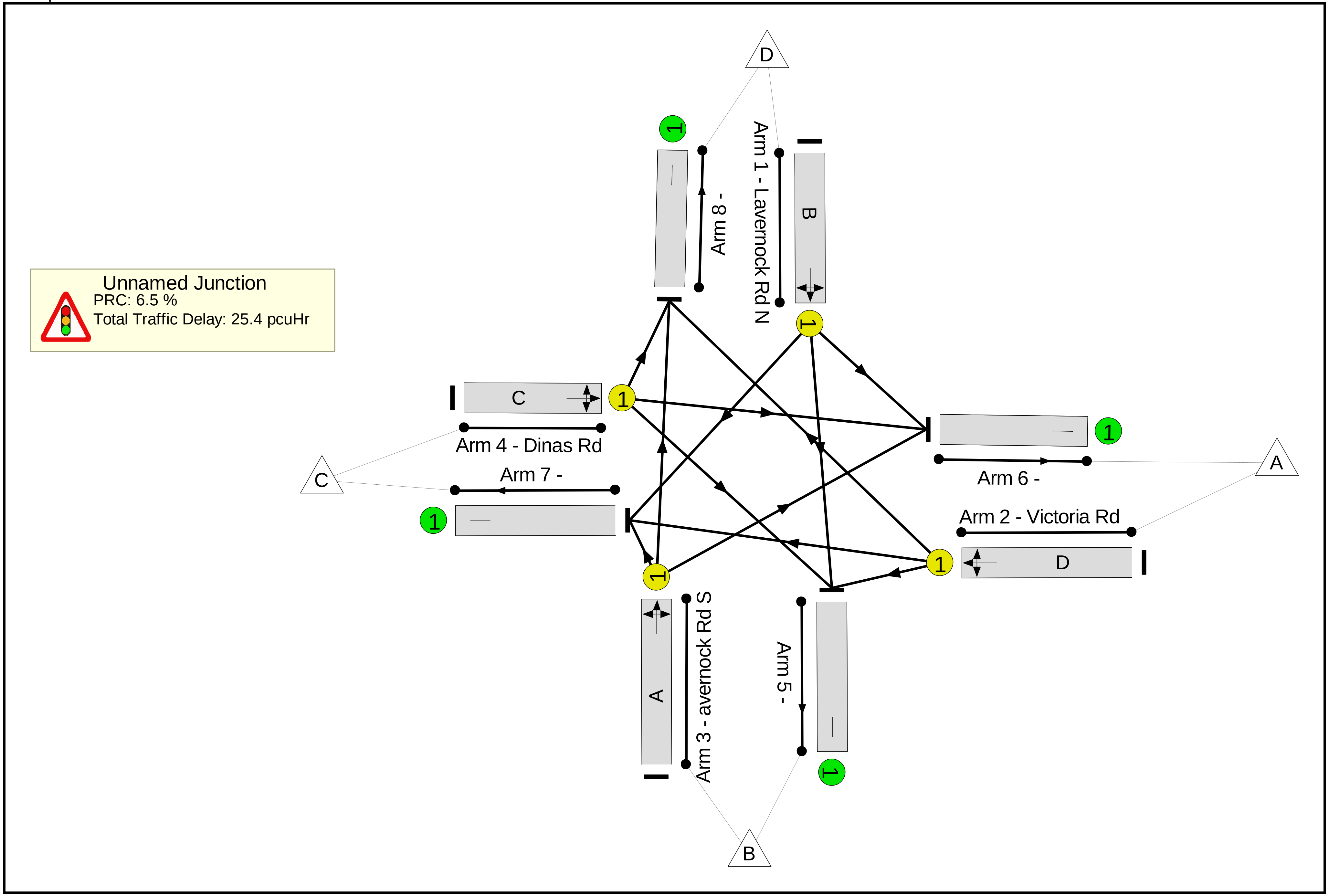
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.5%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	43	-	299	1887	354	84.5%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	252	1812	302	83.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	401	1881	478	83.9%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	46	-	302	1823	365	82.8%
5/1		U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	249	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	144	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%

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**	**15.9**	**9.5**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.9**	**9.5**	**0.0**	**25.4**	**-**	**-**	**-**	**-**
1/1	299	299	-	-	-	3.9	2.5	-	6.4	77.2	9.6	2.5	12.1
2/1	252	252	-	-	-	3.4	2.3	-	5.7	81.4	8.2	2.3	10.5
3/1	401	401	-	-	-	4.7	2.4	-	7.2	64.4	12.7	2.4	15.1
4/1	302	302	-	-	-	3.9	2.3	-	6.1	73.0	10.2	2.3	12.5
5/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	249	249	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	144	144	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

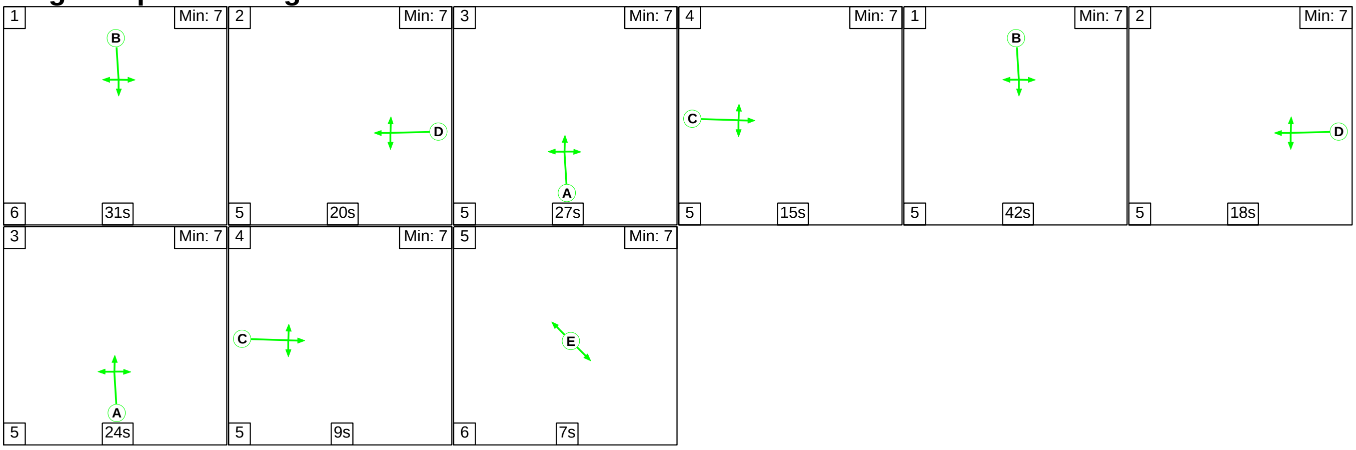
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	6.5	Total Delay for Signalled Lanes (pcuHr):	25.40	Cycle Time (s):	240
	PRC Over All Lanes (%):	6.5	Total Delay Over All Lanes(pcuHr):	25.40		

Full Input Data And Results

Scenario 12: '2025 B + C' (FG12: '2025 B + C PM', Plan 1: 'Network Control Plan 1')

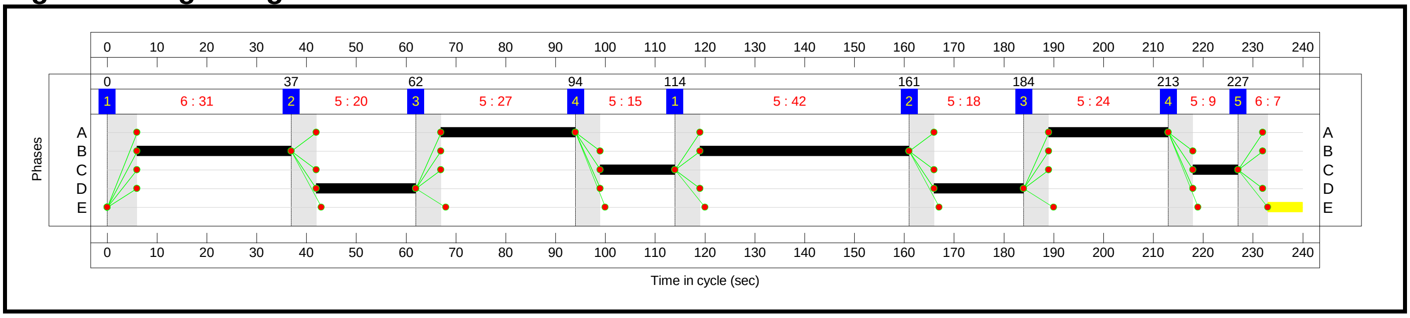
Stage Sequence Diagram



Stage Timings

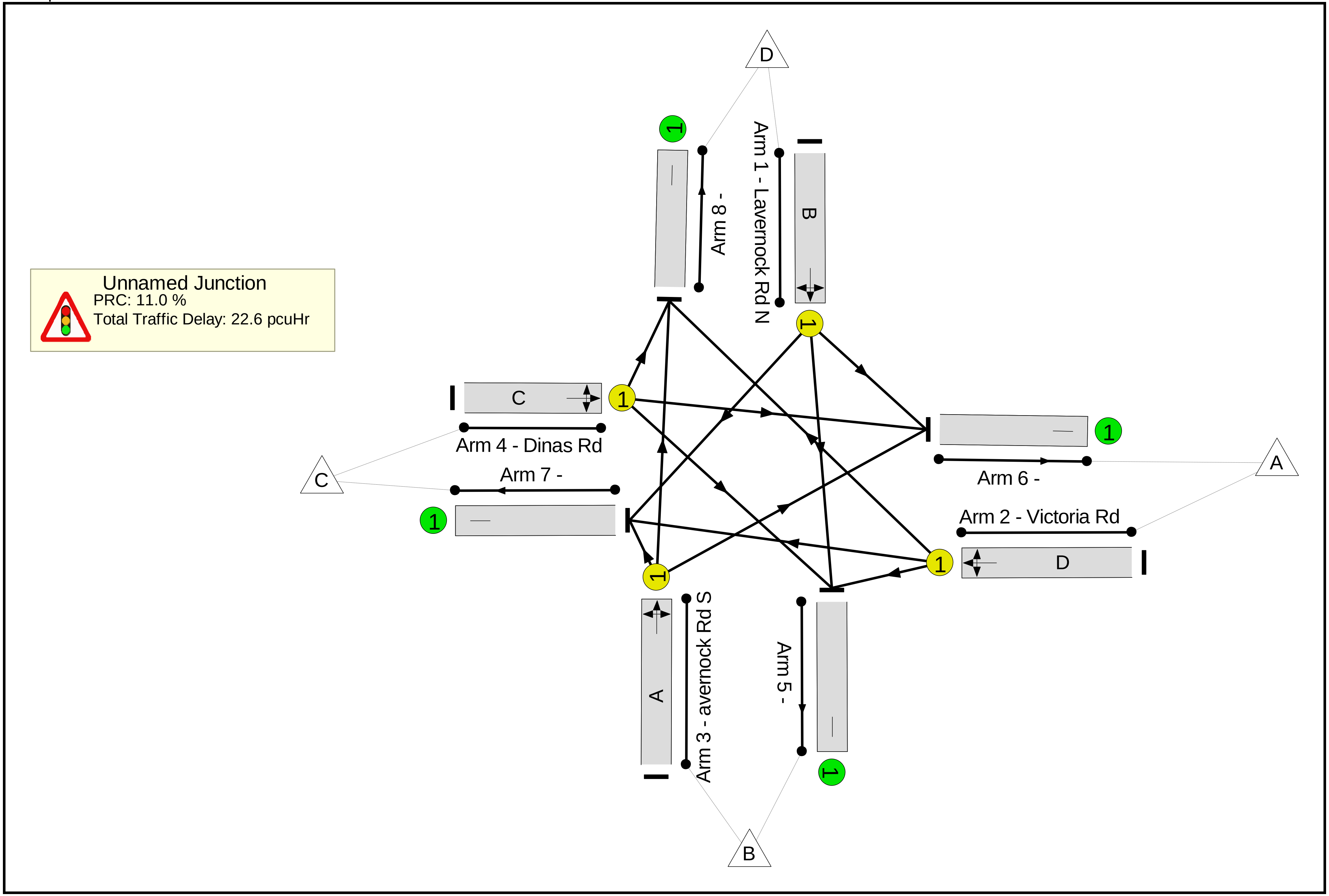
Stage	1	2	3	4	1	2	3	4	5
Duration	31	20	27	15	42	18	24	9	7
Change Point	0	37	62	94	114	161	184	213	227

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	474	1871	585	81.1%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	245	1840	307	79.9%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	336	1889	417	80.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	159	1812	196	81.0%
5/1		U	N/A	N/A	-		-	-	-	484	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	155	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	349	Inf	Inf	0.0%
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**	**14.7**	**7.8**	**0.0**	**22.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.7**	**7.8**	**0.0**	**22.6**	**-**	**-**	**-**	**-**
1/1	474	474	-	-	-	5.0	2.1	-	7.1	53.7	14.7	2.1	16.8
2/1	245	245	-	-	-	3.3	1.9	-	5.1	75.6	8.0	1.9	9.9
3/1	336	336	-	-	-	4.1	2.0	-	6.1	65.5	10.6	2.0	12.6
4/1	159	159	-	-	-	2.3	1.9	-	4.2	96.1	5.3	1.9	7.3
5/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	155	155	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	349	349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

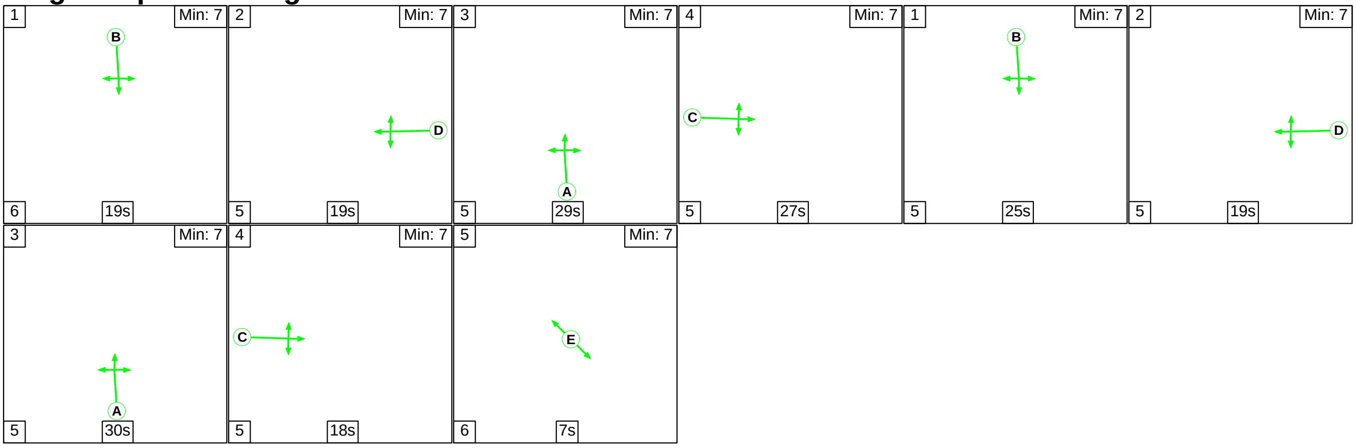
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	11.0	Total Delay for Signalled Lanes (pcuHr):	22.57	Cycle Time (s):	240
	PRC Over All Lanes (%):	11.0	Total Delay Over All Lanes(pcuHr):	22.57		

Full Input Data And Results

Scenario 13: '2029 B + C' (FG13: '2029 B + C AM', Plan 1: 'Network Control Plan 1')

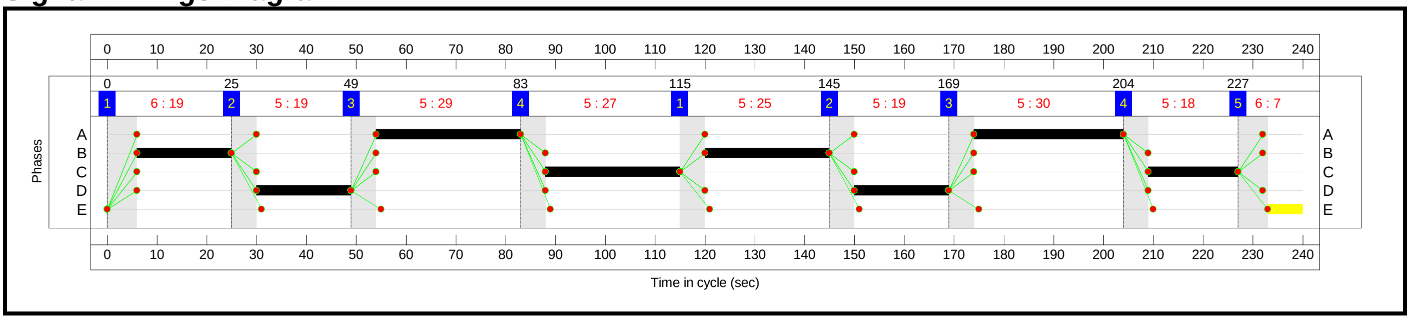
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	19	19	29	27	25	19	30	18	7
Change Point	0	25	49	83	115	145	169	204	227

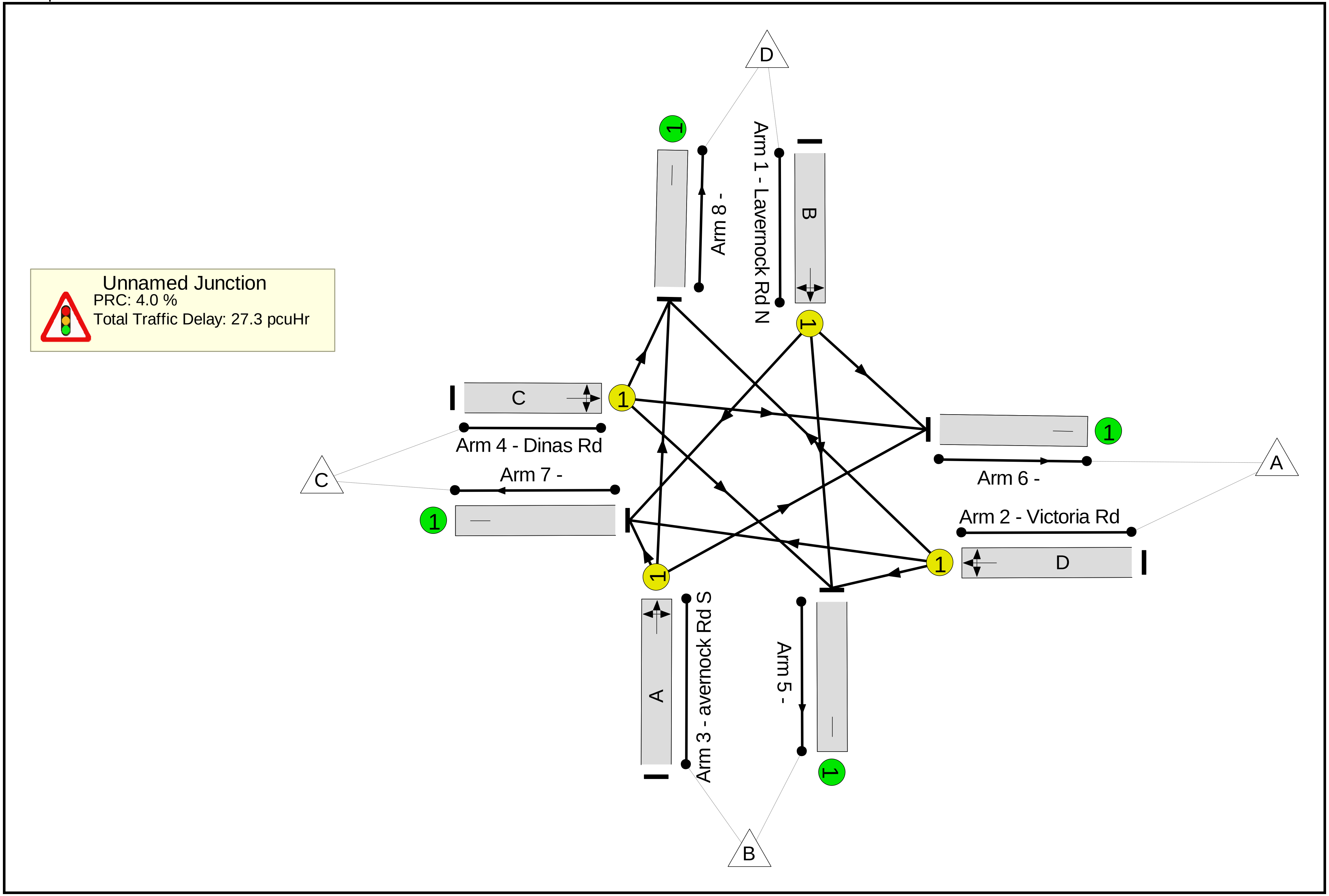
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.6%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	44	-	307	1887	362	84.9%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	258	1812	302	85.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	59	-	412	1881	478	86.2%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	45	-	309	1823	357	86.6%
5/1		U	N/A	N/A	-		-	-	-	441	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	148	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	442	Inf	Inf	0.0%

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**	**16.4**	**10.9**	**0.0**	**27.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**16.4**	**10.9**	**0.0**	**27.3**	**-**	**-**	**-**	**-**
1/1	307	307	-	-	-	4.0	2.6	-	6.6	77.0	10.1	2.6	12.7
2/1	258	258	-	-	-	3.5	2.6	-	6.1	85.1	8.3	2.6	10.9
3/1	412	412	-	-	-	4.9	2.9	-	7.8	67.8	13.2	2.9	16.0
4/1	309	309	-	-	-	4.0	2.9	-	6.9	80.3	10.3	2.9	13.2
5/1	441	441	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	148	148	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

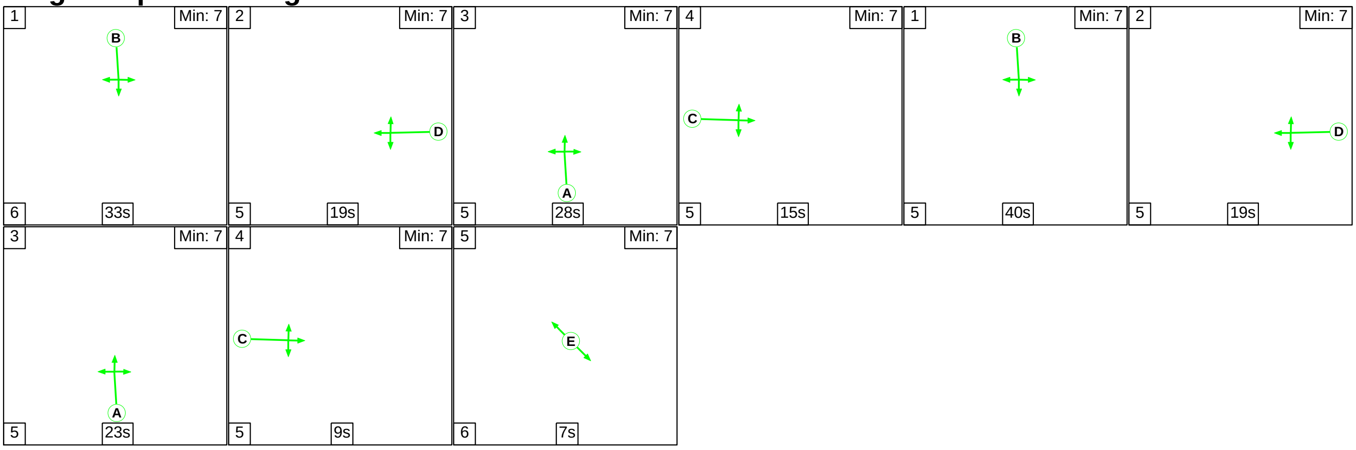
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	27.32	Cycle Time (s):	240
	PRC Over All Lanes (%):	4.0	Total Delay Over All Lanes(pcuHr):	27.32		

Full Input Data And Results

Scenario 14: '2029 B + C' (FG14: '2029 B + C PM', Plan 1: 'Network Control Plan 1')

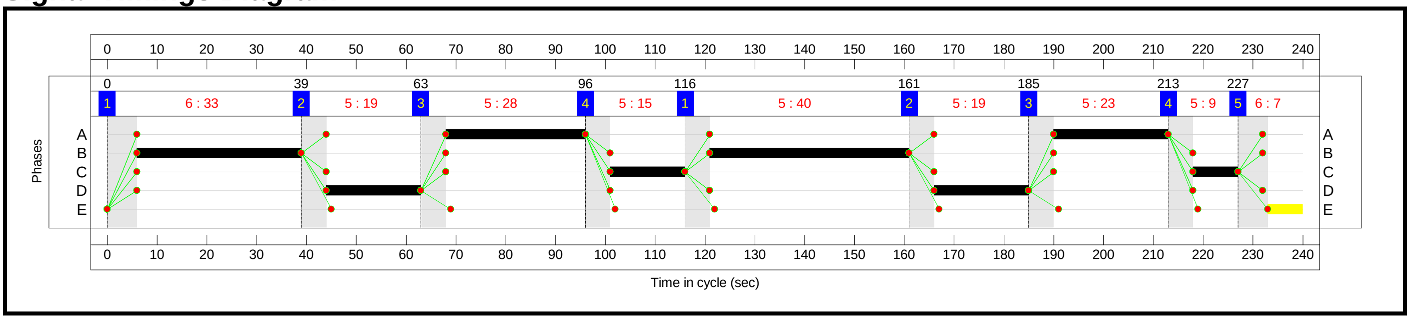
Stage Sequence Diagram



Stage Timings

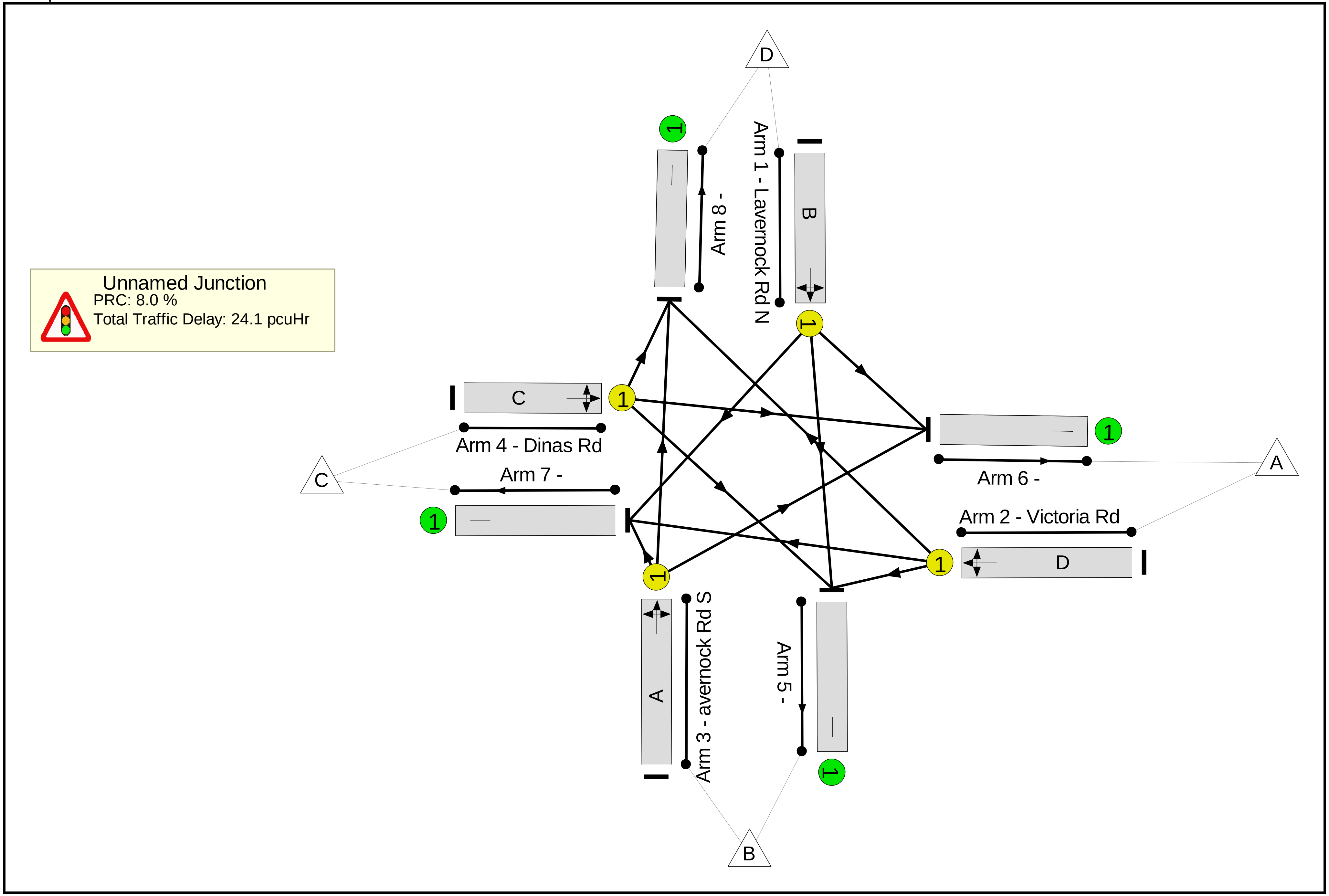
Stage	1	2	3	4	1	2	3	4	5
Duration	33	19	28	15	40	19	23	9	7
Change Point	0	39	63	96	116	161	185	213	227

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.3%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.3%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	73	-	487	1870	584	83.3%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	38	-	252	1840	307	82.2%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	344	1889	417	82.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	163	1812	196	83.0%
5/1		U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	158	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	232	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%

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**	**15.2**	**8.9**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.2**	**8.9**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
1/1	487	487	-	-	-	5.2	2.4	-	7.6	56.0	15.3	2.4	17.7
2/1	252	252	-	-	-	3.4	2.1	-	5.5	78.8	8.3	2.1	10.4
3/1	344	344	-	-	-	4.3	2.2	-	6.5	67.7	10.9	2.2	13.1
4/1	163	163	-	-	-	2.4	2.2	-	4.5	100.4	5.6	2.2	7.8
5/1	497	497	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	158	158	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	232	232	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

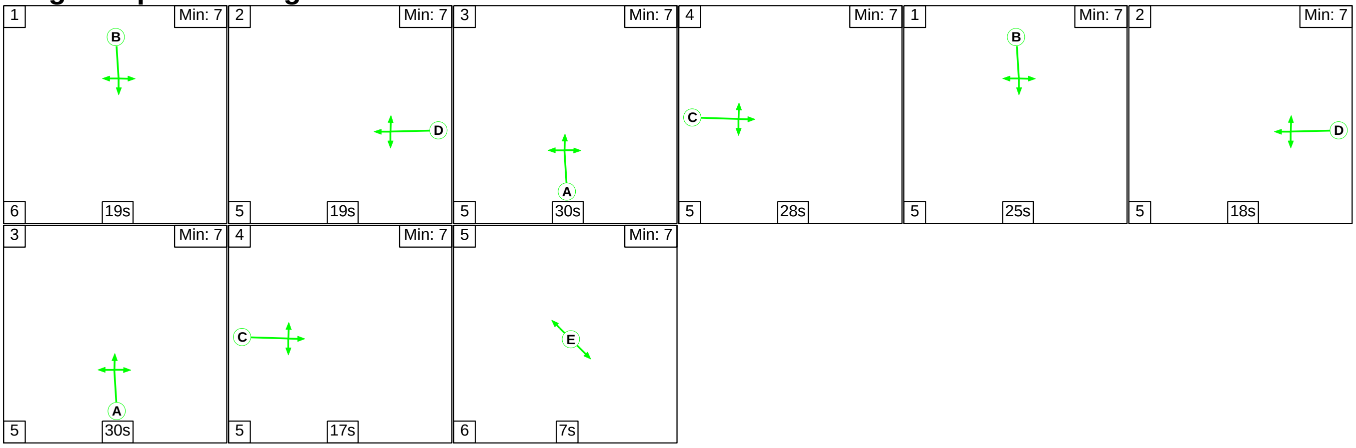
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	8.0	Total Delay for Signalled Lanes (pcuHr):	24.11	Cycle Time (s):	240
	PRC Over All Lanes (%):	8.0	Total Delay Over All Lanes(pcuHr):	24.11		

Full Input Data And Results

Scenario 15: '2022 B + C + D' (FG15: '2022 B + C + D AM', Plan 1: 'Network Control Plan 1')

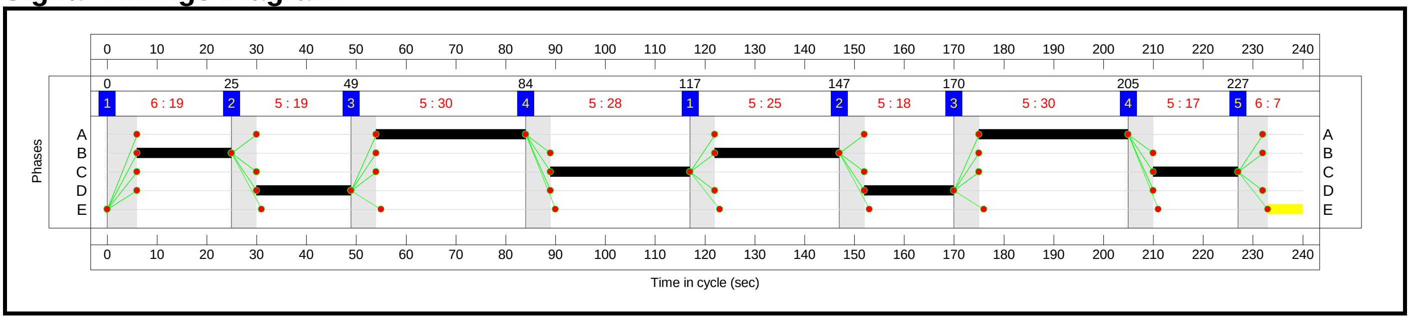
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	19	19	30	28	25	18	30	17	7
Change Point	0	25	49	84	117	147	170	205	227

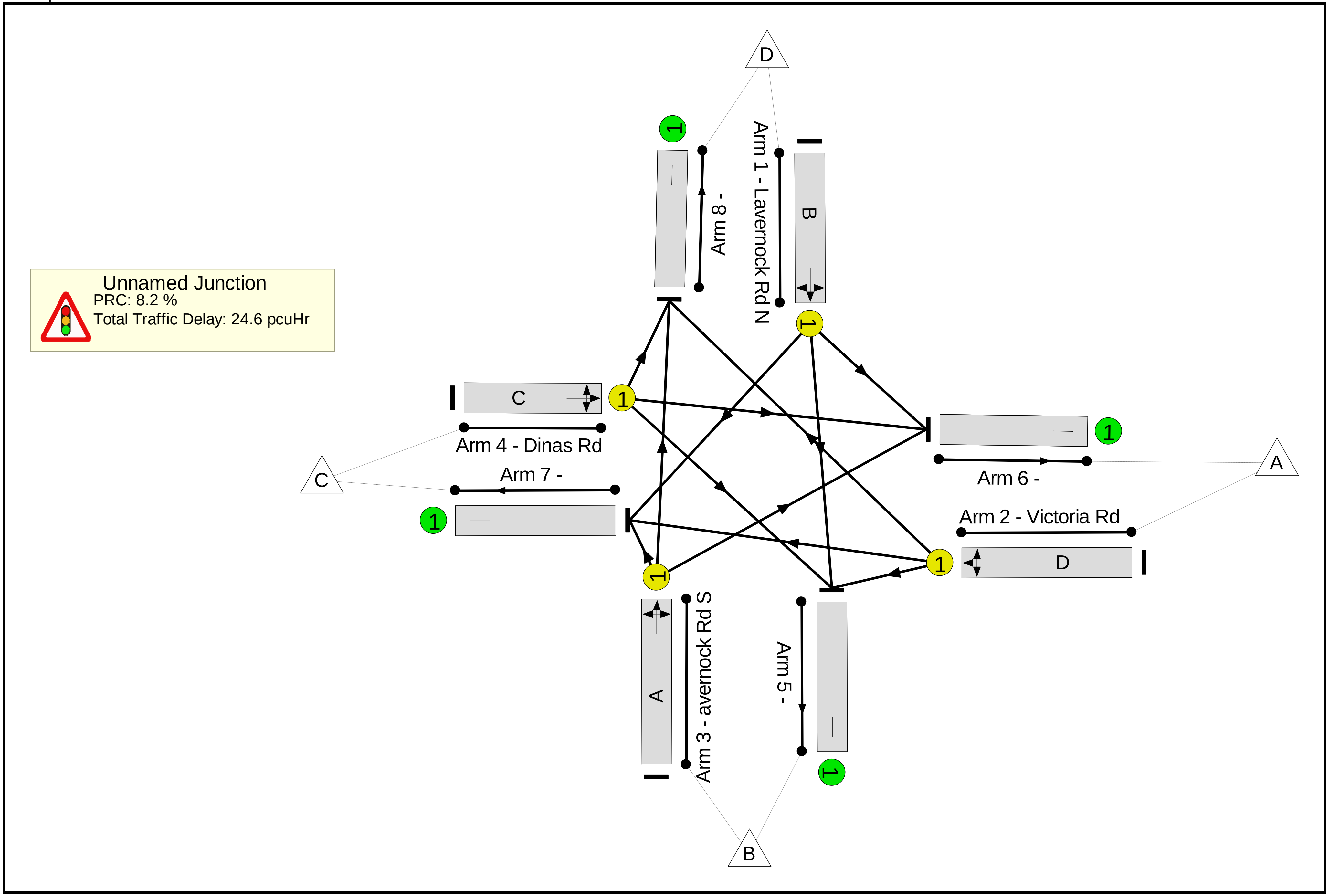
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.2%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	44	-	297	1887	362	82.1%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	37	-	245	1812	294	83.2%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	60	-	403	1882	486	82.9%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	45	-	296	1823	357	82.9%
5/1		U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	245	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	141	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%

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**	**15.7**	**9.0**	**0.0**	**24.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.7**	**9.0**	**0.0**	**24.6**	**-**	**-**	**-**	**-**
1/1	297	297	-	-	-	3.8	2.2	-	6.0	72.6	9.6	2.2	11.7
2/1	245	245	-	-	-	3.3	2.3	-	5.6	82.0	8.0	2.3	10.2
3/1	403	403	-	-	-	4.7	2.3	-	7.0	62.5	12.8	2.3	15.1
4/1	296	296	-	-	-	3.8	2.3	-	6.1	73.9	9.9	2.3	12.1
5/1	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	245	245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	141	141	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

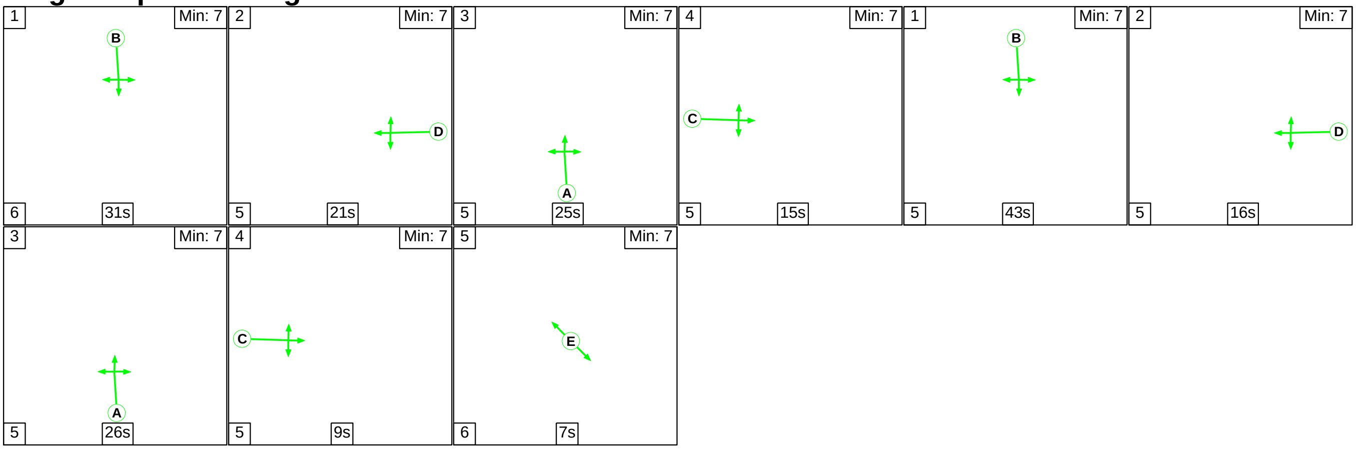
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	8.2	Total Delay for Signalled Lanes (pcuHr):	24.65	Cycle Time (s):	240
	PRC Over All Lanes (%):	8.2	Total Delay Over All Lanes(pcuHr):	24.65		

Full Input Data And Results

Scenario 16: '2022 B + C + D' (FG16: '2022 B + C + D PM', Plan 1: 'Network Control Plan 1')

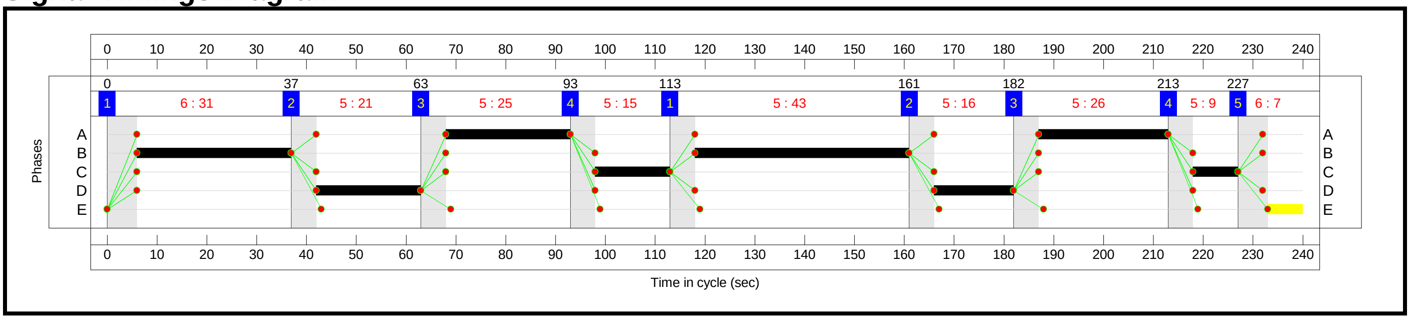
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	31	21	25	15	43	16	26	9	7
Change Point	0	37	63	93	113	161	182	213	227

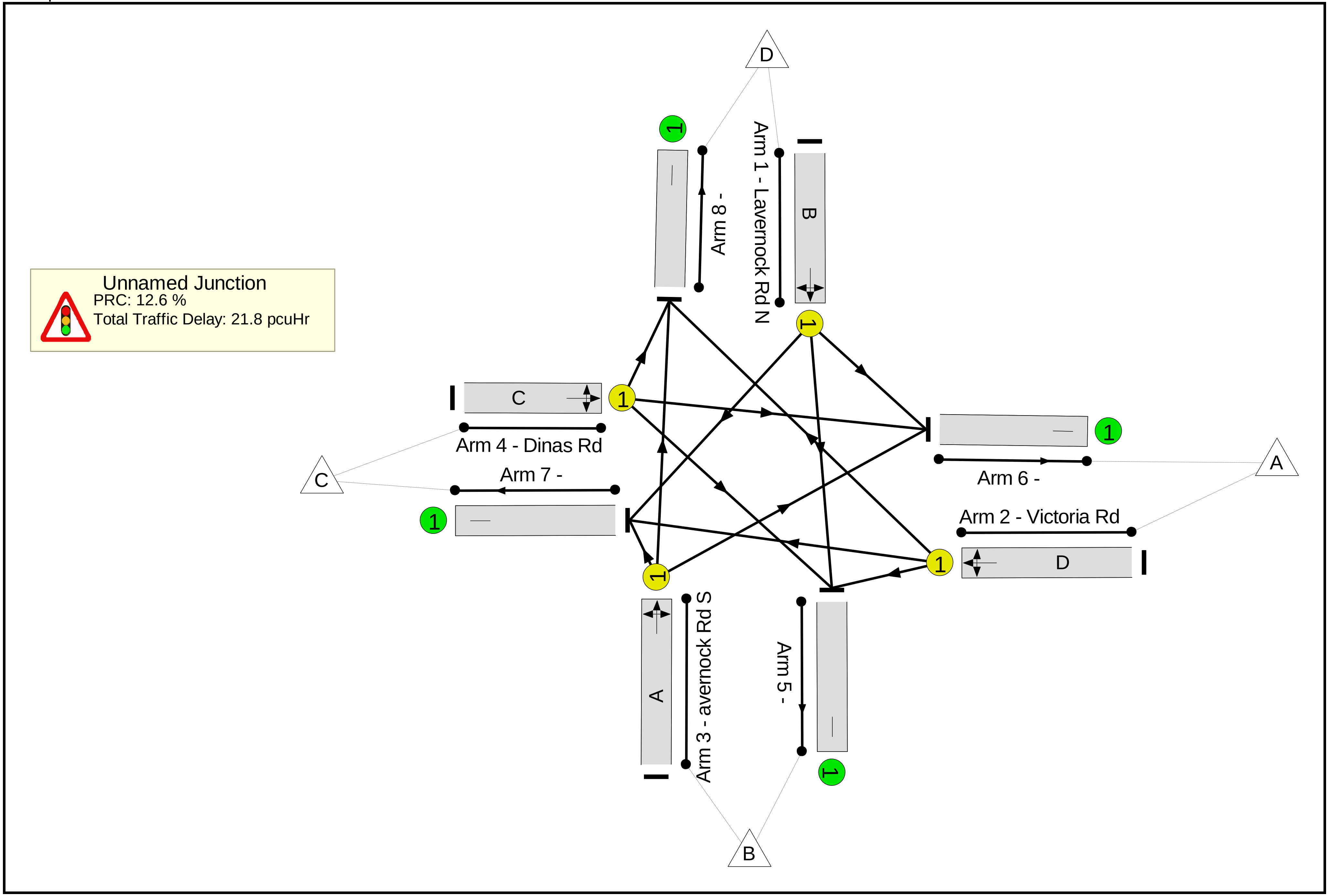
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



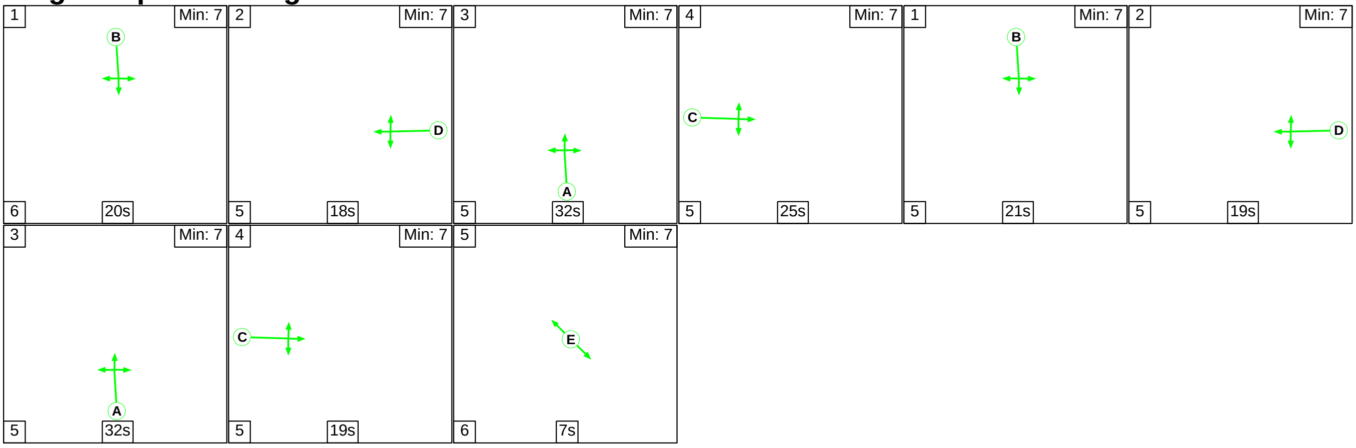
Network Results

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.9%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**79.9%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	74	-	471	1872	593	79.5%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	37	-	239	1840	299	79.9%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	51	-	332	1890	417	79.5%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	156	1811	196	79.5%
5/1		U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	220	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	345	Inf	Inf	0.0%

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**	**14.5**	**7.4**	**0.0**	**21.8**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**14.5**	**7.4**	**0.0**	**21.8**	**-**	**-**	**-**	**-**
1/1	471	471	-	-	-	4.9	1.9	-	6.8	51.8	14.7	1.9	16.5
2/1	239	239	-	-	-	3.2	1.9	-	5.1	76.6	7.8	1.9	9.6
3/1	332	332	-	-	-	4.1	1.9	-	5.9	64.4	10.5	1.9	12.4
4/1	156	156	-	-	-	2.3	1.8	-	4.0	93.4	5.2	1.8	7.0
5/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	220	220	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	345	345	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

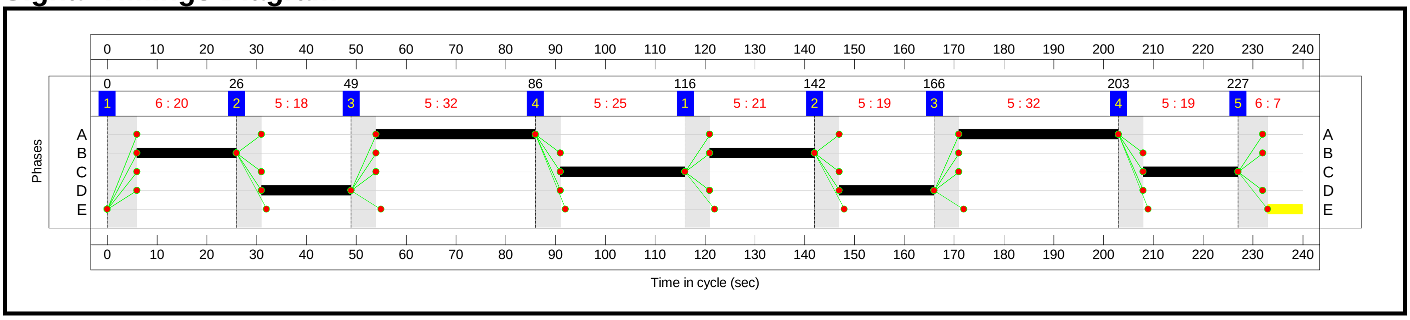
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	12.6	Total Delay for Signalled Lanes (pcuHr):	21.85	Cycle Time (s):	240
	PRC Over All Lanes (%):	12.6	Total Delay Over All Lanes(pcuHr):	21.85		

Full Input Data And Results
Scenario 17: '2025 B + C + D' (FG17: '2025 B + C + D AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram


Stage Timings

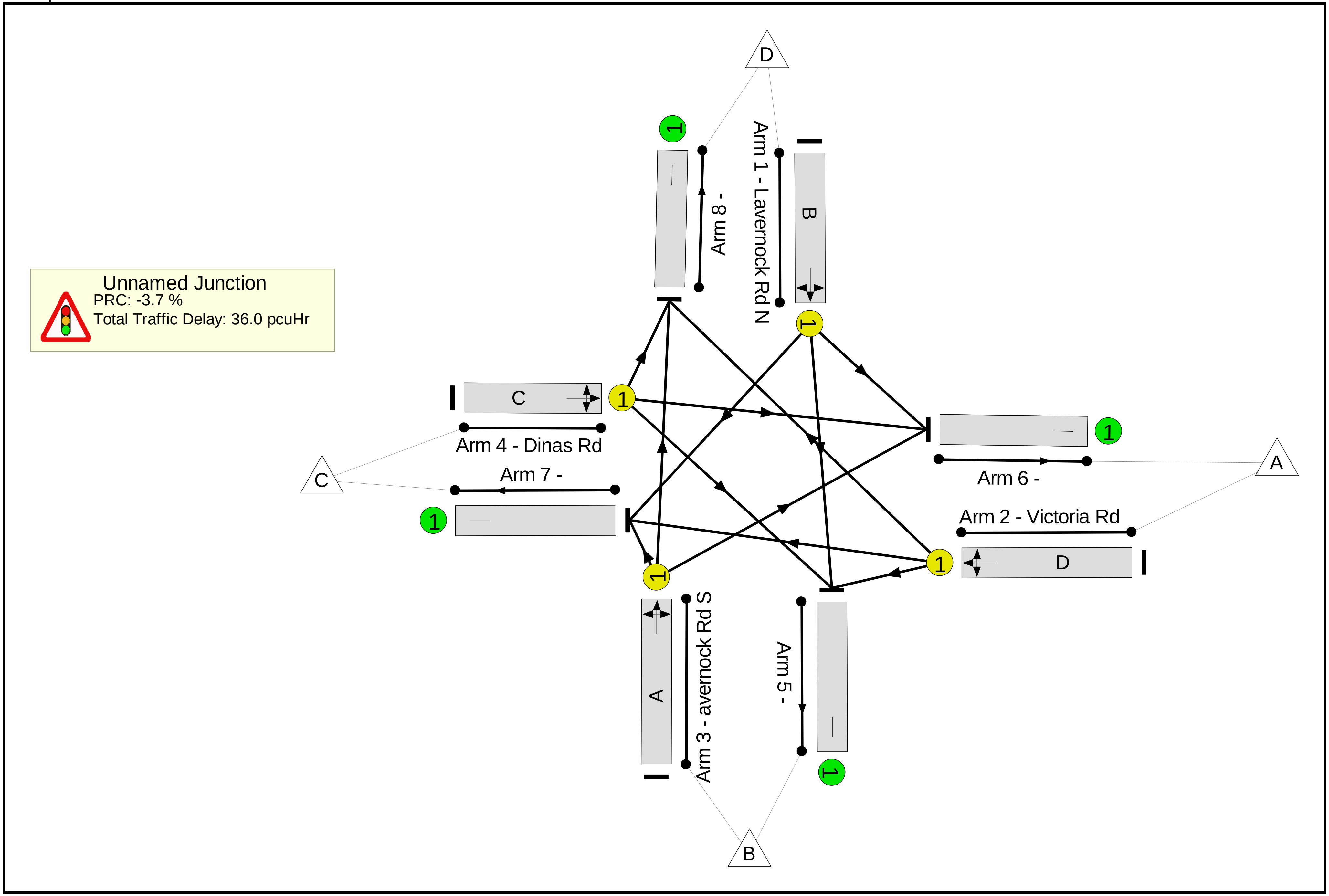
Stage	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**5**
Duration	20	18	32	25	21	19	32	19	7
Change Point	0	26	49	86	116	142	166	203	227

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.4%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.4%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	41	-	316	1889	338	93.4%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	37	-	269	1811	294	91.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	64	-	476	1878	516	92.2%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	44	-	321	1815	348	92.3%
5/1		U	N/A	N/A	-		-	-	-	483	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	261	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	477	Inf	Inf	0.0%

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**	**17.8**	**18.2**	**0.0**	**36.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**17.8**	**18.2**	**0.0**	**36.0**	**-**	**-**	**-**	**-**
1/1	316	316	-	-	-	4.3	4.9	-	9.2	104.5	10.8	4.9	15.7
2/1	269	269	-	-	-	3.7	4.0	-	7.7	103.5	9.1	4.0	13.1
3/1	476	476	-	-	-	5.6	4.8	-	10.4	78.3	15.9	4.8	20.6
4/1	321	321	-	-	-	4.3	4.5	-	8.7	98.0	11.1	4.5	15.6
5/1	483	483	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	261	261	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	477	477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

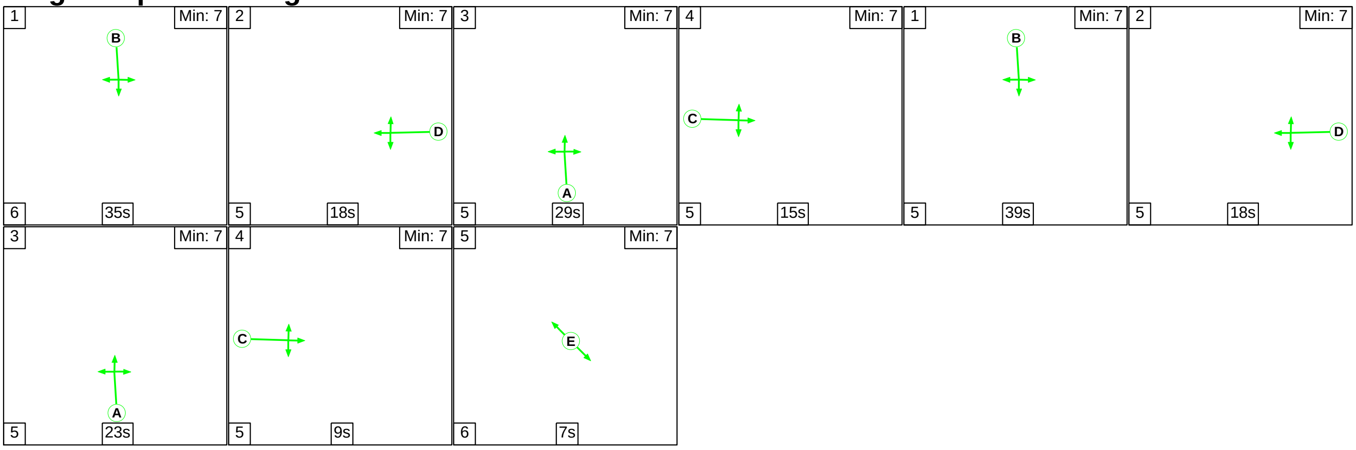
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-3.7	Total Delay for Signalled Lanes (pcuHr):	36.00	Cycle Time (s):	240
	PRC Over All Lanes (%):	-3.7	Total Delay Over All Lanes(pcuHr):	36.00		

Full Input Data And Results

Scenario 18: '2025 B + C + D' (FG18: '2025 B + C + D PM', Plan 1: 'Network Control Plan 1')

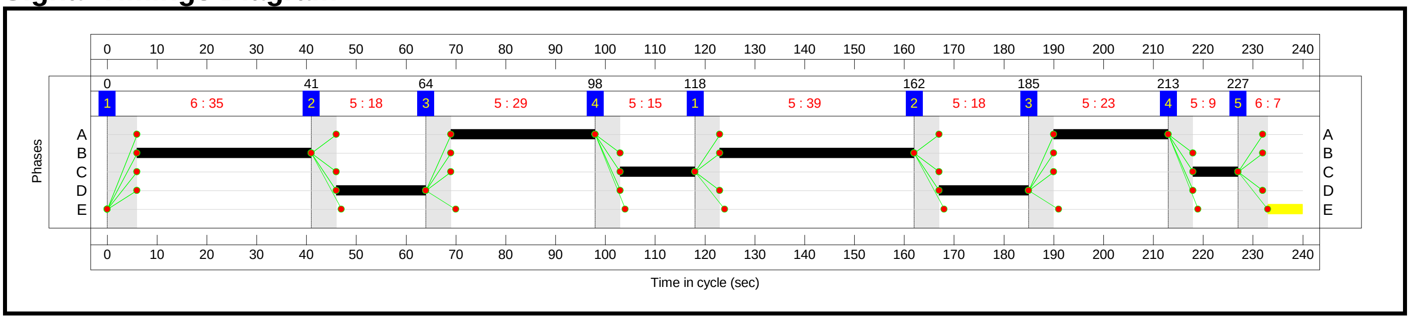
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	1	2	3	4	5
Duration	35	18	29	15	39	18	23	9	7
Change Point	0	41	64	98	118	162	185	213	227

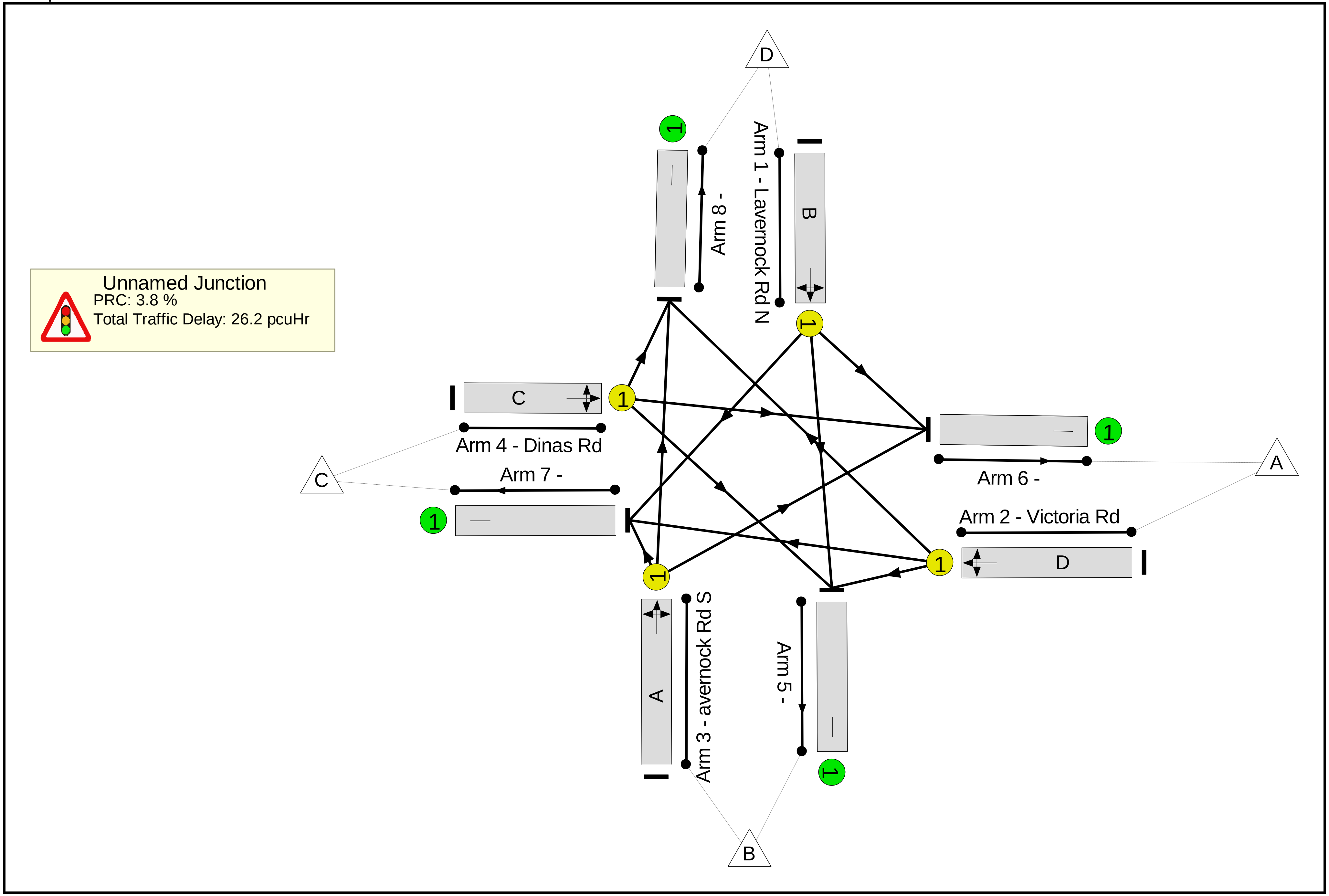
Signal Timings Diagram



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%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.7%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	74	-	515	1876	594	86.7%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	36	-	246	1840	291	84.4%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	52	-	362	1889	425	85.2%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	24	-	165	1807	196	84.3%
5/1		U	N/A	N/A	-		-	-	-	532	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	157	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	230	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	369	Inf	Inf	0.0%

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**	**15.8**	**10.5**	**0.0**	**26.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**15.8**	**10.5**	**0.0**	**26.2**	**-**	**-**	**-**	**-**
1/1	515	515	-	-	-	5.5	3.0	-	8.6	59.8	16.3	3.0	19.3
2/1	246	246	-	-	-	3.4	2.4	-	5.8	84.9	8.0	2.4	10.4
3/1	362	362	-	-	-	4.5	2.6	-	7.1	71.0	11.8	2.6	14.4
4/1	165	165	-	-	-	2.4	2.3	-	4.7	103.6	5.8	2.3	8.1
5/1	532	532	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	157	157	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	230	230	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

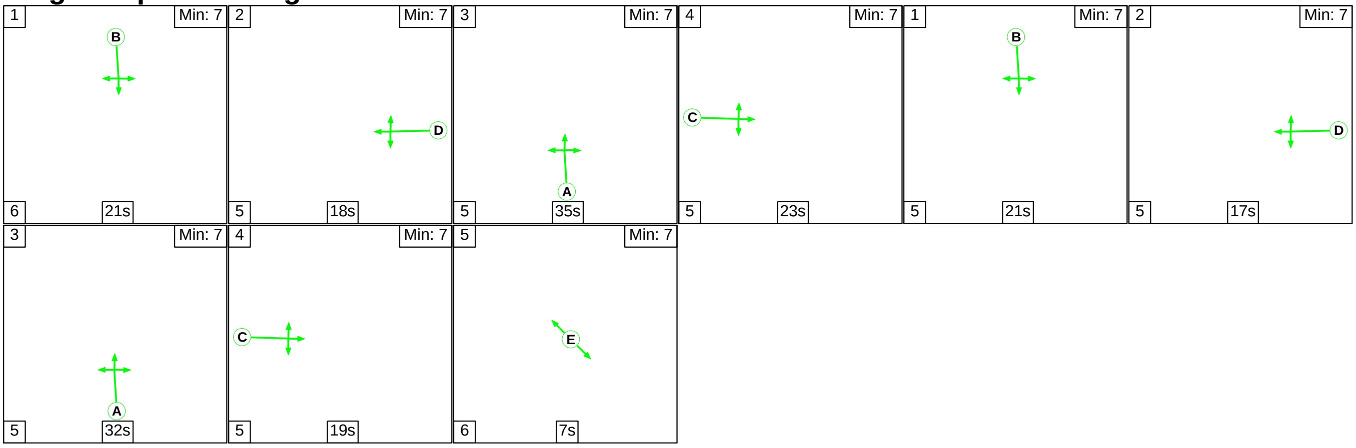
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	3.8	Total Delay for Signalled Lanes (pcuHr):	26.24	Cycle Time (s):	240
	PRC Over All Lanes (%):	3.8	Total Delay Over All Lanes(pcuHr):	26.24		

Full Input Data And Results

Scenario 19: '2029 B + C + D' (FG19: '2029+C+D AM', Plan 1: 'Network Control Plan 1')

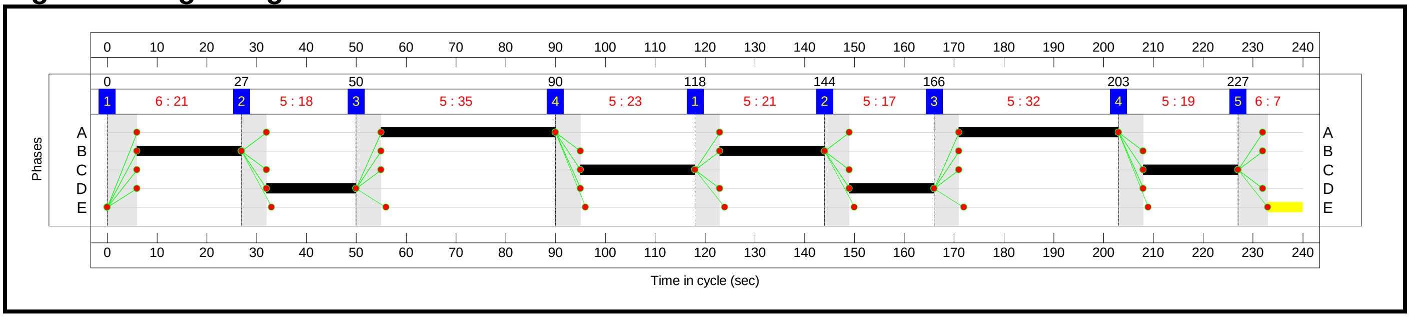
Stage Sequence Diagram



Stage Timings

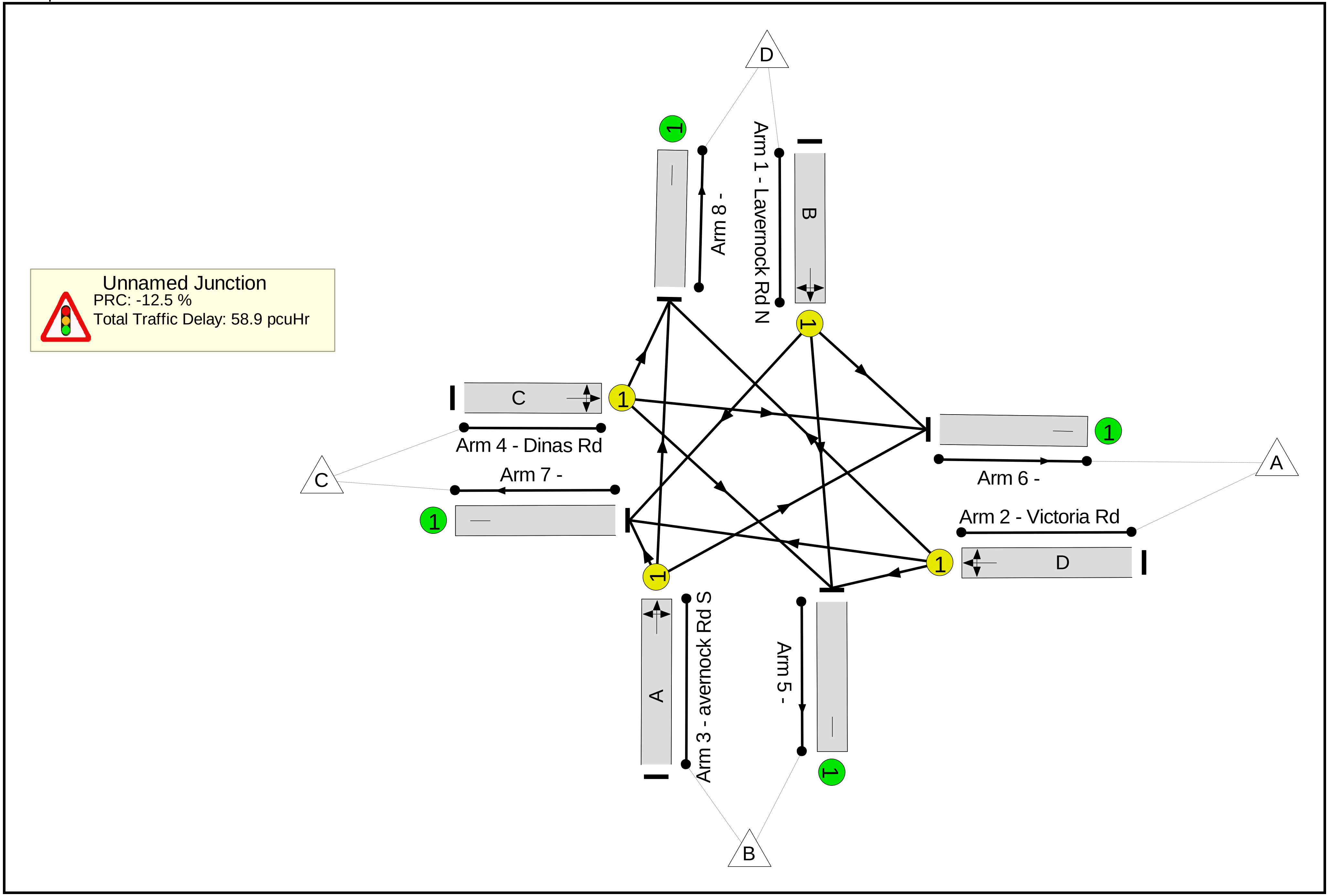
Stage	1	2	3	4	1	2	3	4	5
Duration	21	18	35	23	21	17	32	19	7
Change Point	0	27	50	90	118	144	166	203	227

Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**101.2%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**101.2%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	42	-	345	1892	347	99.5%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	35	-	275	1811	279	98.5%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	67	-	548	1883	541	101.2%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	42	-	331	1813	332	99.6%
5/1		U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	171	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%

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**	**38.4**	**0.0**	**58.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**20.5**	**38.4**	**0.0**	**58.9**	**-**	**-**	**-**	**-**
1/1	345	345	-	-	-	4.8	8.8	-	13.6	142.3	11.8	8.8	20.6
2/1	275	275	-	-	-	3.9	7.3	-	11.2	146.4	9.4	7.3	16.7
3/1	548	541	-	-	-	7.3	13.5	-	20.8	136.6	19.8	13.5	33.3
4/1	331	331	-	-	-	4.5	8.8	-	13.3	144.6	12.0	8.8	20.7
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	266	266	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	170	170	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	538	538	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

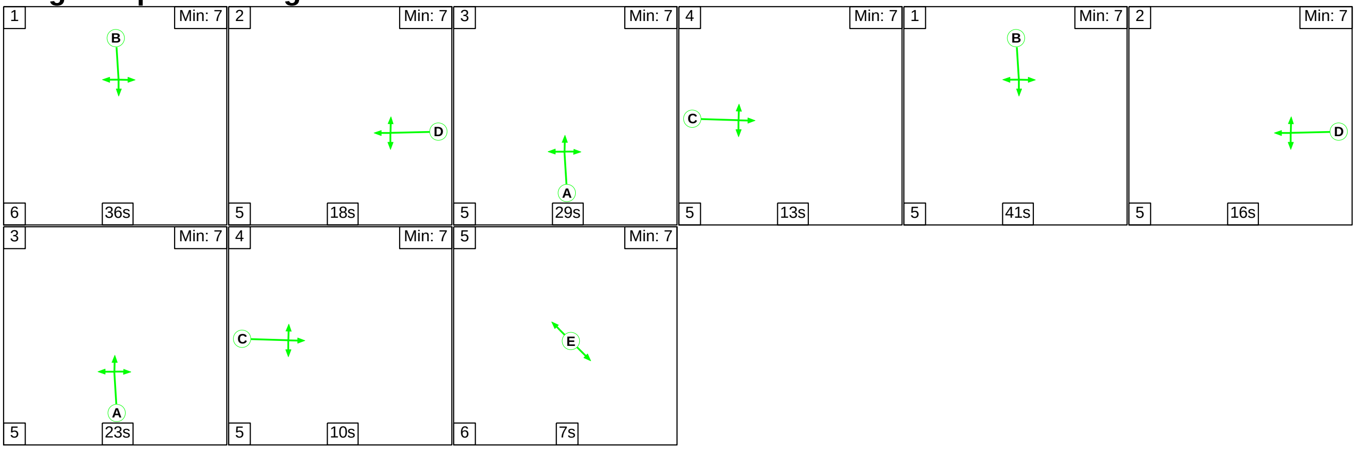
Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-12.5	Total Delay for Signalled Lanes (pcuHr):	58.90	Cycle Time (s):	240
	PRC Over All Lanes (%):	-12.5	Total Delay Over All Lanes(pcuHr):	58.90		

Full Input Data And Results

Scenario 20: '2029 B + C + D' (FG20: '2029+C+D PM', Plan 1: 'Network Control Plan 1')

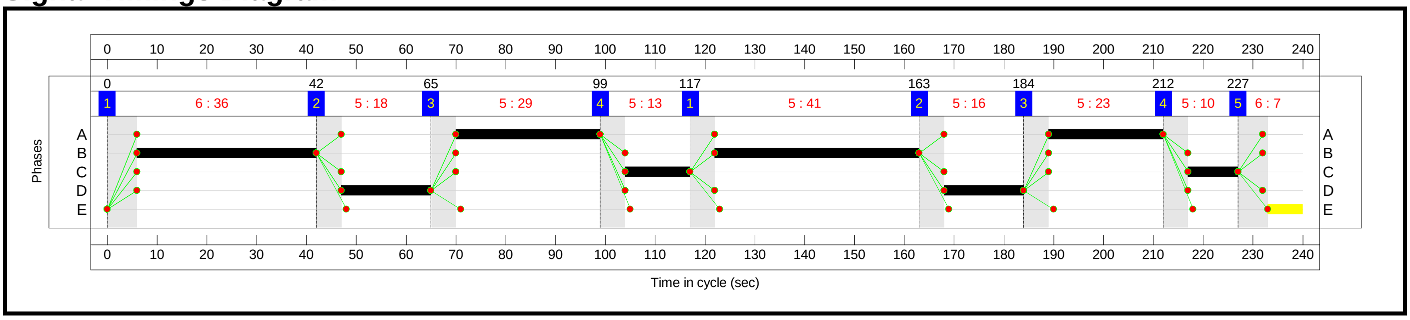
Stage Sequence Diagram



Stage Timings

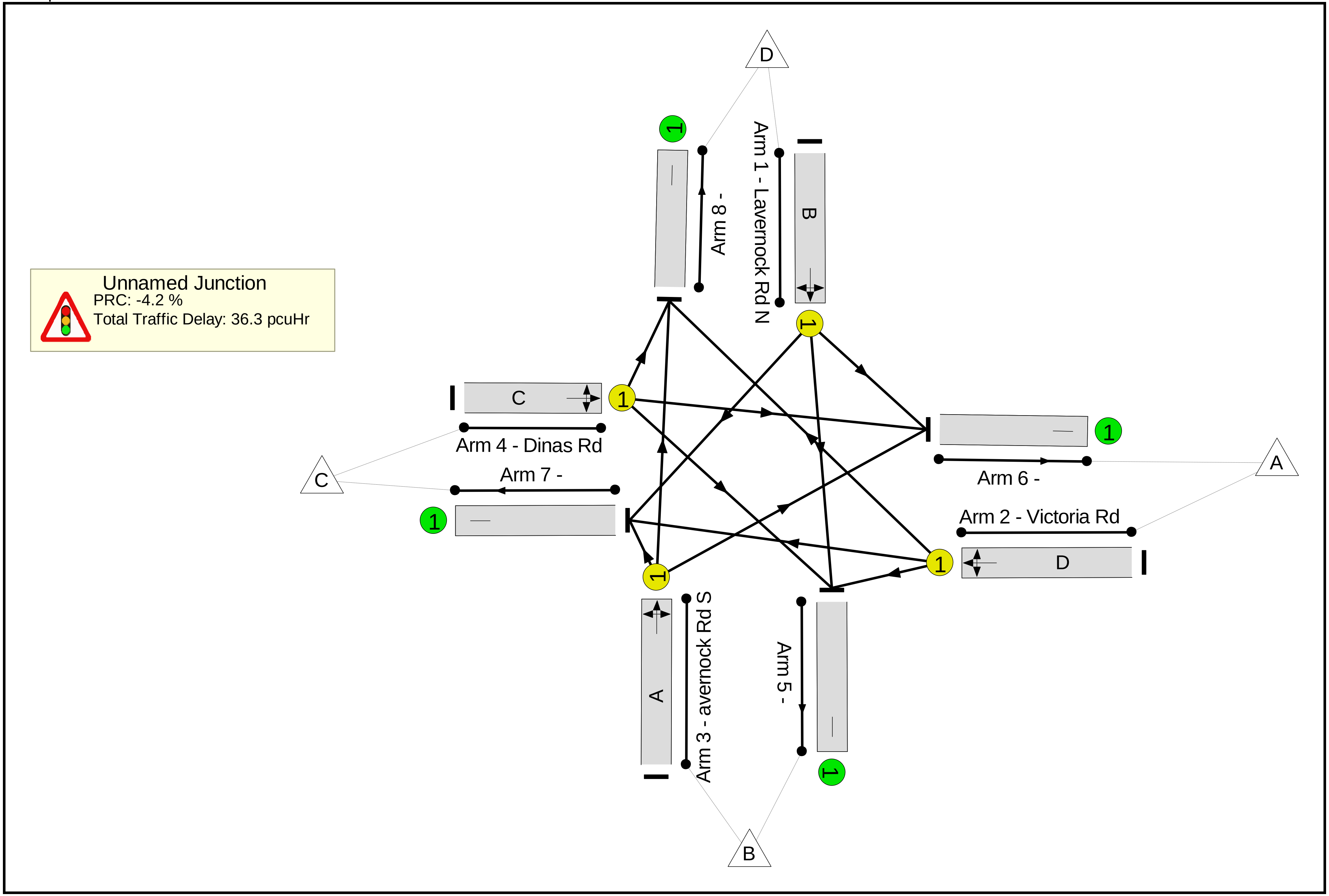
Stage	1	2	3	4	1	2	3	4	5
Duration	36	18	29	13	41	16	23	10	7
Change Point	0	42	65	99	117	163	184	212	227

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Unnamed Junction
PRC: -4.2 %
Total Traffic Delay: 36.3 pcuHr
D
Arm 8 -
Arm 1 - Lavernock Rd N
B
C
Arm 4 - Dinas Rd
Arm 7 -
C
Arm 6 -
A
Arm 2 - Victoria Rd
D
A
Arm 3 - avernock Rd S
Arm 5 -
B

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.8%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**93.8%**
1/1	Lavernock Rd N Ahead Left Right	U	N/A	N/A	B		2	77	-	577	1881	619	93.2%
2/1	Victoria Rd Left Ahead Right	U	N/A	N/A	D		2	34	-	253	1840	276	91.7%
3/1	avernock Rd S Right Left Ahead	U	N/A	N/A	A		2	52	-	399	1891	425	93.8%
4/1	Dinas Rd Right Ahead Left	U	N/A	N/A	C		2	23	-	174	1803	188	92.6%
5/1		U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	403	Inf	Inf	0.0%

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**	**17.4**	**18.9**	**0.0**	**36.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**0**	**0**	**17.4**	**18.9**	**0.0**	**36.3**	**-**	**-**	**-**	**-**
1/1	577	577	-	-	-	6.2	5.4	-	11.7	72.9	18.9	5.4	24.4
2/1	253	253	-	-	-	3.5	4.1	-	7.6	108.1	8.3	4.1	12.4
3/1	399	399	-	-	-	5.1	5.4	-	10.4	94.1	13.5	5.4	18.9
4/1	174	174	-	-	-	2.6	4.0	-	6.6	136.2	6.2	4.0	10.2
5/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

Full Input Data And Results

C1	PRC for Signalled Lanes (%):	-4.2	Total Delay for Signalled Lanes (pcuHr):	36.30	Cycle Time (s):	240
	PRC Over All Lanes (%):	-4.2	Total Delay Over All Lanes(pcuHr):	36.30		

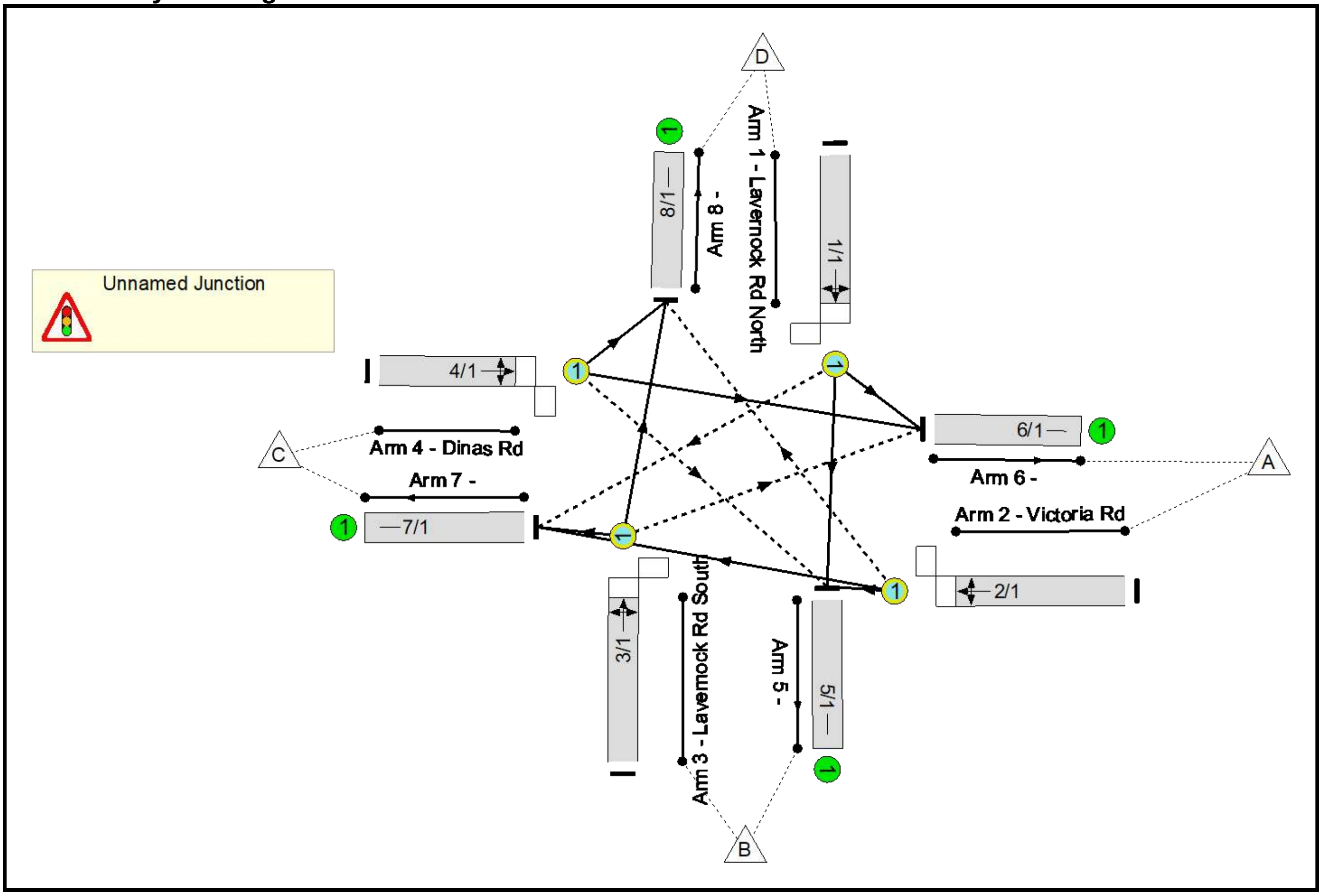
Appendix T

Full Input Data And Results

User and Project Details

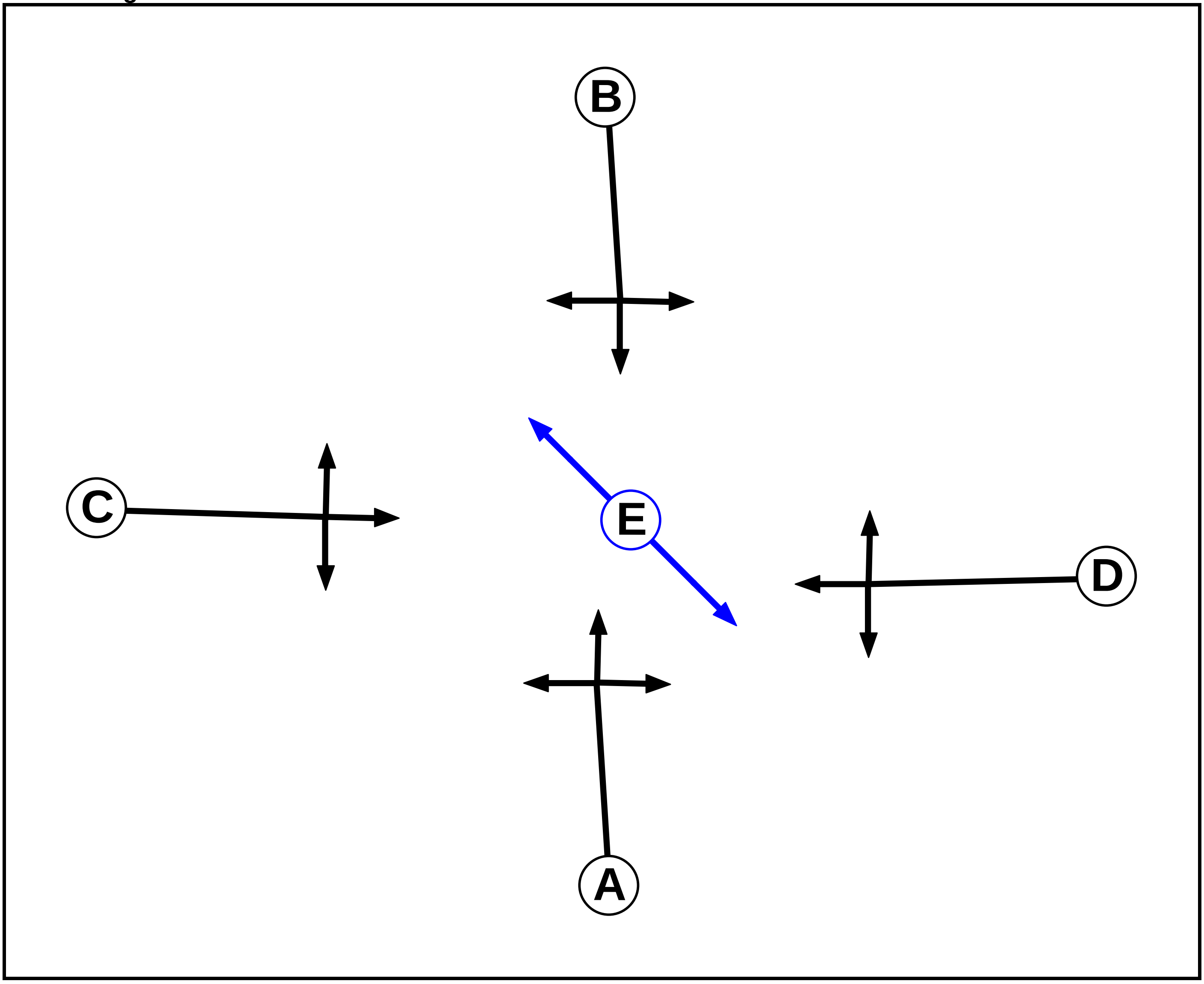
Project:	
Title:	
Location:	
Additional detail:	
File name:	2020 Victoria Rd Linsig DC - Mitigation.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Full Input Data And Results

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	Traffic		7	7
E	Pedestrian		7	7

Full Input Data And Results

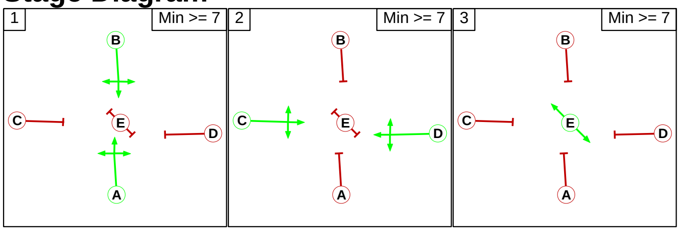
Phase Intergreens Matrix

	Starting Phase					
		A	B	C	D	E
Terminating Phase	A		-	5	5	6
	B	-		5	5	6
	C	5	5		-	6
	D	5	5	-		6
	E	6	6	6	6	

Phases in Stage

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

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
From Stage	1		5	6
	2	5		6
	3	6	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
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)**
1/1 (Lavernock Rd North)	7/1 (Right)	1439	0	3/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	2.00	1.00	0.50	2	2.00
2/1 (Victoria Rd)	8/1 (Right)	1439	0	4/1	1.09	To 6/1 (Ahead) To 8/1 (Left)	2.00	1.00	0.50	2	2.00
3/1 (Lavernock Rd South)	6/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead) To 6/1 (Left)	2.00	1.00	0.50	2	2.00
4/1 (Dinas Rd)	5/1 (Right)	1439	0	2/1	1.09	To 5/1 (Left) To 7/1 (Ahead)	2.00	1.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction												
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 (Lavernock Rd North)	O	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Left	15.40
											Arm 7 Right	10.00
2/1 (Victoria Rd)	O	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	18.00
											Arm 7 Ahead	Inf
											Arm 8 Right	10.00
3/1 (Lavernock Rd South)	O	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Right	10.00
											Arm 7 Left	18.50
											Arm 8 Ahead	Inf
4/1 (Dinas Rd)	O	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Right	10.00
											Arm 6 Ahead	Inf
											Arm 8 Left	18.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2029+C+D AM'	08:00	09:00	01:00	
2: '2029+C+D PM'	08:00	09:00	01:00	

Scenario 1: 'AM' (FG1: '2029+C+D AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	131	86	58	275
	B	82	0	53	413	548
	C	145	114	0	72	331
	D	40	273	32	0	345
	Tot.	267	518	171	543	1499

Traffic Lane Flows

Lane	Scenario 1: AM
Junction: Unnamed Junction	
1/1	345
2/1	275
3/1	548
4/1	331
5/1	518
6/1	267
7/1	171
8/1	543

Lane Saturation Flows

Junction: Unnamed Junction								
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 (Lavernock Rd North)	3.25	0.00	Y	Arm 5 Ahead	Inf	79.1 %	1892	1892
				Arm 6 Left	15.40	11.6 %		
				Arm 7 Right	10.00	9.3 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	47.6 %	1811	1811
				Arm 7 Ahead	Inf	31.3 %		
				Arm 8 Right	10.00	21.1 %		
3/1 (Lavernock Rd South)	3.25	0.00	Y	Arm 6 Right	10.00	15.0 %	1883	1883
				Arm 7 Left	18.50	9.7 %		
				Arm 8 Ahead	Inf	75.4 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	34.4 %	1813	1813
				Arm 6 Ahead	Inf	43.8 %		
				Arm 8 Left	18.00	21.8 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM' (FG2: '2029+C+D PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	102	116	35	253
	B	50	0	35	314	399
	C	62	58	0	54	174
	D	49	439	89	0	577
	Tot.	161	599	240	403	1403

Full Input Data And Results

Traffic Lane Flows

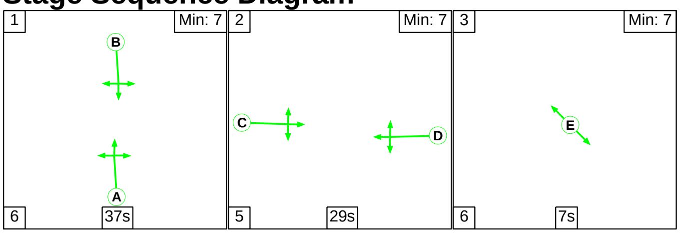
Lane	Scenario 2: PM
Junction: Unnamed Junction	
1/1	577
2/1	253
3/1	399
4/1	174
5/1	599
6/1	161
7/1	240
8/1	403

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Unnamed Junction								
1/1 (Lavernock Rd North)	3.25	0.00	Y	Arm 5 Ahead	Inf	76.1 %	1881	1881
				Arm 6 Left	15.40	8.5 %		
				Arm 7 Right	10.00	15.4 %		
2/1 (Victoria Rd)	3.25	0.00	Y	Arm 5 Left	18.00	40.3 %	1840	1840
				Arm 7 Ahead	Inf	45.8 %		
				Arm 8 Right	10.00	13.8 %		
3/1 (Lavernock Rd South)	3.25	0.00	Y	Arm 6 Right	10.00	12.5 %	1891	1891
				Arm 7 Left	18.50	8.8 %		
				Arm 8 Ahead	Inf	78.7 %		
4/1 (Dinas Rd)	3.25	0.00	Y	Arm 5 Right	10.00	33.3 %	1803	1803
				Arm 6 Ahead	Inf	35.6 %		
				Arm 8 Left	18.00	31.0 %		
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM' (FG1: '2029+C+D AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

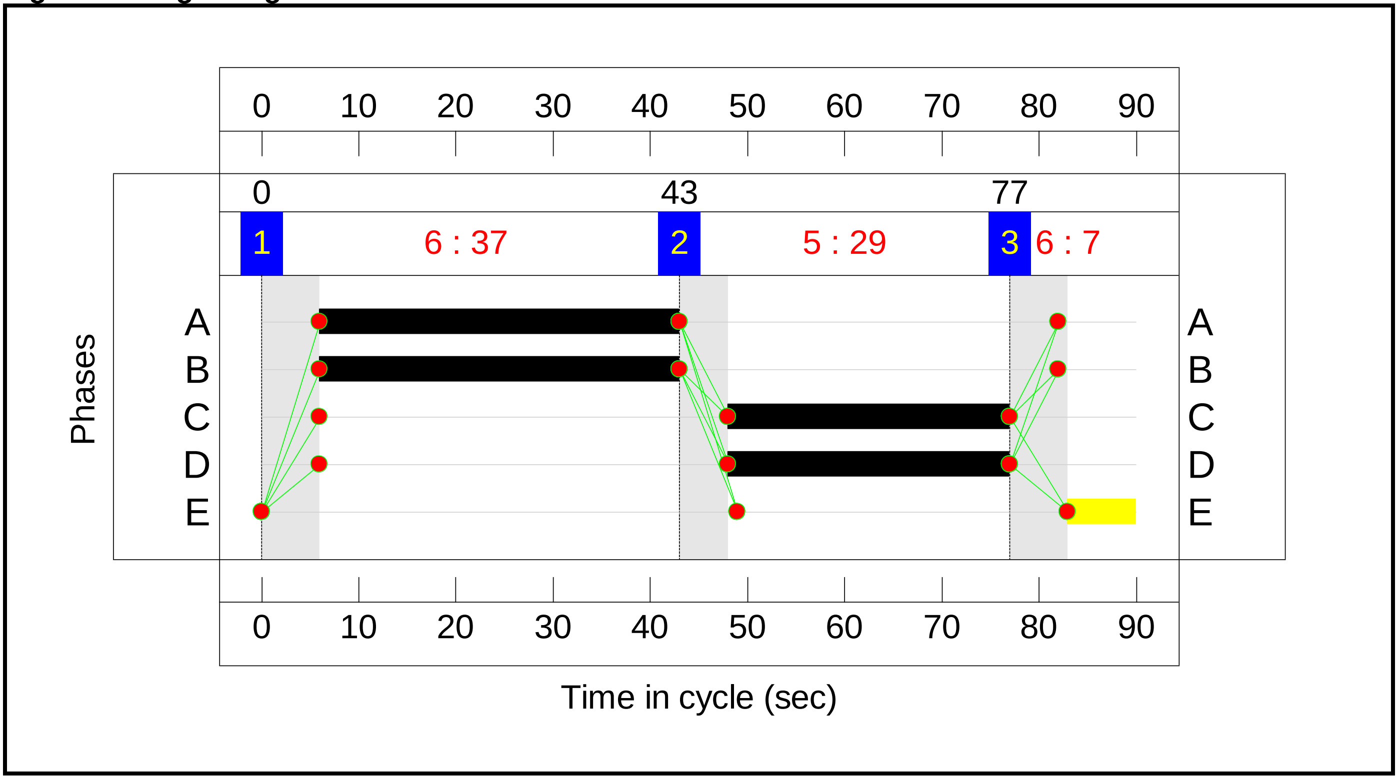


Full Input Data And Results

Stage Timings

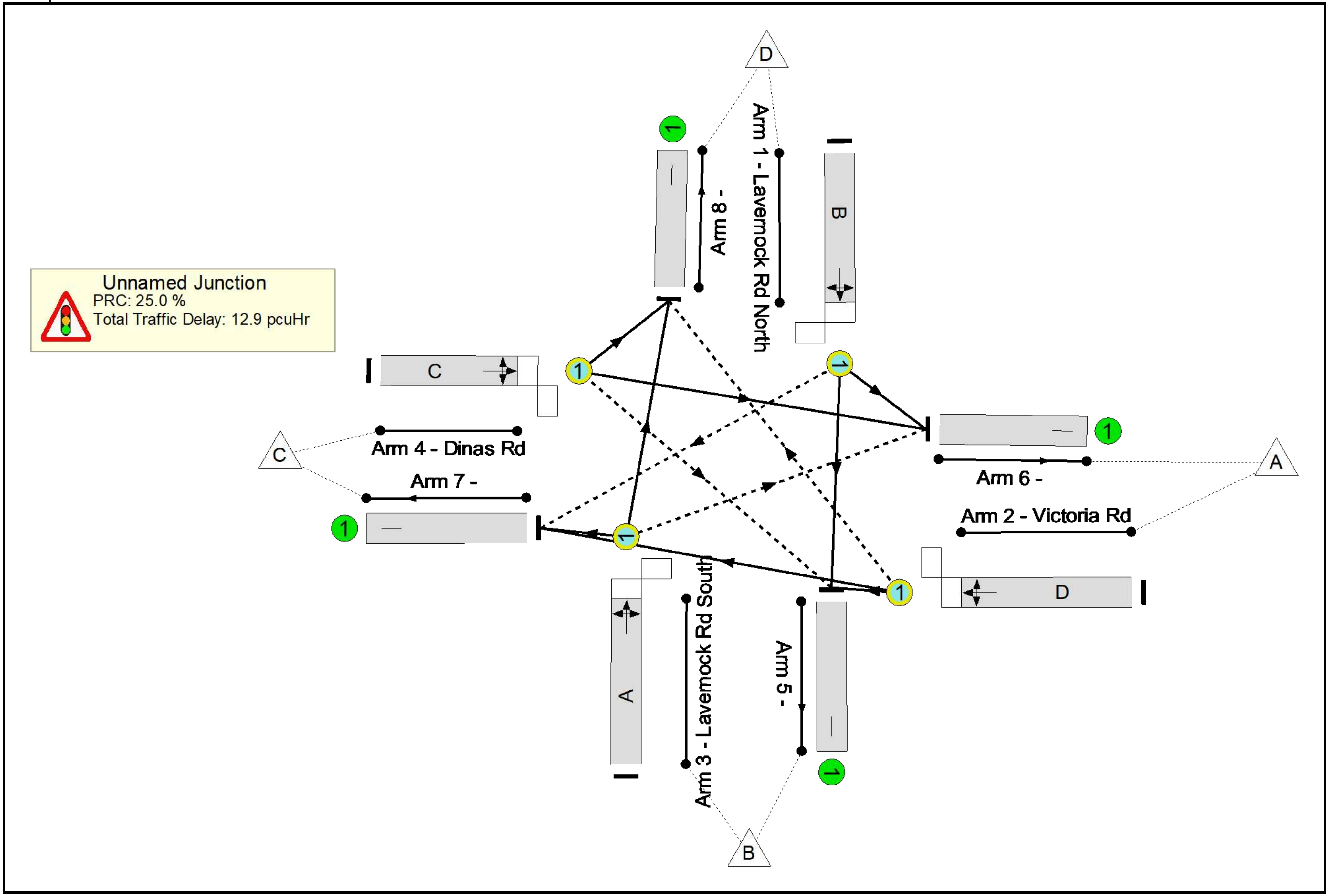
Stage	1	2	3
Duration	37	29	7
Change Point	0	43	77

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Unnamed Junction
PRC: 25.0 %
Total Traffic Delay: 12.9 pcuHr
Arm 1 - Lavernock Rd North
Arm 2 - Victoria Rd
Arm 3 - Lavernock Rd South
Arm 4 - Dinas Rd
Arm 5 -
Arm 6 -
Arm 7 -
Arm 8 -
A
B
C
D

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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.0%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.0%**
1/1	Lavernock Rd North Ahead Left Right	O	N/A	N/A	B		1	37	-	345	1892	771	44.7%
2/1	Victoria Rd Left Ahead Right	O	N/A	N/A	D		1	29	-	275	1811	604	45.6%
3/1	Lavernock Rd South Right Left Ahead	O	N/A	N/A	A		1	37	-	548	1883	761	72.0%
4/1	Dinas Rd Right Ahead Left	O	N/A	N/A	C		1	29	-	331	1813	462	71.7%
5/1		U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	267	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	171	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%

Full Input Data And Results

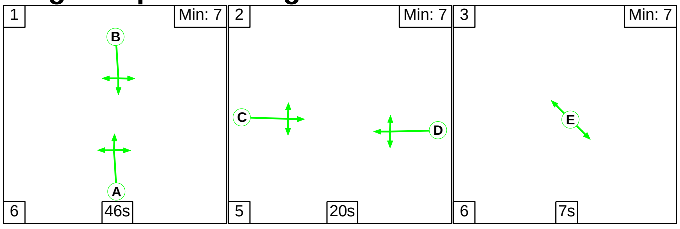
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**283**	**0**	**3**	**9.3**	**3.3**	**0.3**	**12.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**283**	**0**	**3**	**9.3**	**3.3**	**0.3**	**12.9**	**-**	**-**	**-**	**-**
1/1	345	345	32	0	0	1.8	0.4	0.1	2.2	23.3	6.0	0.4	6.4
2/1	275	275	57	0	1	1.8	0.4	0.0	2.2	29.3	5.3	0.4	5.8
3/1	548	548	81	0	1	3.3	1.3	0.1	4.6	30.5	11.4	1.3	12.7
4/1	331	331	113	0	1	2.5	1.2	0.1	3.8	41.7	7.5	1.2	8.8
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	171	171	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 25.0 Total Delay for Signalled Lanes (pcuHr): 12.94 Cycle Time (s): 90
PRC Over All Lanes (%): 25.0 Total Delay Over All Lanes(pcuHr): 12.94

Full Input Data And Results

Scenario 2: 'PM' (FG2: '2029+C+D PM', Plan 1: 'Network Control Plan 1')

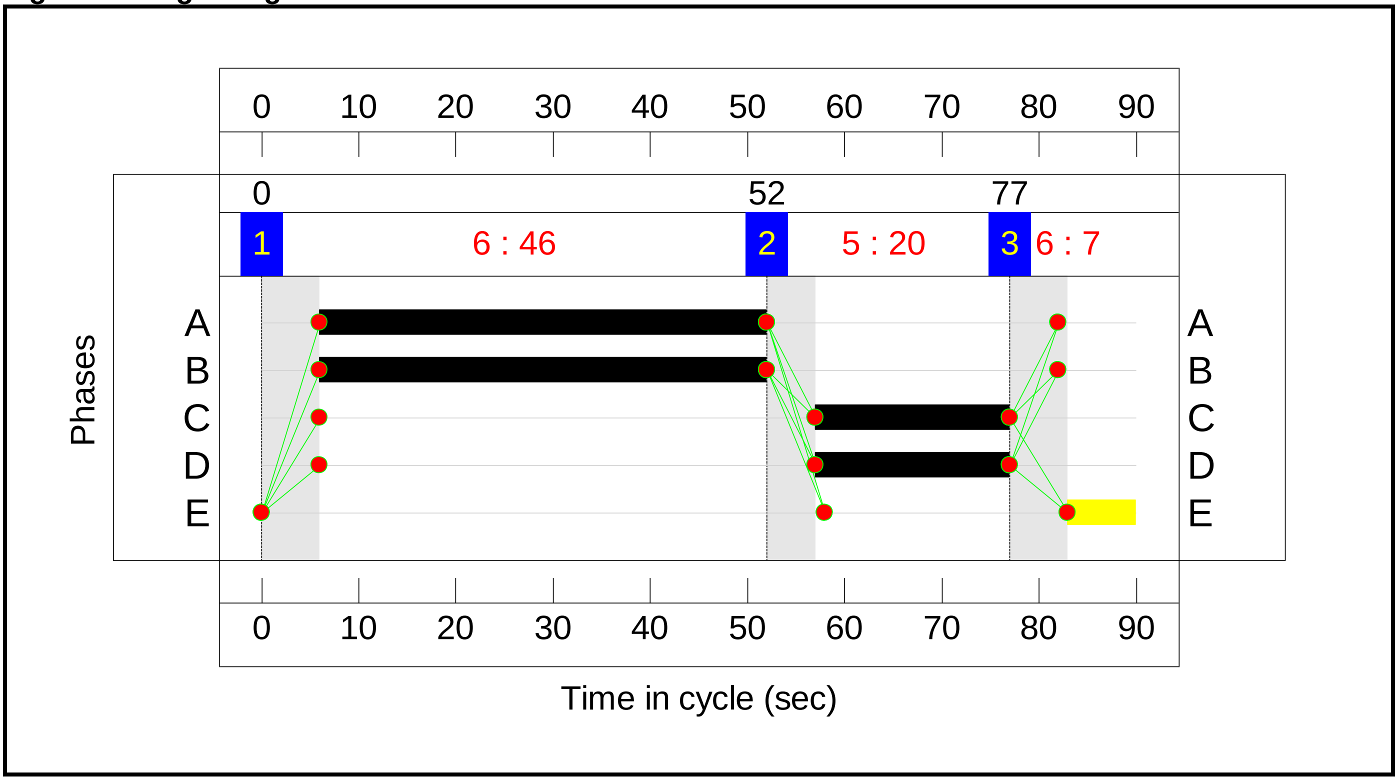
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	20	7
Change Point	0	52	77

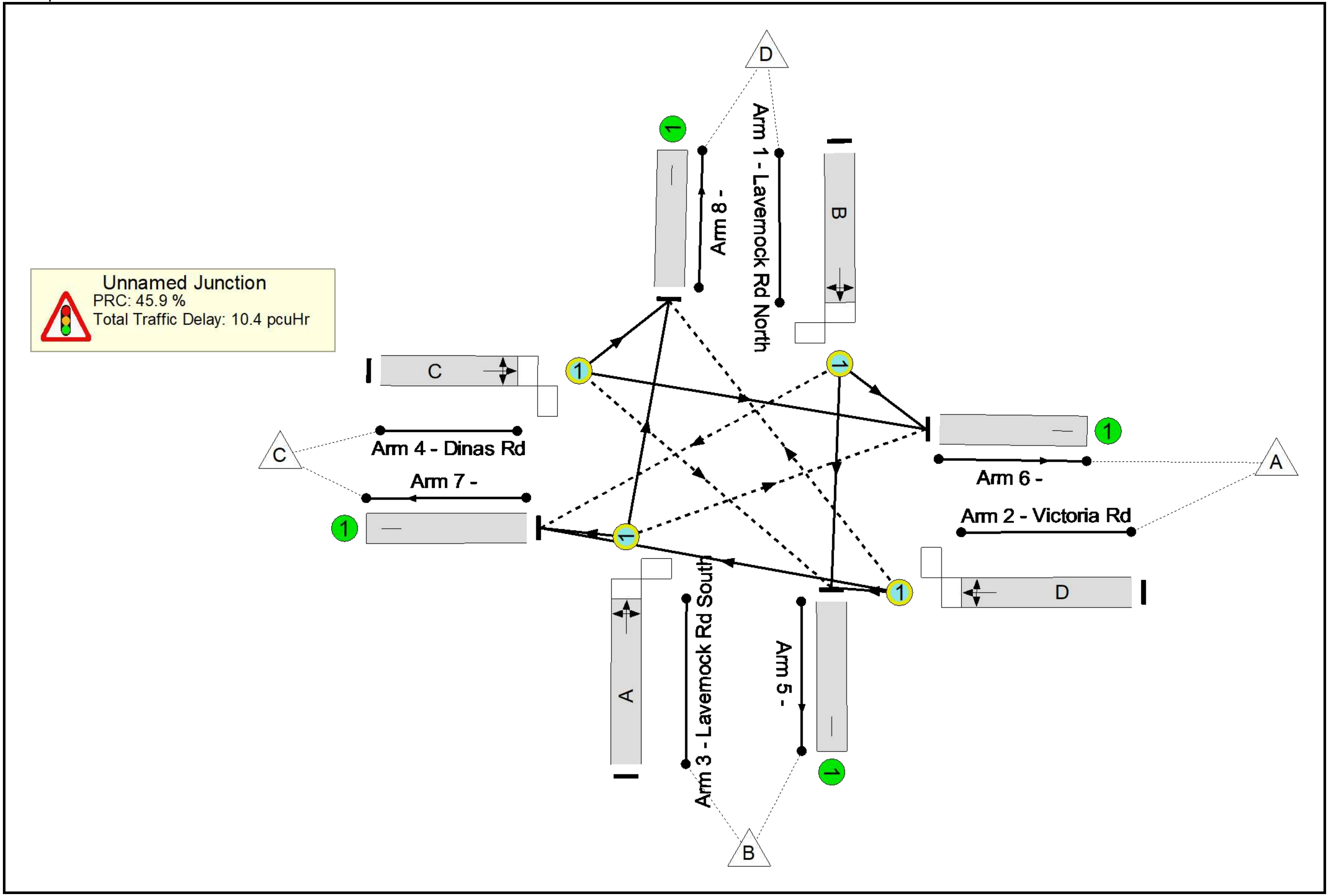
Signal Timings Diagram



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**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**61.7%**
Unnamed Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**61.7%**
1/1	Lavernock Rd North Ahead Left Right	O	N/A	N/A	B		1	46	-	577	1881	948	60.9%
2/1	Victoria Rd Left Ahead Right	O	N/A	N/A	D		1	20	-	253	1840	429	58.9%
3/1	Lavernock Rd South Right Left Ahead	O	N/A	N/A	A		1	46	-	399	1891	935	42.7%
4/1	Dinas Rd Right Ahead Left	O	N/A	N/A	C		1	20	-	174	1803	282	61.7%
5/1		U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	161	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	403	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	**-**	**-**	**229**	**0**	**3**	**7.4**	**2.7**	**0.3**	**10.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**229**	**0**	**3**	**7.4**	**2.7**	**0.3**	**10.4**	**-**	**-**	**-**	**-**
1/1	577	577	88	0	1	2.4	0.8	0.1	3.3	20.4	10.3	0.8	11.0
2/1	253	253	35	0	0	2.2	0.7	0.0	2.9	40.9	5.6	0.7	6.3
3/1	399	399	49	0	1	1.4	0.4	0.1	1.9	17.2	6.0	0.4	6.4
4/1	174	174	57	0	1	1.4	0.8	0.1	2.3	48.2	3.7	0.8	4.5
5/1	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	161	161	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 45.9 Total Delay for Signalled Lanes (pcuHr): 10.39 Cycle Time (s): 90
PRC Over All Lanes (%): 45.9 Total Delay Over All Lanes(pcuHr): 10.39